Phase II Interpretative Ground Assessment

At

Cheetham Hill, Manchester

Client: MSV Housing

Reference: 33716-SUT-ZZ-00-RP-G-7202

Date: February 2026

Liverpool Head Office
18-20 Harrington Street
Liverpool
L2 9QA

T: 0151 227 3155
E: enquiries@sutcliffe.co.uk
www.sutcliffe.co.uk

Manchester Office
T: 0161 817 5180

North Wales Office
T: 01978 664 071

London Office
T: 020 8016 4320

@Sutcliffe_1985 Sutcliffe1985 Sutcliffe

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SUTCLIFFE INVESTIGATIONS

Phase II Interpretative Ground Assessment

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Prepared by: Checked/Approved by:

Name:	D Evans	Name:	D Bowen	W G Baldwin
Title:	Geo-Environmental Scientist	Title:	Associate	Director
Qualifications:	BSc (Hons) AMIEnvSc FGS M.I. Soil Sci.	Qualifications:	BSc (Hons) FGS	BEng (Hons) CEng MIStructE AISEP FGS

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Foreword (Geotechnical and Environmental Assessment)

This report has been prepared for the sole internal use and reliance of the Client named on page 1. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Sutcliffe Investigation; such authorisation not to be unreasonably withheld. If any unauthorised third party comes into possession of this report, they rely on it at their risk and the authors owe them no duty of care and skill.

The report presents observations and factual data obtained during our site investigation and provides an assessment of Geotechnical and environmental issues with respect to information provided by the Client regarding the proposed development. Further advice should be sought from Sutcliffe Investigation prior to significant revision of the development proposals. Primary aims of this exploratory phase of investigation were to identify salient geotechnical and environmental issues affecting the site to enable the client to obtain budget costs for the necessary site preparatory and remedial works.

The report should be read in its entirety, including all associated drawings and appendices. Sutcliffe Investigation cannot be held responsible for any misinterpretations arising from the use of extracts that are taken out of context.

The findings and opinions conveyed in this report (including review of any third-party reports) are based on information obtained from a variety of sources as detailed within this report, and which Sutcliffe Investigation believes are reliable. All reasonable care and skill have been applied in examining the information obtained. Nevertheless, Sutcliffe Investigation cannot and does not guarantee the authenticity or reliability of the information it has relied upon.

The report represents the findings and opinions of experienced Geotechnical and environmental consultants. Sutcliffe Investigations does not provide legal advice and the advice of lawyers may also be required.

Intrusive investigation can only investigate shallow ground beneath a small proportion of the total site area. It is possible therefore that the intrusive investigation undertaken by Sutcliffe Investigation, whilst fully appropriate, may not have encountered all significant subsurface conditions. Any opinions expressed as to the possible configuration of strata between, or below exploratory holes are for guidance only and no responsibility is accepted as to its accuracy.

It should be borne in mind that the timescale over which the investigation was undertaken might not allow the establishment of equilibrium groundwater levels. Particularly relevant in this context is that groundwater levels are susceptible to seasonal and other variations and may be higher during the wetter periods than those encountered during this commission.

Where the report refers to the potential presence of invasive weeds such as Japanese Knotweed, or the presence of asbestos containing materials, it should be noted that the observations are for information only and should be verified by a suitably qualified expert.

This report assumes that ground levels will not change significantly from those existing at present. If this is not to be the case, then some modification to this report may be required.

It should be noted that the banning of the co-disposal of hazardous and non-hazardous waste was introduced in 2011, as a result of the implementation within the UK of the Landfill Directive. This will considerably affect the current practices and procedures for the handling and disposal of wastes, in particular hazardous wastes. In addition, it will be a requirement for all wastes to be pre-treated and to comply with certain waste acceptance procedures prior to sending wastes to landfill. The full potential effects of these important changes are not known at this stage, but it is perceived that disposal costs will rise, particularly for hazardous wastes, and waste pre-treatment may, in some cases, become an ‘additional’ redevelopment cost with regard to the remediation of contaminated sites.

Should this report recommend materials could be excavated and removed off-site for landfill disposal, then it should be noted that the costs, timescales and implications of the pending changes to waste management legislation could not be predicted at this stage. Sutcliffe Investigation will not be responsible for changing practices, etc that may affect the viability of necessary remedial actions or of the implications of potential alternative treatment techniques.

Sutcliffe Investigation reserves the right to amend their conclusions and recommendations in the light of further information that may become available. General notes and limitations relevant to all Sutcliffe Investigations are described in the Foreword and should be read in conjunction with this report.

Executive Summary

INTRODUCTION	Sutcliffe Investigations was instructed by MSV Housing (the "client") to undertake a Phase II ground assessment for the site at Cheetham Hill, Manchester. The site is located at land adjacent to Alderford Parade / Heatherdale Drive, Cheetham Hill, Manchester, M8 0TJ at National Grid Reference (NGR) 384030, 400690, within a predominantly residential area with local amenities also noted in the area. This report assesses the ground based geotechnical and environmental risks, constraints and liabilities associated with the proposed development of the site. This is required in support of the discharge of contaminated land planning conditions assigned to the site and to allow the design of economic foundation solutions.
SITE DESCRIPTION	The site is split into two zones, both are irregular in shape, 1.3ha in total area with Alderford Parade to the north of the site as well as Dinnington Drive and Heatherdale Drive both to the south of the site. The site's borders are largely lined by either wooden posts, metal fencing or stone boulders, therefore vehicular access to each part of the site will need to be taken into consideration before any site investigation works occur. The site is covered by grass with multiple tarmacked and concrete slab footpaths running across the site as well as the occasional tree dotted throughout.
DEVELOPMENT PROPOSAL	This report has been prepared in support of a planning application to develop the site for housing with associated garden areas and infrastructure. Based on information received from the architect, it is anticipated that site levels will be retained to facilitate the proposed development option.
PRELIMINARY CONCEPTUAL MODEL	The earliest available historical map (1848) shows the site to be located within field land and segmented by fencing and possible shrubbery. By 1890 terraced houses and roads are noted in the western section of the site and partially in the eastern section of the site, and by 1908 the entire site is occupied by terraced houses as well as several roads. In the 1949 – 1952 mapping, a Clothing Factory is noted to encroach onto the northern boundary of the site. By 1975 it appears that the terraced houses have been knocked down and new buildings have been erected across the site in their place. The map dated between 1978 and 1984 shows a pub, possibly with a cellar, is noted in the north-western tip of the site. By 1992 a few buildings in the western section of the site are no longer mapped. The aerial photography dated 2000 shows that all the buildings noted on-site are no longer mapped, with grass, several trees and footpaths now cover the site. No further significant changes or features are noted on-site from the available historical mappings. Historical maps have indicated that terraced houses, roads and part of a clothing factory were noted on-site from at least 1890 to 1975 when they were demolished and replaced by residential buildings and a pub. By 1992 some of the buildings are no longer mapped and by 2000 all the buildings including the pub are no longer mapped. Made Ground associated with the demolished buildings is anticipated below ground level across the site. Significant thicknesses of Made Ground, associated with a possible infilled cellar, are potentially present in the north-western tip of the site where the pub was situated. As historic roads were once on-site, past hydrocarbon leakages from parked cars may have occurred. An electricity substation is located immediately off-site but PCB contamination could be a present on-site which would be a human health risk to future site users. Consequently, the potential for significant contamination to have arisen at the site as a result of demolished buildings and hydrocarbon leakages is considered likely. The UXO report recommended that the site be considered a medium risk of unexploded ordinance and is possible that UXO might be encountered. Demolished residential and industrial buildings are also noted surrounding the site and therefore the associated Made Ground may be an active source of leachate and gas generation. Future site users are very unlikely to come into direct contact with potentially contaminated ground located off-site.
PREVIOUS WORKS	Sutcliffe have completed a Phase I Preliminary Risk Assessment (PRA). *Report Ref. 33716-SUT-ZZ-00-RP-G-7101,* a synopsis of which is provided in Section 2 of this report. No other previous studies are known to have been undertaken to Sutcliffe's knowledge.

SITE INVESTIGATION	Field works were undertaken on 27th November-1st December 2023 and 7th-9th February 2024 by VC Drilling, a specialist ground investigation contractor and comprised: - 3No. Cable Percussion (BH201-BH203) - 17No. Window Sample Holes (WS101-WS116) - 8No. Trial Pit Excavations (TP101-TP108) - Contamination samples from various depth in the Made Ground. - Leachate samples. - PCB Samples - Pipeline Risk Assessment Samples - Hazardous Waste Sampling - WAC Sampling - Gas monitoring wells. - Monitoring of ground gas / ground water with installed locations.
GROUND CONDITIONS	Made Ground: Made Ground was encountered in all the exploratory holes across the site and was noted to a maximum depth of 2.60m bgl in TP105. Final depth of Made Ground was not proven in WS105 and WS108. Made Ground generally consisted of grass over silty gravelly fine to medium SAND with gravel of brick, concrete and mixed lithology / sandy clayey ashy GRAVEL of brick, coal, glass, rubber and mixed lithology. Natural Ground: Natural ground was encountered in all positions (except WS105 and WS108) and consisted of slightly gravelly CLAY with rare fine sand bands and gravel of mixed lithology extending to 5.45m bgl. Slightly silty SAND with occasional sand bands was observed proven to 18.95m bgl where the investigation terminates.
GROUNDWATER	Groundwater was not encountered during the site investigation.
SOIL INFILTRATION	1No. infiltration test (SA201) was carried out on site at a location indicated by the Sutcliffe Engineer. Due to the inefficient infiltration characteristics of the ground at the excavation depths, the soakaway tests comprised a single fill. The results of the soakaway test are provided in Appendix C. The test results for the soakaway did not provide an infiltration rate due to the inefficiencies of the ground to infiltrate. As the soakaway test failed, it is advised that alternative methods of sustainable drainage are explored.
ENVIRONMENTAL RISK ASSESSMENT	Long Term Human Health Elevated levels of Lead, Benzo(b)fluoranthene, Benzo(a)pyrene and Dibenzo(ah)anthracene were observed in samples screened in WS107 (0.00-0.40m bgl), WS110 (1.00-1.60m bgl) and TP101 (0.00-0.30m bgl). The statistical analysis for all exceeded contaminants within the Alderford Parade development zone indicates that there is a very high probability that the true mean concentrations are below the critical concentrations and Sutcliffe are confident that these contaminants are unlikely to pose a zone wide risk to human health. In the areas of exceeded contaminants (TP101 and WS107), it is recommended that plots in the vicinity would be remediated to reduce the risk to human health. This is presented on Sutcliffe Drawing Ref. 33716-SUT-ZZ-00-DR-G-7254 P02 (Cover System Zoning Plan) herein. The statistical analysis for all exceeded contaminants within the Heatherdale Parade development zone indicates that the true mean concentrations have the potential to be above the critical concentration and hence there is a zone wide risk human health. Remedial works will be required to reduce the risk and be suitable for the proposed end use. It is noted that 1No. sample (TP106) identified Asbestos containing material above the threshold for human health, and that further delineation is recommended to ascertain the extent of asbestos contamination in this area and to provide more detailed information on the potential human health risk to construction workers from this material. Construction workers may be exposed via dermal contact, ingestion and inhalation of soil / dust during the construction period. Adjacent site users may also be exposed to contaminated soils via inhalation of dust generated during the construction phase.

	Controlled Waters Risk Assessment For controlled waters there are two assessment criteria, the Environmental Quality Standard (EQS) and the UK Drinking Water Standard (UKDWS). Exceedances of DWS and EQS screening criteria are not considered significant given the likely depth to groundwater, effects of natural attenuation, lack of nearby groundwater abstractions and the absence of any surface water courses that could be in continuity with ground water beneath the site.
ASBESTOS	It is noted that 1No. sample (TP106) identified Asbestos containing material above the threshold for human health, and that further delineation is recommended to ascertain the extent of asbestos contamination in this area and to provide more detailed information on the potential human health risk to construction workers from this material.
GROUND GAS RISK ASSESSMENT	Ground gas monitoring has indicated elevated levels of Carbon Dioxide within WS106 and WS110, and it is recommended that these areas on site are classified as CS2. As such gas protection measures will be required as part of the development of the site. A gas risk classification Drawing Ref. 33716-SUT-ZZ-00-DR-G-7253 highlighting the areas required for gas protection is provided herein.
RADON	The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level. No radon protective measures are necessary
GEOTECHNICAL ASSESSMENT	General It is understood that consideration is being given to the development of houses with associated garden areas and infrastructure. Due to the ground conditions encountered it would be Sutcliffe's recommendation that a mixed concrete strip / piled foundation solution is adopted due to the amount of Made Ground that has been identified on site. Final pile design will be undertaken by a specialist piling contractor. A foundation zoning plan Drawing Ref. 33716-SUT-ZZ-00-DR-G-7252 P03 is provided herein. Limited groundwater ingress was recorded during site investigation works and subsequent monitoring. Sub-surface concrete that is only in contact with Made Ground can be Design Sulphate Class DS-1, with an ACEC Classification of AC-1s. Ground Floor Construction Based upon the amount of Made Ground noted on site it is not recommended that a ground-bearing slab is utilised on site. Sutcliffe Investigations therefore propose a suspended P.C Unit ground floor be adopted. Geotechnical Uncertainty The site has been subject to previous development and therefore, the potential for relic foundations and obstructions cannot be discounted.
WASTE CLASSIFICATION	The Waste Classification Report states that all soils sampled are classified as 'Non-Hazardous' waste. WAC analysis indicates that soils analysed at WS104 (0.00-0.40m bgl) can be downgraded as a 'Inert' classification. Notwithstanding, the final decision on waste classification is determined by the accepting landfill, and consultation with landfill operators be carried out during the development of the SMMP.
RECOMMENDATIONS	The following actions are recommended: - Design a Phase III Remediation & Validation Proposal for submission to planning department. - Design SMMP – management of material on and off site. - Delineation of asbestos hot spot. - Good hygiene practices should be employed during construction work, in addition, the findings of this investigation should be included within the contractors H&S file and an assessment of risks associated with short term human health completed. No consumption of food or smoking should occur without prior hand washing. If dust is encountered, dust masks should be worn, and dust suppression employed.

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1 Introduction

1.1 Terms of Reference

Sutcliffe Investigations was instructed by MSV Housing (*the "client"*) to undertake a Phase II ground assessment for the site at Cheetham Hill, Manchester.

A plan detailing the sites existing site layout is presented as *Bowker Sadler Architecture Drawing Ref. 21-026-BSA-0051.*

This report assesses the ground based geotechnical and environmental risks, constraints and liabilities associated with the proposed development of the site. This is required in support of the discharge of contaminated land planning conditions assigned to the site and to allow the design of economic foundation solutions.

1.2 Development Proposal & Legislative Context

Development Proposal

The proposed layout is shown in Bowker Sadler Architecture *Drawing Ref: 21-026-BSA-0001L*. This report has been prepared in support of a planning application to develop the site for housing with associated garden areas and infrastructure. Based on information received from the architect, it is anticipated that site levels will be retained to facilitate the proposed development option.

Legislative Context

The presence of contaminants which may pose a risk to human health, or the environment is a material planning consideration. For planning it should be considered whether the site is suitable for its new use, and the responsibility for securing a safe development (including cumulative effects of pollution on health, and the potential sensitivity of the proposed development to adverse effects from pollution,) rests with the developer and/or landowner. Planning is concerned with the site's proposed use not its current use, where the amount of contamination is expected to be low relative to the level of risk. This is the opposite to Part 2A which considers high levels (significant harm) and the current use of the site.

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

For there to be an environmental liability associated with the site there must be a perceived source (a contaminant), a receptor (humans, living organisms or property) and a pathway between them. The potential presence of all of these aspects would result in a complete contaminant linkage.

In accordance with environmental legislation and the associated guidelines, assuming the site is to be redeveloped as housing, it should be noted that any redevelopment of the site

could actually create new pathways that could increase the liabilities associated with the site. In addition, the basis of the intrusive ground assessment is to refine the preliminary conceptual model.

1.3 Site Location and Setting

The site is located at land adjacent to Alderford Parade / Heatherdale Drive, Cheetham Hill, Manchester, M8 0TJ at National Grid Reference (NGR) 384030, 400690, within a predominantly residential area with local amenities also noted in the area.

A location plan and aerial photograph of the site are shown as *Figure 1 & 2*.

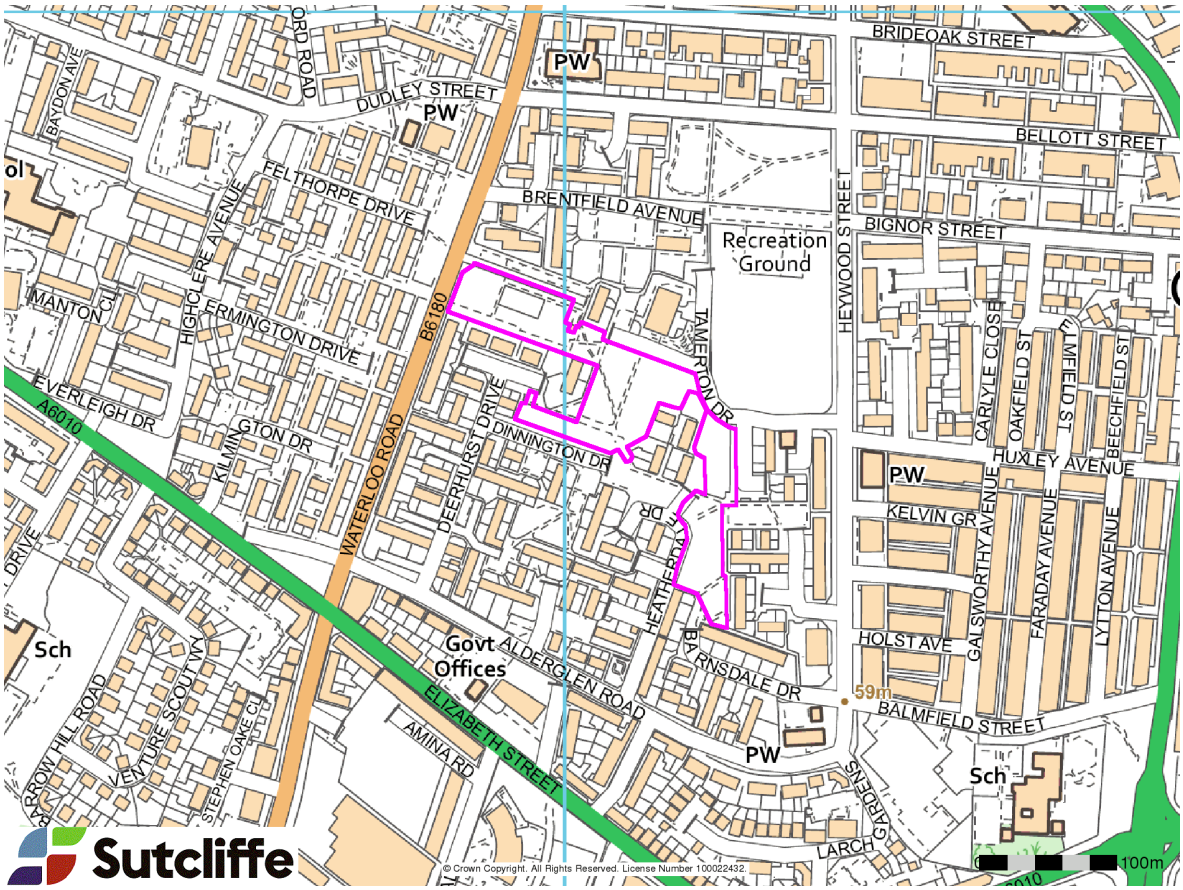


Figure 1: General Location of Site

1.4 Site Description and Layout

The site is split into two zones, both are irregular in shape, 1.3ha in total area with Alderford Parade to the north of the site as well as Dinnington Drive and Heatherdale Drive both to the south of the site. The site's borders are largely lined by either wooden posts, metal fencing or stone boulders, therefore vehicular access to each part of the site will need to be taken into consideration before any site investigation works occur. The site is covered by grass with multiple tarmacked and concrete slab footpaths running across the site as well as the occasional tree dotted throughout.

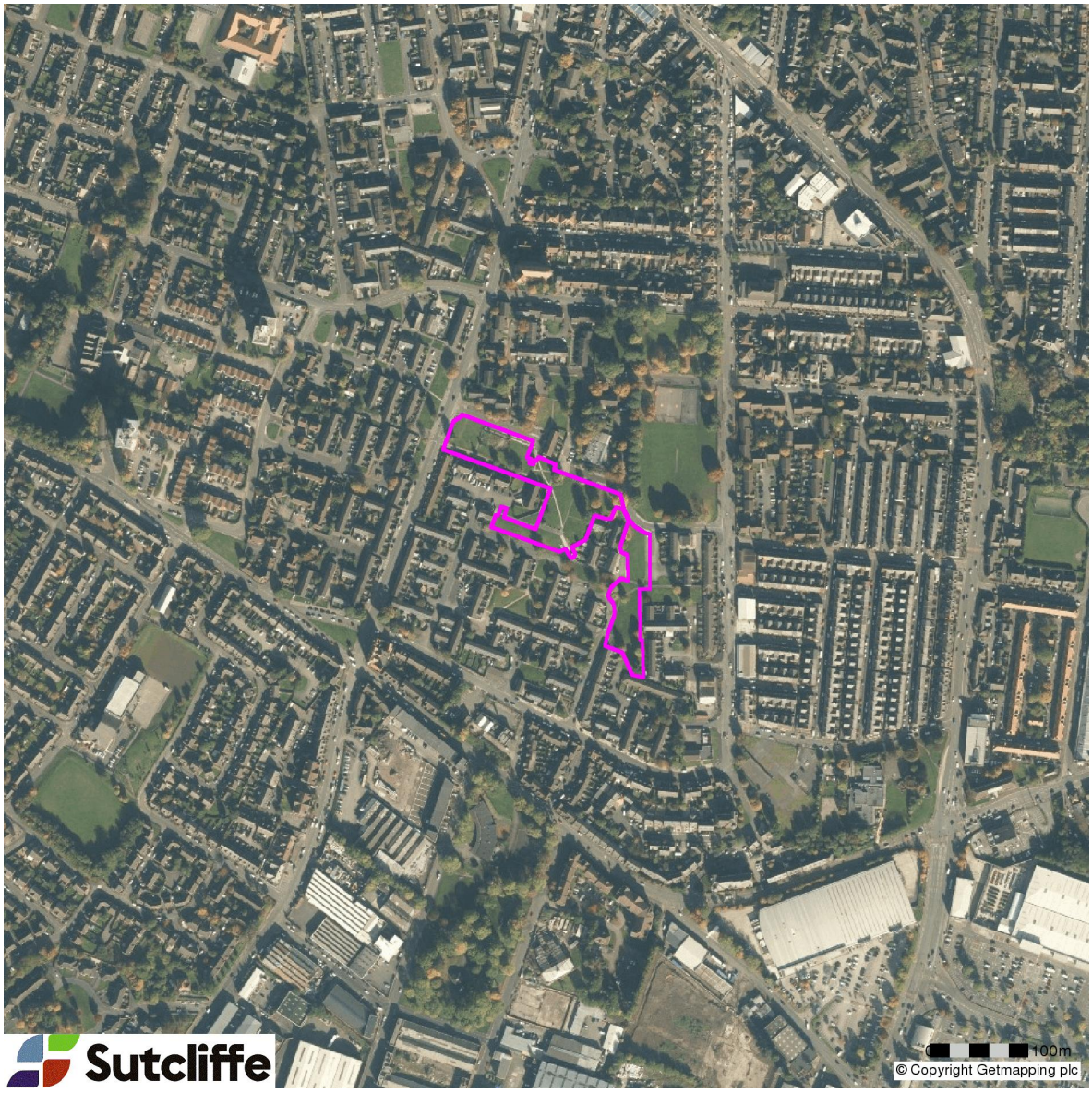


Figure 2: Aerial Photograph of the Site

1.5 Previous Studies

Sutcliffe have completed a Phase I Preliminary Risk Assessment (PRA). *Report Ref. 33716-SUT-ZZ-00-RP-G-7101*, a synopsis of which is provided in *Section 2* of this report. No other previous studies are known to have been undertaken to Sutcliffe's knowledge.

1.6 Objectives & Scope of Assessment

The aim of the intrusive ground investigation is to identify potential geotechnical & environmental liabilities and constraints, associated with the development of the site area in support of the following:

- A planning application and the discharge of contaminated land conditions where reasonably practicable that may have been assigned to the site and to include the design of a remediation scheme, if required as part of the National Planning Policy Framework (NPPF).

- To assess the likelihood of reuse of materials that are site won or disposal options for surplus material.
- The preliminary design of detailed and economic foundations options inclusive of all information and specifications relating to foundation types, the location of underlying rock, (if encountered), preparation of ground, concrete grades, reuse of materials for both the proposed building, and the existing foundations.

2 Preliminary Conceptual Risk Assessment

2.1 Introduction

The Phase I PRA completed by Sutcliffe is summarised below. This report should be read in conjunction with *Report Ref. 33716-SUT-ZZ-00-RP-G-7101.*

2.2 Site History

On-site

The earliest available historical map (1848) shows the site to be located within field land and segmented by fencing and possible shrubbery. By 1890 terraced houses and roads are noted in the western section of the site and partially in the eastern section of the site, and by 1908 the entire site is occupied by terraced houses as well as several roads. In the 1949 – 1952 mapping, a Clothing Factory is noted to encroach onto the northern boundary of the site.

By 1975 it appears that the terraced houses have been knocked down and new buildings have been erected across the site in their place. The map dated between 1978 and 1984 shows a pub, possibly with a cellar, is noted in the north-western tip of the site. By 1992 a few buildings in the western section of the site are no longer mapped. The aerial photography dated 2000 shows that all the buildings noted on-site are no longer mapped, with grass, several trees and footpaths now cover the site. No further significant changes or features are noted on-site from the available historical mappings.

Off-site

The earliest historical map dated 1848 shows the site to be surrounded by field land and ponds. Ponds are noted 40m south-east, 65m east, 65m north, 75m north, 80m west and 180m east of the site. Buildings including a school and places of worship are noted 250m north-east and beyond.

By 1890 all the ponds noted previously, apart from the one noted 180m east of the site, are no longer mapped. Terraced houses are noted immediately west and south of the site, and partially north of the site. A reservoir is noted 40m east of the site. An area of Brick Works with multiple reservoirs is noted 260m south-west of the site.

By 1908 terraced houses now completely surround the site in all directions. The pond noted 180m east and the reservoir noted 40m east of the site are no longer mapped. Brickfields associated with Brick Works are noted 195m south-west, 210m south and 380m south-east of the site.

By 1923 further residential expansion is noted 115m east of the site and by 1931 the brickfield noted 210m south of the site is no longer mapped. The 1949 – 1952 mapping shows a Raincoat Factory and Textile Works are noted 20m south and 90m east of the site. By 1975 the terraced houses that surrounded the site are also no longer mapped and have been replaced by new buildings.

By 1978 – 1984 an electricity substation is noted immediately north of the site. Apart from slight changes to the footprints of surrounding buildings, no further significant changes of features are noted off-site from the available historical mappings.

No other significant changes are evident throughout the historical mapping.

Historical Contamination Potential

Historical maps have indicated that terraced houses, roads and part of a clothing factory were noted on-site from at least 1890 to 1975 when they were demolished and replaced by residential buildings and a pub. By 1992 some of the buildings are no longer mapped and by 2000 all the buildings including the pub are no longer mapped.

Made Ground associated with the demolished buildings is anticipated below ground level across the site. Significant thicknesses of Made Ground, associated with a possible infilled cellar, are potentially present in the north-western tip of the site where the pub was situated. As historic roads were once on-site, past hydrocarbon leakages from parked cars may have occurred.

An electricity substation is located immediately off-site but PCB contamination could be a present on-site which would be a human health risk to future site users.

Consequently, the potential for significant contamination to have arisen at the site as a result of demolished buildings and hydrocarbon leakages is considered likely.

The UXO report recommended that the site be considered a medium risk of unexploded ordinance and is possible that UXO might be encountered.

Demolished residential and industrial buildings are also noted surrounding the site and therefore the associated Made Ground may be an active source of leachate and gas generation. Future site users are very unlikely to come into direct contact with potentially contaminated ground located off-site.

2.3 Geotechnical Constraints

Coal Mining

The site is within a coal mining area, however no further action is required to assess the risks associated with coal mining assets.

Geology

A summary of the site's geology is provided in Table 2.1 hereunder:

Table 2.1: Geology Summary

Strata	Description	Soil / Rock Type	Designation
Artificial Ground	No records on-site	N/a	N/a
Superficial	Till, Devensian	Clay with sand, gravel and cobbles	Secondary A Aquifer / Secondary Undifferentiated Aquifer
Bedrock	Chester Formation	Sandstone	Principal Aquifer

There are no faults on-site or within 500m of the site.

Historical Land Use

The site has been subject to previous development and therefore, the potential for relic foundations and obstructions cannot be discounted.

2.4 Potential Contaminant Linkages

Sources

Based on the information from the desk study, historical maps, published information, and a site walkover a summary of potential contaminant sources is provided in *Table 2.2*.

Table 2.2: Potential Source(s) of Contamination

Ref.	Potential Sources	Potential Contaminants
S1 (On-site)	Demolished houses, pub, works and roads.	All metals, PAHs, petroleum hydrocarbons, oils and localised ground gas.
	Electricity substation	PCBs
	Possible UXO	Ordnance
S2 (Off-Site)	Demolished houses, works and roads.	All metals, PAHs, petroleum hydrocarbons, oils and localised ground gas.

S1

Made Ground associated with demolished buildings is anticipated below site. By its nature, Made Ground can contain a wide range of potentially contaminated material which may also generate leachate. A demolished pub is noted in the north-western tip of the site which may have an infilled cellar, and therefore have a significant amount of Made Ground.

Although an electricity substation is located off-site, as it borders an area of the site that is proposed to be an area of soft landscaping, the potential for PCB contamination cannot be discounted.

Vehicle use and parking associated with the site's previous use likely occurred. As such, hydrocarbons could have been introduced to the site via leaking of vehicles parked on-site which may pose a risk to human health. A vapour risk may also be present, dependent on the volume of hydrocarbons present. Any such leaks / spills are anticipated to be relatively minor / small in scale.

The UXO report recommended that the site be considered a medium risk of unexploded ordinance and is possible that UXO might be encountered.

S2

Made Ground associated with demolished buildings is anticipated off-site in all directions. However, the thicknesses of the Made Ground are not thought to be significant enough to be an active source of permanent gas generation.

An electricity substation is noted immediately north of the site and could be a source of PCB contamination. Due to the immobile nature of PCBs, any concentrations noted off-site are not envisioned to migrate to site. However, concentrations may be present on-site if initial leakage occurred on-site.

Pathways

Exposure pathways are the potential routes and mechanisms by which potential on-site sources could be linked to the identified potential receptors and thereby expose them to potential harm.

The following potential exposure pathways have been identified at the site:

Table 2.3: Pathways

Ref.	Pathway	Description
P1	Direct contact with potential contaminants.	Dermal absorption, ingestion and inhalation of contaminants via direct contact. Construction workers may come into contact during the site works, however this will be for a short time and therefore limited exposure will occur. PPE can be used and worn as a precaution to reduce the risk.
P2	Ingestion of potential contaminants.	
P3	Inhalation of potential contaminants.	
P4	Leaching and migration of contaminants.	Leaching of possible contaminants could migrate into the underlying Principal Aquifers via shallow groundwater. On-site drainage is also at risk from shallow contamination, if present.
P5	Vertical and lateral migration of ground gases / vapours.	There is the potential for contaminants to be present on the site, which could generate ground gas & vapours on site.

P1-P3

Soft landscaping is planned within the proposed development. If Made Ground containing contaminative material is present onsite, human health risks to future site users may be present if such Made Ground is left in situ in the planned soft landscaped areas.

P4

Made Ground as previously discussed within section S1 may contain potentially leachable contaminants.

Groundwater on site is anticipated to be perched water as opposed to a water table, and not in hydraulic conductivity with the underlying Bedrock Aquifer due to the anticipated presence of a significant thickness of impermeable Devensian Till. As such downward migration of any potential leachates generated is not envisioned.

Lateral migration of any leachates generated may be possible, percolating rainwater is likely to be peached on top of the impermeable Devensian Till which has the potential to migrate laterally.

P5

Apart from the possible infilled cellar, Made Ground thicknesses are expected to be relatively limited given the development present onsite. As such, it is considered unlikely that a thickness of Made Ground capable of generating significant thickness of permanent gases will be present, and consequently the risks to human health from permanent gases generated on-site is considered to be low.

While the potential for hydrocarbon contamination on site is thought possible, volumes expected are anticipated to be relatively low, and as such are considered unlikely to pose a viable human health risk from any vapours released for future site users.

Receptors

Based on the site's environmental setting and the proposed future end-use of the area following redevelopment, the following potential receptors have been identified:

Table 2.4: Receptors

Ref.	Receptor	Description
R1	Current & future site users	Site users; personnel, general workers and maintenance workers,
R2	Construction Workers	Contractors working on the development of the site. Construction workers, maintenance workers or other personnel who may be directly exposed to contaminated materials in the course of their activities).
R3	Controlled Waters	Principal Aquifer and Secondary A / Undifferentiated Aquifer and on-site drainage
R4	Adjacent Site Users	Adjacent site users. Third-party land (*i.e.* the possibility of contamination migrating off-site onto third party land *via* contaminated groundwater, surface water run-off).
R5	Infrastructure / Buried services	Proposed buildings and buried services

2.5 Risk Evaluation

An evaluation of the risk that each contaminant linkage poses to the project (as identified in the *Section 2*) has been undertaken, in general accordance with CIRIA guidance document C552, 2001 (as detailed in *Appendix B*) and in *Tables 2.5*, *2.6* and *2.7* below.

The evaluation and resultant actions identified are based on available information presented within the Phase I PRA (*Report reference: 33716-SUT-ZZ-00-RP-G-7101*)

Table 2.5: Classification of consequence

Classification	Definition
Severe	Acute risks to human health, catastrophic damage to buildings/property, major pollution of controlled waters.
Medium	Chronic risk to human health, pollution of sensitive controlled waters, significant effects on sensitive ecosystems or species, significant damage to buildings or structures.
Mild	Pollution of non-sensitive waters, minor damage to buildings or structures.

Classification	Definition
Minor	Requirement for protective equipment during site works to mitigate health effects, damage to non-sensitive ecosystems or species.

Table 2.6: Classification of Probability

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

Table 2.7: Risk Assessment Matrix

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

Each potential contaminant linkage is identified in *Table 2.8* below.

The evaluation and the resultant actions identified are based on the available information presented within this report. A visual representation of the Preliminary CSM is presented as *Figure 3.*

During the development there is a potential for short term human health risk to construction workers. These should be assessed and anticipated by the contractor under CDM Regulations 2015.

Table 2.8: Preliminary Risk Evaluation of Potential Contaminant Linkages

1. Hazard Identification		2. Hazard Assessment				3. Risk Estimation		4. Risk Evaluation	5. Action required
Contaminant Source		Pathway		Receptor		Consequence	Probability	Classification	
S1	Made Ground / UXO	P1	Direct contact with potential contaminants.	R1/2	Site users	Medium	Likely	Moderate Risk	It is possible that harm could arise to a designated receptor from an identified hazard. Investigation is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.
		P2	Ingestion of potential contaminants.	R1/2	Site users	Medium	Likely	Moderate Risk	
		P3	Inhalation of potential contaminants.	R1/2	Site users	Severe	Low	Moderate Risk	
		P4	Leaching and migration of contaminants.	R3/5	Principal Aquifer	Medium	Low	Moderate / Low Risk	
		P5	Vertical and lateral migration of ground gases / vapours.	R1	Site users	Severe	Unlikely	Moderate / Low Risk	
				R4	Property	Severe	Unlikely	Moderate / Low Risk	
S2	Made Ground	P5	Vertical and lateral migration of ground gases / vapours.	R1	Site users	Severe	Unlikely	Moderate / Low Risk	
				R4	Property	Severe	Unlikely	Moderate / Low Risk	

3 Ground Investigation

3.1 Design Rationale

The aim and design of the ground assessment is to satisfy planning conditions assigned to the site by reference to the National Planning Policy Framework (NPPF). This will identify elevated concentrations of determinands with the aim of assessing long term human health risks to site users and groundwater resources. In addition, the works have been designed to allow the design of economic foundation solutions for the proposed new builds.

3.2 Fieldwork

Field works were undertaken on 27th November-1st December 2023 and 7th-9th February 2024 by VC Drilling, a specialist ground investigation contractor and comprised:

- 3No. Cable Percussion (BH201-BH203)
- 17No. Window Sample Holes (WS101-WS116)
- 8No. Trial Pit Excavations (TP101-TP108)
- Contamination samples from various depth in the Made Ground.
- Leachate samples.
- PCB Samples
- Pipeline Risk Assessment Samples
- Hazardous Waste Sampling
- WAC Sampling
- Geotechnical Testing
- Gas monitoring wells.
- Monitoring of ground gas / ground water with installed locations.

All works were supervised by a suitably qualified Sutcliffe engineer. The investigation was carried out in general accordance with the following standards:

- BS10175:2011+A2:2017 Investigation of Potentially Contaminated Sites – Code of Practice;
- R&D Technical Report P5-066/TR Secondary Model Procedure for the Development of Appropriate Soil Sampling Strategies for Land Contamination, 2001 (Environment Agency).
- BS 5930:2015 Code of practice for site investigations; and,
- BS EN ISO 22475-1:2006 Geotechnical investigation and testing. Sampling methods and groundwater measurements. Technical principles for execution.

Site Investigation logs collated as part of the ground investigation completed by Sutcliffe are presented in *Appendix C.*

3.3 Health & Safety

Service plans for the development site have been obtained and are included as part of the Phase I PRA. Copies of these plans are maintained on site by the Sutcliffe engineer who is also responsible for clearing the areas to be investigated by use of a Cable Avoidance Tool (CAT) and signal generator (Genny).

3.4 Sampling Strategy

A summary of exploratory hole detailing rationale is shown in *Table 3.1* below.

Table 3.1: Summary of Site Activities

Ref. No.	Location Rationale	Method	Completed Depth (m bgl)	Installation Details	Testing & Sampling details
BH201	Target deep Made Ground	Cable Percussion	15.45	No Installation.	SPTs, undisturbed and bulk samples.
BH202	Target deep Made Ground	Cable Percussion	18.95	No Installation.	SPTs, undisturbed and bulk samples.
BH203	Target deep Made Ground	Cable Percussion	15.45	No Installation.	SPTs, undisturbed and bulk samples.
WS101	General Site Coverage (HH)	Dynamic Sampling	5.45	No Installation.	SPTs, Environmental and undisturbed samples.
WS102	General Site Coverage (HH)	Dynamic Sampling	5.45	No Installation.	SPTs, Environmental and undisturbed samples.
WS103	General Site Coverage (GG, HH)	Dynamic Sampling	5.45	Standpipe installed to 2.00m bgl.	SPTs, Environmental and undisturbed samples.
WS104	General Site Coverage (GG, HH)	Dynamic Sampling	4.32	Standpipe installed to 2.00m bgl.	SPTs, Environmental and undisturbed samples.
WS105*	General Site Coverage (HH)	Dynamic Sampling	1.00	No Installation.	Environmental and undisturbed samples.
WS105A	General Site Coverage (GGUU)	Dynamic Sampling	5.45	Standpipe installed to 3.00m bgl.	SPTs, Environmental and undisturbed samples.
WS106	General Site Coverage (GG, HH)	Dynamic Sampling	5.45	Standpipe installed to 2.00m bgl.	SPTs, Environmental and undisturbed samples.
WS107	General Site Coverage (GG, CW, HH)	Dynamic Sampling	5.45	Standpipe installed to 3.00m bgl.	SPTs, Environmental and undisturbed samples.
WS108*	General Site Coverage (HH)	Dynamic Sampling	1.38	No Installation.	SPTs, Environmental and undisturbed samples.
WS109	General Site Coverage (GG, HH, UU)	Dynamic Sampling	5.45	Standpipe installed to 2.00m bgl.	SPTs, Environmental and undisturbed samples.
WS110	General Site Coverage (GG, CW, HH)	Dynamic Sampling	4.45	Standpipe installed to 4.00m bgl.	SPTs, Environmental and undisturbed samples.
WS111	General Site Coverage (GG, HH)	Dynamic Sampling	5.45	Standpipe installed to 4.00m bgl.	SPTs, Environmental and undisturbed samples.
WS112	General Site Coverage (CW, HH)	Dynamic Sampling	5.45	No Installation.	SPTs, Environmental and undisturbed samples.

Ref. No.	Location Rationale	Method	Completed Depth (m bgl)	Installation Details	Testing & Sampling details
WS113	General Site Coverage (GG, HH)	Dynamic Sampling	5.45	Standpipe installed to 2.00m bgl.	SPTs, Environmental and undisturbed samples.
WS114	General Site Coverage (HH)	Dynamic Sampling	5.45	No Installation.	SPTs, Environmental and undisturbed samples.
WS115	General Site Coverage (HH, UU)	Dynamic Sampling	5.45	No Installation.	SPTs, Environmental and undisturbed samples.
WS116	General Site Coverage (GG, HH)	Dynamic Sampling	5.45	Standpipe installed to 4.00m bgl.	SPTs, Environmental and undisturbed samples.
TP101	General Site Coverage (CW, HH)	Mechanical Excavation	2.20	N/a	Environmental sample.
TP102	General Site Coverage (HH)	Mechanical Excavation	2.20	N/a	Environmental sample.
TP103	General Site Coverage	Mechanical Excavation	2.00	N/a	Environmental sample.
TP104	General Site Coverage (HH)	Mechanical Excavation	2.70	N/a	Environmental sample.
TP105	General Site Coverage (HH)	Mechanical Excavation	2.80	N/a	Environmental sample.
TP106	General Site Coverage (HH)	Mechanical Excavation	2.00	N/a	Environmental sample.
TP107	General Site Coverage	Mechanical Excavation	2.20	N/a	No Testing / Sampling.
TP108	General Site Coverage (CW, HH)	Mechanical Excavation	2.30	N/a	Environmental sample.

GG – Ground Gas / CW – Controlled Water / HH – Human Health / UU – Pipeline Risk Assessment
**Dynamic sampling boreholes were unable to extend to proposed depth due to the presence of a historic carriageway, noted on historical plans as "Herbert Street".*

A plan detailing the position of sampling locations on an existing layout of the site is presented as *Drawing Ref. 33716-SUT-ZZ-00-DR-G-7251.*

3.5 Chemical Laboratory Testing

Selected soil samples (Made Ground) were collected at various depths and horizons and submitted for chemical analysis, details of which are presented in *Table 3.2.*

Table 3.2: Summary of Soils Analysis (Total & Leachate Concentrations)

Suite Reference	Analysis Suite
Soils Suite	Metals suite, speciated (16) polycyclic aromatic hydrocarbons (PAHs), total petroleum hydrocarbons according to the Total Petroleum Hydrocarbon Working Group (TPHCWG), asbestos screen, total cyanide, phenols and soil organic matter.
Leachate	Metals suite, speciated (16) PAHs.
PCB	Speciated PCB-EC7 & WHO12
Pipeline RA Suite	EPH CWG, VOCs, SVOCs, VPH CWG, Ph, Electrical Conductivity and Redox Potential
Hazwaste Envirolab Minimal Requirements	Metals suite, speciated (16) polycyclic aromatic hydrocarbons (PAHs), TPH Total with ID + GC Trace (>C6-C40).
WAC E (Inert, SNRHW + Hazardous Landfills) 2 Stage	Antimony, Arsenic, Barium, Cadmium, Chloride, Chromium, Copper, DOC, Floride, Lead, Mercury, Molybdenum, Nickle, Phenol, Selenium, Sulphate, Total Dissolved Solids, Zinc.

All samples were analysed by MCERTS accredited soil analysis laboratory Envirolab under UKAS accredited methods. All samples have been taken in accordance with current British Standards.

Envirolab are appropriately accredited for the works required and are an approved supplier under the Sutcliffe's Quality Management System.

Analytical test certificates are presented in *Appendix D.*

TPH Speciated aromatic and aliphatic bands with BTEX analysis have been carried out in line with the TPHCWG. The toxicity and migration risk associated with a TPH is dependent on the specific aliphatic aromatic carbon banding.

Of particular concern are the low molecular weight compounds, which are highly mobile and show a greater level of toxicity that the higher molecular weight compounds. Therefore, a low TPH consisting of low molecular weight aliphatic and aromatic carbon banding compounds may present more of a risk than a high TPH consisting of heavy weight aliphatic and aromatic carbon banding compounds.

Based on the TPHCWG the aromatic band C5 – C7 is considered to consist only of Benzene and the aromatic band C7 – C8 of Toluene. Therefore, the more specific BTEX analysis has been used for risk assessment rather than the aromatic bands.

3.6 Drainage

It is recommended that the client / developer contact United Utilities with respect to capacity in existing foul and surface water sewers in the vicinity of the development area.

3.7 Water Supply

2No. Pipeline Risk Assessment Testing Suites were carried out on samples obtained from the site. Based on the results of the testing, it is indicated that PE pipe is suitable for new water pipelines. Notwithstanding, it is recommended that a United Utility Pipeline Risk Assessment for new water pipes is completed to confirm the appropriate pipe selection.

3.8 Services

It is recommended that the client / developer contact the relevant service provided to ascertain the requirements for power reinforcement and / or relocation / diversion of existing services.

4 Ground Model

4.1 General

The following section describes the ground conditions encountered during the intrusive ground assessment completed by Sutcliffe.

4.2 Made Ground

A summary of the strata depths and thicknesses for Made Ground is detailed in Table 4.1 and Table 4.2 below.

