

**PATRICK
PARSONS**

CREATING PLACES  FOR FUTURE GENERATIONS TO THRIVE

Phase II Site Appraisal

10891 - Huyton Lane
Liverpool

for

McCarthy Stone
HLL-PPC-00-XX-RP-G-0002

December 2022

Phase II Site Appraisal
Huyton Lane, Liverpool
for
McCarthy Stone

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Summary of Recommendations for Huyton Lane, Liverpool	
Risk to End-Users	Elevated PAHs in WS01. Remediation in the form of 300mm of clean capping required to break the pathway between source and receptor. UST to be removed and validated.
Risk to Controlled Waters	No specific remediation required.
Ground Gases	Gas protection measures are not considered to be required at this stage of the investigation. Confirmation of gas precautions will be provided on completion of the gas monitoring programme.
Concrete Specification	DC-1 Class - Gen1 / RC25/30 concrete will be sufficient for buried concrete at the site.
Water Pipe Specification	PVC or barrier pipe not PE water pipes will be required on site (to be confirmed by utility provider).
Engineering Ground Treatment	Not required.
Likely Foundation Types	Traditional pad or strip / trench fill foundation solution for normal loadings.
Likely Foundation Depths	Foundations to typical depths of 1.50m to 2.50m begl. (min 0.75m begl).
Bearing Strata	Firm to stiff cohesive superficial soils.
Allowable Bearing Pressure	100kN/m2 allowable bearing pressure should be achievable within firm to stiff cohesive natural superficial soils.
Volume Change Potential	Low volume change potential.
Tree Influence	Deepening for trees and heave precautions are not considered to be required due to the lack of mature trees on or around the site.
Floor Slabs	Ground bearing where levels allow to bear on natural soils. Excavation and replacement of shallow made ground soils with well graded granular material to provide suitable horizon for a lightly loaded ground bearing floor slab. Subject to the requirement for gas protection measures.
Slope Stability Risk	None.
Retaining Walls	Unlikely to be required.
SUDs	Considered unlikely to be feasible due to underlying natural cohesive soils and perched groundwater.
Roads	Design CBR value of <2% should be used (subject to in-situ testing).
Likely Waste Classification	Two areas of the site (WS01 at 0.50m and WS04 at 0.40m) may require made ground soils removed from site to be disposed of as hazardous waste. The remaining site areas should be classified as non-hazardous subject to confirmation from the receiving facility.
Other Comments	Removal of UST and associated infrastructure and validation of surrounding soils likely to be required.

The above summary should not be used in isolation and reference should be made the full report which provides a detailed assessment of the risks affecting the development.

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1.0 Introduction

1.1 Commission

Patrick Parsons (PP) have been appointed by McCarthy Stone (client) to produce a Phase II Site Appraisal for a site known as 'Huyton Lane, Liverpool'. The proposed development area (hereby referred to as 'the site') is an L-shaped parcel of land covering approximately 0.38ha, accessed off Huyton Lane to the west of the site. The site is centred at grid reference 344385, 391122 and the nearest postcode is L36 7XG. A site location plan is presented in Appendix A.

1.2 Proposed Development

It is understood that current proposals are to provide 51no. apartments over a three-storey retirement living complex with associated carparking, access roads and areas of soft landscaping. The proposed development layout plan is provided in Appendix A.

1.3 Limitations

This report has been prepared for the client and their appointed agents only and should not be relied upon by any third party without the written permission of PP.

If any unauthorised third party comes into possession of this report, they rely on it at their own risk and the authors do not owe them any Duty of Care or Skill. It is based on and limited to an assessment of the information and ground conditions identified here. PP is not responsible for ground conditions located between exploratory hole locations and not revealed during investigations.

1.4 Aim of Phase II Site Appraisal

The client's specific requirements were to undertake a Phase II Site Appraisal. The principal objectives are as follows:

- Obtain information about the soil and groundwater conditions within the area of the site;
- Determine the ground related geotechnical and contamination hazards within the site boundaries that may affect the proposed development;
- Define a Phase II conceptual model;
- Provide development recommendations;
- Provide advice on further works if required.

1.5 Information Sources

This Phase II Site Appraisal is based on the findings of the investigation, chemical analysis and geotechnical testing undertaken during the assessment. The results have been used to refine the conceptual model and initial recommendations outlined in the Phase I Site Appraisal Report undertaken by PP (ref: HLL-PPC-00-XX-RP-G-0001 Phase I Site Appraisal report dated July 2022). The information included within this report helped to form the rationale for the design of this investigation.

2.0 Summary of Phase I Site Appraisal

The following is a summary of the findings of the Phase I Site Appraisal Report undertaken by PP in July 2022 for McCarthy Stone and should not be read in isolation. For full details reference should be made to the report outlined in section 1.5.

- The earliest available mapping from 1892 shows the site to be an undeveloped parcel of land part of a larger field. No significant changes are recorded until mapping from the 1966 which revealed the construction of an ambulance station in the north/east of the site and a fire station in central / western area of the site. A small square building has also been constructed in the southern corner which is associated with the fire station. Historical mapping from 2003 indicated the fire station had been extended. No further significant changes are recorded on site.
- Within the surrounding area of the site, the earliest historical mapping from 1892 shows the site to be east of the village centre with houses along the adjacent roads. Further open land is present to the east and south. A graveyard is mapped approximately 75m west of the site. No significant changes are recorded until mapping from 1951 which reveals residential properties have been constructed adjacent to the north-eastern boundary. A fire station and a club have been constructed approximately 20m to the south of the site accessed by a road running along the western boundary of the site. Mapping from 1966 shows additional residential housing has been constructed adjacent to the south/eastern boundary of the site. The access road to the west is now labelled Lanthom Road. Edendale House was constructed 20m to the west of the site as revealed in mapping from 1975. Further large-scale residential development was recorded from mapping in 1984, situated 100m east of the site. A large commercial unit was also constructed 75m to the southwest of the site. No significant changes are recorded until mapping from 2010 which recorded the construction of a large commercial Asda store located 30m to the southeast of the site. No significant changes are recorded in the surrounding area till the present day.
- The site is recorded to be underlain by superficial deposits comprising till deposits. The bedrock geology beneath superficial soils are recorded to comprise mudstone, siltstone and sandstone of the Pennine Middle Coal Measures Formation. There are no accessible BGS borehole records within 50m of the site, however a national coal board consultation published during the construction of the Asda superstore 96m to the south notes that shallow seams of coal were recorded at the Asda site.
- The site is recorded to be within a coal mining reporting area but is not within a Development High Risk Area (DHRA) as designated by the Coal Authority (CA). The site is not located within an area of past or future underground coal mining, as such no further assessment is required in regard to coal mining.
- There are no records of BritPits or underground workings within 250m of the site. However, there are 4no. records of surface ground workings associated with graveyards, the closest recorded at 41m to the west of the site.
- The site is in an area where less than 1% of properties are above the action level, as such, radon protection measures will not be required for any future development of the site.
- The superficial geology on-site is recorded to be a Secondary Undifferentiated Aquifer. The bedrock geology on-site is recorded to be a Secondary A Aquifer
- There are no groundwater abstraction licences recorded within 1000m and the site is not within a groundwater protection zone.

- The site is not recorded to be within an area at risk of flooding associated with rivers or sea. The site is not recorded to be within flood zone 2 or flood zone 3.
- The environmental report has numerous entries in relation to historical industrial land use within 250m of the site. The nearest being on-site associated with the former fire station, other local historical industrial land uses include a graveyard, a brewery and a police station.
- The nearest recorded historical tank 138m to the south of the site recorded as an 'unspecified tank'.
- The closest historical energy feature relates to an electricity substation recorded 32m to the southwest of the site dated between 1976 and 1989.
- There are no recorded historical garages or petrol stations within 250m of the site boundary.
- There are no records of active, recent landfills or historical landfills within 500m of the site.
- There are no records of waste exemptions within 250m of the site.
- There are 14no. records of current or recent industrial land use within 250m of the site. The closest being the on-site former community fire station and ambulance station. An electricity substation is recorded to be located 2m to the southwest of the site. The remaining records comprise various commercial shops, electricity substations, and a distribution and haulage company.
- The nearest petrol station is recorded 409m southwest of the site, which is far enough from the site to be considered irrelevant in terms of contamination hazards.
- There are no recorded Licensed Discharges to controlled waters within 250m of the site.

Based on the history of the site, it is considered that there are likely to be a limited depths of made ground associated with the historical site use with locally thicker extents present associated with the historically recorded building footprints. In addition, the reviewed information shows the site was used as a fire station and ambulance station with maintenance of their vehicles likely to be undertaken on site. Thus, there is potential for contamination to be encountered on-site. The specific contaminants of concern are likely to include heavy metals, polyaromatic hydrocarbons (PAHs), total petroleum hydrocarbons, and asbestos.

As the site was a former fire station there is the potential that firefighting foams maybe have been stored on site, and or used in training. Some firefighting foams contain Per- and polyfluoroalkyl substances (PFAS). When mixed with water and discharged, the foam forms an aqueous film that quickly cuts off the oxygen to the fire, cools it, extinguishes the fire, and prevents the fire from relighting. It would be prudent to obtain confirmation from the Fire Service if any foams were used on site and the type. Should this information not be available then the specific contaminants of concern should include testing for PFAS.

3.0 Phase I Conceptual Model

The preceding desk study data has been assessed and a conceptual model produced following current relevant guidance.

Based on the desk study information it is considered that there is the potential for variable thicknesses of made ground to be present on-site related to the historical development of the site. Given the history of the site, the main potential source of contamination have been identified as the on-site presence of a fire station and ambulance station. As such it is considered the risk of significant contamination being present on-site is assessed as low to moderate.

In terms of human health, the primary receptors are end-users of the proposed development and construction workers. The pathways include direct contact with contaminated soil and soil dust, ingestion of contaminated soil and dust and the indoor/outdoor inhalation of ground gas and soil vapour. The risk to end users is assessed as low. The risk to construction workers is considered to be low due to their shorter exposure period and given that risks shall be adequately mitigated by law, specifically the Construction Design Management (CDM) Regulations, 2015.

In terms of risk to human health associated with ground gases, the primary receptors are the proposed end users. There is a potential for a variable depth of made ground associated with the historical development of the site. The reviewed information shows no records of landfills or infilled ground within an influencing distance from the site; with the exception of a graveyard to the west which may pose a very limited source of ground gas. Given the limited identified plausible sources and the cohesive superficial and residual soils which will inhibit gas migration, the risk to the proposed development is considered to be negligible.

In terms of controlled waters, the primary receptor is the Secondary A Aquifer. The site is not within a source protection zone. There are no records of surface or potable abstraction points within 1000m of the site. The primary pathways for contamination would be through infiltration, leaching of potential contaminants and vertical migration to the aquifers. The natural strata beneath the site comprise superficial Till (predominantly cohesive soil) and mudstone, siltstone and sandstone of the Pennine Middle Coal Measures Formation bedrock, both with limited vertical permeability. Despite the likely presence of a limited thickness of made ground and the historic fire station and ambulance station; the overall risk to controlled waters has therefore been assessed as very low.

The Phase I conceptual model is illustrated on the next page.

The Phase I conceptual model is illustrated below.

Human Health		
Source	Pathway	Receptor
General Contaminants including heavy metals, PAHs TPHs, and asbestos	Ingestion and inhalation of contaminated soil and soil dust and direct contact with contaminated soil and soil dust.	End users of the completed development.
General Contaminants including heavy metals, PAHs TPHs, and asbestos	Ingestion and inhalation of contaminated soil and soil dust and direct contact with contaminated soil and soil dust.	Construction workers.
No significant source identified	Indoor and outdoor inhalation of ground gas and soil vapours and explosive potential. Migration pathways inhibited by low permeability cohesive soils	End users and construction workers.
Controlled Waters		
General Contaminants including heavy metals, TPHs, and PAHs	Infiltration and downward migration habited by low permeability cohesive soils.	Secondary A Aquifer (Bedrock)

4.0 Phase II Ground Investigation

4.1 Fieldwork

The ground investigation (including fieldwork, sampling and laboratory analysis) has been designed to identify and assess potential ground related problems and to allow cost-effective solutions to be advised. It has been planned on the basis of the proposed development plan. All fieldwork and soil descriptions were carried out in general accordance with relevant British Standards.

The exploratory holes have been positioned to determine the general ground/groundwater conditions below the site, with representative samples obtained for geotechnical and environmental laboratory analysis. The resultant exploratory hole density is considered to be sufficient to assess the site at this stage.

The ground investigation was undertaken on 20 and 21 October 2022 and comprised a total of eleven window sample boreholes to a maximum depth of 5.00m below existing ground level (begl). The exploratory hole location plan and exploratory hole logs are presented in Appendix B.

4.2 Ground Conditions

Concrete hardstanding was encountered in the majority of exploratory hole locations to a depth of 0.40m below existing ground level (begl). Tarmac hardstanding was encountered in WS01, WS03 and WS11. Topsoil was encountered in WS02 comprising a dark brown clayey sandy topsoil to a depth of 0.25m begl.

Made ground was encountered in all exploratory hole locations to a maximum depth of 0.80m begl (WS03) across the proposed development area and generally consisted of either a black sand and gravel, or light grey gravel (subbase) below the hardstanding underlain by brown or grey slightly gravelly sandy clay, dark reddish-brown sand and gravel, or brown slightly gravelly slightly clayey coarse-grained sand. Gravel is recorded as quartzite, concrete, coal, mudstone, sandstone, and brick. A sandstone cobble was encountered below the tarmac hardstanding in WS01 from 0.15m to 0.40m begl.

The made ground was underlain by superficial glacial till deposits within all exploratory hole locations consisting of variable cohesive and granular deposits to a maximum penetrated depth of 5.00m begl. The cohesive soils generally consisted of soft to stiff brown and orangish brown slightly gravelly slightly sandy clay with occasional soft to stiff light brown and orangish brown slightly silty slightly gravelly sandy clay layers. Gravel consisted of fine to coarse quartzite with occasional sandstone and coal. The granular deposits typically comprised light brown slightly silty slightly clayey coarse-grained sand with occasional layers of brown coarse-grained sand.

Corrected SPT-N60 values within the glacial till deposits were recorded between 7.6 and 17.3 at 1.20m, between 4.3 and 21.7 at 2.00m begl, between 2.2 and 24.9 at 3.00m begl, between 11.9 and 26.0 at 4.00m begl and between 16.3 and 54.2 at 5.00m begl.

Hand shear vanes have been undertaken throughout the cohesive natural Glacial Till deposits and have recorded undrained shear strengths of between 30 and 110 kPa between 0.00m and

1.00m begl, 50 and 100 kPa between 1.00m and 2.00m begl, between 50 to 70 kPa from 2.00m to 3.00m begl with a locally lower value of 55kpa was recorded at 4.60m begl.

4.3 Groundwater

Groundwater ingress was encountered during the investigation in the majority of exploratory hole locations during drilling. A summary of the groundwater strikes are presented in the table below:

Exploratory Hole Location	Depth of groundwater strikes during investigation (m begl)	Depth of groundwater during post investigation monitoring (m begl)
WS01	0.40 (perched)	No Installation
WS02	NR	2.05
WS03	1.20	No Installation
WS04	2.00	No Installation
WS05	3.00	No Installation
WS07	2.35	2.16
WS07	4.00	No Installation
WS08	3.00	No Installation
WS08	4.00	No Installation
WS09	2.50	No Installation
WS09	4.00	No Installation
WS11	2.70	0.93

4.4 Contamination Observations

Visual and olfactory evidence of hydrocarbons contamination was noted within the perched groundwater present in WS01 at 0.40m begl. This is believed to be associated with an existing underground storage tank (UST) located in the local vicinity of borehole WS01. The UST was used to re-fuel ambulances. No further visual or olfactory evidence of potential contamination was observed across the remainder of the site.

4.5 Chemical Analysis

Chemical laboratory analyses were selected to provide the parameters necessary to assess the suitability for the re-use of soils on the site as well as to inform risk assessment for end users and controlled waters. The choice of contamination testing was based on commonly occurring potential contaminants and on-site visual observations of contaminated soils. The chemical analysis results are presented in Appendix C. In summary the following testing has been completed:

- 10no. samples of made ground for a general suite of contaminants -including metals, inorganics, PAHs, TPHs and asbestos.
- 3no. samples of made ground for PFAS.
- 1no. groundwater sample tested for TPHs (within WS01)
- 3no. groundwater samples tested for TPHs, Speciated VOCs and Speciated SVOCs.

4.6 Geotechnical Testing

Geotechnical soils testing has been undertaken as part of the ground investigation to provide the parameters necessary for the budgetary design of the development. The geotechnical test results are presented in Appendix D. In summary the following testing has been completed:

- 3 no. for pH and water-soluble sulphate
- 3 no. for plasticity index
- 2no. for remoulded laboratory California Bearing Ratio (CBR) tests.

5.0 Human Health Risk Assessment (Ground Gas)

Three gas/groundwater monitoring standpipes have been installed in three of the exploratory holes across the site (WS02, WS07 and WS11). Due to the limited thicknesses of made ground the response zones were within in the natural soils.

As the site is proposed for residential end-use (Type B building), the monitoring programme is scheduled to comprise four visits over a minimum two-month period using a GA5000 Multi-Function Gas Analyser.

The results of the ground gas monitoring to date (one round) were assessed using the classification system contained within BS 8485:2015+A1:2019 and CIRIA C665. The classification system uses gas concentrations and recorded flow rates for CH₄ and CO₂ to determine a borehole hazardous gas flow rate (Q_{hg}). Q_{hg} is used to assign a Characteristic Situation (CS) for each borehole, based on Table 2 in BS 8485:2015+A1:2019 and the Q_{hg} has been calculated using the equation below:

$$Q_{hg} = q \left(\frac{C_{hg}}{100} \right)$$

where:

q is the measured flow rate of combined gases from the monitoring standpipe (l/hr)

C_{hg} is the measured hazardous gas concentration (% v/v)

The recorded concentrations of ground gas and flow rate are summarised in the table below:

Borehole	Max Steady Flow	Max. CH ₄ (% v/v)	Max. CO ₂ (% v/v)	CH ₄ Q _{hg} (l/hr)	CO ₂ Q _{hg} (l/hr)	CS
WS02	0.4	0.1	0.6	0.0004	0.0024	1
WS07	0.6	0.1	0.5	0.0006	0.0030	1
WS11	0.1	0.2	2.2	0.0092	0.0012	1

The completed monitoring recorded a maximum carbon dioxide concentration of 2.2% v/v, a maximum methane concentration of 0.2% v/v and a minimum oxygen concentration of 18.3% v/v. Carbon monoxide was recorded in WS11 at a concentration of 3ppm and a maximum Hydrogen sulphide concentration of 1ppm was recorded in WS02 and WS07. A maximum steady flow of 0.6 l/hr was recorded.

A plausible worst case Q_{hg} has also been calculated for carbon dioxide (0.00132 l/hr) and methane (0.0012 l/hr) using the maximum steady flow rate of 0.6 l/hr. The 'worst case' Q_{hg} for carbon dioxide and methane would classify the site as Characteristic Situation 1 (CS2) in accordance with BS8485:2019 and on this basis gas precaution measures would not be required for the proposed development.

The gas risk assessment will be reviewed on completion of the monitoring programme and a separate gas risk addendum will be issued.

The gas monitoring results to date are displayed in Appendix E.

6.0 Human Health Risk Assessment (Soil)

6.1 Introduction

It is understood that current proposals are to provide 51no. apartments over a three-storey retirement living complex with associated carparking, access roads and areas of soft landscaping.

The Phase II investigation works has revealed the presence of Made Ground deposits across the site and visual and olfactory evidence of hydrocarbon contamination as outlined within Section 4.4. As such it is considered that there is a potential risk to end users of the proposed development and construction workers from potential contamination within the Made Ground deposits and hydrocarbon impacted groundwater and soils.

Representative samples of Made Ground and natural strata encountered were collected for further examination and/or potential testing.

The Generic Assessment Criteria (GAC) used by Patrick Parsons are presented in Appendix F. The chemical analysis for this proposal are being compared against the GAC for residential without plant uptake end-use with a soil organic matter (SOM) content of 1%, this is considered to be the most appropriate GAC based on the proposed site end use and the total organic carbon (TOC) recorded within the analysis.

