

FRANCIS ROAD, WITHINGTON

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

Job Number: LKC 21 1501
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Client: Southway DevCo Ltd



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EXECUTIVE SUMMARY

Site Details

Site Location:	North of Francis Road, north east of Kingslea House, Withington, Manchester. Centred at approximate National Grid Reference 385318E 392339N.
Site Area:	1,600m ² . 1,680m ² including access track to be retained off Cotton Lane.
Current Land Use:	Vacant employment building.
Proposed Development:	Planning Application No. 134603/FO/2022: Demolition of an employment building and development of 24 residential apartments, with parking provision and soft landscaping.
Purpose of Report:	Contamination and Geotechnical Assessment.

Preliminary Risk Assessment

PRA Details:	Undertaken by LKC in September 2021. Ref: LKC 21 1501-01.
History:	Onsite: Laundry from 1922 until 1958 mapping and annotated as works on 1992 mapping. Surrounding Area: Electrical substation, allotment gardens, residential development.
Geology / Hydrogeology:	Artificial: No BGS recorded artificial. Superficial: Till, Devensian (Diamicton). Secondary Aquifer - Undifferentiated. Bedrock: Wilmslow Sandstone Formation (sandstone). Principal Aquifer.
Mining:	Not within a Coal Reporting Area.
Relevant Environmental Setting:	No surface water courses within 100m. No pollution incidents recorded onsite. No surface water or groundwater abstractions within 1km. 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). PL2 Inhalation of Vapours: Moderate Risk (volatile contaminants). PL3 Gas: Moderate Risk (hazardous gas). PL4 Controlled waters: Moderate Risk (mobile contaminants). PL5 Water Pipelines: Moderate Risk (organic contaminants).
Recommendations:	Site Investigation was recommended to further assess the above pollutant linkages.

Ground Investigation Work Undertaken

Date of Investigation:	21 st October 2022.
Intrusive Investigation Work Undertaken:	4no. window sample boreholes (WS101-WS104).
Monitoring Wells:	Installed in all boreholes.
Soil Sampling:	1no. samples tested for metals, speciated PAHs, pH, sulphate, asbestos and SOM. 4no. samples tested for metals, speciated PAHs, cyanide, pH, sulphate, asbestos, phenol, TPHCWG, BTEX, VOCs, SVOCs and SOM.
Groundwater Sampling:	Insufficient groundwater.
Monitoring:	1no. groundwater monitoring visit.
Insitu and Laboratory Geotechnical Testing:	SPTs, pocket penetrometer tests. 1no. Atterberg Limit test. 2no. PSD tests. 3no. samples tested for BRE SD1 Suite (pH and sulphate).

Ground Conditions and Geotechnical Assessment

General Ground conditions	Allowable Bearing Pressure	Anticipated Foundation Type	Other Considerations
Made Ground to approx. 0.9 – 1.40mbgl.	191kN/m ² within the CLAY.	Piled foundations supporting structural loads, with strip foundations supporting cladding walls.	Consideration of effects of trees also needs to be considered.
Stiff CLAY to approx. 1.10m-2.10mbgl over medium dense, becoming very dense SAND to the completion depths of the boreholes.	120kN/m ² within the SAND, increasing to >500kN/m ² at the base of the exploratory holes.		Temporary supports of excavations may be required.
Groundwater not encountered during the investigation works.			Detailed design should be carried out by structural engineer.
			Concrete Requirements DS-3-AC-3 in the made ground.

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).	Moderate	- Likely probability as elevated metals (arsenic and lead) and TPH identified in the made ground across the site which could come into contact with site users in soft landscaping areas. - Recommendation: Remediation required, to be confirmed upon completion of post-demolition investigation. Likely to include an environmental cover system in soft landscaping areas.
	Low	- No elevated PAHs or ACM identified across the site. - Recommendation: No additional remediation required other than the above for heavy metals and TPH, to be confirmed with a post-demolition investigation.
2 Volatile contaminants posing a risk to site users via the inhalation of vapours.	Low	- DQRA has not identified any elevated volatile contaminants identified across the site. - Recommendation: No remediation required, to be confirmed upon completion of post-demolition investigation.
3 Gas posing a risk to buildings and site users via the migration of gas into building causing explosion and asphyxiation.	Moderate / Low	- No significant source identified from the PRA. - Ground conditions onsite did not identify a significant depth of organic or putrescible material. Therefore, low risk assumed at this stage. - Recommendation: No remediation required, to be confirmed upon completion of post-demolition investigation.
4 Mobile contamination posing a risk to controlled waters via the migration through permeable strata.	Moderate	- Insufficient groundwater present within the boreholes during initial phase of investigation work. - Recommendation: Groundwater or leaching tests required during post demolition investigation.
5 Organic contaminants posing a risk to water pipes.	Moderate	- Likely probability as elevated hydrocarbons encountered which could permeate water pipes and contaminate water supply. - Recommendation: UU risk assessment to be undertaken. Barrier piping may be required, to be confirmed upon completion of post-demolition investigation.

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.

Phase	PL	Remediation Requirements	Validation Requirements
Post-Demolition Work	All	<u>Post-demolition Cable Percussion Boreholes</u> This is recommended to confirm ground conditions below the current buildings and allow delineation of areas of concern. This should allow a more targeted remediation strategy to be completed. This work will also provide more geotechnical information for foundation design.	N/A (Investigation Report will be provided with an updated Remediation Strategy).
Pre-Construction	All	<u>Earthworks Inspections / 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. Should asbestos be identified during groundworks, precautions should be taken to ensure the safety of the construction workers and nearby land users. It would be advisable to introduce an asbestos management strategy in line with CIRIA C733¹.	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> As made ground is relatively deep, it is unlikely to be viable to remove the contaminated soils. Therefore, an environmental cover system is recommended. The environmental cover system should be as follows: Soft Landscaping Areas: 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 G.	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 8-2.
	4	<u>Controlled Waters</u> Groundwater samples to be collected from boreholes post demolition. Delineation and removal of hydrocarbon contamination from area of WS102 likely to be required.	TBC (Investigation Report will be provided with an updated Remediation Strategy).

¹ CIRIA (2014). "Asbestos in Soil and Made Ground: A Guide to Understanding and Managing Risks". C733.

Phase	PL	Remediation Requirements	Validation Requirements
	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. It is likely that barrier pipe will be required.	Delivery Notes of Pipe Material. Photographs of the Installed Pipe.
	2, 3	No remediation anticipated with respect to PL2 (inhalation of vapours), PL3 (gas); however, this needs to be confirmed once additional work has been completed.	TBC

The material in WS102 (0.2-0.9m) has been classified as HAZARDOUS WASTE. The remaining samples have been classified as NON-HAZARDOUS WASTE.

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1 Introduction

1.1 Background

LK Consult Ltd (LKC) has been commissioned by Southway DevCo Ltd to carry out a Phase 2 Geo-Environmental Investigation, Risk Assessment and Remediation Strategy for Francis Road, Manchester. The investigation was undertaken in support of a planning application (ref. 134603/FO/2022) to develop the site for residential use.

The following work has previously been undertaken:

- Preliminary Risk Assessment (PRA) report, undertaken by LKC (Ref: CL-602-LKC 21 1501-01, dated September 2021).

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.

The aims of this report are also to establish the feasibility of developing this site, to demonstrate to the Local Planning Authority that in accordance with the National Planning Policy Framework (NPPF)² the site may be developed for a residential end use and that appropriate site investigation and risk assessment works are in place to allow conditional approval of any future planning application.

A post demolition investigation is also proposed once the existing buildings have been demolished. A separate report including revised remediation strategy will be produced once this has been completed.

1.2 Site Details

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

Site Location	Located north of Francis Road, north east of Kingslea House, Withington, Manchester. Centred at approximate National Grid Reference 385318E 392339N.
Approximate Area	1,600m ² . 1,680m ² including access track to be retained off Cotton Lane.
Topography	35-40 metres Above Ordnance Datum (AOD). Site is approximately level.
Current Site Use	Vacant employment building.
Purpose of Report	Planning.
Planning Ref.	134603/FO/2022
Proposed Development	Residential apartments with soft landscaping. The proposed plan involves the demolition of an employment building and development of 24 residential apartments, with parking provision and soft landscaping.

Table 1-1: Summary of site details.

² "National Planning Policy Framework." Ministry of Housing, Communities and Local Government. July 2021.

2 Review of Previous Work

2.1 Phase 1 Preliminary Risk Assessment (PRA)

A PRA report (Ref: CL-602-LKC 21 1501-01, dated September 2021) has previously been undertaken by LKC.

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

Main Historical Features	Onsite: Laundry from 1922 until 1958 mapping and works from 1992 mapping. Surrounding Area: Electrical substation, allotment gardens, residential development.
Geology / Hydrogeology	Artificial: No BGS recorded artificial. Superficial: Till, Devensian (Diamicton). Secondary Aquifer - Undifferentiated. Bedrock: Wilmslow Sandstone Formation (sandstone), Principal Aquifer.
Landfills / Infilled Ground	No recorded landfills. No potentially infilled ground identified.
Site Walkover	The site comprises a vacant office and former works building with a car park to the south west and car parking off Francis Road to the east. The existing building is two storey with an office space located on the first floor. The ground level is raised by around 0.3m in the north east section compared to the south west. The floor of the building is predominately concrete with varying degrees of staining and cracking. The south of the building contains limited stains and is in good condition. The floor in the north of the building is more heavily stained concrete. Evidence of below ground services and drains was noted.

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

The preliminary contamination conceptual model (PCCM) 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 C552³. The risk matrix is provided in Appendix A.

The PCCM has been updated to take into account recent LKC changes to omit phytotoxicity and sulphate pollutant linkages. Justification is provided below.

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.

³ 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. - Windblown dust.	- Future site users. - Offsite receptors.	- ACM. - Heavy metals. - PAHs. - Other inorganic and organic contaminants.	Likely (given site history, site conditions and proposed end use)	Medium	Moderate	Intrusive investigation required. Soil analysis of CoC.
			- Petroleum hydrocarbons.	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, SVOC, VOCs).	Likely (given site history, site conditions and proposed end use)	Medium	Moderate	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.	- Hazardous gas (carbon dioxide, methane).	Low Likelihood (given viable gas source and viable pathway)	Severe	Moderate	Intrusive investigation to confirm ground conditions. If significant gas source and pathway identified, gas monitoring required.
			- Radon.	Unlikely (as <1% of homes above action level)	Medium	Low	(<1%) No protective measures are necessary in the construction of new dwellings or extensions.
4	- Surface run-off. - Migration via permeable strata and preferential pathways. - Perched waters migration.	- Groundwater (Principal Aquifer).	- Mobile contaminants such as metals, PAHs, hydrocarbons, volatile compounds.	Likely (given site history, potential sources of mobile contamination)	Medium	Moderate	Intrusive investigation required. Groundwater sampling, subject to ground conditions encountered. Analysis of CoC.
5	- Ingestion of tainted water supply.	- Future site users. - Water pipes.	- Organic contaminants such as petroleum hydrocarbons, naphthalene, volatile compounds.	Likely (given site history and anticipated ground conditions)	Medium	Moderate	Intrusive investigation required. Soil analysis of CoC, subject to ground conditions encountered.

Table 2-2: Preliminary Contamination Conceptual Model.

3 Ground Investigation

3.1 Site Investigation Design and Methodology

In order to assess the shallow 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 21st October 2022 and comprised the following:

- 4no. window sample boreholes drilled to 2.39-3.17 metres below ground level (mbgl) (ref. WS101 to WS104).

All site investigation locations are shown in Figure 3.

The locations were chosen to allow good coverage across the site as well as target areas of concern. Table 3-1 details the targeted and general coverage (non-targeted) site investigation locations. WS102-WS104 were drilled where accessible within the current building.

Site Investigation Locations	Rationale
WS102-104	General site coverage in proposed building area.
WS101	General site coverage and in area of proposed soft landscaping.

Table 3-1: Summary of sampling locations.

3.2 Well Installations

All (WS101-WS104) of the boreholes were installed with monitoring wells for gas and groundwater monitoring, groundwater sampling. Monitoring wells were installed in accordance with BS10175 and CIRIA C665⁴ and generally comprised approximately 0.50-1.00m 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.

3.3 Sampling Protocol

3.3.1 Soil Sampling (Contamination)

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

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 PhoCheck Tiger 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

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.

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

boxes prior to being collected by courier at the end of the day for delivery to the Chemtest laboratory in Newmarket for chemical testing. If collection was not possible the same day then samples were stored in the sample storage fridge at the LK Group offices below 4°C. Samples were tracked using appropriate Chain of Custody forms provided by Chemtest.

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

Suites and Contaminants	No. Samples	Location & Depth	Justification
Metals / metalloids, pH, water soluble sulphate, speciated PAHs, SOM and asbestos screen.	1	WS103 0.2-1.0m	A basic suite with a broad selection of contaminants tested on a sample where no significant evidence of contamination was identified (with the exception of brick fragments) and no TVOCs identified from the PID tests.
Metals / metalloids, pH, water soluble sulphate, cyanide suite, phenol, TPHCWG, BTEX, MTBE, speciated PAHs, VOCs, SVOCs, SOM and asbestos screen.	4	WS101 0.5-1.0m WS101 1.1-1.5m WS102 0.2-0.9m WS102 1.4-1.9m	Olfactory evidence of hydrocarbon contamination identified in WS102 0.19-1.40m, detailed suite undertaken at 0.2-0.9m and below the contamination at 1.4-1.9m. PID readings identified TVOC >10ppm in samples WS101 1.1-1.5m, therefore detailed suite including VOCs and SVOCs undertaken. Although no significant evidence of VOC/SVOCs in WS101 0.5-1.0m, a more detailed suite including volatile contaminants included to confirm the contamination risk.

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.

3.3.2 Water Sampling / Leaching Testing

Due to insufficient water volume / slow recharge of the boreholes groundwater samples could not be obtained.

Given a moderate risk was identified in the preliminary contamination conceptual model for controlled waters (pollutant linkage 4) groundwater samples should be collected from the deeper boreholes installed during the post demolition investigation. This is discussed further in Section 5.4.

3.4 Geotechnical Testing

3.4.1 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.
- Pocket penetrometer tests (giving undrained shear strength) were performed in the window sample boreholes at approximately 1m intervals, within the natural clay strata.

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

3.4.2 Laboratory Geotechnical Testing

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

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

Suites and Contaminants	No. Samples	Location	Justification
Atterberg Limits (plasticity testing)	1	WS103 1.2-1.8m	Sample tested for Atterberg Limits to assess shrinkability potential associated with current and proposed trees.
Particle Size Distribution (PSD)	2	WS102 2.0-2.5m WS104 1.2-2.0m	PSD undertaken to confirm grading of granular material.
BRE SD1	3	WS102 0.2-0.9m WS103 1.2-1.9m WS104 1.2-2.0m	Additional sample of natural ground taken to assess the pH and sulphate for geotechnical purposes. pH and water-soluble sulphate are also included in the contamination suites.

Table 3-3: Summary of geotechnical testing undertaken.

4 Ground Conditions

4.1 Geology – Generalised Sequence

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

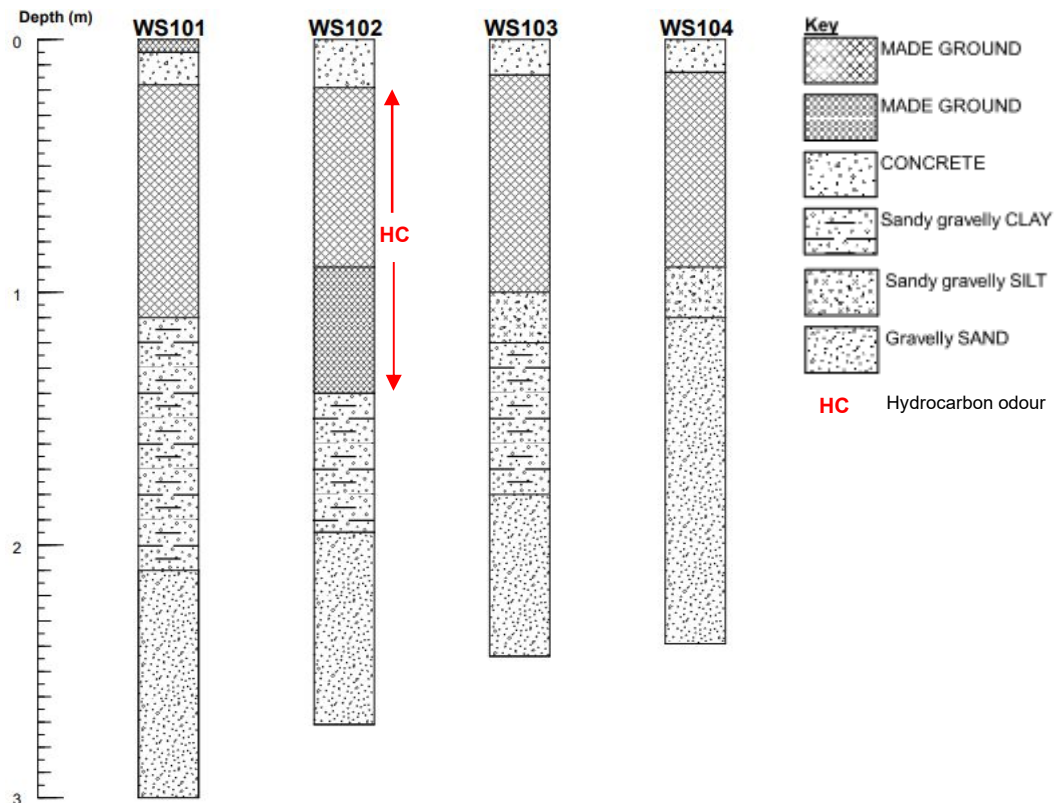


Plate 4-1: Summary of ground conditions.