Table 4.1: Ground Conditions Encountered (Made Ground)

Strata	Depths Encountered (m bgl)		Thickness (m)		
	Min	Max	Min	Max	Average
MADE GROUND	0.00	2.60	0.05	1.60	0.59

Table 4.2: Ground Conditions Encountered (Made Ground – Detailed)

Strata	Depths Encountered (m bgl)		Thickness (m)		
	Min	Max	Min	Max	Avg.
Dark brown, silty, slightly gravelly, fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).	0.00	1.60	0.20	1.60	0.43
Dark brown, gravelly, slightly gravelly, slightly silty, fine to medium SAND. Gravel is fine to coarse, angular of brick, concrete and mixed lithology. Occasional large cobble of concrete.	0.20	1.80	0.30	1.60	0.64
Brown, slightly silty, clayey, gravelly, fine to medium SAND. Gravel is fine to coarse, angular of brick, concrete, ash and mixed lithology.	0.20	2.00	0.40	1.60	0.96
Brown, slightly silty, slightly clayey, very cobbly, fine to medium SAND. Cobbles are small to medium of brick.[1]	1.10	2.00	0.90	0.90	0.90
Dark brown, sandy, gravelly, CLAY with occasional cobbles. Gravel is fine to coarse, angular to sub angular of brick, rare glass fragments and mixed lithology. Sand is fine to medium.	0.20	2.60	0.25	1.50	0.93
Dark brown, sandy, clayey, angular, GRAVEL of ash, bricks and mixed lithology.	0.30	2.40	0.30	1.20	0.80
Dark brown, slightly sandy, fine to coarse, angular GRAVEL of coal, glass, rubber and mixed lithology.	2.40	2.50	0.10	0.10	0.10
Light brown, sandy, angular, fine to medium GRAVEL of sandstone. Sand is fine to coarse.[1]	0.20	0.30	0.10	0.10	0.10
Asphalt.[2]	0.95	1.38**	0.05	0.43**	0.24**
Concrete.[3]	0.90	1.00	0.10	0.10	0.10

[1] Only encountered at one location – TP103.
[2] Only encountered at two locations – WS105 / WS108.
[3] Only encountered at one location – WS114.
*** Final Depth of Strata not proven, average thickness on identified ground.*

4.3 Natural Ground

A summary of the strata depths and thicknesses for natural ground is detailed in *Table 4.3* and *4.4* below.

Table 4.3: Ground Conditions Encountered (Natural – General)

Strata	Depths Encountered (m bgl)		Thickness (m)		
	Min	Max	Min	Max	Average
CLAY	0.40	13.00	0.20	9.20	2.66
SAND	1.40	18.95**	1.00	8.95**	3.46**

*** Final Depth of Strata not proven, average thickness on identified ground.*

Table 4.4: Ground Conditions Encountered (Natural – Detailed)

Strata	Depths Encountered (m bgl)		Thickness (m)		
	Min	Max	Min	Max	Average
Brown, slightly gravelly CLAY with rare fine sand bands. Gravel is rounded, fine to coarse of mixed lithology.	0.40	5.45**	0.45	3.95**	2.35**
Brown, slightly silty, slightly sandy, CLAY. Sand is fine.	0.60	5.45**	1.40	4.85**	2.55**
Brown, slightly silty, CLAY with occasional fine sand bands.	0.80	10.00	0.80	9.20	3.44
Brown, slightly silty, CLAY.	0.40	13.00	0.20	8.50	2.64
Brown, slightly silty, fine SAND.	1.40	15.45**	1.00	5.45**	2.36**
Brown medium to coarse grained SAND with occasional clay bands.[1]	10.00	18.95**	8.95	8.95**	8.95**

[1] Only encountered at one location – BH202.
*** Final Depth of Strata not proven, average thickness on identified ground.*

4.4 Standard Penetration Tests (SPT)

The standard penetration test (SPT) is used to provide geotechnical engineering properties for foundation design purposes. The results can be used to determine the relative density, bearing capacity, and settlement of granular soil. The results can also be used to correlate the approximate strength of cohesive soil.

The SPT results are detailed in *Table 4.5* and *Figure 4* hereunder.

Table 4.5: SPT Results

Strata	No. of Tests	Depth (m bgl)	Range	Average
CLAY	71	1.20-12.50	5-50	13.8
SAND	17	1.20-18.50	12-34	20.8

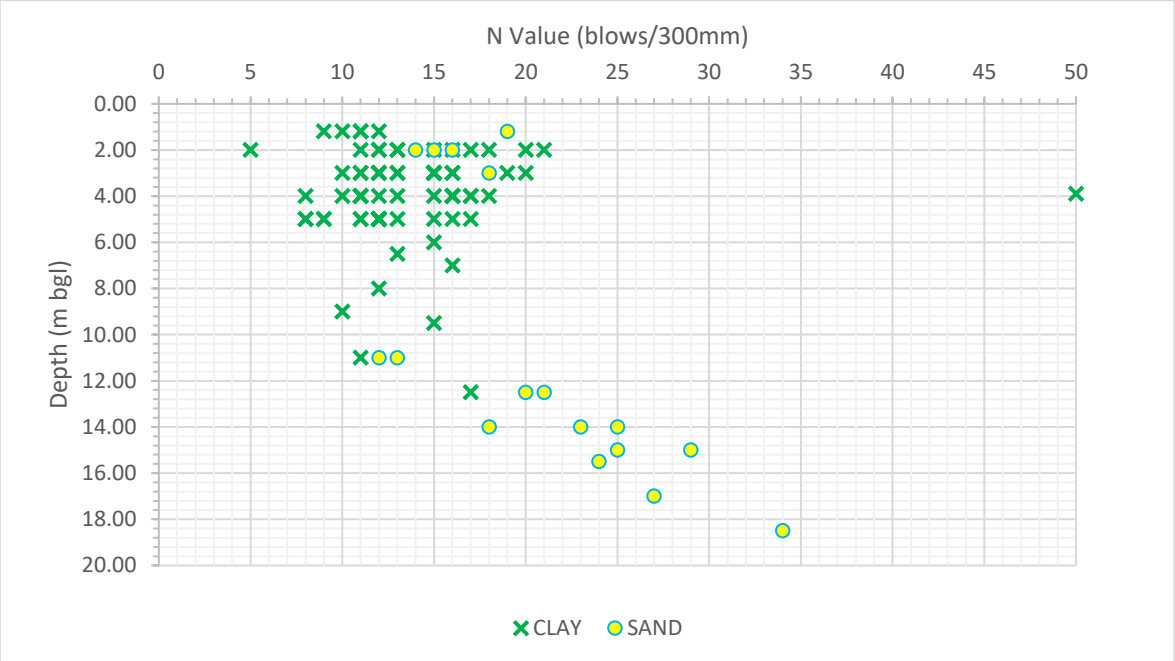


Figure 4: SPT Results

4.5 Field Evidence of Contaminated Soils

Made Ground was noted within every investigation location conducted. Within the Made Ground, addition contamination indicators were also noted:

Table 4.6: Field Evidence of Contaminated Soils

Ref. No.	Depth (m bgl)	Contamination Indicator
BH202	0.00-1.60	Ash
WS101	1.50-2.40	Ash
WS106	0.40-1.10	Ash
WS109	0.40-2.00	Ash
WS110	0.30-1.60	Ash
WS111	0.30-1.50	Ash
TP107	0.30-1.40	Ash
TP108	0.20-0.60	Ash

Apart from the above instances, no other visual or olfactory contamination indicators were noted during the Site Investigation.

4.6 Groundwater

Groundwater was not encountered during the site investigation.

5 Geotechnical Laboratory Testing and Assessment

5.1 General

In total, 13No. samples were recovered from site for the purpose of geotechnical laboratory testing. A breakdown of the testing scheduled is set out in *Table 5.1* below.

Table 5.1: Geotechnical Testing

Ref. No.	Depth (m bgl)	Plasticity Index	Shear Strength	Moisture Content	Particle Size Distribution	Consolidation
WS104	1.60	✓	✓	✓		✓
WS105A	1.30-2.00				✓	
WS106	2.80	✓	✓	✓		
WS107	2.00-3.00				✓	
WS110	2.60	✓	✓	✓		
WS111	2.70	✓	✓	✓		
WS115	1.40-2.00				✓	
WS116	1.60	✓	✓	✓		
BH201	3.00	✓	✓	✓		
BH201	8.00	✓	✓	✓		
BH202	6.50	✓	✓	✓		
BH203	2.00	✓	✓	✓		
BH203	9.50	✓	✓	✓		

5.2 Plasticity Index

A total of 10No. samples were tested to determine the plasticity index of the underlying CLAY strata. The plasticity results and the modified plasticity index are outlined in *Table 5.2* below.

Table 5.2: Plasticity Test Results

Ref. No.	Depth (m)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425mm (%)	Modified Plasticity Index (%)	Soil Classification
WS104	1.60	45	20	25	99	24.75	CI
WS106	2.80	48	20	28	98	27.44	CI
WS110	2.60	46	19	27	99	26.73	CI
WS111	2.70	47	20	27	99	26.73	CI
WS116	1.60	43	18	25	96	24	CI
BH201	3.00	51	21	30	100	30	CI
BH201	8.00	47	20	27	99	26.73	CI
BH202	6.50	42	19	23	96	22.08	CI
BH203	2.00	45	20	25	99	24.75	CI
BH203	9.50	46	19	27	94	25.38	CI

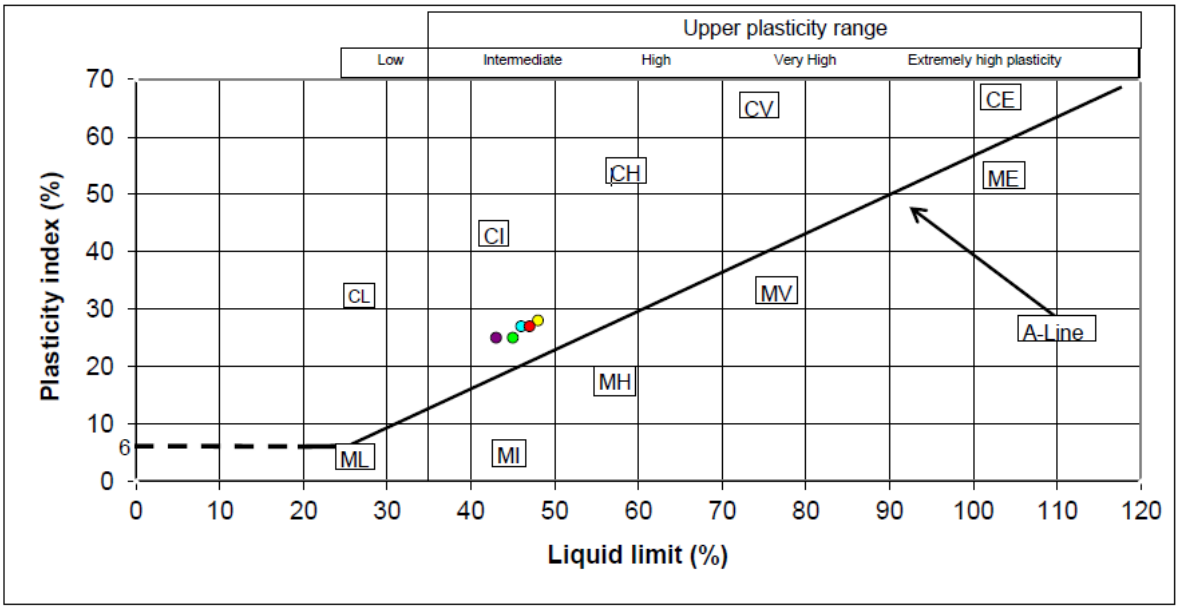


Figure 5: Plasticity Test Results (WS104-WS116)

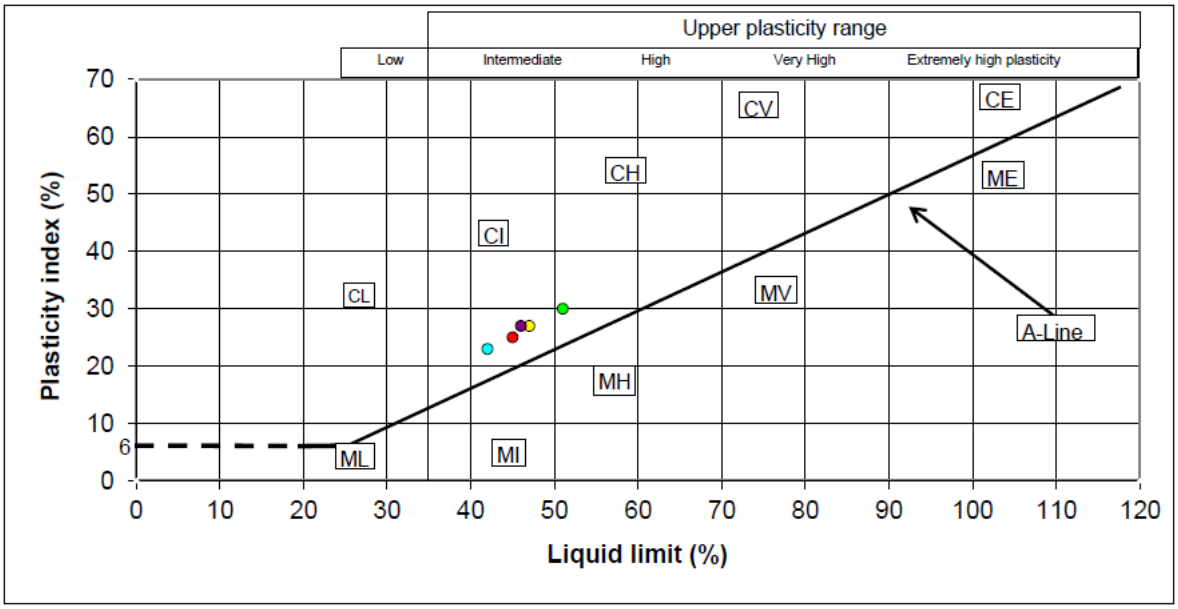


Figure 6: Plasticity Test Results (BH201-BH203)

The results indicate that the underlying CLAY is medium plasticity. Plasticity test results are included in *Appendix F*.

5.3 Shear Strength

Triaxial Testing

3No. Triaxial tests were carried out on samples recovered from site. The results are outlined in Table 5.3 hereunder.

Ref. No.	Depth (m bgl)	Shear Strength (kPa)
BH201	3.00	96
BH202	6.50	47
BH203	9.5	86

Hand Shear Vane (HSV) Testing

7No. HSV Tests were carried out on samples recovered from site. The results are outlined below in *Table 5.3*.

Table 5.3: Laboratory HSV Test Results

Ref. No.	Depth (m bgl)	Shear Strength (kPa)
WS104	1.60	>110
WS106	2.80	>110
WS110	2.60	>110
WS111	2.70	80
WS116	1.60	>110
BH201	8.00	60
BH203	2.00	>110

Shear Strength Testing Summary

A summary of the Shear Strength Testing is presented in *Figure 6.*

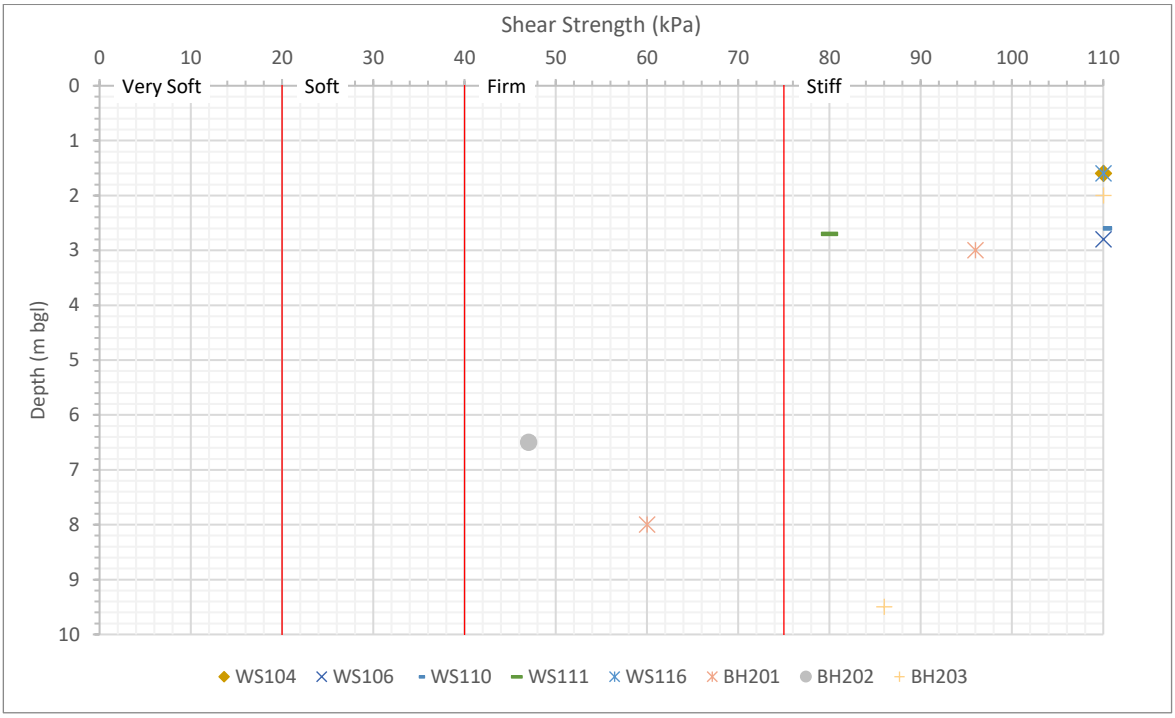


Figure 7: Shear Strength Test Results

The results of this testing indicate that the shear strength of the clay classifies as firm to stiff.

5.4 Particle Size Distribution

PSD testing was scheduled on 3No. samples recovered from site. The result of this testing is outlined below in *Table 5.4*.

Table 5.4: PSD Test Results

Ref. No.	Depth (m bgl)	Sieve Percentage (%)		
		Gravel	Sand	Silt/Clay
WS105A	1.30-2.00	0	21	79
WS107	2.00-3.00	1	83	16
WS115	1.40-2.00	0	77	23

The results of this testing are comparable with the observed ground conditions and indicate that the ground conditions are variable across the site.

5.5 Soil Infiltration

1No. infiltration test (SA201) was carried out on site at a location indicated by the Sutcliffe Engineer. Due to the inefficient infiltration characteristics of the ground at the excavation depths, the soakaway tests comprised a single fill. The results of the soakaway test are provided in Appendix C.

The test results for the soakaway did not provide an infiltration rate due to the inefficiencies of the ground to infiltrate. As the soakaway test failed, it is advised that alternative methods of sustainable drainage are explored.

5.6 Stability

No evidence of instability was noted in the exploratory holes that were undertaken on site; however, due to the amount of Made Ground noted on-site shoring would likely be required if any groundworks are to be left open during site works.

5.7 Soluble Sulphate and pH

It is envisaged foundations will extend through the Made Ground and into the natural strata and samples taken from the Made Ground have been submitted for pH and water-soluble sulphate (2:1 soil/water extract) analysis.

The highest water-soluble sulphate concentration and the lowest pH value for the Made Ground is shown in *Table 5.5.*

Table 5.5: Soluble sulphate and pH classification

Soil Type	Lowest pH Values	Highest Soluble Sulphate Concentration (g/l)
Made Ground	6.7	0.08

Therefore, in accordance with Table C2 of BRE: Special Digest 1 2005, sub-surface concrete that is in contact with Made Ground should be Design Sulphate Class **DS-1**, with the ACEC classification of **AC-1s**.

A complete set of geotechnical laboratory certificates are presented in *Appendix F*.

5.8 Foundation Recommendations

General

It is understood that consideration is being given to the development of houses with associated garden areas and infrastructure.

Due to the ground conditions encountered it would be Sutcliffe's recommendation that a mixed concrete strip / piled foundation solution is adopted due to the amount of Made Ground that has been identified on site. Final pile design will be undertaken by a specialist piling contractor. A foundation zoning plan *Drawing Ref. 33716-SUT-ZZ-00-DR-G-7252 P03* is provided herein.

Limited groundwater ingress was recorded during site investigation works and subsequent monitoring.

Sub-surface concrete that is only in contact with Made Ground can be Design Sulphate Class DS-1, with an ACEC Classification of AC-1s.

Ground Floor Construction

Based upon the amount of Made Ground noted on site it is not recommended that a ground-bearing slab is utilised on site. Sutcliffe Investigations therefore propose a suspended P.C Unit ground floor be adopted.

Designated Concrete Mixes

The following designated mix in accordance with BRE Special Digest SD1 and BS 8500: Part1: 2015 will be suitable for use on this site.

Table 5.6: Designated Concrete Mixes

Application	DS-1 Conditions (Made Ground and Natural) ACEC Class AC-1s
Unreinforced strip / trench fill footings	GEN1
Reinforced strip / trench fill footing (mesh reinforcement)	RC30
Reinforced strip / trench fill footings (rebar etc)	RC30
Unreinforced concrete floor slabs	GEN2
In situ reinforced concrete floor slabs	RC30

**Note: Although RC 30 is in line with BS8500, Sutcliffe Investigation recommend the use of RC35 for concrete used in structurally sensitive works, to provide greater certainty of compliance with strength verification tests. Tolerable mixes dispatched by a batching plant are +/- 10%, and delays on site can also result in deterioration of the concrete.*

5.9 Geotechnical Uncertainty

The site has been subject to previous development and therefore, the potential for relic foundations and obstructions cannot be discounted.

6 Long Term Human Health Risk Assessment

6.1 Methodology

Based on the Preliminary Risk Assessment and Ground Model for this site, a Generic Quantitative Risk Assessment for human health has been undertaken in accordance with LCRM and SR (SC050021 series) (DEFRA) guidance as well as CL:AIRE Professional Guidance: Comparing Soil Contamination Data with a Critical Concentration (2020) and comprises the following:

- Selection of appropriate generic screening values for human health assessment.
- Creation of relevant datasets from which to undertake the assessment.
- Assessment of contamination distribution and comparison of site data to screening values using relevant statistical tests (in accordance with CIEH guidance).
- Assessment of risks to receptors.
- Determination of requirements for further investigation or remediation.

6.2 Selection of Soil Screening Values

Soil screening values appropriate for a *Residential with Plant Uptake* were selected.

6.3 Creation of Relevant Datasets

As part of the desk study assessment and Preliminary Conceptual Model, Made Ground was identified as the principal potential source identified for contamination in the risk evaluation *(Section 2.0*). Consequently, the sampling strategy targeted Made Ground encountered on site.

6.4 Identification of Contaminants of Concern

The results of the soil analysis from the investigation are shown in *Appendix D.* These results were then compared against the relevant GACs for 2.5% soil organic matter (S.O.M.). The average percentage S.O.M. was 4.87% for 26No. samples.

Elevated levels of contamination (excluding Asbestos) were recorded in 3No. samples taken from site when assessed against the *2.5%* S.O.M. *Residential with Plant Uptake* values.

Table 6.1: Chemical Analysis Results for Made Ground Stratum

Contaminant	Threshold Value (mg/kg)	Location	Depth (m bgl)	Recorded Concentration (mg/kg)
Lead	200	WS110	1.00-1.60	790
Benzo(b)fluoranthene	3.3	WS107	0.00-0.40	3.75
		WS110	1.00-1.60	4.66
		TP101	0.00-0.30	4.15
Benzo(a)pyrene	2.7	WS107	0.00-0.40	3.23
		WS110	1.00-1.60	4.07
		TP101	0.00-0.30	3.26
Dibenzo(ah)anthracene	0.28	WS107	0.00-0.40	0.36

Contaminant	Threshold Value (mg/kg)	Location	Depth (m bgl)	Recorded Concentration (mg/kg)
		WS110	1.00-1.60	0.45
		TP101	0.00-0.30	0.33

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6.5 Assessment

The soil analytical data has been assessed following CL:AIRE guidance, LCRM and NHBC R&D Publication 66 2008 *"Guidance for the Safe Development of Housing on Land Affected by Contamination".*

The purpose of human health risk assessment for planning is to decide whether the land is suitable for the proposed end use and does not pose a risk to human health.

Statistical analysis in accordance with CL:AIRE publication *Professional Guidance: Comparing Soil Contamination Data with a Critical Concentration (2020)* was used to assist in answering the key question raised above.

Utilising the 2-way confidence interval method, the likelihood of whether the true mean is less than the critical concentration can be calculated and aid with decision making in terms of further investigation or remediation.

This assessment will be using an 85% confidence interval to state that:

*Sutcliffe are **85%** confident that the true mean concentration (μ) for the contaminant lies between **x** mg/kg and **y** mg/kg.*

A 99% confidence interval will be used to state that:

*Sutcliffe are **99%** confident that the true mean concentration (μ) for the contaminant does not lie outside of **x** mg/kg and **y** mg/kg.*

Results of the Statistical analysis is presented in *Appendix D.*

6.6 Statistical Analysis

Due to the layout of the site, two distinct zones were identified that have led to the dataset being split to appropriately determine the statistical analysis for the exceeded contaminants observed and is presented in *Table 6.2* and *Table 6.3*.

Table 6.2: Statistical Analysis – Alderford Parade

Contaminant	Cc (mg/kg)	85% CI Range (mg/kg)	99% CI Range (mg/kg)	μ<Cc
Benzo(b)fluoranthene	3.3	0.80-1.60	0.44-1.96	Confident
Benzo(a)pyrene	2.7	0.62-1.28	0.32-1.58	Confident
Dibenzo(ah)anthracene	0.28	0.07-0.14	0.04-0.17	Confident

Cc – Critical Concentration / CI – Confidence Interval / μ - True Mean Concentration

Table 6.3: Statistical Analysis – Heatherdale Drive

Contaminant	Cc (mg/kg)	85% CI Range (mg/kg)	99% CI Range (mg/kg)	μ<Cc
Lead	200	37.02-363.84	0.00-567.56	Not Confident
Benzo(b)fluoranthene	3.3	0.12-2.13	0.00-3.39	Not Confident
Benzo(a)pyrene	2.7	0.06-1.83	0.00-2.93	Not Confident
Dibenzo(ah)anthracene	0.28	0.00-0.20	0.00-0.32	Not Confident

Cc – Critical Concentration / CI – Confidence Interval / μ - True Mean Concentration

6.7 Asbestos

26No. samples were screened for Asbestos Containing Materials (ACM). 2No. samples indicated the presence of ACM and were submitted for asbestos quantification to determine the percentage asbestos in the soil. A summary of the screening is provided in *Table 6.4*.

Table 6.4: Asbestos Screening Summary

Ref. No.	Asbestos in Soil	Asbestos Matrix	Asbestos Quantification
WS102	Amosite & Chrysotile	Loose Fibres	<0.001
TP106	Chrysotile	Cement	0.032

Due to the exceedance of asbestos at TP106, further delineation is recommended to ascertain the extent of asbestos contamination in this area and to provide more detailed information on the potential human health risk to construction workers from this material.

6.8 PCB

2No. soil samples were taken from WS103 (0.00-0.40m bgl) and TP103 (0.30-0.75m bgl) screened for Speciated PCB-EC7 & WHO12 due to the presence of an electric sub-station adjacent to the site. Results of the testing indicate that all PCBs screened were observed to be below the limit of detection.

6.9 Conclusions

The statistical analysis for all exceeded contaminants within the Alderford Parade development zone indicates that there is a very high probability that the true mean concentrations are below the critical concentrations and Sutcliffe are confident that these contaminants are unlikely to pose a zone wide risk to human health.

In the areas of exceeded contaminants (TP101 and WS107), it is recommended that plots in the vicinity would be remediated to reduce the risk to human health.

The statistical analysis for all exceeded contaminants within the Heatherdale Parade development zone indicates that the true mean concentrations have the potential to be above the critical concentration and hence there is a zone wide risk human health. Remedial works will be required to reduce the risk and be suitable for the proposed end use.

7 Controlled Waters Risk Assessment

7.1 Methodology

Based on the Preliminary Risk Assessment and Ground Model for this site, a Level 1 Screening Assessment has been undertaken in general accordance with Environment Agency guidance Environment Agency Remedial Targets Methodology, Hydrogeological Risk Assessment for Land Contamination, 2006.

The methodology comprises:

- Identification of potential contaminant linkages.
  - Selection of appropriate generic screening values for controlled waters.
  - Screening measured concentrations of leachate against the generic screening values available for UK Drinking Water Standards (UK DWS) and Environmental Quality Standards (EQS).
- Assessment of contaminant distribution and risk to receptors.
  - Identification of contaminants of concern and relevant contaminant linkages.
  - Identification of potential contaminants and contaminant linkages which are no longer of concern.

7.2 Identification of Potential Contaminant Linkages

Contaminant linkages have been identified in *Section 2.0* between the Made Ground and the underlying aquifer via infiltration and/or migration of dissolved phase contaminants.

7.3 Selection of Generic Screening Values

Screening values for Drinking Water Standards (DWS) have been used to assess leachability. DWS are relevant to potable receptors (Principal Aquifer).

Environmental Quality Standards (EQS) screening values have been used to assess risks to surface water resources.

7.4 Leachate Screening – UK DWS & EQS

Metals, TPHCWG and Speciated PAHs were assessed. Exceedances of relevant UK DWS and EQS screening criteria were encountered, details of which are identified in *Table 7.1 & 7.2.*

Table 7.1: Leachate Exceedances Summary - DWS

Determinant	DWS Threshold	Range of concentrations	Location	Depth (m bgl)	Recorded Concentration
Lead	10µg/l	<1-60µg/l	WS107	0.00-0.30	60µg/l
			TP108	0.00-0.30	11µg/l
Benzo(a)pyrene	0.01µg/l	<0.01-0.14µg/l	TP101	0.00-0.20	0.14µg/l
			WS107	0.00-0.30	0.02µg/l

Table 7.2: Leachate Exceedances Summary - EQS

Determinant	EQS Threshold	Range of concentrations	Location	Depth (m bgl)	Recorded Concentration
Copper	1µg/l	<4-20µg/l	WS112	0.00-0.30	8µg/l
			WS107	0.00-0.30	20µg/l
			TP108	0.00-0.30	9µg/l
			WS110	0.00-0.30	7µg/l
Lead	14µg/l	<1-60µg/l	WS107	0.00-0.30	60µg/l
Zinc	10.9µg/l	3-19µg/l	WS112	0.00-0.30	19µg/l
			WS107	0.00-0.30	19µg/l
			TP108	0.00-0.30	18µg/l
Fluoranthene	0.12µg/l	<0.01-0.19µg/l	TP101	0.00-0.20	0.19µg/l
Benzo(b)fluoranthene	0.017µg/l	<0.01-0.14µg/l	TP101	0.00-0.20	0.14µg/l
			WS107	0.00-0.30	0.02µg/l
Benzo(k)fluoranthene	0.017µg/l	<0.01-0.06µg/l	TP101	0.00-0.20	0.06µg/l
Benzo(ghi)perylene	0.0082µg/l	<0.01-0.07µg/l	TP101	0.00-0.20	0.07µg/l
			WS107	0.00-0.30	0.01µg/l
Indeno(123cd)pyrene	0.002µg/l	<0.01-0.08µg/l	TP101	0.00-0.20	0.08µg/l
			WS107	0.00-0.30	0.01µg/l

Leachate screening tables are presented in *Appendix G.* Analytical certificates are presented in *Appendix D.*

7.5 Contaminant Distributions and Risk to Receptors

Several determinands exceeded the DWS and EQS screening values. However, the risk to controlled waters (groundwater & surface waters) is diminished as a result of the following:

- The site is underlain by a layer of Glacial Till which is classified as Unproductive Strata that will act as an aquiclude impeding the flow of water to the underlying Principal Aquifer.
- There are no surface water features within 500m of the site.
- There are no surface water abstractions listed within the Envirocheck Report within 500m of the site.

7.6 Conclusion

Exceedances of DWS and EQS screening criteria are not considered significant given the likely depth to groundwater, effects of natural attenuation, lack of nearby groundwater abstractions and the absence of any surface water courses that could be in continuity with ground water beneath the site.

8 Ground Gas & Groundwater Risk Assessment

8.1 CIRIA C665 Assessment

Gas monitoring wells were installed in 10No. exploratory hole locations (WS103, WS104, WS105A, WS106, WS107, WS109, WS110, WS111, WS113 and WS116) as part of the ground investigation completed by Sutcliffe.

A copy of all gas monitoring readings and water levels to date can be found in *Appendix E.*

8.2 Methodology

A ground gas risk assessment has been undertaken in general accordance with the British Standard BS8485:2015+A1:2019, "*Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings".*

The guidance is written specifically for use by designers of gas protection measures relating to the development of a site. Reference has also been made to the CIRIA document C665:2007: "*Assessing Risks Posed by Hazardous Ground Gases to Buildings"* and to the Health and Safety Executive document EH40/2005 "Workplace Exposure Limits".

Our assessment comprises the following:

- Review of results.
- Calculation of Hazardous Gas Flow Rate for Methane (CH_4) and Carbon Dioxide (CO_2)
- Assessment of risks from ground gas.
- Development options.

8.3 Review of Field Data

6No. rounds of gas and groundwater monitoring have been undertaken.

Gas monitoring was undertaken using a fully calibrated GFM gas monitor which measured concentrations of oxygen, carbon dioxide and methane as well as gas flow emission rates.

Monitoring of groundwater installations were undertaken using an electronic ATEX Dipmeter.

The findings are summarised below in *Table 8.1* and the results are presented in full in *Appendix E*.

Table 8.1: Summarised Ground Gas and Groundwater Monitoring Data

Ref. No.	MAX Flow Rate (l/hr)	MAX CH_4 (%)	MAX CO_2 (%)	MIN O_2 (%)	Atmospheric Pressure	Water Level (m bgl)
19/01/2024						
WS103	-	-	-	-	-	-
WS104	**0.00***	0.00	1.50	18.40	1008mB	0.43
WS105A	**0.00**	0.00	4.10	11.30	1008mB	2.46
WS106	**0.00**	0.00	5.60	7.70	1008mB	1.72
WS107	**0.00***	0.00	0.90	18.20	1008mB	1.70
WS109	-	-	-	-	1008mB	-
WS110	-	-	-	-	1008mB	-
WS111	-	-	-	-	1008mB	-
WS113	-	-	-	-	1008mB	-
WS116	-	-	-	-	1008mB	-
02/02/2024						
WS103	**0.00***	0.00	1.70	15.60	1015mB	0.82
WS104	**0.00***	0.00	0.20	19.70	1015mB	0.15
WS105A	**0.00**	0.00	3.20	15.10	1015mB	2.08
WS106	**0.00**	0.00	4.70	10.00	1015mB	1.66
WS107	**0.00***	0.00	0.60	19.60	1015mB	1.34
WS109	**0.00**	0.00	3.40	15.00	1015mB	2.10
WS110	**0.00***	0.00	0.80	19.30	1015mB	1.46
WS111	**0.00**	0.00	0.00	20.00	1015mB	1.11
WS113	**0.00**	0.00	0.70	19.60	1015mB	2.09
WS116	**0.00***	0.00	3.00	13.60	1015mB	0.75
14/02/2024						
WS103	**0.00***	0.00	1.50	17.00	1001mB	0.42
WS104	**0.00***	0.00	2.00	12.30	1001mB	0.20
WS105A	**0.00**	0.00	2.80	15.50	1001mB	1.92
WS106	**0.00**	0.00	4.60	13.00	1001mB	1.60
WS107	**0.00***	0.00	0.60	19.40	1001mB	1.28
WS109	**0.00**	0.00	3.20	19.40	1001mB	2.15
WS110	**0.00***	0.00	0.90	19.20	1001mB	1.52
WS111	**0.00**	0.00	0.90	19.40	1001mB	1.25
WS113	**0.00**	0.00	0.60	19.60	1001mB	2.05
WS116	**0.00***	0.00	3.20	13.30	1001mB	0.85
01/03/2024						
WS103	**0.00***	0.00	1.40	17.00	980mB	0.40
WS104	**0.00***	0.00	2.20	12.50	980mB	0.35
WS105A	**0.00**	0.00	2.60	15.90	980mB	1.85
WS106	**0.00**	0.00	4.30	13.50	980mB	1.45

Ref. No.	MAX Flow Rate (l/hr)	MAX CH_4 (%)	MAX CO_2 (%)	MIN O_2 (%)	Atmospheric Pressure	Water Level (m bgl)
WS107	**0.00***	0.00	0.60	19.20	980mB	1.33
WS109	**0.00**	0.00	3.50	19.30	980mB	1.95
WS110	**0.00***	0.00	0.70	19.10	980mB	1.40
WS111	**0.00**	0.00	0.70	19.70	980mB	1.20
WS113	**0.00**	0.00	0.70	19.50	980mB	1.99
WS116	**0.00***	0.00	3.00	14.10	980mB	0.82
03/04/2024						
WS103	-	-	-	-	988mB	-
WS104	-	-	-	-	988mB	-
WS105A	**0.00**	0.00	3.40	15.20	988mB	2.12
WS106	**0.00**	0.00	4.80	15.00	988mB	1.66
WS107	**0.00***	0.00	1.00	17.90	988mB	1.30
WS109	**0.00**	0.00	4.00	10.00	988mB	2.09
WS110	**0.00***	0.00	2.50	15.00	988mB	1.52
WS111	**0.00**	0.00	1.30	18.40	988mB	1.16
WS113	**0.00**	0.00	2.90	15.70	988mB	2.09
WS116	**0.00***	0.00	4.10	11.30	988mB	0.40
15/04/2024						
WS103	-	-	-	-	997mB	-
WS104	-	-	-	-	997mB	-
WS105A	**0.00**	0.00	3.90	14.30	997mB	2.00
WS106	**0.00**	0.00	4.80	10.40	997mB	1.66
WS107	**0.00***	0.00	0.60	19.50	997mB	1.33
WS109	**0.00**	0.00	3.40	13.50	997mB	2.06
WS110	**0.00***	0.00	6.70	8.10	997mB	1.51
WS111	**0.00**	0.00	2.00	16.20	997mB	1.15
WS113	**0.00**	0.00	3.40	15.30	997mB	2.09
WS116	**0.00***	0.00	1.80	19.00	997mB	0.42

** Peak flow recorded is likely to be due to a build-up of pressure caused by rising water trapping the gas within the solid section of pipe; the initial peak flow is not representative of the rate of gas generation within the ground and can be discounted from the dataset.*

8.4 Calculation of Hazardous Gas Flow Rate (HGFR)

A hazardous gas flow rate (HGFR) is derived, representative of the actual flow of gas from the borehole. This, combined with a consideration of other factors such as maximum concentration, is used to characterise the site.

HGFRs for both methane and carbon dioxide based on steady state flow and concentration have been calculated as:

HGFR = maximum gas concentration on visit x measured borehole flow rate on visit.

Results of the calculation are presented in *Appendix E*.

Methane HGFR

The highest calculated HGFR per borehole for methane is presented below:

Table 8.2: Methane HGFR

Ref. No.	Flow[1] (l/h)	CH_4[2] (%)	HGFR CH_4 (l/h)	Characteristic Situation
WS103	0.10	0.10	0.0001	CS1
WS104	0.10	0.10	0.0001	CS1
WS105A	0.10	0.10	0.0001	CS1
WS106	0.10	0.10	0.0001	CS1
WS107	0.10	0.10	0.0001	CS1
WS109	0.10	0.10	0.0001	CS1
WS110	0.10	0.10	0.0001	CS1
WS111	0.10	0.10	0.0001	CS1
WS113	0.10	0.10	0.0001	CS1
WS116	0.10	0.10	0.0001	CS1

[1] Where maximum recorded flow is <0.1l/h, 0.1l/h has been used as recommended in CIRIA C665.
[2] Where maximum recorded concentration is <0.1%, 0.1% has been used as recommended in BS8485.

Carbon Dioxide HGFR

The highest calculated HGFR per borehole for carbon dioxide is presented below:

Table 8.3: Carbon Dioxide HGFR

Ref. No.	Flow[1] (l/h)	CO_2[2] (%)	HGFR CO_2 (l/h)	Characteristic Situation
WS103	0.10	1.70	0.0017	CS1
WS104	0.10	2.20	0.0022	CS1
WS105A	0.10	4.10	0.0041	CS1
WS106	0.10	4.80	0.0048	CS1
WS107	0.10	1.00	0.0010	CS1
WS109	0.10	4.00	0.0040	CS1
WS110	0.10	6.70	0.0067	CS1
WS111	0.10	2.00	0.0020	CS1
WS113	0.10	3.40	0.0034	CS1
WS116	0.10	4.10	0.0041	CS1

[1] Where maximum recorded flow is <0.1l/h, 0.1l/h has been used as recommended in CIRIA C665.
[2] Where maximum recorded concentration is <0.1%, 0.1% has been used as recommended in BS8485.

8.5 Ground Gas Risk Assessment

In accordance with CIRIA C665 the ground gas monitoring results indicate that the site has a HGFR of 0.0001l/hr for methane and 0.0067l/hr for carbon dioxide.

This results in the site being classified as Characteristic Situation 1 – Very Low Risk and require no protective measures to be installed.

However, CIRIA C665 states in Table 8.5 (Wilson & Card) that:

- for a typical Carbon Dioxide maximum concentration above 5% that an CS2 classification be considered.

As there have been a number of readings above 5% CO_2 during the monitoring period, it is Sutcliffe's recommendation that these areas are classified as CS2 and require gas protection measures.

A gas risk classification *Drawing Ref. 33716-SUT-ZZ-00-DR-G-7253* highlighting the areas required for gas protection is provided herein.

This classifies the site as having a low to intermediate gas regime identified, which requires gas protection measures, comprising a membrane and ventilated sub-floor void to create a permeability contrast to prevent the ingress of gas into buildings.

Using BS8485:2015+A1:2019, "*Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings"* a total of 3.5 points is required for the proposed end use, *Table 8.4* details the protection measures required to achieve this point total.

Table 8.4: BS8485 (2015+A1:2019) Point Score Summary

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

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

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

8.6 Radon

According to the Envirocheck Report, the site is not within a radon affected area, as <1% of homes are above the action level hence no radon protection measures are necessary.

8.7 Groundwater Protection Measures

Groundwater was observed to be standing at 0.15-2.46m bgl during the monitoring investigation.

In light of these observations, contractors should allow for pumping to develop and maintain dry working conditions, in foundation and service trench excavations.

9 Land Contamination Risks and Remediation Requirements

9.1 Revised Conceptual Model

Based on the findings of the human health, the preliminary conceptual model has been revised as shown in *Figure 7*. The drawing shows all contaminant linkages from the preliminary conceptual model, identifying those which remain relevant.

9.2 Discounted Contaminant Linkages

Controlled Waters – Groundwater Resources

The UK DWS Leachate screening identified concentrations of Lead and Benzo(a)pyrene that could pose a risk to the Principal aquifer. However, due the presence of Glacial Till, the likely depth of groundwater and the effects of natural attenuation, the risk is unlikely to be significant.

Controlled Waters – Surface Water Resources

The EQS Leachate screening identified concentrations of multiple contaminants that could pose a risk to the local surface water features. However, the nearest surface water feature is noted <500m of the site, as such the risk is unlikely to be significant.

9.3 Remaining Potential Contaminant Linkages

Long Term Human Health

Elevated levels of Lead, Benzo(b)fluoranthene, Benzo(a)pyrene and Dibenzo(ah)anthracene were observed in samples screened in WS107 (0.00-0.40m bgl), WS110 (1.00-1.60m bgl) and TP101 (0.00-0.30m bgl).

The statistical analysis for all exceeded contaminants within the Alderford Parade development zone indicates that there is a very high probability that the true mean concentrations are below the critical concentrations and Sutcliffe are confident that these contaminants are unlikely to pose a zone wide risk to human health.

In the areas of exceeded contaminants (TP101 and WS107), it is recommended that plots in the vicinity would be remediated to reduce the risk to human health. This is presented on Sutcliffe Drawing Ref. 33716-SUT-ZZ-00-DR-G-7254 P02 (Cover System Zoning Plan) herein.

The statistical analysis for all exceeded contaminants within the Heatherdale Parade development zone indicates that the true mean concentrations have the potential to be above the critical concentration and hence there is a zone wide risk human health. Remedial works will be required to reduce the risk and be suitable for the proposed end use.

It is noted that 1No. sample (TP106) identified Asbestos containing material above the threshold for human health, and that further delineation is recommended to ascertain the extent of asbestos contamination in this area and to provide more detailed information on the potential human health risk to construction workers from this material.

Construction workers may be exposed via dermal contact, ingestion and inhalation of soil / dust during the construction period. Adjacent site users may also be exposed to contaminated soils via inhalation of dust generated during the construction phase.

Ground Gas

Ground gas monitoring has indicated elevated levels of Carbon Dioxide within WS106 and WS110, and it is recommended that these areas on site are classified as CS2. As such gas protection measures will be required as part of the development of the site. A gas risk classification Drawing Ref. 33716-SUT-ZZ-00-DR-G-7253 highlighting the areas required for gas protection is provided herein.