6.2 Risk to End-Users

The chemical analyses of the made ground soils have recorded exceedances for polyaromatic hydrocarbons (PAHs) in WS01 when compared to the GAC for a residential end use.

The recorded exceedances are tabulated below:

Determinant	Location	Result (mg/kg)	GAC (mg/kg)
Benzo(b)fluoranthene	WS01 – 0.50m begl	18	3.90
Benzo(a)pyrene	WS01 – 0.50m begl	23	3.20
Dibenz(a,h)anthracene	WS01 – 0.50m begl	2.5	0.31

All samples were also tested for the presence of asbestos. Asbestos was detected in one sample from WS08 (0.30m begl), and subsequent quantification of the sample returned a <0.001% total mass of sample. Based on the recorded quantification result of <0.001% by mass this is therefore considered to be a rogue fibre or misidentification and is not considered representative of widespread significant asbestos contamination nor to represent a risk to end-users.

The exceedances recorded within WS01 are located along the boundary between soft landscaping and hard standing and therefore a viable pathway will remain. The elevated soils in this area will likely be removed as part of the UST removal and validation and therefore will remove the source in the source-pathway-receptor linkage. However, it is considered that 300mm of a suitable clean capping should be included in this area as an additional measure.

Full results of chemical analysis are presented in Appendix C.

6.3 Risk to Construction Workers

During any future construction works that take place on site, risks associated with contaminated soils must be adequately mitigated by law, specifically the Construction Design Management (CDM) Regulations, 2015. Potential acute risks resulting from short term exposure to contamination by construction / maintenance workers involved with the proposed development and future intrusive maintenance works (i.e. repairing services) cannot be assessed using the aforementioned GAC because they relate to the long-term (chronic) risk.

In accordance with CDM, potential risks to human health and the environment from construction activities shall be appropriately identified and all necessary steps taken to eliminate/manage that risk with the use of appropriate risk assessments and safe systems of work. It has been assumed that any future construction works on-site will be undertaken in compliance with these requirements and therefore construction workers involved in any future development at the site and intrusive maintenance workers (e.g. for repair of underground services) have been discounted as a human receptor in this report.

However, it is recommended that the laboratory test results are included in the consideration of site-specific risk assessment for the ground workers that will be exposed to the soils beneath the site.

7.0 Controlled Waters Risk Assessment

7.1 Risk Assessment

The ground investigation identified contaminated groundwater which was recorded within WS01 at 0.40m begl. The groundwater had a strong hydrocarbon odour and an oil like sheen was present on the surface. This is thought to be associated with a leak from an underground fuel storage tank used to fuel ambulances. This groundwater is assumed to be perched within the shallow made ground as it was not identified in other exploratory locations at this depth. The deeper ground water withing the superficial soils was not recorded to have a hydrocarbon odour nor evidence of hydrocarbon contamination should as a surface sheen. As such it is considered that the identified hydrocarbons are localised to the vicinity of WS01 and not in continuity with the deeper groundwater within the superficial soils.

A sample of the groundwater from WS01 was obtained and scheduled for TPH CWG. The results have been assessed against the World Health Organization (WHO) guide values for TPH CWG fractions in drinking water and the England and Wales Drinking Water Standards (EWDWS). Recorded exceedances are outlined in the table below.

Location	Determinand	WHO (µg/l)	EWDWS (µg/l)	Exceedance (µg/l)
WS01 (0.40m begl)	TPH Aliphatic >C10 – C12	300	1	2900
	TPH Aliphatic >C10 – C12		1	15000
	TPH Aromatic >C10 – C12	90	1	440
	TPH Aromatic >C12 – C16		1	8800
	TPH Aromatic >C16 – C21		1	8900
	TPH Aromatic >C21 – C35		1	1700

The site is underlain by Secondary A Aquifer (Bedrock Geology) and Secondary Undifferentiated Aquifer (Superficial Deposits); however, no abstraction licenses are recorded within 1.00km of the site. Additionally, the site is not within a source protection zone and the shallow groundwater within the superficial soils beneath the site is not considered to be a significant receptor as it is highly unlikely that this would ever be utilised for potable abstraction purposes given the historical land-uses of the site and surrounding area resulting in this being a degraded water body. No evidence of hydrocarbons were noted within the deeper groundwater within the superficial soils. On this basis, the shallow groundwater should be considered as a potential pathway for contaminant migration rather than a receptor and therefore the risks are considered to be low and no further assessment is considered necessary.

It is anticipated that the Secondary A groundwater aquifer in the deeper Pennine Middle Coal Measures will be of a significant depth and consequently it is considered unlikely that contamination would migrate vertically to impact the deeper aquifer, with site sourced contamination likely to be “intercepted” by the shallow groundwater body in the Made Ground and superficial deposits. On this basis, the risk to groundwater in the Secondary A Aquifer is considered to be low and no further assessment or remedial action are considered necessary in relation to this receptor.

As such, the primary controlled waters pollutant linkage that requires further assessment is the migration of contamination through shallow groundwater potentially causing impact to

the River Alt which is approximately 250m east of the site and an unnamed watercourse approximately 166m south east of the site.

Three samples of shallow groundwater were obtained after the initial phase of ground investigation from WS02, WS07 and WS11 and were scheduled for a suite of analyses comprising TPH CWG, Speciated VOCs and Speciated SVOCs. The results have been assessed against Statutory and Non-Statutory Environmental Quality Standards, where available, for freshwater given the potential risk to surface water receptors. No determinands recorded above the detection limits and therefore the risk to surface waters is also considered to be negligible.

Given the relative insensitivity of the shallow superficial aquifer, and the lack of hydrocarbon contamination recorded within it, it is not considered that the site would pose a risk to the bedrock aquifer nor surface waters and as such the overall risk to controlled waters is very low.

8.0 Construction Materials Risk Assessment

8.1 Water Supply Pipes

The chemical analysis results have been compared against UK Water Industry Research (UKWIR) Contamination Thresholds for sub-surface water pipes. Based on the chemical analysis completed which has highlighted elevated hydrocarbons, it is considered that the site will require PVC or barrier pipe not PE water pipes, subject to confirmation from the utility provider.

Should any sources of hydrocarbons be excavated and removed, and subject to further testing to confirm that there are no remaining deleterious hydrocarbons then PE/PVC water pipes may be suitable where laid within the natural soils.

8.2 Buried Concrete

Based on the recorded water-soluble sulphate (<400mg/l) and pH (7.5-11.7) within the made ground and natural soils below the site (assuming mobile groundwater conditions) may be assumed as DS-1 and the ACEC Class as AC-1 (in accordance with BRE Special Digest 1 (2005)). This equates to a DC-1 classification and as such in accordance with BS 8500 GEN1 / RC25/30 concrete would be suitable for unreinforced and reinforced concrete.

9.0 Phase II Conceptual Model

The preceding information has been used to construct the conceptual model.

The chemical analysis has identified exceedances against the GACs for a residential end-use without plant uptake for several PAHs within WS01 which may pose a potential risk to end-users. The presence of asbestos fibres was recorded within WS08 at 0.30m begl with a total percentage of sample mass of <0.001%. As such it is considered that this is due to a rogue fibre or misidentification and does not represent the material as a whole and is not considered representative of widespread significant asbestos contamination nor to represent a risk to end-users. The identified exceedances of PAHs are located beneath the boundary of proposed hardstanding and proposed soft landscaped gardens. However, the soils in the vicinity of WS01 will likely be removed as part of the UST removal and validation which will ensure that the source is removed. It is As clean imported topsoil will be required to form the areas of soft landscaping it is recommended that 300mm of clean capping is placed as an additional measure for any residual elevated soils. It is therefore considered that a limited source will be present and will therefore break the source-pathway-receptor linkage. It is therefore considered that the risk to end-users of the site will be very low.

In terms of risk to human health associated with ground gases, the primary receptors are the end users of the residential development, and the main pathway is inhalation. However, it is considered that the risk to end users is negligible due to the lack of any significant ground gas concentrations and low flow rates at this stage of the monitoring programme. It is therefore considered that at this stage no gas protection measures will be required for the proposed development. A final gas risk assessment will be produced on completion of the monitoring programme.

In terms of controlled waters, no highly sensitive receptors have been recorded on site with bedrock geology recorded as Secondary A Aquifer and the Superficial Deposits recorded as Secondary (undifferentiated) Aquifer, additionally the site is not within a source protection zone and no abstraction licenses are recorded within 1.00km of the site. Although a potential source has been identified on site (on-site UST) and within locally perched groundwater in the vicinity of the tank, no further evidence of TPH contamination has been recorded within the shallow groundwater samples collected on subsequent monitoring visits. Therefore, the testing results indicate that whilst shallow contamination exists in the vicinity of the underground storage tank that a significant pathway does not exist to the shallow superficial groundwater and in turn the deeper bedrock aquifer. As noted above, the impacted soils will be removed as part of the tank removal and validation exercise thus removing the source and further reducing the risk. As such it is considered the risk to controlled waters will be negligible.

The Phase II conceptual model is illustrated below.

Human Health		
Source	Pathway	Receptor
Isolated exceedances of GAC for PAHs in WS01 (0.50m begl).	Indoor and outdoor inhalation of ground gas and soil vapours, the ingestion of contaminated soil and soil dust and direct contact with contaminated soil and soil dust	End users of the completed residential development
	Indoor and outdoor inhalation of ground gas and soil vapours, the ingestion of contaminated soil and soil dust and direct contact with contaminated soil and soil dust	Construction workers
No elevated ground gas concentrations identified to date. (Gas monitoring not completed)	Inhalation	End users of the completed residential development
Controlled Waters		
Underground Fuel Storage Tank (TPHs)	Lateral migration via drainage routes / trenches No definitive pathway identified through shallow groundwater.	River Alt and unnamed watercourse (Surface water) Secondary Undifferentiated Aquifer (Superficial Geology)
	Contamination likely to be intercepted by shallow groundwater in superficial deposits, limiting vertical migration to deeper groundwater in Secondary A Aquifer.	Secondary A Aquifer (Bedrock geology)

10.0 Remediation and Validation

10.1 Protection of End-Users - Soils

Laboratory analysis has confirmed that soil samples collected within WS01 were recorded above their respective GACs for a residential without plant uptake end-use for PAHs. The majority of the site will comprise the building footprints and surface hardstanding, which will act to break the pathway in the source-pathway-receptor linkage. However, the area where exceedances were recorded (WS01) is located on the boundary between proposed hardstanding and proposed soft landscaped gardens. It is considered that the elevated soils will be removed as part of the underground storage tank removal and validation and as such the source will have been removed, and subsequently the risk to end-users in regard to human health will be low.

It is recommended that the underground storage tank located in the vicinity of WS01 is removed and validated as part of the ground works as outlined in section 10.7. The remediation will involve removal of the tank and any impacted soils, removing the source and further reducing the risk to end-users.

While the source removal and restriction of the plausible pathways by hardstanding and floor slabs will result in a negligible risk to end-users the near surface soils are not considered to be suitable as a surface cover in areas of soft landscaping and an appropriate thickness of subsoil / topsoil will be required in these areas. It is considered as a precautionary measure that the proposed garden area should adopt a subsoil/topsoil thickness of 300mm to act as a capping layer and further reduce the risk to end-users.

10.2 Protection of End-Users - Ground Gas

Based on the results of the ground gas monitoring to date the site is within the limits for a Characteristic Situation 1 (CS1) classification and therefore no gas protection measures will be required at this stage, subject to completion of the full monitoring programme. A separate addendum gas risk assessment will be issued following completion of the full monitoring programme.

10.3 Protection of Construction Workers

Specific remediation to protect construction workers is not required. However, during future construction works on site, risks associated with the identified impacted soils must be adequately mitigated by law, specifically the Construction Design Management (CDM) Regulations, 2015. In accordance with CDM, potential risks to human health and the environment from construction activities shall be appropriately identified and all necessary steps are taken to eliminate/manage that risk with the use of appropriate risk assessments and safe systems of work, including using suitable personal protective equipment (PPE) in line with the ground workers risk assessment.

10.4 Protection of Controlled Waters

The site is not considered to pose a risk to controlled waters. Therefore, no remedial action is recommended.

10.5 Protection of Construction Materials

Based on the site history and the chemical analysis completed, it is considered that the site will be suitable for standard PVC or barrier pipe but not PE water pipes subject to confirmation from the utility provider.

In accordance with BS 8500:2016 GEN1 concrete would be suitable required or RC25/30 if reinforced.

10.6 Removal of Underground Storage Tank and Validation

The recorded underground storage tank (UST) (fuel) along with any fuel / oil interceptors and associated pipework or infrastructure should be removed as part of the development. This should be undertaken by an appropriately qualified contractor. Validation of the successful removal of the UST should be undertaken to demonstrate that any associated contamination has been removed and thus any residual risk to human-health remediated.

During the UST removal any soils that present with visual or olfactory evidence of hydrocarbon contamination should be over excavated and removed from site. Should these require temporary storage on site, then they should be placed on plastic sheeting and covered.

The above remedial measures above should be independently validated to confirm that they have been completed in line with the recommendations. Validation of the successful removal should comprise sampling of the base and walls of the resultant excavation on a 1 per 5m linear length of the walls of the excavation and 1 per 25m² of the base of the excavation for testing for petroleum hydrocarbons and comparison with the relevant GACs. A validation report of this exercise should be produced on completion.

It is considered that any materials excavated which are impacted with hydrocarbons will require disposal as hazardous waste.

10.7 Remediation – Clean capping

It is considered based on the levels of the exceedances of the relevant GACs that 300mm of clean capping in the proposed central communal garden area would be the most appropriate remedial measure sufficient to break the source-pathway-receptor linkage and thus remove the risk to human-health.

10.8 Clean Capping Formation

The capping layer in the area of central communal gardens may be comprised of subsoil and a minimum of 150mm of topsoil as a growing medium if required; however, both imported material types will require validations that they are chemically suitable.

10.9 Capping Validation

The above remedial measures above should be independently validated to confirm that they have been completed in line with the recommendations. This will include:

- Capping validation report which will include a photographic record confirming the required thickness of capping has been placed.

- Testing of the imported materials at the rates described below and comparison to the relevant GACs to demonstrate that the soils are suitable for use.

10.10 Imported Material

Topsoil was encountered in WS02 as part of a small area of grass in front of the ambulance station. The chemical analysis of the topsoil has not identified any exceedances when compared to the GACs for a residential with plant uptake end-use and therefore is suitable for re-use within the proposed development. However, additional topsoil will likely be required and will need to be chemically validated to ensure it is suitable for a residential with plant uptake end-use. A minimum 150mm of topsoil, needed as a growing medium, will be required for all soft landscaped areas. All imported topsoil should be chemically validated at the rates shown in the table below:

Source and Validation Rate	Chemical Analysis Suite		
	General Soil Suite	Asbestos	Hydrocarbons (TPHCWG)
Greenfield Source 1 per 150m ³	✓		
Brownfield Source 1 per 100m ³	✓	✓	✓
Generated Soil 1 per 50m ³	✓	✓	✓

The results of the chemical validation should be compared to the GACs for a residential without plant uptake end-use as included in Appendix G and should comply with BS3882 specification for topsoil.

10.11 Re-use of materials

Re-use of excavated materials within the site will require materials management in accordance with a remediation strategy and under the CL:AIRE Definition of Waste Code of Practice (DoW CoP), V2, 2011. A Materials Management Plan (MMP) facilitates the legal reuse of excavated materials generated by the project in accordance with the requirements of the DoW CoP without the need for Environmental Permits or exemptions. However, an Environmental Permit or Waste Exemption may represent a viable option depending on the waste code assigned to the material and the maximum quantity proposed for re-use.

10.12 Waste Disposal Classification

The results of the chemical analysis have been subject to an online Hazwaste Assessment. The online Hazwaste assessment has confirmed out of the ten samples tested eight have been classified as non-hazardous and two samples (WS01 at 0.50m and WS04 at 0.40m) are classified as hazardous waste due to HP3 – Flammable, HP7- Carcinogenic, HP11 – Mutagenic and HP8 – Corrosive. As such, it is considered that should made ground soils require removal from these areas of the site they may be classified as hazardous waste. The remaining areas of the site should be classified as non-hazardous and may be suitable for disposal to an inert landfill, subject to confirmation from the receiving landfill site.

10.13 Unexpected Contamination

Should any unexpected or previously unidentified contamination be identified or suspected during construction then reference back to the office should be made for further advice.

11.0 Geotechnical Appraisal

11.1 Introduction

It is understood that current proposals are to provide 51no. apartments over a three-storey retirement living complex with associated carparking, access roads and areas of soft landscaping

11.2 Excavation Conditions

Shallow excavations undertaken in the soils encountered during the ground investigation should be easily achieved using conventional hydraulic equipment. The former building floor slab is currently in-situ and will be required to be removed as part of the development works. It is likely that foundations and subsurface structures will be present in this area.

Trench support may be required where deeper made ground soils were encountered or any soft or loose cohesive and granular natural strata. Full temporary works support should be provided to any excavation where person entry is required.

Groundwater at shallow depth was recorded across the site at depths of between 1.20m begl and 4.00m begl, although generally >2.0m depth. Ground water is likely to be encountered in any excavations below 2.00m begl. Should groundwater be encountered upon excavation then foundations should be constructed as soon as possible after excavation to reduce softening or loosening of the formation horizon.

11.3 Foundations

The ground investigation has revealed the presence of variable strength superficial soils; however, sufficiently competent natural soils are present at acceptable foundation depths. As such a traditional pad and/or strip / trench fill foundation may be suitable for the proposed development providing excessive loads are not anticipated. An allowable bearing pressure of 100kN/m² should be achievable within the underlying minimum firm to stiff cohesive superficial soils with settlements not exceeding 25mm. Foundations should be deepened to extend through any made ground, soft or loose superficial soils to at least 200mm into minimum stiff natural/residual soils. The typical depths of foundations will be in the region of approximately 1.50m to 2.50m begl depth.

Should an increased allowable bearing capacity be required then consideration to a non-traditional foundation solution, such as a scheme of piles, will be required. Should a non-traditional foundation solution be considered then additional investigation to provide the necessary design parameters may be required.

The near surface soils are of low volume change potential and as such, minimum foundation depths of 0.75m begl should be adopted. Mature trees have been recorded adjacent to the southern site boundary. Deepening of foundations due to tree influence may be required. A tree survey of existing trees should be undertaken, and tree influence contours should be constructed during detailed foundation design for any trees to be retained, removed as well as new plantings. Foundations should be deepened as necessary to account for tree influence. Heave precautions will be required where the depth of tree influence exceeds 1.50m begl.

Based on the recorded ground conditions, it is considered that the use of a monolithic reinforced ground bearing floor slabs for the proposed development will likely be adopted. Based on the depths of made ground encountered should the proposed formation horizon level of the floor slab not be designed to bear upon the natural soils, then the made ground should be over-excavated and replaced with a well compacted well graded granular material to form a suitable stone blanket formation horizon for the casting of the slab to ensure cracking does not occur. This is subject to the requirement for gas protection measures, which will be confirmed in a separate gas risk assessment addendum.

11.4 New Access Roads and Car Parking

The proposed development includes parking areas and access roads. Laboratory CBR testing has been carried out in the locations of WS03 and WS08. The results are tabulated below:

Location	Depth (m begl)	Result (%)
WS03	0.50	1.6
WS08	0.60	1.2

Based on the above results the near-surface materials are likely to provide minimum CBR values of 1.2% respectively. As such a design CBR value of <2% should be used. In-situ CBR testing should be undertaken to confirm these results.

11.5 Soakaway Drainage

Based on the extent of cohesive natural strata across the site, as well as the shallow groundwater encountered, it is considered that a soakaway drainage strategy will not be suitable for the proposed development.

11.6 Slope Stability

Based on the current site gradients it is considered are unlikely that the site will present any slope stability issues.

11.7 Retaining Structures

Given the existing topography in the areas of proposed development it is considered that no significant retaining structures are likely to be required. Should retaining structures be required they should be Engineer designed.

12.0 Further Investigation

Based on the ground conditions encountered in the site investigation it is considered that following further works are required:

- The ground gas monitoring programme should be completed, and a final gas risk assessment undertaken.
- Underground Storage Tank removal and validation.
- Should a non-traditional foundation solution be considered further investigation to inform the required design parameters may be necessary.