Additional information on ground conditions:

Made Ground

Tarmacadam recorded at WS101 only from ground level to a depth of 0.05mbgl. Concrete was recorded in all boreholes from depths of 0.00-0.05mbgl to 0.13-0.19mbgl.

Made ground was recorded in all boreholes, from depths of 0.13-0.19mbgl to depths of 0.90-1.40mbgl. The made ground comprised horizons of gravel, sand, silt, clay with anthropogenic material including ash, clinker, brick and ceramic.

It should be noted that two types of made ground were recorded in WS102, in comparison to just one type in the other boreholes. In addition to this, the made ground recorded in WS104 was a probable sub-base that contained no anthropogenic material.

Natural Strata

Three types of natural strata were encountered on site, a gravelly sandy silt, underlain by a firm to stiff consistency gravelly sandy clay, underlain by medium to very dense gravelly sand.

The silt strata was not present in boreholes WS101 and WS102. The clay strata was not present in borehole WS104. The sand strata was present in all boreholes.

Contamination

There was visual and olfactory evidence of hydrocarbons or volatile contaminants in WS102, where two dark coloured strata with hydrocarbon odours were identified at depths of 0.19-0.90mbgl and 0.90-1.40mbgl. The PID recorded a maximum of 2.1ppm TVOC in these particular samples, and a maximum of 11.4ppm across the rest of the site.

4.2 Groundwater

No groundwater strikes were recorded during the investigation in the boreholes. In addition, groundwater monitoring within the borehole wells has been undertaken on one occasion. An oil-water interface probe (approximately 1cm 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)	No. of Monitoring Visits	Monitoring Depths (mbgl)		Sample Taken?	Evidence of Contam?
				GW Level	Base		
WS101	Dry	1.0-2.8 (MG/C/S)	1	2.71	2.76	No	No
WS102	Dry	0.5-2.0 (MG/C/S)	1	Dry	1.94	No	No
WS103	Dry	1.0-2.0 (Si/C/S)	1	Dry	2.05	No	No
WS104	Dry	1.0-2.0 (Si/S)	1	1.97	2.05	No	No

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

Response Zones:

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

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 4-2 and provided within the profile logs in Appendix B.

Approximate Depth (mbgl)	SPT 'N' Values			
	WS101	WS102	WS103	WS104
1-2	9 (C)	7 (MG/C)	5 (C)	12 (S)
2-3	20 (C/S)	15 (S) 50/105mm (S)	50/290mm (S)	50/240mm (S)
3-4	50/220 (S)	-	-	-
GW Level	Dry	Dry	Dry	Dry

Table 4-2: Summary of SPT (N) values.

Notes:

MG=Made Ground; S=Sand; C=Clay.

Groundwater level based on strikes during investigation.

4.3.2 Pocket Penetrometer

Pocket penetrometer readings, recording undrained shear strength (s_u), were taken within the clay strata. The results are summarised in Table 4-3 and provided within the profile logs in Appendix B.

Approximate Depth (mbgl)	Average Undrained Shear Strength (kN/m ²)		
	WS101	WS102	WS103
1	-	147	-
1.8	123	201	93
GW Level	Dry	Dry	Dry

Table 4-3: 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 Particle Size Distribution

Particle size distribution (PSDs) tests were carried out on granular strata to confirm the material type. Full results are presented in Appendix D and summarised below in Table 4-4.

Location	Depth (mbgl)	Material	Percent passing through sieve		
			63mm	2mm	0.063mm
WS102	2.00-2.50	Very silty SAND with occasional gravel.	100%	95%	55%
WS104	1.20-2.00	Very silty SAND with occasional gravel.	100%	99%	46%

Table 4-4: Summary of particle size distribution results.

Notes:

% passing: 63mm = cobble / gravel boundary; 2mm = gravel / sand boundary; 0.063mm = sand / silt boundary

4.4.2 Atterberg Limits

A representative sample of natural clay was subjected to Atterberg Limits (plasticity) and Moisture Content testing. Results are presented in Appendix D and summarised in Table 4-5.

Table 4-5 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 (%)
WS103	1.20-1.80	18.7	33	12	21	CL	81	17.01

Table 4-5: Summary of plasticity index testing.

The modified plasticity index is 17%. This characterises the clay as having a low volume change potential.

4.4.3 BRE SD1 Short Suite

BRE SD1 Short Suite tests were carried out on soil samples. Full results are presented in Appendix C and summarised in Table 4-6.

Strata	pH	Sulphate (g/l)	Magnesium (g/l)	Chloride (g/l)	Nitrate (g/l)
Made Ground	7.5-8.3	0.027-1.800	0.028	0.039	0.300
Natural	6.2-7.4	0.023-0.052	<0.010	<0.010	0.028-0.034

Table 4-6: Summary of BRE SD1 Short Suite results.

4.5 Geotechnical Considerations

Based on the information gathered during the site investigation the geotechnical considerations for the site are presented in Table 4-7 below:

Undrained Shear Strength (s_u)	Cohesive strata (CLAY and SILT) was encountered within the exploratory holes at depths ranging between 0.90m to 2.10mbgl. In-situ pocket penetrometer tests taken within the cohesive strata returned undrained shear strengths (s_u) of between 93 and 201kPa. Using the conservative s_u of 93kPa will return an Allowable Bearing Capacity (ABC) of 191kN/m². Granular strata was encountered beneath the cohesive deposits at depths of between 1.10m and 2.10mbgl. In-situ SPT's returned N values between 12 and 20 within the granular SAND, increasing to refusal of SPT (N>50) at the base of the boreholes. Adopting the most conservative value of N12 will return an ABC of 120kN/m². Groundwater was not recorded during the site works within any of the exploratory holes. Subsequent monitoring recorded two of the boreholes as dry, with the remaining two having water levels very close to the base of the installations indicating potential ponding from rainfall.
Anticipated Foundation Type	It is understood that the proposed development will comprise an apartment block. Given the anticipated loads from an apartment, it is considered that a piled foundation solution will provide the most suitable solution. Shallow strip foundations will be suitable for supporting an allowable bearing capacity of 120kN/m² for cladding walls. Made Ground was encountered to depths of up to 1.4mbgl, the presence of Made Ground can result in negative skin friction having a detrimental effect upon piles. The Made Ground may result in settlement and therefore is recommended that drain runs are designed using steeper gradients and flexible joints to allow for some differential settlement. Pile design should be undertaken by a specialist contractor/structural engineer.

Table 4-7: Preliminary Geotechnical Assessment.

Temporary Support of Excavation	Likely to be required given the predominantly granular nature of the Made Ground encountered.
Services	Consideration needs to be given to the potential presence of services running through the site. Services may need disconnecting or re-routing.
Concrete Requirements	Based on BRE Digest 2005 ⁷ – DS-3 AC-3 recommended in the made ground.
Other Considerations	Upon demolition of the existing building: • Further site investigation will be required to aid in foundation design. • In areas with cohesive strata, further Plastic Limits testing should be determined to assess the volume change potential of the strata. Detailed design should be carried out by the structural engineer.

Table 4-7 (continued): Preliminary Geotechnical Assessment.

⁷ BRE (2005). "Concrete in Aggressive Ground." Special Digest 1.

5 Generic Risk Assessment

5.1 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 (LCRM⁸). Information gathered from the risk assessment has been collated in the revised contamination conceptual model in Section 5.6.

5.2 Soil Risk Assessment

5.2.1 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^{9,10}. The change to the contaminated land guidance has changed the evaluation of risk from 'minimal' (referred to as Health Criteria values (HCVs))¹¹ 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 S4ULs¹². 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^{13,14,15,16}.

If contaminants are not present as C4SLs and S4ULs then LKC will use ATRISK SSVs or CL:AIRE GACs¹⁷. 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

⁸ Land Contamination Risk Management (LCRM) <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>

⁹ Defra (2014). "SP1010: Development of Category 4 Screening Levels and Assessment of Land Affected by Contamination – Policy Companion Document."

¹⁰ CL:AIRE (2013). "SP1010: Development of Category 4 Screening Levels and Assessment of Land Affected by Contamination – Final project Report."

¹¹ EA (2008). "Human Health Toxicological Assessment of Contaminants in Soils." Science Report – SC050021/SR2.

¹² LQM (2014). "The LQM/CIEH S4ULs for Human Health Risk Assessment."

¹³ EA (2008). "Updated Technical Background to the CLEA Model." Science Report – SC050021/SR3.

¹⁴ EA (2008). "Human Health Toxicological Assessment of Contaminants in Soils." Science Report – SC050021/SR2.

¹⁵ EA (2008). "A Review of Body Weight and Height Data used within the Contaminated Land Exposure Assessment Model (CLEA)." Project SC050021/Technical Review 1.

¹⁶ EA (2009). "Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values." Science report SC050021/SR7.

¹⁷ CL:AIRE (2009). "The Soil Generic Assessment Criteria for Human Health Risk Assessment."

PAHs^{18,19} and naphthalene the most volatile and soluble²⁰. 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 negligible²¹. For B(a)P to be used as a surrogate marker it should follow the profile described by the HPA (2008)²² and CL:AIRE (2013). Naphthalene will be treated separately using the LQM S4ULs.

The proposed development is for residential apartments with limited shared soft landscaping, therefore the assessment criteria for residential without plant uptake has been used.

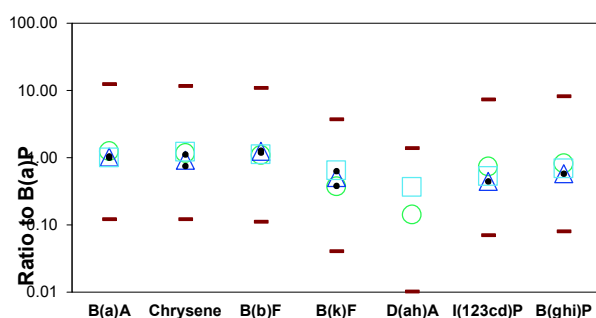
All criteria have been generated using the CLEA V1.06 model²³ based either on 1%, 2.5% and 6% Soil Organic matter (SOM). Results will be compared to the nearest appropriate SOM.

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

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.*²⁴, 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 5-1 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 5-1: The ratio of PAH to B(a)P in soil for all available data at the site based on 2 out of 5 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)

¹⁸ EA (2002). "Contaminants in Soils: Collation of Toxicological Data and Intake Values for Humans. Benzo[a]pyrene." R&D Publication TOX2.

¹⁹ USEPA (1984). "Health Effects Assessment of Polycyclic Aromatic Hydrocarbons (PAHs). EPA 540/1-86-013."

²⁰ EA (2003). "Review of the Fate and Transport of Selected Contaminants in the Soil Environment." Draft technical report P5- 079/TR1.

²¹ CL:AIRE (2013). "SP1010: Development of Category 4 Screening Levels and Assessment of Land Affected by Contamination – Final project Report."

²² HPA (2010). "HPA Contaminated Land Information Sheet: Risk Assessment Approaches for Polycyclic Aromatic Hydrocarbons (PAHs)." Version 3.

²³ EA (2008). "CLEA Software (Version 1.05) Handbook." Science Report – SC050021/SR4.

²⁴ 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.

Other Contaminants with no C4SLs, LQM S4ULs, ATRISK SSVs or CL:AIRE GACs

Where generic assessment criteria have not been derived (mainly due to insufficient toxicological data), the results were compared against contaminants of assumed likely similar toxicity (with some conservatism) as shown below:

- 1, 3, 5-trimethylbenzene: compared to residential without consumption of homegrown produce CL:AIRE GAC for 1, 2, 4 trimethylbenzene (0.35mg/kg 1% SOM) as a conservative screening value. LKC considers this appropriate on the assumption of similar toxicity.

5.2.2 Soil Results Comparison against Assessment Criteria

All analysis sheets are presented in Appendix C. Elevated and pertinent results are presented in Table 5-1.

Contaminant	Units	No. of samples	Elevated Results	Sample Location	Criteria (1%/2.5%/6%)	Source of Criteria
Metals						
Arsenic	mg/kg	5	42	WS101 (0.5-1.0m)	40	C4SL
Lead	mg/kg	5	340	WS103 (0.2-1.0m)	310	C4SL
TPHs						
Aromatic EC12-16	mg/kg	4	3,500	WS102 (0.2-0.9m)	2500 (6%)	S4UL
Aromatic EC16-21	mg/kg	4	13,000	WS102 (0.2-0.9m)	1900 (6%)	S4UL
Aromatic EC21-35	mg/kg	4	24,000	WS102 (0.2-0.9m)	1900 (6%)	S4UL
GENERAL						
pH	pH	7	Range 6.2 to 8.3			
SOM	%	7	Range 0.55 to 21			
Asbestos	N/A	5	None detected			

Table 5-1: 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.

No asbestos was identified in any soil samples analysed.

Elevated results have been identified for arsenic (WS101 0.5-1.0m), lead (WS103 0.2-1.0m), aromatic TPH EC12-16, EC16-12 and EC21-35 (WS102 0.2-0.9m).

No elevated levels of contaminants were encountered in the natural clay deposits (based on only two samples). As such LKC considers that the natural clay material was not impacted by the made ground above, with regards to human health.

5.2.3 Hazard Quotient

Other than the exceedance in WS102 (0.2-0.9m) no other significant concentrations of petroleum hydrocarbons were identified in any of the soil samples, therefore a hazard

index (HI) as described by the Environment Agency²⁵ technical report (to examine the potential additivity of toxicological effects between the petroleum hydrocarbon fractions) has not been undertaken as part of this assessment.

5.2.4 *Direct Contact Risk – Pollutant Linkage 1*

Metals

Elevated arsenic and lead have been identified on site in WS101 and WS103 respectively. Given the limited number of samples and location of elevated samples, the contamination is considered to be site wide at this stage.

The source of the contamination is expected to the ceramic, ash and clinker noted in the made ground.

At the concentrations identified, the contaminants are considered to pose a potential risk to future site users (residents) in soft landscaped areas, where made ground may be exposed. The principal pathways are the ingestion pathways (soil, dust) 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 and PAHs, VOCs, SVOCs)

No asbestos was identified in any of the samples and no elevated levels of PAHs, VOCs or SVOCs were noted when compared to generic assessment criteria values. Therefore, the probability of asbestos and PAHs affecting site users is considered to be unlikely at this stage and should be confirmed in the post-demolition investigation. With a medium consequence, the risk is low and remediation is not required. However, as a precaution, construction workers should be and vigilant for any suspected ACM during groundworks (discussed further in Section 8.2).

Petroleum Hydrocarbons

Elevated aromatic EC12-16, EC16-21 and EC21-35 were identified in WS102 at 0.2-0.9mbgl.

The hydrocarbon contamination risk appears to be isolated to the area around WS102. The contamination in WS102 is heavier end petroleum hydrocarbons (Aromatic EC12-16, EC16-21 and EC21-35) which is likely to be associated with weathered diesel. The principal pathways associated with these hydrocarbon fractions are ingestion (of soil, dust and homegrown produce), dermal contact (indoor and outdoor) and to a lesser degree the inhalation of indoor vapours (EC12-16 only).

LKC considers the probability of hydrocarbon contamination affecting site users (via ingestion and dermal contact) as low likelihood around WS102 as it is located under the proposed building footprint. Given a medium consequence a moderate / low risk with an assumed moderate risk is considered appropriate at this stage and either further investigation work, post demolition or localised remediation is recommended in areas of proposed landscaping.

²⁵ EA (2005). "The UK Approach for Evaluating Human Health Risks from Petroleum Hydrocarbons in Soils." Science Report P5-080/TR3.

The risk associated with the inhalation of vapours is discussed in Section 5.2.4 below.

5.2.5 Risk from Inhalation of Vapours – Pollutant Linkage 2

Elevated hydrocarbons were noted in WS102 (aromatic EC12-EC35) which is likely to be associated with weathered diesel. As per PL1, the principal pathways are ingestion, dermal contact and inhalation of vapours (for EC12-16 fraction only). On further assessment using the CLEA model, the soil assessment criteria for the inhalation HCV is 16,800mg/kg for EC12-16 TPH fraction. When this is compared to the results from WS102 (3,00mg/kg) it can be seen that it is significantly lower than the inhalation HCV and that the risk from vapours is unlikely.

No other olfactory evidence of volatile contaminants was identified during the investigation. The PID did not detect any significant TVOCs. Confirmatory soil analysis did not detect any VOCs / SVOCs above detection limits.

LKC therefore consider the probability of volatile contaminants affecting site users as unlikely. The consequence is expected to be medium, giving a low risk and no remediation is required with respect to pollutant linkage 2. This should be confirmed during the post demolition investigation works.

5.3 Gas Risk Assessment

Gas monitoring was not carried out as part of this assessment. The PRA identified a low likelihood due to no landfills or infilled features identified within 250m of the site, however due to a severe consequence, a moderate risk was identified and gas monitoring was only recommended if a significant depth of organic / putrescible material was identified on site.

During the initial phase of pre-demolition investigation, made ground in the 4no. boreholes undertaken across the site was identified, with an average depth of 0.94m recorded. Ash and clinker inclusion were present within the made ground however there was no visual evidence of significant organic or putrescible material in the made ground such as timber, organic material or vegetable matter. High SOM was recorded in WS102, this is likely due to the high ash and clinker content which may skew results, generating a false positive for degradable material and not necessarily generating gas.

In line with CL:AIRE Research Bulletin 17²⁶ where made ground is 1m or less and no significant organic/putrescible material is present, the site can be classified as Characteristic Situation 1 and no gas protection measures are required.