Table 9.1: Summary of Remaining Contaminant Linkages

1. Hazard Identification		2. Hazard Assessment				3. Risk Estimation		4. Risk Evaluation	5. Action required
Contaminant Source		Pathway		Receptor		Consequence	Probability	Classification	
S1	Made Ground	P1	Direct contact with potential contaminants.	R1/2	Site users	Medium	Low	Moderate / Low Risk	Elevated levels of Lead, Benzo(b)fluoranthene, Benzo(a)pyrene and Dibenzo(ah)anthracene were observed in samples screened in WS107 (0.00-0.40m bgl), WS110 (1.00-1.60m bgl) and TP101 (0.00-0.30m bgl). The statistical analysis for all exceeded contaminants within the Alderford Parade development zone indicates that there is a very high probability that the true mean concentrations are below the critical concentrations and Sutcliffe are confident that these contaminants are unlikely to pose a zone wide risk to human health. In the areas of exceeded contaminants (TP101 and WS107), it is recommended that plots in the vicinity would be remediated to reduce the risk to human health. This is presented on Sutcliffe Drawing Ref. 33716-SUT-ZZ-00-DR-G-7254 P02 (Cover System Zoning Plan) herein. The statistical analysis for all exceeded contaminants within the Heatherdale Parade development zone indicates that the true mean concentrations have the potential to be above the critical concentration and hence there is a zone wide risk human health. Remedial works will be required to reduce the risk and be suitable for the proposed end use. It is noted that 1No. sample (TP106) identified Asbestos containing material above the threshold for human health, and that further delineation is recommended to ascertain the extent of asbestos contamination in this area and to provide more detailed information on the potential human health risk to construction workers from this material. Construction workers may be exposed via dermal contact, ingestion and inhalation of soil / dust during the construction period. Adjacent site users may also be exposed to contaminated soils via inhalation of dust generated during the construction phase.
		P2	Ingestion of potential contaminants.	R1/2	Site users	Medium	Low	Moderate / Low Risk	
		P3	Inhalation of potential contaminants.	R1/2	Site users	Severe	Low	Moderate Risk	

1. Hazard Identification		2. Hazard Assessment				3. Risk Estimation		4. Risk Evaluation	5. Action required
Contaminant Source		Pathway		Receptor		Consequence	Probability	Classification	
		P4	Leaching and migration of contaminants.	R3/5	Principal Aquifer	Medium	Unlikely	Low Risk	No Action Required.
		P5	Vertical and lateral migration of ground gases / vapours.	R1	Site users	Severe	Unlikely	Moderate / Low Risk	Ground gas monitoring has indicated elevated levels of Carbon Dioxide within WS106 and WS110, and it is recommended that these areas on site are classified as CS2. As such gas protection measures will be required as part of the development of the site. A gas risk classification *Drawing Ref. 33716-SUT-ZZ-00-DR-G-7253* highlighting the areas required for gas protection is provided herein.
				R4	Property	Severe	Unlikely	Moderate / Low Risk	
S2	Made Ground	P5	Vertical and lateral migration of ground gases / vapours.	R1	Site users	Severe	Unlikely	Moderate / Low Risk	
				R4	Property	Severe	Unlikely	Moderate / Low Risk	

9.4 Additional Works Required to Assess Outstanding Contaminant Linkages

Based on the proposed development plan, a remediation strategy will be required and will include validation of imported material. Additionally, any site derived material scheduled for reuse would need to be designed to assess the risks to future site users.

9.5 Remediation Requirements

Human Health – Soils

Elevated levels of Lead, Benzo(b)fluoranthene, Benzo(a)pyrene and Dibenzo(ah)anthracene were observed in samples screened.

The statistical analysis for all exceeded contaminants within the Alderford Parade development zone indicates that there is a very high probability that the true mean concentrations are below the critical concentrations and Sutcliffe are confident that these contaminants are unlikely to pose a zone wide risk to human health.

Notwithstanding, In the areas of exceeded contaminants (TP101 and WS107), it is recommended that plots site levels in the vicinity of these positions are reduced by 600mm material from site and the importing of clean tested material to create a capping break layer in garden areas on site.

All other soft landscaping / garden areas within the Alderford Parade zone are recommended that site levels to be reduced by 300mm and replaced with clean imported material to facilitate a growing medium.

The statistical analysis for all exceeded contaminants within the Heatherdale Parade development zone indicates that the true mean concentrations have the potential to be above the critical concentration and hence there is a zone wide risk human health. It is recommended that site levels are reduced by 600mm material from site and the importing of clean tested material to create a capping break layer in garden areas on site, with hardcover providing a break layer in other areas of the site.

The cover system zoning for the site is presented on Sutcliffe *Drawing Ref. 33716-SUT-ZZ-00-DR-G-7254 P02 (Cover System Zoning Plan)* herein.

It is noted that 1No. sample (TP106) identified Asbestos containing material above the threshold for human health, and that further delineation is recommended to ascertain the extent of asbestos contamination in this area and to provide more detailed information on the potential human health risk to construction workers from this material.

Construction workers may be exposed via dermal contact, ingestion and inhalation of soil / dust during the construction period. Adjacent site users may also be exposed to contaminated soils via inhalation of dust generated during the construction phase.

Human Health – Ground Gas

Ground gas monitoring has indicated elevated levels of Carbon Dioxide within WS106 and WS110, and it is recommended that these areas on site are classified as CS2. As such gas

protection measures will be required as part of the development of the site. A gas risk classification *Drawing Ref. 33716-SUT-ZZ-00-DR-G-7253* highlighting the areas required for gas protection is provided herein.

Controlled Waters

No Action Required.

10 Waste Classification

10.1 Preliminary Waste Classification

A preliminary waste classification was carried out to determine the classification of soil contamination data using HazWasteOnline program, which creates the standard 'Hazardous / Non-Hazardous' classification of soils.

A summary of the preliminary waste classification is provided in *Table 10.1* below.

Table 10.1: Preliminary Waste Classification Summary

Ref. No.	Depth (m bgl)	Classification
WS101	0.40-1.00	Non-Hazardous
WS102	0.20-0.50	Non-Hazardous
WS103	0.00-0.40	Non-Hazardous
WS104	0.00-0.40	Non-Hazardous
WS105	0.40-0.60	Non-Hazardous
WS106	0.40-0.60	Non-Hazardous
WS107	0.00-0.40	Non-Hazardous
WS108	0.00-0.40	Non-Hazardous
WS109	0.40-1.00	Non-Hazardous
WS110	0.30-0.50	Non-Hazardous
WS110	1.00-1.50	Non-Hazardous
WS111	0.30-0.60	Non-Hazardous
WS112	0.30-0.60	Non-Hazardous
WS113	0.50-1.00	Non-Hazardous
WS114	0.30-0.60	Non-Hazardous
WS114	0.60-0.90	Non-Hazardous
WS115	0.20-0.75	Non-Hazardous
WS116	0.00-0.20	Non-Hazardous
TP101	0.00-0.30	Non-Hazardous
TP101	0.30-0.80	Non-Hazardous
TP102	0.20-0.50	Non-Hazardous
TP104	2.00-2.50	Non-Hazardous
TP105	1.00-1.50	Non-Hazardous
TP106	0.30-0.60	Non-Hazardous
TP106	0.30-0.75	Non-Hazardous

The full Waste Classification Report is provided in Appendix H.

Notwithstanding, the final decision on waste classification is determined by the accepting landfill, and consultation with landfill operators be carried out during the development of the SMMP.

10.2 Asbestos

2No. samples indicated the presence of ACM and were submitted for asbestos quantification to determine the percentage asbestos in the soil. A summary of the screening is provided in *Table 10.2*.

Table 10.2: Asbestos Screening Summary

Ref. No.	Asbestos in Soil	Asbestos Matrix	Asbestos Quantification
WS102	Amosite & Chrysotile	Loose Fibres	<0.001
TP106	Chrysotile	Cement	0.032

Asbestos Quantification indicated that the asbestos is not present at levels above its threshold value for disposal so is not classified as Hazardous Waste, however due to the observations of ACM, the sample cannot be downgraded to Inert and remains Non-Hazardous.

10.3 Waste Acceptance Criteria (WAC)

WAC analysis was carried out on the samples obtained from WS104 to determine if the preliminary waste classification results can be downgraded. Result of the WAC analysis are presented in Appendix D and on worksheets in Appendix G.

10.4 Final Waste Classification

Following the results of the WAC testing, the final waste classification is presented in *Table 10.3.*

Table 10.3: Final Waste Classification Summary

Ref. No.	Depth (m bgl)	Preliminary Classification	WAC	Final Classification	Comments
WS101	0.40-1.00	Non-Hazardous		Non-Hazardous	
WS102	0.20-0.50	Non-Hazardous		Non-Hazardous	Cannot be downgraded (ACM detected)
WS103	0.00-0.40	Non-Hazardous		Non-Hazardous	
WS104	0.00-0.40	Non-Hazardous	✓	Inert	No Exceedances (WAC)
WS105	0.40-0.60	Non-Hazardous		Non-Hazardous	
WS106	0.40-0.60	Non-Hazardous		Non-Hazardous	
WS107	0.00-0.40	Non-Hazardous		Non-Hazardous	
WS108	0.00-0.40	Non-Hazardous		Non-Hazardous	
WS109	0.40-1.00	Non-Hazardous		Non-Hazardous	
WS110	0.30-0.50	Non-Hazardous		Non-Hazardous	
WS110	1.00-1.50	Non-Hazardous		Non-Hazardous	
WS111	0.30-0.60	Non-Hazardous		Non-Hazardous	
WS112	0.30-0.60	Non-Hazardous		Non-Hazardous	
WS113	0.50-1.00	Non-Hazardous		Non-Hazardous	
WS114	0.30-0.60	Non-Hazardous		Non-Hazardous	
WS114	0.60-0.90	Non-Hazardous		Non-Hazardous	

Ref. No.	Depth (m bgl)	Preliminary Classification	WAC	Final Classification	Comments
WS115	0.20-0.75	Non-Hazardous		Non-Hazardous	
WS116	0.00-0.20	Non-Hazardous		Non-Hazardous	
TP101	0.00-0.30	Non-Hazardous		Non-Hazardous	
TP101	0.30-0.80	Non-Hazardous		Non-Hazardous	
TP102	0.20-0.50	Non-Hazardous		Non-Hazardous	
TP104	2.00-2.50	Non-Hazardous		Non-Hazardous	
TP105	1.00-1.50	Non-Hazardous		Non-Hazardous	
TP106	0.30-0.60	Non-Hazardous		Non-Hazardous	Cannot be downgraded (ACM detected)
TP106	0.30-0.75	Non-Hazardous		Non-Hazardous	

Notwithstanding, the final decision on waste classification is determined by the accepting landfill, and consultation with landfill operators be carried out during the development of the SMMP.

11 Recommendations

11.1 Further works

The following actions are recommended:

- Design a Phase III Remediation & Validation Proposal for submission to planning department.
- Design SMMP – management of material on and off site.
- Delineation of asbestos hotspots.
- Good hygiene practices should be employed during construction work, in addition, the findings of this investigation should be included within the contractors H&S file and an assessment of risks associated with short term human health completed. No consumption of food or smoking should occur without prior hand washing. If dust is encountered, dust masks should be worn, and dust suppression employed.

12 References

- BRE Special Digest (1991) 'Sulphate and acidic resistance of concrete in the ground' 363
- BRE Special Digest (2001) 'Aggressive Chemical Environment for Concrete (ACEC) Site Classification.
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- DETR/Partners in Technology (1997) Passive venting of soil gases beneath buildings research report-guide for design.
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- Environment Agency (2000) 'Secondary Model Procedure for the Development of Appropriate Soil Sampling Strategies for Land Contamination. Research and Development. Technical Report. P5-066/TR', Bristol.
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- Environment Agency (2002) 'Department for Environment, Food and Rural Affairs and The Environment Agency. 'Priority Contaminants for The Assessment of Land', Environment Agency, Bristol. CLR report No. 8
- Environment Agency (2002) 'Department for Environment, Food and Rural Affairs and The Environment Agency. The Contaminated Land Exposure Assessment (CLEA) Model: Technical Basis and Algorithms', Environment Agency, Bristol. CLR report No. 1

Appendix A – General Notes

Generic Notes – Sutcliffe Investigations

Environmental Setting

General

Third party information obtained from the British Geological Survey (BGS), the Coal Authority, the Local Authority etc is presented in the Correspondence Appendix of the Geoenvironmental Report.

Geology, Mining & Quarrying

In order to establish the geological setting of a site, Sutcliffe Investigations refer to BGS maps for the area and the relevant geological memoir.

A coal mining report is obtained from the Coal Authority. Further information is sourced from the Local Authority and by reference to current and historical OS plans.

Landfills

Sutcliffe Investigations obtain data from the Landmark Information Group, the Environment Agency and the Local Authority with respect to known areas of landfilling within 250m of the proposed development site. Reference is also made to historical OS plans, which are inspected for evidence of backfilled quarries, railway cuttings, colliery spoil tips etc.

Radon

Radon is a colourless, odourless gas, which is radioactive. It is formed in strata that contain uranium and radium (most notably granite) and can move through fissures eventually discharging to atmosphere, or the spaces under and within buildings. Where radon occurs in high concentrations, it can pose a risk to health.

In order to assess potential risks associated with radon gas, Sutcliffe Investigations refer to BRE Report BR211, 1999: *"Radon: guidance on protective measures for new dwellings".*

BR211 provides a preliminary indication of the measures required for a particular site, but it is also often necessary to request a Stage 2 Protective Measures Site Report from the BGS.

The level of protection needed is site-specific and is determined by reference to the radon potential map for the area followed by a geological assessment of the site. This information is contained in the Annexes of BR211.

Annex A – derived from statistical analysis of radon measurements in existing houses carried out by the NRPB and grouped on 5km grid.

Annex B – based on an assessment of the same radon measurements grouped by geological units. The maps show the 5km grid squares underlain completely or in part, by geological units which potentially exceed the action levels for radon protective measures. The grid squares are coded according to highest potential within the square. In many cases the actual geological radon potential varies considerably within a grid square.

Sutcliffe Investigations adopt the following procedure when assessing risk associated with radon.

Firstly, Annex A maps are reviewed to see whether the site requires full, basic or no measures. If the site is in a dark brown square, full radon protection measures are required. If the site is in a light brown square, reference should be made to Annex B.

Secondly, Annex B maps are reviewed to see whether a further geological assessment is required which may result in upgrading the result from Annex A. If a site lies within a shaded square, it may require radon protection and Sutcliffe Investigations request a Stage 2 Protective Measures Site Report from the BGS.

If the site is in a square that is not coloured or shaded in either set of maps then no radon protection is needed and therefore a BGS Report is not normally necessary.

The BGS geological assessment involves checking whether the site is on or close to a geological unit that has statistically been found to have elevated radon potential. The geological assessment is based on either 1:50,000 or the 1:250,000 scale data. The search area specified as part of the request is increased by 50m in areas where 1:50,000 data is available and by 500m in areas with 1:250,000 scale data to allow for potential inaccuracies in the position of boundaries. The BGS report indicates the highest level of protection required within the search area and its buffer zone.

When requesting a BGS report, Sutcliffe Projects select the search radius carefully, since too large a search radius may result in the inclusion of areas underlain by geological units of a higher radon potential, thereby giving rise to recommending too high a level of protection.

The report also includes (where available), a list of the geological units included in the assessment. Sutcliffe Investigations check that these actually underlie the site, rather than the buffer zone only.

On the basis of radon measurements in dwellings and on their geological interpretation, the BGS report stipulates the level of protective measures required for the proposed development site, and this could be:

1. no measures
2. basic measures or
3. full measures

Details of these measures are provided in the Hazardous Gas section of this Geoenvironmental Report.

Hydrogeology

Sutcliffe Investigations obtain information from the Environment Agency (EA) and the Landmark Information Group with respect to:

- groundwater quality
- recorded pollution incidents
- licensed groundwater abstractions

Reference is also made to the EA document “Policy and Practice for the Protection of Groundwater” (1998) and the relevant Groundwater Vulnerability Map.

Bedrock and any overlying granular Drift deposits are classified by the EA.

Major aquifers: “*Highly permeable formations, usually with a known or probable presence of significant fracturing. They may be highly productive and able to support large abstractions for public water supply and other purposes*”.

Minor aquifers: “*Fractured or potentially fractured rocks which do not have a high primary permeability, or other formations or variable permeability. Although these acquifers will seldom produce large quantities of water for abstractions, they are important both for local supplies and in supplying base flow to rivers*”.

Non-aquifers: “*Formations which are generally regarded as containing insignificant quantities of groundwater. However groundwater flow through such rocks, although imperceptible, does take place and needs to be considered in assessing the risk associated with persistent pollutants. Some non-acquifers can yield water in sufficient quantities for domestic use*”.

Groundwater vulnerability is determined by 4 variables:

1. The presence and nature of overlying soil (the weathered zone affected by living organisms; soil in the UK can extend up to 2m in depth). Physical properties of the soil affect the downward passage of water and its ability to attenuate pollutants. The EA make reference to a three-fold classification of soil types:-

    - Soils of **low** leaching potential are defined as "*soils in which the pollutants are unlikely to penetrate the soil layer because either water movement is largely horizontal, or they have the ability to attenuate diffuse pollutants*".

    - Soils of **intermediate** leaching potential are defined as "*soils which have a moderate ability to attenuate diffuse source pollutants or in which it is possible that some non-absorbed diffuse source pollutants and liquid discharges could penetrate the soil layer*".

    - Soils of high leaching potential are defined as "*soils with little ability to attenuate diffuse source pollutants and in which non-absorbed diffuse source pollutants and liquid discharges have the potential to move rapidly to underlying strata or to shallow groundwater*".

    In urban areas and restored mineral workings the soil information is based on fewer observations than elsewhere. A worst-case vulnerability (H) is therefore assumed for these areas and for current mineral workings by the EA. All are given a designation of **HU** unless proved otherwise.

2. The presence and nature of Drift, which often overlies bedrock. Where Drift is of substantial thickness and low permeability, it can provide an effective barrier to surface pollutant migration. Permeability Drift is classified as a Minor Aquifer except where it is in probable hydraulic continuity with a Major Aquifer, where it is regarded as part of the Major Aquifer unless proven otherwise by site investigation.

3. The nature of the geological strata (bedrock). Rocks that contain groundwater in exploitable quantities are called aquifers.

4. The depth of the unsaturated zone; i.e. that part of the aquifer which lies above the water table.

The EA have also designated Source Protection Zones, which are based on proximity to a groundwater source (springs, wells and abstraction boreholes). The size of a Source Protection Zone may vary from tens to several thousand hectares.

Hydrology

Sutcliffes obtain information from the Environment Agency and the Landmark Information Group with respect to:

- Surface water quality
- Recorded pollution incidents
- Licensed abstractions (groundwater & surface waters)
- Licensed discharge consents
- Site susceptibility to flooding

The EA have set **water quality** targets for all rivers. These targets are known as River Quality Objectives (RQOs). The water quality scheme used to set RQO planning targets is known as the River Ecosystem scheme. The scheme comprises five classes (RE1 to RE5) which reflect the chemical quality requirements of communities of plants and animals occurring in our rivers.

General Quality Assessment (GQA) grades reflect actual water quality. They are based on the most recent analytical testing undertaken by the EA. There are six GQA grades (denoted A to F) defined by the concentrations of biochemical oxygen demand, total ammonia and dissolved oxygen.

The susceptibility of a site to **flooding** is assessed by reference to a Flood Map on the Environment Agency's website. These maps provides show natural floodplains – areas potentially at risk of flooding it a river rises above its banks or high tides and stormy seas cause flooding in coastal areas.

There are different kinds of area shown on the Flood Map:

1. Dark blue areas could be flooded by the sea by a flood that has a 0.5% (1 in 200) or greater chance of happening each year, or by a river by a flood that has a 1% (1 in 200) or greater chance of happening each year.

2. Light blue areas show the additional extend of an extreme flood from rivers or the sea. These outlying areas are likely to be affected by a major flood, with up to a 0.1% (1 in 1000) chance or occurring each year.

These two colours show the extent of the natural floodplain if there were no flood defences or certain other manmade structures and channel improvements.

The maps also show all flood defences built in the last five years to protect against river floods with a 1% (1 in 100) chance of happening each year, or floods from the sea with a 0.5% (1 in 200) chance of happening each year, together with some, but not all, older defences and defences which protect against smaller floods.

The Agency's assessment of the likelihood of flooding from rivers and the sea at any location is based on the presence and effect of all flood defences, predicted flood levels and ground levels.

It should also be noted that as the floodplain shown is the 1 in 100 year (or 1 in 200 year as appropriate) areas outside this may be flooded by more extreme floods (e.g. the 1 in 1000 year flood). Also, parts of the areas shown at risk of flooding will be flooded by lesser floods (e.g. the 1 in 5 year flood). In some places due to the shape of the river valley the smaller floods will flood a very similar extent to larger floods but to a lesser depth.

If a site falls within a floodplain, it is recommended that a flood survey be undertaken by a specialist consultant who can advise on appropriate mitigating measures; i.e. raising slab levels, provision of storage etc.

COMAH & Explosive Sites

Sutcliffe Investigations obtain information from the Landmark Information Group with respect to COMAH or explosive sites within 1km of the proposed development site. Sutcliffe Investigations' report refers to any that are present and recommends that the Client seeks further advice from the HSE.

Areas around COMAH sites (chemical plants etc) are zoned with respect to the implementation of emergency plans. The HSE are a statutory consultee to the local planning authority for all COMAH sites. The COMAH site may have to revise its emergency action plan if development occurs. This might be quite straightforward or could entail significant expenditure. Consequently, the COMAH site may object to a proposed development (although it is the Local Authority who have final say and they are likely to place more weight on advice from the HSE).

Preliminary Conceptual Ground Model

The site's environmental setting (and proposed end use) is used by Sutcliffe Investigations to assess the significance of any contamination encountered during the subsequent ground investigation.

Generic Notes – Sutcliffes Geoenvironmental Investigations

2. Ground Investigation Fieldwork

General

Sutcliffe Ground Investigations are undertaken in accordance with current UK guidance including:

- BS5930:1999 "*Code of practice for site investigation*"
- BS10175:2001 "Code of practice for the identification of potentially contaminated sites"
- Contaminated Land Reports 1 to 6, most notably CLR Report No. 4 "*Sampling strategies for contaminated land*"
- "*Guidance on the protection soil sampling strategies for land contamination*" – EA R&D Technical report P5-066/TR (2001)
- AGS: 1996 "*Guide to the selection of Geotechnical Soil Laboratory Testing*"

Exploratory hole logs are represented in Appendices to this Geoenvironmental Report. These logs include details of the:

- Investigation technique adopted
- Samples taken
- Descriptions of the solid strata and any groundwater encountered
- Results of any insitu testing
- Any gas/groundwater monitoring well installed

Exploratory Hole Locations

Exploratory hole locations are selected by Sutcliffe Investigations, prior to commencement of fieldwork, to provide a representative view of the strata beneath the site and to target potential contaminant sources identified during the preliminary investigation (desk study). Additional exploratory locations are often determined by the site engineer in light of the ground conditions actually encountered; this enables better delineation of the depth and lateral extent of organic contamination, poor ground, relict structures etc.

Investigation Techniques

Ground conditions can be investigated by a number of techniques; the procedures used are in general accordance with BS5930: 1999 and BS1377: 1990. Techniques most commonly used by Sutcliffe Investigations include:

- Machine excavated trial pits, usually equipped with a backactor and a 0.6m wide bucket
- Cable percussive (Shell & Auger) boreholes, typically using 150mm diameter tools and casing
- Window or windowless sampling boreholes. Constraints associated with existing buildings, operations and underground service runs can render some sites partly or wholly inaccessible to a mechanical excavator. In such circumstances, window sampling is often the most appropriate technique. A window sampling drilling rig can be manoeuvred in areas of restricted access and results in minimal disturbance of the ground (a 150mm diameter tarmac/concrete core can be lifted and put to one side). However, it should be noted that window sampling allows only a limited inspection of the ground (especially made ground with a significant proportion of coarse material).
- Rotary percussive open-hole probeholes are typically drilled using a tricone rock roller bit with air as the flushing medium. Probeholes are generally lined through made ground with temporary steel casing to prevent hole collapse.

Where installed, gas/groundwater monitoring wells typically comprise a lower slotted section, surrounded by a filter pack of 10mm non-calcareous gravel and an upper plain section surrounded in part by a bentonite seal and in part by gravel or arisings. The top of the plain pipe is cut off below ground level and the monitoring well protected by a square, stopcock type manhole cover set in concrete, or the plain pipe is cut off just above ground level and the well protected by 100mm diameter steel borehole helmet set in concrete.

Monitoring well details, including the location of the response zone and bentonite seal are presented on the relevant exploratory hole logs.

Insitu Testing

Where relative densities of granular materials given on the trial pit and window sample logs are based on visual inspection only, they do not relate to any specific bearing capacities. However, wherever possible, Sutcliffe Investigations employ a mackintosh probe to assess relative density. Mackintosh probe results can be related to approximate allowable bearing capacities.

The relative densities of granular materials encountered in cable percussive boreholes are based on Standard Penetration Test (SPT) results. SPTs are carried out boreholes, in accordance with BS 1377 1990, Part 9 Section 3.3. Where full penetration (600mm) is not possible, N values are calculated by linear extrapolation and are shown on the logs as N* = x.

The strength of cohesive deposits is determined using a hand shear vane.

Shear strength test results reported on trial pit logs are considered to be more reliable than those reported on window sample logs. Significant sample disturbance occurs during window sampling and consequently shear strength results on disturbed window samples are generally lower than results obtained during trial pitting, in-situ or in large excavated blocks.

Sampling

Representative soil/fill samples are taken at regular intervals from the exploratory holes to assist in description of the ground and to allow selected laboratory testing to be performed. The type of sample taken is dependent on the nature of the stratum and the purpose of the analysis.

Where the soils encountered contain a significant proportion of coarse grained material, truly representative samples are not typically obtained – only the finer fraction is placed in sample containers. However, a visual estimate of the amount of coarse material is made on site.

NB: Coarse constituents not sampled are defined as: coarse gravel, cobble and boulder (i.e. any ‘particles’ with an average diameter greater than 20mm).

Occasionally, unrepresentative ‘spot’ samples are also taken from some exploratory locations for contaminant analysis, typically where unusual, localised pockets of materials are encountered.

Samples of soil for chemical testing are placed into 1 litre plastic tubs prior to delivery to the selected laboratory. Samples of water are taken in one litre brown glass bottles and stored in cool boxes, at a temperature of approximately 4°C, until delivery to the selected laboratory. Soil/fill samples for organic analysis are also stored in cool boxes.

Groundwater

Where encountered during fieldwork, groundwater is recorded on exploratory hole logs. If monitoring wells are installed, groundwater levels are also recorded on one or more occasions after completion of the fieldwork.

It should be borne in mind that the rapid excavation rates used during a ground investigation may not allow the establishment of equilibrium water levels. Water levels are likely to fluctuate with season/rainfall and could be substantially higher at wetter times of the year than those found during this investigation.

Long term monitoring of standpipes of piezometers is always recommended if water levels are likely to have a significant effect on earthworks or foundation design.

Description of Strata

The soils encountered during an Sutcliffes ground investigation are described (logged) in general accordance with BS 5930. The descriptions and depth of strata encountered are presented on the exploratory hole logs and summarised in the Ground Conditions section within the main body of text.

The materials encountered in the trial pits are logged, samples taken and tests performed on the in-situ materials in the excavation faces, to depths of up to 1.2m; below this depth these operations are conducted at the surface on disturbed samples recovered from the excavation.

Key to Exploratory Hole Logs

Keys to logs are presented in the Appendix(ces) containing the logs. These are two keys – Symbols and Legends and Terms and Definitions.

Health and Safety

All work was carried out in accordance with the procedures detailed in the DGEL Health and Safety Manuel and SUKD health and Safety Procedures.

Generic Notes – Sutcliffes Geoenvironmental Investigations

3. Geotechnical Laboratory Tests

General

Soil Samples are delivered to the laboratory for testing along with a schedule of testing drawn up by Sutcliffe Investigations. All tests are carried out in accordance with BS 1377:1990.

The test results are presented as received in an Appendix to this Geoenvironmental Report.

The following laboratory testing are routinely carried out on a selection of samples:

- Atterberg limits & moisture contents
- Soluble sulphate & pH

The additional tests are typically only scheduled where significant earthworks regrade is anticipated:

- Grading
- Compaction tests
- Particle density

Attenberg Limits & Moisture Content

The Liquid and Plastic Limits of samples of natural in-situ clay are determined using the cone penetrometer method and the rolling thread test. These tests enable determination of an average Plasticity Index (PI) for each “type” of clay, although judgement is applied where variable results are reported.

PI can be related to shrinkability (low, medium or high) and then to minimum founding depth. Sutcliffe Investigations typically only consider a soil to be shrinkable if the proportion finer than 63μm is > 35%.

PI results are compared against guidance given in the NHBC Standards, Chapter 4.2 (revised April 2003) which advocates the use of modified Plasticity Index (I’p) defined as:

I’p = Ip * (% < 425μm/100)

ie if PI is 30%, but the soil contains 80% < 425μm, then I’p = 30 * 80/100 = 24%

It should be noted that in accordance with the requirements of BS 1377, the % passing the 425μm sieve is routinely reported by testing labs.

Sutcliffe Investigations apply engineering judgement where PI results are spread over a range of classifications. Consideration is given to:

- The average values for each particular soil type (ie differentiate between residual soil and alluvium)
- The number of results in each class and
- The actual values

Unless the judgement strongly indicates otherwise, Sutcliffe Investigations typically adopt a conservative approach and recommend assumption of the higher classification.

Soluble Sulphate and pH

Sulphates in soil and groundwater are the chemical agents most likely to attack sub-surface concrete, resulting in expansion and softening of the concrete to a mush. Another common cause of concrete deterioration is groundwater acidity.

The rate of chemical attack depends on the concentration of aggressive ions and their replenishment at the reaction surface. The rate of replenishment is related to the presence and mobility of groundwater.

Sutcliffe Investigations refer to BRE Special Digest 1 (SD1) “Concrete in aggressive ground. Part 1: Assessing the aggressive chemical environment” (2001). SD 1 provides definitions of:

- The nature of the site (Greenfield, brownfield or pyretic)
- The groundwater regime (static, mobile or highly mobile)
- The Design Sulphate Class (DC Class) and
- The Aggressive Chemical Environment for Concrete (ACEC Class)

Sutcliffe reports clearly state each of the above for the site being considered.

The concentrations of sulphate in aqueous soil/fill extracts are determined in the laboratory using the gravimetric method. The results are expressed in terms of SO_4 for direct comparison with BS 5328:1997. The pH value of each sample was determined by the electrometric method.

SD1 also discusses determination of “representative” sulphate concentration from a number of tests. Essentially if <10 samples of a given soil-type have been tested, the highest measured sulphate concentration should be taken. If >10 samples have been tested, the mean of the highest 20% of the sulphate test can be taken. With respect to groundwater, the highest sulphate concentration should always be taken.

With respect to pH (soil & groundwater) the value used is the lowest value if <10 samples have been tested and the mean of the lowest 20% if >10 samples have been tested.

Generic Notes – Sutcliffe Investigations Geoenvironmental Investigations

4. Contamination Laboratory Analysis & Interpretation (including WAC)

General

An assessment of potential contaminants associated with the former usages of the site is undertaken with reference to CLR 8 "*Potential contaminants for the assessment of land*" and the relevant DETR Industry Profile(s).

Common Inorganic Contaminants

These include:

- Metals, most notably cadmium, copper, chromium, mercury, lead, nickel and zinc
- Semi-metals, most notably arsenic, selenium and (water soluble) boron
- Non-metals, most notably sulphur
- Inorganic anions, most notably cyanides (free & complex), sulphates, sulphides and nitrates

With respect to the terminology used by most analytical laboratories:

Total cyanide = Free cyanide + Complex cyanide

Total cyanide (CN) is determined by acid extraction; whereas free cyanide is the water soluble fraction.

Complex cyanide is "bound" in compounds and is hard to breakdown. Laboratory determination of complex CN involves subjecting the sample to uv digestion for determination of both free and total CN.

Thiocyanate (SCN) is a different species combined with sulphur.

Elemental sulphur (S) and free sulphur are the same. Total sulphur is all forms, including that present in sulphates (SO_4) sulphates etc.

There are 2 forms of chromium (Cr), chromium VI and chromium III. Chromium VI is the more toxic of these. In soils, total chromium is determined by a strong aqua regia acid digestion. Chromium VI is an empirical method based on a water extract test.

Common Organic Contaminants

Petroleum hydrocarbons are a mixture of hydrocarbons produced from the distillation of crude oil. They include aliphatics (alkanes, alkenes and cycloalkanes), aromatics (single or multi benzene ringed compounds) and hydrocarbon-like compounds containing minor amounts of oxygen, sulphur or nitrogen.

Petroleum hydrocarbons can be grouped based on the carbon number range:-

GRO – Gasoline Range Organics (typically C_6 to C_{10}). Also referred to as PRO – Petroleum Range Organics
DRO – Diesel Range Organics (typically C_{10} to C_{28})
LRO – Lubricating Oil Range Organics (typically C_{28} to C_{40})
MRO – Mineral Oil Range Organics (typically C_{18} to C_{44})

However, it should be borne in mind that the terms "GRO" and "DRO" analysis are purely descriptive terms, the exact definition of which varies.

Total Petroleum Hydrocarbons (TPH) is also a poorly defined term; some testing laboratories regard TPH as hydrocarbons ranging from C_5 – C_{40}, whereas other define TPH as C_{10} – C_{30}.

The composition of a TPH plume migrating through the ground can vary significantly; this is primarily dictated by the nature of the source (eg petrol, diesel, engine oil etc). Furthermore, different hydrocarbons are affected differently by weathering processes and this can result in further variation in the chemical composition of the TPH.

Gasoline contains light aliphatic hydrocarbons rapidly (especially within the C4 to C5 range) that will evaporate. The aromatic hydrocarbons in gasoline are primarily benzene, toluene, ethylbenzene and xylenes, referred to as BTEX. Small amounts of polyaromatic hydrocarbons (PAHs) such as benzo(a)pyrene may also be present.

Diesel and light fuel oils have higher molecular weights than gasoline. Consequently, they are less volatile and less water soluble. About 25 to 35% is composed of aromatic hydrocarbons. BTEX concentrations are generally low.

Heavy Fuel Oils are typically dark in colour and considerably more viscous than water. They contain 15 to 40% aromatic hydrocarbons. Polar NSO compounds are also present.

Lubricating Oils are relatively viscous and insoluble in groundwater. They may contain 10 to 30% aromatics, including the heavier PAHs. NSO compounds are also common.

Polycyclic Aromatic Hydrocarbons (PAHs) have more than two fused benzene rings as a structural characteristic. PAH compounds are present in both petrol and diesel, although insignificantly lower concentrations than in coal tars. Certain PAH compounds are carcinogenic (Benzo(a)pyrene) and/or mobile in the environment (naphthalene).

Polychlorinated Biphenyls (PCBs)

Volatile Organic Compounds (VOCs) The volatile organic compound (VOC) headspace concentration of all soil samples was made with a photoionization detector (PID) fitted with a 10.2 eV lamp. This gives a semi-quantitative VOC concentration record as parts per million (ppm) (Vol/Vol). Prior to the VOC headspace reading, the background levels of VOCs were recorded. The PID was recalibrated with standard isobutylene in zero air after every 10 headspace readings.

Semi-Volatile Organic Compounds (sVOCs)

Phenols

Solvents, pesticides, herbicides

Dioxins & furans

Methods of Analysis (Organic Compounds)

Toluene Extractable Matter (TEM) results provide a screening test for organic contamination. The sample is air dried a 30°C and ground prior to addition of the solvent (toluene). The solvent extraction is aggressive and most organic compounds (fuels, oils, tars, humic material, animal fats and vegetable oil) are dissolved, as are some other inorganic contaminants such as sulphur. However, the volatiles (lighter fuel fraction etc) are lost during evaporation of the solvent.

Total Petroleum Hydrocarbon (TPH) by IR (also known as mineral oil by some testing laboratories) is undertaken on “as received” samples. Tetrachloroethylene is the solvent, and fluoroscil is used to removed humic material, animal fats and vegetable oil. Consequently this analysis detects a wide range of “mineral” organics from volatiles (BTEX and gasoline) through diesel and oils to tars (including the very heavy, stable tars such as asphalt and bitumen).

TPH by GC-FID is more refined analytical technique which only detects hydrocarbons (aliphatic and aromatic) in the range C_{10} to C_{40} (volatiles, heavy tars, humic material and sulphur are not detected). The laboratory can provide a breakdown of the TPH results into diesel range organics (**DRO**) and heavier lubricating oil range organics (**LRO**).

GRO (PRO) by GC-FID analysis detects the more volatile C_6 – C_9 hydrocarbons (aliphatic and aromatic) including those organic compounds present in petrol.

Speciated VOC (by GC-MS) analysis quantifies the concentrations of 30 USA-EPA priority compounds. These include chlorinated alkanes and alkenes (in the molecular weight range chloroethane to tetrachloroethane); trimethlybenzenes; and the 4 BTEX compounds (benzene, ethyl-benzene, toluene & xylene).

Speciated sVOC by (GC-MS) analysis quantifies the concentration of a variety of organic compounds, including the 16 USA-EPA priority PAHs, phenols, 7 USA EPA priority PCB congeners, herbicides & pesticides.

Note: PAHs are hydrocarbons and consequently (where present) will be picked up when scheduling TPH by GC-FID. Napthalene (the lightest PAH) is also one of the 58 US EPA VOCs.

Speciated TPH by GC-FID provides a "banded "TPH", initially split into aromatic and aliphatic fractions and then further divided into fraction specific carbon bandings based upon behavioural characteristics.

Note: Risk assessment models require physiochemical properties (solubilities, toxicitities etc) of compounds in order to model their behaviour in the environment. These physiochermical properties cannot be derived from a single "TPH", "GRO" or "DRO" value. However, the carbon banded fractions can be used in risk assessment models.

If the relative proportion of each carbon banding within the "TPH" impact at a site is known, the risks posed by each individual fraction can be assessed and a simple back calculation applied to calculate an overall "TPH" screening value based upon the percentage weight fraction of each banding present in the "TPH". Specialised analytical techniques and data interpretation skills are required to identify each carbon banding.

Current Guidance

The UK approach to the consideration of contaminated land is based upon the principles of risk assessment. This in turn is founded upon the use of so called source⇒ pathway⇒ target principles in order to establish the presence or potential presence of a pollutant linkage.

Sutcliffe Investigations adopt a tiered approach to risk assessment, consistent with UK guidance and best practice. The initial step of such a risk assessment (or Tier 1) is the comparison of site data with appropriate guidance levels, intervention levels or remedial targets.

In March 2002 DEFRA and the Environment Agency published a series of technical research papers (R & D Publications CLR 7, 8, 9 and 10) introducing the UK approach to the assessment of risk to **human health** from land contamination. This methodology and approach represents current scientific knowledge and thinking. The overall methodology also included the Contaminated Land Exposure Model (CLEA) and some Soil Guidance Values (SGV's).

At the time of writing this report, these guidelines only address seven contaminants and the development of both the CLEA model and additional SGV's in ongoing. Where published, SGV's have been utilised as intervention values for the purpose of an initial Tier 1 assessment.

Where SGV's were not published at the time of writing this report, appropriate Tier 1 human health related assessment have been based upon information that was best available at the time of the study.

With respect to the assessment of potential **phytotoxic effects** of contaminants, Sutcliffe Investigations refer to "The Soil Code" (Maff, 1998) for copper and zinc. The CLEA SGV is adopted for nickel.

The potential risk to **building materials** is considered through reference to relevant BRE Digests, with particular emphasis on BRE Special Digest 1, 'Sulphate and Acid Resistance of Concrete in the Ground', 2001.

With respect to the interpretation of the calorific values, at present there are no accepted methods to assess whether a sample is combustible and under what circumstances it might smoulder. Some guidance is given in ICRCL Note 61/84 "Notes on the fire hazards of contaminated land" which states that:

"In general ……. it seems likely that materials whose CV's exceed 10MJ/kg are almost certainly combustible, while those with values below 2MJ/kg are unlikely to burn".

Tier 1 **groundwater** risk assessments are undertaken by comparing leachate concentrations with the appropriate water quality standard. Depending upon the specific characteristics and environmental setting of the site the appropriate standard is likely to be one of the following:

- Water Supply (Water Quality) Regulations 1989
- Environmental Quality Standards (for Freshwater)
- The Surface Waters (Abstraction for Drinking Water) Regulations

The tier 1 risk assessment of **landfill gas** is undertaken through reference to the following documents:

- Approved Document C, Building Regulations 1991
- CIRIA Report 149, “Protecting Development from Methane”, 1995

Should any Tier 1 criteria be exceeded, then three potential courses of action are available. (The first is only applicable in terms of human health, but the second and third could also be applied to groundwater or landfill gas).

- Undertake further statistical following the approach set out in Appendix A of CLR 7 in order to determine whether contaminant concentrations of inorganic contaminants within soil/fill actually present a risk (only applicable to assessing the risk to human health).
- Based on a qualitative risk assessment, advocate an appropriate level of remediation to “break” the pollutant linkage – for example the removal of the contaminated materials or the provision of a clean cover.
- Carry out a more detailed quantitative risk assessment in order to determine whether contamination risks actually exist.

However, the issue of **averaging area** requires further consideration. CLR 7 is ambiguous and could be interpreted as advocating the concept of a single garden as an appropriate averaging area.

This concept has massive implications with respect to ground investigation design and cost. To comply, investigations for residential development on brownfield sites would need to recover and analyse about 6 samples from each garden; this implies exploratory locations on a very tight grid, perhaps 5m to 10m spacings, with a huge increase in the number of samples analysed (cf test schedules currently issued by most practitioners).

In any case, Sutcliffe Investigations consider the concept of a single garden as an averaging area to be inappropriate. Statistical analysis of sample results by fill type, and/or by former use in a given sub-area of the site (i.e. with reference to the Conceptual Site Model), is considered a more appropriate methodology.

Analysis by soil/fill type is appropriate for essentially immobile contaminants associated with a particular fill type, for example arsenic in colliery spoil, metals in ash & clinker, sulphate in plaster-rich demolition rubble etc.

Analysis by former use is appropriate where more mobile contaminants have entered the ground, for example diesel associated with leakage from a former fuel tank, downward migration of leachable metals through granular materials, various soluble contaminants present in a wastewater leaking into the ground via a fractured sewer etc. In these circumstances, it may be appropriate to undertake statistical analysis of sample results from a variety of different soil/fill types. However, consideration would have to be given to factors such as porosity which might influence impregnation of a mobile contaminant into the soil mass; ie contamination would be normally be more pervasive and significant in granular soils than cohesive soils.

There is a suggestion in para 4.7 of CLR 7 that the approach outlined above was intended and the Environment Agency have confirmed that an averaging area can be larger than a single garden, if:

- Contaminant concentrations are within the same statistical population as determined using the maximum value test. The sample data being representative of the averaging area and the mean concentration of the averaging area.
- “Hot spots” are treated as separate zones or averaging areas (as defined by the maximum value test).
- The sampling strategy takes into account uncertainty (spatial heterogeneity) in contaminant concentration

Waste Classification & WAC

In the context of waste soils generated by remediation and/or groundworks activities on brownfield sites, the following definitions (from the Landfill Regulations 2002) apply:

- Inert (e.g. uncontaminated ‘natural soil, bricks, concrete, tiles & ceramics)
- Non-Hazardous (e.g. soil excavated from a contaminated site which contains dangerous substances, but at concentrations below prescribed thresholds).
- Hazardous (e.g. soil excavated from a contaminated site which contains dangerous substances at concentrations above prescribed thresholds).

Dangerous substances include compounds containing a variety of determinants commonly found in contaminated soils on brownfield sites, for example arsenic, lead, chromium, benzene etc.

From 16th July 2005, landfill operators will require Waste Acceptance Citeria (WAC) laboratory data, if soil is classified as **hazardous** and such waste must have been subjected to pre-treatment. However, subject to WAC testing it may be possible to classify it as stable, non-reactive hazardous waste, which can be placed within a dedicated cell within the non-hazardous landfill.

Sutcliffe Investigations typically only include WAC analysis in site investigation proposals and reports, if significant off-site disposal (of soil classified as hazardous waste) is anticipated for example where redevelopment proposals include basement construction etc.

If off-site disposal of soils classified as hazardous waste were undertaken during redevelopment, then WAC analysis should be scheduled at an early stage in the remediation programme.

However, organic compounds (BTEX, TPH, PAH etc) are the most common contaminants that result in soils being classed as hazardous. These contaminants can often be dealt with by alternative technologies (eg by bioremediation or stabilisation) and consequently retention on site is often possible.

It should be noted that **non-hazardous** soil waste can go to a non-hazardous landfill facility; no further testing (eg WAC) is required.

Generic Notes – Sutcliffe Investigations

5. Hazardous Gas

General

Hazardous gas is considered to be any mixture of potentially explosive, toxic or asphyxiating gases, most notably methane, carbon dioxide and oxygen (deficiency).

In addition, radon, a naturally occurring radioactive gas is also considered. Further information about radon is included in Notes 1 – Environmental Setting.

Assessment of potential risks associated with hazardous gas are based on a review of data obtained from the Landmark information Group, the Environment Agency and the Local Authority and the British Geological Survey.

Reference is also made to historical OS plans, which are inspected for evidence of backfilled quarries, railway cuttings, colliery spoil tips etc.

Where landfilling has occurred within 250m of the site boundary, the Local Planning Authority may request a landfill gas investigation in accordance with the Town and Country Planning General Development Order, 1988.

Sources

Potential sources of hazardous gas are:

- Landfill sites
- Made ground, especially where significant depths are present
- Shallow mineworks associated with coal extraction
- Geological strata, including peat, organic silts, coal-bearing strata and limestone (reaction with acidic waters), granite (radon)
- Groundwater can sometimes act as a “carrier” for hazardous gas
- Leakages from pipelines or storage tanks
- Sewers, septic tanks and cess pits

Generation

Wherever biodegradable material is deposited, landfill gas (principally a mixture of methane and carbon dioxide) is likely to be generated by microbial activity. Carbon dioxide is an asphyxiant and toxic; methane is flammable and a mixture containing between 5% and 15% methane by volume in air is explosive. Landfill gas in the ground is unlikely in itself to pose a significant risk, though it may damage vegetation. However, infiltration of landfill gas into confined spaces (e.g. cellars, services, etc) may give rise to considerable risk.