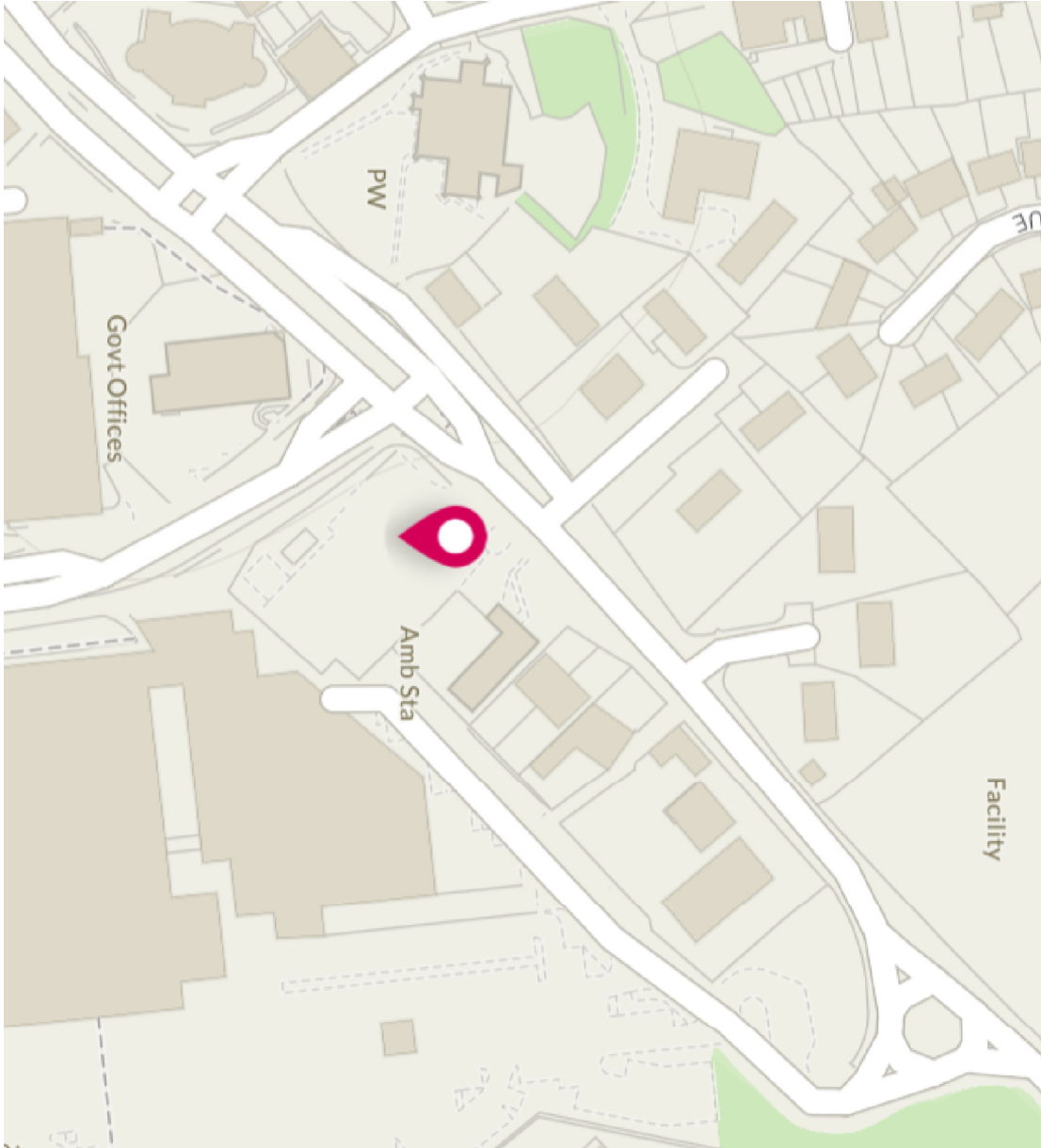
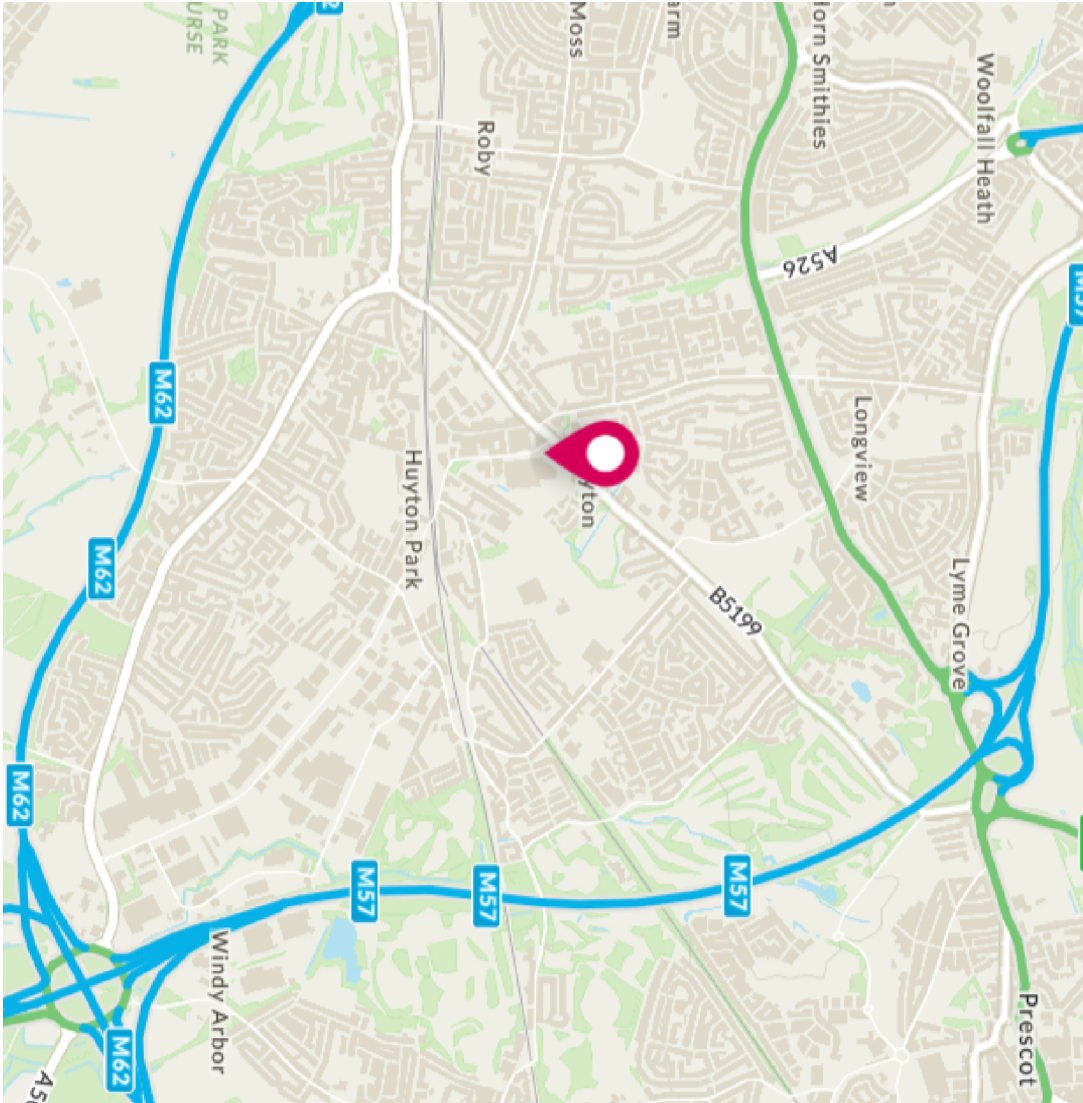
Following review of this report a copy of it should be submitted to the Local Authority planning department prior to any development works as this is often a condition of planning.



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Appendix A

Figures



Rev.	Amendments	Date	Dwg	CHK
------	------------	------	-----	-----

Revisions



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Client
McCarthy & Stone

Project
Huyton Lane, Liverpool

Drawing
Site Location Plan

Scales	NTS	A1 original size	A1
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Date	14/07/2022	Drawn by	HA	Checked by	JPB
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Status	Draft
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Drawing No.	HLLPPC00XXDR-G-0701	Rev.	0
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- Notes:
- All drawings are subject to Planning and Building Control consent.
 - The details shown are for design intent purposes only and are subject to further design development with suppliers and sub-contractors
 - Proposals subject to consultation and approval from Local Authority Building Control or an Approved Inspector
 - All setting out dimensions should be checked on-site prior to construction and any discrepancies and/or omissions should be reported to the Architect immediately



Rev.	Date	Details	Drawn	Chkd	Rev.	Date	Details	Drawn	Chkd
------	------	---------	-------	------	------	------	---------	-------	------

Drawn By:
AL
Date:
Dec22
Checked By:
MA
Date:

Project No:
22053
Scale:
1:500 @A3
Dwg No:
1002
Rev:

Issued for:

Project/Client:
22053
Huyton Lane, Huyton
McCarthy & Stone

Drawing:
Proposed Site Plan

BrightSPACE
architects

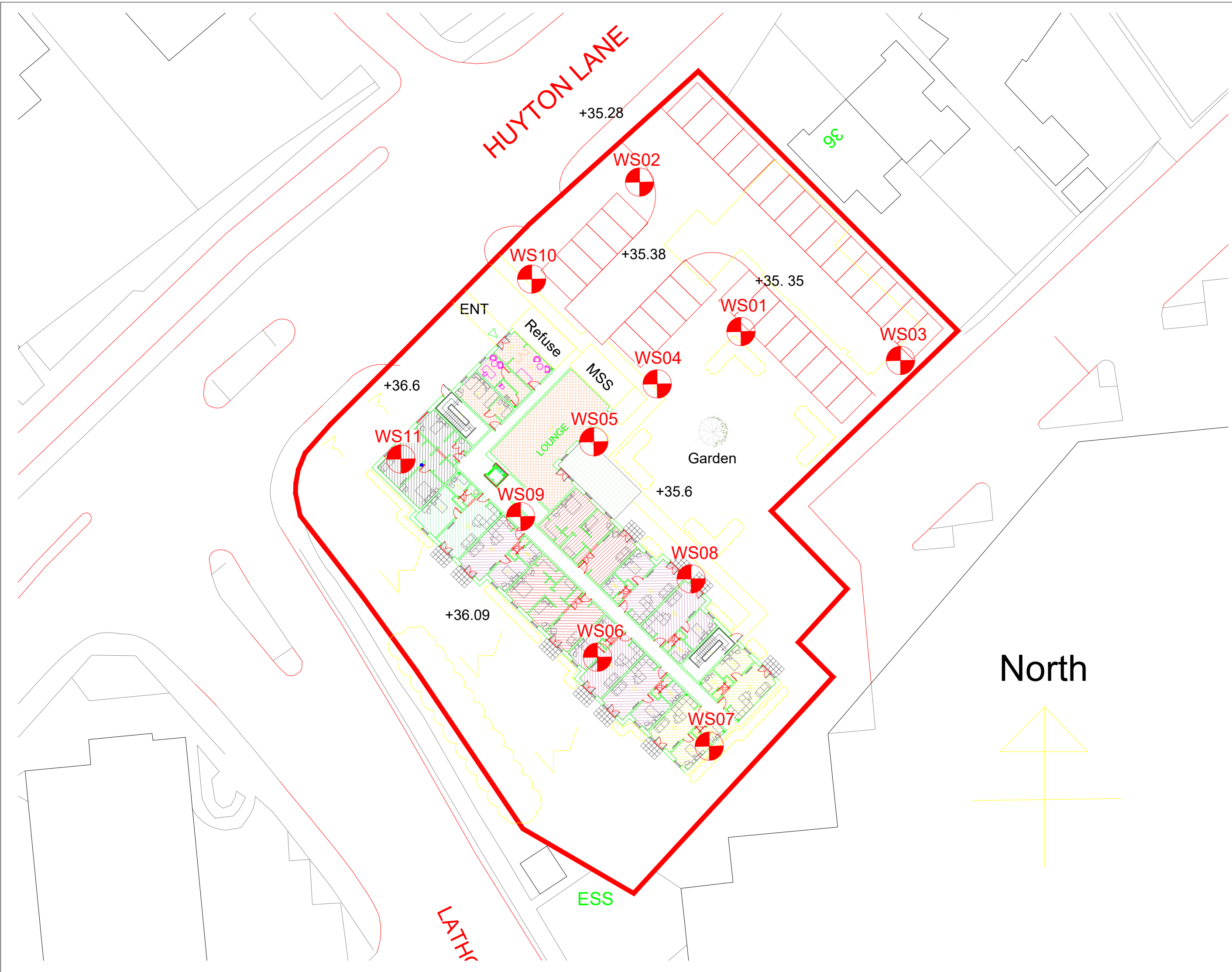
27 Glasshouse Studios, Fryern Court Road, Fordingbridge, Hampshire, SP6 1QX
T: (01425) 655806
www.brightspacearchitects.com
© BrightSpace Architects Ltd. Contractors must work only to figured dimensions which are to be checked on site.
Registered Office: 27 Glasshouse Studios, Fryern Court Road, Fordingbridge, Hants, SP6 1QX. Registered Number: 07090908



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Appendix B

Exploratory Hole Location Plan and Logs



GENERAL NOTES

1.1. THIS DRAWING IS COPYRIGHT AND SHOULD NOT BE REPRODUCED IN WHOLE OR PART WITHOUT THE WRITTEN CONSENT OF PATRICK PARSONS LTD.

1.2. DO NOT SCALE FROM THIS DRAWING.

Rev.	Amendments	Date	Drg	Chg
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Revisions



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Client
McCarthy Stone

Project
10891 - Huyton Lane

Drawing

Exploratory Hole Location Plan

Scales NTS At original size A1

Date	5/12/2022	Drawn by	Checked by
		HA	JPB

Status **Draft**

Drawing No. HLL-PPC-00-XX-DR-G-704 Rev. 1

				Borehole Log				Borehole No. WS01 Sheet 1 of 1	
Project Name: Huyton Lane				Project No. 10891		Co-ords: 344405E - 391131N		Hole Type WS	
Location: Liverpool				Level:		Scale 1:25		Logged By RA	
Client: McCarthy Stone				Dates: 20/10/2022					

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.15		 MADE GROUND: Tarmac		
							 MADE GROUND: Sandstone cobble		
		0.40	ES		0.40		 MADE GROUND: Wet black sandy gravel. Gravel is fine to coarse angular to subrounded concrete and quartzite. (Strong TPH odour) End of Borehole at 0.60m		
		0.50	ES		0.60				

Remarks

1) Borehole location CAT scanned prior to commencement of drilling. 2) Materials recovered as wet from 0.40m to 0.60m begl. 3) Borehole backfilled with arisings upon completion. 4) Borehole terminated at 0.60m begl due to ingress of grossly contaminated groundwater.



Borehole Log

Borehole No.

WS02

Sheet 1 of 1

Project Name: Huyton Lane

Project No.
10891

Co-ords: 344393E - 391149N

Hole Type
WS

Location: Liverpool

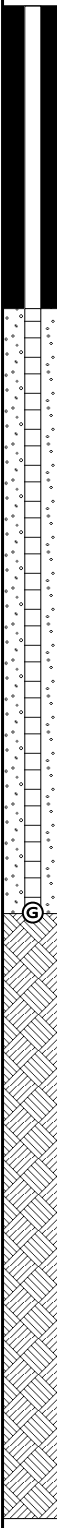
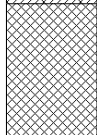
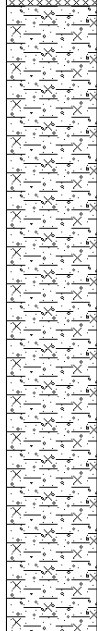
Level:

Scale
1:25

Client: McCarthy Stone

Dates: 20/10/2022

Logged By
RA

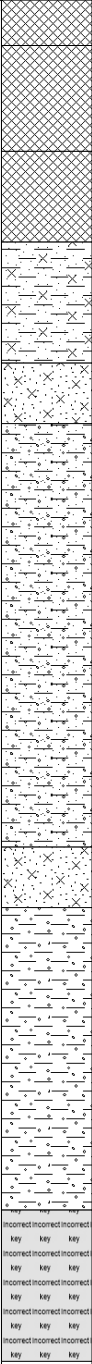
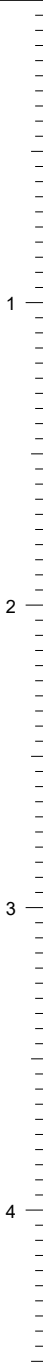
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.25			Dark brown slightly clayey sandy TOPSOIL.	1
		0.60	ES		0.70			MADE GROUND: Soft dark orangish brown slightly gravelly slightly sandy clay. Gravel is fine to coarse angular to subrounded quartzite, coal, sandstone and occasional brick.	
		1.20	SPT	N=8 (1,2/2,2,1,3)				Firm orangish brown slightly silty slightly gravelly sandy CLAY. Gravel is subrounded to subangular quartzite, coal and mudstone. (GLACIAL TILL)	2
		1.70	D						
		1.80		HVP=38					
		2.00	ES						
		2.00	SPT	N=12 (2,2/3,2,4,3)					
		2.50		HVP=50					3
		3.00	SPT	N=23 (3,4/5,5,6,7)	2.80			Stiff orangish brown slightly gravelly slightly sandy CLAY. Gravel is fine to medium subrounded to subangular quartzite. (GLACIAL TILL)	
		4.00	SPT	N=23 (4,4/5,6,6,6)					
		4.60		HVP=55					
		5.00	SPT	N=24 (4,3/5,5,7,7)	5.00			End of Borehole at 5.00m	5

Remarks

1) Borehole location CAT scanned prior to commencement of drilling. 2) Groundwater not encountered during drilling. 3) Soil-gas and groundwater monitoring well installed upon completion.



				Borehole Log				Borehole No. WS03 Sheet 1 of 1	
Project Name: Huyton Lane				Project No. 10891		Co-ords: 344423E - 391127N		Hole Type WS	
Location: Liverpool				Level:		Scale 1:25		Logged By RA	
Client: McCarthy Stone				Dates: 20/10/2022					

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.15		MADE GROUND: Tarmac		
		0.50	B		0.50		MADE GROUND: Dark reddish brown sand and gravel. Gravel is fine to coarse angular to subrounded brick, concrete, concrete cobble, brick cobble and quartzite.		
					0.80		MADE GROUND: Brown slightly gravelly slightly clayey sand with occasional rootlets. Gravel is fine to medium quartzite and brick.		
							Soft light brown mottled orange slightly silty very sandy CLAY. (GLACIAL TILL)		
		1.20	SPT	N=16 (2,2/3,3,4,6)	1.20		Loose wet orangish brown very silty medium grained SAND. (GLACIAL TILL) Stiff brown slightly gravelly slightly sandy CLAY. Gravel is fine to medium subrounded to subangular quartzite. (GLACIAL TILL)		
		1.40			1.40				
		1.90					Becoming firm at 2.00m begl.		
		2.00	SPT	HVP=110 N=17 (2,3/3,4,4,6)					
		2.50							
					2.80				
3.00	SPT	N=9 (3,3/2,2,3,2)	3.00		Light brown slightly silty coarse grained SAND. (GLACIAL TILL)				
					Firm to stiff brown mottled grey slightly gravelly CLAY. Gravel is fine to medium subrounded to subangular quartzite. (GLACIAL TILL)				
			4.00		No Recovery				
			4.50		End of Borehole at 4.50m				

Remarks

1) Borehole location CAT scanned prior to commencement of drilling. 2) Materials recovered as wet at 2.00m begl. 3) Borehole backfilled with arisings upon completion.



Borehole Log

Borehole No.