Given the ground conditions encountered, LKC considers the probability of gas posing a risk to site users as unlikely. The consequence is severe, which gives a moderate / low risk. Given the known ground conditions, LKC considers there to be a low risk and no further action is required with respect to pollutant linkage 3. This should be confirmed after the post demolition investigation has been completed.

5.4 Controlled Water Assessment

Due to insufficient groundwater present within the boreholes, groundwater sampling has not been carried out. Groundwater sampling or leaching tests should be carried out during post-demolition investigation work. It is likely that the hydrocarbon contamination identified in the soil in WS102 should be removed to prevent contamination migrating to the aquifer below.

²⁶ CL:AIRE Research Bulletin (RB17) "A Pragmatic Approach to Ground Gas Risk Assessment" November 2012.

Therefore, at this stage LKC considers the probability of contaminants on site affecting the Principal Aquifer as likely. Given the medium consequence, a moderate risk is anticipated (Pollutant Linkage 4) and further investigation is still required, post demolition.

5.5 Potable Water Supply

Soil results were compared to United Utilities (UU) guidelines for the selection of potable water pipes in land potentially affected by contamination²⁷. 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: cresols, ketones and aldehydes.

The following elevated contaminants were identified:

» Elevated petroleum hydrocarbons in WS102 (0.2-0.9m).

It is likely that barrier pipe will be required across the site subject to the depth and location of the water pipes and in consultation with UU.

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 likely. Given the consequence is considered to be medium, the risk (pollutant linkage 6) is anticipated to be moderate risk and remediation (i.e. barrier pipe) may be required (subject to further site investigation and risk assessment).

5.6 Revised Contamination Conceptual Model

The preliminary contamination conceptual model (Table 2-2) has been revised following the risk assessments undertaken in Sections 5.1-5.5. 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 5-2.

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 8.

²⁷ UU(2011). "United Utilities Water Supplementary Guidance for the Selection of Water Pipes in Land Potentially Affected by Contamination."

PL	Pathway	Receptor	Contaminant	Probability	Consequence	Risk	Assessment
1	- Dermal contact. - Inhalation of soil, fibres and dust. - Ingestion of soils, dust. - Windblown dust.	- Future site users. - Offsite receptors.	Heavy metals: - Arsenic and lead Hydrocarbons: - Aromatic TPH EC12-35.	Likely	Medium	Moderate	- Likely probability as elevated metals (arsenic and lead) and TPH identified in the made ground across the site which could come into contact with site users in soft landscaping areas. - Recommendation*1: Remediation required, to be confirmed upon completion of post-demolition investigation. Likely to include an environmental cover system in soft landscaping areas.
			ACM PAHs - None identified	Unlikely	Medium	Low	- No elevated PAHs or ACM identified across the site. - Recommendation: No additional remediation required other than the above for heavy metals and TPH, to be confirmed with a post-demolition investigation.
2	- Inhalation of vapours. - Migration through permeable strata and preferential pathways.	- Future site users. - Offsite receptors.	Volatile Contaminants: - None identified.	Unlikely	Medium	Low	- DQRA has not identified any elevated volatile contaminants identified across the site. - Recommendation: No remediation required, to be confirmed upon completion of post-demolition investigation.
3	- Inhalation of gas. - Migration through permeable strata and preferential pathways. - Explosion in confined spaces (methane only).	- Future site users. - Buildings. - Offsite land users.	- Carbon dioxide - Methane	Unlikely	Severe	Moderate / Low	- No significant source identified from the PRA. - Ground conditions onsite did not identify a significant depth of organic or putrescible material. Therefore, low risk assumed at this stage. - Recommendation: No remediation required, to be confirmed upon completion of post-demolition investigation.
4	- Surface Run-off. - Migration through permeable strata and preferential pathways. - Perched waters migration.	- Groundwater (Principal Aquifer).	Mobile contaminants: - Metals and PAHs, hydrocarbons, volatile compounds.	Likely	Medium	Moderate	- Insufficient groundwater present within the boreholes during initial phase of investigation work. It is likely the hydrocarbon contamination identified in WS102 should be removed. - Recommendation: Groundwater or leaching tests required during post demolition investigation.
5	- Ingestion of tainted water supply.	- Future site users (via potable water).	Organic Contaminants: - Hydrocarbons.	Likely	Medium	Moderate	- Likely probability as elevated hydrocarbons encountered which could permeate water pipes and contaminate water supply. - Recommendation: UU risk assessment to be undertaken. Barrier piping may be required, to be confirmed upon completion of post-demolition investigation.

Table 5-2: Revised Contamination Conceptual Model.

Notes

*1 Although no ACM identified, contractors should be vigilant during earthworks of any potential ACM. This is discussed further in Section 8.

6 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^{28, 29, 30, 31, 32, 33, 34, 35, 36}.

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 output sheet is presented in Appendix F and summarised in Table 6-1.

Sampling Location	Hazardous Waste?	LoW Code	Hazard (Risk Phrase)	Contaminants
WS102 (0.2-0.9m)	Yes	17 05 03	HP3(i) Flammable, HP10 Toxic for reproduction, HP14 (Ecotoxic)	TPH (C6 to C40), 1,3,5-trimethylbenzene

Table 6-1: Summary of hazardous HazWaste Online™ findings.

Based on individual locations hazardous waste has been identified. The soil onsite should be classified as HAZARDOUS WASTE around WS102 (0.2-0.9m) and LoW code "17-05-03 - soil and stones containing hazardous substances".

The remaining results show that the other 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 F.

²⁸ EA (2018). "Guidance on the Classification and Assessment of Waste (1st Edition v1.1)". Technical Guidance WM3.

²⁹ CLP Regulation - Regulation 1272/2008/EC of 16 December 2008.

³⁰ 1st ATP - Regulation 790/2009/EC of 10 August 2009

³¹ Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

³² WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

³³ Revised List of Wastes 2014 - Decision 2014/955/EU of 18 December 2014

³⁴ 13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

³⁵ POPs Regulation 2004 - Regulation 850/2004/EC of 29 April 2004

³⁶ 2nd ATP to POPs Regulation - Regulation 757/2010/EU of 24 August 2010

7 Conclusions

7.1 Geotechnical

Geotechnical observations and conclusions are contained within Section 4.

Strata encountered comprises Made Ground to depths of between 0.90m-1.40mbgl over cohesive strata to between 1.10m and 2.10mbgl. This is underlain by granular strata to the completion depths 2.39m and 3.17mbgl of the exploratory holes.

All exploratory holes terminated upon refusal of SPT tests (N>50) indicative of weathered sandstone bedrock.

It is considered that a piled foundation solution will provide the safest and most economic foundation solution and that deeper investigations will be required to satisfy warranty providers of the suitability of the pile design.

7.2 Contamination Assessment

A revised contamination conceptual model has been produced by LKC which is summarised in Table 7-1 below (more detailed model provided in Section 5).

Pollutant Linkage		Risk	Recommendations
1	Contaminants posing a risk to site users via dermal contact, ingestion and inhalation (of soil, dust, fibres).	Moderate	- Likely probability as elevated metals (arsenic and lead) and TPH identified in the made ground across the site which could come into contact with site users in soft landscaping areas. Recommendation: Remediation required, to be confirmed upon completion of post-demolition investigation. Likely to include an environmental cover system in soft landscaping areas.
		Low	- No elevated PAHs or ACM identified across the site. Recommendation: No additional remediation required other than the above for heavy metals and TPH, to be confirmed with a post-demolition investigation.
2	Volatile contaminants posing a risk to site users via the inhalation of vapours.	Low	- DQRA has not identified any elevated volatile contaminants identified across the site. Recommendation: No remediation required, to be confirmed upon completion of post-demolition investigation.
3	Gas posing a risk to buildings and site users via the migration of gas into building causing explosion and asphyxiation.	Moderate / Low	- No significant source identified from the PRA. - Ground conditions onsite did not identify a significant depth of organic or putrescible material. Therefore, low risk assumed at this stage. Recommendation: No remediation required, to be confirmed upon completion of post-demolition investigation.
4	Mobile contamination posing a risk to controlled waters via the migration through permeable strata.	Moderate	- Insufficient groundwater present within the boreholes during initial phase of investigation work. It is likely the hydrocarbon contamination identified in WS102 should be removed. Recommendation: Groundwater or leaching tests required during post demolition investigation.
5	Organic contaminants posing a risk to water pipes.	Moderate	- Likely probability as elevated hydrocarbons encountered which could permeate water pipes and contaminate water supply. Recommendation: UU risk assessment to be undertaken. Barrier piping may be required, to be confirmed upon completion of post-demolition investigation.

Table 7-1: Summary Risk Table.

Remedial recommendations are presented in Section 8.

8 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.

8.1 Remediation and Validation Recommendations

Table 8-1 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.

Phase	PL	Remediation Requirements	Validation Requirements
Post-Demolition Work	All	<u>Post-demolition Cable Percussion Boreholes</u> This is recommended to confirm ground conditions below the current buildings and allow delineation of areas of concern. This should allow a more targeted remediation strategy to be completed. This work will also provide more geotechnical information for foundation design.	N/A (Investigation Report will be provided with an updated Remediation Strategy).
Pre-Construction	All	<u>Earthworks Inspections / 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. Should asbestos be identified during groundworks, precautions should be taken to ensure the safety of the construction workers and nearby land users. It would be advisable to introduce an asbestos management strategy in line with CIRIA C733³⁷.	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> As made ground is relatively deep, it is unlikely to be viable to remove the contaminated soils. Therefore, an environmental cover system is recommended. The environmental cover system should be as follows: Soft Landscaping Areas: 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.	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 8-2.

Table 8-1: Further work, remediation and validation requirements

Notes: See Table 5-2 for pollutant linkage (PL) details.

³⁷ CIRIA (2014). "Asbestos in Soil and Made Ground: A Guide to Understanding and Managing Risks". C733.

Phase	PL	Remediation Requirements	Validation Requirements
Pre-Construction	1	The subsoil layer can be replaced by additional topsoil. A diagram of a typical environmental cover system is shown in Appendix G.	
	4	<u>Controlled Waters</u> Groundwater samples to be collected from boreholes post demolition. Delineation and removal of hydrocarbon contamination from area of WS102 likely to be required.	TBC (Investigation Report will be provided with an updated Remediation Strategy).
	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. It is likely that barrier pipe will be required.	Delivery Notes of Pipe Material. Photographs of the Installed Pipe.
	2, 3	No remediation anticipated with respect to PL2 (inhalation of vapours), PL3 (gas); however, this needs to be confirmed once additional work has been completed.	TBC
Other Considerations		<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 ³⁸): 5,000 tonnes (c. 2,500m ³) <u>treatment</u> of crushed concrete / stone. 1,000 tonnes (c. 500m ³) <u>use of</u> non-hazardous soil. 5,000 tonnes (c. 2,500m ³) <u>use of</u> clays, sand, gravel, brick, concrete, stone etc. 50,000 tonnes (c. 25,000m ³) <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 <u>before</u> 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 8-2.	
		<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 ³⁹) should be adopted by all workers involved with site enabling and construction works.	

Table 8-1: Further work, remediation and validation requirements

Notes: See Table 5-2 for pollutant linkage (PL) details.

³⁸ <https://www.gov.uk/guidance/waste-exemptions-using-waste>

³⁹ HSE (1991). "Protection of Workers and the General Public During Development of Contaminated Land" London HMSO.

Other Considerations	Piling in Contaminated Land It is understood that the building will be piled into the bedrock. This may provide a preferential pathway for contaminants to the Principal Aquifer. Once the method of piling has been determined, good practice for the drilling of piles on contaminated sites should be adhered to, such as guidance provided by the Environment Agency ⁴⁰ .
	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 8-1: Further work, remediation and validation requirements

Notes: See Table 5-2 for pollutant linkage (PL) details.

8.2 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 8-2, based on MCC 'Guidelines to Developer' (2021)⁴¹. However, LKC consider no testing, but proof of provenance is sufficient for natural, virgin, quarried material.

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.

Material Type	Source	Suite of Analysis	Sampling Rate (min. 3 per source) *		
			Garden	Landscape	Other **
Topsoil / subsoil / Fill material	Greenfield	Suite A	200m ³	200m ³	200m ³
	Remediated	Suite A / B dependent upon original SI	100m ³	150m ³	200m ³
	Brownfield / Unknown	Suite B	50m ³	150m ³	200m ³
Quarried Fill	First Generation i.e. quarried sand (subsoil) or stone (break layer)	No testing is required. Certification of material provenance is required.			

Table 8-2: 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.

** Other assumed to be stone / 6F2 / mass fill etc.

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 BS3882⁴²). LKC advise this information is provided by the supplier before material is imported onto site.

⁴⁰Environment Agency (2001) Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention.

⁴¹YALPAG (2021). "Verification Requirements for Cover Systems: Technical Guidance for Developers, Landowners and Consultants." Yorkshire and Lincolnshire Pollution Advisory Group. V. 4.1-June 2021.

⁴²BS (2015). "Specifications for Topsoil and Requirements for use." BS3882:2015.

Imported material to be used in gardens will be compared against residential without plant uptake criteria (as used in the contamination risk assessment (Section 5-1)). Appropriate remedial target criteria are presented in Appendix E.

8.3 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:

- » Details of the demolition of the current buildings within a Pre-Demolition and Major Refurbishment Asbestos Survey.
- » Provision of waste transfer documents.
- » Validation of environmental cover system.
- » Verification testing of all imported soil for soft landscaping areas.
- » Information on the installation of protective pipes and / or sterile trenches.
- » 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.