There is no typical figure for the length of time that landfill gas will be evolved, but at many sites significant gas generation continues for at least 15 years after the last deposit of waste.

Migration

Gas migration from a landfill site may occur in several ways. It may migrate through adjacent strata; the distance of migration being dependent on the pressure gradients, volume of gas and permeability of the strata. Where there are faults, cavities and fissures within the strata, gas may move considerable distances. Other migration pathways for gas include man-made features such as mine shafts, roadways and underground services.

Gas migration is influenced by a number of climatic factors, such as atmospheric pressure variations, water table level variations and the influence of a covering of snow or ice over the surface of the site and surrounding area.

Current Guidance

Guidance on landfill gas monitoring control at landfill sites is given two technical memoranda, Waste Management Paper Nos. 26 and 27 published by the Department of the Environment.

Waste Management Paper 27, 1991 recommends that no dwellings should be constructed within 50m of any landfill that has the capacity to produce large volumes of landfill gas. No garden should extend to within 10m of the landfilled waste. However, development closer to landfill has been permitted where a comprehensive gas risk assessment has been completed (typically based on a minimum of 6 to 12 month monitoring programme) and appropriate gas exclusion measures designed.

The current advice with regard to monitoring for landfill gas is that if the trigger value of 1% volume (20% LEL) for methane and 1.5% volume for carbon dioxide is exceeded then remedial/control measures will be required.

It should be noted that the guideline limit for carbon dioxide of 1.5% volume recommended in Waste Management paper No. 27 is the short term (10 minute) occupational exposure limit for carbon dioxide quoted by the Health and Safety Executive in their publication EH40. The long term (8 hour) occupational exposure limit for carbon dioxide is 0.5% volume.

Approved Document C to the Department of the Environment's Building Regulations 1992 requires what where there may be gaseous contamination of the ground but the level of methane is unlikely to exceed 1% by volume, the ground floor of any house or similar small building shall be constructed of suspended concrete and ventilated as described in BRE Digest Report "Construction of New Buildings on Gas Contaminated Land". The document also requires specific design measures to be taken if a level of 5% volume carbon dioxide exists or is exceeded within the ground.

Although the above guidance is still relevant it has been more recently updated within the following documents published by the Construction Industry Research and Information Association (CIRIA).

CIRIA Report 149 'Protecting Development from Methane' (1995)
CIRIA Report 150 'Methane Investigation Strategies' (1995)
CIRIA Report 151 'Interpreting Measurement of Gas in the Ground' (1995)
CIRIA Report 152 'Risk Assessment for Methane and other gases from the ground' (1995)

The above documents are intended to provide advice on how to investigate and deal with the gas contaminated ground with respect to development.

CIRIA Report 149 characterised sites based on the recorded methane/carbon dioxide concentration and emission rates recorded during a suitable gas investigation. Characteristic situation 1 is deemed to be the lowest risk scenario with the risk rating increasing up to 6. The characteristic situations are classified as follows:

Gassing regime in ground			
Methane (% by volume in air)	Carbon dioxide (% by volume in air)	Emission rate [1] (m/s)	Characteristic situation [2]
< 0.1	< 1.5	not detected	1
> 0.1 – 1	> 1.5 – 5	not detected	2
> 1 - 5	< 5	not detected	3
> 5 – 20	< 20	< 0.01	4
> 20	> 20	> 0.01 – 0.05	5
> 20	> 20	> 0.05	6

Notes:
1. Emission rate values measures as equivalent total gas flow velocity from a 50mm diameter borehole: for methods of measurement see Crowhurst and Manchester (1992).
2. Highest measures parameter used as determining factor.

CIRIA Report 151 (1995) identified that there is currently inadequate guidance on trigger concentrations for ground gases. The current emphasis on using gas concentrations for trigger values particularly in Waste Management Paper 27 and the Building Regulations, should be revised to consider gas pressures, borehole flow rates and estimated surface emission rates.

It was concluded that the most important aspect of relating the gas regime below or adjacent to a site, to the risk it poses to any development, is the surface emission rate i.e. how quickly the gas is coming out of the ground. The lower the surface emission rate the lower the risk. This is considered further in the DETR Partners in Technology Report 'Passive venting of soil gases beaneath buildings' (September 1997).

CIRIA Report 149 (1995), reference Table 28, reviewed over 100 case studies of development affeceted by gas to establish current UK practices for gas control. The report classified the gassing regimes found within 6 Characteristic Situations. The highest measures parameter, either methane or carbon dioxide concentration and/or emission rate were used to define the Characteristic Situation for each case history site. The report then related the typical range of mitigation measures that has been adopted at each study site to the characteristic gas situation.

To achieve a more consistent design of protection measures Table 28 of CIRIA 149 was rewritten (Wilson and Card, 1999) in terms of borehole gas volume flow rate and gas concentrations, as reproduced in the table below. This was done to reflect the importance of recognising the gas surface emission rate.

Characteristic situations based on Gas Flux

Characteristic Situation	Limiting CH_4 Concentration (% v/v)	Limiting CO_2 Concentrations (% v/v)	Limiting Borehole Flow Velocity (m/s)	Limiting Borehole Gas Volume Flow (litre/hour)	
				CH_4	CO_2
1	< 0.1	< 0.1	< 0.005	< 0.035	< 0.035
2	< 1.0	< 1.5	< 0.005	< 0.35	< 0.5
3	< 5.0	< 5.0	< 0.005	< 1.75	< 1.75
4	< 20	< 20	< 0.01	< 14	< 14
5	> 20	> 20	< 0.05	< 70	< 70
6	> 20	> 20	< 0.05	> 70	> 70

Gas Monitoring Procedure

Sutcliffe Investigations adopt a standard gas monitoring procedure, in accordance with CIRIA guidance. This procedure involves the measurement, in the following order of:

- Atmospheric temperature, pressure and ambient oxygen concentration on site immediately prior to and on completion of monitoring.
- Gas emission rate.
- Methane, oxygen and carbon dioxide concentrations using and infra-red gas analyser.
- Standing water level using a dipmeter.

In addition, ground conditions at each sampling location are recorded together with prevailing weather conditions and any other observations such as any vandalism.

Where samples of gas are required for laboratory analysis, Gresham Tubes are used. Gas concentrations in the well are typically recorded immediately before and after retrieval of a sample.

Appendix B – CIRIA Guidance Document C552 2001

RISK ASSESSMENT METHODOLOGY

GENERAL

The purpose of this appendix is to describe in detail the concepts underlying the risk based approach to assessing potentially contaminated land, introduce the roles of key legislation and describe the qualitative methodology adopted for evaluating and characterising risk.

Current best practice in the UK promotes a risk-based approach to dealing with both soil and groundwater contamination. The principal aim of the approach is to ensure protection of human health and the environment in a thorough, transparent and cost-effective manner.

Fundamental to the risk-based approach is the concept that for 'Contaminated Land' to be designated, as a consequence of historic activities, a pathway for contamination must be shown to exist between a source of contamination and a receptor. The combined presence of a source, pathway and a receptor is described as a 'pollutant linkage'.

The concepts associated with a contaminant source, pathway and receptor are defined in DETR Circular 02/2000 'Contaminated Land Environmental Protection Act 1990: Part II A'. A ***source*** of contamination may be considered as a 'substance, which is in, on or under land that has the potential to cause harm or to cause pollution of controlled waters'. A ***receptor*** can be considered as either 'a living organism, a group of living organisms, an ecological system or a piece of property which is being, or could be harmed, by a contaminant or controlled waters which are being, or could be, polluted by a contaminant'. A ***pathway*** may be considered as one or more routes by, or through, which a receptor is being, or could be, exposed to or affected, by a contaminant. Typical pathways may include migration in groundwater, surface water run-off or infiltration, inhalation, dermal contact and ingestion.

The risks posed by an identified pollutant linkage can often be mitigated by removing the source of contamination, treating the source of contamination, blocking the relevant pathway(s) or by protecting the receptor.

PRINCIPLES OF RISK EVALUATION

The risk evaluation methodology presented below is qualitative in nature, and is therefore a subjective method. It is based upon guidance presented in CIRIA publication referenced C552, 'Contaminated land risk assessment - A guide to good practice', 2001 and involves the classification of the following.

The magnitude of the potential **consequence** (severity) of risks occurring (Table 1).

The magnitude of the **probability** (likelihood) of the risk occurring (Table 2).

These are then considered in conjunction to give a risk matrix (Table 3)

Table 1 - Classification of consequence

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

Table 2 - Classification of probability

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

Table 3 - Comparison of consequence against probability

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

Table 4 - Description of the classified risks and likely action required

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

Table 5 - Response action likely to be required in relation to estimated risk

KEY

- Mitigation and remedial measures required
- Mitigation and remedial measures likely
- Remedial measures unlikely
- Remedial measures not required

RISK ASSESSMENT FOR THE WATER ENVIRONMENT

The risk assessment has been developed to provide a greater level of standardisation. It includes relevant elements from TAG (Transport Analysis Guidance) Table 1 relating to the features described as river, floodplain, groundwater and stillwaters, including their attributes/services and selected/modified indicators of quality and possible measures. Two additional columns have been added for 'grading' and 'importance level'. These columns expand on the limited number of examples provided in TAG Table 2. Table 1 has been developed with reference to TAG, Highways Agency's 'New Approach to Appraisal' (NATA), the Water Framework Directive and other sources as referenced in the table.

Table 1 here relies on easily available data to avoid unnecessary data collection. Should inadequate data be available a 'worst case' should be assumed. The table is designed to act as a guide to determining importance and to raise the level of compatibility in predicting the significance of impacts on the water environment.

Once Table 1 has been used to determine the importance of the environmental attributes that may be affected by a particular development project, Tables 3 and 4 of TAG Unit 3.3.11 can be used to estimate the significance of potential impacts. These tables are reproduced here as Tables 2 and 3 respectively. Table 2 provides a methodology for determining impact magnitude. Table 3 is a matrix that allows the significance of the impact to be calculated based on the impact magnitude and the importance of the attribute. The significance of impacts can range from 'insignificant' to 'very significant'.

Table 1: Water features, their attributes, indicators of quality, grading and importance (adapted from Table 1 of TAG unit 3.3.11)

Feature	Attribute / Service	Indicator of Quality	Measure	Grading	Importance Level
River	Water Supply	Chemical water quality	Environment Agency's Chemical General Quality Assessment (GQA)	A B C-D E-F	Very High High Medium Low
		Industrial / agricultural abstractions	Location and volume of abstraction	All abstractions within 2km downstream: >1000m3/day 500-1000m3/day 50-499m3/day <50m3/day	 Very High High Medium Low
		Drinking water supply	Classification defined within The Surface Waters (Abstraction for Drinking Water) (Classification) Regulations 1996. No 3001[2]	Classification: DW1 or DW2 within critical travel time for pollution downstream DW3 within critical time downstream Not designated	 Very High High Medium - Low
	Biodiversity[3]	Biological Water Quality	Environment Agency's Biological GQA[1]	A B C-D E-F	Very High High Medium Low
		Fisheries Quality	Fisheries status as defined within the Freshwater Fish Directive 78/659/EEC	Designated salmonid fishery Designated cyprinid fishery Undesignated fishery Not a fishery	Very High High Medium Low

Feature	Attribute / Service	Indicator of Quality	Measure	Grading	Importance Level
River	Transport and dilution of waste product	Surface Water / effluent discharges	Type of discharges with reference to the EC Dangerous Substances Directive (76/464/EEC and Daughter Directives)	All discharges within 2km up or downstream: List I List II Other discharge / no discharge	 Very High - High Medium Medium - Low
	Recreation	Riverside access	Presence / absence of route and importance	National trail / cycleway Regional trail Definitive footpath / bridleway No route	Very High High Medium Low
		Presence of clubs/ recreation use	Presence / absence	Club recreation use present No club / recreation use	Very High - High - Medium Low
	Conveyance of flow and material	Presence of water courses	Size of watercourses[5]	Main River > 10m wide Main River < 10m wide Ordinary watercourse >5m wide Other	Very High High Medium Low
Floodplain	Flood defence	Importance in relation to flood defence	Status of flood plain area	Designated washland Active floodplain Existing defended area Does not flood	Very High High Medium Low
			Return period	> (ie more frequent then) 1 in 25 years < 1 in 25 years <1 in 100 years (urban) <1 in 50 years <1 in 200 years	Very High High Medium Medium Low
Groundwater	Water supply	Industrial / agricultural abstractions	Location and volume of abstraction	All abstraction points within zone of influence of development: >1000m3/day >500-1000m3/day 50-499m3/day <50m3/day	 Very High High Medium Low
		Drinking water supply	Presence of potable public supply or private water supply within zone of influence of development	Public supply Private water supply >10m3/day or serves >50 people[6] Other private water supply No supply	Very High High Medium Low
		Groundwater vulnerability	Source protection status	Within zone 1,2 or 3 of a source protection zone Not within a source protection zone	Very High High Medium Low
			Classification of aquifer vulnerability	Major aquifer with H soils or I soils or U soils. Minor aquifer with H soils or U soils Major aquifer with L soils. Minor aquifer with L soils or non aquifer	Very High High Medium Low
	Conveyance of flood flows	Acceptance potential of flood flows	Soil type / groundwater table levels[8]	Gravels with low water table (>1m below infiltration point) Sands with low water table All soil types with high water table Clay	Very High High Medium Low
Stillwaters (lakes and ponds)	Biodiversity[3]	Biological water quality	Classification system to be developed under the Water Framework Directive for ecological status / potential		
		Fisheries quality	Fisheries status as defined within the Freshwater Fish Directive 78/659/EEC	Designated salmonid fishery Designated cyprinid fishery Undesignated fishery Not a fishery	Very High-high High - medium Medium - low Low
	Water supply	Use for abstraction	Presence / absence	Abstraction No abstraction	Very High - High – Medium[9] Low
	Recreation	Presence of clubs / recreation use	Presence / absence	Club recreation use present No club / recreation use	Very High - High - Medium[4] Low

Notes to Table 1

1 If the river is unclassified and hence has no GQA grade, the quality can be measured or assumptions can be made based on the grade of the nearest classified stretch.

2 An importance level of high or very high must also be awarded if the water feature provides more than 10m3/day of drinking water, or serves more than 50 people, which is the definition used in the Water Framework Directive to define drinking water protected areas.

3 Conservation value is not included, as this should be included within an ecology/nature conservation assessment.

4 This required judgement on a case by case basis because the importance of use by people is being assessed, and they are sensitive to being categorised as unimportant. Careful assessment is thus required, using as much data as possible eg on the facilities, their scale and frequency of use, membership levels and economic value.

5 An importance level of 'Medium' or greater must also be awarded if a river has a catchment greater than 10km2, as this means that it will be classified as a water body under the Water Framework Directive. Other measures are available for describing the ability of watercourses to convey flow and material (such as the carrying capacity of the channel for flood flows) and could if necessary be substituted.

6 Based on criteria given within the Water Frame Work Directive for features to be designated as drinking water protected areas.

7 Adapted from NRA Policy and Practice for the Protection of Groundwater, Groundwater Vulnerability Sheets, NRA 1994. Because soil information in urban areas is less reliable and based on fewer observations than in rural areas, the worst case is assumed and such land is classified as being high of leaching potential. H = high, I = Intermediate, L = Low and U = Unclassified leaching potential.

8 This uses a coarse basis of permeability together with the ability of the existing ground conditions to accept additional flows. For example, gravels in a river floodplain are unlikely to have a high acceptance potential because of raised water table due to river flows. Sands above a relatively dry substrata would have a high potential, however caution is required in areas such as chalk with highly fluctuating groundwater levels.

9 Depends on use of water, volume abstracted etc. An importance level of 'High' or 'Very high' mus be awarded if the water feature provides more than 10m3/day of drinking water, or serves more than 50 people, which is the definition used in the Water Framework Directive to define drinking water protected areas.

Table 2: Criteria for determining impact magnitude (reproduced from Table 3 of TAG unit 3.3.11)

Magnitude	Criteria	Example
Major	Results in loss of attribute	• Loss of EC designated Salmonid fishery • Compromise employment source • Pollution of potable source of abstraction • Change in GQA grade of river reach • Loss of flood storage / increased flood risk
Moderate	Results in impact on integrity of attribute or loss of art of attribute	• Loss in productivity of a fishery • Contribution of a significant proportion of the effluent in the receiving river, but insufficient to change its GQA grade • Reduction in the economic value of the feature
Minor	Results in minor impact on attribute	• Measurable change in attribute, but of limited size and/or proportion
Negligible	Results in an impact on attribute but of insufficient magnitude to affect the use / integrity	• Discharges to watercourse but no significant loss in quality, fishery productivity or biodiversity • No significant impact on the economic value of the feature • No increase in flood risk

Table 3: Significance Criteria of Potential Impacts
(Reproduced from Table 4 of TAG unit 3.3.11)

Magnitude of Potential impact	Importance of Attribute			
	Very High	**High**	**Medium**	**Low**
Major	Very Significant	Very Significant	Significant	Low Significant
Moderate	Very Significant	Significant	Low Significant	Insignificant
Minor	Significant	Low Significant	Insignificant	Insignificant
Negligible	Low Significant	Insignificant	Insignificant	Insignificant

Table 4: Proposed impact assessment summary table

Feature	Attribute / Service	Importance Level	Magnitude of Impact	Significance of Impact
River	Water Supply	Very High	Minor	Significant

References

1 The Highways Agency et al, Design Manual for Roads and Bridges, Vol 11. Environmental Assessment, 1993.
2 DETR 'Guidance on the New Approach to Appraisal, 1998.
3 Department for Transport, Transport Analysis Guidance (TAG) 2003

Appendix C – Site Investigation Logs

Sutcliffe

Site	Borehole Number
Cheetham Hill, Manchester	BH201

Boring Method	Casing Diameter	Ground Level (mOD)	Client	Job Number
Cable Percussion			Mosscare St Vincents	33716LG
	Location	**Dates** 07/02/2024	**Engineer** MW	**Sheet** 1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(0.80)	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium grained SAND with frequent rootlets. Gravel is fine to medium brick and mixed lithology.		
						0.80	Stiff brown silty CLAY with occasional sand bands.		
1.20-1.65	SPT N=11			2,1/2,3,3,3					
2.00-2.45 2.00	SPT N=13 B1			3,2/3,3,3,4					
3.00-3.45	U1			17 blows					
4.00-4.45	SPT N=11			2,3/2,3,3,3					
5.00-5.45	SPT N=16			2,3/3,4,4,5		(9.20)			
6.00	B2								
6.50-6.95	SPT N=13			3,3/2,3,4,4					
8.00-8.45	U2			15 blows					
				Water strike(1) at 9.00m, rose to 8.70m in 20 mins.					▼1 ▽1
9.50-9.95	SPT N=15			2,3/2,4,4,5					

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.BH201

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Sutcliffe

Site	Borehole Number
Cheetham Hill, Manchester	BH201

Boring Method	Casing Diameter	Ground Level (mOD)	Client	Job Number
Cable Percussion			Mosscare St Vincents	33716LG
	Location	**Dates** 07/02/2024	**Engineer** MW	**Sheet** 2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						10.00	Stiff becoming very stiff brown silty laminated CLAY.		
11.00-11.45	SPT N=11			2,2/2,3,3,3		(3.00)			▼2
12.50-12.95	SPT N=17			2,4/4,3,5,5					
				Water strike(2) at 13.00m, rose to 12.00m in 20 mins.		13.00	Medium dense brown silty fine SAND.		▽2
14.00-14.45	SPT N=18			2,3/4,4,4,6		(2.45)			
15.00-15.45	SPT N=29			4,4/6,6,8,9		15.45	Complete at 15.45m		

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.BH201

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Sutcliffe

Site	Borehole Number
Cheetham Hill, Manchester	BH202

Boring Method	Casing Diameter	Ground Level (mOD)	Client	Job Number
Cable Percussion			Mosscare St Vincents	33716LG
	Location	**Dates** 08/02/2024	**Engineer** MW	**Sheet** 1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(1.60)	MADE GROUND: Dark brown ashy, silty, slightly gravelly, fine to medium grained SAND with frequent rootlets. Gravel is fine to medium brick and mixed lithology (GRASS OVER TOPSOIL).		
1.20-1.65	SPT N=11			2,2/3,2,3,3		1.60	Stiff brown silty CLAY.		
2.00-2.45	SPT N=13			2,3/3,3,3,4					
3.00-3.45	SPT N=13			2,3/2,4,3,4					
4.00-4.45	SPT N=17			2,2/4,3,5,5					
5.00-5.45	SPT N=15			3,3/3,4,4,4		(8.40)			
6.50-6.95	U1			21 blows					
8.00-8.45	SPT N=12			2,3/3,3,2,4					
9.50-9.95	SPT N=10			Water strike(1) at 2,4/3,2,2,3 9.70m, rose to 9.00m in 20 mins.					▼1 ▽1

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.BH202

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Sutcliffe

Site	Borehole Number
Cheetham Hill, Manchester	BH202

Boring Method	Casing Diameter	Ground Level (mOD)	Client	Job Number
Cable Percussion			Mosscare St Vincents	33716LG
	Location	**Dates** 08/02/2024	**Engineer** MW	**Sheet** 2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						10.00	Medium dense becoming dense brown medium to coarse grained SAND with occasional clay bands.		
11.00-11.45	SPT N=13			3,2/2,3,4,4					
12.50-12.95	SPT N=20			3,4/4,4,6,6					
14.00-14.45	SPT N=25			4,3/6,4,7,8		(8.95)			
15.50-15.95	SPT N=24			3,4/3,6,6,9					
17.00-17.45	SPT N=27			3,3/4,7,8,8					
18.50-18.95	SPT N=34			3,5/8,9,8,9		18.95	Complete at 18.95m		

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.BH202

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Sutcliffe

Site	Borehole Number
Cheetham Hill, Manchester	BH203

Boring Method	Casing Diameter	Ground Level (mOD)	Client	Job Number
Cable Percussion			Mosscare St Vincents	33716LG
	Location	**Dates** 09/02/2024	**Engineer** MW	**Sheet** 1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(1.50)	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium grained SAND with frequent rootlets. Gravel is fine to medium brick and mixed lithology (GRASS OVER TOPSOIL).		
1.20-1.65	SPT N=16			2,3/3,4,4,5		1.50	Stiff brown silty CLAY.		
2.00-2.45	U1			36 blows					
3.00-3.45	SPT N=15			2,2/3,4,3,5					
4.00-4.45	SPT N=10			2,2/3,2,2,3					
5.00-5.45 5.00	SPT N=11 B1			2,3/2,2,3,4		(8.50)			
6.50-6.95	SPT N=15			2,4/3,4,4,4					
8.00-8.45	SPT N=16			2,2/3,4,4,5					
9.50-9.95	U2			25 blows					▼1

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.BH203

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Sutcliffe

Site	Borehole Number
Cheetham Hill, Manchester	BH203

Boring Method	Casing Diameter	Ground Level (mOD)	Client	Job Number
Cable Percussion			Mosscare St Vincents	33716LG
	Location	**Dates** 09/02/2024	**Engineer** MW	**Sheet** 2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				Water strike(1) at 10.00m, rose to 9.70m in 20 mins.		10.00	Medium dense becoming dense brown silty fine grained SAND.		▽1
11.00-11.45	SPT N=12			3,4/3,3,3,3					
12.50-12.95	SPT N=21			2,4/4,5,6,6		(5.45)			
14.00-14.45	SPT N=23			1,5/4,5,7,7					
15.00-15.45	SPT N=25			3,3/4,5,7,9		15.45	Complete at 15.45m		

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.BH203

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Sutcliffe

Site	Number
Cheetham Hill, Manchester	WS101

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Windowless Sampler			Mosscare St Vincents	33716LG
	Location	**Dates** 30/11/2023	**Engineer** MW	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.40) 0.40	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).		
					(1.10)	MADE GROUND: Brown, slightly sandy, slightly silty, gravelly, CLAY. Gravel is fine to coarse, angular of brick, concrete and mixed lithology.		
1.20-1.65	SPT N=17		4,4/5,4,4,4		1.50			
					(0.90)	MADE GROUND: Half bricks with occasional fine to medium, angular GRAVEL of ash.		
2.00-2.45	SPT N=8		3,3/2,2,2,2		2.40 2.50	MADE GROUND: Dark brown, slightly sandy, fine to coarse, angular GRAVEL of coal, glass, rubber and mixed lithology.		
						Stiff, brown, slightly silty, CLAY.		
3.00-3.45	SPT N=12		2,2/3,3,3,3					
4.00-4.45	SPT N=15		3,3/4,4,3,4		(2.95)			
5.00-5.45	SPT N=12		3,3/3,3,3,3					
					5.45	Complete at 5.45m		

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.WS101

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Sutcliffe

Site	Number
Cheetham Hill, Manchester	WS102

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Windowless Sampler			Mosscare St Vincents	33716LG
	Location	**Dates** 30/11/2023	**Engineer** MW	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20) 0.20	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).		
					(0.40) 0.60	MADE GROUND: Dark brown, slightly silty, gravelly, CLAY. Gravel is angular to sub angular, fine to medium of brick, concrete and glass.		
1.20-1.65	SPT N=12		3,3/3,3,3,3			Stiff becoming very stiff, brown, slightly silty, CLAY.		
2.00-2.45	SPT N=21		3,5/5,6,5,5		(2.40) 3.00			
3.00-3.45	SPT N=15		3,4/3,4,4,4			Stiff becoming firm, brown, slightly silty, CLAY.		
4.00-4.45	SPT N=16		4,4/4,4,4,4		(2.45) 5.45			
5.00-5.45	SPT N=8		3,3/2,2,2,2			Complete at 5.45m		

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.WS102

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Sutcliffe

Site	Number
Cheetham Hill, Manchester	WS103

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Windowless Sampler			Mosscare St Vincents	33716LG
	Location	**Dates** 30/11/2023	**Engineer** MW	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
					(0.40) 0.40	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).			
						Very stiff, brown mottled grey, slightly silty, CLAY.			
1.20-1.65	SPT N=11		2,3/3,2,3,3		(2.60)				
2.00-2.45	SPT N=17		3,3/5,4,4,4						
3.00-3.45	SPT N=19		3,5/5,5,4,5		3.00 (1.00)	Stiff becoming very stiff, brown mottled grey, slightly silty, CLAY.			
4.00-4.45	SPT N=16		4,4/4,4,4,4		4.00 (1.45)	Stiff, brown mottled grey, slightly silty, CLAY.			
5.00-5.45	SPT N=13		4,3/4,3,3,3		5.45	Complete at 5.45m			

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.WS103

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Sutcliffe

Site	Number
Cheetham Hill, Manchester	WS104

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Windowless Sampler			Mosscare St Vincents	33716LG
	Location 384022 E 400784 N	**Dates** 29/11/2023	**Engineer** MW	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
					(0.40) 0.40	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).			
						Stiff becoming very stiff, brown, slightly gravelly CLAY. Gravel is fine to medium, angular of mixed lithology.			
1.20-1.65	SPT N=9		2,2/2,3,2,2						
2.00-2.45	SPT N=15		3,3/4,4,3,4		(3.92)				
3.00-3.45	SPT N=20		4,4/5,5,5,5						
3.90-4.32	SPT 50/270		3,12/16,14,13,7		4.32	Complete at 4.32m			

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.WS104

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Sutcliffe

Site	Number
Cheetham Hill, Manchester	WS105

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Windowless Sampler			Mosscare St Vincents	33716LG
	Location 384040 E 400746 N	**Dates** 28/11/2023	**Engineer** MW	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.40) 0.40	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).		
					(0.55) 0.95	MADE GROUND: dark brown, slightly silty, gravelly, fine to medium SAND. Gravel is angular, fine to coarse, of brick, concrete and mixed lithology.		
					1.00	MADE GROUND: Asphalt.		
						Complete at 1.00m		

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.WS105

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Sutcliffe

Site	Number
Cheetham Hill, Manchester	WS105A

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Windowless Sampler			Mosscare St Vincents	33716LG
	Location 384040 E 400746 N	**Dates** 28/11/2023	**Engineer** MW	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
					(0.40) 0.40	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).			
					(0.60) 1.00	MADE GROUND: Dark brown, slightly silty, gravelly, fine to medium SAND. Gravel is angular, fine to coarse, of brick, concrete and mixed lithology.			
1.20-1.65	SPT N=9		3,2/2,3,2,2		(1.00) 2.00	MADE GROUND: Brown, slightly gravelly, CLAY. Gravel is fine to coarse, angular of brick and mixed lithology.			
2.00-2.45	SPT N=15		3,3/4,3,4,4			Medium dense brown, slightly silty, fine SAND.			
3.00-3.45	SPT N=18		3,4/5,5,5,3		(1.70) 3.70				
4.00-4.45	SPT N=18		4,4/4,6,4,4			Very stiff becoming stiff, brown, slightly silty, CLAY.			
5.00-5.45	SPT N=12		4,3/3,3,3,3		(1.75) 5.45				
						Complete at 5.45m			

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.WS105A

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Sutcliffe

Site	Number
Cheetham Hill, Manchester	WS106

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Windowless Sampler			Mosscare St Vincents	33716LG
	Location 384063 E 400741	**Dates** 27/11/2024	**Engineer** MW	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
					(0.40) 0.40	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).			
					(0.40) 0.80	MADE GROUND: Dark brown, slightly silty, very gravelly, fine to medium, SAND. Gravel is fine to coarse, angular to sub rounded of brick, ash, and mixed lithology.			
1.00-1.45	SPT N=19		3,5/6,5,4,4		(0.30) 1.10	MADE GROUND: Dark brown, sandy, clayey, angular, GRAVEL of ash and mixed lithology.			
					(0.90)	MADE GROUND: Brown, slightly silty, slightly clayey, very cobbly, fine to medium SAND. Cobbles are small to medium of brick.			
2.00-2.45	SPT N=12		3,3/3,3,3,3		2.00	Stiff, brown, slightly silty, CLAY.			
3.00-3.45	SPT N=11		2,3/2,3,3,3						
					(3.45)				
4.00-4.45	SPT N=16		3,4/4,4,4,4						
5.00-5.45	SPT N=11		3,3/2,3,3,3		5.45	Complete at 5.45m			

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.WS106

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Sutcliffe

Site	Number
Cheetham Hill, Manchester	WS107

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Windowless Sampler			Mosscare St Vincents	33716LG
	Location 384081 E 400734 N	**Dates** 28/11/2023	**Engineer** MW	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
					(0.80)	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).			
					0.80	MADE GROUND: dark brown, slightly silty, slightly sandy, slightly gravelly, CLAY. Sand is fine to medium of brick and mixed lithology.			
1.20-1.65	SPT N=14		3,3/4,3,4,4,3		(1.20)				
2.00-2.45	SPT N=16		3,4/4,4,4,4		2.00	Medium dense light greyish brown, fine to medium SAND.			
					(1.00)				
3.00-3.45	SPT N=11		2,2/3,2,3,3		3.00	Stiff, greyish brown, slightly silty, CLAY.			
4.00-4.45	SPT N=16		3,4/5,5,3,3		(2.45)				
5.00-5.45	SPT N=8		2,2/2,2,2,2		5.45	Complete at 5.45m			

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.WS107

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Sutcliffe

Site	Number
Cheetham Hill, Manchester	WS108

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Windowless Sampler			Mosscare St Vincents	33716LG
	Location 384025 E 400711 N	**Dates** 28/11/2024	**Engineer** MW	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.40) 0.40	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).		
					(0.55) 0.95	MADE GROUND: brown, slightly silty, slightly gravelly, fine to medium SAND. Gravel is fine to coarse, angular of brick, concrete and mixed lithology.		
1.00-1.38	SPT 50/230		10,12/16,18,16		(0.43) 1.38	MADE GROUND: Asphalt.		
						Complete at 1.38m		

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.WS108

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Sutcliffe

Site	Number
Cheetham Hill, Manchester	WS109

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Windowless Sampler			Mosscare St Vincents	33716LG
	Location 384050 E 400703 N	**Dates** 28/11/2023	**Engineer** MW	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
					(0.40) 0.40	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).			
1.20-1.65	SPT N=9		2,2/3,2,2,2		(1.60) 2.00	MADE GROUND: Brown, slightly silty, clayey, gravelly, fine to medium SAND. Gravel is fine to coarse, angular of brick, concrete, ash and mixed lithology.			
2.00-2.45	SPT N=5		1,2/1,2,1,1		(1.00) 3.00	Soft, brown, slightly silty, slightly gravelly, CLAY. Gravel is fine, angular of mixed lithology.			
3.00-3.45	SPT N=12		2,3/3,3,3,3		(2.45) 5.45	Stiff, brown, slightly silty, slightly gravelly, CLAY. Gravel is fine, angular of mixed lithology.			
4.00-4.45	SPT N=13		3,3/4,3,3,3						
5.00-5.45	SPT N=12		2,3/3,3,3,3						
					5.45	Complete at 5.45m			

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.WS109

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Sutcliffe

Site	Number
Cheetham Hill, Manchester	WS110

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Windowless Sampler			Mosscare St Vincents	33716LG
	Location 384111 E 400699 N	**Dates** 29/11/2023	**Engineer** MW	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
					(0.30) 0.30	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).			
					(1.30)	MADE GROUND: Dark brown, slightly silty, gravelly, fine to medium SAND. Gravel is fine to coarse, angular of brick, ash and mixed lithology.			
1.20-1.65	SPT N=12		2,3/3,3,3,3		1.60	Stiff, brown, CLAY with rare fine to medium sand bands.			
2.00-2.45	SPT N=12		3,3/3,3,3,3						
3.00-3.45	SPT N=15		3,3/4,4,3,4		(2.85)				
4.00-4.45	SPT N=11		3,4/3,2,3,3						
					4.45	Complete at 4.45m			

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.WS110

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Sutcliffe

Site	Number
Cheetham Hill, Manchester	WS111

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Windowless Sampler			Mosscare St Vincents	33716LG
	Location 383970 E 400713 N	**Dates** 27/11/2024	**Engineer** MW	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
					(0.30) 0.30	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).			
					(1.20)	MADE GROUND: Brown, sandy, angular fine to coarse GRAVEL of brick and ash. Occasional half brick.			
1.20-1.65	SPT N=31		3,4/4,4,18,5		1.50	Very stiff becoming stiff, brown , slightly sandy, slightly gravelly, CLAY. Gravel is fine, angular of mixed lithology. Sand is fine.			
2.00-2.45	SPT N=18		2,3/4,4,4,6						
3.00-3.45	SPT N=15		3,3/4,4,3,4		(3.95)				
4.00-4.45	SPT N=11		3,3/2,3,3,3						
5.00-5.45	SPT N=17		2,3/3,4,5,5		5.45	Complete at 5.45m			

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.WS111

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Sutcliffe

Site	Number
Cheetham Hill, Manchester	WS112

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Windowless Sampler			Mosscare St Vincents	33716LG
	Location 383992 E 400703 N	**Dates** 27/11/2023	**Engineer** MW	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30) 0.30	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).		
					(0.30) 0.60	MADE GROUND: Brown, gravelly, slightly silty, fine to medium SAND. Gravel is fine to coarse, angular of brick and mixed lithology.		
1.20-1.65	SPT N=10		2,2/3,2,3,2			Stiff, brown, slightly sandy, CLAY. Sand is fine to medium.		
2.00-2.45	SPT N=16		3,4/4,4,4,4					
3.00-3.45	SPT N=13		3,4/3,4,3,3		(4.85)			
4.00-4.45	SPT N=12		3,3/3,3,3,3					
5.00-5.45	SPT N=12		3,3/3,3,3,3					
					5.45	Complete at 5.45m		

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.WS112

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Sutcliffe

Site	Number
Cheetham Hill, Manchester	WS113

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Windowless Sampler			Mosscare St Vincents	33716LG
	Location 384024 E 400692 N	**Dates** 01/12/2023	**Engineer** MW	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
					(0.20) 0.20	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).			
					(0.80) 1.00	MADE GROUND: Dark brown, silty, gravelly, fine to medium SAND. Gravel is fine to coarse, angular of brick, concrete and mixed lithology.			
1.20-1.65	SPT N=13		2,3/4,3,3,3		(1.00) 2.00	MADE GROUND: Brown, slightly gravelly, slightly sandy, CLAY. Gravel is angular, fine to coarse of brick, concrete and mixed lithology.			
2.00-2.45	SPT N=11		2,2/3,3,2,3			Stiff, brown, slightly gravelly CLAY with occasional fine sand bands. Gravel is rounded, fine to coarse of mixed lithology.			
3.00-3.45	SPT N=16		3,3/4,4,4,4						
4.00-4.45	SPT N=17		3,4/3,5,4,5		(3.45)				
5.00-5.45	SPT N=12		3,3/3,3,3,3						
					5.45	Complete at 5.45m			

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.WS113

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Sutcliffe

Site	Number
Cheetham Hill, Manchester	WS114

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Windowless Sampler			Mosscare St Vincents	33716LG
	Location 384113 E 400659 N	**Dates** 29/11/2023	**Engineer** MW	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30) 0.30	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).		
					(0.60) 0.90	MADE GROUND: dark brown, slightly silty, slightly gravelly, fine SAND.		
					1.00	MADE GROUND: Concrete		
1.20-1.65	SPT N=13		3,3/3,4,3,3		(1.50)	MADE GROUND: Dark brown, slightly silty, slightly gravelly, CLAY. Gravel is fine to coarse of brick and mixed lithology.		
2.00-2.45	SPT N=15		3,4/4,3,4,4		2.50	Stiff, brown, slightly silty, CLAY.		
3.00-3.45	SPT N=10		2,2/2,3,2,3					
4.00-4.45	SPT N=16		5,4/4,4,4,4		(2.95)			
5.00-5.45	SPT N=9		4,4/3,2,2,2					
					5.45	Complete at 5.45m		

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.WS114

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Sutcliffe

Site	Number
Cheetham Hill, Manchester	WS115

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Windowless Sampler			Mosscare St Vincents	33716LG
	Location 384110 E 400630 N	**Dates** 27/11/2023	**Engineer** MW	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20) 0.20	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).		
					(0.55) 0.75	MADE GROUND: Dark brown, silty, gravelly, fine to medium SAND. Gravel is fine to coarse, angular of brick, concrete and mixed lithology.		
1.20-1.65	SPT N=19		2,3/5,5,4,5		(0.65) 1.40	Brown, CLAY.		
2.00-2.45	SPT N=14		2,3/3,4,4,3		(1.20) 2.60	Medium dense brown, mottled orangish brown, silty, fine to medium SAND.		
3.00-3.45	SPT N=12		2,2/2,4,3,3			Stiff becoming firm, brown, slightly gravelly, slightly silty CLAY. Gravel is angular, fine of mixed lithology.		
4.00-4.45	SPT N=8		2,2/2,2,2,2		(2.40) 5.00			
5.00-5.45	SPT N=9		2,2/1,2,3,3		(0.45) 5.45	Stiff, brown, slightly gravelly, slightly silty CLAY. Gravel is angular, fine of mixed lithology.		
						Complete at 5.45m		

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.WS115

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Sutcliffe

Site	Number
Cheetham Hill, Manchester	WS116

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Windowless Sampler			Mosscare St Vincents	33716LG
	Location 384093 E 400583 N	**Dates** 27/11/2024	**Engineer** MW	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
					(0.20) 0.20	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).			
					(0.40) 0.60	MADE GROUND: Dark brown, silty, gravelly, fine to medium SAND. Gravel is fine to coarse, angular of brick, concrete and mixed lithology.			
					(0.25) 0.85	MADE GROUND: Very stiff, slightly gravelly CLAY. Gravel is angular, fine to medium of brick and concrete.			
1.20-1.65	SPT N=8		1,2/2,2,2,2		(1.15)	Firm, brown, slightly silty, CLAY.			
2.00-2.45	SPT N=20		2,3/4,5,6,5		2.00	Very stiff becoming stiff, brown, slightly silty, CLAY.			
3.00-3.45	SPT N=16		2,3/4,4,4,4						
					(3.45)				
4.00-4.45	SPT N=11		3,4/3,3,2,3						
5.00-5.45	SPT N=12		2,3/3,3,3,3						
					5.45	Complete at 5.45m			

Remarks

Scale (approx)	Logged By
1:50	MW

Figure No. 33716LG.WS116

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Sutcliffe

Site	Trial Pit Number
Cheetham Hill, Manchester	TP101

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Trial Pit			Mosscare St Vincents	33716LG
	Location	**Dates**	**Engineer**	**Sheet**
	383936 N 400797 E	01/12/2023	MW	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30) 0.30	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND. Gravel is fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).		
					(0.50) 0.80	MADE GROUND: Dark brown, slightly gravelly, slightly silty, fine to medium SAND. Gravel is fine to coarse, angular of brick, concrete and mixed lithology. Occasional large cobble of concrete.		
					(1.40) 2.20	Brown, slightly silty, slightly sandy, CLAY. Sand is fine.		
						Complete at 2.20m		



Remarks

Scale (approx)	Logged By	Figure No.
1:50	MW	33716LG.TP101

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Sutcliffe

Site	Trial Pit Number
Cheetham Hill, Manchester	TP102

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Trial Pit			Mosscare St Vincents	33716LG
	Location	**Dates**	**Engineer**	**Sheet**
	383979 N 400789 E	01/12/2023	MW	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20) 0.20	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND. Gravel is fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).		
					(0.80) 1.00	MADE GROUND: Dark brown, gravelly, slightly gravelly, slightly silty, fine to medium SAND. Gravel is fine to coarse, angular of brick, concrete and mixed lithology. Occasional large cobble of concrete.		
					(1.20) 2.20	Brown, slightly silty, slightly sandy, slightly gravelly, CLAY. Sand is fine. Gravel is fine, angular of mixed lithology.		
						Complete at 2.20m		



Remarks

Scale (approx)	Logged By	Figure No.
1:50	MW	33716LG.TP102

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Sutcliffe

Site	Trial Pit Number
Cheetham Hill, Manchester	TP103

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Trial Pit			Mosscare St Vincents	33716LG
	Location	**Dates**	**Engineer**	**Sheet**
	384014 E 400762	01/12/2023	MW	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20) 0.20	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND. Gravel is fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).		
					0.30 (0.45) 0.75	MADE GROUND: Light brown, sandy, angular, fine to medium GRAVEL of sandstone. Sand is fine to coarse.		
						MADE GROUND: Dark brown, slightly gravelly, slightly silty, fine to medium SAND. Gravel is fine to coarse, angular of brick, concrete and mixed lithology. Occasional large cobble of concrete.		
					(1.25)	Brown mottled grey, slightly silty, CLAY.		
					2.00	Complete at 2.00m		



Remarks

Scale (approx)	Logged By	Figure No.
1:50	MW	33716LG.TP103

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Site	Trial Pit Number
Cheetham Hill, Manchester	TP104

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Trial Pit			Mosscare St Vincents	33716LG
	Location	**Dates**	**Engineer**	**Sheet**
	384039 N 400723 E	01/12/2023	MW	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.40) 0.40	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND. Gravel is fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).		
					(0.90) 1.30	MADE GROUND: Dark brown, slightly gravelly, slightly silty, fine to medium SAND. Gravel is fine to coarse, angular of brick, concrete and mixed lithology. Occasional large cobble of concrete.		
					(1.20) 2.50	MADE GROUND: Dark brown, sandy, gravelly, CLAY with occasional road cobbles. Gravel is fine to coarse, angular to sub angular of brick and mixed lithology. Sand is fine to medium.		
					(0.20) 2.70	Brown, slightly silty, CLAY.		
						Complete at 2.70m		



Remarks

Scale (approx)	Logged By	Figure No.
1:50	MW	33716LG.TP104

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Sutcliffe

Site	Trial Pit Number
Cheetham Hill, Manchester	TP105

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Trial Pit			Mosscare St Vincents	33716LG
	Location	**Dates**	**Engineer**	**Sheet**
	384057 E 400721	01/12/2023	MW	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20) 0.20	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND. Gravel is fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).		
					(1.60) 1.80	MADE GROUND: Dark brown, slightly gravelly, slightly silty, fine to medium SAND. Gravel is fine to coarse, angular of brick, concrete and mixed lithology. Occasional large cobble of concrete.		
					(0.80) 2.60	MADE GROUND: very sandy, gravelly CLAY. Gravel is fine to coarse, angular of brick, concrete and mixed lithology. Occasional whole bricks.		
					(0.20) 2.80	Brown mottled grey, slightly silty, CLAY.		
						Complete at 2.80m		



Remarks

Scale (approx)	Logged By	Figure No.
1:50	MW	33716LG.TP105

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Sutcliffe

Site	Trial Pit Number
Cheetham Hill, Manchester	TP106

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Trial Pit			Mosscare St Vincents	33716LG
	Location	**Dates**	**Engineer**	**Sheet**
	384007 E 400699 N	01/12/2023	MW	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20) 0.20	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND. Gravel is fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).		
					(0.40) 0.60	MADE GROUND: Dark brown, gravelly, slightly gravelly, slightly silty, fine to medium SAND. Gravel is fine to coarse, angular of brick, concrete and mixed lithology. Occasional large cobble of concrete.		
					(1.40)	Brown mottled grey, slightly silty, slightly sandy, CLAY.		
					2.00	Complete at 2.00m		



Remarks

Scale (approx)	Logged By	Figure No.
1:50	MW	33716LG.TP106

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Sutcliffe

Site	Trial Pit Number
Cheetham Hill, Manchester	TP107

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Trial Pit			Mosscare St Vincents	33716LG
	Location	**Dates**	**Engineer**	**Sheet**
	384106 E 400684 N	01/12/2023	MW	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30) 0.30	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND. Gravel is fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).		
					(1.10)	MADE GROUND: Dark brown, slightly silty, gravelly, fine to medium SAND. Gravel is fine to coarse, angular of brick, ash, mixed lithology.		
					1.40	Brown, slightly silty, CLAY with occasional fine sand bands.		
					(0.80)			
					2.20	Complete at 2.20m		



Remarks

Scale (approx)	Logged By	Figure No.
1:50	MW	33716LG.TP107

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Sutcliffe

Site	Trial Pit Number
Cheetham Hill, Manchester	TP108

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Trial Pit			Mosscare St Vincents	33716LG
	Location	**Dates**	**Engineer**	**Sheet**
	384100 E 400606 N	01/12/2023	MW	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20) 0.20	MADE GROUND: Dark brown, silty, slightly gravelly, fine to medium SAND. Gravel is fine to medium SAND with frequent rootlets. Gravel is fine to medium, angular of brick and mixed lithology (GRASS OVER TOPSOIL).		
					(0.40) 0.60	MADE GROUND: Brown, gravelly, slightly clayey, fine to medium, SAND. Gravel is fine to coarse, angular of brick and ash.		
					(0.80) 1.40	MADE GROUND: greyish brown, sandy, slightly gravelly, CLAY. Sand is fine, Gravel is angular, fine to coarse, of brick.		
					(0.90) 2.30	Greyish brown, slightly silty CLAY with occasional fine sand bands.		
						Complete at 2.30m		



Remarks

Scale (approx)	Logged By	Figure No.
1:50	MW	33716LG.TP108

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Sutcliffe

Site	Trial Pit Number
Cheetham Hill, Manchester	SA201

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Trial Pit			Mosscare St Vincents	33716LG
	Location	**Dates** 08/02/2024	**Engineer** MW	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.55)	MADE GROUND: Dark brown, slightly silty, slightly gravelly, fine to medium grained SAND. Gravel is fine to coarse, sub-rounded to angular of ceramic and mixed lithology.		
					0.55 (0.25) 0.80	MADE GROUND: Brown, slightly gravelly, slightly sandy CLAY with occasional whole bricks. Sand is fine to coarse. Gravel is fine to coarse sub-rounded to angular of brick and mixed lithology.		
					(1.20)	Brown slightly gravelly CLAY. Gravel is fine angular to rounded of mixed lithology.		
					2.00	Complete at 2.00m		



Remarks

Scale (approx)	Logged By	Figure No.
1:50	MW	33716LG.SA201

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SUTCLIFFE INVESTIGATIONS

TEL: 0151 227 3155
FAX: 0151 227 3156

BRE 365
Soil Infiltration Test

Job No.:	33716LG	**Job Name:**	Cheetham Hill, Manchester		
Position Ref.:	SA201	**Date:**	08/02/2024	**Site Team:**	MW

Pit Dimensions

Depth (m)	2.00	**Width (m)**	0.70	**Length (m)**	2.00
Depth to Water (m bgl)		1.00	**Effective Depth (m)**		1.00

Soil Infiltration Test Data

Time (mins)	Depth (m bgl)
0	1.00
30	1.00
60	1.00
90	1.00
120	1.00
150	1.00
180	1.00

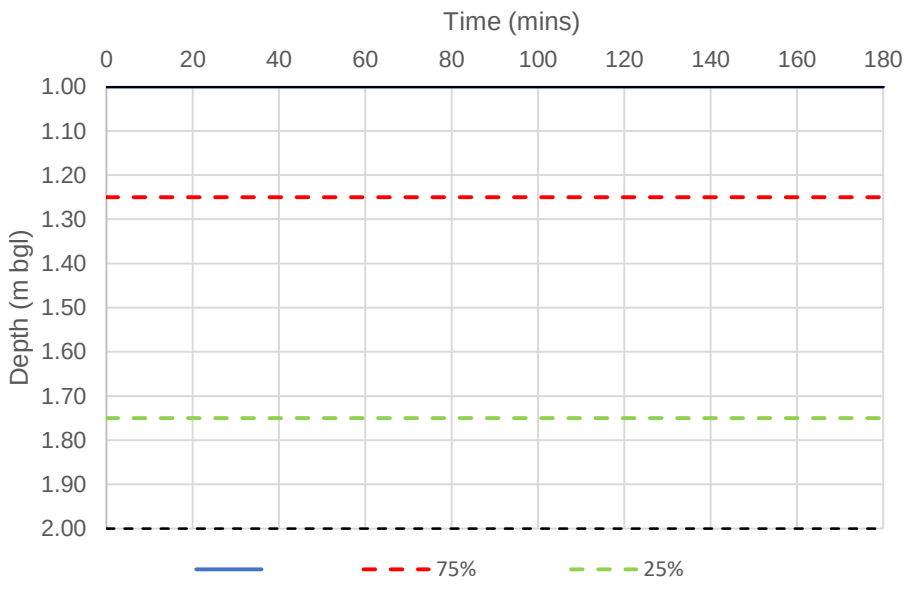
Volume Outflowing between 75% and 25% of effective depth

V_{p75-25}	=	**L**	x	**B**	x	D_{75-25}	
	=	2.00	x	0.70	x	0.50	
	=	0.21	m^3	(30% Void Allowance Made)			

Mean surface area through which outflow occurs, taken to be pit sides to 50% effective depth and including the base of the pit

a_{p50}	=	**L_{side} Area**	+	**B_{side} Area**	+	**Base Area**	
	=	2.00	+	0.70	+	1.40	
	=	4.10	m^2				

Soil Infiltration Test Graph



Depth at 75% (m bgl)	1.25	**Depth at 25% (m bgl)**	1.75

Infiltration Rate Calculation

t_{p75-25}	=	**Time at 25%**	-	**Time at 75%**			
	=		-		=	-	

Soil Infiltration Rate	=	V_{p75-25} / (a_{p50}*t_{p75-25}*60)					
	=	-	**m/s**	=	-	**mm/hr**	

Comments

Test Failed - The test results did not provide an infiltration rate due to the inefficiencies of the ground to infiltrate. Infiltration testing has been undertaken and failed, therefore alternative drainage solutions will be required.