WS04

Sheet 1 of 1

Project Name: Huyton Lane

Project No.
10891

Co-ords: 344396E - 391125N

Hole Type
WS

Location: Liverpool

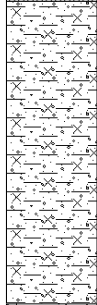
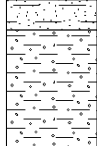
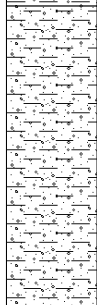
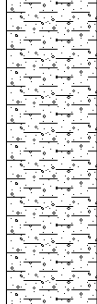
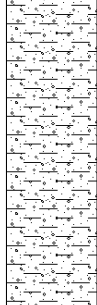
Level:

Scale
1:25

Client: McCarthy Stone

Dates: 21/10/2022

Logged By
RA

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.25			CONCRETE	
		0.40	ES		0.50			MADE GROUND: Brown coarse grained sand and gravel. Gravel is fine to coarse angular to subrounded concrete, brick and quartzite.	
		1.20 1.20 1.30	SPT D	HVP=65 N=8 (1,2/2,2,2,2)	1.50 1.60			Soft becoming firm orangish brown slightly gravelly slightly silty sandy CLAY. Gravel is fine subrounded to subangular quartzite and occasional coal. (GLACIAL TILL)	1
		1.90 2.00	ES SPT	N=14 (2,5/3,4,3,4)	2.00			Orangish brown clayey coarse grained SAND. (GLACIAL TILL) Firm brown mottled grey slightly gravelly CLAY. Gravel is fine to coarse rounded to subangular quartzite. (GLACIAL TILL)	2
		2.90 3.00	SPT	HVP=80 N=19 (2,3/4,4,5,6)				Stiff wet slightly sandy slightly gravelly CLAY. Gravel is fine to medium subrounded to subangular quartzite. (GLACIAL TILL)	3
		3.70		HVP=70					
		4.00	SPT	N=18 (3,3/3,4,5,6)					4
		5.00	SPT	N=20 (3,3/4,4,6,6)	5.00				
								End of Borehole at 5.00m	5

Remarks

- 1) Borehole location CAT scanned prior to commencement of drilling. 2) Materials recovered as wet from 1.20m to 1.40m begl.
- 3) Borehole backfilled with arisings upon completion.



Borehole Log

Borehole No.

WS05

Sheet 1 of 1

Project Name: Huyton Lane

Project No.
10891

Co-ords: 344390E - 391119N

Hole Type
WS

Location: Liverpool

Level:

Scale
1:25

Client: McCarthy Stone

Dates: 21/10/2022

Logged By
RA

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20			CONCRETE	
					0.30			MADE GROUND: Light grey gravel. Gravel is angular to subrounded concrete.	
		0.40	ES		0.45			MADE GROUND: Orangish brown slightly gravelly sandy clay. Gravel is fine to coarse subrounded to subangular brick and quartzite.	
					0.70			MADE GROUND: Brown slightly gravelly very sandy clay. Gravel is fine subrounded to subangular coal, brick and quartzite.	
								Firm orangish brown slightly gravelly slightly sandy CLAY. Gravel is fine to coarse subrounded to subangular quartzite. (GLACIAL TILL)	1
		1.20	SPT	N=9 (2,2/2,2,2,3)	1.20			Firm to stiff brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse rounded to subangular quartzite. (GLACIAL TILL)	
		1.80		HVP=86					
		2.00	SPT	N=20 (3,3/4,4,6,6)					2
		2.80		HVP=100					
		3.00	SPT	N=7 (3,3/2,2,1,2)	3.00			Soft to firm wet brown slightly gravelly silty very sandy CLAY. Gravel is fine to medium subrounded to subangular quartzite. (GLACIAL TILL)	3
					3.40			Wet brown very clayey coarse grained SAND. (GLACIAL TILL)	
		4.00	SPT	N=11 (2,3/2,3,3,3)	4.00			Firm becoming stiff wet slightly sandy slightly gravelly CLAY. Gravel is fine to medium subrounded to subangular quartzite. (GLACIAL TILL)	4
		5.00	SPT	N=20 (5,4/4,5,6,5)	5.00			End of Borehole at 5.00m	5

Remarks

- 1) Borehole location CAT scanned prior to commencement of drilling.
- 2) Materials recovered as wet from 3.00m to 4.50m begl.
- 3) Borehole backfilled with arisings upon completion.
- 4) Groundwater level of 1.57m begl immediately after drilling.



Borehole Log

Borehole No.

WS07

Sheet 1 of 1

Project Name: Huyton Lane

Project No.
10891

Co-ords: 344399E - 391089N

Hole Type
WS

Location: Liverpool

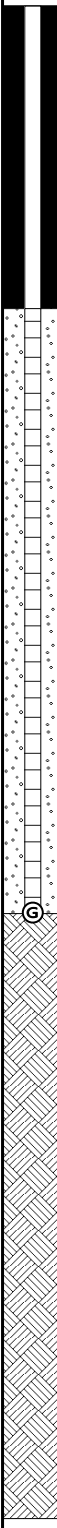
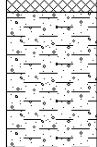
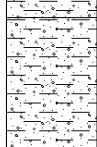
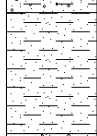
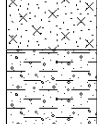
Level:

Scale
1:25

Client: McCarthy Stone

Dates: 21/10/2022

Logged By
RA

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20			CONCRETE	
					0.30			MADE GROUND: Light grey gravel. Gravel is angular to subrounded concrete.	
					0.50			MADE GROUND: Black sand and gravel. Gravel is angular to subrounded concrete.	
								Firm brownish orange slightly gravelly sandy CLAY. Gravel is fine to coarse subrounded to subangular quartzite and occasional coal. (GLACIAL TILL)	
		1.20	SPT	N=12 (2,3/3,2,3,4)	1.00			Firm brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is fine to medium subrounded to subangular quartzite. (GLACIAL TILL)	1
		1.50	ES						
		1.60		HVP=60					
					1.80			Firm damp brown very sandy CLAY. (GLACIAL TILL)	2
		2.00	SPT	N=11 (2,2/2,2,3,4)	2.20			Stiff brown slightly gravelly slightly sandy CLAY. Gravel is fine subrounded to subangular quartzite. (GLACIAL TILL)	
					2.35			Wet brown coarse grained SAND. (GLACIAL TILL)	
					2.40			Firm brown slightly gravelly slightly sandy CLAY. Gravel is fine subrounded to subangular quartzite. (GLACIAL TILL)	
		2.90		HVP=60					
		3.00	SPT	N=7 (1,2/1,2,1,3)					3
		3.50		HVP=50					
		4.00	SPT	N=11 (2,3/3,2,3,3)	4.00			Wet brown coarse grained silty SAND. (GLACIAL TILL)	4
					4.30			Firm brown slightly sandy slightly gravelly CLAY. Gravel is fine subrounded quartzite. (GLACIAL TILL)	
		5.00	SPT	N=16 (3,4/4,3,4,5)	5.00			End of Borehole at 5.00m	5

Remarks

1) Borehole location CAT scanned prior to commencement of drilling. 2) Materials recovered as wet from 2.35m to 2.40m begl and 4.00m to 4.30m begl. 3) Soil-gas and groundwater monitoring well installed upon completion.



Borehole Log

Borehole No.

WS08

Sheet 1 of 1

Project Name: Huyton Lane

Project No.
10891

Co-ords: 344402E - 391104N

Hole Type
WS

Location: Liverpool

Level:

Scale
1:25

Client: McCarthy Stone

Dates: 21/10/2022

Logged By
RA

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
								CONCRETE	
		0.30	ES		0.25			MADE GROUND: Black sand and gravel. Gravel is angular to subrounded concrete and quartzite,.	
		0.50	ES		0.50			MADE GROUND: Firm grey slightly gravelly sandy clay. Gravel is fine to coarse subrounded to subangular concrete and quartzite.	
		0.60	B		0.70			Firm brown and light brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is fine to coarse subrounded to subangular quartzite. (GLACIAL TILL)	1
		1.20	SPT	N=7 (2,2/2,1,2,2)					
		1.90		HVP=70					
		2.00	SPT	N=11 (2,2/2,2,3,4)					2
		2.90		HVP=90					
		3.00	SPT	N=8 (2,2/2,2,2,2)	3.00			Wet brown coarse grained SAND. (GLACIAL TILL)	3
		3.30			3.30			Firm brown slightly sandy slightly gravelly CLAY. Gravel is fine subrounded quartzite. (GLACIAL TILL)	
		3.90		HVP=55					
		4.00	SPT	N=15 (2,3/3,3,4,5)	4.00			Firm to stiff wet brown slightly sandy slightly gravelly CLAY. Gravel is fine subrounded quartzite. (GLACIAL TILL)	4
		5.00	SPT	N=21 (4,5/5,4,6,6)	5.00				
								End of Borehole at 5.00m	5

Remarks

1) Borehole location CAT scanned prior to commencement of drilling. 2) Materials recovered as wet from 3.00m to 3.30m begl and 4.00m to 5.00m begl. 3) Borehole backfilled with arisings upon completion. 4) Groundwater level of 2.70m begl immediately after drilling.

Borehole Log

Borehole No.

WS09

Sheet 1 of 1

Project Name: Huyton Lane

Project No.
10891

Co-ords: 344381E - 391110N

Hole Type
WS

Location: Liverpool

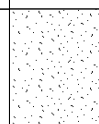
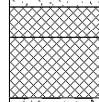
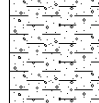
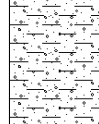
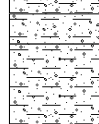
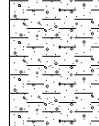
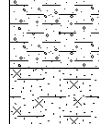
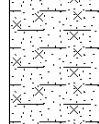
Level:

Scale
1:25

Client: McCarthy Stone

Dates: 21/10/2022

Logged By
RA

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.60	ES		0.40			CONCRETE	1
					0.50			MADE GROUND: Light grey gravel. Gravel is angular to subrounded concrete.	
					0.70			MADE GROUND: Black and grey sand and gravel. Gravel is fine to coarse subrounded to subangular brick, concrete, concrete cobble and brick cobble.	
		1.20	SPT	N=7 (1,1/2,1,2,2)				Firm brown and orangish brown slightly gravelly sandy CLAY. Gravel is fine to coarse subrounded to subangular quartzite. (GLACIAL TILL)	2
					1.50				
					1.60				
		1.90	SPT	HVP=62 N=6 (1,1/1,2,1,2)				Soft brown slightly gravelly sandy CLAY. Gravel is fine to coarse subrounded to subangular quartzite. (GLACIAL TILL)	3
					2.00				
					2.20				
		3.00	SPT	N=7 (1,2/1,2,2,2)				Firm brown and orangish brown slightly gravelly sandy CLAY. Gravel is fine to coarse subrounded to subangular quartzite. (GLACIAL TILL)	4
					2.50				
					3.50				
		3.80	SPT	HVP=70 N=11 (3,3/3,2,3,3)				Wet brown slightly silty slightly clayey coarse grained SAND. (GLACIAL TILL)	5
					4.00				
					4.60				
		5.00	SPT	N=15 (4,2/4,3,4,4)				Loose to medium dense wet brown slightly silty coarse grained SAND. (GLACIAL TILL)	6
					4.60				
					5.00				
End of Borehole at 5.00m								5	

Remarks

1) Borehole location CAT scanned prior to commencement of drilling. 2) Materials recovered as wet from 2.50m to 3.50m begl and 4.00m to 4.60m begl. 3) Borehole backfilled with arisings upon completion.

Borehole Log

Borehole No.

WS10

Sheet 1 of 1

Project Name: Huyton Lane

Project No. 10891

Co-ords: 344384E - 391137N

Hole Type WS

Location: Liverpool

Level:

Scale 1:25

Client: McCarthy Stone

Dates: 21/10/2022

Logged By RA

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.10			CONCRETE	1 2 3 4 5
					0.20			MADE GROUND: Black sand and gravel. Gravel is fine to coarse angular to subrounded concrete, sandstone and quartzite.	
								MADE GROUND: Brown and black gravelly coarse grained sand. Gravel is fine to coarse subrounded to subangular quartzite, sandstone and occasional concrete.	
					0.50			Brownish orange slightly silty coarse grained SAND. (GLACIAL TILL)	
					0.55			Firm orangish brown slightly gravelly sandy CLAY. Gravel is fine to coarse subrounded to subangular quartzite, sandstone and coal. (GLACIAL TILL)	
					1.00			Firm brown mottled grey slightly gravelly CLAY. Gravel is fine to medium subrounded to subangular quartzite. (GLACIAL TILL)	
		1.20	SPT	N=7 (1,1/1,2,2,2)					
		1.60			HVP=55				
		2.00	SPT	N=13 (1,2/2,3,3,5)	2.00			No Recovery	
		3.00	SPT	N=5 (2,1/1,2,1,1)					
		4.00	SPT	N=17 (3,4/4,3,5,5)					
		5.00	SPT	N=21 (4,3/3,5,6,7)	5.00			End of Borehole at 5.00m	

Remarks

1) Borehole location CAT scanned prior to commencement of drilling. 2) Groundwater not encountered during drilling. 3) Borehole backfilled with arisings upon completion. 4) Groundwater level of 1.30m begl immediately after drilling. 5) Unable to retrieve sample from 2.00m onwards due to the liner to slipping out of the casing during drilling.

Borehole Log

Borehole No.

WS11

Sheet 1 of 1

Project Name: Huyton Lane

Project No.
10891

Co-ords: 344366E - 391119N

Hole Type
WS

Location: Liverpool

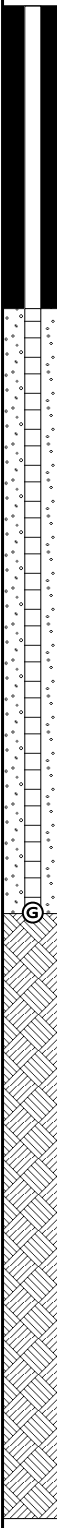
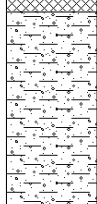
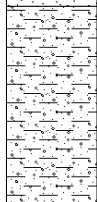
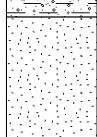
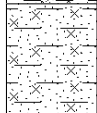
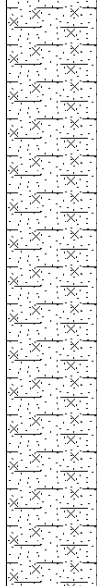
Level:

Scale
1:25

Client: McCarthy Stone

Dates: 21/10/2022

Logged By
RA

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10			0.10			MADE GROUND: Tarmac	
		0.25	ES		0.35			MADE GROUND: Black sand and gravel. Gravel is fine to coarse angular to subrounded sandstone, concrete, mudstone and quartzite.	
								Firm orangish brown slightly gravelly sandy CLAY. Gravel is fine to coarse subrounded to subangular sandstone and quartzite. (GLACIAL TILL)	
		1.20	SPT	N=11 (1,2/2,3,3,3)	1.00			Loose to medium dense orange brown coarse grained SAND. (GLACIAL TILL)	1
					1.30			Firm orange brown slightly sandy slightly gravelly CLAY. Gravel is fine to medium subrounded to subangular quartzite. (GLACIAL TILL)	
		2.00	SPT	N=6 (1,1/1,1,2,2)	2.00			Loose damp orangish brown coarse grained SAND. (GLACIAL TILL)	2
		2.50	D		2.40			Firm brown slightly gravelly sandy CLAY. Gravel is fine subrounded quartzite. (GLACIAL TILL)	
		3.00	SPT	N=2 (0,0/1,0,1,0)	2.70			Loose becoming medium dense wet slightly silty slightly clayey coarse grained SAND. (GLACIAL TILL)	3
		4.00	SPT	N=17 (3,3/3,4,4,6)					4
		5.00	SPT	N=22 (3,4/5,6,5,6)	5.00			End of Borehole at 5.00m	5

Remarks

- 1) Borehole location CAT scanned prior to commencement of drilling. 2) Materials recovered as wet from 2.70m to 4.50m begl.
- 3) Soil-gas and groundwater monitoring well installed upon completion.



PATRICK PARSONS

Appendix C

Laboratory Chemical Test Results

Rich Allen
Patrick Parson
40 St. Paul's Square
Birmingham
B3 1FQ

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

e: Patrick Parsons

Analytical Report Number : 22-92288

Project / Site name:	Huyton lane, Liverpool	Samples received on:	24/10/2022
Your job number:	10891	Samples instructed on/ Analysis started on:	24/10/2022
Your order number:	1746	Analysis completed by:	01/11/2022
Report Issue Number:	1	Report issued on:	01/11/2022
Samples Analysed:	14 soil samples - 1 water sample		


Signed:

Adam Fenwick
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-92288
 Project / Site name: Huyton lane, Liverpool
 Your Order No: 1746

Lab Sample Number				2474189	2474190	2474191	2474192	2474193
Sample Reference				WS01	WS02	WS02	WS03	WS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.10	0.60	0.20	0.40
Date Sampled				20/10/2022	20/10/2022	20/10/2022	20/10/2022	21/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	48	< 0.1	< 0.1	< 0.1	82
Moisture Content	%	0.01	NONE	16	21	15	14	7.1
Total mass of sample received	kg	0.001	NONE	0.8	0.8	0.8	0.8	0.8

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	ASE	ASE	ASE	ASE	ASE

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.7	7.5	8.0	8.9	11.7
Total Sulphate as SO ₄	%	0.005	MCERTS	0.033	0.055	0.011	0.059	0.123
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	330	14	12	43	130
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.16	0.0068	0.006	0.021	0.066
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	165	6.8	6	21.3	66.3
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1.4	3.2	0.4	0.5	0.2

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	0.3	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	NONE	0.48	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	NONE	0.19	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	0.29	< 0.05
Phenanthrene	mg/kg	0.05	NONE	2.4	1.4	< 0.05	4.5	< 0.05
Anthracene	mg/kg	0.05	NONE	1.6	0.37	< 0.05	1.3	< 0.05
Fluoranthene	mg/kg	0.05	NONE	14	2.6	0.3	8	< 0.05
Pyrene	mg/kg	0.05	NONE	17	2.8	0.27	6.3	< 0.05
Benzo(a)anthracene	mg/kg	0.05	NONE	10	0.91	0.06	3	< 0.05
Chrysene	mg/kg	0.05	NONE	10	1.2	0.12	2.6	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	NONE	18	1.2	0.08	1.8	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	NONE	9.3	0.82	0.17	1.6	< 0.05
Benzo(a)pyrene	mg/kg	0.05	NONE	23	1.2	< 0.05	2.3	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	13	0.61	< 0.05	0.95	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	2.5	0.12	< 0.05	0.24	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	NONE	17	0.76	< 0.05	1.3	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	141	14	1	34.1	< 0.80
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Analytical Report Number: 22-92288
Project / Site name: Huyton lane, Liverpool
Your Order No: 1746

Lab Sample Number	2474189	2474190	2474191	2474192	2474193
Sample Reference	WS01	WS02	WS02	WS03	WS04
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.10	0.60	0.20	0.40
Date Sampled	20/10/2022	20/10/2022	20/10/2022	20/10/2022	21/10/2022
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.5	11	9.9	10	5.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.7	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	NONE	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	13	23	37	19	14
Copper (aqua regia extractable)	mg/kg	1	MCERTS	38	47	20	40	32
Lead (aqua regia extractable)	mg/kg	1	MCERTS	12	110	32	150	9.5
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	0.7	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	28	22	28	17	8.9
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	36	120	44	120	33

Monoaromatics & Oxygenates

Benzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	NONE	5.6	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	NONE	220	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	NONE	470	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	NONE	160	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) EH_CU+HS_1D_AL	mg/kg	10	NONE	860	< 10	< 10	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	NONE	3.7	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	NONE	110	< 2.0	< 2.0	6.8	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	NONE	350	11	< 10	29	< 10
TPH-CWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	NONE	350	20	< 10	41	< 10
TPH-CWG - Aromatic (EC5 - EC35) EH_CU+HS_1D_AR	mg/kg	10	NONE	810	31	< 10	77	< 10

Analytical Report Number: 22-92288
Project / Site name: Huyton lane, Liverpool
Your Order No: 1746