Figures



**FSG Francis Road Developments Ltd
& Southway Housing Trust**

Francis Road, Manchester

Job No.: LKC 21 1501 Drawn By: RW Checked By: MT Drawn: July 2022

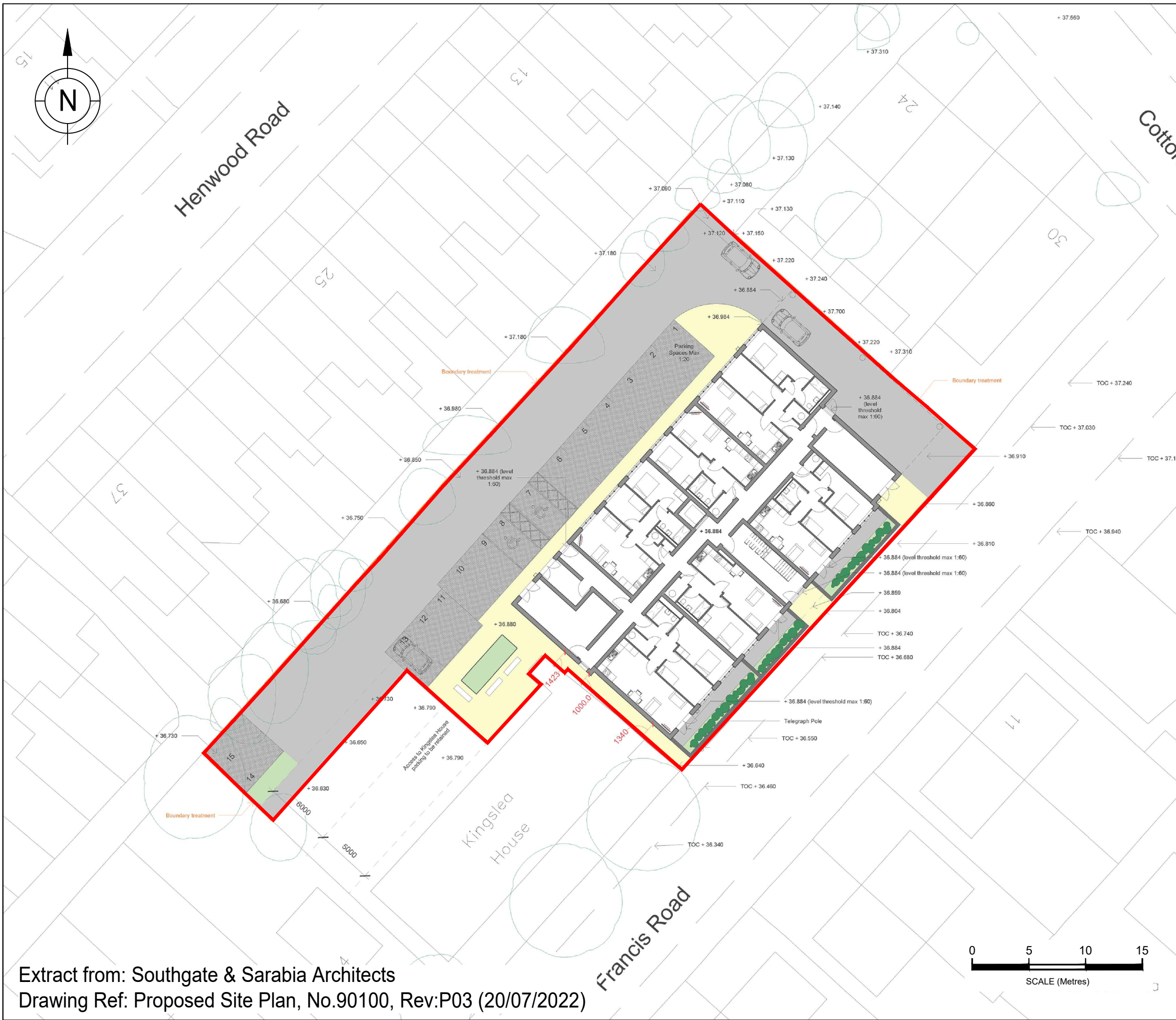
**Site Location &
Boundary Plan**

Scale (see scale bar):
1:25,000 &
1:1500 @ A4

Figure:
1

Revision:
1

LK
CONSULT



KEY

Site Boundary

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

LK
CONSULT LIMITED

Client:
**FSG Francis Road Developments Ltd
& Southway Housing Trust**

Site:
Francis Road, Manchester

Title:
Proposed Layout Plan

Job No.:
LKC 21 1501

Scale (See Scale Bar):
See Scale Bar

Figure:
2

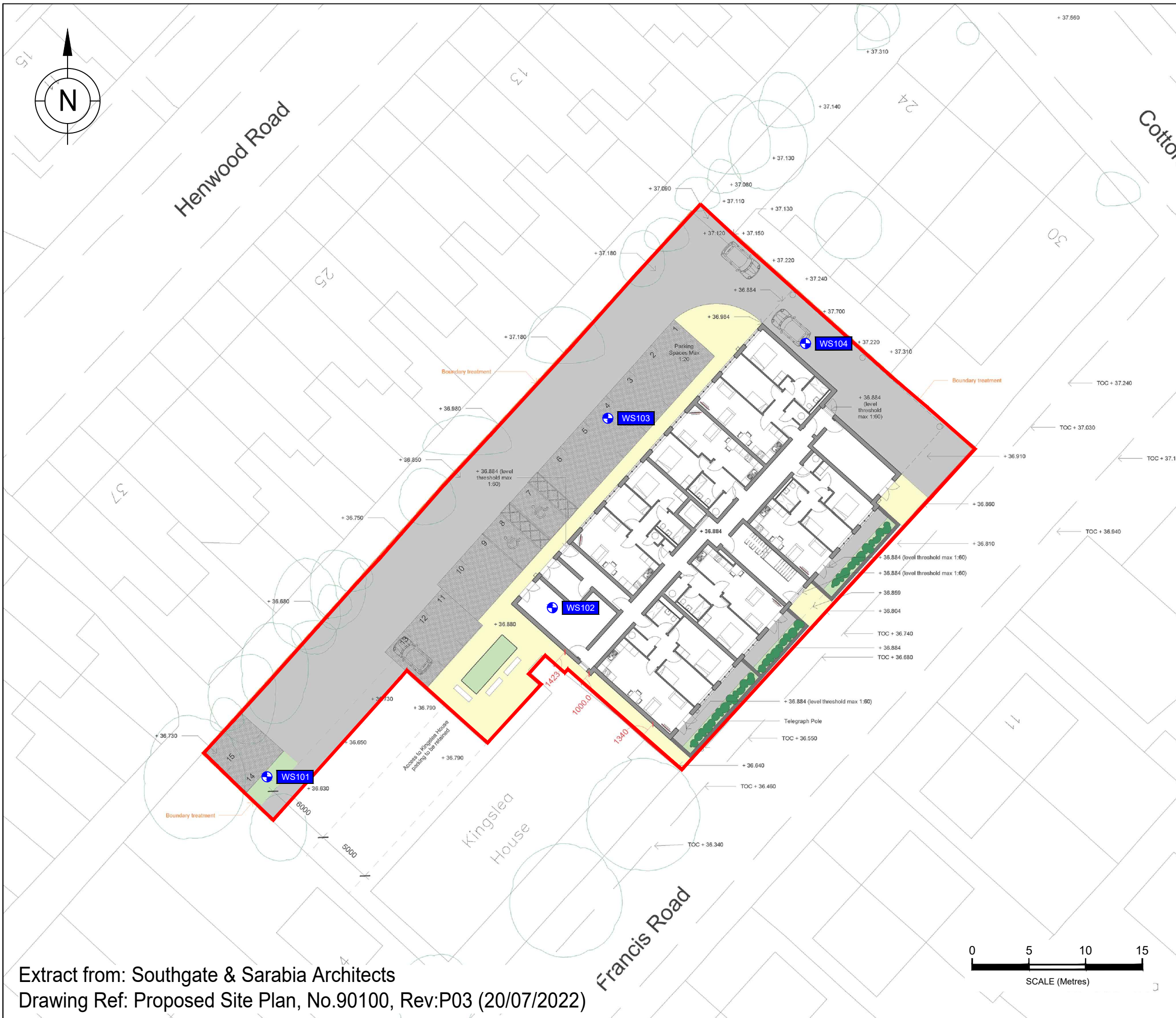
Revision:
4

Drawn By:
AC

Checked By:
MT

Drawn:
Jul 2022

Extract from: Southgate & Sarabia Architects
Drawing Ref: Proposed Site Plan, No.90100, Rev:P03 (20/07/2022)



KEY

Site Boundary

Window Sample Borehole (WS)

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:

FSG Francis Road Developments Ltd & Southway Housing Trust

Site:

Francis Road, Manchester

Title:

Site Investigation Location Plan

Job No.:

LKC 21 1501

Scale (See Scale Bar):

See Scale Bar

Figure:

3a

Revision:

A

Drawn By:

AC

Checked By:

JW

Drawn:

Oct 2022

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 552⁴³. 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.

⁴³ 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
to 3.17mbgl.

Dimensions
Location

385285 E 392309 N

Ground Level (mOD)

39.00

Dates

21/10/2022

Client

Southway DevCo Ltd

Engineer

LKC

Job
Number

LKC 21 1501

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.50-1.00	ES PID=3.8ppm			38.95 38.82	0.05 (0.13) 0.18	TARMACADAM. Good condition. CONCRETE. 1no. rebar present, 8mm diameter.			
1.10-1.50 1.20-1.65	ES D PID=11.4ppm SPT N=9		3,3/2,2,2,3	37.90	1.10 (0.92)	MADE GROUND: Dark brown gravelly sandy SILT with occasional rootlets, coal fragments, rare ceramic fragments, brick fragments and bone fragments. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded of mixed lithologies.			
1.80-2.00 2.00-2.45 2.10-2.80	PP 123kPa SPT N=20 D		3,3/4,5,5,6	36.90	2.10 (1.00)	Stiff consistency high strength brown with grey mottling gravelly sandy CLAY with occasional coal fragments. Sand is fine to coarse. Gravel is fine to coarse of mixed lithologies.			
2.80-3.17	SPT 50/220		7,8/10,15,25	35.83	3.17 (1.07)	Medium to very dense brownish orange slightly gravelly SAND. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded of mixed lithologies.			
						Complete at 3.17m			

Remarks

Grid reference estimated using www.gridreferencefinder.com
Elevation estimated using www.freemaptools.com/elevation-finder.htm
Borehole dry and stable.
Sampler refusal at 2.80mbgl. SPT refusal at 3.17mbgl.

Scale
(approx)

1:25

Logged
By

JW

Figure No.

LKC 21 1501.WS101

Excavation Method

Drive-in Windowless Sampler
to 2.71mbgl.

Dimensions
Location

385303 E 392325 N

Ground Level (mOD)

39.00

Dates

21/10/2022

Client

Southway DevCo Ltd

Engineer

LKC

Job
Number

LKC 21 1501

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.20-0.90	ES D PID=2.1ppm			38.81	(0.19) 0.19	CONCRETE.			
0.90-1.40 0.90-1.40	ES PID=0.3ppm PP 147kPa			38.10	(0.71) 0.90	MADE GROUND: Black sandy silty GRAVEL with frequent ash, clinker, coal fragments and rare brick fragments. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of predominantly ash, clinker and coal. Strong hydrocarbon odour.			
1.20-1.65	SPT N=7		1,0/1,1,2,3		(0.50)	MADE GROUND: Stiff consistency high strength brownish dark grey slightly gravelly slightly sandy silty CLAY with rare brick and coal fragments. Sand is fine to coarse. Gravel is fine to medium of mixed lithologies. Slight hydrocarbon odour.			
1.40-1.90 1.50-1.95	ES D PID=0.3ppm PP 201kPa			37.60	1.40	Firm to stiff consistency very high strength brown with grey mottling gravelly sandy CLAY with occasional coal fragments. Sand is fine to coarse. Gravel is fine to coarse of mixed lithologies.			
2.00-2.45 2.00-2.50	SPT N=15 D		2,2/3,3,4,5	37.05	1.95	Very dense brownish orange slightly gravelly SAND. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded of mixed lithologies.			
2.50-2.71	SPT 25*/105 50/105		15,10/31,19	36.29	(0.76) 2.71	Complete at 2.71m			

Remarks

Grid reference estimated using www.gridreferencefinder.com
Elevation estimated using www.freemaptools.com/elevation-finder.htm
Borehole dry and stable.
Sampler refusal at 2.50mbgl. SPT refusal at 2.71mbgl.

Scale
(approx)

1:25

Logged
By

JW

Figure No.

LKC 21 1501.WS101

Excavation Method

Drive-in Windowless Sampler
to 2.44mbgl.

Dimensions
Location

385310 E 392340 N

Ground Level (mOD)

39.00

Dates

21/10/2022

Client

Southway DevCo Ltd

Engineer

LKC

Job
Number

LKC 21 1501

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.20-1.00	ES PID=0.1ppm			38.86	(0.14) 0.14	CONCRETE.			
						MADE GROUND: Dark brown sandy silty GRAVEL with frequent brick fragments. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of predominantly brick.			
					(0.86)				
1.00-1.20	ES PID=0.2ppm			38.00	1.00	Dark brown gravelly sandy SILT. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded of mixed lithologies.			
1.20-1.65	SPT N=5		1,0/1,1,1,2	37.80	(0.20) 1.20	Firm to stiff consistency high strength brown with grey mottling gravelly sandy CLAY with occasional coal fragments. Sand is fine to coarse. Gravel is fine to coarse of mixed lithologies.			
1.20-1.80	ES D PID=0.1ppm				(0.60)				
1.60-1.80	D PP=93kPa			37.20	1.80	Very dense brownish orange slightly gravelly SAND. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded of mixed lithologies.			
2.00-2.44	SPT 50/290		4,6/8,12,15,15		(0.64) 2.44	Complete at 2.44m			
				36.56					

Remarks

Grid reference estimated using www.gridreferencefinder.com
Elevation estimated using www.freemaptools.com/elevation-finder.htm
Borehole dry and stable.
SPT refusal at 2.44mbgl.

Scale (approx)

1:25

Logged By

JW

Figure No.

LKC 21 1501.WS101

Excavation Method

Drive-in Windowless Sampler
to 2.39mbgl.

Dimensions
Location

385328 E 392347 N

Ground Level (mOD)

39.00

Dates

21/10/2022

Client

Southway DevCo Ltd

Engineer

LKC

Job
Number

LKC 21 1501

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.20-0.90	D			38.87	(0.13) 0.13	CONCRETE.			
					(0.77)	MADE GROUND: Light grey sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of limestone. Probable sub-base.			
0.90-1.10	ES PID=0.2ppm			38.10	0.90	Dark brown gravelly sandy SILT with rare coal fragments. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded of mixed lithologies.			
1.20-1.65 1.20-2.00 1.20-2.00	SPT N=12 D ES PID=0.1ppm		2,2/2,3,3,4	37.90	1.10	Medium to very dense brownish orange slightly gravelly SAND. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded of mixed lithologies.			
					(1.29)				
2.00-2.39	SPT 50/240		7,8/10,15,20,5						
				36.61	2.39	Complete at 2.39m			

Remarks

Grid reference estimated using www.gridreferencefinder.com
Elevation estimated using www.freemaptools.com/elevation-finder.htm
Borehole dry and stable.
SPT refusal at 2.39mbgl.

Scale
(approx)

1:25

Logged
By

JW

Figure No.

LKC 21 1501.WS101

Appendix C

Certificates of Analysis – Soil



Final Report

Report No.: 22-40729-1
Initial Date of Issue: 22-Nov-2022
Client LK Consult
Client Address: Unit 29 Eton Business Park
Eton Hill Road
Radcliffe
Manchester
Lancashire
M26 2ZS
Contact(s): Contaminated Land
Michelle Thorniley
Project LKC 21 1501 Francis Street,
Withington

Quotation No.:		Date Received:	25-Oct-2022
Order No.:	740672	Date Instructed:	25-Oct-2022
No. of Samples:	7		
Turnaround (Wkdays):	10	Results Due:	07-Nov-2022
Date Approved:	22-Nov-2022		

Approved By:

Details: Stuart Henderson, Technical
Manager

Results - Soil

Project: LKC 21 1501 Francis Street, Withington

Client: LK Consult	Chemtest Job No.:				22-40729	22-40729	22-40729	22-40729	22-40729	22-40729	22-40729
Quotation No.:	Chemtest Sample ID.:				1531348	1531349	1531350	1531351	1531352	1531353	1531354
Order No.: 740672	Client Sample Ref.:				ES	ES	ES	ES	ES	ES	ES
	Client Sample ID.:				WS101	WS101	WS102	WS102	WS103	WS103	WS104
	Sample Location:				WS101	WS101	WS102	WS102	WS103	WS103	WS104
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.5	1.1	0.2	1.4	0.2	1.2	1.2
	Bottom Depth (m):				1	1.5	0.9	1.9	1	1.8	2
	Date Sampled:				21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	NEW-ASB	DURHAM		
Determinand	Accred.	SOP	Units	LOD							
ACM Type	U	2192		N/A	-	-	-	-	-		
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected		
Moisture	N	2030	%	0.020	8.9	12	9.1	12	9.4	16	9.7
Soil Colour	N	2040		N/A	Brown	Brown	Black	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Clay	Sand	Clay	Sand	Clay	Sand
pH	M	2010		4.0	8.3	7.5	7.9		8.3	7.4	6.2
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.90	< 0.40	2.1	< 0.40			
Magnesium (Water Soluble)	N	2120	g/l	0.010			0.028			< 0.010	< 0.010
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.027	0.028	0.29		1.8	0.052	0.023
Chloride (Water Soluble)	M	2220	g/l	0.010			0.039			< 0.010	< 0.010
Nitrate (Water Soluble)	N	2220	g/l	0.010			0.30			0.034	0.028
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50			
Cyanide (Total)	M	2300	mg/kg	0.50	1.5	< 0.50	< 0.50	< 0.50			
Arsenic	M	2455	mg/kg	0.5	42	3.0	16	3.4	8.1		
Cadmium	M	2455	mg/kg	0.10	0.69	< 0.10	0.11	< 0.10	0.19		
Chromium	M	2455	mg/kg	0.5	17	9.8	7.8	8.8	11		
Copper	M	2455	mg/kg	0.50	93	6.7	70	8.5	22		
Mercury	M	2455	mg/kg	0.05	0.11	< 0.05	0.14	< 0.05	0.15		
Nickel	M	2455	mg/kg	0.50	46	6.3	21	6.0	8.7		
Lead	M	2455	mg/kg	0.50	150	8.6	130	12	340		
Selenium	M	2455	mg/kg	0.25	1.1	0.37	0.59	0.34	< 0.25		
Vanadium	U	2455	mg/kg	0.5	52	9.7	18	9.4	14		
Zinc	M	2455	mg/kg	0.50	120	14	61	15	370		
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
Organic Matter	M	2625	%	0.40	12	0.55	21	2.4	16		
Diesel Present	N	2670		N/A	False	False	False	False			
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0			
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0			
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0			
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	15	< 1.0			
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	91	< 1.0			
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	330	< 1.0			
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	940	< 1.0			
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0			

Results - Soil

Project: LKC 21 1501 Francis Street, Withington

Client: LK Consult	Chemtest Job No.:		22-40729	22-40729	22-40729	22-40729	22-40729	22-40729	22-40729
Quotation No.:	Chemtest Sample ID.:		1531348	1531349	1531350	1531351	1531352	1531353	1531354
Order No.: 740672	Client Sample Ref.:		ES	ES	ES	ES	ES	ES	ES
	Client Sample ID.:		WS101	WS101	WS102	WS102	WS103	WS103	WS104
	Sample Location:		WS101	WS101	WS102	WS102	WS103	WS103	WS104
	Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):		0.5	1.1	0.2	1.4	0.2	1.2	1.2
	Bottom Depth (m):		1	1.5	0.9	1.9	1	1.8	2
	Date Sampled:		21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022
	Asbestos Lab:		DURHAM	DURHAM	DURHAM	NEW-ASB	DURHAM		
Determinand	Accred.	SOP	Units	LOD					
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	1400	< 5.0	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	12	< 1.0	
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	300	< 1.0	
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	3500	< 1.0	
Aromatic TPH >C16-C21	N	2680	mg/kg	1.0	< 1.0	< 1.0	13000	< 1.0	
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	24000	< 1.0	
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	41000	< 5.0	
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	43000	< 10	
Dichlorodifluoromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Chloromethane	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Vinyl Chloride	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Bromomethane	M	2760	µg/kg	20	< 20	< 20	< 20	< 20	
Chloroethane	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	
Trichlorofluoromethane	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,1-Dichloroethene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Trans 1,2-Dichloroethene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,1-Dichloroethane	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
cis 1,2-Dichloroethene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Bromochloromethane	U	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	
Trichloromethane	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,1,1-Trichloroethane	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Tetrachloromethane	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,1-Dichloropropene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,2-Dichloroethane	M	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	
Trichloroethene	N	2760	µg/kg	1.0	< 1.0	< 1.0	1.5	< 1.0	
1,2-Dichloropropane	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Dibromomethane	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Bromodichloromethane	M	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	
cis-1,3-Dichloropropene	N	2760	µg/kg	10	< 10	< 10	< 10	< 10	
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Trans-1,3-Dichloropropene	N	2760	µg/kg	10	< 10	< 10	< 10	< 10	
1,1,2-Trichloroethane	M	2760	µg/kg	10	< 10	< 10	< 10	< 10	