Appendix D – Analytical Certificates

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/11847
Issue Number: 1 **Date:** 11 December, 2023

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

Project Manager: (Use) D Evans; D Bowen; A Tosh; W Baldwin/(Use) Sa
Project Name: Cheetham Hill
Project Ref: 33716LG
Order No: 10089
Date Samples Received: 29/11/23
Date Instructions Received: 30/11/23
Date Analysis Completed: 11/12/23

Approved by:

[redacted]

Client Manager

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/1	23/11847/2	23/11847/3	23/11847/4	23/11847/5	23/11847/6	23/11847/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS116	WS115	WS115	WS113	WS112	WS111	ws108			
Depth to Top	0.0	0.2	0.8	0.5	0.3	0.3	0.0			
Depth To Bottom	0.2	0.75	1.2	1.0	0.6	0.6	0.4			
Date Sampled	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	28-Nov-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	6AE	6AE	6A	6AE	4AB	4ABE	4AE			
% Moisture at <40C$_A$	22.1	18.3	-	14.2	12.6	15.9	19.8	% w/w	0.1	A-T-044
% Stones >10mm$_A$	<0.1	12.5	<0.1	19.4	16.6	9.9	10.8	% w/w	0.1	A-T-044
pH$_D$ M#	6.67	7.14	7.73	7.92	8.16	8.49	7.68	pH	0.01	A-T-031s
Electrical conductivity @ 20degC$_D$	-	-	305	-	-	-	-	µs/cm	10	A-T-037s
Sulphate (water sol 2:1)$_D$ M#	<0.01	0.04	-	0.04	0.03	0.08	0.03	g/l	0.01	A-T-026s
Sulphate (acid soluble)$_D$ M#	660	920	-	660	480	2400	440	mg/kg	200	A-T-028s
Cyanide (total)$_A$ M#	<1	<1	-	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_A$	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Sulphide$_A$	110	80	-	73	61	59	48	mg/kg	5	A-T-043-s
Sulphur (elemental)$_D$ M#	<5	<5	-	11	<5	<5	<5	mg/kg	5	A-T-029s
Organic Matter$_D$ M#	7.2	5.7	-	2.0	4.0	3.9	4.9	% w/w	0.1	A-T-032s
Arsenic$_D$ M#	8	12	-	6	10	10	7	mg/kg	1	A-T-024s
Boron (water soluble)$_D$ M#	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium$_D$ M#	0.8	1.1	-	0.6	0.5	0.7	0.5	mg/kg	0.5	A-T-024s
Copper$_D$ M#	37	55	-	31	37	44	28	mg/kg	1	A-T-024s
Chromium$_D$ M#	20	31	-	23	19	29	17	mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1	-	<1	<1	<1	<1	mg/kg	1	A-T-040s
Chromium (trivalent)	20	31	-	23	19	29	17	mg/kg	1	Calc
Lead$_D$ M#	88	154	-	79	88	109	57	mg/kg	1	A-T-024s
Mercury$_D$	<0.17	1.80	-	0.43	0.48	1.41	<0.17	mg/kg	0.17	A-T-024s
Nickel$_D$ M#	20	24	-	24	21	27	14	mg/kg	1	A-T-024s
Selenium$_D$ M#	<1	<1	-	<1	<1	<1	<1	mg/kg	1	A-T-024s
Zinc$_D$ M#	85	133	-	67	61	124	62	mg/kg	5	A-T-024s
Redox Potential (water soluble)$_D$	-	-	237	-	-	-	-	mV		Redox

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/1	23/11847/2	23/11847/3	23/11847/4	23/11847/5	23/11847/6	23/11847/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS116	WS115	WS115	WS113	WS112	WS111	ws108			
Depth to Top	0.0	0.2	0.8	0.5	0.3	0.3	0.0			
Depth To Bottom	0.2	0.75	1.2	1.0	0.6	0.6	0.4			
Date Sampled	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	28-Nov-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	6AE	6AE	6A	6AE	4AB	4ABE	4AE			
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	-	NAD	NAD	NAD	NAD			A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	-	N/A	N/A	N/A	N/A			A-T-045

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/1	23/11847/2	23/11847/3	23/11847/4	23/11847/5	23/11847/6	23/11847/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS116	WS115	WS115	WS113	WS112	WS111	ws108			
Depth to Top	0.0	0.2	0.8	0.5	0.3	0.3	0.0			
Depth To Bottom	0.2	0.75	1.2	1.0	0.6	0.6	0.4			
Date Sampled	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	28-Nov-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	6AE	6AE	6A	6AE	4AB	4ABE	4AE			
PAH-16MS										
Acenaphthene$_A^{M\#}$	0.04	0.03	-	0.07	0.03	0.89	0.04	mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	<0.01	-	<0.01	<0.01	0.05	<0.01	mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	0.05	0.06	-	0.11	0.05	1.16	0.08	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	0.24	0.22	-	0.46	0.31	2.60	0.34	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.26	0.19	-	0.43	0.33	2.09	0.31	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	0.31	0.24	-	0.54	0.40	2.44	0.39	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	0.15	0.12	-	0.26	0.22	0.99	0.18	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	0.14	0.12	-	0.22	0.18	0.97	0.18	mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	0.31	0.26	-	0.53	0.37	2.71	0.40	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A$	<0.04	<0.04	-	0.06	0.05	0.22	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.47	0.51	-	0.96	0.53	6.30	0.77	mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	0.03	0.02	-	0.04	<0.01	0.72	0.03	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	0.18	0.12	-	0.30	0.23	1.12	0.20	mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	<0.03	-	<0.03	<0.03	0.50	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	0.23	0.29	-	0.48	0.21	5.31	0.40	mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	0.45	0.47	-	0.84	0.52	5.49	0.67	mg/kg	0.07	A-T-019s
Total PAH-16MS$_A$	2.86	2.65	-	5.30	3.43	33.6	3.99	mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/1	23/11847/2	23/11847/3	23/11847/4	23/11847/5	23/11847/6	23/11847/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS116	WS115	WS115	WS113	WS112	WS111	ws108			
Depth to Top	0.0	0.2	0.8	0.5	0.3	0.3	0.0			
Depth To Bottom	0.2	0.75	1.2	1.0	0.6	0.6	0.4			
Date Sampled	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	28-Nov-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	6AE	6AE	6A	6AE	4AB	4ABE	4AE			
SVOC										
4-Bromophenyl phenyl ether$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Hexachlorobenzene$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Diethyl phthalate$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Dimethyl phthalate$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Dibenzofuran$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Carbazole$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Butylbenzyl phthalate$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate$_A$	-	-	<500	-	-	-	-	µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
4-Nitrophenol$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
3+4-Methylphenol$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
4-Chloro-3-methylphenol$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
2-Nitrophenol$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
2-Methylphenol$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
1,2,4-Trichlorobenzene$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
2-Chlorophenol$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
2,6-Dinitrotoluene$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
2,4-Dinitrotoluene$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
2,4-Dimethylphenol$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
2,4-Dichlorophenol$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
2,4,6-Trichlorophenol$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
2,4,5-Trichlorophenol$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
1,4-Dichlorobenzene$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
1,3-Dichlorobenzene$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
1,2-Dichlorobenzene$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
2-Chloronaphthalene$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
2-Methylnaphthalene$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Acenaphthylene$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Acenaphthene$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Anthracene$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Benzo(a)anthracene$_A$	-	-	254	-	-	-	-	µg/kg	100	A-T-052s

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/1	23/11847/2	23/11847/3	23/11847/4	23/11847/5	23/11847/6	23/11847/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS116	WS115	WS115	WS113	WS112	WS111	ws108			
Depth to Top	0.0	0.2	0.8	0.5	0.3	0.3	0.0			
Depth To Bottom	0.2	0.75	1.2	1.0	0.6	0.6	0.4			
Date Sampled	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	28-Nov-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	6AE	6AE	6A	6AE	4AB	4ABE	4AE			
Benzo(b)fluoranthene$_A$	-	-	264	-	-	-	-	µg/kg	100	A-T-052s
Benzo(k)fluoranthene$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Benzo(a)pyrene$_A$	-	-	282	-	-	-	-	µg/kg	100	A-T-052s
Benzo(ghi)perylene$_A$	-	-	190	-	-	-	-	µg/kg	100	A-T-052s
Chrysene$_A$	-	-	246	-	-	-	-	µg/kg	100	A-T-052s
Fluoranthene$_A$	-	-	424	-	-	-	-	µg/kg	100	A-T-052s
Fluorene$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Indeno(1,2,3-cd)pyrene$_A$	-	-	195	-	-	-	-	µg/kg	100	A-T-052s
Phenanthrene$_A$	-	-	264	-	-	-	-	µg/kg	100	A-T-052s
Pyrene$_A$	-	-	434	-	-	-	-	µg/kg	100	A-T-052s
Naphthalene$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Dibenzo(ah)anthracene$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Phenol$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Pentachlorophenol$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
n-Dioctylphthalate$_A$	-	-	<500	-	-	-	-	µg/kg	500	A-T-052s
n-Dibutylphthalate$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Nitrobenzene$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Isophorone$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Hexachloroethane$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Hexachlorobutadiene$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
SVOC Total (excl. PAH/Phenols/Cresols)$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Phenol Total$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s
Cresol & Chlorinated Phenol Total$_A$	-	-	<100	-	-	-	-	µg/kg	100	A-T-052s

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/1	23/11847/2	23/11847/3	23/11847/4	23/11847/5	23/11847/6	23/11847/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS116	WS115	WS115	WS113	WS112	WS111	ws108			
Depth to Top	0.0	0.2	0.8	0.5	0.3	0.3	0.0			
Depth To Bottom	0.2	0.75	1.2	1.0	0.6	0.6	0.4			
Date Sampled	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	28-Nov-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	6AE	6AE	6A	6AE	4AB	4ABE	4AE			
VOC										
Dichlorodifluoromethane$_A$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
Chloromethane$_A$	-	-	<250	-	-	-	-	µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene)$_A^{\#}$	-	-	<25^U	-	-	-	-	µg/kg	1	A-T-006s
Bromomethane$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
Chloroethane$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
Trichlorofluoromethane$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
1,1-Dichloroethene$_A^{\#}$	-	-	<25^U	-	-	-	-	µg/kg	1	A-T-006s
Carbon Disulphide$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
Dichloromethane$_A$	-	-	<125	-	-	-	-	µg/kg	5	A-T-006s
trans 1,2-Dichloroethene$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
1,1-Dichloroethane$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
cis 1,2-Dichloroethene$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
2,2-Dichloropropane$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
Bromochloromethane$_A^{\#}$	-	-	<125	-	-	-	-	µg/kg	5	A-T-006s
Chloroform$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
1,1,1-Trichloroethane$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
1,1-Dichloropropene$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
Carbon Tetrachloride$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
1,2-Dichloroethane$_A^{\#}$	-	-	<50	-	-	-	-	µg/kg	2	A-T-006s
Benzene$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
Trichloroethene$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
1,2-Dichloropropane$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
Dibromomethane$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
Bromodichloromethane$_A^{\#}$	-	-	<250	-	-	-	-	µg/kg	10	A-T-006s
cis 1,3-Dichloropropene$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
Toluene$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
trans 1,3-Dichloropropene$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
1,1,2-Trichloroethane$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
1,3-Dichloropropane$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
Tetrachloroethene$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
Dibromochloromethane$_A^{\#}$	-	-	<75	-	-	-	-	µg/kg	3	A-T-006s
1,2-Dibromoethane$_A^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/1	23/11847/2	23/11847/3	23/11847/4	23/11847/5	23/11847/6	23/11847/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS116	WS115	WS115	WS113	WS112	WS111	ws108			
Depth to Top	0.0	0.2	0.8	0.5	0.3	0.3	0.0			
Depth To Bottom	0.2	0.75	1.2	1.0	0.6	0.6	0.4			
Date Sampled	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	28-Nov-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	6AE	6AE	6A	6AE	4AB	4ABE	4AE			
Chlorobenzene$_{A}^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
1,1,1,2-Tetrachloroethane$_{A}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
Ethylbenzene$_{A}^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
m & p Xylene$_{A}^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
o-Xylene$_{A}^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
Styrene$_{A}^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
Bromoform$_{A}^{\#}$	-	-	<75	-	-	-	-	µg/kg	3	A-T-006s
Isopropylbenzene$_{A}^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane$_{A}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
1,2,3-Trichloropropane$_{A}^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
Bromobenzene$_{A}^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
n-Propylbenzene$_{A}^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
2-Chlorotoluene$_{A}^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_{A}^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
4-Chlorotoluene$_{A}^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
tert-Butylbenzene$_{A}^{\#}$	-	-	<50	-	-	-	-	µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene$_{A}^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
sec-Butylbenzene$_{A}^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
4-Isopropyltoluene$_{A}^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
1,3-Dichlorobenzene$_{A}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
1,4-Dichlorobenzene$_{A}^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
n-Butylbenzene$_{A}^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
1,2-Dichlorobenzene$_{A}^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP)$_{A}$	-	-	<50	-	-	-	-	µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene$_{A}$	-	-	<75	-	-	-	-	µg/kg	3	A-T-006s
Hexachlorobutadiene$_{A}^{\#}$	-	-	<25	-	-	-	-	µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene$_{A}$	-	-	<75	-	-	-	-	µg/kg	3	A-T-006s
VOC Total$_{A}$	-	-	<250	-	-	-	-	µg/kg	10	A-T-006s

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/1	23/11847/2	23/11847/3	23/11847/4	23/11847/5	23/11847/6	23/11847/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS116	WS115	WS115	WS113	WS112	WS111	ws108			
Depth to Top	0.0	0.2	0.8	0.5	0.3	0.3	0.0			
Depth To Bottom	0.2	0.75	1.2	1.0	0.6	0.6	0.4			
Date Sampled	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	28-Nov-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	6AE	6AE	6A	6AE	4AB	4ABE	4AE			
TPH CWG with Clean Up										
Ali >C5-C6$_A$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8$_A$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C10-C12$_A$$^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C12-C16$_A$$^{M\#}$	<1	<1	<1	<1	<1	1	<1	mg/kg	1	A-T-055s
Ali >C16-C21$_A$$^{M\#}$	<1	1	<1	2	<1	2	1	mg/kg	1	A-T-055s
Ali >C21-C35$_A$$^{M\#}$	12	19	5	17	16	36	17	mg/kg	1	A-T-055s
Total Aliphatics$_A$	-	-	5	-	-	-	-	mg/kg	1	Calc-As Recd
Aro >C5-C7$_A$$^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8$_A$$^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	<3	<3	<1	5	<3	<3	<3	mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1	<1	<1	3	<1	1	<1	mg/kg	1	A-T-055s
Aro >C12-C16$_A$	3	3	<1	6	2	7	2	mg/kg	1	A-T-055s
Aro >C16-C21$_A$$^{M\#}$	8	12	3	24	7	32	10	mg/kg	1	A-T-055s
Aro >C21-C35$_A$$^{M\#}$	30	58	10	95	36	125	32	mg/kg	1	A-T-055s
EPH Total Ali & Aro (>C10-C16)$_A$$^{\#}$	-	-	<1	-	-	-	-	mg/kg	1	A-T-055s
EPH Total Ali & Aro (>C16-C35)$_A$$^{M\#}$	-	-	16	-	-	-	-	mg/kg	1	A-T-055s
Total Aromatics$_A$	-	-	13	-	-	-	-	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_A$	-	-	18	-	-	-	-	mg/kg	1	Calc-As Recd
BTEX and MTBE Total$_A$	-	-	<0.01	-	-	-	-	mg/kg	0.01	A-T-022s
BTEX - Benzene$_A$$^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene$_A$$^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A$$^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A$$^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A$$^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE$_A$$^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
VPH total (>C5-C10)$_A$$^{\#}$	-	-	<0.01	-	-	-	-	mg/kg	0.01	A-T-022s

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/1	23/11847/2	23/11847/3	23/11847/4	23/11847/5	23/11847/6	23/11847/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS116	WS115	WS115	WS113	WS112	WS111	ws108			
Depth to Top	0.0	0.2	0.8	0.5	0.3	0.3	0.0			
Depth To Bottom	0.2	0.75	1.2	1.0	0.6	0.6	0.4			
Date Sampled	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	28-Nov-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	6AE	6AE	6A	6AE	4AB	4ABE	4AE			
TPH UKCWG with Clean Up										
Ali >C35-C44$_A$	1	3	-	3	2	9	2	mg/kg	1	A-T-055s
Total Aliphatics$_A$	13	24	-	23	19	48	20	mg/kg	1	Calc-As Recd
Aro >C35-C44$_A$	<1	2	-	3	<1	5	1	mg/kg	1	A-T-055s
Total Aromatics$_A$	40	75	-	135	46	171	46	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C44)$_A$	53	99	-	158	65	220	66	mg/kg	1	Calc-As Recd

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/8	23/11847/9	23/11847/10	23/11847/11	23/11847/12	23/11847/13	23/11847/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS109	WS109	WS107	WS106	WS105	WS105A	WS104			
Depth to Top	0.4	1.0	0.0	0.4	0.4	1.0	0.0			
Depth To Bottom	1.0	1.3	0.4	0.8	0.8	1.3	0.4			
Date Sampled	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	29-Nov-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	6ABE	6A	4AE	4AB	4ABE	5AE	6AE			
% Moisture at <40C$_A$	15.6	-	13.2	10.8	15.8	-	16.9	% w/w	0.1	A-T-044
% Stones >10mm$_A$	23.4	3.7	18.5	21.6	21.4	<0.1	18.4	% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	7.94	8.02	8.08	8.47	8.09	8.31	6.94	pH	0.01	A-T-031s
Electrical conductivity @ 20degC$_D$	-	174	-	-	-	114	-	µs/cm	10	A-T-037s
Sulphate (water sol 2:1)$_D$$^{M\#}$	<0.01	-	0.02	0.05	0.06	-	<0.01	g/l	0.01	A-T-026s
Sulphate (acid soluble)$_D$$^{M\#}$	480	-	640	620	650	-	210	mg/kg	200	A-T-028s
Cyanide (total)$_A$$^{M\#}$	<1	-	<1	<1	<1	-	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_A$	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	mg/kg	0.2	A-T-050s
Sulphide$_A$	33	-	53	19	11	-	9	mg/kg	5	A-T-043-s
Sulphur (elemental)$_D$$^{M\#}$	<5	-	<5	<5	<5	-	<5	mg/kg	5	A-T-029s
Organic Matter$_D$$^{M\#}$	4.6	-	5.1	4.2	5.2	-	1.3	% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	12	-	20	17	9	-	2	mg/kg	1	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	<1.0	-	<1.0	<1.0	<1.0	-	<1.0	mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	0.8	-	1.1	1.0	0.7	-	<0.5	mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	51	-	72	67	59	-	14	mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	16	-	23	23	15	-	11	mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	-	<1	<1	<1	-	<1	mg/kg	1	A-T-040s
Chromium (trivalent)	16	-	23	23	15	-	11	mg/kg	1	Calc
Lead$_D$$^{M\#}$	118	-	196	161	69	-	29	mg/kg	1	A-T-024s
Mercury$_D$	0.83	-	1.15	1.43	1.60	-	<0.17	mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	19	-	20	20	17	-	11	mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	-	<1	<1	<1	-	<1	mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	81	-	214	83	60	-	26	mg/kg	5	A-T-024s
Redox Potential (water soluble)$_D$	-	235	-	-	-	209	-	mV		Redox

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/8	23/11847/9	23/11847/10	23/11847/11	23/11847/12	23/11847/13	23/11847/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS109	WS109	WS107	WS106	WS105	WS105A	WS104			
Depth to Top	0.4	1.0	0.0	0.4	0.4	1.0	0.0			
Depth To Bottom	1.0	1.3	0.4	0.8	0.8	1.3	0.4			
Date Sampled	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	29-Nov-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	6ABE	6A	4AE	4AB	4ABE	5AE	6AE			
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	-	NAD	NAD	NAD	-	NAD			A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	-	N/A	N/A	N/A	-	N/A			A-T-045

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/8	23/11847/9	23/11847/10	23/11847/11	23/11847/12	23/11847/13	23/11847/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS109	WS109	WS107	WS106	WS105	WS105A	WS104			
Depth to Top	0.4	1.0	0.0	0.4	0.4	1.0	0.0			
Depth To Bottom	1.0	1.3	0.4	0.8	0.8	1.3	0.4			
Date Sampled	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	29-Nov-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	6ABE	6A	4AE	4AB	4ABE	5AE	6AE			
PAH-16MS										
Acenaphthene$_A^{M\#}$	0.09	-	2.41	0.23	0.22	-	<0.01	mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	0.02	-	0.08	0.02	<0.01	-	<0.01	mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	0.14	-	3.13	0.33	0.28	-	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	0.65	-	4.68	1.21	0.96	-	0.06	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.56	-	3.23	1.05	0.86	-	0.06	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	0.69	-	3.75	1.24	1.05	-	0.07	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	0.29	-	1.47	0.54	0.49	-	<0.05	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	0.29	-	1.28	0.47	0.43	-	<0.07	mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	0.72	-	4.47	1.23	1.04	-	0.08	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A$	0.06	-	0.36	0.12	0.10	-	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	1.41	-	12.2	2.73	2.04	-	0.10	mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	0.05	-	1.87	0.12	0.11	-	<0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	0.34	-	1.82	0.65	0.56	-	0.04	mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	0.04	-	0.92	0.06	0.12	-	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	0.58	-	11.8	1.37	1.11	-	0.04	mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	1.27	-	10.2	2.30	1.71	-	0.10	mg/kg	0.07	A-T-019s
Total PAH-16MS$_A$	7.20	-	63.7	13.7	11.1	-	0.55	mg/kg	0.01	A-T-019s

Lab Sample ID	23/11847/8	23/11847/9	23/11847/10	23/11847/11	23/11847/12	23/11847/13	23/11847/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS109	WS109	WS107	WS106	WS105	WS105A	WS104			
Depth to Top	0.4	1.0	0.0	0.4	0.4	1.0	0.0			
Depth To Bottom	1.0	1.3	0.4	0.8	0.8	1.3	0.4			
Date Sampled	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	29-Nov-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	6ABE	6A	4AE	4AB	4ABE	5AE	6AE			
SVOC										
4-Bromophenyl phenyl ether$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Hexachlorobenzene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Diethyl phthalate$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Dimethyl phthalate$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Dibenzofuran$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Carbazole$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Butylbenzyl phthalate$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate$_A$	-	<500	-	-	-	<500	-	µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
4-Nitrophenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
3+4-Methylphenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
4-Chloro-3-methylphenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Nitrophenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Methylphenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
1,2,4-Trichlorobenzene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Chlorophenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2,6-Dinitrotoluene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4-Dinitrotoluene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4-Dimethylphenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4-Dichlorophenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4,6-Trichlorophenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4,5-Trichlorophenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
1,4-Dichlorobenzene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
1,3-Dichlorobenzene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
1,2-Dichlorobenzene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Chloronaphthalene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Methylnaphthalene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Acenaphthylene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Acenaphthene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Anthracene$_A$	-	183	-	-	-	<100	-	µg/kg	100	A-T-052s
Benzo(a)anthracene$_A$	-	677	-	-	-	<100	-	µg/kg	100	A-T-052s

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/8	23/11847/9	23/11847/10	23/11847/11	23/11847/12	23/11847/13	23/11847/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS109	WS109	WS107	WS106	WS105	WS105A	WS104			
Depth to Top	0.4	1.0	0.0	0.4	0.4	1.0	0.0			
Depth To Bottom	1.0	1.3	0.4	0.8	0.8	1.3	0.4			
Date Sampled	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	29-Nov-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	6ABE	6A	4AE	4AB	4ABE	5AE	6AE			
Benzo(b)fluoranthene$_A$	-	584	-	-	-	<100	-	µg/kg	100	A-T-052s
Benzo(k)fluoranthene$_A$	-	221	-	-	-	<100	-	µg/kg	100	A-T-052s
Benzo(a)pyrene$_A$	-	572	-	-	-	<100	-	µg/kg	100	A-T-052s
Benzo(ghi)perylene$_A$	-	331	-	-	-	<100	-	µg/kg	100	A-T-052s
Chrysene$_A$	-	675	-	-	-	<100	-	µg/kg	100	A-T-052s
Fluoranthene$_A$	-	1350	-	-	-	<100	-	µg/kg	100	A-T-052s
Fluorene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Indeno(1,2,3-cd)pyrene$_A$	-	349	-	-	-	<100	-	µg/kg	100	A-T-052s
Phenanthrene$_A$	-	823	-	-	-	<100	-	µg/kg	100	A-T-052s
Pyrene$_A$	-	1350	-	-	-	<100	-	µg/kg	100	A-T-052s
Naphthalene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Dibenzo(ah)anthracene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Phenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Pentachlorophenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
n-Dioctylphthalate$_A$	-	<500	-	-	-	<500	-	µg/kg	500	A-T-052s
n-Dibutylphthalate$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Nitrobenzene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Isophorone$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Hexachloroethane$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Hexachlorobutadiene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
SVOC Total (excl. PAH/Phenols/Cresols)$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Phenol Total$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Cresol & Chlorinated Phenol Total$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s

Lab Sample ID	23/11847/8	23/11847/9	23/11847/10	23/11847/11	23/11847/12	23/11847/13	23/11847/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS109	WS109	WS107	WS106	WS105	WS105A	WS104			
Depth to Top	0.4	1.0	0.0	0.4	0.4	1.0	0.0			
Depth To Bottom	1.0	1.3	0.4	0.8	0.8	1.3	0.4			
Date Sampled	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	29-Nov-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	6ABE	6A	4AE	4AB	4ABE	5AE	6AE			
VOC										
Dichlorodifluoromethane$_A$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
Chloromethane$_A$	-	<250	-	-	-	<50	-	µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene)$_A^{\#}$	-	<25^U	-	-	-	<5^U	-	µg/kg	1	A-T-006s
Bromomethane$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
Chloroethane$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
Trichlorofluoromethane$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
1,1-Dichloroethene$_A^{\#}$	-	<25^U	-	-	-	<5^U	-	µg/kg	1	A-T-006s
Carbon Disulphide$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
Dichloromethane$_A$	-	<125	-	-	-	<25	-	µg/kg	5	A-T-006s
trans 1,2-Dichloroethene$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
1,1-Dichloroethane$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
cis 1,2-Dichloroethene$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
2,2-Dichloropropane$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
Bromochloromethane$_A^{\#}$	-	<125	-	-	-	<25	-	µg/kg	5	A-T-006s
Chloroform$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
1,1,1-Trichloroethane$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
1,1-Dichloropropene$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
Carbon Tetrachloride$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
1,2-Dichloroethane$_A^{\#}$	-	<50	-	-	-	<10	-	µg/kg	2	A-T-006s
Benzene$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
Trichloroethene$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
1,2-Dichloropropane$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
Dibromomethane$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
Bromodichloromethane$_A^{\#}$	-	<250	-	-	-	<50	-	µg/kg	10	A-T-006s
cis 1,3-Dichloropropene$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
Toluene$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
trans 1,3-Dichloropropene$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
1,1,2-Trichloroethane$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
1,3-Dichloropropane$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
Tetrachloroethene$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
Dibromochloromethane$_A^{\#}$	-	<75	-	-	-	<15	-	µg/kg	3	A-T-006s
1,2-Dibromoethane$_A^{\#}$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/8	23/11847/9	23/11847/10	23/11847/11	23/11847/12	23/11847/13	23/11847/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS109	WS109	WS107	WS106	WS105	WS105A	WS104			
Depth to Top	0.4	1.0	0.0	0.4	0.4	1.0	0.0			
Depth To Bottom	1.0	1.3	0.4	0.8	0.8	1.3	0.4			
Date Sampled	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	29-Nov-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	6ABE	6A	4AE	4AB	4ABE	5AE	6AE			
Chlorobenzene$_A^\#$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
1,1,1,2-Tetrachloroethane$_A$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
Ethylbenzene$_A^\#$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
m & p Xylene$_A^\#$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
o-Xylene$_A^\#$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
Styrene$_A^\#$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
Bromoform$_A^\#$	-	<75	-	-	-	<15	-	µg/kg	3	A-T-006s
Isopropylbenzene$_A^\#$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane$_A$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
1,2,3-Trichloropropane$_A^\#$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
Bromobenzene$_A^\#$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
n-Propylbenzene$_A^\#$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
2-Chlorotoluene$_A^\#$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^\#$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
4-Chlorotoluene$_A^\#$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
tert-Butylbenzene$_A^\#$	-	<50	-	-	-	<10	-	µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene$_A^\#$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
sec-Butylbenzene$_A^\#$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^\#$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
1,3-Dichlorobenzene$_A$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
1,4-Dichlorobenzene$_A^\#$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
n-Butylbenzene$_A^\#$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
1,2-Dichlorobenzene$_A^\#$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP)$_A$	-	<50	-	-	-	<10	-	µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene$_A$	-	<75	-	-	-	<15	-	µg/kg	3	A-T-006s
Hexachlorobutadiene$_A^\#$	-	<25	-	-	-	<5	-	µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene$_A$	-	<75	-	-	-	<15	-	µg/kg	3	A-T-006s
VOC Total$_A$	-	<250	-	-	-	<50	-	µg/kg	10	A-T-006s

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/8	23/11847/9	23/11847/10	23/11847/11	23/11847/12	23/11847/13	23/11847/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS109	WS109	WS107	WS106	WS105	WS105A	WS104			
Depth to Top	0.4	1.0	0.0	0.4	0.4	1.0	0.0			
Depth To Bottom	1.0	1.3	0.4	0.8	0.8	1.3	0.4			
Date Sampled	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	29-Nov-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	6ABE	6A	4AE	4AB	4ABE	5AE	6AE			
TPH CWG with Clean Up										
Ali >C5-C6$_A$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8$_A$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1	<1	<1	<1	<1	1	<1	mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	<1	<1	<1	<1	<1	2	<1	mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	<1	1	3	<1	2	2	<1	mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	4	5	80	42	24	4	9	mg/kg	1	A-T-055s
Total Aliphatics$_A$	-	6	-	-	-	10	-	mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	<3	<1	<3	<3	<3	1	<3	mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1	<1	2	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C12-C16$_A$	3	5	8	5	8	2	<1	mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	11	15	29	19	35	2	6	mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	41	53	99	54	107	2	22	mg/kg	1	A-T-055s
EPH Total Ali & Aro (>C10-C16)$_A^{\#}$	-	5	-	-	-	5	-	mg/kg	1	A-T-055s
EPH Total Ali & Aro (>C16-C35)$_A^{M\#}$	-	75	-	-	-	12	-	mg/kg	1	A-T-055s
Total Aromatics$_A$	-	73	-	-	-	9	-	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_A$	-	79	-	-	-	19	-	mg/kg	1	Calc-As Recd
BTEX and MTBE Total$_A$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
BTEX - Benzene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
VPH total (>C5-C10)$_A^{\#}$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/8	23/11847/9	23/11847/10	23/11847/11	23/11847/12	23/11847/13	23/11847/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS109	WS109	WS107	WS106	WS105	WS105A	WS104			
Depth to Top	0.4	1.0	0.0	0.4	0.4	1.0	0.0			
Depth To Bottom	1.0	1.3	0.4	0.8	0.8	1.3	0.4			
Date Sampled	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	29-Nov-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	6ABE	6A	4AE	4AB	4ABE	5AE	6AE			
TPH UKCWG with Clean Up										
Ali >C35-C44$_A$	<1	-	26	11	4	-	<1	mg/kg	1	A-T-055s
Total Aliphatics$_A$	5	-	110	54	30	-	10	mg/kg	1	Calc-As Recd
Aro >C35-C44$_A$	<1	-	14	5	3	-	<1	mg/kg	1	A-T-055s
Total Aromatics$_A$	54	-	152	83	153	-	27	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C44)$_A$	59	-	262	137	183	-	37	mg/kg	1	Calc-As Recd

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/16	23/11847/17	23/11847/18	23/11847/19				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS110	WS110	WS114	WS114						
Depth to Top	0.3	1.0	0.6	0.3						
Depth To Bottom	0.6	1.6	0.9	0.6						
Date Sampled	29-Nov-23	29-Nov-23	29-Nov-23	29-Nov-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6ABE	4ABE	6A	6A						
% Moisture at <40C$_A$	16.3	15.4	20.8	22.3				% w/w	0.1	A-T-044
% Stones >10mm$_A$	16.6	12.7	<0.1	<0.1				% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	7.76	7.84	7.72	7.54				pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	<0.01	0.02	<0.01	0.04				g/l	0.01	A-T-026s
Sulphate (acid soluble)$_D$$^{M\#}$	430	710	500	600				mg/kg	200	A-T-028s
Cyanide (total)$_A$$^{M\#}$	<1	<1	<1	<1				mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_A$	<0.2	<0.2	<0.2	<0.2				mg/kg	0.2	A-T-050s
Sulphide$_A$	<5	<5	<5	<5				mg/kg	5	A-T-043-s
Sulphur (elemental)$_D$$^{M\#}$	<5	10	<5	<5				mg/kg	5	A-T-029s
Organic Matter$_D$$^{M\#}$	5.4	6.5	5.9	4.9				% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	13	27	10	13				mg/kg	1	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	<1.0	<1.0	<1.0	<1.0				mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	1.3	1.9	0.9	1.4				mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	121	100	28	43				mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	22	37	17	19				mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1	<1	<1				mg/kg	1	A-T-040s
Chromium (trivalent)	22	37	17	19				mg/kg	1	Calc
Lead$_D$$^{M\#}$	138	790	65	76				mg/kg	1	A-T-024s
Mercury$_D$	0.80	0.69	<0.17	<0.17				mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	20	31	14	18				mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	<1	<1	<1				mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	119	223	65	80				mg/kg	5	A-T-024s

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/16	23/11847/17	23/11847/18	23/11847/19				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS110	WS110	WS114	WS114						
Depth to Top	0.3	1.0	0.6	0.3						
Depth To Bottom	0.6	1.6	0.9	0.6						
Date Sampled	29-Nov-23	29-Nov-23	29-Nov-23	29-Nov-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6ABE	4ABE	6A	6A						
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD	NAD						A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-						A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-						A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A	N/A						A-T-045

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/16	23/11847/17	23/11847/18	23/11847/19				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS110	WS110	WS114	WS114						
Depth to Top	0.3	1.0	0.6	0.3						
Depth To Bottom	0.6	1.6	0.9	0.6						
Date Sampled	29-Nov-23	29-Nov-23	29-Nov-23	29-Nov-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6ABE	4ABE	6A	6A						
PAH-16MS										
Acenaphthene$_A^{M\#}$	0.32	1.01	0.05	0.03				mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	0.15	<0.01	<0.01				mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	0.34	1.95	0.09	0.04				mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	1.25	5.15	0.32	0.18				mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	1.12	4.07	0.27	0.17				mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	1.41	4.66	0.32	0.21				mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	0.61	2.00	0.15	0.09				mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	0.58	1.89	0.15	0.09				mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	1.29	5.32	0.35	0.22				mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A$	0.12	0.45	<0.04	<0.04				mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	2.77	12.8	0.71	0.39				mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	0.14	0.84	0.03	<0.01				mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	0.71	2.28	0.18	0.10				mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	0.06	0.29	0.11	<0.03				mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	1.40	8.72	0.39	0.18				mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	2.23	11.8	0.62	0.35				mg/kg	0.07	A-T-019s
Total PAH-16MS$_A$	14.3	63.4	3.74	2.05				mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/16	23/11847/17	23/11847/18	23/11847/19				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS110	WS110	WS114	WS114						
Depth to Top	0.3	1.0	0.6	0.3						
Depth To Bottom	0.6	1.6	0.9	0.6						
Date Sampled	29-Nov-23	29-Nov-23	29-Nov-23	29-Nov-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6ABE	4ABE	6A	6A						
TPH CWG with Clean Up										
Ali >C5-C6$_A$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C6-C8$_A$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	<1	2	<1	<1				mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	2	4	<1	<1				mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	22	25	9	6				mg/kg	1	A-T-055s
Aro >C5-C7$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	<3	<3	<3	<3				mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1	2	<1	<1				mg/kg	1	A-T-055s
Aro >C12-C16$_A$	9	14	<1	<1				mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	29	74	5	4				mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	96	269	20	12				mg/kg	1	A-T-055s
BTEX - Benzene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s

Envirolab Job Number: 23/11847

Client Project Name: Cheetham Hill

Client Project Ref: 33716LG

Lab Sample ID	23/11847/16	23/11847/17	23/11847/18	23/11847/19				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS110	WS110	WS114	WS114						
Depth to Top	0.3	1.0	0.6	0.3						
Depth To Bottom	0.6	1.6	0.9	0.6						
Date Sampled	29-Nov-23	29-Nov-23	29-Nov-23	29-Nov-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6ABE	4ABE	6A	6A						
TPH UKCWG with Clean Up										
Ali >C35-C44$_A$	4	7	<1	<1				mg/kg	1	A-T-055s
Total Aliphatics$_A$	28	38	9	6				mg/kg	1	Calc-As Recd
Aro >C35-C44$_A$	3	7	<1	<1				mg/kg	1	A-T-055s
Total Aromatics$_A$	138	367	25	15				mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C44)$_A$	165	406	34	22				mg/kg	1	Calc-As Recd

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

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

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^{o}C / 11550µS/cm @ 20^{o}C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

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

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

Project No: 23/11847

Date Received: 30/11/2023 (am)

Project: Cheetham Hill

Cool Box Temperatures (°C): 5.5-6.3

Clients Project No: 33716LG

Lab Sample ID	23/11847/1	23/11847/2	23/11847/4	23/11847/5	23/11847/6
Client Sample No					
Client Sample ID/Depth	WS116 0.0-0.2m	WS115 0.2-0.75m	WS113 0.5-1.0m	WS112 0.3-0.6m	WS111 0.3-0.6m
Date Sampled	27/11/23	27/11/23	27/11/23	27/11/23	27/11/23
Deviation Code					
F	✓	✓	✓	✓	✓

Key

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

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/11847/1	23/11847/2	23/11847/4	23/11847/5	23/11847/6
Client Sample No					
Client Sample ID/Depth	WS116 0.0-0.2m	WS115 0.2-0.75m	WS113 0.5-1.0m	WS112 0.3-0.6m	WS111 0.3-0.6m
Date Sampled	27/11/23	27/11/23	27/11/23	27/11/23	27/11/23
Sulphide	✓	✓	✓	✓	✓