Lab Sample Number				2474189	2474190	2474191	2474192	2474193
Sample Reference				WS01	WS02	WS02	WS03	WS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.10	0.60	0.20	0.40
Date Sampled				20/10/2022	20/10/2022	20/10/2022	20/10/2022	21/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
PFAS Suite 3								
PFBS C4 Sulphonate	µg/kg	0.1	NONE	-	-	-	-	< 0.1
PHPS C5 Sulphonate	µg/kg	0.1	NONE	-	-	-	-	< 0.1
PFHxS C6 Sulphonate	µg/kg	0.1	NONE	-	-	-	-	< 0.1
PFHpS C7 Sulphonate	µg/kg	0.1	NONE	-	-	-	-	< 0.1
PFOS C8 Sulphonate	µg/kg	0.1	NONE	-	-	-	-	< 0.1
PFNS C9 Sulphonate	µg/kg	0.1	NONE	-	-	-	-	< 0.1
PFDS C10 Sulphonate	µg/kg	0.1	NONE	-	-	-	-	< 0.1
PFUDS C11 Sulphonate	µg/kg	0.1	NONE	-	-	-	-	< 0.1
PFDoS C12 Sulphonate	µg/kg	0.1	NONE	-	-	-	-	< 0.1
PFBA C4 Carboxylic acid	µg/kg	0.1	NONE	-	-	-	-	< 0.1
PFPeA C5 Carboxylic acid	µg/kg	0.1	NONE	-	-	-	-	< 0.1
PFHxA C6 Carboxylic acid	µg/kg	0.1	NONE	-	-	-	-	< 0.1
PFHpA C7 Carboxylic acid	µg/kg	0.1	NONE	-	-	-	-	< 0.1
PFOA C8 Carboxylic acid	µg/kg	0.1	NONE	-	-	-	-	< 0.1
PFNA C9 Carboxylic acid	µg/kg	0.1	NONE	-	-	-	-	< 0.1
PFDA C10 Carboxylic acid	µg/kg	0.1	NONE	-	-	-	-	< 0.1
PFUDA C11 Carboxylic acid	µg/kg	0.1	NONE	-	-	-	-	< 0.1
PFDoA C12 Carboxylic acid	µg/kg	0.1	NONE	-	-	-	-	< 0.1

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-92288
 Project / Site name: Huyton lane, Liverpool
 Your Order No: 1746

Lab Sample Number				2474194	2474195	2474196	2474197	2474198
Sample Reference				WS05	WS06	WS08	WS08	WS09
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.35	0.30	0.50	0.60
Date Sampled				21/10/2022	21/10/2022	21/10/2022	21/10/2022	21/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	35	< 0.1	56
Moisture Content	%	0.01	NONE	12	17	19	11	11
Total mass of sample received	kg	0.001	NONE	0.8	0.8	0.8	0.3	0.8

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Chrysotile	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Detected	-	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	< 0.001	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	< 0.001	-	-
Asbestos Analyst ID	N/A	N/A	N/A	ASE	ASE	ASE	N/A	ASE

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.5	8.2	8.5	-	8.2
Total Sulphate as SO ₄	%	0.005	MCERTS	0.053	0.025	0.066	-	0.042
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	400	120	240	-	330
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.2	0.059	0.12	-	0.16
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	199	59.2	118	-	164
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.4	0.4	1.2	-	0.9

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	-	< 0.05
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	-	< 0.05
Acenaphthene	mg/kg	0.05	NONE	< 0.05	0.12	< 0.05	-	< 0.05
Fluorene	mg/kg	0.05	NONE	< 0.05	0.09	< 0.05	-	< 0.05
Phenanthrene	mg/kg	0.05	NONE	0.48	1.1	0.99	-	< 0.05
Anthracene	mg/kg	0.05	NONE	0.24	0.48	0.43	-	< 0.05
Fluoranthene	mg/kg	0.05	NONE	0.56	1.4	1.8	-	< 0.05
Pyrene	mg/kg	0.05	NONE	0.51	1.4	1.8	-	< 0.05
Benzo(a)anthracene	mg/kg	0.05	NONE	0.17	0.44	0.77	-	< 0.05
Chrysene	mg/kg	0.05	NONE	0.25	0.82	0.93	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	NONE	0.13	0.29	0.58	-	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.2	0.69	0.52	-	< 0.05
Benzo(a)pyrene	mg/kg	0.05	NONE	0.14	0.4	0.71	-	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	0.37	-	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	NONE	< 0.05	< 0.05	0.4	-	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	2.68	7.24	9.29	-	< 0.80
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Analytical Report Number: 22-92288
Project / Site name: Huyton lane, Liverpool
Your Order No: 1746

Lab Sample Number				2474194	2474195	2474196	2474197	2474198
Sample Reference				WS05	WS06	WS08	WS08	WS09
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.35	0.30	0.50	0.60
Date Sampled				21/10/2022	21/10/2022	21/10/2022	21/10/2022	21/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.5	16	28	-	11
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	< 0.2
Chromium (hexavalent)	mg/kg	1.2	NONE	< 1.2	< 1.2	< 1.2	-	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	28	41	24	-	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	15	34	110	-	41
Lead (aqua regia extractable)	mg/kg	1	MCERTS	24	28	65	-	50
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	21	37	56	-	33
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	45	56	110	-	62

Monoaromatics & Oxygenates

Benzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	< 1.0
Toluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	< 1.0
Ethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	< 1.0
p & m-xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	< 1.0
o-xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS,1D,AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS,1D,AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS,1D,AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH,CU,1D,AL}	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH,CU,1D,AL}	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH,CU,1D,AL}	mg/kg	8	NONE	< 8.0	< 8.0	< 8.0	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 _{EH,CU,1D,AL}	mg/kg	8	NONE	< 8.0	< 8.0	< 8.0	-	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) _{EH,CU+HS,1D,AL}	mg/kg	10	NONE	< 10	< 10	< 10	-	< 10
TPH-CWG - Aromatic >EC5 - EC7 _{HS,1D,AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS,1D,AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS,1D,AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH,CU,1D,AR}	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH,CU,1D,AR}	mg/kg	2	NONE	< 2.0	3.9	< 2.0	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH,CU,1D,AR}	mg/kg	10	NONE	< 10	15	17	-	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH,CU,1D,AR}	mg/kg	10	NONE	< 10	26	37	-	< 10
TPH-CWG - Aromatic (EC5 - EC35) _{EH,CU+HS,1D,AR}	mg/kg	10	NONE	< 10	45	54	-	< 10

Analytical Report Number: 22-92288
 Project / Site name: Huyton lane, Liverpool
 Your Order No: 1746

Lab Sample Number				2474194	2474195	2474196	2474197	2474198
Sample Reference				WS05	WS06	WS08	WS08	WS09
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.35	0.30	0.50	0.60
Date Sampled				21/10/2022	21/10/2022	21/10/2022	21/10/2022	21/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
PFAS Suite 3								
PFBS C4 Sulphonate	µg/kg	0.1	NONE	< 0.1	-	-	< 0.1	-
PHPS C5 Sulphonate	µg/kg	0.1	NONE	< 0.1	-	-	< 0.1	-
PFHxS C6 Sulphonate	µg/kg	0.1	NONE	< 0.1	-	-	< 0.1	-
PFHpS C7 Sulphonate	µg/kg	0.1	NONE	< 0.1	-	-	< 0.1	-
PFOS C8 Sulphonate	µg/kg	0.1	NONE	< 0.1	-	-	< 0.1	-
PFNS C9 Sulphonate	µg/kg	0.1	NONE	< 0.1	-	-	< 0.1	-
PFDS C10 Sulphonate	µg/kg	0.1	NONE	< 0.1	-	-	< 0.1	-
PFUDS C11 Sulphonate	µg/kg	0.1	NONE	< 0.1	-	-	< 0.1	-
PFDoS C12 Sulphonate	µg/kg	0.1	NONE	< 0.1	-	-	< 0.1	-
PFBA C4 Carboxylic acid	µg/kg	0.1	NONE	< 0.1	-	-	< 0.1	-
PFPeA C5 Carboxylic acid	µg/kg	0.1	NONE	0.1	-	-	< 0.1	-
PFHxA C6 Carboxylic acid	µg/kg	0.1	NONE	< 0.1	-	-	< 0.1	-
PFHpA C7 Carboxylic acid	µg/kg	0.1	NONE	< 0.1	-	-	< 0.1	-
PFOA C8 Carboxylic acid	µg/kg	0.1	NONE	< 0.1	-	-	< 0.1	-
PFNA C9 Carboxylic acid	µg/kg	0.1	NONE	< 0.1	-	-	< 0.1	-
PFDA C10 Carboxylic acid	µg/kg	0.1	NONE	< 0.1	-	-	< 0.1	-
PFUDa C11 Carboxylic acid	µg/kg	0.1	NONE	< 0.1	-	-	< 0.1	-
PFDoA C12 Carboxylic acid	µg/kg	0.1	NONE	< 0.1	-	-	< 0.1	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-92288
 Project / Site name: Huyton lane, Liverpool
 Your Order No: 1746

Lab Sample Number				2474199	2474201	2474202	2474203
Sample Reference				WS11	WS04	WS07	WS09
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.25	1.90	1.50	2.20
Date Sampled				21/10/2022	21/10/2022	21/10/2022	21/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Stone Content	%	0.1	NONE	40	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	11	13	13	14
Total mass of sample received	kg	0.001	NONE	0.8	0.5	0.5	0.5

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	-	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	ASE	N/A	N/A	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.9	8.9	7.9	8.2
Total Sulphate as SO ₄	%	0.005	MCERTS	0.036	-	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	100	-	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.05	0.0027	0.0079	0.01
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	50.2	-	-	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	3.6	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	-	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	< 0.05	-	-	-
Acenaphthylene	mg/kg	0.05	NONE	0.11	-	-	-
Acenaphthene	mg/kg	0.05	NONE	< 0.05	-	-	-
Fluorene	mg/kg	0.05	NONE	< 0.05	-	-	-
Phenanthrene	mg/kg	0.05	NONE	< 0.05	-	-	-
Anthracene	mg/kg	0.05	NONE	< 0.05	-	-	-
Fluoranthene	mg/kg	0.05	NONE	0.09	-	-	-
Pyrene	mg/kg	0.05	NONE	0.12	-	-	-
Benzo(a)anthracene	mg/kg	0.05	NONE	< 0.05	-	-	-
Chrysene	mg/kg	0.05	NONE	< 0.05	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	NONE	< 0.05	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	NONE	< 0.05	-	-	-
Benzo(a)pyrene	mg/kg	0.05	NONE	< 0.05	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	< 0.05	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	NONE	< 0.05	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	< 0.80	-	-	-
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Analytical Report Number: 22-92288
 Project / Site name: Huyton lane, Liverpool
 Your Order No: 1746

Lab Sample Number				2474199	2474201	2474202	2474203
Sample Reference				WS11	WS04	WS07	WS09
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.25	1.90	1.50	2.20
Date Sampled				21/10/2022	21/10/2022	21/10/2022	21/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	-	-
Chromium (hexavalent)	mg/kg	1.2	NONE	< 1.2	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	23	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	71	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	31	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	39	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	82	-	-	-

Monoaromatics & Oxygenates

Benzene	µg/kg	1	NONE	< 1.0	-	-	-
Toluene	µg/kg	1	NONE	< 1.0	-	-	-
Ethylbenzene	µg/kg	1	NONE	< 1.0	-	-	-
p & m-xylene	µg/kg	1	NONE	< 1.0	-	-	-
o-xylene	µg/kg	1	NONE	< 1.0	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	< 1.0	-	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	NONE	< 1.0	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	NONE	4.1	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	NONE	9.9	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	NONE	98	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	110	-	-	-
TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	NONE	< 1.0	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	NONE	< 2.0	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	NONE	12	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	NONE	290	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	300	-	-	-

Analytical Report Number: 22-92288
 Project / Site name: Huyton lane, Liverpool
 Your Order No: 1746

Lab Sample Number				2474199	2474201	2474202	2474203
Sample Reference				WS11	WS04	WS07	WS09
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.25	1.90	1.50	2.20
Date Sampled				21/10/2022	21/10/2022	21/10/2022	21/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
PFAS Suite 3							
PFBS C4 Sulphonate	µg/kg	0.1	NONE	-	-	-	-
PHPS C5 Sulphonate	µg/kg	0.1	NONE	-	-	-	-
PFHxS C6 Sulphonate	µg/kg	0.1	NONE	-	-	-	-
PFHpS C7 Sulphonate	µg/kg	0.1	NONE	-	-	-	-
PFOS C8 Sulphonate	µg/kg	0.1	NONE	-	-	-	-
PFNS C9 Sulphonate	µg/kg	0.1	NONE	-	-	-	-
PFDS C10 Sulphonate	µg/kg	0.1	NONE	-	-	-	-
PFUDS C11 Sulphonate	µg/kg	0.1	NONE	-	-	-	-
PFDoS C12 Sulphonate	µg/kg	0.1	NONE	-	-	-	-
PFBA C4 Carboxylic acid	µg/kg	0.1	NONE	-	-	-	-
PFPeA C5 Carboxylic acid	µg/kg	0.1	NONE	-	-	-	-
PFHxA C6 Carboxylic acid	µg/kg	0.1	NONE	-	-	-	-
PFHpA C7 Carboxylic acid	µg/kg	0.1	NONE	-	-	-	-
PFOA C8 Carboxylic acid	µg/kg	0.1	NONE	-	-	-	-
PFNA C9 Carboxylic acid	µg/kg	0.1	NONE	-	-	-	-
PFDA C10 Carboxylic acid	µg/kg	0.1	NONE	-	-	-	-
PFUDa C11 Carboxylic acid	µg/kg	0.1	NONE	-	-	-	-
PFDoA C12 Carboxylic acid	µg/kg	0.1	NONE	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample



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Analytical Report Number: 22-92288

Project / Site name: Huyton lane, Liverpool

Your Order No: 1746

Lab Sample Number				2474200
Sample Reference				WS01
Sample Number				None Supplied
Depth (m)				0.40
Date Sampled				21/10/2022
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status	

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6 HS_ID_AL	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aliphatic >C6 - C8 HS_ID_AL	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aliphatic >C8 - C10 HS_ID_AL	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aliphatic >C10 - C12 EH_ID_AL_MS	µg/l	10	NONE	2900
TPH-CWG - Aliphatic >C12 - C16 EH_ID_AL_MS	µg/l	10	NONE	15000
TPH-CWG - Aliphatic >C16 - C21 EH_ID_AL_MS	µg/l	10	NONE	29000
TPH-CWG - Aliphatic >C21 - C35 EH_ID_AL_MS	µg/l	10	NONE	9300
TPH-CWG - Aliphatic (C5 - C35) HS+EH_ID_AL_MS	µg/l	10	NONE	56000

TPH-CWG - Aromatic >C5 - C7 HS_ID_AR	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aromatic >C7 - C8 HS_ID_AR	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aromatic >C8 - C10 HS_ID_AR	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aromatic >C10 - C12 EH_ID_AR_MS	µg/l	10	NONE	440
TPH-CWG - Aromatic >C12 - C16 EH_ID_AR_MS	µg/l	10	NONE	8800
TPH-CWG - Aromatic >C16 - C21 EH_ID_AR_MS	µg/l	10	NONE	8900
TPH-CWG - Aromatic >C21 - C35 EH_ID_AR_MS	µg/l	10	NONE	1700
TPH-CWG - Aromatic (C5 - C35) HS+EH_ID_AR_MS	µg/l	10	NONE	20000

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-92288

Project / Site name: Huyton lane, Liverpool

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2474189	WS01	None Supplied	0.5	Brown gravelly sand with stones.
2474190	WS02	None Supplied	0.1	Brown loam and sand with gravel and vegetation.
2474191	WS02	None Supplied	0.6	Brown clay and loam.
2474192	WS03	None Supplied	0.2	Brown clay and sand with gravel.
2474193	WS04	None Supplied	0.4	Brown gravelly sand with stones.
2474194	WS05	None Supplied	0.4	Brown clay and sand with gravel.
2474195	WS06	None Supplied	0.35	Brown clay and sand with gravel.
2474196	WS08	None Supplied	0.3	Grey gravelly sand with stones.
2474197	WS08	None Supplied	0.5	Brown clay and sand with gravel.
2474198	WS09	None Supplied	0.6	Brown clay and sand with gravel and stones.
2474199	WS11	None Supplied	0.25	Brown gravelly sand with stones.
2474201	WS04	None Supplied	1.9	Brown clay and sand.
2474202	WS07	None Supplied	1.5	Brown clay and sand.
2474203	WS09	None Supplied	2.2	Brown clay and sand.

Analytical Report Number : 22-92288

Project / Site name: Huyton lane, Liverpool

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	ISO 17025
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	NONE
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	NONE
EF - PFAS in soil by LC-MS/MS	PFAS suite 3 by LC-MS/MS	In-house method	UK	W	NONE
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS

Analytical Report Number : 22-92288

Project / Site name: Huyton lane, Liverpool

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
-	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total



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e: Patrick Parsons

Analytical Report Number : 22-97695

Project / Site name: Huyton Lane, Liverpool

Samples received on: 18/11/2022

Your job number: 10891

**Samples instructed on/
Analysis started on:** 18/11/2022

Your order number: 1816

Analysis completed by: 28/11/2022

Report Issue Number: 1

Report issued on: 28/11/2022

Samples Analysed: 3 water samples

Signed:

Dominika Warjan
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.



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Analytical Report Number: 22-97695

Project / Site name: Huyton Lane, Liverpool

Your Order No: 1816

Lab Sample Number				2505014	2505015	2505016
Sample Reference				WS02	WS07	WS11
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				17/11/2022	17/11/2022	17/11/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6 _{HS,1D,AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 _{HS,1D,AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 _{HS,1D,AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 _{EH,1D,AL,MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 _{EH,1D,AL,MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 _{EH,1D,AL,MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 _{EH,1D,AL,MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) _{HS+EH,1D,AL,MS}	µg/l	10	NONE	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7 _{HS,1D,AR}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8 _{HS,1D,AR}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10 _{HS,1D,AR}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12 _{EH,1D,AR,MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 _{EH,1D,AR,MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 _{EH,1D,AR,MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 _{EH,1D,AR,MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) _{HS+EH,1D,AR,MS}	µg/l	10	NONE	< 10	< 10	< 10

VOCs

Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0



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Analytical Report Number: 22-97695

Project / Site name: Huyton Lane, Liverpool

Your Order No: 1816

Lab Sample Number				2505014	2505015	2505016
Sample Reference				WS02	WS07	WS11
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				17/11/2022	17/11/2022	17/11/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Tri bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene*	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0

SVOCs

Aniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05

Analytical Report Number: 22-97695

Project / Site name: Huyton Lane, Liverpool

Your Order No: 1816

Lab Sample Number				2505014	2505015	2505016
Sample Reference				WS02	WS07	WS11
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				17/11/2022	17/11/2022	17/11/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Dibenzofuran	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Azobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Carbazole	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
3&4-Methylphenol	µg/l	0.1	NONE	< 0.10	< 0.10	< 0.10

U/S = Unsuitable Sample I/S = Insufficient Sample
 These compounds have a true limit of detection, but
 was not detected in any sample in the batch so is
 reported "accredited". All other checks (calibration, SST,
 AQC) pass.

Analytical Report Number : 22-97695

Project / Site name: Huyton Lane, Liverpool

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds in leachate by extraction in dichloromethane followed by GC-MS.	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	ISO 17025
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C. Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total



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Appendix C

Laboratory Geotechnical Test Results

GEOLABS Limited
Unit D3 HRS Business Park
Granby Avenue
Birmingham
B33 0SJ

Tel: +44(0) 121 296 4600
Fax: +44(0) 121 296 4599
email: admin@geolabs.co.uk
web: www.geolabs.co.uk

Patrick Parsons
40 St Pauls Square
Birmingham
B3 1FQ

09 November 2022

Report No : GEO/36697/01

Page 1 of 1

For the attention of Mr R Allen

Our ref **GEO / 36697**
Your Ref **10891**

Date samples received 24/10/2022
Date written instructions received 24/10/2022
Date testing commenced 25/10/2022
Date of sample disposal 07/12/2022

Project **HUYTON LANE**

Further to your instructions we have pleasure in enclosing the results of the tests you requested in the attached figures.

LABORATORY TEST REPORT

Item No	Test Quantity	Description
1	~	Liquid & Plastic Limits Summary
~	4	Water Content
2	4	Liquid & Plastic Limits
3	2	California Bearing Ratio

Any opinions or interpretations expressed herein are outside the scope of UKAS accreditation. All results contained in this report are provisional unless signed by an approved signatory. The results contained in this report relate only to samples received in the laboratory and are tested 'as received' unless otherwise stated. This report should not be reproduced, except in full, without the written approval of the laboratory. The results reported are applicable only to the test items received by the laboratory.

All the necessary data required by the documented test procedures has been recorded and will be stored for a period of not less than 6 years. This data will be issued to yourselves at your request. All samples will be disposed of after the date shown above. Written confirmation will be required to retain the samples beyond this period and a storage charge may be applied.