Results - Soil

Project: LKC 21 1501 Francis Street, Withington

Client: LK Consult	Chemtest Job No.:		22-40729	22-40729	22-40729	22-40729	22-40729	22-40729	22-40729
Quotation No.:	Chemtest Sample ID.:		1531348	1531349	1531350	1531351	1531352	1531353	1531354
Order No.: 740672	Client Sample Ref.:		ES	ES	ES	ES	ES	ES	ES
	Client Sample ID.:		WS101	WS101	WS102	WS102	WS103	WS103	WS104
	Sample Location:		WS101	WS101	WS102	WS102	WS103	WS103	WS104
	Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):		0.5	1.1	0.2	1.4	0.2	1.2	1.2
	Bottom Depth (m):		1	1.5	0.9	1.9	1	1.8	2
	Date Sampled:		21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022
	Asbestos Lab:		DURHAM	DURHAM	DURHAM	NEW-ASB	DURHAM		
Determinand	Accred.	SOP	Units	LOD					
Tetrachloroethene	M	2760	µg/kg	1.0	11	6.6	3.3	< 1.0	
1,3-Dichloropropane	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	
Dibromochloromethane	U	2760	µg/kg	10	< 10	< 10	< 10	< 10	
1,2-Dibromoethane	M	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	
Chlorobenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,1,1,2-Tetrachloroethane	M	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Styrene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Tribromomethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Isopropylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Bromobenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,2,3-Trichloropropane	N	2760	µg/kg	50	< 50	< 50	< 50	< 50	
N-Propylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
2-Chlorotoluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,3,5-Trimethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	7.5	< 1.0	
4-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Tert-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,2,4-Trimethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Sec-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,3-Dichlorobenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
4-Isopropyltoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,4-Dichlorobenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
N-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,2-Dichlorobenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	< 50	< 50	< 50	< 50	
1,2,4-Trichlorobenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Hexachlorobutadiene	N	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	
Carbon Disulphide	N	2760	µg/kg	50	< 50	< 50	< 50	< 50	
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
N-Nitrosodimethylamine	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Phenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
2-Chlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	

Results - Soil

Project: LKC 21 1501 Francis Street, Withington

Client: LK Consult	Chemtest Job No.:		22-40729	22-40729	22-40729	22-40729	22-40729	22-40729	22-40729
Quotation No.:	Chemtest Sample ID.:		1531348	1531349	1531350	1531351	1531352	1531353	1531354
Order No.: 740672	Client Sample Ref.:		ES	ES	ES	ES	ES	ES	ES
	Client Sample ID.:		WS101	WS101	WS102	WS102	WS103	WS103	WS104
	Sample Location:		WS101	WS101	WS102	WS102	WS103	WS103	WS104
	Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):		0.5	1.1	0.2	1.4	0.2	1.2	1.2
	Bottom Depth (m):		1	1.5	0.9	1.9	1	1.8	2
	Date Sampled:		21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022
	Asbestos Lab:		DURHAM	DURHAM	DURHAM	NEW-ASB	DURHAM		
Determinand	Accred.	SOP	Units	LOD					
1,3-Dichlorobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
1,2-Dichlorobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
2-Methylphenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
4-Methylphenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Nitrobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Isophorone	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Bis(2-Chloroethoxy)Methane	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
2,4-Dichlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
1,2,4-Trichlorobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Naphthalene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Hexachlorobutadiene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
4-Chloro-3-Methylphenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
2-Methylnaphthalene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
2,4,6-Trichlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
2,4,5-Trichlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
2-Chloronaphthalene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
2-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Acenaphthylene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Dimethylphthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
2,6-Dinitrotoluene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Acenaphthene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Dibenzofuran	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
4-Chlorophenylphenylether	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
2,4-Dinitrotoluene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Fluorene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Diethyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	

Results - Soil

Project: LKC 21 1501 Francis Street, Withington

Client: LK Consult	Chemtest Job No.:		22-40729	22-40729	22-40729	22-40729	22-40729	22-40729	22-40729
Quotation No.:	Chemtest Sample ID.:		1531348	1531349	1531350	1531351	1531352	1531353	1531354
Order No.: 740672	Client Sample Ref.:		ES	ES	ES	ES	ES	ES	ES
	Client Sample ID.:		WS101	WS101	WS102	WS102	WS103	WS103	WS104
	Sample Location:		WS101	WS101	WS102	WS102	WS103	WS103	WS104
	Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):		0.5	1.1	0.2	1.4	0.2	1.2	1.2
	Bottom Depth (m):		1	1.5	0.9	1.9	1	1.8	2
	Date Sampled:		21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022
	Asbestos Lab:		DURHAM	DURHAM	DURHAM	NEW-ASB	DURHAM		
Determinand	Accred.	SOP	Units	LOD					
4-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Azobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
4-Bromophenylphenyl Ether	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Hexachlorobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Phenanthrene	M	2790	mg/kg	0.50	3.4	< 0.50	< 0.50	< 0.50	
Anthracene	M	2790	mg/kg	0.50	0.70	< 0.50	< 0.50	< 0.50	
Carbazole	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Fluoranthene	M	2790	mg/kg	0.50	4.5	< 0.50	< 0.50	< 0.50	
Pyrene	M	2790	mg/kg	0.50	4.2	< 0.50	< 0.50	< 0.50	
Butylbenzyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Benzo[a]anthracene	M	2790	mg/kg	0.50	2.1	< 0.50	< 0.50	< 0.50	
Chrysene	M	2790	mg/kg	0.50	2.3	< 0.50	< 0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Benzo[b]fluoranthene	M	2790	mg/kg	0.50	2.5	< 0.50	< 0.50	< 0.50	
Benzo[k]fluoranthene	M	2790	mg/kg	0.50	0.80	< 0.50	< 0.50	< 0.50	
Benzo[a]pyrene	M	2790	mg/kg	0.50	2.1	< 0.50	< 0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50	0.92	< 0.50	< 0.50	< 0.50	
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50	1.2	< 0.50	< 0.50	< 0.50	
Naphthalene	M	2800	mg/kg	0.10				< 0.10	
Acenaphthylene	N	2800	mg/kg	0.10				< 0.10	
Acenaphthene	M	2800	mg/kg	0.10				< 0.10	
Fluorene	M	2800	mg/kg	0.10				< 0.10	
Phenanthrene	M	2800	mg/kg	0.10				1.3	
Anthracene	M	2800	mg/kg	0.10				0.55	
Fluoranthene	M	2800	mg/kg	0.10				1.6	
Pyrene	M	2800	mg/kg	0.10				1.7	
Benzo[a]anthracene	M	2800	mg/kg	0.10				0.68	
Chrysene	M	2800	mg/kg	0.10				0.48	
Benzo[b]fluoranthene	M	2800	mg/kg	0.10				0.83	
Benzo[k]fluoranthene	M	2800	mg/kg	0.10				0.41	
Benzo[a]pyrene	M	2800	mg/kg	0.10				0.65	

Results - Soil

Project: LKC 21 1501 Francis Street, Withington

Client: LK Consult	Chemtest Job No.:		22-40729	22-40729	22-40729	22-40729	22-40729	22-40729	22-40729
Quotation No.:	Chemtest Sample ID.:		1531348	1531349	1531350	1531351	1531352	1531353	1531354
Order No.: 740672	Client Sample Ref.:		ES	ES	ES	ES	ES	ES	ES
	Client Sample ID.:		WS101	WS101	WS102	WS102	WS103	WS103	WS104
	Sample Location:		WS101	WS101	WS102	WS102	WS103	WS103	WS104
	Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):		0.5	1.1	0.2	1.4	0.2	1.2	1.2
	Bottom Depth (m):		1	1.5	0.9	1.9	1	1.8	2
	Date Sampled:		21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022
	Asbestos Lab:		DURHAM	DURHAM	DURHAM	NEW-ASB	DURHAM		
Determinand	Accred.	SOP	Units	LOD					
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10				< 0.10	
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10				< 0.10	
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10				< 0.10	
Total Of 16 PAH's	N	2800	mg/kg	2.0				8.2	
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	0.98	< 0.10	

TPH Interpretation

Job	Sample	Matrix	Location	Sample Ref	Sample ID	Sample Depth (m)	Gasoline / Diesel Present	TPH Interpretation
22-40729	1531348	S	WS101	ES	WS101	0.5	No	N/A
22-40729	1531349	S	WS101	ES	WS101	1.1	No	N/A
22-40729	1531350	S	WS102	ES	WS102	0.2	No	PAH
22-40729	1531351	S	WS102	ES	WS102	1.4	No	N/A

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurement by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2300	Cyanides & Thiocyanate in Soils	Free (or easily liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8, >C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35–C44 Aromatics: >C5–C7, >C7–C8, >C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35–C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenzo[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com

Appendix D

Certificates 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 21 1501 -
Francis Road, Manchester

Job Number MRN 4310/157
Date of Issue 14 November 2022
Page 1 of 4

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

TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

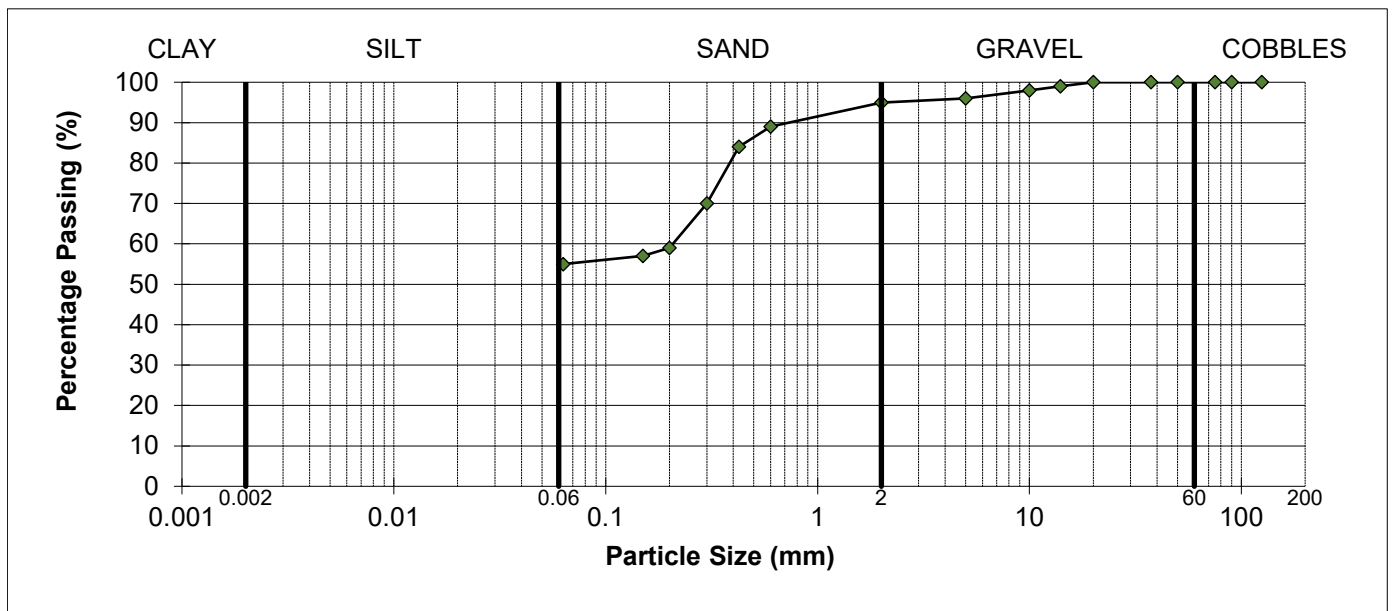
Determination of Water Content in accordance with BS EN ISO 17892-1:2014 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 21 1501 - Francis Road, Manchester
JOB NUMBER	MRN 4310/157

SAMPLE LABEL	WS102 2.0-2.5m	DATE SAMPLED	21-Oct-22
LAB SAMPLE No	118459	DATE RECEIVED	27-Oct-22
DATE TESTED	28-Oct-22	SAMPLED BY	Client

MATERIAL	Orange brown clayey silty slightly gravelly SAND
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		5	96	
90	100		2	95	
75	100		0.6	89	
50	100		0.425	84	
37.5	100		0.3	70	
20	100		0.2	59	
14	99		0.15	57	
10	98		0.063	55	



REMARKS

As received water content = 12.6%

SIGNED



NAME

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

DATE

14-Nov-22

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

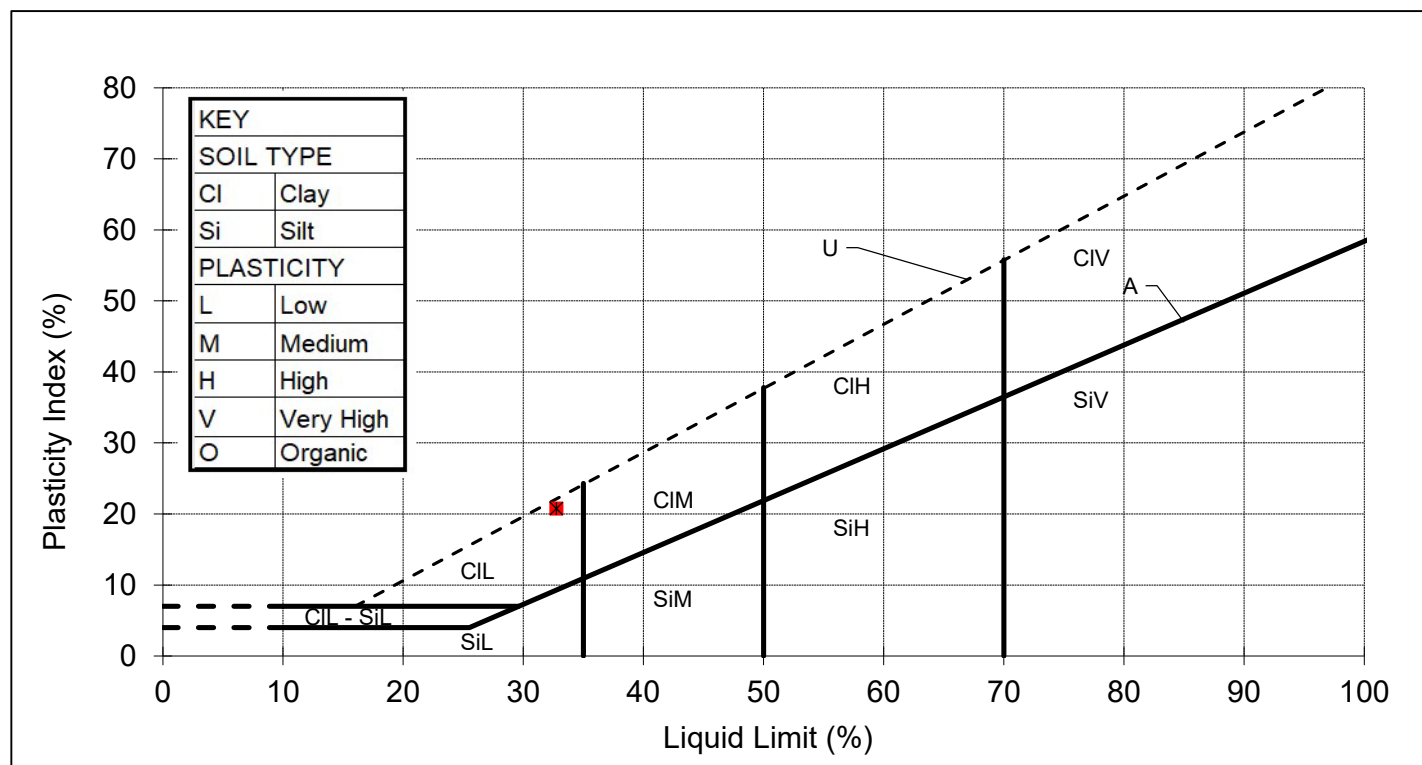
CLIENT	LK Consult Ltd
SITE	LKC 21 1501 - Francis Road, Manchester
JOB NUMBER	MRN 4310/157

SAMPLE LABEL	WS103 1.2-1.8m	DATE SAMPLED	21-Oct-22
SAMPLE No.	118460	DATE RECEIVED	28-Oct-22
DATE TESTED	28-Oct-22	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	Wet Sieved

Test Readings mm (average)	Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	22.8	33.9	
Determination 2 (avg)	23.0	34.2	

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
18.7	33	12	21	81



REMARKS

SIGNED

NAME

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

DATE

14-Nov-22

TEST CERTIFICATE
PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

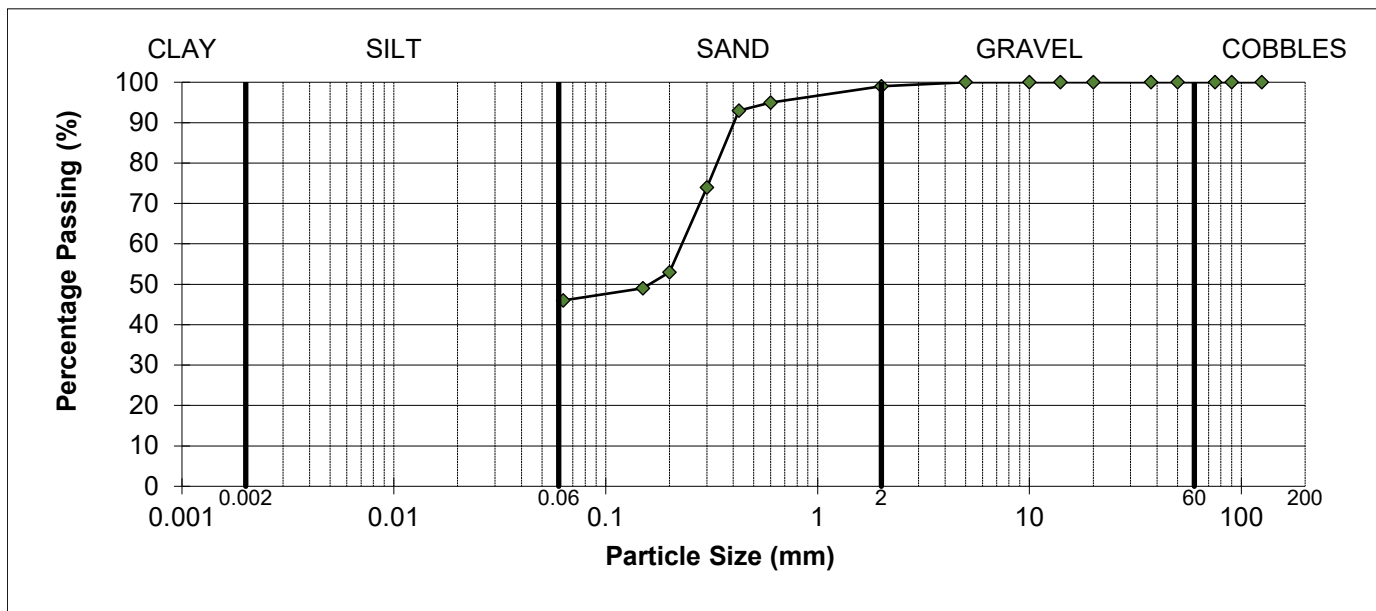
Determination of Water Content in accordance with BS EN ISO 17892-1:2014 (Oven Dry)

CLIENT	LK Consult Ltd
SITE	LKC 21 1501 - Francis Road, Manchester
JOB NUMBER	MRN 4310/157

SAMPLE LABEL	WS104 1.2-2.0m	DATE SAMPLED	21-Oct-22
LAB SAMPLE No	118461	DATE RECEIVED	27-Oct-22
DATE TESTED	28-Oct-22	SAMPLED BY	Client

MATERIAL	Orange brown clayey silty slightly gravelly SAND
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		5	100	
90	100		2	99	
75	100		0.6	95	
50	100		0.425	93	
37.5	100		0.3	74	
20	100		0.2	53	
14	100		0.15	49	
10	100		0.063	46	



REMARKS

As received water content = 10.4%

SIGNED

NAME



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

DATE

14-Nov-22

Appendix E

Generic Assessment Criteria Values

Summary of Category 4 Screening Levels: 2015

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

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	6%	180	180	230	980	230	3,400
	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	1%	1,600 ^f	1,900 ^f	1,200 ^f	28,000 ^f	3,800 ^f	7,800 ^f
+Aromatic	2.5%	1,800 ^f	1,900 ^f	2,100 ^f	28,000 ^f	3,800 ^f	7,800 ^f
>EC44	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.