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

Envirolab Analysis Dates

Lab Sample ID	23/11847/1	23/11847/2	23/11847/3	23/11847/4	23/11847/5	23/11847/6	23/11847/7	23/11847/8	23/11847/9	23/11847/10	23/11847/11	23/11847/12
Client Sample No												
Client Sample ID/Depth	WS116 0.0-0.2m	WS115 0.2-0.75m	WS115 0.8-1.2m	WS113 0.5-1.0m	WS112 0.3-0.6m	WS111 0.3-0.6m	ws108 0.0-0.4m	WS109 0.4-1.0m	WS109 1.0-1.3m	WS107 0.0-0.4m	WS106 0.4-0.8m	WS105 0.4-0.8m
Date Sampled	27/11/23	27/11/23	27/11/23	27/11/23	27/11/23	27/11/23	28/11/23	28/11/23	28/11/23	28/11/23	28/11/23	28/11/23
A-T-004s												
A-T-006s			08/12/2023						08/12/2023			
A-T-007s												
A-T-019s	07/12/2023	07/12/2023		07/12/2023	07/12/2023	07/12/2023	07/12/2023	07/12/2023		07/12/2023	07/12/2023	07/12/2023
A-T-022s	08/12/2023	08/12/2023	08/12/2023	08/12/2023	08/12/2023	08/12/2023	08/12/2023	08/12/2023	08/12/2023	08/12/2023	08/12/2023	08/12/2023
A-T-024s	08/12/2023	08/12/2023		08/12/2023	08/12/2023	08/12/2023	08/12/2023	08/12/2023		08/12/2023	07/12/2023	07/12/2023
A-T-025w												
A-T-026s	06/12/2023	06/12/2023		06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023		06/12/2023	06/12/2023	06/12/2023
A-T-026w												
A-T-026w (F)												
A-T-027s	06/12/2023	06/12/2023		06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023		06/12/2023	06/12/2023	06/12/2023
A-T-028s	06/12/2023	06/12/2023		06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023		06/12/2023	06/12/2023	06/12/2023
A-T-029s	06/12/2023	06/12/2023		06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023		06/12/2023	06/12/2023	06/12/2023
A-T-030s												
A-T-031s	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023
A-T-031w												
A-T-032s	07/12/2023	07/12/2023		07/12/2023	08/12/2023	08/12/2023	11/12/2023	08/12/2023		08/12/2023	08/12/2023	08/12/2023
A-T-032w												
A-T-037s			06/12/2023						06/12/2023			
A-T-037w												
A-T-040s	06/12/2023	06/12/2023		06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023		06/12/2023	06/12/2023	06/12/2023
A-T-042sTCN	05/12/2023	05/12/2023		05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023		05/12/2023	05/12/2023	05/12/2023
A-T-043-s	07/12/2023	07/12/2023		07/12/2023	07/12/2023	07/12/2023	07/12/2023	07/12/2023		07/12/2023	07/12/2023	07/12/2023
A-T-044	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023
A-T-045	01/12/2023	01/12/2023		01/12/2023	01/12/2023	01/12/2023	01/12/2023	01/12/2023		01/12/2023	01/12/2023	01/12/2023
A-T-050s	11/12/2023	11/12/2023		11/12/2023	11/12/2023	11/12/2023	11/12/2023	11/12/2023		11/12/2023	11/12/2023	11/12/2023
A-T-050w												
A-T-052s			04/12/2023						04/12/2023			
A-T-055s	04/12/2023	04/12/2023	04/12/2023	04/12/2023	04/12/2023	04/12/2023	04/12/2023	04/12/2023	04/12/2023	04/12/2023	04/12/2023	04/12/2023
A-T-ANCs												
Calc	08/12/2023	08/12/2023		08/12/2023	08/12/2023	08/12/2023	08/12/2023	08/12/2023		08/12/2023	07/12/2023	07/12/2023
Calc-As Recd	08/12/2023	08/12/2023	08/12/2023	08/12/2023	08/12/2023	08/12/2023	08/12/2023	08/12/2023	08/12/2023	08/12/2023	08/12/2023	08/12/2023

Lab Sample ID	23/11847/1	23/11847/2	23/11847/3	23/11847/4	23/11847/5	23/11847/6	23/11847/7	23/11847/8	23/11847/9	23/11847/10	23/11847/11	23/11847/12
Client Sample No												
Client Sample ID/Depth	WS116 0.0-0.2m	WS115 0.2-0.75m	WS115 0.8-1.2m	WS113 0.5-1.0m	WS112 0.3-0.6m	WS111 0.3-0.6m	ws108 0.0-0.4m	WS109 0.4-1.0m	WS109 1.0-1.3m	WS107 0.0-0.4m	WS106 0.4-0.8m	WS105 0.4-0.8m
Date Sampled	27/11/23	27/11/23	27/11/23	27/11/23	27/11/23	27/11/23	28/11/23	28/11/23	28/11/23	28/11/23	28/11/23	28/11/23
Calc-no stones												
Probe (w)												
Redox			06/12/2023						06/12/2023			

Lab Sample ID	23/11847/13	23/11847/14	23/11847/16	23/11847/17	23/11847/18	23/11847/19
Client Sample No						
Client Sample ID/Depth	WS105A 1.0-1.3m	WS104 0.0-0.4m	WS110 0.3-0.6m	WS110 1.0-1.6m	WS114 0.6-0.9m	WS114 0.3-0.6m
Date Sampled	28/11/23	29/11/23	29/11/23	29/11/23	29/11/23	29/11/23
A-T-004s		05/12/2023				
A-T-006s	08/12/2023					
A-T-007s		08/12/2023				
A-T-019s		07/12/2023	07/12/2023	07/12/2023	07/12/2023	07/12/2023
A-T-022s	08/12/2023	08/12/2023	07/12/2023	08/12/2023	08/12/2023	08/12/2023
A-T-024s		07/12/2023	07/12/2023	07/12/2023	07/12/2023	07/12/2023
A-T-025w		11/12/2023				
A-T-026s		06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023
A-T-026w		11/12/2023				
A-T-026w (F)		11/12/2023				
A-T-027s		06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023
A-T-028s		06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023
A-T-029s		06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023
A-T-030s		05/12/2023				
A-T-031s	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023
A-T-031w		11/12/2023				
A-T-032s		08/12/2023	08/12/2023	08/12/2023	08/12/2023	08/12/2023
A-T-032w		11/12/2023				
A-T-037s	06/12/2023					
A-T-037w		11/12/2023				
A-T-040s		06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023
A-T-042sTCN		05/12/2023	05/12/2023	05/12/2023	05/12/2023	05/12/2023
A-T-043-s		07/12/2023	07/12/2023	07/12/2023	07/12/2023	07/12/2023
A-T-044	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023
A-T-045		01/12/2023	01/12/2023	01/12/2023	01/12/2023	01/12/2023
A-T-050s		11/12/2023	11/12/2023	11/12/2023	11/12/2023	11/12/2023
A-T-050w		11/12/2023				
A-T-052s	04/12/2023					
A-T-055s	04/12/2023	04/12/2023	04/12/2023	04/12/2023	04/12/2023	04/12/2023
A-T-ANCs		06/12/2023				
Calc		07/12/2023	07/12/2023	07/12/2023	07/12/2023	07/12/2023
Calc-As Recd	08/12/2023	08/12/2023	07/12/2023	08/12/2023	08/12/2023	08/12/2023
Calc-no stones		11/12/2023				
Probe (w)		11/12/2023				

Lab Sample ID	23/11847/13	23/11847/14	23/11847/16	23/11847/17	23/11847/18	23/11847/19
Client Sample No						
Client Sample ID/Depth	WS105A 1.0-1.3m	WS104 0.0-0.4m	WS110 0.3-0.6m	WS110 1.0-1.6m	WS114 0.6-0.9m	WS114 0.3-0.6m
Date Sampled	28/11/23	29/11/23	29/11/23	29/11/23	29/11/23	29/11/23
Redox	06/12/2023					

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

Final Test Report

Envirolab Job Number:	23/11847
Issue Number:	1
Date:	11-Dec-23
Client:	Sutcliffe 18-20 Harrington Street Liverpool L2 9QA Coventry CV3 4LJ
Project Manager:	(Use) D Evans; D Bowen; A Tosh; W Baldwin/(Use) Sa
Project Name:	Cheetham Hill
Project Ref:	33716LG
Order No:	10089
Date Samples Received:	29-Nov-23
Date Instructions Received:	30-Nov-23
Date Analysis Completed:	11-Dec-23

Notes - Soil analysis

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

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General

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

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

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

Predominant Matrix Codes: 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

Secondary Matrix Codes: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

HWOL TPH Code: EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:

[redacted]

Richard Wong
Client Manager

Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Sample Details								Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	23/11847/14				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample Number										
Client Sample ID				WS104						
Depth to Top				0						
Depth to Bottom				0.40						
Date Sampled				29/11/2023						
Sample Type				Soil						
Sample Matrix Code				6AE						
Solid Waste Analysis										
pH (pH Units)$_D$	A-T-031	N	N	**6.94**				-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N	**0.02**				-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N	**<0.01**				-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	N	N	**2.9**				-	-	10
Total Organic Carbon (%)$_D$	A-T-032	N	N	**0.75**				3	5	6
PAH Sum of 17 (mg/kg) $_A$	A-T-019	N	N	**0.52**				100	-	-
Mineral Oil (mg/kg)$_{A\ EH_CU_1D_AL}$	A-T-007	N	N	**<10**				500	-	-
Sum of 7 PCBs (mg/kg)$_A$	A-T-004	N	N	**<0.007**				1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N	**<0.01**				6	-	-
Eluate Analysis				**2:1**	**8:1**	**2:1**	**Cumulative 10:1**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)**		
				mg/l		**mg/kg**				
Arsenic	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.5	2	25
Barium	A-T-025	N	N	0.045	0.040	0.103	**0.420**	20	100	300
Cadmium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.04	1	5
Chromium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.5	10	70
Copper	A-T-025	N	N	0.005	0.004	0.011	**0.040**	2	50	100
Mercury	A-T-025	N	N	<0.0005	<0.0005	<0.001	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.5	10	30
Nickel	A-T-025	N	N	<0.002	<0.002	<0.004	**<0.02**	0.4	10	40
Lead	A-T-025	N	N	0.003	0.007	0.007	**0.070**	0.5	10	50
Antimony	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.06	0.7	5
Selenium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.1	0.5	7
Zinc	A-T-025	N	N	0.010	0.017	0.023	**0.170**	4	50	200
Chloride	A-T-026	N	N	5	2	12	**22**	800	15000	25000
Fluoride	A-T-026	N	N	0.4	0.2	0.8	**2.0**	10	150	500
Sulphate as SO_4	A-T-026	N	N	2	5	4	**50**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	85	26	194	**335**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	<0.01	<0.02	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<20.0	<20.0	<40	**<200**	500	800	1000
Leach Test Information										
pH (pH Units)	A-T-031	N	N	7.4	7.3					
Conductivity (µS/cm)	A-T-037	N	N	171	52					
Mass Sample (kg)				0.225						
Dry Matter (%)	A-T-044	N	N	77.7						
Stage 1										
Volume Leachant, L_2 (l)	A-T-046			0.350						
Filtered Eluate Volume, VE_1 (l)	A-T-046			0.200						
Stage 2										
Volume Leachant, L_8 (l)	A-T-046			1.400						

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/12007
Issue Number: 1 **Date:** 21 December, 2023

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

Project Manager: (Use) D Evans; D Bowen; A Tosh; W Baldwin/(Use) Sa
Project Name: Cheetham Hill, Manchester
Project Ref: 33716LG
Order No: 10120
Date Samples Received: 04/12/23
Date Instructions Received: 05/12/23
Date Analysis Completed: 21/12/23

Approved by:



Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 23/12007

Client Project Name: Cheetham Hill, Manchester

Client Project Ref: 33716LG

Lab Sample ID	23/12007/1	23/12007/2	23/12007/3	23/12007/4	23/12007/5	23/12007/6	23/12007/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS103	WS102	WS101	WS101	TP102	TP101	TP101			
Depth to Top	0.00	0.20	0.40	1.00	0.20	0.00	0.30			
Depth To Bottom	0.40	0.60	1.00	1.50	0.50	0.30	0.80			
Date Sampled	30-Nov-23	30-Nov-23	30-Nov-23	30-Nov-23	01-Dec-23	01-Dec-23	01-Dec-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	4AE	6ABDE	6AB	6AB	4AB	6ABE	4AB			
Hazardous Waste Assessment	-	Appended	-	Appended	Appended	-	-			Assessment
% Moisture at <40C$_A$	17.4	12.0	11.8	18.2	13.9	16.1	16.2	% w/w	0.1	A-T-044
% Stones >10mm$_A$	25.4	<0.1	36.3	1.7	46.4	17.5	19.1	% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	8.59	7.63	8.35	8.22	8.56	8.03	8.37	pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	0.05	0.01	<0.01	-	0.04	0.02	0.03	g/l	0.01	A-T-026s
Sulphate (acid soluble)$_D$$^{M\#}$	1600	<200	370	-	1400	640	890	mg/kg	200	A-T-028s
Cyanide (total)$_A$$^{M\#}$	<1	<1	<1	-	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_A$	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Sulphide$_A$	70	110	52	-	62	66	57	mg/kg	5	A-T-043-s
Sulphur (elemental)$_D$$^{M\#}$	10	<5	38	-	8	50	12	mg/kg	5	A-T-029s
Organic Matter$_D$$^{M\#}$	4.3	8.2	3.5	-	3.6	6.4	4.0	% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	6	3	6	10	4	7	6	mg/kg	1	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	1.0	1.0	0.8	1.1	0.5	1.0	1.0	mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	37	27	30	36	19	38	32	mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	21	25	22	21	15	17	20	mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-040s
Chromium (trivalent)	21	25	22	-	15	17	20	mg/kg	1	Calc
Lead$_D$$^{M\#}$	62	43	87	123	28	106	106	mg/kg	1	A-T-024s
Mercury$_D$	0.61	<0.17	0.40	0.26	0.54	0.53	0.54	mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	19	30	16	21	14	17	17	mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	160	59	92	136	96	92	123	mg/kg	5	A-T-024s

Envirolab Job Number: 23/12007

Client Project Name: Cheetham Hill, Manchester

Client Project Ref: 33716LG

Lab Sample ID	23/12007/1	23/12007/2	23/12007/3	23/12007/4	23/12007/5	23/12007/6	23/12007/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS103	WS102	WS101	WS101	TP102	TP101	TP101			
Depth to Top	0.00	0.20	0.40	1.00	0.20	0.00	0.30			
Depth To Bottom	0.40	0.60	1.00	1.50	0.50	0.30	0.80			
Date Sampled	30-Nov-23	30-Nov-23	30-Nov-23	30-Nov-23	01-Dec-23	01-Dec-23	01-Dec-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	4AE	6ABDE	6AB	6AB	4AB	6ABE	4AB			
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	Amosite & Chrysotile	NAD	NAD	NAD	NAD	NAD			A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope)$_{D}$	-	Loose Fibres	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A	N/A	N/A	N/A	N/A			A-T-045
Asbestos in Soil Quantification % (Hand Picking & Weighing)										
Asbestos in soil % composition (hand picking and weighing)$_{D}$	-	<0.001	-	-	-	-	-	% w/w	0.001	A-T-054

Envirolab Job Number: 23/12007

Client Project Name: Cheetham Hill, Manchester

Client Project Ref: 33716LG

Lab Sample ID	23/12007/1	23/12007/2	23/12007/3	23/12007/4	23/12007/5	23/12007/6	23/12007/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS103	WS102	WS101	WS101	TP102	TP101	TP101			
Depth to Top	0.00	0.20	0.40	1.00	0.20	0.00	0.30			
Depth To Bottom	0.40	0.60	1.00	1.50	0.50	0.30	0.80			
Date Sampled	30-Nov-23	30-Nov-23	30-Nov-23	30-Nov-23	01-Dec-23	01-Dec-23	01-Dec-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	4AE	6ABDE	6AB	6AB	4AB	6ABE	4AB			
PAH-16MS										
Acenaphthene$_A^{M\#}$	0.30	0.02	0.02	0.16	0.22	0.53	0.08	mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	0.03	<0.01	<0.01	<0.01	0.03	0.06	0.02	mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	0.46	0.06	0.05	0.18	0.49	1.11	0.17	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	1.53	0.15	0.23	0.49	1.48	3.39	0.81	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	1.35	0.10	0.21	0.25	1.19	3.26	0.78	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	1.73	0.15	0.31	0.42	1.60	4.15	1.13	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	0.92	0.06	0.16	0.12	0.70	1.79	0.47	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	0.55	<0.07	0.11	0.17	0.56	1.44	0.36	mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	1.63	0.15	0.27	0.59	1.49	3.60	0.92	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A$	0.16	<0.04	<0.04	<0.04	0.13	0.33	0.09	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	3.31	0.39	0.47	1.33	3.44	7.59	1.52	mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	0.17	0.01	0.01	0.10	0.24	0.41	0.05	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	1.00	0.07	0.17	0.13	0.79	2.00	0.52	mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	0.07	<0.03	0.04	<0.03	0.17	0.22	0.06	mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	2.01	0.25	0.23	0.91	2.32	4.92	0.74	mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	3.10	0.33	0.45	1.31	3.16	6.99	1.49	mg/kg	0.07	A-T-019s
Total PAH-16MS$_A$	18.3	1.74	2.73	6.16	18	41.8	9.21	mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/12007

Client Project Name: Cheetham Hill, Manchester

Client Project Ref: 33716LG

Lab Sample ID	23/12007/1	23/12007/2	23/12007/3	23/12007/4	23/12007/5	23/12007/6	23/12007/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS103	WS102	WS101	WS101	TP102	TP101	TP101			
Depth to Top	0.00	0.20	0.40	1.00	0.20	0.00	0.30			
Depth To Bottom	0.40	0.60	1.00	1.50	0.50	0.30	0.80			
Date Sampled	30-Nov-23	30-Nov-23	30-Nov-23	30-Nov-23	01-Dec-23	01-Dec-23	01-Dec-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	4AE	6ABDE	6AB	6AB	4AB	6ABE	4AB			
Speciated PCB-WHO12										
PCB BZ 81$_A^{M\#}$	<0.005^U	-	-	-	-	-	-	mg/kg	0.005	A-T-004s
PCB BZ 105$_A^{M\#}$	<0.005^U	-	-	-	-	-	-	mg/kg	0.005	A-T-004s
PCB BZ 114$_A^{M\#}$	<0.005^U	-	-	-	-	-	-	mg/kg	0.005	A-T-004s
PCB BZ 118$_A^{M\#}$	<0.007	-	-	-	-	-	-	mg/kg	0.007	A-T-004s
PCB BZ 123$_A^{M\#}$	<0.005^U	-	-	-	-	-	-	mg/kg	0.005	A-T-004s
PCB BZ 126$_A^{M\#}$	<0.005^U	-	-	-	-	-	-	mg/kg	0.005	A-T-004s
PCB BZ 156$_A^{M\#}$	<0.005^U	-	-	-	-	-	-	mg/kg	0.005	A-T-004s
PCB BZ 157$_A^{M\#}$	<0.005^U	-	-	-	-	-	-	mg/kg	0.005	A-T-004s
PCB BZ 167$_A^{M\#}$	<0.005^U	-	-	-	-	-	-	mg/kg	0.005	A-T-004s
PCB BZ 169$_A^{M\#}$	<0.005^U	-	-	-	-	-	-	mg/kg	0.005	A-T-004s
PCB BZ 189$_A^{M\#}$	<0.005^U	-	-	-	-	-	-	mg/kg	0.005	A-T-004s
PCB BZ 77$_A^{M\#}$	<0.005^U	-	-	-	-	-	-	mg/kg	0.005	A-T-004s
Total Speciated PCB-WHO12$_A^{M\#}$	<0.007	-	-	-	-	-	-	mg/kg	0.005	A-T-004s
TPH Total with ID + GC Trace										
TPH total (>C6-C40)$_A^{M\#}$	-	95	-	101	757	-	-	mg/kg	10	A-T-007s
TPH FID Chromatogram$_A$	-	Appended	-	Appended	Appended	-	-			A-T-007s
TPH ID Interpretation$_A$	-	C10-C44 with PAHs and other unknown hydrocarbons	-	C10-C44 with PAHs and other unknown hydrocarbons	C10-C44 with PAHs and other unknown hydrocarbons	-	-			A-T-007s

Envirolab Job Number: 23/12007

Client Project Name: Cheetham Hill, Manchester

Client Project Ref: 33716LG

Lab Sample ID	23/12007/1	23/12007/2	23/12007/3	23/12007/4	23/12007/5	23/12007/6	23/12007/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS103	WS102	WS101	WS101	TP102	TP101	TP101			
Depth to Top	0.00	0.20	0.40	1.00	0.20	0.00	0.30			
Depth To Bottom	0.40	0.60	1.00	1.50	0.50	0.30	0.80			
Date Sampled	30-Nov-23	30-Nov-23	30-Nov-23	30-Nov-23	01-Dec-23	01-Dec-23	01-Dec-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	4AE	6ABDE	6AB	6AB	4AB	6ABE	4AB			
TPH UKCWG with Clean Up										
Ali >C5-C6$_A$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8$_A$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<10	<1	<1	-	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<10	<1	<1	-	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	<10	<1	<1	-	<1	2	<1	mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	<10	<1	1	-	2	2	<1	mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	85	8	17	-	138	22	11	mg/kg	1	A-T-055s
Ali >C35-C44$_A$	20	2	7	-	37	14	5	mg/kg	1	A-T-055s
Total Aliphatics$_A$	105	10	26	-	177	39	16	mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	<10	<1	<1	-	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<10	<1	<1	-	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C12-C16$_A$	<10	2	2	-	6	12	5	mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	23	6	7	-	33	53	24	mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	60	17	30	-	136	180	78	mg/kg	1	A-T-055s
Aro >C35-C44$_A$	12	1	8	-	49	15	5	mg/kg	1	A-T-055s
Total Aromatics$_A$	94	26	46	-	224	261	112	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C44)$_A$	199	36	72	-	402	300	128	mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s

Envirolab Job Number: 23/12007

Client Project Name: Cheetham Hill, Manchester

Client Project Ref: 33716LG

Lab Sample ID	23/12007/8	23/12007/9	23/12007/10	23/12007/11	23/12007/12			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP106	TP104	TP105	TP103	TP108					
Depth to Top	0.30	2.00	1.00	0.30	0.30					
Depth To Bottom	0.60	2.50	1.50	0.75	0.75					
Date Sampled	01-Dec-23	01-Dec-23	01-Dec-23	01-Dec-23	01-Dec-23					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL					
Sample Matrix Code	4AB	6AE	4AE	4ABE	4ABE					
% Moisture at <40C$_A$	12.1	16.8	14.6	-	20.1			% w/w	0.1	A-T-044
% Stones >10mm$_A$	<0.1	0.2	26.5	16.7	8.8			% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	7.96	8.26	7.89	-	7.66			pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	0.01	0.03	0.01	-	0.03			g/l	0.01	A-T-026s
Sulphate (acid soluble)$_D$$^{M\#}$	810	340	480	-	720			mg/kg	200	A-T-028s
Cyanide (total)$_A$$^{M\#}$	<1	<1	<1	-	<1			mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_A$	<0.2	<0.2	<0.2	-	<0.2			mg/kg	0.2	A-T-050s
Sulphide$_A$	75	97	66	-	73			mg/kg	5	A-T-043-s
Sulphur (elemental)$_D$$^{M\#}$	<5	150	17	-	70			mg/kg	5	A-T-029s
Organic Matter$_D$$^{M\#}$	3.1	6.8	4.6	-	6.4			% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	7	4	12	-	8			mg/kg	1	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	<1.0	1.1	<1.0	-	<1.0			mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	0.7	1.1	1.2	-	1.0			mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	31	45	49	-	36			mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	17	33	19	-	23			mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1	<1	-	<1			mg/kg	1	A-T-040s
Chromium (trivalent)	17	33	19	-	23			mg/kg	1	Calc
Lead$_D$$^{M\#}$	107	56	108	-	92			mg/kg	1	A-T-024s
Mercury$_D$	0.24	0.22	0.43	-	0.36			mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	16	30	18	-	19			mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	<1	<1	-	<1			mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	69	52	86	-	115			mg/kg	5	A-T-024s

Envirolab Job Number: 23/12007

Client Project Name: Cheetham Hill, Manchester

Client Project Ref: 33716LG

Lab Sample ID	23/12007/8	23/12007/9	23/12007/10	23/12007/11	23/12007/12			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP106	TP104	TP105	TP103	TP108					
Depth to Top	0.30	2.00	1.00	0.30	0.30					
Depth To Bottom	0.60	2.50	1.50	0.75	0.75					
Date Sampled	01-Dec-23	01-Dec-23	01-Dec-23	01-Dec-23	01-Dec-23					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL					
Sample Matrix Code	4AB	6AE	4AE	4ABE	4ABE					
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	Chrysotile	NAD	NAD	-	NAD					A-T-045
Asbestos Matrix (visual)$_{D}$	Cement	-	-	-	-					A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-	-					A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	No	N/A	N/A	-	N/A					A-T-045
Asbestos in Soil Quantification % (Hand Picking & Weighing)										
Asbestos in soil % composition (hand picking and weighing)$_{D}$	0.032	-	-	-	-			% w/w	0.001	A-T-054

Envirolab Job Number: 23/12007

Client Project Name: Cheetham Hill, Manchester

Client Project Ref: 33716LG

Lab Sample ID	23/12007/8	23/12007/9	23/12007/10	23/12007/11	23/12007/12			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP106	TP104	TP105	TP103	TP108					
Depth to Top	0.30	2.00	1.00	0.30	0.30					
Depth To Bottom	0.60	2.50	1.50	0.75	0.75					
Date Sampled	01-Dec-23	01-Dec-23	01-Dec-23	01-Dec-23	01-Dec-23					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL					
Sample Matrix Code	4AB	6AE	4AE	4ABE	4ABE					
PAH-16MS										
Acenaphthene$_A^{M\#}$	0.02	0.89	0.12	-	0.08			mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	0.06	0.05	-	0.02			mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	0.05	0.53	0.23	-	0.17			mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	0.22	1.18	0.79	-	0.63			mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.20	1.01	0.74	-	0.51			mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	0.30	1.30	1.14	-	0.74			mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	0.14	0.58	0.40	-	0.31			mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	0.09	0.42	0.34	-	0.27			mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	0.25	1.27	0.91	-	0.72			mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A$	<0.04	0.12	0.08	-	0.06			mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.42	2.53	1.76	-	1.37			mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	0.01	0.49	0.07	-	0.07			mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	0.15	0.61	0.47	-	0.33			mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	0.38	0.03	-	<0.03			mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	0.23	1.97	0.86	-	0.90			mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	0.40	2.63	1.58	-	1.34			mg/kg	0.07	A-T-019s
Total PAH-16MS$_A$	2.48	16	9.57	-	7.52			mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/12007

Client Project Name: Cheetham Hill, Manchester

Client Project Ref: 33716LG

Lab Sample ID	23/12007/8	23/12007/9	23/12007/10	23/12007/11	23/12007/12			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP106	TP104	TP105	TP103	TP108					
Depth to Top	0.30	2.00	1.00	0.30	0.30					
Depth To Bottom	0.60	2.50	1.50	0.75	0.75					
Date Sampled	01-Dec-23	01-Dec-23	01-Dec-23	01-Dec-23	01-Dec-23					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL					
Sample Matrix Code	4AB	6AE	4AE	4ABE	4ABE					
Speciated PCB-WHO12										
PCB BZ 81$_A^{M\#}$	-	-	-	<0.005^U	-			mg/kg	0.005	A-T-004s
PCB BZ 105$_A^{M\#}$	-	-	-	<0.005^U	-			mg/kg	0.005	A-T-004s
PCB BZ 114$_A^{M\#}$	-	-	-	<0.005^U	-			mg/kg	0.005	A-T-004s
PCB BZ 118$_A^{M\#}$	-	-	-	<0.007	-			mg/kg	0.007	A-T-004s
PCB BZ 123$_A^{M\#}$	-	-	-	<0.005^U	-			mg/kg	0.005	A-T-004s
PCB BZ 126$_A^{M\#}$	-	-	-	<0.005^U	-			mg/kg	0.005	A-T-004s
PCB BZ 156$_A^{M\#}$	-	-	-	<0.005^U	-			mg/kg	0.005	A-T-004s
PCB BZ 157$_A^{M\#}$	-	-	-	<0.005^U	-			mg/kg	0.005	A-T-004s
PCB BZ 167$_A^{M\#}$	-	-	-	<0.005^U	-			mg/kg	0.005	A-T-004s
PCB BZ 169$_A^{M\#}$	-	-	-	<0.005^U	-			mg/kg	0.005	A-T-004s
PCB BZ 189$_A^{M\#}$	-	-	-	<0.005^U	-			mg/kg	0.005	A-T-004s
PCB BZ 77$_A^{M\#}$	-	-	-	<0.005^U	-			mg/kg	0.005	A-T-004s
Total Speciated PCB-WHO12$_A^{M\#}$	-	-	-	<0.007	-			mg/kg	0.005	A-T-004s

Envirolab Job Number: 23/12007

Client Project Name: Cheetham Hill, Manchester

Client Project Ref: 33716LG

Lab Sample ID	23/12007/8	23/12007/9	23/12007/10	23/12007/11	23/12007/12			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP106	TP104	TP105	TP103	TP108					
Depth to Top	0.30	2.00	1.00	0.30	0.30					
Depth To Bottom	0.60	2.50	1.50	0.75	0.75					
Date Sampled	01-Dec-23	01-Dec-23	01-Dec-23	01-Dec-23	01-Dec-23					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL					
Sample Matrix Code	4AB	6AE	4AE	4ABE	4ABE					
TPH UKCWG with Clean Up										
Ali >C5-C6$_A$	<0.01	<0.01	<0.01	-	<0.01			mg/kg	0.01	A-T-022s
Ali >C6-C8$_A$	<0.01	<0.01	<0.01	-	<0.01			mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1	<1	<1	-	<1			mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<1	<1	<1	-	<1			mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	<1	<1	<1	-	<1			mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	2	1	<1	-	<1			mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	17	5	18	-	6			mg/kg	1	A-T-055s
Ali >C35-C44$_A$	5	4	6	-	2			mg/kg	1	A-T-055s
Total Aliphatics$_A$	24	10	25	-	8			mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01			mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01			mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	<1	<1	<1	-	<1			mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1	4	<1	-	<1			mg/kg	1	A-T-055s
Aro >C12-C16$_A$	3	11	3	-	2			mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	7	23	15	-	8			mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	38	60	69	-	30			mg/kg	1	A-T-055s
Aro >C35-C44$_A$	3	4	5	-	2			mg/kg	1	A-T-055s
Total Aromatics$_A$	51	101	93	-	42			mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C44)$_A$	75	110	118	-	50			mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01			mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01			mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01			mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01			mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01			mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01			mg/kg	0.01	A-T-022s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

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

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^{o}C / 11550µS/cm @ 20^{o}C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

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

Project: Cheetham Hill, Manchester

Clients Project No: 33716LG

Project No: 23/12007

Date Received: 05/12/2023 (am)

Cool Box Temperatures (°C): 7.1 & 7.2

Lab Sample ID	23/12007/1	23/12007/2	23/12007/3
Client Sample No			
Client Sample ID/Depth	WS103 0.00-0.40m	WS102 0.20-0.60m	WS101 0.40-1.00m
Date Sampled	30/11/23	30/11/23	30/11/23
Deviation Code			
F	✓	✓	✓

Key

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

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/12007/1	23/12007/2	23/12007/3
Client Sample No			
Client Sample ID/Depth	WS103 0.00-0.40m	WS102 0.20-0.60m	WS101 0.40-1.00m
Date Sampled	30/11/23	30/11/23	30/11/23
Sulphide	✓	✓	✓

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

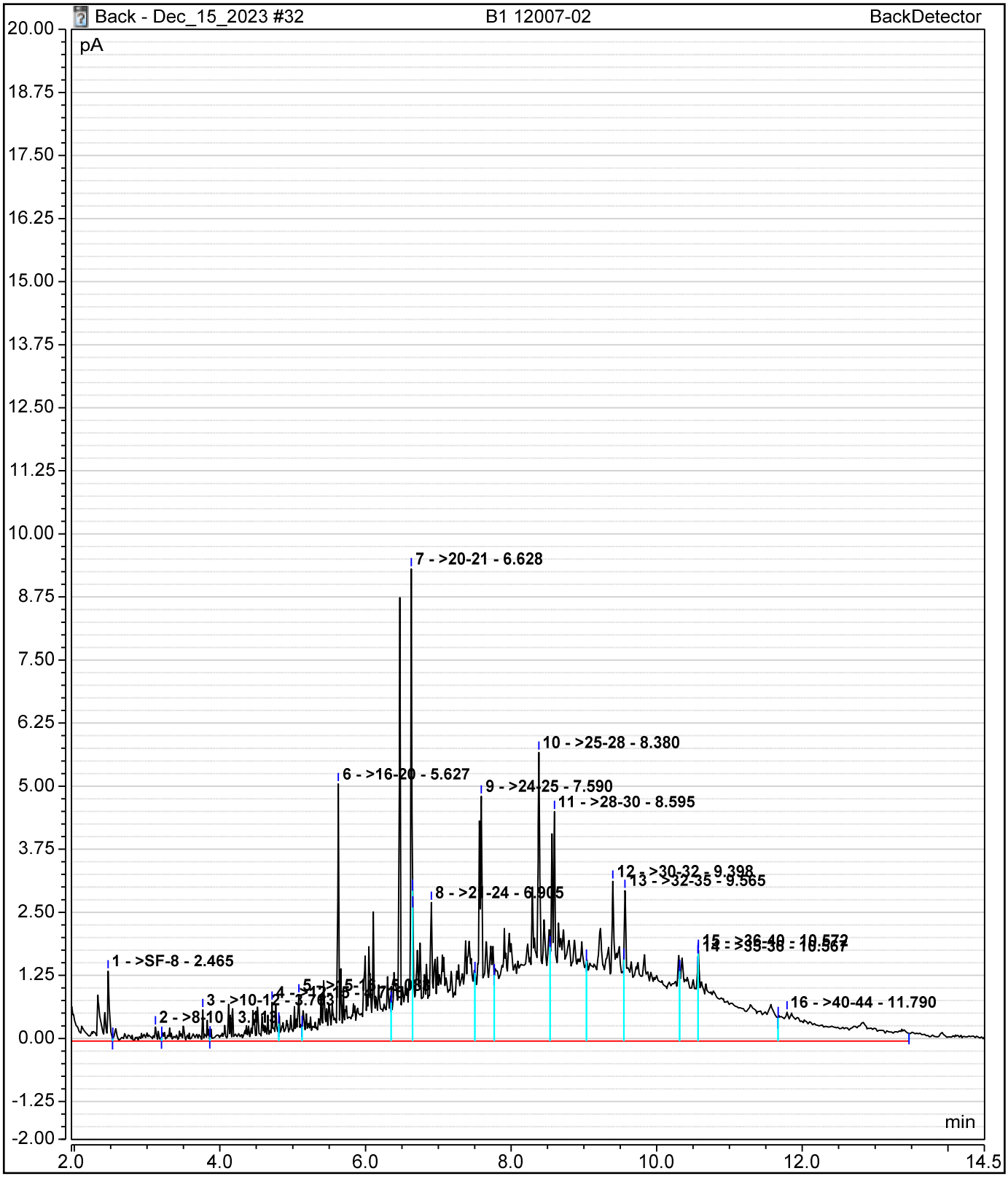
Envirolab Analysis Dates

Lab Sample ID	23/12007/1	23/12007/2	23/12007/3	23/12007/4	23/12007/5	23/12007/6	23/12007/7	23/12007/8	23/12007/9	23/12007/10	23/12007/11	23/12007/12
Client Sample No												
Client Sample ID/Depth	WS103 0.00-0.40m	WS102 0.20-0.60m	WS101 0.40-1.00m	WS101 1.00-1.50m	TP102 0.20-0.50m	TP101 0.00-0.30m	TP101 0.30-0.80m	TP106 0.30-0.60m	TP104 2.00-2.50m	TP105 1.00-1.50m	TP103 0.30-0.75m	TP108 0.30-0.75m
Date Sampled	30/11/23	30/11/23	30/11/23	30/11/23	01/12/23	01/12/23	01/12/23	01/12/23	01/12/23	01/12/23	01/12/23	01/12/23
A-T-004s	11/12/2023										11/12/2023	
A-T-007s		18/12/2023		18/12/2023	18/12/2023							
A-T-019s	11/12/2023	11/12/2023	11/12/2023	11/12/2023	11/12/2023	11/12/2023	11/12/2023	11/12/2023	11/12/2023	11/12/2023		11/12/2023
A-T-022s	11/12/2023	11/12/2023	11/12/2023		11/12/2023	11/12/2023	11/12/2023	11/12/2023	11/12/2023	11/12/2023		11/12/2023
A-T-024s	14/12/2023	14/12/2023	14/12/2023	14/12/2023	14/12/2023	14/12/2023	14/12/2023	14/12/2023	14/12/2023	14/12/2023		14/12/2023
A-T-026s	12/12/2023	12/12/2023	12/12/2023		12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023		12/12/2023
A-T-027s	12/12/2023	12/12/2023	12/12/2023		12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023		12/12/2023
A-T-028s	12/12/2023	12/12/2023	12/12/2023		12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023		12/12/2023
A-T-029s	18/12/2023	18/12/2023	19/12/2023		18/12/2023	19/12/2023	18/12/2023	18/12/2023	18/12/2023	18/12/2023		19/12/2023
A-T-031s	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023		12/12/2023
A-T-032s	14/12/2023	14/12/2023	14/12/2023		14/12/2023	14/12/2023	14/12/2023	14/12/2023	14/12/2023	14/12/2023		14/12/2023
A-T-040s	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023		12/12/2023
A-T-042sTCN	11/12/2023	11/12/2023	11/12/2023		11/12/2023	11/12/2023	11/12/2023	11/12/2023	11/12/2023	11/12/2023		11/12/2023
A-T-043-s	12/12/2023	12/12/2023	12/12/2023		12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023		12/12/2023
A-T-044	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023
A-T-045	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023	06/12/2023		06/12/2023
A-T-050s	15/12/2023	15/12/2023	15/12/2023		15/12/2023	15/12/2023	15/12/2023	15/12/2023	15/12/2023	15/12/2023		15/12/2023
A-T-054		12/12/2023						12/12/2023				
A-T-055s	11/12/2023	11/12/2023	11/12/2023		11/12/2023	11/12/2023	11/12/2023	11/12/2023	11/12/2023	11/12/2023		11/12/2023
Assessment		21/12/2023		21/12/2023	21/12/2023							
Calc	14/12/2023	14/12/2023	14/12/2023		14/12/2023	14/12/2023	14/12/2023	14/12/2023	14/12/2023	14/12/2023		14/12/2023
Calc-As Recd	11/12/2023	11/12/2023	11/12/2023		11/12/2023	11/12/2023	11/12/2023	11/12/2023	11/12/2023	11/12/2023		11/12/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

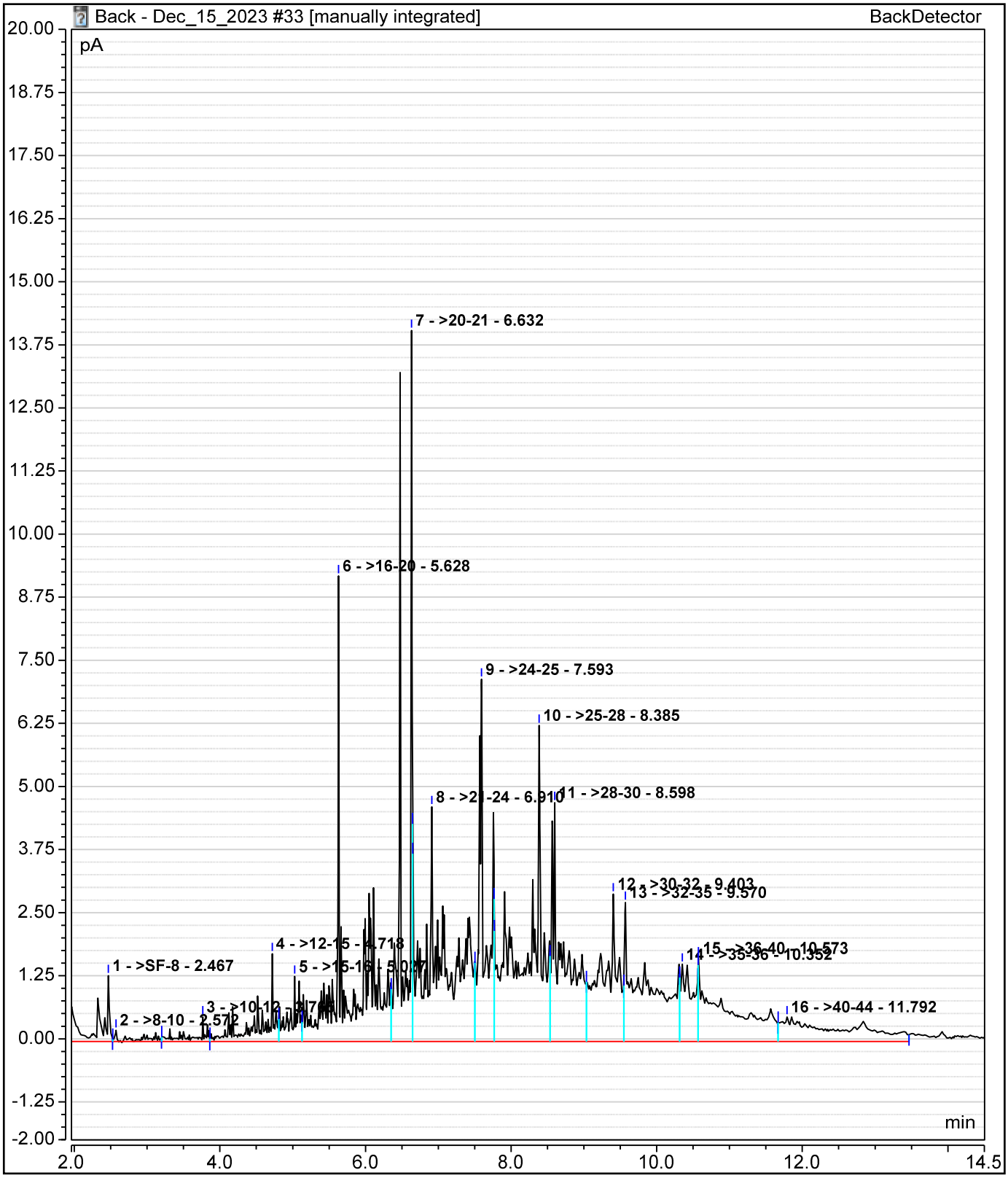
End of Report

Chromatogram



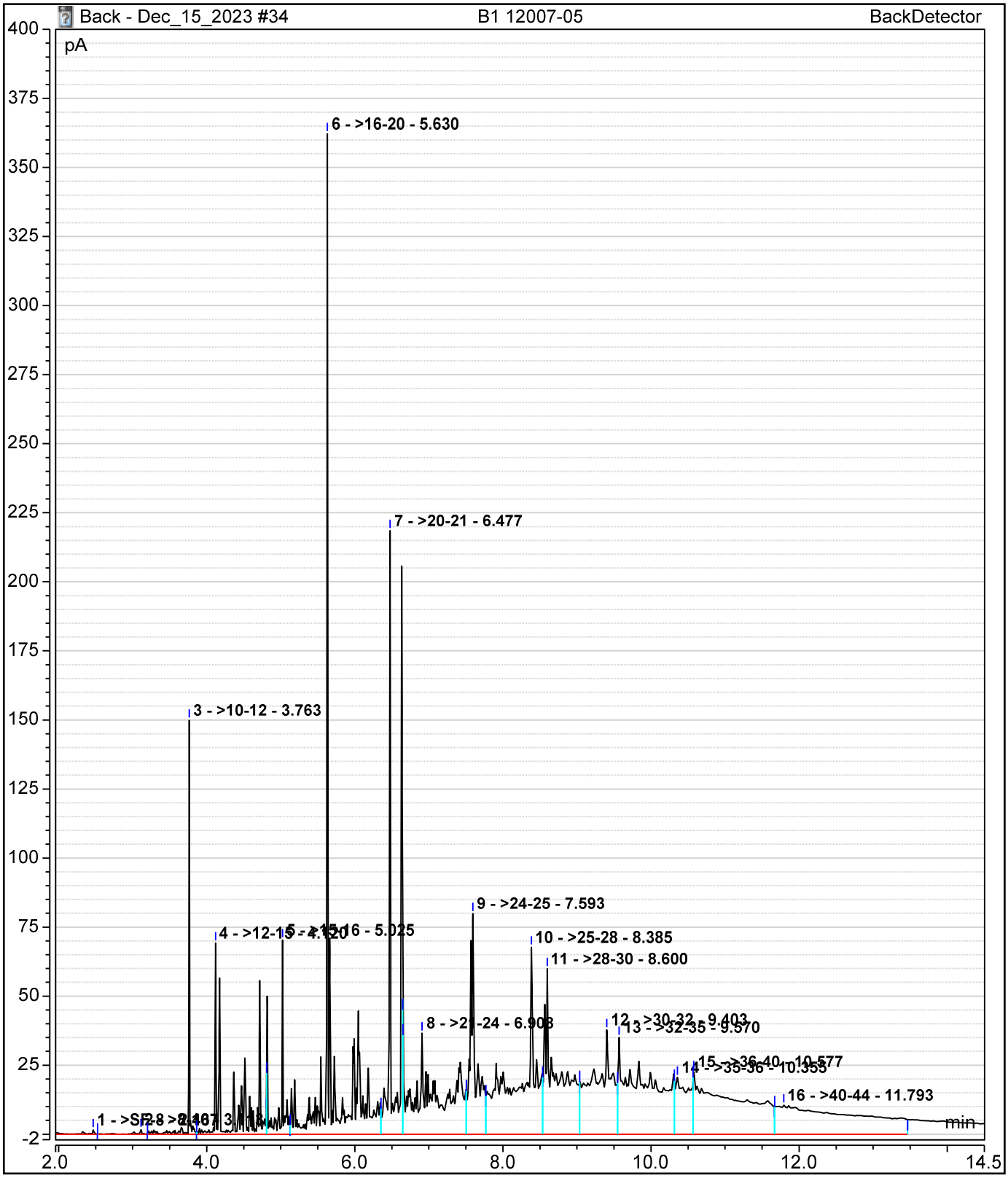
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Chromatogram



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Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/00632
Issue Number: 1 **Date:** 02 February, 2024

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

Project Manager: (Use) D Evans; D Bowen; A Tosh; W Baldwin/(Use) Sa
Project Name: Cheetham
Project Ref: 33716LG
Order No: 10188
Date Samples Received: 22/01/24
Date Instructions Received: 24/01/24
Date Analysis Completed: 02/02/24

Approved by:

[redacted]
Danielle Brierley
Client Services Supervisor

Envirolab Job Number: 24/00632

Client Project Name: Cheetham

Client Project Ref: 33716LG

Lab Sample ID	24/00632/1	24/00632/2	24/00632/3	24/00632/4	24/00632/5			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP101	WS112	WS107	TP108	WS110					
Depth to Top	0.00	0.00	0.00	0.00	0.00					
Depth To Bottom	0.20	0.30	0.30	0.30	0.30					
Date Sampled	19-Jan-24	19-Jan-24	19-Jan-24	19-Jan-24	19-Jan-24					
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES					
Sample Matrix Code	6	6E	6AE	6E	6AE					
% Moisture at <40C$_A$	17.1	25.7	16.3	32.9	19.4			% w/w	0.1	A-T-044
% Stones >10mm$_A$	<0.1	<0.1	35.3	3.4	8.6			% w/w	0.1	A-T-044
Leachate Prep NRA (10:1)$_A$	*	*	*	*	*					A-T-001
pH (leachable)$_A$	7.99	6.99	7.51	7.23	7.67			pH	0.01	A-T-031w
Sulphate (leachable)$_A$	5.36	<1.00	<1.00	1.41	1.89			mg/l	1	A-T-026w
Cyanide (total) (leachable)$_A$	<0.005	<0.005	<0.005	<0.005	<0.005			mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_A$	<0.01	<0.01	<0.01	<0.01	<0.01			mg/l	0.01	A-T-050w
Sulphide (leachable)$_A$	<0.1	<0.1	<0.1	<0.1	<0.1			mg/l	0.1	A-T-043-w
DOC (leachable)$_A$	2.5	6.2	5.6	8.4	4.9			mg/l	2	A-T-032w
Arsenic (leachable)$_A$	<1	<1	5	1	4			µg/l	1	A-T-025w
Boron (leachable)$_A$	11	11	<10	11	12			µg/l	10	A-T-025w
Cadmium (leachable)$_A$	<1	<1	<1	<1	<1			µg/l	1	A-T-025w
Copper (leachable)$_A$	<4	8	20	9	7			µg/l	4	A-T-025w
Chromium (leachable)$_A$	<1	<1	<1	<1	<1			µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	<0.05	<0.05	<0.05	<0.05	<0.05			mg/l	0.05	A-T-040w
Chromium (trivalent)	<0.05	<0.05	<0.05	<0.05	<0.05			mg/l	0.05	Calc
Lead (leachable)$_A$	<1	4	60	11	9			µg/l	1	A-T-025w
Mercury (leachable)$_A$	<0.1	<0.1	<0.1	<0.1	<0.1			µg/l	0.1	A-T-025w
Nickel (leachable)$_A$	<2	<2	<2	<2	<2			µg/l	2	A-T-025w
Selenium (leachable)$_A$	<1	<1	<1	<1	<1			µg/l	1	A-T-025w
Sulphur (elemental/free) (leachable)$_A$	<0.1	<0.1	<0.1	<0.1	<0.1			mg/l	0.1	A-T-029w
Zinc (leachable)$_A$	3	19	19	18	9			µg/l	2	A-T-025w
TPH total (>C6-C40) (leachable)$_A$	<80	<80	<80	<80	<80			µg/l	80	A-T-007w

Envirolab Job Number: 24/00632

Client Project Name: Cheetham

Client Project Ref: 33716LG

Lab Sample ID	24/00632/1	24/00632/2	24/00632/3	24/00632/4	24/00632/5			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP101	WS112	WS107	TP108	WS110					
Depth to Top	0.00	0.00	0.00	0.00	0.00					
Depth To Bottom	0.20	0.30	0.30	0.30	0.30					
Date Sampled	19-Jan-24	19-Jan-24	19-Jan-24	19-Jan-24	19-Jan-24					
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES					
Sample Matrix Code	6	6E	6AE	6E	6AE					
PAH-16MS (leachable)										
Acenaphthene (leachable)$_A$	0.01	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Acenaphthylene (leachable)$_A$	<0.01	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Anthracene (leachable)$_A$	0.04	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Benzo(a)anthracene (leachable)$_A$	0.15	<0.01	0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Benzo(a)pyrene (leachable)$_A$	0.14	<0.01	0.02	<0.01	<0.01			µg/l	0.01	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	0.14	<0.01	0.02	<0.01	<0.01			µg/l	0.01	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	0.07	<0.01	0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	0.06	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Chrysene (leachable)$_A$	0.16	<0.01	0.02	<0.01	<0.01			µg/l	0.01	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	0.03	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Fluoranthene (leachable)$_A$	0.19	<0.01	0.04	<0.01	<0.01			µg/l	0.01	A-T-019w
Fluorene (leachable)$_A$	0.02	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	0.08	<0.01	0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Naphthalene (leachable)$_A$	<0.01	<0.01	<0.01	<0.01	<0.01			µg/l	0.01	A-T-019w
Phenanthrene (leachable)$_A$	0.12	<0.01	0.02	0.01	<0.01			µg/l	0.01	A-T-019w
Pyrene (leachable)$_A$	0.17	<0.01	0.03	<0.01	<0.01			µg/l	0.01	A-T-019w
Total PAH-16MS (leachable)$_A$	1.38	<0.01	0.18	0.01	<0.01			µg/l	0.01	A-T-019w

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

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

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
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5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^{o}C / 11550µS/cm @ 20^{o}C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

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

Project No: 24/00632

Date Received: 24/01/2024 (am)

Project: Cheetham

Cool Box Temperatures (°C): 8.3

Clients Project No: 33716LG

NO DEVIATIONS IDENTIFIED

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

Envirolab Analysis Dates

Lab Sample ID	24/00632/1	24/00632/2	24/00632/3	24/00632/4	24/00632/5
Client Sample No					
Client Sample ID/Depth	TP101 0.00-0.20m	WS112 0.00-0.30m	WS107 0.00-0.30m	TP108 0.00-0.30m	WS110 0.00-0.30m
Date Sampled	19/01/24	19/01/24	19/01/24	19/01/24	19/01/24
A-T-007w	30/01/2024	30/01/2024	30/01/2024	30/01/2024	30/01/2024
A-T-019w	30/01/2024	30/01/2024	30/01/2024	30/01/2024	30/01/2024
A-T-025w	30/01/2024	30/01/2024	30/01/2024	30/01/2024	30/01/2024
A-T-026w	01/02/2024	01/02/2024	01/02/2024	01/02/2024	01/02/2024
A-T-029w	30/01/2024	30/01/2024	30/01/2024	30/01/2024	30/01/2024
A-T-031w	30/01/2024	30/01/2024	30/01/2024	30/01/2024	30/01/2024
A-T-032w	31/01/2024	31/01/2024	31/01/2024	31/01/2024	31/01/2024
A-T-040w	01/02/2024	01/02/2024	01/02/2024	01/02/2024	01/02/2024
A-T-042wTCN	30/01/2024	30/01/2024	30/01/2024	30/01/2024	30/01/2024
A-T-043-w	02/02/2024	02/02/2024	02/02/2024	02/02/2024	02/02/2024
A-T-044	29/01/2024	29/01/2024	29/01/2024	29/01/2024	29/01/2024
A-T-050w	31/01/2024	31/01/2024	31/01/2024	31/01/2024	31/01/2024
Calc	01/02/2024	01/02/2024	01/02/2024	01/02/2024	01/02/2024

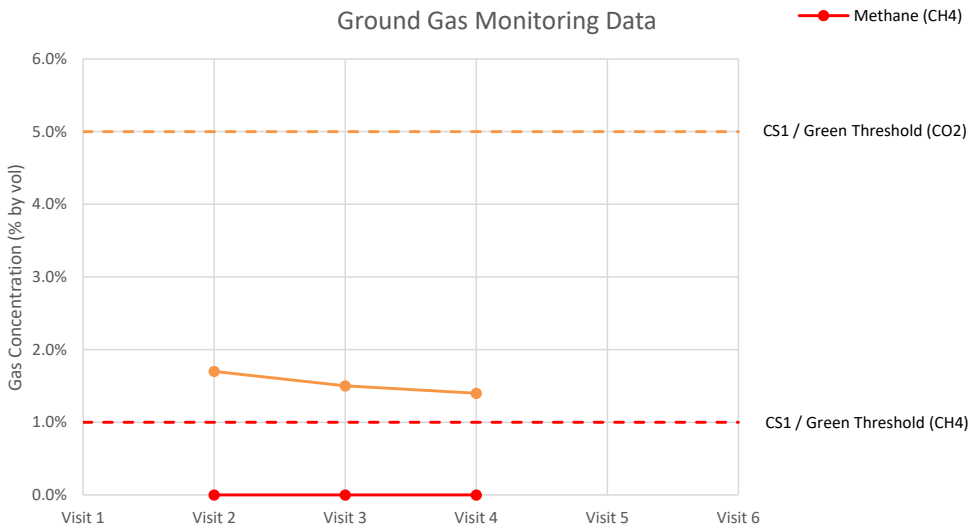
The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

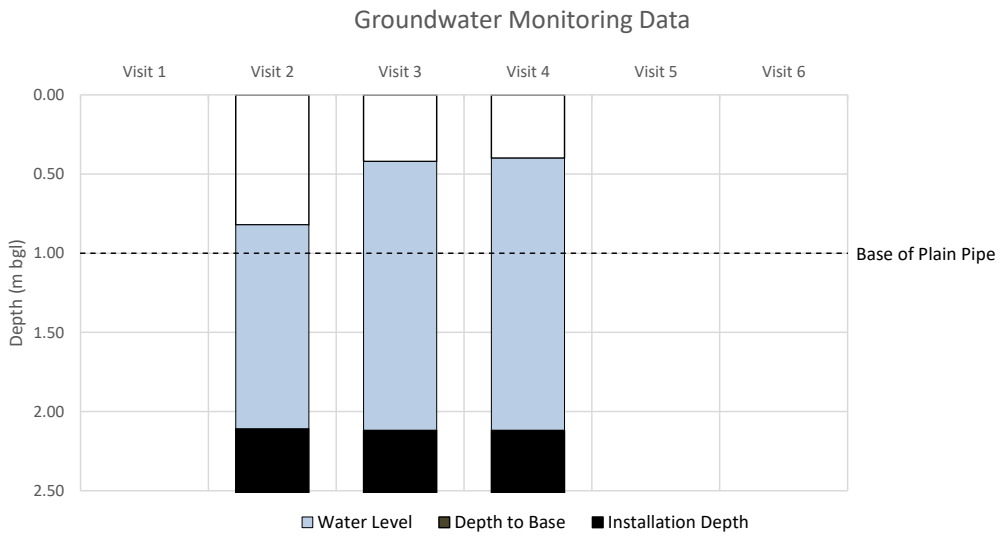
End of Report

Appendix E – Ground Gas & Groundwater Monitoring Data

SUTCLIFFE INVESTIGATIONS	Site Details		Installation Details		Position Ref.:
	Job No.:	33716LG	Installation Date:	30/11/2023	
TEL: 0151 227 3155	Site Name:	Cheetham Hill, Manchester	Installation Depth (m bgl):	2.00	WS103
FAX: 0151 227 3156	Client:	MSV Housing	Base of Plain Pipe (m bgl):	1.00	

Site Monitoring Visit Details							Gas and Groundwater Monitoring Data							Ground Gas Risk Assessment				
Visit No.	Visit Date	Logged By	Weather	Atmospheric Pressure	Pressure Trend	Relative Pressure (mb)	Flow Rate (l/h)	Max CH_4 (% LEL)	Max CH_4 (% by vol)	Max CO_2 (% by vol)	Min O_2 (% by vol)	Water Level (m bgl)	Depth to Base (m bgl)	Gas Type	Max Flow Rate[2] (l/h)	Max Gas Conc.[3] (% by vol)	HGFR[1] (l/h)	Characteristic Situation (CS)
Visit 1	19/01/2024	MW	Cloudy	1008mB	Steady	-	-	#N/A	#N/A	#N/A	#N/A	-	-	CH_4	0.10	0.10	0.0001	CS1
Visit 2	02/02/2024	MW	Cloudy	1015mB	Falling	-	0.00*	#N/A	0.0%	1.7%	15.6%	0.82	2.11					
Visit 3	14/02/2024	MW	Cloudy	1001mB	Steady	-	0.00*	#N/A	0.0%	1.5%	17.0%	0.42	2.12					
Visit 4	01/03/2024	MW	Raining	980mB	Steady	-	0.00*	#N/A	0.0%	1.4%	17.0%	0.40	2.12	CO_2	0.10	1.70	0.0017	CS1
Visit 5	03/04/2024	MW	Raining	988mB	Steady	-	-	#N/A	#N/A	#N/A	#N/A	-	-					
Visit 6	15/04/2024	MW	Cloudy	997mB	Falling	-	-	#N/A	#N/A	#N/A	#N/A	-	-					





Instrument Used:	Accuracy of Instrument (% by volume)	CH_4	CO_2	O_2	Comments:
GFM		± 0.5% @ 5%	± 0.5% @ 5%	± 1.0%	
		± 1.0% @15%	± 1.0% @15%		
		±3.0% @>15%	±3.0% @>15%		

[1] Hazardous Gas Flow Rate Assessment Methodology (HGFR) is the calculation of the maximum gas concentration for the location x maximum flow rate for the location.

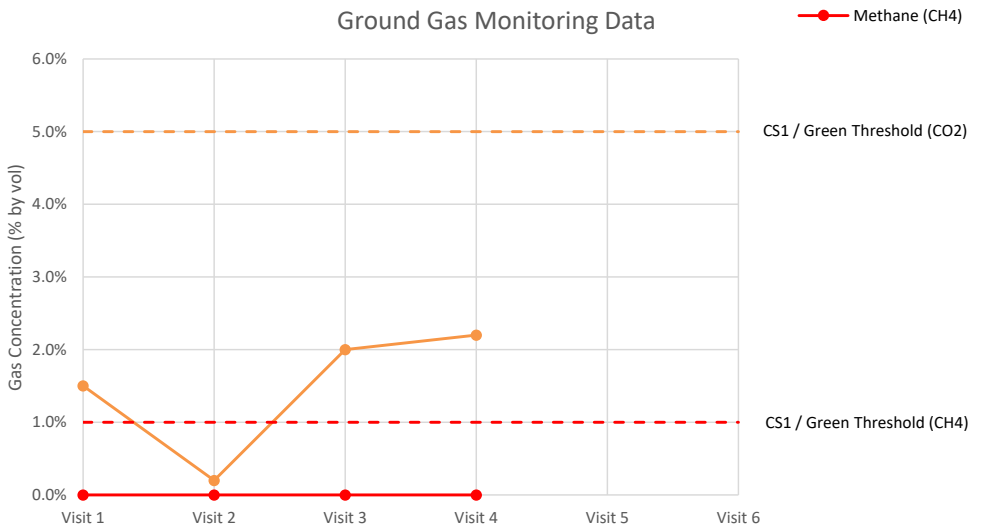
[2] Where maximum recorded flow is <0.1l/h, 0.1l/h has been used to calculate HGFR as recommended in CIRIA C665.

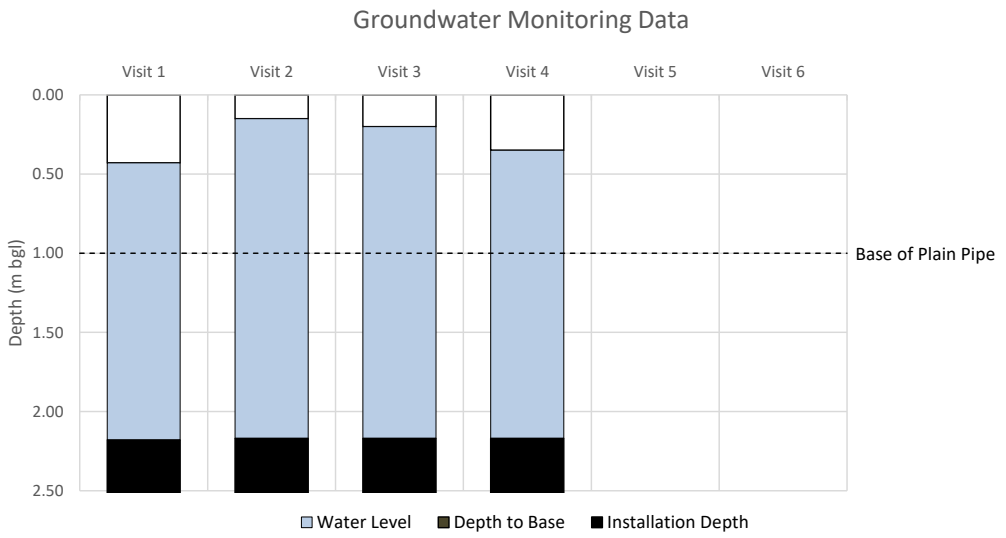
[3] Where maximum recorded concentration is <0.1%, 0.1% has been used as recommended in BS8485.

* Peak flow recorded is likely to be due to a build-up of hydraulic pressure caused by rising water trapping the gas within the solid section of pipe; the initial peak flow is not representative of the rate of gas generation within the ground and can be discounted from the dataset.

SUTCLIFFE INVESTIGATIONS	Site Details		Installation Details		Position Ref.:
	Job No.:	33716LG	Installation Date:	29/11/2023	
TEL: 0151 227 3155	Site Name:	Cheetham Hill, Manchester	Installation Depth (m bgl):	2.00	WS104
FAX: 0151 227 3156	Client:	MSV Housing	Base of Plain Pipe (m bgl):	1.00	

Site Monitoring Visit Details							Gas and Groundwater Monitoring Data							Ground Gas Risk Assessment				
Visit No.	Visit Date	Logged By	Weather	Atmospheric Pressure	Pressure Trend	Relative Pressure (mb)	Flow Rate (l/h)	Max CH_4 (% LEL)	Max CH_4 (% by vol)	Max CO_2 (% by vol)	Min O_2 (% by vol)	Water Level (m bgl)	Depth to Base (m bgl)	Gas Type	Max Flow Rate[2] (l/h)	Max Gas Conc.[3] (% by vol)	HGFR[1] (l/h)	Characteristic Situation (CS)
Visit 1	19/01/2024	MW	Cloudy	1008mB	Steady	-	0.00*	#N/A	0.0%	1.5%	18.4%	0.43	2.18	CH_4	0.10	0.10	0.0001	CS1
Visit 2	02/02/2024	MW	Cloudy	1015mB	Falling	-	0.00*	#N/A	0.0%	0.2%	19.7%	0.15	2.17					
Visit 3	14/02/2024	MW	Cloudy	1001mB	Steady	-	0.00*	#N/A	0.0%	2.0%	12.3%	0.20	2.17					
Visit 4	01/03/2024	MW	Raining	980mB	Steady	-	0.00*	#N/A	0.0%	2.2%	12.5%	0.35	2.17	CO_2	0.10	2.20	0.0022	CS1
Visit 5	03/04/2024	MW	Raining	988mB	Steady	-	-	#N/A	#N/A	#N/A	#N/A	-	-					
Visit 6	15/04/2024	MW	Cloudy	997mB	Falling	-	-	#N/A	#N/A	#N/A	#N/A	-	-					





Instrument Used:	Accuracy of Instrument (% by volume)	CH_4	CO_2	O_2	Comments:
GFM		± 0.5% @ 5%	± 0.5% @ 5%	± 1.0%	
		± 1.0% @15%	± 1.0% @15%		
		±3.0% @>15%	±3.0% @>15%		

[1] Hazardous Gas Flow Rate Assessment Methodology (HGFR) is the calculation of the maximum gas concentration for the location x maximum flow rate for the location.

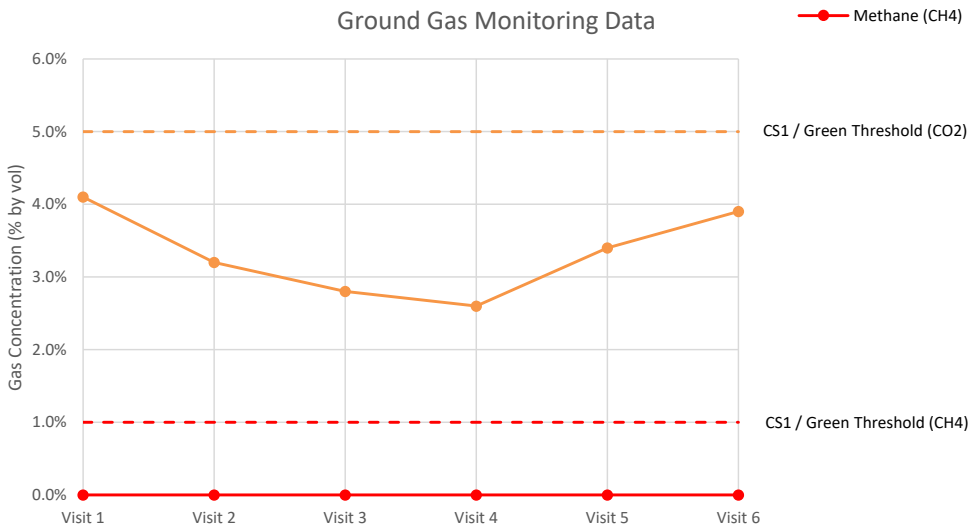
[2] Where maximum recorded flow is <0.1l/h, 0.1l/h has been used to calculate HGFR as recommended in CIRIA C665.

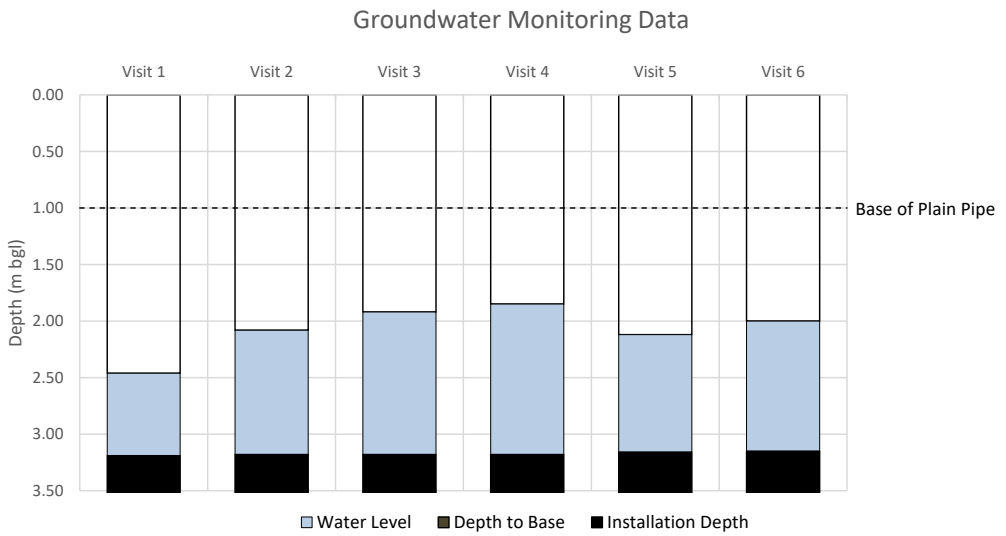
[3] Where maximum recorded concentration is <0.1%, 0.1% has been used as recommended in BS8485.

* Peak flow recorded is likely to be due to a build-up of hydraulic pressure caused by rising water trapping the gas within the solid section of pipe; the initial peak flow is not representative of the rate of gas generation within the ground and can be discounted from the dataset.

SUTCLIFFE INVESTIGATIONS	Site Details		Installation Details		Position Ref.:
	Job No.:	33716LG	Installation Date:	28/11/2023	
TEL: 0151 227 3155	Site Name:	Cheetham Hill, Manchester	Installation Depth (m bgl):	3.00	WS105A
FAX: 0151 227 3156	Client:	MSV Housing	Base of Plain Pipe (m bgl):	1.00	

Site Monitoring Visit Details							Gas and Groundwater Monitoring Data							Ground Gas Risk Assessment				
Visit No.	Visit Date	Logged By	Weather	Atmospheric Pressure	Pressure Trend	Relative Pressure (mb)	Flow Rate (l/h)	Max CH_4 (% LEL)	Max CH_4 (% by vol)	Max CO_2 (% by vol)	Min O_2 (% by vol)	Water Level (m bgl)	Depth to Base (m bgl)	Gas Type	Max Flow Rate[2] (l/h)	Max Gas Conc.[3] (% by vol)	HGFR[1] (l/h)	Characteristic Situation (CS)
Visit 1	19/01/2024	MW	Cloudy	1008mB	Steady	-	0.00	#N/A	0.0%	4.1%	11.3%	2.46	3.19	CH_4	0.10	0.10	0.0001	CS1
Visit 2	02/02/2024	MW	Cloudy	1015mB	Falling	-	0.00	#N/A	0.0%	3.2%	15.1%	2.08	3.18					
Visit 3	14/02/2024	MW	Cloudy	1001mB	Steady	-	0.00	#N/A	0.0%	2.8%	15.5%	1.92	3.18					
Visit 4	01/03/2024	MW	Raining	980mB	Steady	-	0.00	#N/A	0.0%	2.6%	15.9%	1.85	3.18	CO_2	0.10	4.10	0.0041	CS1
Visit 5	03/04/2024	MW	Raining	988mB	Steady	-	0.00	#N/A	0.0%	3.4%	15.2%	2.12	3.16					
Visit 6	15/04/2024	MW	Cloudy	997mB	Falling	-	0.00	#N/A	0.0%	3.9%	14.3%	2.00	3.15					





Instrument Used:	Accuracy of Instrument (% by volume)	CH_4	CO_2	O_2	Comments:
GFM		± 0.5% @ 5%	± 0.5% @ 5%	± 1.0%	
		± 1.0% @15%	± 1.0% @15%		
		±3.0% @>15%	±3.0% @>15%		

[1] Hazardous Gas Flow Rate Assessment Methodology (HGFR) is the calculation of the maximum gas concentration for the location x maximum flow rate for the location.

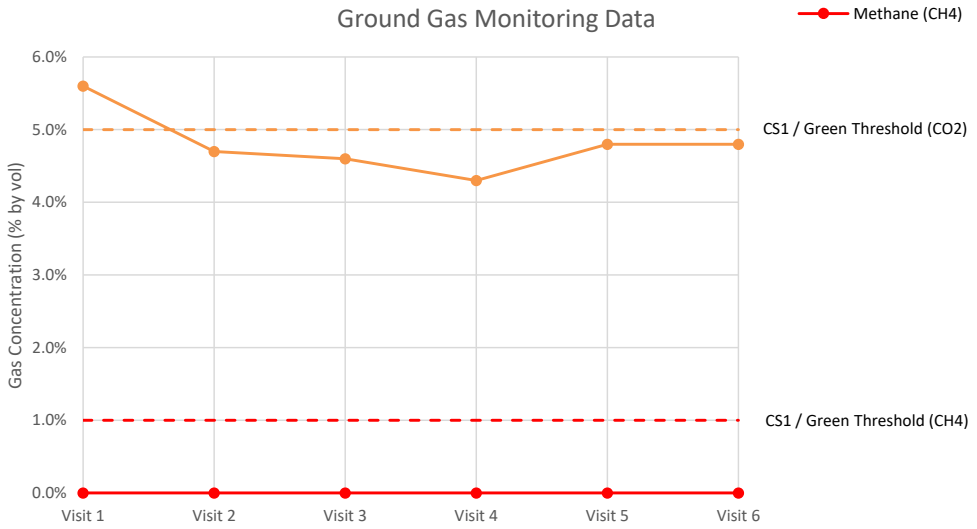
[2] Where maximum recorded flow is <0.1l/h, 0.1l/h has been used to calculate HGFR as recommended in CIRIA C665.

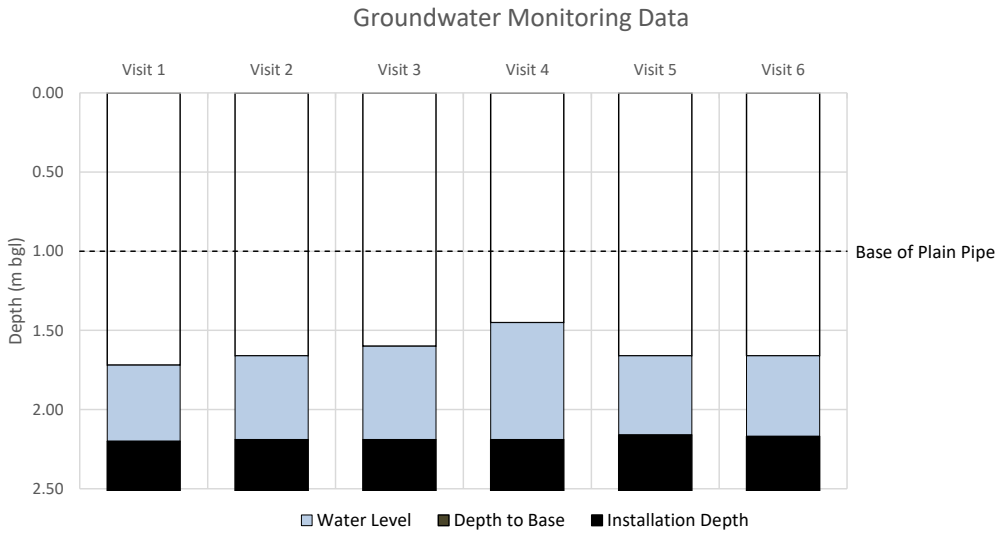
[3] Where maximum recorded concentration is <0.1%, 0.1% has been used as recommended in BS8485.

* Peak flow recorded is likely to be due to a build-up of hydraulic pressure caused by rising water trapping the gas within the solid section of pipe; the initial peak flow is not representative of the rate of gas generation within the ground and can be discounted from the dataset.

SUTCLIFFE INVESTIGATIONS	Site Details		Installation Details		Position Ref.:
	Job No.:	33716LG	Installation Date:	27/11/2023	
TEL: 0151 227 3155	Site Name:	Cheetham Hill, Manchester	Installation Depth (m bgl):	2.00	WS106
FAX: 0151 227 3156	Client:	MSV Housing	Base of Plain Pipe (m bgl):	1.00	

Site Monitoring Visit Details							Gas and Groundwater Monitoring Data							Ground Gas Risk Assessment				
Visit No.	Visit Date	Logged By	Weather	Atmospheric Pressure	Pressure Trend	Relative Pressure (mb)	Flow Rate (l/h)	Max CH_4 (% LEL)	Max CH_4 (% by vol)	Max CO_2 (% by vol)	Min O_2 (% by vol)	Water Level (m bgl)	Depth to Base (m bgl)	Gas Type	Max Flow Rate[2] (l/h)	Max Gas Conc.[3] (% by vol)	HGFR[1] (l/h)	Characteristic Situation (CS)
Visit 1	19/01/2024	MW	Cloudy	1008mB	Steady	-	0.00	#N/A	0.0%	5.6%	7.7%	1.72	2.20	CH_4	0.10	0.10	0.0001	CS1
Visit 2	02/02/2024	MW	Cloudy	1015mB	Falling	-	0.00	#N/A	0.0%	4.7%	10.0%	1.66	2.19					
Visit 3	14/02/2024	MW	Cloudy	1001mB	Steady	-	0.00	#N/A	0.0%	4.6%	13.0%	1.60	2.19					
Visit 4	01/03/2024	MW	Raining	980mB	Steady	-	0.00	#N/A	0.0%	4.3%	13.5%	1.45	2.19	CO_2	0.10	4.80	0.0048	CS1
Visit 5	03/04/2024	MW	Raining	988mB	Steady	-	0.00	#N/A	0.0%	4.8%	15.0%	1.66	2.16					
Visit 6	15/04/2024	MW	Cloudy	997mB	Falling	-	0.00	#N/A	0.0%	4.8%	10.4%	1.66	2.17					





Instrument Used:	Accuracy of Instrument (% by volume)	CH_4	CO_2	O_2	Comments:
GFM		± 0.5% @ 5%	± 0.5% @ 5%	± 1.0%	
		± 1.0% @15%	± 1.0% @15%		
		±3.0% @>15%	±3.0% @>15%		

[1] Hazardous Gas Flow Rate Assessment Methodology (HGFR) is the calculation of the maximum gas concentration for the location x maximum flow rate for the location.

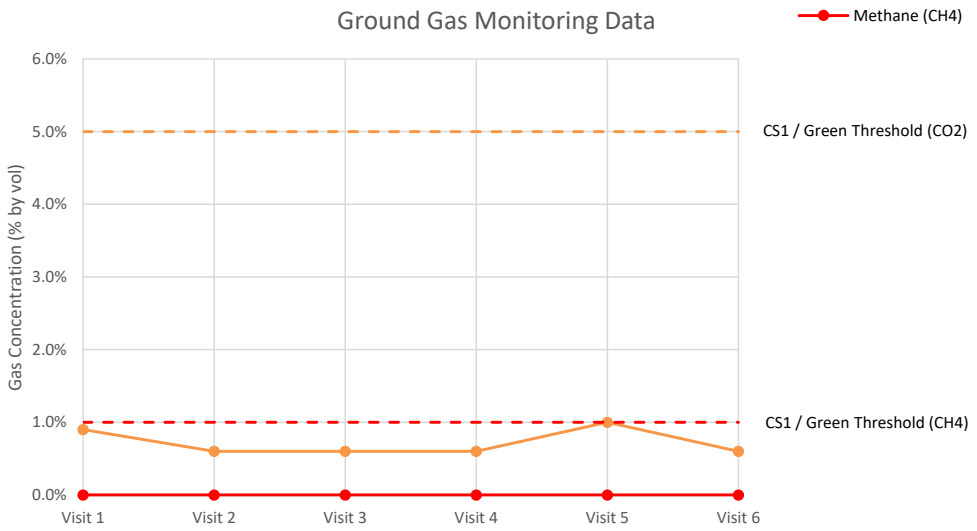
[2] Where maximum recorded flow is <0.1l/h, 0.1l/h has been used to calculate HGFR as recommended in CIRIA C665.

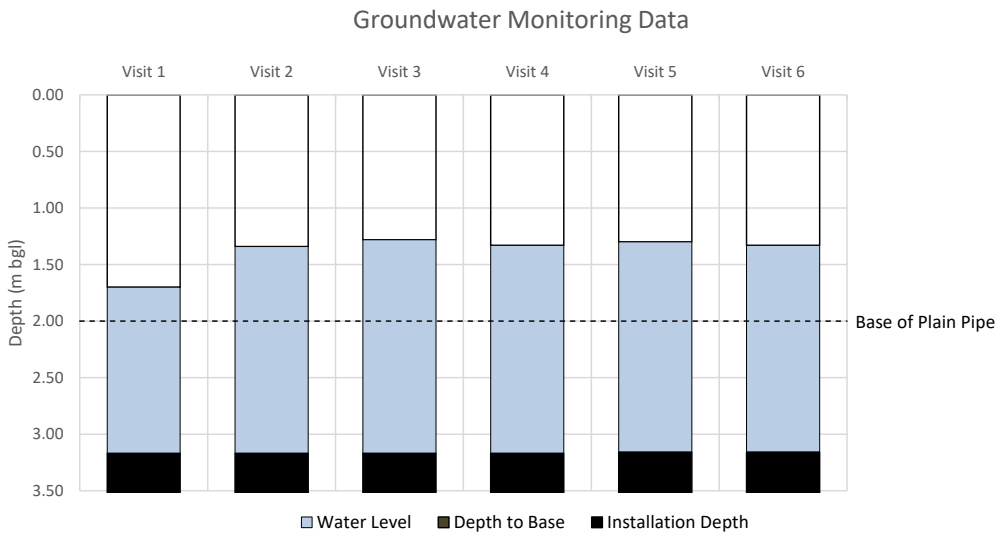
[3] Where maximum recorded concentration is <0.1%, 0.1% has been used as recommended in BS8485.

* Peak flow recorded is likely to be due to a build-up of hydraulic pressure caused by rising water trapping the gas within the solid section of pipe; the initial peak flow is not representative of the rate of gas generation within the ground and can be discounted from the dataset.

SUTCLIFFE INVESTIGATIONS	Site Details		Installation Details		Position Ref.:
	Job No.:	33716LG	Installation Date:	28/11/2023	
TEL: 0151 227 3155	Site Name:	Cheetham Hill, Manchester	Installation Depth (m bgl):	3.00	WS107
FAX: 0151 227 3156	Client:	MSV Housing	Base of Plain Pipe (m bgl):	2.00	

Site Monitoring Visit Details							Gas and Groundwater Monitoring Data							Ground Gas Risk Assessment				
Visit No.	Visit Date	Logged By	Weather	Atmospheric Pressure	Pressure Trend	Relative Pressure (mb)	Flow Rate (l/h)	Max CH_4 (% LEL)	Max CH_4 (% by vol)	Max CO_2 (% by vol)	Min O_2 (% by vol)	Water Level (m bgl)	Depth to Base (m bgl)	Gas Type	Max Flow Rate[2] (l/h)	Max Gas Conc.[3] (% by vol)	HGFR[1] (l/h)	Characteristic Situation (CS)
Visit 1	19/01/2024	MW	Cloudy	1008mB	Steady	-	0.00*	#N/A	0.0%	0.9%	18.2%	1.70	3.17	CH_4	0.10	0.10	0.0001	CS1
Visit 2	02/02/2024	MW	Cloudy	1015mB	Falling	-	0.00*	#N/A	0.0%	0.6%	19.6%	1.34	3.17					
Visit 3	14/02/2024	MW	Cloudy	1001mB	Steady	-	0.00*	#N/A	0.0%	0.6%	19.4%	1.28	3.17					
Visit 4	01/03/2024	MW	Raining	980mB	Steady	-	0.00*	#N/A	0.0%	0.6%	19.2%	1.33	3.17	CO_2	0.10	1.00	0.0010	CS1
Visit 5	03/04/2024	MW	Raining	988mB	Steady	-	0.00*	#N/A	0.0%	1.0%	17.9%	1.30	3.16					
Visit 6	15/04/2024	MW	Cloudy	997mB	Falling	-	0.00*	#N/A	0.0%	0.6%	19.5%	1.33	3.16					





Instrument Used:	Accuracy of Instrument (% by volume)	CH_4	CO_2	O_2	Comments:
GFM		± 0.5% @ 5%	± 0.5% @ 5%	± 1.0%	
		± 1.0% @15%	± 1.0% @15%		
		±3.0% @>15%	±3.0% @>15%		

[1] Hazardous Gas Flow Rate Assessment Methodology (HGFR) is the calculation of the maximum gas concentration for the location x maximum flow rate for the location.

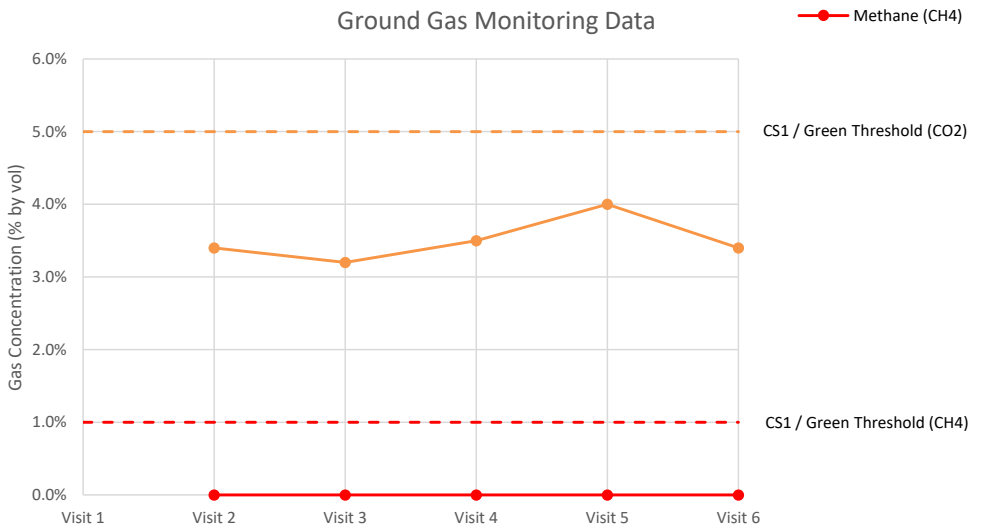
[2] Where maximum recorded flow is <0.1l/h, 0.1l/h has been used to calculate HGFR as recommended in CIRIA C665.

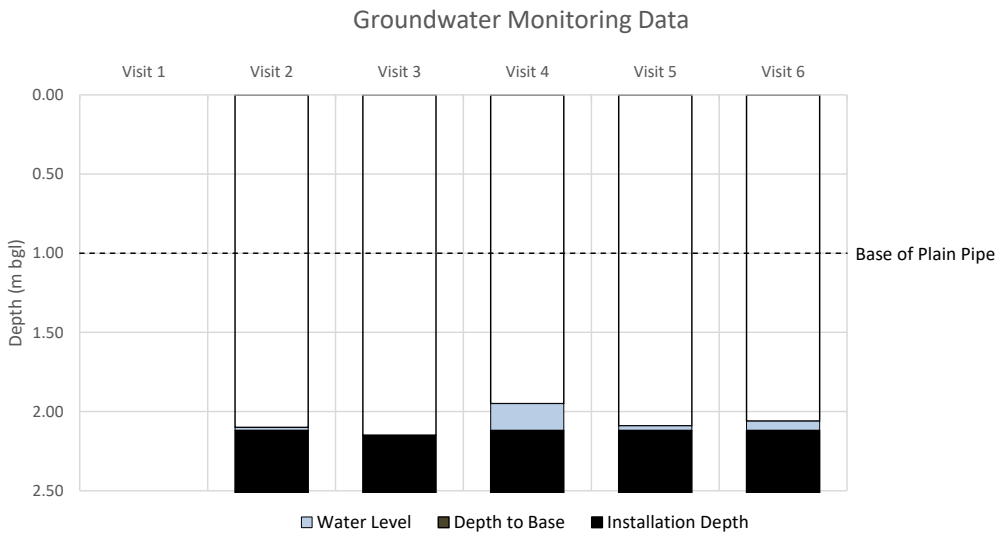
[3] Where maximum recorded concentration is <0.1%, 0.1% has been used as recommended in BS8485.

* Peak flow recorded is likely to be due to a build-up of hydraulic pressure caused by rising water trapping the gas within the solid section of pipe; the initial peak flow is not representative of the rate of gas generation within the ground and can be discounted from the dataset.

SUTCLIFFE INVESTIGATIONS	Site Details		Installation Details		Position Ref.:
	Job No.:	33716LG	Installation Date:	28/11/2023	
TEL: 0151 227 3155	Site Name:	Cheetham Hill, Manchester	Installation Depth (m bgl):	2.00	WS109
FAX: 0151 227 3156	Client:	MSV Housing	Base of Plain Pipe (m bgl):	1.00	

Site Monitoring Visit Details							Gas and Groundwater Monitoring Data							Ground Gas Risk Assessment				
Visit No.	Visit Date	Logged By	Weather	Atmospheric Pressure	Pressure Trend	Relative Pressure (mb)	Flow Rate (l/h)	Max CH_4 (% LEL)	Max CH_4 (% by vol)	Max CO_2 (% by vol)	Min O_2 (% by vol)	Water Level (m bgl)	Depth to Base (m bgl)	Gas Type	Max Flow Rate[2] (l/h)	Max Gas Conc.[3] (% by vol)	HGFR[1] (l/h)	Characteristic Situation (CS)
Visit 1	19/01/2024	MW	Cloudy	1008mB	Steady	-	-	#N/A	#N/A	#N/A	#N/A	-	-					
Visit 2	02/02/2024	MW	Cloudy	1015mB	Falling	-	0.00	#N/A	0.0%	3.4%	15.0%	2.10	2.12	CH_4	0.10	0.10	0.0001	CS1
Visit 3	14/02/2024	MW	Cloudy	1001mB	Steady	-	0.00	#N/A	0.0%	3.2%	19.4%	2.15	2.12					
Visit 4	01/03/2024	MW	Raining	980mB	Steady	-	0.00	#N/A	0.0%	3.5%	19.3%	1.95	2.12					
Visit 5	03/04/2024	MW	Raining	988mB	Steady	-	0.00	#N/A	0.0%	4.0%	10.0%	2.09	2.12	CO_2	0.10	4.00	0.0040	CS1
Visit 6	15/04/2024	MW	Cloudy	997mB	Falling	-	0.00	#N/A	0.0%	3.4%	13.5%	2.06	2.12					





Instrument Used:	Accuracy of Instrument (% by volume)	CH_4	CO_2	O_2	Comments:
GFM		± 0.5% @ 5%	± 0.5% @ 5%	± 1.0%	
		± 1.0% @15%	± 1.0% @15%		
		±3.0% @>15%	±3.0% @>15%		

[1] Hazardous Gas Flow Rate Assessment Methodology (HGFR) is the calculation of the maximum gas concentration for the location x maximum flow rate for the location.

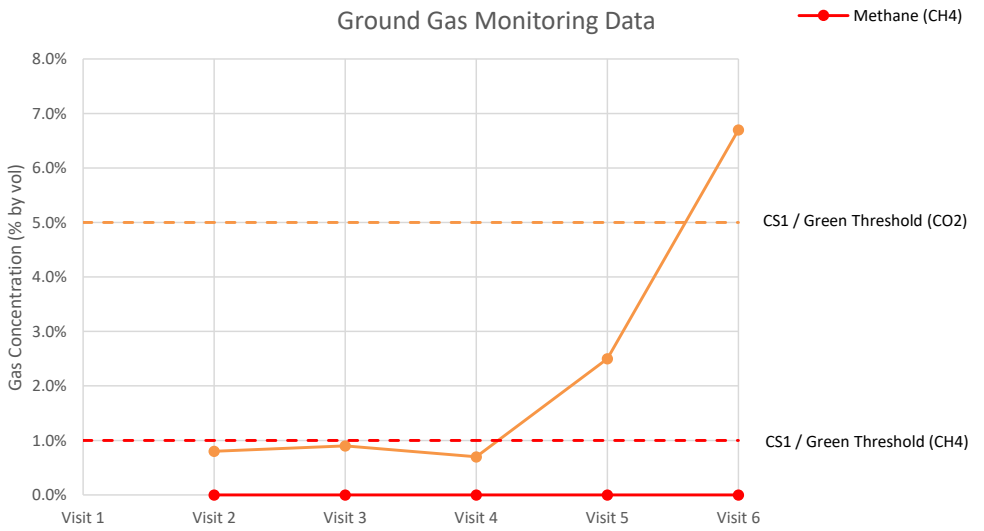
[2] Where maximum recorded flow is <0.1l/h, 0.1l/h has been used to calculate HGFR as recommended in CIRIA C665.