We trust that the above meets your requirements and should you require any further information or assistance, please do not hesitate to contact us.

Yours faithfully
on behalf of **GEOLABS Limited**



J A Reynolds
Director



Test Type:	Sample condition:
1 - 1 point 80g / 30° fall cone method.	1 - As Received
2 - 4 point 80g / 30° fall cone method.	2 - Air Dried
3 - Non plastic determination.	3 - Washed & Air Dried

1982

LIQUID AND PLASTIC LIMITS

Location WS02
Depth (m) 1.70
Sample Type D

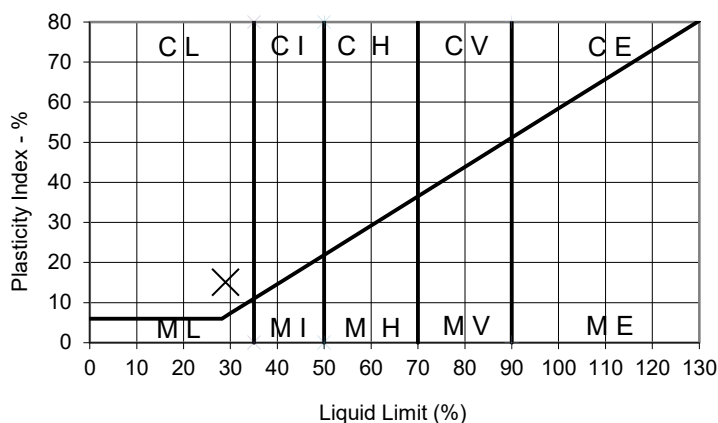
Description:

Reddish brown mottled light grey and dark brown very sandy
CLAY with rare fine gravel.

Preparation : Sample as received with discrete coarse particles removed by hand.

Water Content : (BS EN ISO 17892-1:2014) 17.6 %
Estimated percentage passing 425µm sieve : 99 %
*Liquid Limit - Fall Cone 1 point Method (cone angle 30°) : 29 %
Plastic Limit : 14 %
Plasticity Index : 15 %

Equivalent Water Content of material passing 425µm sieve : 17.8 %
Liquidity Index : 0.25

***One point liquid limit test readings**

Cone penetration 20.1 mm
Water content 28.9 %
One point method correlation factor : BS 1377-2 : 2022 : 5.3.2 0.997

Tested by AD
Checked and Approved by

J A Reynolds

J A Reynolds - Director
09/11/2022

Project Number:

GEO / 36697

Project Name:

**HUYTON LANE
10891**

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LIQUID AND PLASTIC LIMITS

Location WS04
Depth (m) 1.30
Sample Type D

Description:

Brown mottled dark brown and light grey very sandy CLAY with rare fine to medium gravel.

Preparation : Sample as received with discrete coarse particles removed by hand.

Water Content : (BS EN ISO 17892-1:2014) 20.5 %

Estimated percentage passing 425µm sieve : 99 %

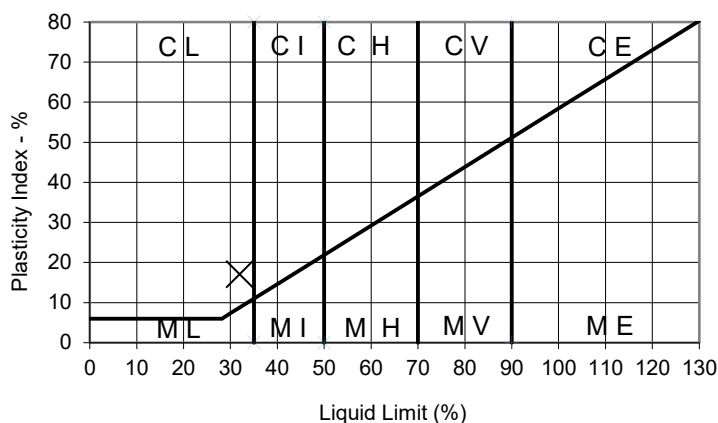
*Liquid Limit - Fall Cone 1 point Method (cone angle 30°) : 32 %

Plastic Limit : 15 %

Plasticity Index : 17 %

Equivalent Water Content of material passing 425µm sieve : 20.8 %

Liquidity Index : 0.34

***One point liquid limit test readings**

Cone penetration 20.0 mm

Water content 32.1 %

One point method correlation factor : BS 1377-2 : 2022 : 5.3.2 1.000

Tested by AD
Checked and Approved by

J A Reynolds

J A Reynolds - Director
09/11/2022

Project Number:

GEO / 36697

Project Name:

**HUYTON LANE
10891**

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BS EN ISO 17892-12 : 2018 : Clause 5.3 & 5.5

LIQUID AND PLASTIC LIMITS

Location	WS06
Depth (m)	1.50
Sample Type	D

Description:

Dark brown mottled light grey sandy CLAY with rare fine gravel.

Preparation : Sample as received with discrete coarse particles removed by hand.

Water Content : (BS EN ISO 17892-1:2014) 18.4 %

Estimated percentage passing 425µm sieve : 98 %

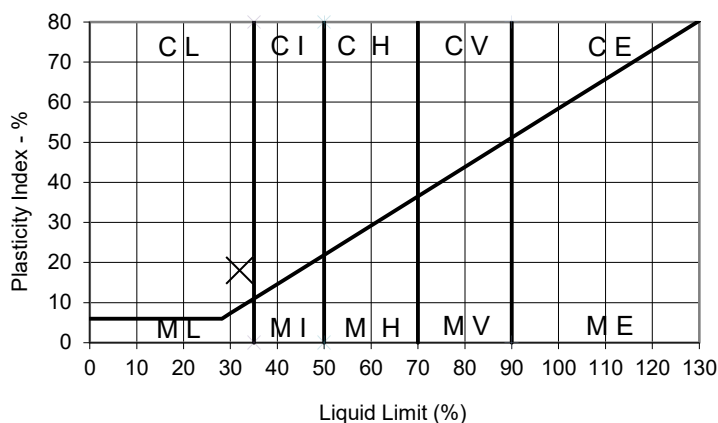
*Liquid Limit - Fall Cone 1 point Method (cone angle 30°) : 32 %

Plastic Limit : 14 %

Plasticity Index : 18 %

Equivalent Water Content of material passing 425µm sieve : 18.8 %

Liquidity Index : 0.27



***One point liquid limit test readings**

Cone penetration	20.1 mm
------------------	---------

Water content	32.2 %
---------------	--------

One point method correlation factor : *BS 1377-2 : 2022 : 5.3.2* 0.998

Tested by AD ☐
Checked and Approved by

J. A. Reynolds

J A Reynolds - Director ☐

Project Number:

GEO / 36697

Project Name:

HUYTON LANE
10891

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BS EN ISO 17892-12 : 2018 : Clause 5.3 & 5.5

LIQUID AND PLASTIC LIMITS

Location	WS11
Depth (m)	2.50
Sample Type	D

Description:

Reddish brown very sandy CLAY with rare fine gravel.

Preparation : Sample as received with discrete coarse particles removed by hand.

Water Content : (BS EN ISO 17892-1:2014) 18.2 %

Estimated percentage passing 425µm sieve : 99 %

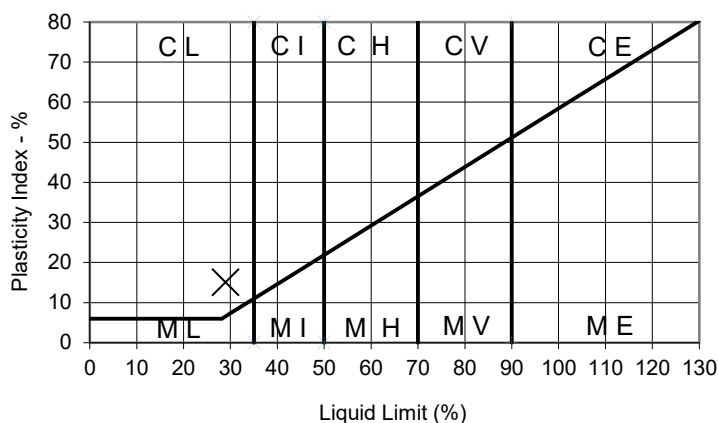
*Liquid Limit - Fall Cone 1 point Method (cone angle 30°) : 29 %

Plastic Limit : 14 %

Plasticity Index : 15 %

Equivalent Water Content of material passing 425µm sieve : 18.4 %

Liquidity Index : 0.29



***One point liquid limit test readings**

Cone penetration	20.5 mm
------------------	---------

Water content	29.7 %
---------------	--------

One point method correlation factor : *BS 1377-2 : 2022 : 5.3.2* 0.992

Tested by AD ☐
Checked and Approved by

J. A. Reynolds

J A Reynolds - Director ☐
09/11/2022

Project Number:

GEO / 36697

Project Name:

HUYTON LANE
10891

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CALIFORNIA BEARING RATIO

Location WS03
Depth (m) 0.50
Sample Type B

Description:

Brown sandy CLAY with some fine to coarse gravel.

PREPARATION DETAILS

The specimen was tested in an unsoaked condition.

The specimen was tested at the as received water content

The specimen was prepared by dynamic compaction using a 2.5 kg rammer

Prepared bulk density 1.99 Mg/m³

Prepared dry density 1.66 Mg/m³

1.9 % of the sample was retained on a 20mm sieve

Test Details

Surcharge
Seating load
Water content

Top

8.0 kg
50 N
20 %

Base

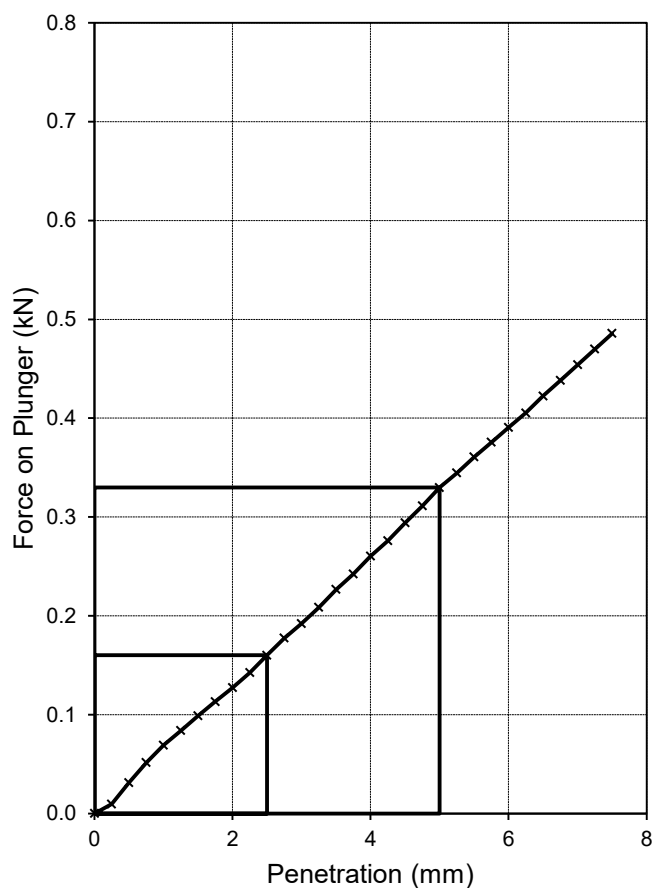
8.0 kg
50 N
19 %

CBR Value

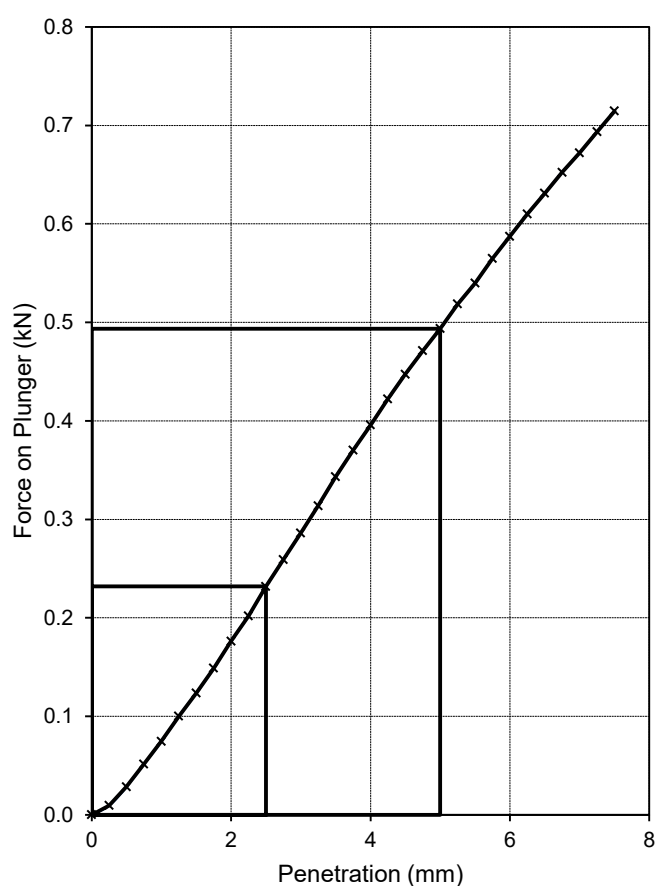
1.6 %

2.5 %

Top of Specimen



Base of Specimen



Checked and Approved by

J A Reynolds

J A Reynolds - Director
09/11/2022

Project Number:

GEO / 36697

Project Name:

**HUYTON LANE
10891**

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CALIFORNIA BEARING RATIO

Location WS08
Depth (m) 0.60
Sample Type B

Description:

Brown sandy CLAY with some fine to coarse gravel.

PREPARATION DETAILS

The specimen was tested in an unsoaked condition.
The specimen was tested at the as received water content
The specimen was prepared by dynamic compaction using a 2.5 kg rammer
Prepared bulk density 2.05 Mg/m³
Prepared dry density 1.74 Mg/m³
3.4 % of the sample was retained on a 20mm sieve

Test Details

Surcharge
Seating load
Water content

Top

8.0 kg
50 N
18 %

Base

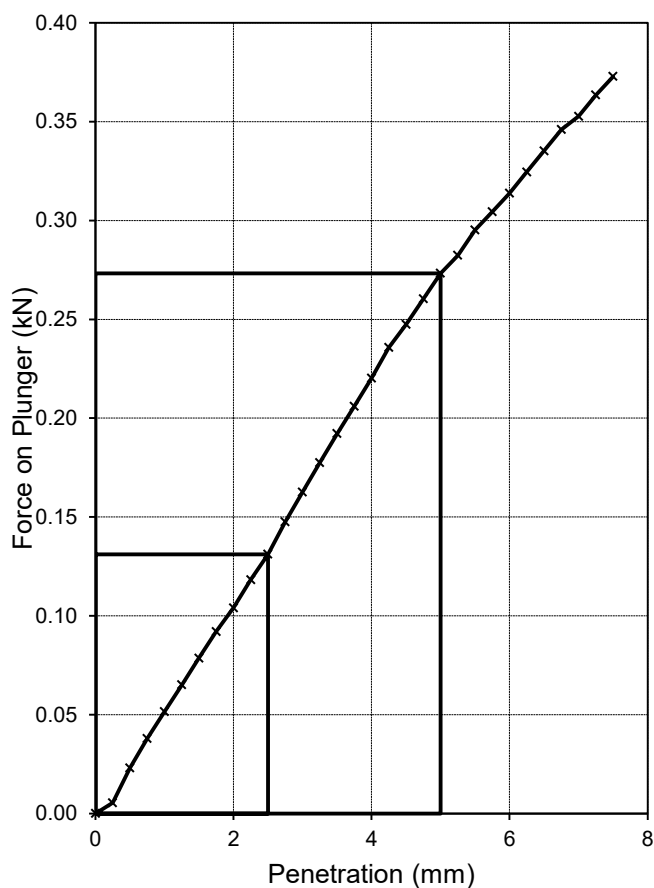
8.0 kg
50 N
18 %

CBR Value

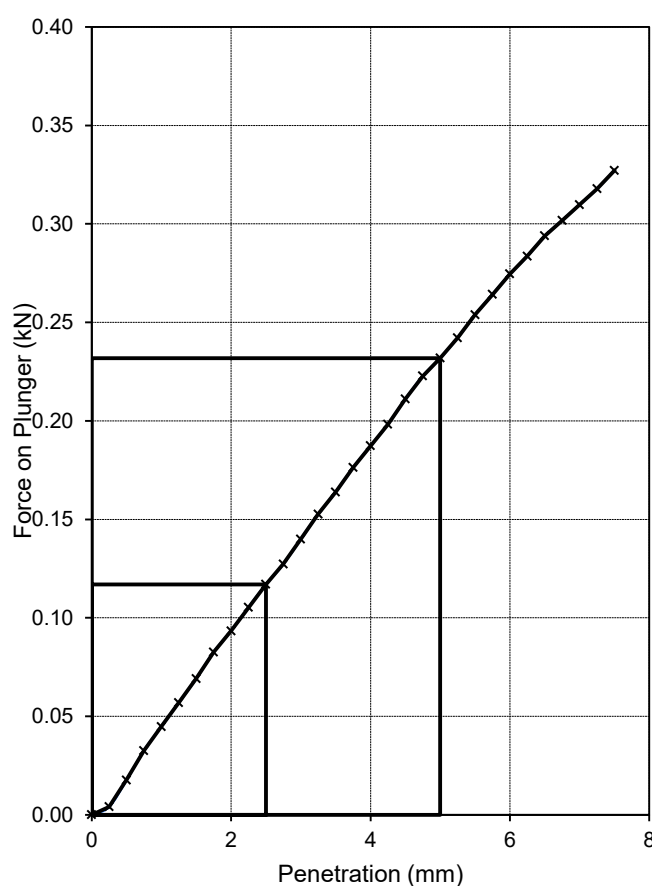
1.4 %

1.2 %

Top of Specimen



Base of Specimen



Checked and Approved by

J A Reynolds - Director
09/11/2022

Project Number:

GEO / 36697

Project Name:

**HUYTON LANE
10891****GEOLABS**



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Appendix E

Gas Monitoring Results

Ground Gas and Groundwater Monitoring Record Sheet

JOB DETAILS:

Client: McCarthy Stone
Site: Huyton Lane, Liverpool
Date: 03/11/2022

Job No: 10891
Visit No: 1 of 6
Operator: BR

Project Manager: HA

[illegible]

METEOROLOGICAL AND SITE INFORMATION:

State of ground:

Wind:

Cloud cover:

Precipitation:

Barometric pressure (mbar):

Pressure trend:

Air Temperature (Deg. C):

(Select correct box with X or enter data, as applicable)

	Moist
x	Light
x	Slight
	Slight
994	Before
	Falling
13	Before

	Wet
	Moderate
	Cloudy
	Moderate

	Steady
--	--------

	Snow
	Strong
	Overcast
	Heavy
995	After
X	Rising
13	After

Frozen



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Appendix F

Online Hazwaste results

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)



RJVTV-XE52U-KBBCD

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

Job name

10891 - Huyton Lane, Liverpool

Description/Comments

Project

10891 - Huyton Lane, Liverpool

Site

10891 - Huyton Lane, Liverpool

Classified by

Name: **Hugh Adler**
 Date: **30 Nov 2022 14:43 GMT**
 Telephone:
 Company: **PPCP Ltd t/a Patrick Parsons**
40 St Pauls Square
Birmingham
B3 1FQ

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

Date

10 Feb 2022

Next 3 year Refresher due by Feb 2025

Purpose of classification

2 - Material Characterisation

Address of the waste

Huyton Ln, Huyton, Liverpool

Post Code L36 7XG

SIC for the process giving rise to the waste

41202 Construction of domestic buildings

Description of industry/producer giving rise to the waste

Redevelopment of former fire station site for residential end-use.

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

Waste created during the construction of foundations and groundworks.