		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
	Endosulfans (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.

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 F

HazWaste Online Output 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)



I6BJT-QR1BM-K0NKG

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

Job name

LKC 21 1501

Description/Comments

Project

LKC 21 1501

Site

Francis Road, Withington

Classified by

Name: **Peter Dunn**
 Date: **24 Nov 2022 14:50 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

Francis Road, Withington, Manchester,

Post Code **M20 4XP**

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Development of brownfield land

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

Excavation of soils for construction

Description of the waste

soil and made ground

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	WS101-21/10/2022-0.5	0.5-1	Non Hazardous		3
2	WS101-21/10/2022-1.1	1.1-1.5	Non Hazardous		9
3	WS102-21/10/2022-0.2	0.2-0.9	Hazardous	HP 3(i), HP 10, HP 14	15
4	WS102-21/10/2022-1.4	1.4-1.9	Non Hazardous		21
5	WS103-21/10/2022-0.2	0.2-1	Non Hazardous		27
6	WS103-21/10/2022-1.2	1.2-1.8	Non Hazardous		29
7	WS104-21/10/2022-1.2	1.2-2	Non Hazardous		30

Related documents

#	Name	Description
1	HWOL_22-40729-20221122 201808.hwol	Eurofins Chemtest .hwol file used to populate the Job
2	LK SUITE 1 - 5	waste stream template used to create this Job

Report

Created by: Peter Dunn

Created date: 24 Nov 2022 14:50 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	31
Appendix B: Rationale for selection of metal species	35
Appendix C: Version	36

Classification of sample: WS101-21/10/2022-0.5

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

Sample details

Sample name:	LoW Code:
WS101-21/10/2022-0.5	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.5-1 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
8.9%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 8.9% 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 }				42 mg/kg	1.32	50.518 mg/kg	0.00505 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				0.69 mg/kg	1.142	0.718 mg/kg	0.0000718 %	✓	
	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	22.635 mg/kg	0.00226 %	✓	
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				93 mg/kg	1.126	95.389 mg/kg	0.00954 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
5	mercury { mercury dichloride }				0.11 mg/kg	1.353	0.136 mg/kg	0.0000136 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
6	nickel { nickel(II) oxide (nickel monoxide) }				46 mg/kg	1.273	53.329 mg/kg	0.00533 %	✓	
	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	150 mg/kg		136.65 mg/kg	0.0137 %	✓	
	082-001-00-6									
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1.1 mg/kg	1.405	1.408 mg/kg	0.000141 %	✓	
	034-002-00-8									
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				52 mg/kg	1.785	84.568 mg/kg	0.00846 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
10	zinc { zinc oxide }				120 mg/kg	1.245	136.072 mg/kg	0.0136 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	boron { diboron trioxide; boric oxide }				0.9 mg/kg	3.22	2.64 mg/kg	0.000264 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
13	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<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	confirm TPH has NOT arisen from diesel or petrol				☒						
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
16	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<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]								
20	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 }				1.5 mg/kg	1.884	2.574 mg/kg	0.000257 %		✓	
	006-007-00-5										
21	pH				8.3 pH		8.3 pH	8.3 pH			
			PH								
22	naphthalene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				3.4 mg/kg		3.097 mg/kg	0.00031 %		✓	
		201-581-5	85-01-8								
27	anthracene				0.7 mg/kg		0.638 mg/kg	0.0000638 %		✓	
		204-371-1	120-12-7								
28	fluoranthene				4.5 mg/kg		4.1 mg/kg	0.00041 %		✓	
		205-912-4	206-44-0								
29	pyrene				4.2 mg/kg		3.826 mg/kg	0.000383 %		✓	
		204-927-3	129-00-0								
30	benzo[a]anthracene				2.1 mg/kg		1.913 mg/kg	0.000191 %		✓	
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				2.3 mg/kg		2.095 mg/kg	0.00021 %		✓	
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				2.5 mg/kg		2.278 mg/kg	0.000228 %		✓	
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				0.8 mg/kg		0.729 mg/kg	0.0000729 %		✓	
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				2.1 mg/kg		1.913 mg/kg	0.000191 %		✓	
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				0.92 mg/kg		0.838 mg/kg	0.0000838 %		✓	
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				1.2 mg/kg		1.093 mg/kg	0.000109 %		✓	
		205-883-8	191-24-2								
38	chloromethane; methyl chloride				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	602-001-00-7	200-817-4	74-87-3								
39	vinyl chloride; chloroethylene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	602-023-00-7	200-831-0	75-01-4								

#	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	bromomethane; methylbromide				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-002-00-2	200-813-2	74-83-9							
41	1,1-dichloroethane and 1,2-dichloroethane (combined)				<0.003 mg/kg		<0.003 mg/kg	<0.0000003 %		<LOD
		203-458-1, 200-863-5	107-06-2, 75-34-3							
42	tetrachloroethylene				0.011 mg/kg		0.01 mg/kg	0.000001 %	✓	
	602-028-00-4	204-825-9	127-18-4							
43	carbon tetrachloride; tetrachloromethane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-008-00-5	200-262-8	56-23-5							
44	trichloroethylene; trichloroethene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-027-00-9	201-167-4	79-01-6							
45	hexachlorobenzene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	602-065-00-6	204-273-9	118-74-1							
46	phenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
47	bromoform; tribromomethane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-007-00-X	200-854-6	75-25-2							
48	dibromomethane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-003-00-8	200-824-2	74-95-3							
49	dichlorodifluoromethane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		200-893-9	75-71-8							
50	chloroethane				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	602-009-00-0	200-830-5	75-00-3							
51	trichlorofluoromethane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		200-892-3	75-69-4							
52	1,1-dichloroethylene; vinylidene chloride				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-025-00-8	200-864-0	75-35-4							
53	bromochloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		200-826-3	74-97-5							
54	chloroform; trichloromethane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-006-00-4	200-663-8	67-66-3							
55	1,1,1-trichloroethane; methyl chloroform				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-013-00-2	200-756-3	71-55-6							
56	1,1-dichloropropene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-031-00-0	209-253-3	563-58-6							
57	1,2-dichloropropane; propylene dichloride				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-020-00-0	201-152-2	78-87-5							
58	bromodichloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		200-856-7	75-27-4							
59	1,3-dichloropropene; [1] (Z)-1,3-dichloropropene [2]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-030-00-5	208-826-5 [1] 233-195-8 [2]	542-75-6 [1] 10061-01-5 [2]							
60	trans-1,3-dichloropropene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		431-460-4	10061-02-6							
61	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							
62	1,3-dichloropropane				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		205-531-3	142-28-9							
63	dibromochloromethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		204-704-0	124-48-1							
64	1,2-dibromoethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-010-00-6	203-444-5	106-93-4							
65	chlorobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-033-00-1	203-628-5	108-90-7							
66	1,1,1,2-tetrachloroethane				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		211-135-1	630-20-6							
67	styrene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-026-00-0	202-851-5	100-42-5							
68	bromobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-060-00-9	203-623-8	108-86-1							

#	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	1,2,3-trichloropropane				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	602-062-00-X	202-486-1	96-18-4							
70	mesitylene; 1,3,5-trimethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-025-00-5	203-604-4	108-67-8							
71	tert-butylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		202-632-4	98-06-6							
72	1,2,4-trimethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-043-00-3	202-436-9	95-63-6							
73	sec-butylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		205-227-0	135-98-8							
74	1,3-dichlorobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-067-00-7	208-792-1	541-73-1							
75	4-isopropyltoluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		202-796-7	99-87-6							
76	1,4-dichlorobenzene; p-dichlorobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-035-00-2	203-400-5	106-46-7							
77	n-butylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		203-209-7	104-51-8							
78	1,2-dichlorobenzene; o-dichlorobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-034-00-7	202-425-9	95-50-1							
79	1,2-dibromo-3-chloropropane				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	602-021-00-6	202-479-3	96-12-8							
80	1,2,4-trichlorobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-087-00-6	204-428-0	120-82-1							
81	hexachlorobutadiene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		201-765-5	87-68-3							
82	1,2,3-trichlorobenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		201-757-1	87-61-6							
83	carbon disulphide				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	006-003-00-3	200-843-6	75-15-0							
84	dimethylnitrosoamine; N-nitrosodimethylamine				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	612-077-00-3	200-549-8	62-75-9							
85	2-chlorophenol; [1] 4-chlorophenol; [2] 3-chlorophenol; [3] chlorophenol [4]				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-008-00-0	202-433-2 [1]	95-57-8 [1]							
		203-402-6 [2]	106-48-9 [2]							
		203-582-6 [3]	108-43-0 [3]							
		246-691-4 [4]	25167-80-0 [4]							
86	bis(2-chloroethyl) ether				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	603-029-00-2	203-870-1	111-44-4							
87	hexachloroethane				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		200-666-4	67-72-1							
88	nitrosodipropylamine				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	612-098-00-8	210-698-0	621-64-7							
89	nitrobenzene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	609-003-00-7	202-716-0	98-95-3							
90	3,5,5-trimethylcyclohex-2-enone; isophorone				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	606-012-00-8	201-126-0	78-59-1							
91	2-nitrophenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		201-857-5	88-75-5							
92	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]				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-006-00-X	202-439-5 [1]	95-65-8 [1]							
		202-461-5 [2]	95-87-4 [2]							
		203-321-6 [3]	105-67-9 [3]							
		208-395-3 [4]	526-75-0 [4]							
		209-400-1 [5]	576-26-1 [5]							
		215-089-3 [6]	1300-71-6 [6]							
		276-245-4 [7]	71975-58-1 [7]							
93	bis(2-chloroethoxy)methane				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		203-920-2	111-91-1							

#	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							
94	2,4-dichlorophenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-011-00-7	204-429-6	120-83-2							
95	4-chloroaniline				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	612-137-00-9	203-401-0	106-47-8							
96	chlorocresol; 4-chloro-m-cresol; 4-chloro-3-methylphenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-014-00-3	200-431-6	59-50-7							
97	2-methyl naphthalene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		202-078-3	91-57-6							
98	4-nitrophenol; p-nitrophenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	609-015-00-2	202-811-7	100-02-7							
99	hexachlorocyclopentadiene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	602-078-00-7	201-029-3	77-47-4							
100	2,4,6-trichlorophenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-018-00-5	201-795-9	88-06-2							
101	2,4,5-trichlorophenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-017-00-X	202-467-8	95-95-4							
102	2-chloronaphthalene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		202-079-9	91-58-7							
103	dimethyl phthalate				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		205-011-6	131-11-3							
104	2,6-dinitrotoluene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	609-049-00-8	210-106-0	606-20-2							
105	dibenzofuran				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		205-071-3	132-64-9							
106	4-chlorophenylphenylether				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		230-281-7	7005-72-3							
107	2,4-dinitrotoluene; [1] dinitrotoluene [2]				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	609-007-00-9	204-450-0 [1] 246-836-1 [2]	121-14-2 [1] 25321-14-6 [2]							
108	diethyl phthalate				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		201-550-6	84-66-2							
109	DNOC (ISO); 4,6-dinitro-o-cresol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	609-020-00-X	208-601-1	534-52-1							
110	azobenzene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	611-001-00-6	203-102-5	103-33-3							
111	4-bromophenylphenylether				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		202-952-4	101-55-3							
112	pentachlorophenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-002-00-8	201-778-6	87-86-5							
113	carbazole				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		201-696-0	86-74-8							
114	dibutyl phthalate; DBP				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	607-318-00-4	201-557-4	84-74-2							
115	BBP; benzyl butyl phthalate				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	607-430-00-3	201-622-7	85-68-7							
116	bis(2-ethylhexyl) phthalate; di-(2-ethylhexyl) phthalate; DEHP				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	607-317-00-9	204-211-0	117-81-7							
117	di-n-octyl phthalate				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		204-214-7	117-84-0							
118	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
			P1186							
119	m-cresol; [1] o-cresol; [2] p-cresol; [3] mix-cresol [4]				<1 mg/kg		<1 mg/kg	<0.0001 %		<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]							

#	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							
120	1,2-dichloroethylene; [1] cis-dichloroethylene; [2] trans-dichloroethylene [3]									
	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]		<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
121	cumene; [1] propylbenzene [2]									
	601-024-00-X	202-704-5 [1] 203-132-9 [2]	98-82-8 [1] 103-65-1 [2]		<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
122	2-chlorotoluene; [1] 3-chlorotoluene; [2] 4-chlorotoluene; [3] chlorotoluene [4]									
	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]		<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
123	o-nitroaniline; [1] m-nitroaniline; [2] p-nitroaniline [3]									
	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]		<1.5 mg/kg		<1.5 mg/kg	<0.00015 %		<LOD
Total:								0.0644 %		

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: WS101-21/10/2022-1.1

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

Sample details

Sample name:	LoW Code:
WS101-21/10/2022-1.1	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.1-1.5 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
12%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 12% 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 }				3 mg/kg	1.32	3.486 mg/kg	0.000349 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				9.8 mg/kg	1.462	12.604 mg/kg	0.00126 %	✓	
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				6.7 mg/kg	1.126	6.638 mg/kg	0.000664 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
5	mercury { mercury dichloride }				<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
6	nickel { nickel(II) oxide (nickel monoxide) }				6.3 mg/kg	1.273	7.055 mg/kg	0.000706 %	✓	
	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	8.6 mg/kg		7.568 mg/kg	0.000757 %	✓	
	082-001-00-6									
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.37 mg/kg	1.405	0.457 mg/kg	0.0000457 %	✓	
	034-002-00-8									
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				9.7 mg/kg	1.785	15.238 mg/kg	0.00152 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
10	zinc { zinc oxide }				14 mg/kg	1.245	15.335 mg/kg	0.00153 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
13	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<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	confirm TPH has NOT arisen from diesel or petrol				☒						
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
16	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<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]								
20	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 }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				7.5 pH		7.5 pH	7.5 pH			
			PH								
22	naphthalene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		205-883-8	191-24-2								
38	chloromethane; methyl chloride				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	602-001-00-7	200-817-4	74-87-3								
39	vinyl chloride; chloroethylene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	602-023-00-7	200-831-0	75-01-4								