Description of the waste

Cohesive made ground containing red brick, concrete, quartzite, sandstone and coal.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	WS01	0.50	Hazardous	HP 3(i), HP 7, HP 11	3
2	WS02	0.10	Non Hazardous		6
3	WS02[2]	0.60	Non Hazardous	HP 8	8
4	WS03	0.20	Non Hazardous		10
5	WS04	0.40	Hazardous		12
6	WS05	0.40	Non Hazardous		14
7	WS06	0.35	Non Hazardous		16
8	WS08	0.30	Non Hazardous		18
9	WS08[2]	0.50	Unknown. Chemistry data not provided.		20
10	WS09	0.60	Non Hazardous		21
11	WS11	0.25	Non Hazardous		23

Related documents

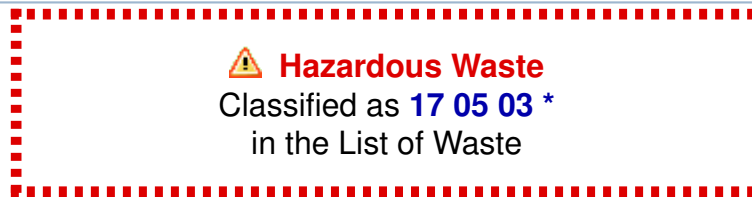
#	Name	Description
1	PP Standard Suite	waste stream template used to create this Job

Report

Created by: Hugh Adler

Created date: 30 Nov 2022 14:43 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	25
Appendix B: Rationale for selection of metal species	26
Appendix C: Version	26

Classification of sample: WS01

Sample details

Sample name:	LoW Code:
WS01	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.50 m	Entry:
Moisture content:	17 05 03 * (Soil and stones containing hazardous substances)
16%	
(no 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 No free product hydrocarbons recorded.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.167%)

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.167%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.167%)

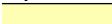
Determinands

Moisture content: **16% No 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				7.7	pH		7.7	pH	7.7 pH		
2	arsenic { arsenic trioxide }				8.5	mg/kg	1.32	11.223	mg/kg	0.00112 %		
	033-003-00-0	215-481-4	1327-53-3									
3	cadmium { cadmium sulfide }			1	0.2	mg/kg	1.285	0.257	mg/kg	0.00002 %		
	048-010-00-4	215-147-8	1306-23-6									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		13 mg/kg	1.462	19 mg/kg	0.0019 %		
5	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6		38 mg/kg	3.929	149.304 mg/kg	0.0149 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	1	12 mg/kg	1.56	18.718 mg/kg	0.0012 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8		0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %		
8	nickel { nickel chromate }	028-035-00-7	238-766-5		28 mg/kg	2.976	83.335 mg/kg	0.00833 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8			1 mg/kg	1.405	1.405 mg/kg	0.000141 %		
10	zinc { zinc chromate }	024-007-00-3	236-878-9		36 mg/kg	2.774	99.869 mg/kg	0.00999 %		
11	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
12	TPH (C6 to C40) petroleum group		TPH		1670 mg/kg		1670 mg/kg	0.167 %		
13	acenaphthene	201-469-6	83-32-9		0.48 mg/kg		0.48 mg/kg	0.000048 %		
14	acenaphthylene	205-917-1	208-96-8		0.19 mg/kg		0.19 mg/kg	0.000019 %		
15	anthracene	204-371-1	120-12-7		1.6 mg/kg		1.6 mg/kg	0.00016 %		
16	benzo[a]anthracene	601-033-00-9	200-280-6		10 mg/kg		10 mg/kg	0.001 %		
17	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		23 mg/kg		23 mg/kg	0.0023 %		
18	benzo[b]fluoranthene	601-034-00-4	205-911-9		18 mg/kg		18 mg/kg	0.0018 %		
19	benzo[ghi]perylene	205-883-8	191-24-2		17 mg/kg		17 mg/kg	0.0017 %		
20	benzo[k]fluoranthene	601-036-00-5	205-916-6		9.3 mg/kg		9.3 mg/kg	0.00093 %		
21	chrysene	601-048-00-0	205-923-4		10 mg/kg		10 mg/kg	0.001 %		
22	dibenz[a,h]anthracene	601-041-00-2	200-181-8		2.5 mg/kg		2.5 mg/kg	0.00025 %		
23	fluoranthene	205-912-4	206-44-0		14 mg/kg		14 mg/kg	0.0014 %		
24	fluorene	201-695-5	86-73-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
25	indeno[123-cd]pyrene	205-893-2	193-39-5		13 mg/kg		13 mg/kg	0.0013 %		
26	phenanthrene	201-581-5	85-01-8		2.4 mg/kg		2.4 mg/kg	0.00024 %		
27	naphthalene	601-052-00-2	202-049-5		0.3 mg/kg		0.3 mg/kg	0.00003 %		
28	pyrene	204-927-3	129-00-0		17 mg/kg		17 mg/kg	0.0017 %		
Total:								0.219 %		

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: WS02

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

Sample details

Sample name:	LoW Code:
WS02	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.10 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
21%	
(no correction)	

Hazard properties

None identified

Determinands

 Moisture content: **21% No Moisture Correction applied (MC)**

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	pH		PH		7.5 pH		7.5 pH	7.5 pH		
2	arsenic { arsenic trioxide }				11 mg/kg	1.32	14.524 mg/kg	0.00145 %		
	033-003-00-0	215-481-4	1327-53-3							
3	cadmium { cadmium sulfide }			1	0.7 mg/kg	1.285	0.9 mg/kg	0.00007 %		
	048-010-00-4	215-147-8	1306-23-6							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				23 mg/kg	1.462	33.616 mg/kg	0.00336 %		
		215-160-9	1308-38-9							
5	copper { copper sulphate pentahydrate }				47 mg/kg	3.929	184.665 mg/kg	0.0185 %		
	029-023-00-4	231-847-6	7758-99-8							
6	lead { lead chromate }			1	110 mg/kg	1.56	171.58 mg/kg	0.011 %		
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury dichloride }				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel chromate }				22 mg/kg	2.976	65.478 mg/kg	0.00655 %		
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1 mg/kg	1.405	1.405 mg/kg	0.000141 %		
	034-002-00-8									
10	zinc { zinc chromate }				120 mg/kg	2.774	332.898 mg/kg	0.0333 %		
	024-007-00-3	236-878-9	13530-65-9							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	TPH (C6 to C40) petroleum group		TPH		41 mg/kg		41 mg/kg	0.0041 %		
13	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
14	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
15	anthracene				0.37 mg/kg		0.37 mg/kg	0.000037 %		
		204-371-1	120-12-7							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		0.91 mg/kg		0.91 mg/kg	0.000091 %		
17	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		1.2 mg/kg		1.2 mg/kg	0.00012 %		
18	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		1.2 mg/kg		1.2 mg/kg	0.00012 %		
19	benzo[ghi]perylene 205-883-8		191-24-2		0.76 mg/kg		0.76 mg/kg	0.000076 %		
20	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		0.82 mg/kg		0.82 mg/kg	0.000082 %		
21	chrysene 601-048-00-0	205-923-4	218-01-9		1.2 mg/kg		1.2 mg/kg	0.00012 %		
22	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		0.12 mg/kg		0.12 mg/kg	0.000012 %		
23	fluoranthene 205-912-4		206-44-0		2.6 mg/kg		2.6 mg/kg	0.00026 %		
24	fluorene 201-695-5		86-73-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
25	indeno[123-cd]pyrene 205-893-2		193-39-5		0.61 mg/kg		0.61 mg/kg	0.000061 %		
26	phenanthrene 201-581-5		85-01-8		1.4 mg/kg		1.4 mg/kg	0.00014 %		
27	naphthalene 601-052-00-2	202-049-5	91-20-3		0.05 mg/kg		0.05 mg/kg	0.000005 %		
28	pyrene 204-927-3		129-00-0		2.8 mg/kg		2.8 mg/kg	0.00028 %		
Total:								0.0801 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product hydrocarbons recorded.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0041%)

Classification of sample: WS02[2]

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

Sample details

Sample name:	LoW Code:
WS02[2]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.60 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
15%	
(no correction)	

Hazard properties

None identified

Determinands

 Moisture content: **15% No 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		8 pH		8 pH	8pH		
2	arsenic { arsenic trioxide }				9.9 mg/kg	1.32	13.071 mg/kg	0.00131 %		
	033-003-00-0	215-481-4	1327-53-3							
3	cadmium { cadmium sulfide }			1	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
	048-010-00-4	215-147-8	1306-23-6							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				37 mg/kg	1.462	54.078 mg/kg	0.00541 %		
		215-160-9	1308-38-9							
5	copper { copper sulphate pentahydrate }				20 mg/kg	3.929	78.581 mg/kg	0.00786 %		
	029-023-00-4	231-847-6	7758-99-8							
6	lead { lead chromate }			1	32 mg/kg	1.56	49.914 mg/kg	0.0032 %		
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury dichloride }				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel chromate }				28 mg/kg	2.976	83.335 mg/kg	0.00833 %		
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1 mg/kg	1.405	1.405 mg/kg	0.000141 %		
	034-002-00-8									
10	zinc { zinc chromate }				44 mg/kg	2.774	122.062 mg/kg	0.0122 %		
	024-007-00-3	236-878-9	13530-65-9							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	TPH (C6 to C40) petroleum group		TPH		20 mg/kg		20 mg/kg	0.002 %		
13	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
14	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
15	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		0.06 mg/kg		0.06 mg/kg	0.000006 %		
17	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
18	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		0.08 mg/kg		0.08 mg/kg	0.000008 %		
19	benzo[ghi]perylene 205-883-8	191-24-2			0.05 mg/kg		0.05 mg/kg	0.000005 %		
20	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		0.17 mg/kg		0.17 mg/kg	0.000017 %		
21	chrysene 601-048-00-0	205-923-4	218-01-9		0.12 mg/kg		0.12 mg/kg	0.000012 %		
22	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		0.05 mg/kg		0.05 mg/kg	0.000005 %		
23	fluoranthene 205-912-4	206-44-0			0.3 mg/kg		0.3 mg/kg	0.00003 %		
24	fluorene 201-695-5	86-73-7			0.05 mg/kg		0.05 mg/kg	0.000005 %		
25	indeno[123-cd]pyrene 205-893-2	193-39-5			0.05 mg/kg		0.05 mg/kg	0.000005 %		
26	phenanthrene 201-581-5	85-01-8			0.05 mg/kg		0.05 mg/kg	0.000005 %		
27	naphthalene 601-052-00-2	202-049-5	91-20-3		0.05 mg/kg		0.05 mg/kg	0.000005 %		
28	pyrene 204-927-3	129-00-0			0.27 mg/kg		0.27 mg/kg	0.000027 %		
Total:								0.0409 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product hydrocarbons recorded.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.002%)

Classification of sample: WS03

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

Sample details

Sample name:	LoW Code:
WS03	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.20 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
14%	
(no correction)	

Hazard properties

None identified

Determinands

 Moisture content: **14% No 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		8.9 pH		8.9 pH	8.9 pH		
2	arsenic { arsenic trioxide }				10 mg/kg	1.32	13.203 mg/kg	0.00132 %		
	033-003-00-0	215-481-4	1327-53-3							
3	cadmium { cadmium sulfide }			1	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
	048-010-00-4	215-147-8	1306-23-6							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				19 mg/kg	1.462	27.77 mg/kg	0.00278 %		
		215-160-9	1308-38-9							
5	copper { copper sulphate pentahydrate }				40 mg/kg	3.929	157.162 mg/kg	0.0157 %		
	029-023-00-4	231-847-6	7758-99-8							
6	lead { lead chromate }			1	150 mg/kg	1.56	233.972 mg/kg	0.015 %		
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury dichloride }				0.7 mg/kg	1.353	0.947 mg/kg	0.0000947 %		
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel chromate }				17 mg/kg	2.976	50.597 mg/kg	0.00506 %		
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1 mg/kg	1.405	1.405 mg/kg	0.000141 %		
	034-002-00-8									
10	zinc { zinc chromate }				120 mg/kg	2.774	332.898 mg/kg	0.0333 %		
	024-007-00-3	236-878-9	13530-65-9							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	TPH (C6 to C40) petroleum group		TPH		87 mg/kg		87 mg/kg	0.0087 %		
13	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
14	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
15	anthracene				1.3 mg/kg		1.3 mg/kg	0.00013 %		
		204-371-1	120-12-7							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		3 mg/kg		3 mg/kg	0.0003 %		
17	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		2.3 mg/kg		2.3 mg/kg	0.00023 %		
18	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		1.8 mg/kg		1.8 mg/kg	0.00018 %		
19	benzo[ghi]perylene 205-883-8	191-24-2			1.3 mg/kg		1.3 mg/kg	0.00013 %		
20	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		1.6 mg/kg		1.6 mg/kg	0.00016 %		
21	chrysene 601-048-00-0	205-923-4	218-01-9		2.6 mg/kg		2.6 mg/kg	0.00026 %		
22	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		0.24 mg/kg		0.24 mg/kg	0.000024 %		
23	fluoranthene 205-912-4	206-44-0			8 mg/kg		8 mg/kg	0.0008 %		
24	fluorene 201-695-5	86-73-7			0.29 mg/kg		0.29 mg/kg	0.000029 %		
25	indeno[123-cd]pyrene 205-893-2	193-39-5			0.95 mg/kg		0.95 mg/kg	0.000095 %		
26	phenanthrene 201-581-5	85-01-8			4.5 mg/kg		4.5 mg/kg	0.00045 %		
27	naphthalene 601-052-00-2	202-049-5	91-20-3		0.05 mg/kg		0.05 mg/kg	0.000005 %		
28	pyrene 204-927-3	129-00-0			6.3 mg/kg		6.3 mg/kg	0.00063 %		
Total:								0.0858 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product hydrocarbons recorded.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0087%)

Classification of sample: WS04
 **Hazardous Waste**
 Classified as **17 05 03 ***
 in the List of Waste

Sample details

Sample name:	LoW Code:
WS04	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 03 * (Soil and stones containing hazardous substances)
0.40 m	
Moisture content:	
7.1%	
(no correction)	

Hazard properties

HP 8: Corrosive "waste which on application can cause skin corrosion"

pH; pH "Assumed to be irritant/corrosive because of pH value"

Because of determinand:

pH: (conc.: 11.7 pH)

Determinands

Moisture content: **7.1% No 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		11.7 pH		11.7	pH	11.7 pH		
2	arsenic { arsenic trioxide }				5.7 mg/kg	1.32	7.526	mg/kg	0.000753 %		
	033-003-00-0	215-481-4	1327-53-3								
3	cadmium { cadmium sulfide }			1	0.2 mg/kg	1.285	0.257	mg/kg	0.00002 %		
	048-010-00-4	215-147-8	1306-23-6								
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				14 mg/kg	1.462	20.462	mg/kg	0.00205 %		
		215-160-9	1308-38-9								
5	copper { copper sulphate pentahydrate }				32 mg/kg	3.929	125.73	mg/kg	0.0126 %		
	029-023-00-4	231-847-6	7758-99-8								
6	lead { lead chromate }			1	9.5 mg/kg	1.56	14.818	mg/kg	0.00095 %		
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury dichloride }				0.3 mg/kg	1.353	0.406	mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel chromate }				8.9 mg/kg	2.976	26.489	mg/kg	0.00265 %		
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1 mg/kg	1.405	1.405	mg/kg	0.000141 %		
	034-002-00-8										
10	zinc { zinc chromate }				33 mg/kg	2.774	91.547	mg/kg	0.00915 %		
	024-007-00-3	236-878-9	13530-65-9								
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0								
12	TPH (C6 to C40) petroleum group				20 mg/kg		20	mg/kg	0.002 %		
			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							
13	acenaphthene	201-469-6	83-32-9		0.05 mg/kg		0.05 mg/kg	0.000005 %		
14	acenaphthylene	205-917-1	208-96-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
15	anthracene	204-371-1	120-12-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
16	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.05 mg/kg		0.05 mg/kg	0.000005 %		
17	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.05 mg/kg		0.05 mg/kg	0.000005 %		
18	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.05 mg/kg		0.05 mg/kg	0.000005 %		
19	benzo[ghi]perylene	205-883-8	191-24-2		0.05 mg/kg		0.05 mg/kg	0.000005 %		
20	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.05 mg/kg		0.05 mg/kg	0.000005 %		
21	chrysene	601-048-00-0	205-923-4	218-01-9	0.05 mg/kg		0.05 mg/kg	0.000005 %		
22	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.05 mg/kg		0.05 mg/kg	0.000005 %		
23	fluoranthene	205-912-4	206-44-0		0.05 mg/kg		0.05 mg/kg	0.000005 %		
24	fluorene	201-695-5	86-73-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
25	indeno[123-cd]pyrene	205-893-2	193-39-5		0.05 mg/kg		0.05 mg/kg	0.000005 %		
26	phenanthrene	201-581-5	85-01-8		0.05 mg/kg		0.05 mg/kg	0.000005 %		
27	naphthalene	601-052-00-2	202-049-5	91-20-3	0.05 mg/kg		0.05 mg/kg	0.000005 %		
28	pyrene	204-927-3	129-00-0		0.05 mg/kg		0.05 mg/kg	0.000005 %		
Total:								0.0306 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product hydrocarbons recorded.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.002%)

Classification of sample: WS05
 **Non Hazardous Waste**
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
WS05	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.40 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
12%	
(no correction)	

Hazard properties

None identified

Determinands

 Moisture content: **12% No 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		8.5 pH		8.5 pH	8.5 pH		
2	arsenic { arsenic trioxide }				7.5 mg/kg	1.32	9.902 mg/kg	0.00099 %		
	033-003-00-0	215-481-4	1327-53-3							
3	cadmium { cadmium sulfide }			1	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
	048-010-00-4	215-147-8	1306-23-6							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				28 mg/kg	1.462	40.924 mg/kg	0.00409 %		
		215-160-9	1308-38-9							
5	copper { copper sulphate pentahydrate }				15 mg/kg	3.929	58.936 mg/kg	0.00589 %		
	029-023-00-4	231-847-6	7758-99-8							
6	lead { lead chromate }			1	24 mg/kg	1.56	37.436 mg/kg	0.0024 %		
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury dichloride }				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel chromate }				21 mg/kg	2.976	62.502 mg/kg	0.00625 %		
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1 mg/kg	1.405	1.405 mg/kg	0.000141 %		
	034-002-00-8									
10	zinc { zinc chromate }				45 mg/kg	2.774	124.837 mg/kg	0.0125 %		
	024-007-00-3	236-878-9	13530-65-9							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	TPH (C6 to C40) petroleum group		TPH		20 mg/kg		20 mg/kg	0.002 %		
13	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
14	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
15	anthracene				0.24 mg/kg		0.24 mg/kg	0.000024 %		
		204-371-1	120-12-7							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	benzo[a]anthracene				0.17 mg/kg		0.17 mg/kg	0.000017 %		
	601-033-00-9	200-280-6	56-55-3							
17	benzo[a]pyrene; benzo[def]chrysene				0.14 mg/kg		0.14 mg/kg	0.000014 %		
	601-032-00-3	200-028-5	50-32-8							
18	benzo[b]fluoranthene				0.13 mg/kg		0.13 mg/kg	0.000013 %		
	601-034-00-4	205-911-9	205-99-2							
19	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
20	benzo[k]fluoranthene				0.2 mg/kg		0.2 mg/kg	0.00002 %		
	601-036-00-5	205-916-6	207-08-9							
21	chrysene				0.25 mg/kg		0.25 mg/kg	0.000025 %		
	601-048-00-0	205-923-4	218-01-9							
22	dibenz[a,h]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-041-00-2	200-181-8	53-70-3							
23	fluoranthene				0.56 mg/kg		0.56 mg/kg	0.000056 %		
		205-912-4	206-44-0							
24	fluorene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-695-5	86-73-7							
25	indeno[123-cd]pyrene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-893-2	193-39-5							
26	phenanthrene				0.48 mg/kg		0.48 mg/kg	0.000048 %		
		201-581-5	85-01-8							
27	naphthalene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-052-00-2	202-049-5	91-20-3							
28	pyrene				0.51 mg/kg		0.51 mg/kg	0.000051 %		
		204-927-3	129-00-0							
Total:								0.0348 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product hydrocarbons recorded.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.002%)