#	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	bromomethane; methylbromide				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-002-00-2	200-813-2	74-83-9							
41	1,1-dichloroethane and 1,2-dichloroethane (combined)				<0.003 mg/kg		<0.003 mg/kg	<0.0000003 %		<LOD
		203-458-1, 200-863-5	107-06-2, 75-34-3							
42	tetrachloroethylene				0.0066 mg/kg		0.0058 mg/kg	0.000000581 %	✓	
	602-028-00-4	204-825-9	127-18-4							
43	carbon tetrachloride; tetrachloromethane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-008-00-5	200-262-8	56-23-5							
44	trichloroethylene; trichloroethene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-027-00-9	201-167-4	79-01-6							
45	hexachlorobenzene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	602-065-00-6	204-273-9	118-74-1							
46	phenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
47	bromoform; tribromomethane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-007-00-X	200-854-6	75-25-2							
48	dibromomethane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-003-00-8	200-824-2	74-95-3							
49	dichlorodifluoromethane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		200-893-9	75-71-8							
50	chloroethane				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	602-009-00-0	200-830-5	75-00-3							
51	trichlorofluoromethane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		200-892-3	75-69-4							
52	1,1-dichloroethylene; vinylidene chloride				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-025-00-8	200-864-0	75-35-4							
53	bromochloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		200-826-3	74-97-5							
54	chloroform; trichloromethane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-006-00-4	200-663-8	67-66-3							
55	1,1,1-trichloroethane; methyl chloroform				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-013-00-2	200-756-3	71-55-6							
56	1,1-dichloropropene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-031-00-0	209-253-3	563-58-6							
57	1,2-dichloropropane; propylene dichloride				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-020-00-0	201-152-2	78-87-5							
58	bromodichloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		200-856-7	75-27-4							
59	1,3-dichloropropene; [1] (Z)-1,3-dichloropropene [2]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-030-00-5	208-826-5 [1] 233-195-8 [2]	542-75-6 [1] 10061-01-5 [2]							
60	trans-1,3-dichloropropene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		431-460-4	10061-02-6							
61	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							
62	1,3-dichloropropane				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		205-531-3	142-28-9							
63	dibromochloromethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		204-704-0	124-48-1							
64	1,2-dibromoethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-010-00-6	203-444-5	106-93-4							
65	chlorobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-033-00-1	203-628-5	108-90-7							
66	1,1,1,2-tetrachloroethane				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		211-135-1	630-20-6							
67	styrene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-026-00-0	202-851-5	100-42-5							
68	bromobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-060-00-9	203-623-8	108-86-1							

#	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	1,2,3-trichloropropane				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	602-062-00-X	202-486-1	96-18-4							
70	mesitylene; 1,3,5-trimethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-025-00-5	203-604-4	108-67-8							
71	tert-butylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		202-632-4	98-06-6							
72	1,2,4-trimethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-043-00-3	202-436-9	95-63-6							
73	sec-butylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		205-227-0	135-98-8							
74	1,3-dichlorobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-067-00-7	208-792-1	541-73-1							
75	4-isopropyltoluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		202-796-7	99-87-6							
76	1,4-dichlorobenzene; p-dichlorobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-035-00-2	203-400-5	106-46-7							
77	n-butylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		203-209-7	104-51-8							
78	1,2-dichlorobenzene; o-dichlorobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-034-00-7	202-425-9	95-50-1							
79	1,2-dibromo-3-chloropropane				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	602-021-00-6	202-479-3	96-12-8							
80	1,2,4-trichlorobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-087-00-6	204-428-0	120-82-1							
81	hexachlorobutadiene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		201-765-5	87-68-3							
82	1,2,3-trichlorobenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		201-757-1	87-61-6							
83	carbon disulphide				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	006-003-00-3	200-843-6	75-15-0							
84	dimethylnitrosoamine; N-nitrosodimethylamine				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	612-077-00-3	200-549-8	62-75-9							
85	2-chlorophenol; [1] 4-chlorophenol; [2] 3-chlorophenol; [3] chlorophenol [4]				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-008-00-0	202-433-2 [1]	95-57-8 [1]							
		203-402-6 [2]	106-48-9 [2]							
		203-582-6 [3]	108-43-0 [3]							
		246-691-4 [4]	25167-80-0 [4]							
86	bis(2-chloroethyl) ether				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	603-029-00-2	203-870-1	111-44-4							
87	hexachloroethane				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		200-666-4	67-72-1							
88	nitrosodipropylamine				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	612-098-00-8	210-698-0	621-64-7							
89	nitrobenzene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	609-003-00-7	202-716-0	98-95-3							
90	3,5,5-trimethylcyclohex-2-enone; isophorone				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	606-012-00-8	201-126-0	78-59-1							
91	2-nitrophenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		201-857-5	88-75-5							
92	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]				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-006-00-X	202-439-5 [1]	95-65-8 [1]							
		202-461-5 [2]	95-87-4 [2]							
		203-321-6 [3]	105-67-9 [3]							
		208-395-3 [4]	526-75-0 [4]							
		209-400-1 [5]	576-26-1 [5]							
		215-089-3 [6]	1300-71-6 [6]							
		276-245-4 [7]	71975-58-1 [7]							
93	bis(2-chloroethoxy)methane				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		203-920-2	111-91-1							

#	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							
94	2,4-dichlorophenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-011-00-7	204-429-6	120-83-2							
95	4-chloroaniline				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	612-137-00-9	203-401-0	106-47-8							
96	chlorocresol; 4-chloro-m-cresol; 4-chloro-3-methylphenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-014-00-3	200-431-6	59-50-7							
97	2-methyl naphthalene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		202-078-3	91-57-6							
98	4-nitrophenol; p-nitrophenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	609-015-00-2	202-811-7	100-02-7							
99	hexachlorocyclopentadiene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	602-078-00-7	201-029-3	77-47-4							
100	2,4,6-trichlorophenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-018-00-5	201-795-9	88-06-2							
101	2,4,5-trichlorophenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-017-00-X	202-467-8	95-95-4							
102	2-chloronaphthalene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		202-079-9	91-58-7							
103	dimethyl phthalate				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		205-011-6	131-11-3							
104	2,6-dinitrotoluene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	609-049-00-8	210-106-0	606-20-2							
105	dibenzofuran				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		205-071-3	132-64-9							
106	4-chlorophenylphenylether				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		230-281-7	7005-72-3							
107	2,4-dinitrotoluene; [1] dinitrotoluene [2]				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	609-007-00-9	204-450-0 [1] 246-836-1 [2]	121-14-2 [1] 25321-14-6 [2]							
108	diethyl phthalate				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		201-550-6	84-66-2							
109	DNOC (ISO); 4,6-dinitro-o-cresol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	609-020-00-X	208-601-1	534-52-1							
110	azobenzene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	611-001-00-6	203-102-5	103-33-3							
111	4-bromophenylphenylether				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		202-952-4	101-55-3							
112	pentachlorophenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-002-00-8	201-778-6	87-86-5							
113	carbazole				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		201-696-0	86-74-8							
114	dibutyl phthalate; DBP				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	607-318-00-4	201-557-4	84-74-2							
115	BBP; benzyl butyl phthalate				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	607-430-00-3	201-622-7	85-68-7							
116	bis(2-ethylhexyl) phthalate; di-(2-ethylhexyl) phthalate; DEHP				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	607-317-00-9	204-211-0	117-81-7							
117	di-n-octyl phthalate				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		204-214-7	117-84-0							
118	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
			P1186							
119	m-cresol; [1] o-cresol; [2] p-cresol; [3] mix-cresol [4]				<1 mg/kg		<1 mg/kg	<0.0001 %		<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]							

#	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							
120	1,2-dichloroethylene; [1] cis-dichloroethylene; [2] trans-dichloroethylene [3]									
	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]		<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
121	cumene; [1] propylbenzene [2]									
	601-024-00-X	202-704-5 [1] 203-132-9 [2]	98-82-8 [1] 103-65-1 [2]		<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
122	2-chlorotoluene; [1] 3-chlorotoluene; [2] 4-chlorotoluene; [3] chlorotoluene [4]									
	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]		<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
123	o-nitroaniline; [1] m-nitroaniline; [2] p-nitroaniline [3]									
	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]		<1.5 mg/kg		<1.5 mg/kg	<0.00015 %		<LOD
Total:								0.0111 %		

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: WS102-21/10/2022-0.2

 **Hazardous Waste**
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:
WS102-21/10/2022-0.2	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 03 * (Soil and stones containing hazardous substances)
0.2-0.9 m	
Moisture content:	
9.1%	
(wet weight correction)	

Hazard properties

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 hazardous because due to high concentrations encountered, HP3 cannot be discounted

Hazard Statements hit:

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 3.909%)
mesitylene; 1,3,5-trimethylbenzene: (conc.: 6.82e-07%)

HP 10: Toxic for reproduction "waste which has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring"

Hazard Statements hit:

Repr. 2; H361d "Suspected of damaging the unborn child."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 3.909%)

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 2; H411 "Toxic to aquatic life with long lasting effects."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 3.909%)

Determinands

Moisture content: 9.1% 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 }				16 mg/kg	1.32	19.203 mg/kg	0.00192 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				0.11 mg/kg	1.142	0.114 mg/kg	0.0000114 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				7.8 mg/kg	1.462	10.363 mg/kg	0.00104 %	✓	
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				70 mg/kg	1.126	71.64 mg/kg	0.00716 %	✓	
	029-002-00-X	215-270-7	1317-39-1							

#		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								
5	 mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.14 mg/kg	1.353	0.172 mg/kg	0.0000172 %	✓		
6	 nickel { nickel(II) oxide (nickel monoxide) }	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]		21 mg/kg	1.273	24.293 mg/kg	0.00243 %	✓		
7	 lead {  lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	130 mg/kg		118.17 mg/kg	0.0118 %	✓		
8	 selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.59 mg/kg	1.405	0.754 mg/kg	0.0000754 %	✓		
9	 vanadium {  divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		18 mg/kg	1.785	29.209 mg/kg	0.00292 %	✓		
10	 zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		61 mg/kg	1.245	69.018 mg/kg	0.0069 %	✓		
11	 chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD	
12	 boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		2.1 mg/kg	3.22	6.146 mg/kg	0.000615 %	✓		
13	 TPH (C6 to C40) petroleum group			TPH		43000 mg/kg		39087 mg/kg	3.909 %	✓		
14	 confirm TPH has NOT arisen from diesel or petrol					☒						
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD	
16	benzene	601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD	
17	toluene	601-021-00-3	203-625-9	108-88-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD	
18	 ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD	
19	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]		<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD	
20	 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				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD	
21	 pH			PH		7.9 pH		7.9 pH	7.9 pH			
22	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD	
23	 acenaphthylene		205-917-1	208-96-8		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD	
24	 acenaphthene		201-469-6	83-32-9		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD	
25	 fluorene		201-695-5	86-73-7		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD	
26	 phenanthrene		201-581-5	85-01-8		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD	
27	 anthracene		204-371-1	120-12-7		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<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							
28	fluoranthene	205-912-4	206-44-0		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
29	pyrene	204-927-3	129-00-0		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
30	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
31	chrysene	601-048-00-0	205-923-4	218-01-9	<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
32	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
33	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
34	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
35	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
36	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
37	benzo[ghi]perylene	205-883-8	191-24-2		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
38	chloromethane; methyl chloride	602-001-00-7	200-817-4	74-87-3	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
39	vinyl chloride; chloroethylene	602-023-00-7	200-831-0	75-01-4	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
40	bromomethane; methylbromide	602-002-00-2	200-813-2	74-83-9	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
41	1,1-dichloroethane and 1,2-dichloroethane (combined)	203-458-1, 200-863-5	107-06-2, 75-34-3		<0.003 mg/kg		<0.003 mg/kg	<0.0000003 %		<LOD
42	tetrachloroethylene	602-028-00-4	204-825-9	127-18-4	0.0033 mg/kg		0.003 mg/kg	0.0000003 %	✓	
43	carbon tetrachloride; tetrachloromethane	602-008-00-5	200-262-8	56-23-5	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
44	trichloroethylene; trichloroethene	602-027-00-9	201-167-4	79-01-6	0.0015 mg/kg		0.0013 mg/kg	0.000000136 %	✓	
45	hexachlorobenzene	602-065-00-6	204-273-9	118-74-1	<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
46	phenol	604-001-00-2	203-632-7	108-95-2	<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
47	bromoform; tribromomethane	602-007-00-X	200-854-6	75-25-2	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
48	dibromomethane	602-003-00-8	200-824-2	74-95-3	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
49	dichlorodifluoromethane	200-893-9	75-71-8		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
50	chloroethane	602-009-00-0	200-830-5	75-00-3	<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
51	trichlorofluoromethane	200-892-3	75-69-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
52	1,1-dichloroethylene; vinylidene chloride	602-025-00-8	200-864-0	75-35-4	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
53	bromochloromethane	200-826-3	74-97-5		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
54	chloroform; trichloromethane	602-006-00-4	200-663-8	67-66-3	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
55	1,1,1-trichloroethane; methyl chloroform	602-013-00-2	200-756-3	71-55-6	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
56	1,1-dichloropropene	602-031-00-0	209-253-3	563-58-6	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<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							
57	1,2-dichloropropane; propylene dichloride				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-020-00-0	201-152-2	78-87-5							
58	bromodichloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		200-856-7	75-27-4							
59	1,3-dichloropropene; [1] (Z)-1,3-dichloropropene [2]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-030-00-5	208-826-5 [1] 233-195-8 [2]	542-75-6 [1] 10061-01-5 [2]							
60	trans-1,3-dichloropropene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		431-460-4	10061-02-6							
61	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							
62	1,3-dichloropropane				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		205-531-3	142-28-9							
63	dibromochloromethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		204-704-0	124-48-1							
64	1,2-dibromoethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-010-00-6	203-444-5	106-93-4							
65	chlorobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-033-00-1	203-628-5	108-90-7							
66	1,1,1,2-tetrachloroethane				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		211-135-1	630-20-6							
67	styrene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-026-00-0	202-851-5	100-42-5							
68	bromobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-060-00-9	203-623-8	108-86-1							
69	1,2,3-trichloropropane				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	602-062-00-X	202-486-1	96-18-4							
70	mesitylene; 1,3,5-trimethylbenzene				0.0075 mg/kg		0.0068 mg/kg	0.000000682 %	✓	
	601-025-00-5	203-604-4	108-67-8							
71	tert-butylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		202-632-4	98-06-6							
72	1,2,4-trimethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-043-00-3	202-436-9	95-63-6							
73	sec-butylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		205-227-0	135-98-8							
74	1,3-dichlorobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-067-00-7	208-792-1	541-73-1							
75	4-isopropyltoluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		202-796-7	99-87-6							
76	1,4-dichlorobenzene; p-dichlorobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-035-00-2	203-400-5	106-46-7							
77	n-butylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		203-209-7	104-51-8							
78	1,2-dichlorobenzene; o-dichlorobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-034-00-7	202-425-9	95-50-1							
79	1,2-dibromo-3-chloropropane				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	602-021-00-6	202-479-3	96-12-8							
80	1,2,4-trichlorobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-087-00-6	204-428-0	120-82-1							
81	hexachlorobutadiene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		201-765-5	87-68-3							
82	1,2,3-trichlorobenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		201-757-1	87-61-6							
83	carbon disulphide				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	006-003-00-3	200-843-6	75-15-0							
84	dimethylnitrosoamine; N-nitrosodimethylamine				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	612-077-00-3	200-549-8	62-75-9							

#	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								
85	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]		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
86	bis(2-chloroethyl) ether 603-029-00-2	203-870-1	111-44-4		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
87	hexachloroethane 200-666-4	67-72-1			<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
88	nitrosodipropylamine 612-098-00-8	210-698-0	621-64-7		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
89	nitrobenzene 609-003-00-7	202-716-0	98-95-3		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
90	3,5,5-trimethylcyclohex-2-enone; isophorone 606-012-00-8	201-126-0	78-59-1		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
91	2-nitrophenol 201-857-5	88-75-5			<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
92	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]		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
93	bis(2-chloroethoxy)methane 203-920-2	111-91-1			<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
94	2,4-dichlorophenol 604-011-00-7	204-429-6	120-83-2		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
95	4-chloroaniline 612-137-00-9	203-401-0	106-47-8		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
96	chlorocresol; 4-chloro-m-cresol; 4-chloro-3-methylphenol 604-014-00-3	200-431-6	59-50-7		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
97	2-methyl naphthalene 202-078-3	91-57-6			<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
98	4-nitrophenol; p-nitrophenol 609-015-00-2	202-811-7	100-02-7		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
99	hexachlorocyclopentadiene 602-078-00-7	201-029-3	77-47-4		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
100	2,4,6-trichlorophenol 604-018-00-5	201-795-9	88-06-2		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
101	2,4,5-trichlorophenol 604-017-00-X	202-467-8	95-95-4		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
102	2-chloronaphthalene 202-079-9	91-58-7			<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
103	dimethyl phthalate 205-011-6	131-11-3			<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
104	2,6-dinitrotoluene 609-049-00-8	210-106-0	606-20-2		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
105	dibenzofuran 205-071-3	132-64-9			<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
106	4-chlorophenylphenylether 230-281-7	7005-72-3			<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
107	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]		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
108	diethyl phthalate 201-550-6	84-66-2			<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<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							
109		DNOC (ISO); 4,6-dinitro-o-cresol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		609-020-00-X	208-601-1	534-52-1							
110		azobenzene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		611-001-00-6	203-102-5	103-33-3							
111	■	4-bromophenylphenylether				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
			202-952-4	101-55-3							
112		pentachlorophenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		604-002-00-8	201-778-6	87-86-5							
113	■	carbazole				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
			201-696-0	86-74-8							
114		dibutyl phthalate; DBP				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		607-318-00-4	201-557-4	84-74-2							
115		BBP; benzyl butyl phthalate				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		607-430-00-3	201-622-7	85-68-7							
116		bis(2-ethylhexyl) phthalate; di-(2-ethylhexyl) phthalate; DEHP				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		607-317-00-9	204-211-0	117-81-7							
117	■	di-n-octyl phthalate				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
			204-214-7	117-84-0							
118	■	monohydric phenols				0.98 mg/kg		0.891 mg/kg	0.0000891 %	✓	
				P1186							
119		m-cresol; [1] o-cresol; [2] p-cresol; [3] mix-cresol [4]				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		604-004-00-9	203-577-9 [1]	108-39-4 [1]							
			202-423-8 [2]	95-48-7 [2]							
			203-398-6 [3]	106-44-5 [3]							
			215-293-2 [4]	1319-77-3 [4]							
120		1,2-dichloroethylene; [1] cis-dichloroethylene; [2] trans-dichloroethylene [3]				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		602-026-00-3	208-750-2 [1]	540-59-0 [1]							
			205-859-7 [2]	156-59-2 [2]							
			205-860-2 [3]	156-60-5 [3]							
121		cumene; [1] propylbenzene [2]				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		601-024-00-X	202-704-5 [1]	98-82-8 [1]							
			203-132-9 [2]	103-65-1 [2]							
122		2-chlorotoluene; [1] 3-chlorotoluene; [2] 4-chlorotoluene; [3] chlorotoluene [4]				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		602-040-00-X	202-424-3 [1]	95-49-8 [1]							
			203-580-5 [2]	108-41-8 [2]							
			203-397-0 [3]	106-43-4 [3]							
			246-698-2 [4]	25168-05-2 [4]							
123		o-nitroaniline; [1] m-nitroaniline; [2] p-nitroaniline [3]				<1.5 mg/kg		<1.5 mg/kg	<0.00015 %		<LOD
		612-012-00-9	201-855-4 [1]	88-74-4 [1]							
			202-729-1 [2]	99-09-2 [2]							
			202-810-1 [3]	100-01-6 [3]							
Total:									3.947 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	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: WS102-21/10/2022-1.4

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

Sample details

Sample name:	LoW Code:
WS102-21/10/2022-1.4	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.4-1.9 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
12%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 12% 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 }				3.4 mg/kg	1.32	3.95 mg/kg	0.000395 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				8.8 mg/kg	1.462	11.318 mg/kg	0.00113 %	✓	
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				8.5 mg/kg	1.126	8.422 mg/kg	0.000842 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
5	mercury { mercury dichloride }				<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
6	nickel { nickel(II) oxide (nickel monoxide) }				6 mg/kg	1.273	6.719 mg/kg	0.000672 %	✓	
	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	12 mg/kg		10.56 mg/kg	0.00106 %	✓	
	082-001-00-6									
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.34 mg/kg	1.405	0.42 mg/kg	0.000042 %	✓	
	034-002-00-8									
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				9.4 mg/kg	1.785	14.767 mg/kg	0.00148 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
10	zinc { zinc oxide }				15 mg/kg	1.245	16.43 mg/kg	0.00164 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
13	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<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	confirm TPH has NOT arisen from diesel or petrol				☒						
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
16	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<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]								
20	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 }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	naphthalene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
22	acenaphthylene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		205-917-1	208-96-8								
23	acenaphthene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		201-469-6	83-32-9								
24	fluorene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		201-695-5	86-73-7								
25	phenanthrene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		201-581-5	85-01-8								
26	anthracene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		204-371-1	120-12-7								
27	fluoranthene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		205-912-4	206-44-0								
28	pyrene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		204-927-3	129-00-0								
29	benzo[a]anthracene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
30	chrysene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
31	benzo[b]fluoranthene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
32	benzo[k]fluoranthene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
33	benzo[a]pyrene; benzo[def]chrysene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
34	indeno[123-cd]pyrene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		205-893-2	193-39-5								
35	dibenz[a,h]anthracene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
36	benzo[ghi]perylene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
		205-883-8	191-24-2								
37	chloromethane; methyl chloride				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	602-001-00-7	200-817-4	74-87-3								
38	vinyl chloride; chloroethylene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	602-023-00-7	200-831-0	75-01-4								
39	bromomethane; methylbromide				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %			<LOD
	602-002-00-2	200-813-2	74-83-9								

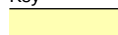
#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
40	1,1-dichloroethane and 1,2-dichloroethane (combined)				<0.003 mg/kg		<0.003 mg/kg	<0.0000003 %		<LOD
		203-458-1, 200-863-5	107-06-2, 75-34-3							
41	tetrachloroethylene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-028-00-4	204-825-9	127-18-4							
42	carbon tetrachloride; tetrachloromethane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-008-00-5	200-262-8	56-23-5							
43	trichloroethylene; trichloroethene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-027-00-9	201-167-4	79-01-6							
44	hexachlorobenzene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	602-065-00-6	204-273-9	118-74-1							
45	phenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
46	bromoform; tribromomethane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-007-00-X	200-854-6	75-25-2							
47	dibromomethane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-003-00-8	200-824-2	74-95-3							
48	dichlorodifluoromethane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		200-893-9	75-71-8							
49	chloroethane				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	602-009-00-0	200-830-5	75-00-3							
50	trichlorofluoromethane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		200-892-3	75-69-4							
51	1,1-dichloroethylene; vinylidene chloride				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-025-00-8	200-864-0	75-35-4							
52	bromochloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		200-826-3	74-97-5							
53	chloroform; trichloromethane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-006-00-4	200-663-8	67-66-3							
54	1,1,1-trichloroethane; methyl chloroform				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-013-00-2	200-756-3	71-55-6							
55	1,1-dichloropropene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-031-00-0	209-253-3	563-58-6							
56	1,2-dichloropropane; propylene dichloride				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-020-00-0	201-152-2	78-87-5							
57	bromodichloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		200-856-7	75-27-4							
58	1,3-dichloropropene; [1] (Z)-1,3-dichloropropene [2]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-030-00-5	208-826-5 [1] 233-195-8 [2]	542-75-6 [1] 10061-01-5 [2]							
59	trans-1,3-dichloropropene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		431-460-4	10061-02-6							
60	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							
61	1,3-dichloropropane				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		205-531-3	142-28-9							
62	dibromochloromethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		204-704-0	124-48-1							
63	1,2-dibromoethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-010-00-6	203-444-5	106-93-4							
64	chlorobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-033-00-1	203-628-5	108-90-7							
65	1,1,1,2-tetrachloroethane				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		211-135-1	630-20-6							
66	styrene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-026-00-0	202-851-5	100-42-5							
67	bromobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-060-00-9	203-623-8	108-86-1							
68	1,2,3-trichloropropane				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	602-062-00-X	202-486-1	96-18-4							

#	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	mesitylene; 1,3,5-trimethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-025-00-5	203-604-4	108-67-8							
70	tert-butylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		202-632-4	98-06-6							
71	1,2,4-trimethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-043-00-3	202-436-9	95-63-6							
72	sec-butylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		205-227-0	135-98-8							
73	1,3-dichlorobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-067-00-7	208-792-1	541-73-1							
74	4-isopropyltoluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		202-796-7	99-87-6							
75	1,4-dichlorobenzene; p-dichlorobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-035-00-2	203-400-5	106-46-7							
76	n-butylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		203-209-7	104-51-8							
77	1,2-dichlorobenzene; o-dichlorobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-034-00-7	202-425-9	95-50-1							
78	1,2-dibromo-3-chloropropane				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	602-021-00-6	202-479-3	96-12-8							
79	1,2,4-trichlorobenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	602-087-00-6	204-428-0	120-82-1							
80	hexachlorobutadiene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		201-765-5	87-68-3							
81	1,2,3-trichlorobenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		201-757-1	87-61-6							
82	carbon disulphide				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	006-003-00-3	200-843-6	75-15-0							
83	dimethylnitrosoamine; N-nitrosodimethylamine				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	612-077-00-3	200-549-8	62-75-9							
84	2-chlorophenol; [1] 4-chlorophenol; [2] 3-chlorophenol; [3] chlorophenol [4]				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-008-00-0	202-433-2 [1]	95-57-8 [1]							
		203-402-6 [2]	106-48-9 [2]							
		203-582-6 [3]	108-43-0 [3]							
		246-691-4 [4]	25167-80-0 [4]							
85	bis(2-chloroethyl) ether				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	603-029-00-2	203-870-1	111-44-4							
86	hexachloroethane				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		200-666-4	67-72-1							
87	nitrosodipropylamine				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	612-098-00-8	210-698-0	621-64-7							
88	nitrobenzene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	609-003-00-7	202-716-0	98-95-3							
89	3,5,5-trimethylcyclohex-2-enone; isophorone				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	606-012-00-8	201-126-0	78-59-1							
90	2-nitrophenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		201-857-5	88-75-5							
91	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]				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-006-00-X	202-439-5 [1]	95-65-8 [1]							
		202-461-5 [2]	95-87-4 [2]							
		203-321-6 [3]	105-67-9 [3]							
		208-395-3 [4]	526-75-0 [4]							
		209-400-1 [5]	576-26-1 [5]							
		215-089-3 [6]	1300-71-6 [6]							
		276-245-4 [7]	71975-58-1 [7]							
92	bis(2-chloroethoxy)methane				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		203-920-2	111-91-1							
93	2,4-dichlorophenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-011-00-7	204-429-6	120-83-2							

#	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							
94	4-chloroaniline				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	612-137-00-9	203-401-0	106-47-8							
95	chlorocresol; 4-chloro-m-cresol; 4-chloro-3-methylphenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-014-00-3	200-431-6	59-50-7							
96	2-methyl naphthalene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		202-078-3	91-57-6							
97	4-nitrophenol; p-nitrophenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	609-015-00-2	202-811-7	100-02-7							
98	hexachlorocyclopentadiene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	602-078-00-7	201-029-3	77-47-4							
99	2,4,6-trichlorophenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-018-00-5	201-795-9	88-06-2							
100	2,4,5-trichlorophenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-017-00-X	202-467-8	95-95-4							
101	2-chloronaphthalene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		202-079-9	91-58-7							
102	dimethyl phthalate				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		205-011-6	131-11-3							
103	2,6-dinitrotoluene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	609-049-00-8	210-106-0	606-20-2							
104	dibenzofuran				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		205-071-3	132-64-9							
105	4-chlorophenylphenylether				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		230-281-7	7005-72-3							
106	2,4-dinitrotoluene; [1] dinitrotoluene [2]				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	609-007-00-9	204-450-0 [1] 246-836-1 [2]	121-14-2 [1] 25321-14-6 [2]							
107	diethyl phthalate				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		201-550-6	84-66-2							
108	DNOC (ISO); 4,6-dinitro-o-cresol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	609-020-00-X	208-601-1	534-52-1							
109	azobenzene				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	611-001-00-6	203-102-5	103-33-3							
110	4-bromophenylphenylether				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		202-952-4	101-55-3							
111	pentachlorophenol				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-002-00-8	201-778-6	87-86-5							
112	carbazole				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		201-696-0	86-74-8							
113	dibutyl phthalate; DBP				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	607-318-00-4	201-557-4	84-74-2							
114	BBP; benzyl butyl phthalate				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	607-430-00-3	201-622-7	85-68-7							
115	bis(2-ethylhexyl) phthalate; di-(2-ethylhexyl) phthalate; DEHP				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	607-317-00-9	204-211-0	117-81-7							
116	di-n-octyl phthalate				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		204-214-7	117-84-0							
117	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
			P1186							
118	m-cresol; [1] o-cresol; [2] p-cresol; [3] mix-cresol [4]				<1 mg/kg		<1 mg/kg	<0.0001 %		<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]							
119	1,2-dichloroethylene; [1] cis-dichloroethylene; [2] trans-dichloroethylene [3]				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<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]							

#		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							
120	cumene; [1] propylbenzene [2]				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD	
	601-024-00-X	202-704-5 [1] 203-132-9 [2]	98-82-8 [1] 103-65-1 [2]								
121	2-chlorotoluene; [1] 3-chlorotoluene; [2] 4-chlorotoluene; [3] chlorotoluene [4]				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<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]								
122	o-nitroaniline; [1] m-nitroaniline; [2] p-nitroaniline [3]				<1.5 mg/kg		<1.5 mg/kg	<0.00015 %		<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:								0.0115 %			

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: WS103-21/10/2022-0.2

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

Sample details

Sample name:	LoW Code:
WS103-21/10/2022-0.2	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.2-1 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
9.4%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 9.4% 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	arsenic { arsenic trioxide }				8.1	mg/kg	1.32	9.689	mg/kg	0.000969 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
2	cadmium { cadmium oxide }				0.19	mg/kg	1.142	0.197	mg/kg	0.0000197 %	✓	
	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	14.566	mg/kg	0.00146 %	✓	
		215-160-9	1308-38-9									
4	copper { dicopper oxide; copper (I) oxide }				22	mg/kg	1.126	22.441	mg/kg	0.00224 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
5	mercury { mercury dichloride }				0.15	mg/kg	1.353	0.184	mg/kg	0.0000184 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
6	nickel { nickel(II) oxide (nickel monoxide) }				8.7	mg/kg	1.273	10.031	mg/kg	0.001 %	✓	
	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	340	mg/kg		308.04	mg/kg	0.0308 %	✓	
	082-001-00-6											
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.25	mg/kg	1.405	<0.351	mg/kg	<0.0000351 %		<LOD
	034-002-00-8											
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				14	mg/kg	1.785	22.643	mg/kg	0.00226 %	✓	
	023-001-00-8	215-239-8	1314-62-1									
10	zinc { zinc oxide }				370	mg/kg	1.245	417.253	mg/kg	0.0417 %	✓	
	030-013-00-7	215-222-5	1314-13-2									
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
12	pH				8.3	pH		8.3	pH	8.3 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		1.3 mg/kg		1.178 mg/kg	0.000118 %	✓	
18	anthracene	204-371-1	120-12-7		0.55 mg/kg		0.498 mg/kg	0.0000498 %	✓	
19	fluoranthene	205-912-4	206-44-0		1.6 mg/kg		1.45 mg/kg	0.000145 %	✓	
20	pyrene	204-927-3	129-00-0		1.7 mg/kg		1.54 mg/kg	0.000154 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6		0.68 mg/kg		0.616 mg/kg	0.0000616 %	✓	
22	chrysene	601-048-00-0	205-923-4		0.48 mg/kg		0.435 mg/kg	0.0000435 %	✓	
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		0.83 mg/kg		0.752 mg/kg	0.0000752 %	✓	
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		0.41 mg/kg		0.371 mg/kg	0.0000371 %	✓	
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		0.65 mg/kg		0.589 mg/kg	0.0000589 %	✓	
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:								0.0814 %		

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: WS103-21/10/2022-1.2

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

Sample details

Sample name:	LoW Code:	
WS103-21/10/2022-1.2	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)
1.2-1.8 m		
Moisture content:		
16%		
(wet weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 16% 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				7.4 pH		7.4 pH	7.4 pH		
			PH							
Total:								0%		

Key

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

Classification of sample: WS104-21/10/2022-1.2



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

Sample details

Sample name:	LoW Code:
WS104-21/10/2022-1.2	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)
Moisture content:	
9.7%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 9.7% 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	pH		PH		6.2 pH		6.2 pH	6.2 pH		
Total:								0%		

Key

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

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.

• 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

• confirm TPH has NOT arisen from diesel or petrol

Description/Comments: Chapter 3, section 4b requires a positive confirmation for benzo[a]pyrene to be used as a marker in evaluating Carc. 1B; H350 (HP 7) and Muta. 1B; H340 (HP 11)

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

• 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

• 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

■ **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

▀ **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

• **1,2,3-trichlorobenzene** (EC Number: 201-757-1, CAS Number: 87-61-6)

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 3; H410

• **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-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

• **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

• **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

• **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

• **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

▪ **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

▪ **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

▪ **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

▪ **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

▪ **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

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. Worse 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 sulphoselenide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide 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 pentaoxide; 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: 2022.325.5408.10064 (21 Nov 2022)
HazWasteOnline Database: 2022.325.5408.10064 (21 Nov 2022)

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

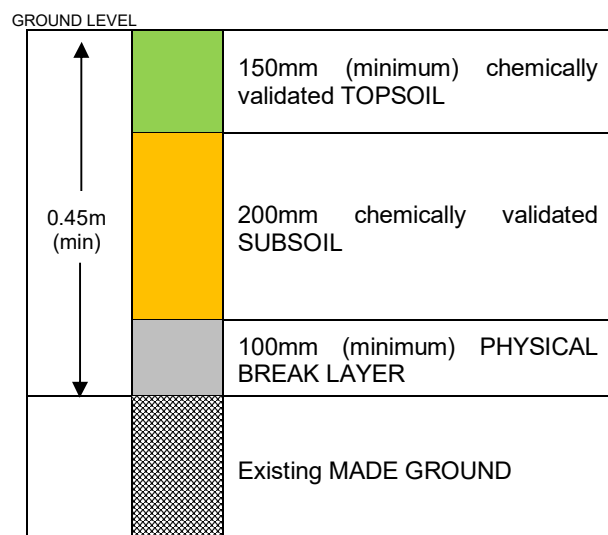
Appendix G

Environmental Cover System Construction

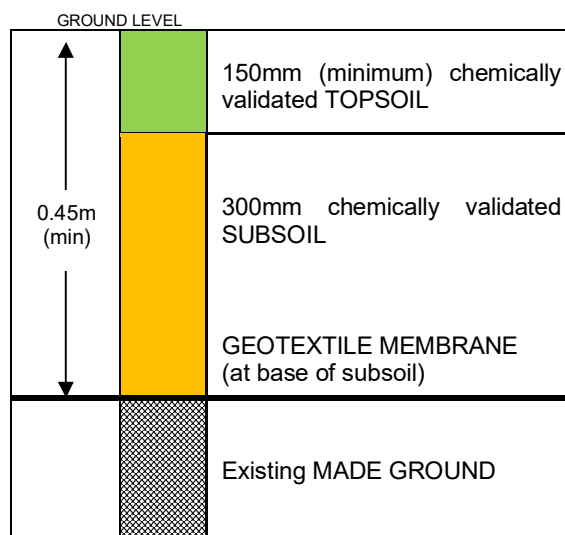
Soft Landscaping

SOFT LANDSCAPING AREAS:

Either (physical break layer)



Or (geotextile membrane)



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- » Geotechnical
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