Classification of sample: WS06

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

Sample details

Sample name:	LoW Code:
WS06	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.35 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
17%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 17% No 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		8.2 pH		8.2 pH	8.2 pH		
2	arsenic { arsenic trioxide }				16 mg/kg	1.32	21.125 mg/kg	0.00211 %		
	033-003-00-0	215-481-4	1327-53-3							
3	cadmium { cadmium sulfide }			1	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
	048-010-00-4	215-147-8	1306-23-6							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				41 mg/kg	1.462	59.924 mg/kg	0.00599 %		
		215-160-9	1308-38-9							
5	copper { copper sulphate pentahydrate }				34 mg/kg	3.929	133.588 mg/kg	0.0134 %		
	029-023-00-4	231-847-6	7758-99-8							
6	lead { lead chromate }			1	28 mg/kg	1.56	43.675 mg/kg	0.0028 %		
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury dichloride }				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel chromate }				37 mg/kg	2.976	110.122 mg/kg	0.011 %		
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1 mg/kg	1.405	1.405 mg/kg	0.000141 %		
	034-002-00-8									
10	zinc { zinc chromate }				56 mg/kg	2.774	155.352 mg/kg	0.0155 %		
	024-007-00-3	236-878-9	13530-65-9							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	TPH (C6 to C40) petroleum group		TPH		55 mg/kg		55 mg/kg	0.0055 %		
13	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
14	acenaphthylene				0.12 mg/kg		0.12 mg/kg	0.000012 %		
		205-917-1	208-96-8							
15	anthracene				0.48 mg/kg		0.48 mg/kg	0.000048 %		
		204-371-1	120-12-7							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		0.44 mg/kg		0.44 mg/kg	0.000044 %		
17	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		0.4 mg/kg		0.4 mg/kg	0.00004 %		
18	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		0.29 mg/kg		0.29 mg/kg	0.000029 %		
19	benzo[ghi]perylene 205-883-8	191-24-2			0.05 mg/kg		0.05 mg/kg	0.000005 %		
20	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		0.69 mg/kg		0.69 mg/kg	0.000069 %		
21	chrysene 601-048-00-0	205-923-4	218-01-9		0.82 mg/kg		0.82 mg/kg	0.000082 %		
22	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		0.05 mg/kg		0.05 mg/kg	0.000005 %		
23	fluoranthene 205-912-4	206-44-0			1.4 mg/kg		1.4 mg/kg	0.00014 %		
24	fluorene 201-695-5	86-73-7			0.09 mg/kg		0.09 mg/kg	0.000009 %		
25	indeno[123-cd]pyrene 205-893-2	193-39-5			0.05 mg/kg		0.05 mg/kg	0.000005 %		
26	phenanthrene 201-581-5	85-01-8			1.1 mg/kg		1.1 mg/kg	0.00011 %		
27	naphthalene 601-052-00-2	202-049-5	91-20-3		0.05 mg/kg		0.05 mg/kg	0.000005 %		
28	pyrene 204-927-3	129-00-0			1.4 mg/kg		1.4 mg/kg	0.00014 %		
Total:								0.0575 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product hydrocarbons recorded.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0055%)

Classification of sample: WS08

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

Sample details

Sample name:	LoW Code:
WS08	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.30 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
19%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 19% No 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		8.5 pH		8.5 pH	8.5 pH		
2	arsenic { arsenic trioxide }				28 mg/kg	1.32	36.969 mg/kg	0.0037 %		
	033-003-00-0	215-481-4	1327-53-3							
3	cadmium { cadmium sulfide }			1	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
	048-010-00-4	215-147-8	1306-23-6							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				24 mg/kg	1.462	35.077 mg/kg	0.00351 %		
		215-160-9	1308-38-9							
5	copper { copper sulphate pentahydrate }				110 mg/kg	3.929	432.196 mg/kg	0.0432 %		
	029-023-00-4	231-847-6	7758-99-8							
6	lead { lead chromate }			1	65 mg/kg	1.56	101.388 mg/kg	0.0065 %		
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury dichloride }				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel chromate }				56 mg/kg	2.976	166.671 mg/kg	0.0167 %		
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1 mg/kg	1.405	1.405 mg/kg	0.000141 %		
	034-002-00-8									
10	zinc { zinc chromate }				110 mg/kg	2.774	305.156 mg/kg	0.0305 %		
	024-007-00-3	236-878-9	13530-65-9							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	TPH (C6 to C40) petroleum group		TPH		64 mg/kg		64 mg/kg	0.0064 %		
13	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-469-6	83-32-9							
14	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
15	anthracene				0.43 mg/kg		0.43 mg/kg	0.000043 %		
		204-371-1	120-12-7							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		0.77 mg/kg		0.77 mg/kg	0.000077 %		
17	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		0.71 mg/kg		0.71 mg/kg	0.000071 %		
18	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		0.58 mg/kg		0.58 mg/kg	0.000058 %		
19	benzo[ghi]perylene 205-883-8		191-24-2		0.4 mg/kg		0.4 mg/kg	0.00004 %		
20	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		0.52 mg/kg		0.52 mg/kg	0.000052 %		
21	chrysene 601-048-00-0	205-923-4	218-01-9		0.93 mg/kg		0.93 mg/kg	0.000093 %		
22	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		0.05 mg/kg		0.05 mg/kg	0.000005 %		
23	fluoranthene 205-912-4		206-44-0		1.8 mg/kg		1.8 mg/kg	0.00018 %		
24	fluorene 201-695-5		86-73-7		0.05 mg/kg		0.05 mg/kg	0.000005 %		
25	indeno[123-cd]pyrene 205-893-2		193-39-5		0.37 mg/kg		0.37 mg/kg	0.000037 %		
26	phenanthrene 201-581-5		85-01-8		0.99 mg/kg		0.99 mg/kg	0.000099 %		
27	naphthalene 601-052-00-2	202-049-5	91-20-3		0.05 mg/kg		0.05 mg/kg	0.000005 %		
28	pyrene 204-927-3		129-00-0		1.8 mg/kg		1.8 mg/kg	0.00018 %		
29	asbestos 650-013-00-6	-----	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5		10 mg/kg		10 mg/kg	0.001 %		
Total:								0.113 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product hydrocarbons recorded.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0064%)

Classification of sample: WS08[2]

Unknown. Chemistry data not provided.

 Classified as **17 05 04** or **17 05 03 ***
 in the List of Waste

Sample details

Sample name:	LoW Code:
WS08[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)
0.50 m	
Moisture content:	
11%	
(no correction)	

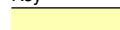
Hazard properties

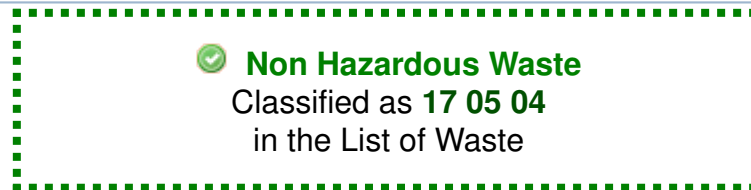
None identified

Determinands

 Moisture content: **11%** No 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							
Total:							0%			

Key
 User supplied data

Classification of sample: WS09

Sample details

Sample name:	WS09	LoW Code:	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	0.60 m	Entry:		17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content:	11% (no correction)			

Hazard properties

None identified

Determinands

Moisture content: 11% No 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				8.2	pH		8.2	pH	8.2 pH		
2	arsenic { arsenic trioxide }				11	mg/kg	1.32	14.524	mg/kg	0.00145 %		
	033-003-00-0	215-481-4	1327-53-3									
3	cadmium { cadmium sulfide }			1	0.2	mg/kg	1.285	0.257	mg/kg	0.00002 %		
	048-010-00-4	215-147-8	1306-23-6									
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				27	mg/kg	1.462	39.462	mg/kg	0.00395 %		
		215-160-9	1308-38-9									
5	copper { copper sulphate pentahydrate }				41	mg/kg	3.929	161.091	mg/kg	0.0161 %		
	029-023-00-4	231-847-6	7758-99-8									
6	lead { lead chromate }			1	50	mg/kg	1.56	77.991	mg/kg	0.005 %		
	082-004-00-2	231-846-0	7758-97-6									
7	mercury { mercury dichloride }				0.3	mg/kg	1.353	0.406	mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel chromate }				33	mg/kg	2.976	98.217	mg/kg	0.00982 %		
	028-035-00-7	238-766-5	14721-18-7									
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	1.405	1.405	mg/kg	0.000141 %		
	034-002-00-8											
10	zinc { zinc chromate }				62	mg/kg	2.774	171.997	mg/kg	0.0172 %		
	024-007-00-3	236-878-9	13530-65-9									
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
12	TPH (C6 to C40) petroleum group				20	mg/kg		20	mg/kg	0.002 %		
			TPH									
13	acenaphthene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		201-469-6	83-32-9									
14	acenaphthylene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		205-917-1	208-96-8									
15	anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		204-371-1	120-12-7									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
17	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
18	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
19	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
20	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
21	chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-048-00-0	205-923-4	218-01-9							
22	dibenz[a,h]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-041-00-2	200-181-8	53-70-3							
23	fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-912-4	206-44-0							
24	fluorene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-695-5	86-73-7							
25	indeno[123-cd]pyrene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-893-2	193-39-5							
26	phenanthrene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-581-5	85-01-8							
27	naphthalene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-052-00-2	202-049-5	91-20-3							
28	pyrene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-927-3	129-00-0							
Total:								0.056 %		

Key

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

Supplementary Hazardous Property Information

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

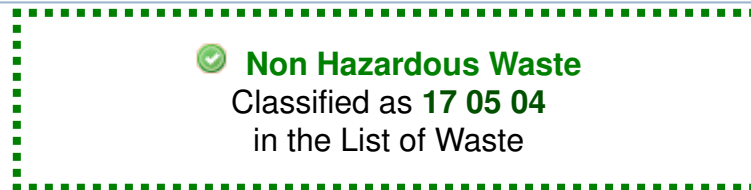
Force this Hazardous property to non hazardous because No free product hydrocarbons recorded.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.002%)

Classification of sample: WS11

Sample details

Sample name:	LoW Code:
WS11	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.25 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
11%	
(no correction)	

Hazard properties

None identified

Determinands

Moisture content: 11% No 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				7.9 pH		7.9 pH	7.9 pH		
2	arsenic { arsenic trioxide }				17 mg/kg	1.32	22.446 mg/kg	0.00224 %		
	033-003-00-0	215-481-4	1327-53-3							
3	cadmium { cadmium sulfide }			1	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
	048-010-00-4	215-147-8	1306-23-6							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				23 mg/kg	1.462	33.616 mg/kg	0.00336 %		
		215-160-9	1308-38-9							
5	copper { copper sulphate pentahydrate }				71 mg/kg	3.929	278.963 mg/kg	0.0279 %		
	029-023-00-4	231-847-6	7758-99-8							
6	lead { lead chromate }			1	31 mg/kg	1.56	48.354 mg/kg	0.0031 %		
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury dichloride }				0.3 mg/kg	1.353	0.406 mg/kg	0.0000406 %		
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel chromate }				39 mg/kg	2.976	116.074 mg/kg	0.0116 %		
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1 mg/kg	1.405	1.405 mg/kg	0.000141 %		
	034-002-00-8									
10	zinc { zinc chromate }				82 mg/kg	2.774	227.48 mg/kg	0.0227 %		
	024-007-00-3	236-878-9	13530-65-9							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	TPH (C6 to C40) petroleum group				410 mg/kg		410 mg/kg	0.041 %		
			TPH							
13	acenaphthene				0.11 mg/kg		0.11 mg/kg	0.000011 %		
		201-469-6	83-32-9							
14	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-917-1	208-96-8							
15	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		204-371-1	120-12-7							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	benzo[a]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-033-00-9	200-280-6	56-55-3							
17	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-032-00-3	200-028-5	50-32-8							
18	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-034-00-4	205-911-9	205-99-2							
19	benzo[ghi]perylene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-883-8	191-24-2							
20	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-036-00-5	205-916-6	207-08-9							
21	chrysene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-048-00-0	205-923-4	218-01-9							
22	dibenz[a,h]anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-041-00-2	200-181-8	53-70-3							
23	fluoranthene				0.09 mg/kg		0.09 mg/kg	0.000009 %		
		205-912-4	206-44-0							
24	fluorene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-695-5	86-73-7							
25	indeno[123-cd]pyrene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		205-893-2	193-39-5							
26	phenanthrene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-581-5	85-01-8							
27	naphthalene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
	601-052-00-2	202-049-5	91-20-3							
28	pyrene				0.12 mg/kg		0.12 mg/kg	0.000012 %		
		204-927-3	129-00-0							
Total:								0.112 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product hydrocarbons recorded.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.041%)

Appendix A: Classifier defined and non GB MCL determinands

• pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

• 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

• 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

• 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

• 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

• 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

• 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

• 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

• 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

• 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

■ **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

■ **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

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

(enter justification for selecting this species)

cadmium {cadmium sulfide}

(enter justification for selecting this species)

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

(enter justification for selecting this species)

copper {copper sulphate pentahydrate}

(enter justification for selecting this species)

lead {lead chromate}

(enter justification for selecting this species)

mercury {mercury dichloride}

(enter justification for selecting this species)

nickel {nickel chromate}

(enter justification for selecting this species)

selenium {selenium compounds with the exception of cadmium sulposelenide and those specified elsewhere in this Annex}

(enter justification for selecting this species)

zinc {zinc chromate}

(enter justification for selecting this species)

chromium in chromium(VI) compounds {chromium(VI) oxide}

(enter justification for selecting this species)

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

Patrick Parsons Generic Assessment Criteria (GAC)

Generic Assessment Criteria

		Residential with Homegrown Produce			Residential without Homegrown Produce			Allotments			Commercial			Public Open Space Near Residential Housing			Public Open Space Park		
SOM %		1	2.5	6	1	2.5	6	1	2.5	6	1	2.5	6	1	2.5	6	1	2.5	6
Metals and Inorganics (non SOM dependent)	Arsenic		37			40			43			640			79			170	
	Beryllium		1.7			1.7			35			12			2.2			63	
	Boron		290			11000			45			240000			21000			46000	
	Cadmium		11			85			1.9			190			120			555	
	Chromium (III)		910			910			18000			8600			1500			33000	
	Chromium (VI) (Hexavalent)		6			6			1.8			33			7.7			220	
	Copper		2400			7100			520			68000			12000			44000	
	Elemental Mercury		1.2			1.2			21			58			16			30	
	Inorganic Mercury		40			56			19			1100			120			240	
	Methylmercury		11			15			6			320			40			68	
	Lead		200			310			80			2300			630			1300	
	Nickel		130			180			53			980			230			800	
	Selenium		250			430			88			12000			1100			1800	
	Vanadium		410			1200			91			9000			2000			5000	
	Zinc		3700			40000			620			730000			81000			170000	
Polyaromatic Hydrocarbons	Acenaphthene	210	510	1100	3000	4700	6000	34	85	200	84000	97000	100000	15000	15000	15000	29000	30000	30000
	Acenaphthylene	170	420	920	2900	4600	6000	28	69	160	83000	97000	100000	15000	15000	15000	29000	30000	30000
	Anthracene	2400	5400	11000	31000	35000	37000	380	950	2200	520000	540000	540000	74000	74000	74000	150000	150000	150000
	Benzo[a]anthracene	7.2	11	13	11	14	15	2.9	6.5	13	170	170	180	29	29	29	49	56	62
	Benzo[a]pyrene	2.2	2.7	3	3.2	3.2	3.2	0.97	2.0	3.5	35	35	36	5.7	5.7	5.7	11	12	13
	Benzo[b]fluoranthene	2.6	3.3	3.7	3.9	4.0	4.0	0.99	2.1	3.9	44	44	45	7.1	7.2	7.2	13	15	16
	Benzo[ghi]perylene	320	340	350	360	360	360	290	470	640	3900	4000	4000	640	640	640	1400	1500	1600
	Benzo[k]fluoranthene	77	93	100	110	110	110	37	75	130	1200	1200	1200	190	190	190	370	410	440
	Chrysene	15	22	27	30	31	32	4.1	9.4	19	350	350	350	57	57	57	93	110	120
	Dibenz[ah]anthracene	0.24	0.28	0.3	0.31	0.32	0.32	0.14	0.27	0.43	3.5	3.6	3.6	0.57	0.57	0.58	1.1	1.3	1.4
	Fluoranthene	280	560	890	1500	1600	1600	52	130	290	23000	23000	23000	3100	3100	3100	6300	6300	6400
	Fluorene	170	400	860	2800	3800	4500	27	67	160	63000	68000	71000	9900	9900	9900	20000	20000	20000
	Indeno[123-cd]pyrene	27	36	41	45	46	46	9.5	21	39	500	510	510	82	82	82	150	170	180
	Naphthalene	2.3	5.6	13	2.3	5.6	13	4.1	10	24	190	460	1100	4900	4900	4900	1200	1900	3000
	Phenanthrene	95	220	440	1300	1500	1500	15	38	90	22000	22000	23000	3100	3100	3100	6200	6200	6300
	Pyrene	620	1200	2000	3700	3800	3800	110	270	620	54000	54000	54000	7400	7400	7400	15000	15000	15000
	Coal Tar (B[a]P as surrogate marker)	0.79	0.98	1.1	1.2	1.2	1.2	0.32	0.67	1.2	15	15	15	2.2	2.2	2.2	4.4	4.7	4.8
Petroleum Hydrocarbons	Benzene	0.087	0.17	0.37	0.38	0.7	1.4	0.017	0.034	0.075	27	47	90	72	72	73	90	100	110
	Toluene	130	290	660	880	1900	3900	22	51	120	56000	110000	180000	56000	56000	56000	87000	95000	100000
	Ethylbenzene	47	110	260	83	190	440	16	39	91	5700	13000	27000	24000	24000	25000	17000	22000	27000
	m-Xylene	59	140	320	82	190	450	31	74	170	6200	14000	31000	41000	42000	43000	17000	24000	32000
	o-Xylene	60	140	330	88	210	480	28	67	160	6600	15000	33000	41000	42000	43000	17000	24000	33000
	p-Xylene	56	130	310	79	180	430	29	69	160	5900	14000	30000	41000	42000	43000	17000	23000	31000
	Aliphatic EC 5-6	42	78	160	42	78	160	730	1700	3900	3200	5900	12000	570000	590000	600000	95000	130000	180000
	Aliphatic EC >6-8	100	230	530	100	230	530	2300	5600	13000	7800	17000	40000	600000	610000	620000	150000	220000	320000
	Aliphatic EC >8-10	27	65	150	27	65	150	320	770	1700	2000	4800	11000	13000	13000	13000	14000	18000	21000
	Aliphatic EC >10-12	130	330	760	130	330	770	2200	4400	7300	9700	23000	47000	13000	13000	13000	21000	23000	24000
	Aliphatic EC >12-16	1100	2400	4300	1100	2400	4400	11000	13000	13000	59000	82000	90000	13000	13000	13000	25000	25000	26000
	Aliphatic EC >16-35	65000	92000	110000	65000	92000	110000	260000	270000	270000	1600000	1700000	1800000	250000	250000	250000	450000	480000	490000
	Aliphatic EC >35-44	65000	92000	110000	65000	92000	110000	260000	270000	270000	1600000	1700000	1800000	250000	250000	250000	450000	480000	490000
	Aromatic EC 5-7 (benzene)	70	140	300	370	690	1400	13	27	57	26000	46000	86000	56000	56000	56000	76000	84000	92000
	Aromatic EC >7-8 (toluene)	130	290	660	860	1800	3900	22	51	120	56000	110000	180000	56000	56000	56000	87000	95000	100000
	Aromatic EC >8-10	34	83	190	47	110	270	8.6	21	51	3500	8100	17000	5000	5000	5000	7200	8500	9300
	Aromatic EC >10-12	74	180	380	250	590	1200	13	31	74	16000	28000	34000	5000	5000	5000	9200	9700	10000
	Aromatic EC >12-16	140	330	660	1800	2300	2500	23	57	130	36000	37000	38000	5100	5100	5000	10000	10000	10000
	Aromatic EC >16-21	260	540	930	1900	1900	1900	46	110	260	28000	28000	28000	3800	3800	3800	7600	7700	7800
	Aromatic EC >21-35	1100	1500	1700	1900	1900	1900	370	820	1600	28000	28000	28000	3800	3800	3800	7800	7800	7900
	Aromatic EC >35-44	1100	1500	1700	1900	1900	1900	370	820	1600	28000	28000	28000	3800	3800	3800	7800	7800	7900
	Petroleum Hydrocarbons EC >44-70	1600	1800	1900	1900	1900	1900	1200	2100	3000	28000	28000	28000	3800	3800	3800	7800	7800	7900

UK Locations

Ash Vale
Birmingham
London
Wakefield