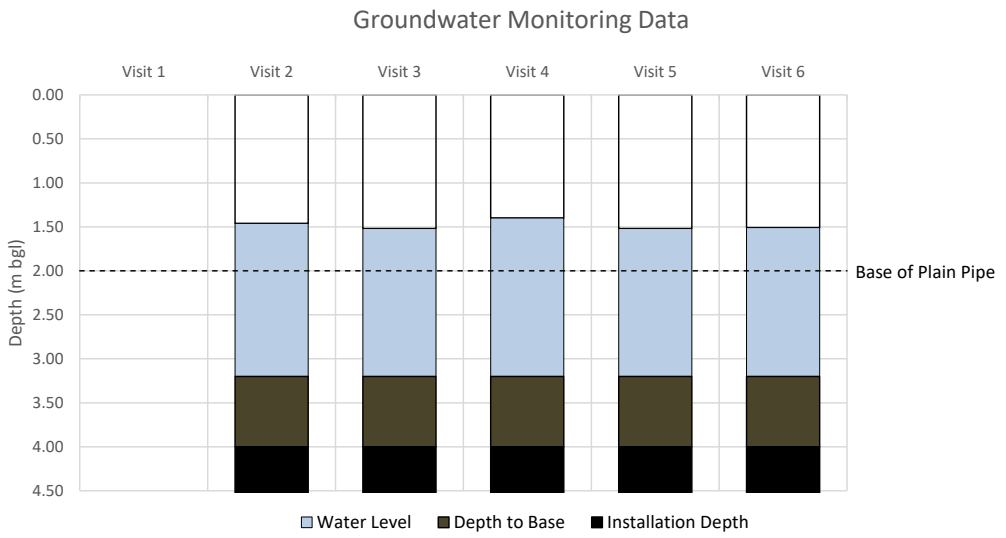
[3] Where maximum recorded concentration is <0.1%, 0.1% has been used as recommended in BS8485.

* Peak flow recorded is likely to be due to a build-up of hydraulic pressure caused by rising water trapping the gas within the solid section of pipe; the initial peak flow is not representative of the rate of gas generation within the ground and can be discounted from the dataset.

SUTCLIFFE INVESTIGATIONS	Site Details		Installation Details		Position Ref.:
	Job No.:	33716LG	Installation Date:	29/11/2023	
TEL: 0151 227 3155	Site Name:	Cheetham Hill, Manchester	Installation Depth (m bgl):	4.00	WS110
FAX: 0151 227 3156	Client:	MSV Housing	Base of Plain Pipe (m bgl):	2.00	

Site Monitoring Visit Details							Gas and Groundwater Monitoring Data							Ground Gas Risk Assessment				
Visit No.	Visit Date	Logged By	Weather	Atmospheric Pressure	Pressure Trend	Relative Pressure (mb)	Flow Rate (l/h)	Max CH_4 (% LEL)	Max CH_4 (% by vol)	Max CO_2 (% by vol)	Min O_2 (% by vol)	Water Level (m bgl)	Depth to Base (m bgl)	Gas Type	Max Flow Rate[2] (l/h)	Max Gas Conc.[3] (% by vol)	HGFR[1] (l/h)	Characteristic Situation (CS)
Visit 1	19/01/2024	MW	Cloudy	1008mB	Steady	-	-	#N/A	#N/A	#N/A	#N/A	-	-					
Visit 2	02/02/2024	MW	Cloudy	1015mB	Falling	-	0.00*	#N/A	0.0%	0.8%	19.3%	1.46	3.20	CH_4	0.10	0.10	0.0001	CS1
Visit 3	14/02/2024	MW	Cloudy	1001mB	Steady	-	0.00*	#N/A	0.0%	0.9%	19.2%	1.52	3.20					
Visit 4	01/03/2024	MW	Raining	980mB	Steady	-	0.00*	#N/A	0.0%	0.7%	19.1%	1.40	3.20					
Visit 5	03/04/2024	MW	Raining	988mB	Steady	-	0.00*	#N/A	0.0%	2.5%	15.0%	1.52	3.20	CO_2	0.10	6.70	0.0067	CS1
Visit 6	15/04/2024	MW	Cloudy	997mB	Falling	-	0.00*	#N/A	0.0%	6.7%	8.1%	1.51	3.20					





Instrument Used:	Accuracy of Instrument (% by volume)	CH_4	CO_2	O_2	Comments:
GFM		± 0.5% @ 5%	± 0.5% @ 5%	± 1.0%	
		± 1.0% @15%	± 1.0% @15%		
		±3.0% @>15%	±3.0% @>15%		

[1] Hazardous Gas Flow Rate Assessment Methodology (HGFR) is the calculation of the maximum gas concentration for the location x maximum flow rate for the location.

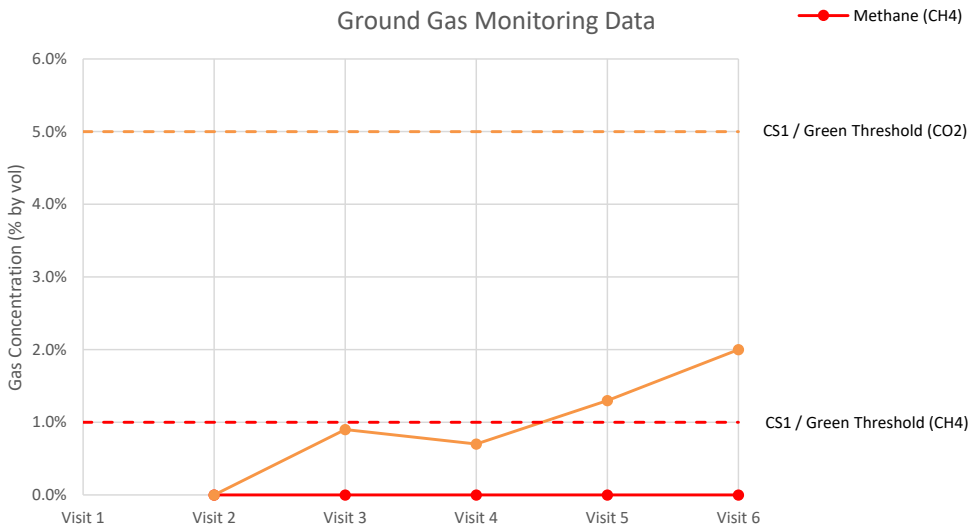
[2] Where maximum recorded flow is <0.1l/h, 0.1l/h has been used to calculate HGFR as recommended in CIRIA C665.

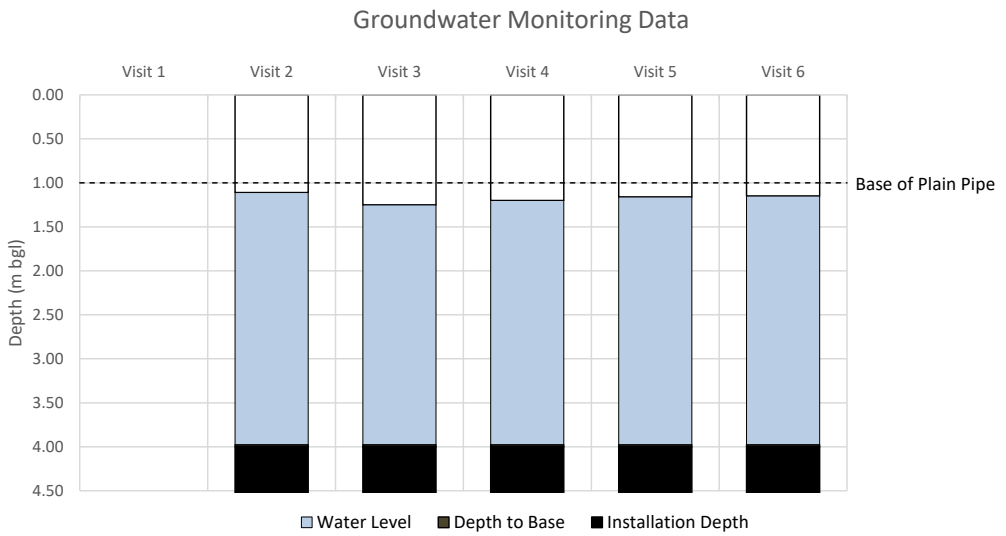
[3] Where maximum recorded concentration is <0.1%, 0.1% has been used as recommended in BS8485.

* Peak flow recorded is likely to be due to a build-up of hydraulic pressure caused by rising water trapping the gas within the solid section of pipe; the initial peak flow is not representative of the rate of gas generation within the ground and can be discounted from the dataset.

SUTCLIFFE INVESTIGATIONS	Site Details		Installation Details		Position Ref.:
	Job No.:	33716LG	Installation Date:	27/11/2023	
TEL: 0151 227 3155	Site Name:	Cheetham Hill, Manchester	Installation Depth (m bgl):	4.00	WS111
FAX: 0151 227 3156	Client:	MSV Housing	Base of Plain Pipe (m bgl):	1.00	

Site Monitoring Visit Details							Gas and Groundwater Monitoring Data							Ground Gas Risk Assessment				
Visit No.	Visit Date	Logged By	Weather	Atmospheric Pressure	Pressure Trend	Relative Pressure (mb)	Flow Rate (l/h)	Max CH_4 (% LEL)	Max CH_4 (% by vol)	Max CO_2 (% by vol)	Min O_2 (% by vol)	Water Level (m bgl)	Depth to Base (m bgl)	Gas Type	Max Flow Rate[2] (l/h)	Max Gas Conc.[3] (% by vol)	HGFR[1] (l/h)	Characteristic Situation (CS)
Visit 1	19/01/2024	MW	Cloudy	1008mB	Steady	-	-	#N/A	#N/A	#N/A	#N/A	-	-	CH_4	0.10	0.10	0.0001	CS1
Visit 2	02/02/2024	MW	Cloudy	1015mB	Falling	-	0.00	#N/A	0.0%	0.0%	20.0%	1.11	3.98					
Visit 3	14/02/2024	MW	Cloudy	1001mB	Steady	-	0.00	#N/A	0.0%	0.9%	19.4%	1.25	3.98					
Visit 4	01/03/2024	MW	Raining	980mB	Steady	-	0.00	#N/A	0.0%	0.7%	19.7%	1.20	3.98	CO_2	0.10	2.00	0.0020	CS1
Visit 5	03/04/2024	MW	Raining	988mB	Steady	-	0.00	#N/A	0.0%	1.3%	18.4%	1.16	3.98					
Visit 6	15/04/2024	MW	Cloudy	997mB	Falling	-	0.00	#N/A	0.0%	2.0%	16.2%	1.15	3.98					





Instrument Used:	Accuracy of Instrument (% by volume)	CH_4	CO_2	O_2	Comments:
GFM		± 0.5% @ 5%	± 0.5% @ 5%	± 1.0%	
		± 1.0% @15%	± 1.0% @15%		
		±3.0% @>15%	±3.0% @>15%		

[1] Hazardous Gas Flow Rate Assessment Methodology (HGFR) is the calculation of the maximum gas concentration for the location x maximum flow rate for the location.

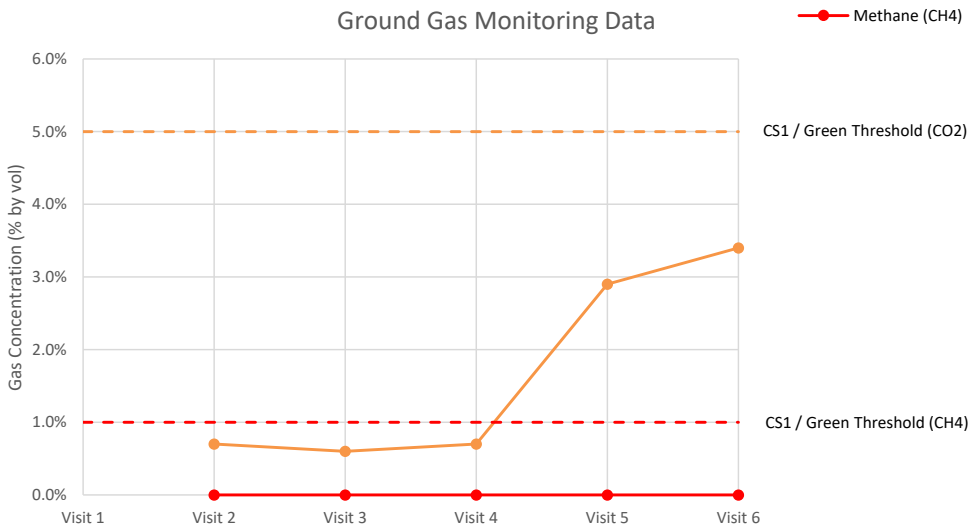
[2] Where maximum recorded flow is <0.1l/h, 0.1l/h has been used to calculate HGFR as recommended in CIRIA C665.

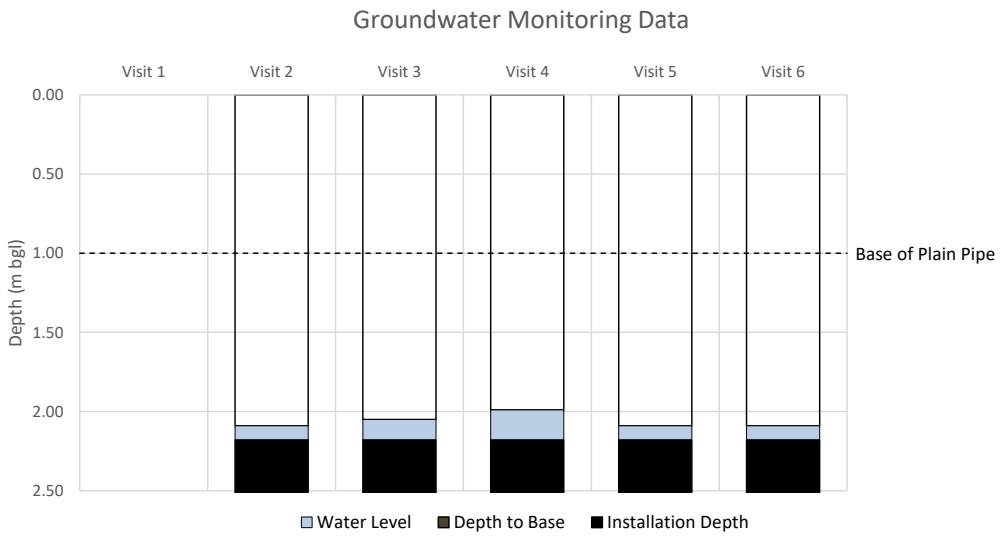
[3] Where maximum recorded concentration is <0.1%, 0.1% has been used as recommended in BS8485.

* Peak flow recorded is likely to be due to a build-up of hydraulic pressure caused by rising water trapping the gas within the solid section of pipe; the initial peak flow is not representative of the rate of gas generation within the ground and can be discounted from the dataset.

SUTCLIFFE INVESTIGATIONS	Site Details		Installation Details		Position Ref.:
	Job No.:	33716LG	Installation Date:	01/12/2023	
TEL: 0151 227 3155	Site Name:	Cheetham Hill, Manchester	Installation Depth (m bgl):	2.00	WS113
FAX: 0151 227 3156	Client:	MSV Housing	Base of Plain Pipe (m bgl):	1.00	

Site Monitoring Visit Details							Gas and Groundwater Monitoring Data							Ground Gas Risk Assessment				
Visit No.	Visit Date	Logged By	Weather	Atmospheric Pressure	Pressure Trend	Relative Pressure (mb)	Flow Rate (l/h)	Max CH_4 (% LEL)	Max CH_4 (% by vol)	Max CO_2 (% by vol)	Min O_2 (% by vol)	Water Level (m bgl)	Depth to Base (m bgl)	Gas Type	Max Flow Rate[2] (l/h)	Max Gas Conc.[3] (% by vol)	HGFR[1] (l/h)	Characteristic Situation (CS)
Visit 1	19/01/2024	MW	Cloudy	1008mB	Steady	-	-	#N/A	#N/A	#N/A	#N/A	-	-					
Visit 2	02/02/2024	MW	Cloudy	1015mB	Falling	-	0.00	#N/A	0.0%	0.7%	19.6%	2.09	2.18	CH_4	0.10	0.10	0.0001	CS1
Visit 3	14/02/2024	MW	Cloudy	1001mB	Steady	-	0.00	#N/A	0.0%	0.6%	19.6%	2.05	2.18					
Visit 4	01/03/2024	MW	Raining	980mB	Steady	-	0.00	#N/A	0.0%	0.7%	19.5%	1.99	2.18					
Visit 5	03/04/2024	MW	Raining	988mB	Steady	-	0.00	#N/A	0.0%	2.9%	15.7%	2.09	2.18	CO_2	0.10	3.40	0.0034	CS1
Visit 6	15/04/2024	MW	Cloudy	997mB	Falling	-	0.00	#N/A	0.0%	3.4%	15.3%	2.09	2.18					





Instrument Used:	Accuracy of Instrument (% by volume)	CH_4	CO_2	O_2	Comments:
GFM		± 0.5% @ 5%	± 0.5% @ 5%	± 1.0%	
		± 1.0% @15%	± 1.0% @15%		
		±3.0% @>15%	±3.0% @>15%		

[1] Hazardous Gas Flow Rate Assessment Methodology (HGFR) is the calculation of the maximum gas concentration for the location x maximum flow rate for the location.

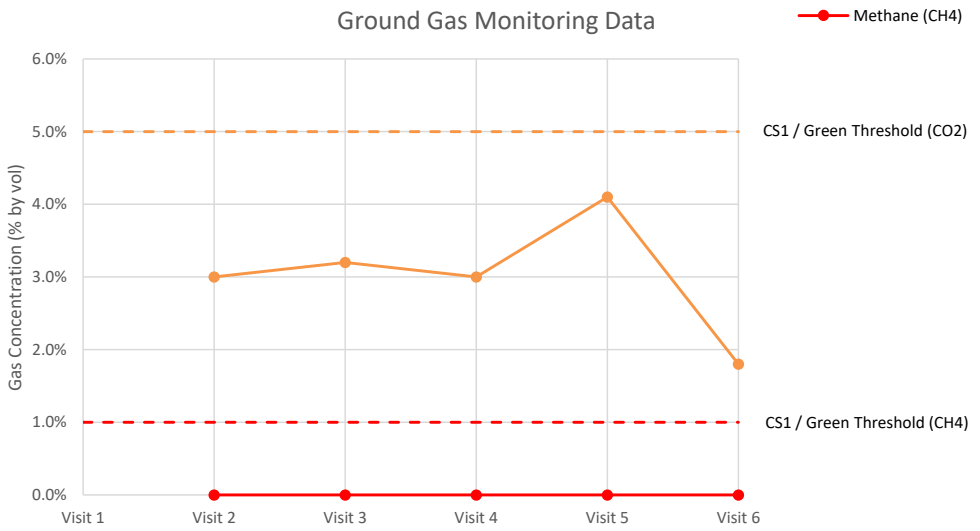
[2] Where maximum recorded flow is <0.1l/h, 0.1l/h has been used to calculate HGFR as recommended in CIRIA C665.

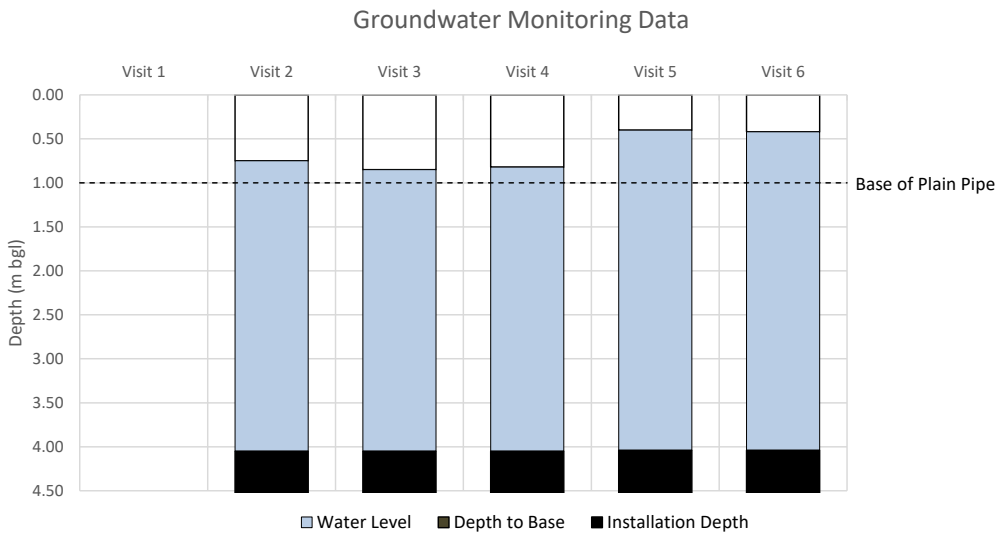
[3] Where maximum recorded concentration is <0.1%, 0.1% has been used as recommended in BS8485.

* Peak flow recorded is likely to be due to a build-up of hydraulic pressure caused by rising water trapping the gas within the solid section of pipe; the initial peak flow is not representative of the rate of gas generation within the ground and can be discounted from the dataset.

SUTCLIFFE INVESTIGATIONS	Site Details		Installation Details		Position Ref.:
	Job No.:	33716LG	Installation Date:	27/11/2023	
TEL: 0151 227 3155	Site Name:	Cheetham Hill, Manchester	Installation Depth (m bgl):	4.00	WS116
FAX: 0151 227 3156	Client:	MSV Housing	Base of Plain Pipe (m bgl):	1.00	

Site Monitoring Visit Details							Gas and Groundwater Monitoring Data							Ground Gas Risk Assessment				
Visit No.	Visit Date	Logged By	Weather	Atmospheric Pressure	Pressure Trend	Relative Pressure (mb)	Flow Rate (l/h)	Max CH_4 (% LEL)	Max CH_4 (% by vol)	Max CO_2 (% by vol)	Min O_2 (% by vol)	Water Level (m bgl)	Depth to Base (m bgl)	Gas Type	Max Flow Rate[2] (l/h)	Max Gas Conc.[3] (% by vol)	HGFR[1] (l/h)	Characteristic Situation (CS)
Visit 1	19/01/2024	MW	Cloudy	1008mB	Steady	-	-	#N/A	#N/A	#N/A	#N/A	-	-	CH_4	0.10	0.10	0.0001	CS1
Visit 2	02/02/2024	MW	Cloudy	1015mB	Falling	-	0.00*	#N/A	0.0%	3.0%	13.6%	0.75	4.05					
Visit 3	14/02/2024	MW	Cloudy	1001mB	Steady	-	0.00*	#N/A	0.0%	3.2%	13.3%	0.85	4.05					
Visit 4	01/03/2024	MW	Raining	980mB	Steady	-	0.00*	#N/A	0.0%	3.0%	14.1%	0.82	4.05	CO_2	0.10	4.10	0.0041	CS1
Visit 5	03/04/2024	MW	Raining	988mB	Steady	-	0.00*	#N/A	0.0%	4.1%	11.3%	0.40	4.04					
Visit 6	15/04/2024	MW	Cloudy	997mB	Falling	-	0.00*	#N/A	0.0%	1.8%	19.0%	0.42	4.04					





Instrument Used:	Accuracy of Instrument (% by volume)	CH_4	CO_2	O_2	Comments:
GFM		± 0.5% @ 5%	± 0.5% @ 5%	± 1.0%	
		± 1.0% @15%	± 1.0% @15%		
		±3.0% @>15%	±3.0% @>15%		

[1] Hazardous Gas Flow Rate Assessment Methodology (HGFR) is the calculation of the maximum gas concentration for the location x maximum flow rate for the location.

[2] Where maximum recorded flow is <0.1l/h, 0.1l/h has been used to calculate HGFR as recommended in CIRIA C665.

[3] Where maximum recorded concentration is <0.1%, 0.1% has been used as recommended in BS8485.

* Peak flow recorded is likely to be due to a build-up of hydraulic pressure caused by rising water trapping the gas within the solid section of pipe; the initial peak flow is not representative of the rate of gas generation within the ground and can be discounted from the dataset.

Appendix F – Geotechnical Laboratory Certificates

Units 1 & 2
Deltic Place
Deltic Way
Knowsley Industrial Estate
Liverpool
L33 7BU

Telephone: (0151) 545 2750
Fax: (0151) 548 7892
Email: enquiries@ccgeotechnical.com
www.ccgeotechnical.com

CC GEOTECHNICAL LTD
Consulting Geoenvironmental and Geotechnical Engineers

LABORATORY REPORT

CONTRACT NUMBER: CCG-C-23-14399

CONTRACT TITLE: CHEETHAM HILL, MANCHESTER

CLIENT: SUTCLIFFE
18-20 Harrington Street, Liverpool L2 9QA

DATE RECEIVED: 30/11/23
DATE COMMENCED: 30/11/23
DATE COMPLETED: 08/12/23
REPORT DATE: 11/12/23

Test Description	Qty
Determination of Moisture Content BS1377-2:1990 (a)	5
Determination of Liquid & Plastic Limits BS 1377-2:1990 (a)	5
Particle Size Distribution BS 1377-2:1990 (a)	3
One-Dimensional Consolidation BS1377-5:1990 (a)	1

Notes: Observations and interpretations are not accredited by UKAS
All testing undertaken at laboratory permanent facilities
# denotes non-accredited test
a denotes UKAS accredited test
s denotes test undertaken by approved subcontractor
Test results only relate to the samples tested
Sample and sample information supplied by client

This report is issued in accordance with the requirements of the United kingdom Accreditation Services and EN ISO/IEC 17025:2017. The results reported herein relate only to the material supplied to the laboratory. This report shall not be reproduced except in full, without the prior written approval of the laboratory.
Approved Signatories: Chris Bolan (Managing Director) – Daniel Kerfoot (Laboratory Manager)

Registered in England & Wales, Company No. 5085241. Head Office: Unit 1, Deltic Place, Deltic Way, Knowsley Industrial Estate, Liverpool, L33 7BU

SUMMARY OF LABORATORY SOIL TEST RESULTS

BH / TP / WS Number	Sample Type	Depth From (m)	Depth To (m)	Moisture Content (%)	Bulk Density (Mg/m^3)	Dry Density (Mg/m^3)	Shear Strength (kN/m^2)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425mm (%)	Soil Classification	UKAS accredited test (Y/N)	Description / Test Method Samples described in accordance with BS EN ISO 14688-2 2004
WS104	U	1.60	1.60	22	-	-	>110*	45	20	25	99	CI	Y	Brown slightly sandy silty CLAY. (BS1377Pt2:3.2,4.4,5)
WS105A	B	1.30	2.00	-	-	-	-	-	-	-	-	-	Y	Brown slightly sandy SILT. (BS1377Pt2:9.2)
WS106	U	2.80	2.80	23	-	-	>110*	48	20	28	98	CI	Y	Brown slightly sandy silty CLAY. (BS1377Pt2:3.2,4.4,5)
WS107	B	2.00	3.00	-	-	-	-	-	-	-	-	-	Y	Greyish brown silty slightly gravelly fine to medium SAND. Gravel is fine to medium subrounded sandstone. (BS1377Pt2:9.2)
WS110	U	2.60	2.60	20	-	-	>110*	46	19	27	99	CI	Y	Greyish brown slightly sandy silty CLAY. (BS1377Pt2:3.2,4.4,5)
WS111	U	2.70	2.70	22	-	-	80*	47	20	27	99	CI	Y	Brown slightly sandy silty CLAY. (BS1377Pt2:3.2,4.4,5)
WS115	B	1.40	2.00	-	-	-	-	-	-	-	-	-	Y	Brown very clayey fine to medium SAND. (BS1377Pt2:9.2)
WS116	U	1.60	1.60	20	-	-	>110*	43	18	25	96	CI	Y	Brown slightly sandy silty CLAY. (BS1377Pt2:3.2,4.4,5)

SITE: CHEETHAM HILL, MANCHESTER (CCG-C-23-14399) DATE: 11.12.23

CLIENT: SUTCLIFFE

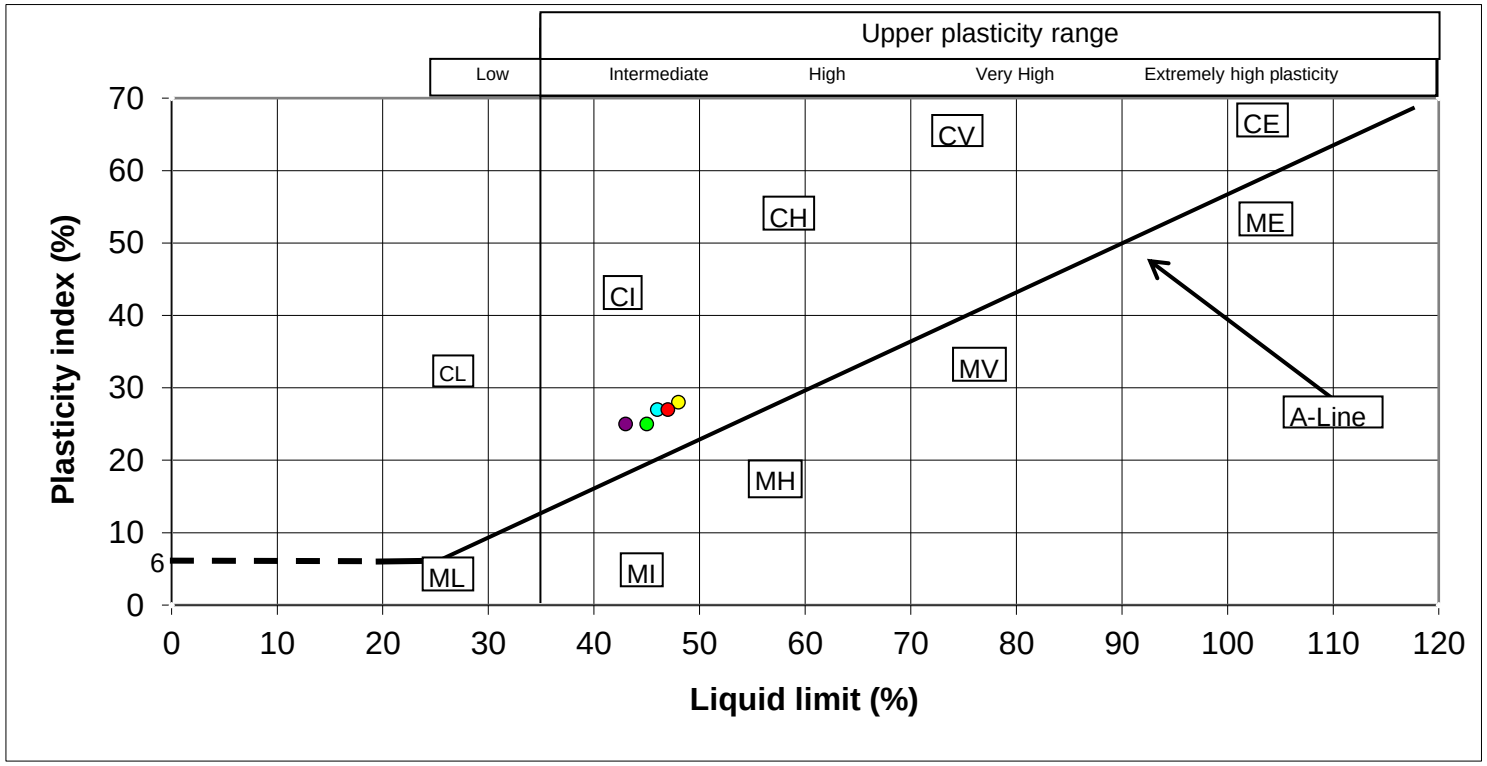
UKAS TESTING 4514

Key:- BD = Bulk Disturbed; SD = Small Disturbed; U100 = Undisturbed 100mm; WS = Window Sample
CL = Low Plasticity; CI = Intermediate; CH = High; CV = Very high; CE = Extremely high; NP = Non-plastic
(* Denotes Hand Shear Vane test result)
Sample description not accredited by UKAS

ATTERBERG TEST RESULT SHEET

BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line , CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.



BH	Sample Depth	Liquid limit	Plasticity index
WS104	1.60	45.0	25.0
WS106	2.80	48.0	28.0
WS110	2.60	46.0	27.0
WS111	2.70	47.0	27.0
WS116	1.60	43.0	25.0

UKAS TESTING
4514

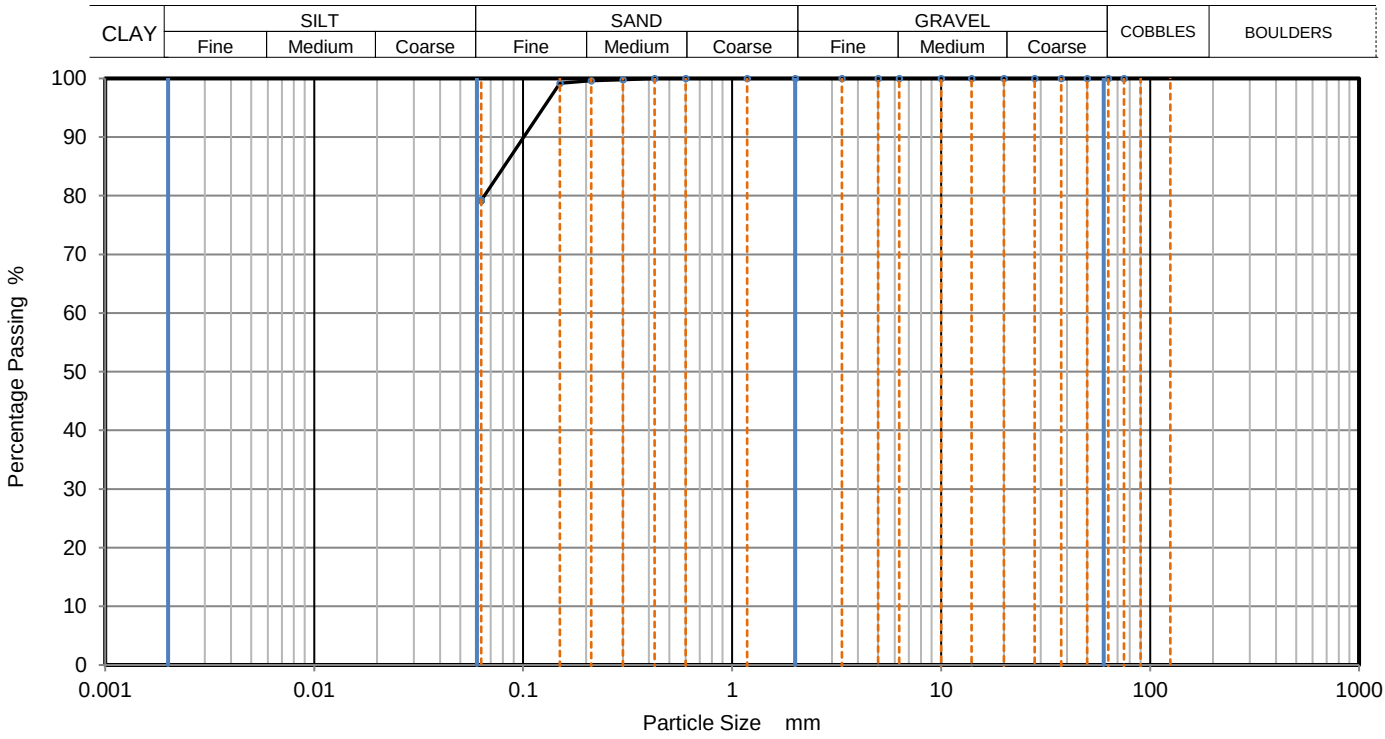
APPROVED BY	DK

CLIENT: SUTCLIFFE	SITE: CHEETHAM HILL, MANCHESTER (CCG-C-23-14399)

CC Geotechnical Ltd
Tel: 0151 545 2750
e: lab@ccgeotechnical.com

PARTICLE SIZE DISTRIBUTION

Job Ref	CCG-C-23-14399		
Borehole/Pit No.	WS105A		
Site Name	CHEETHAM HILL, MANCHESTER	Sample No.	1
Specimen Description	Brown slightly sandy SILT	Depth, m	1.30
Specimen Reference	Specimen Depth: m	Sample Type	B
Test Method	BS1377:Part 2:1990, clause 9.2	KeyLAB ID	CCGL202312110



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	100		
0.212	100		
0.15	99		
0.063	79		

Dry Mass of sample, g

Sample Proportions	% dry mass
Very coarse	0
Gravel	0
Sand	21
Fines <0.063mm	79

Grading Analysis		
D100	mm	
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

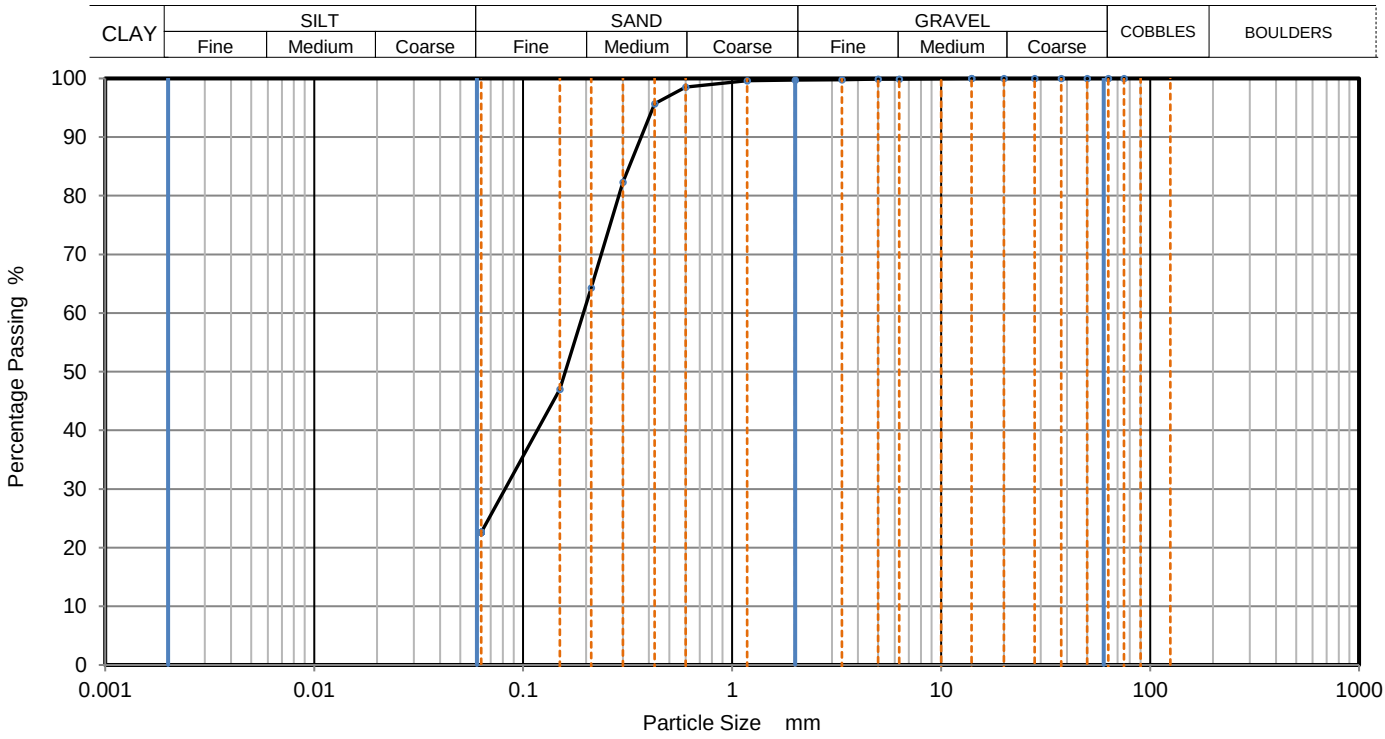
Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1
JE	DK	DK	11/12/2023 12:07	Sheet

CC Geotechnical Ltd
Tel: 0151 545 2750
e: lab@ccgeotechnical.com

PARTICLE SIZE DISTRIBUTION

Job Ref			CCG-C-23-14399
Borehole/Pit No.			WS115
Site Name	CHEETHAM HILL, MANCHESTER	Sample No.	1
Specimen Description	Brown very clayey fine to medium SAND	Depth, m	1.40
Specimen Reference	Specimen Depth: m	Sample Type	B
Test Method	BS1377:Part 2:1990, clause 9.2	KeyLAB ID	CCGL202312112



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	96		
0.3	82		
0.212	64		
0.15	47		
0.063	23		

Dry Mass of sample, g

Sample Proportions	% dry mass
Very coarse	0
Gravel	0
Sand	77
Fines <0.063mm	23

Grading Analysis		
D100	mm	
D60	mm	0.194
D30	mm	0.0819
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

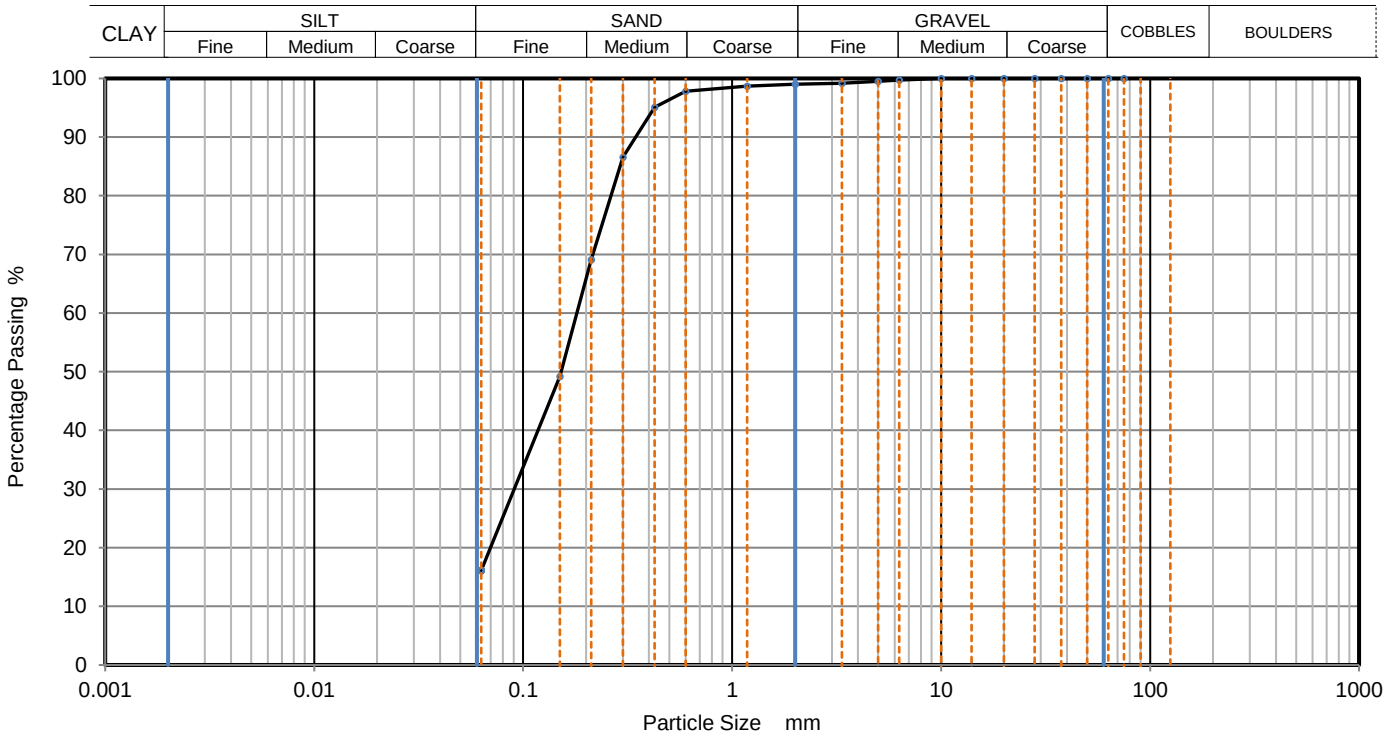
Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1
JE	DK	DK	11/12/2023 12:07	Sheet

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Tel: 0151 545 2750
e: lab@ccgeotechnical.com

PARTICLE SIZE DISTRIBUTION

Job Ref			CCG-C-23-14399
Borehole/Pit No.			WS107
Site Name	CHEETHAM HILL, MANCHESTER	Sample No.	1
Specimen Description	Greyish brown silty slightly gravelly fine to medium SAND	Depth, m	2.00
Specimen Reference	Specimen Depth: m	Sample Type	B
Test Method	BS1377:Part 2:1990, clause 9.2	KeyLAB ID	CCGL202312111



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	99		
2	99		
1.18	99		
0.6	98		
0.425	95		
0.3	87		
0.212	69		
0.15	49		
0.063	16		

Dry Mass of sample, g

Sample Proportions	% dry mass
Very coarse	0
Gravel	1
Sand	83
Fines <0.063mm	16

Grading Analysis		
D100	mm	
D60	mm	0.181
D30	mm	0.0907
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1
JE	DK	DK	11/12/2023 12:07	Sheet

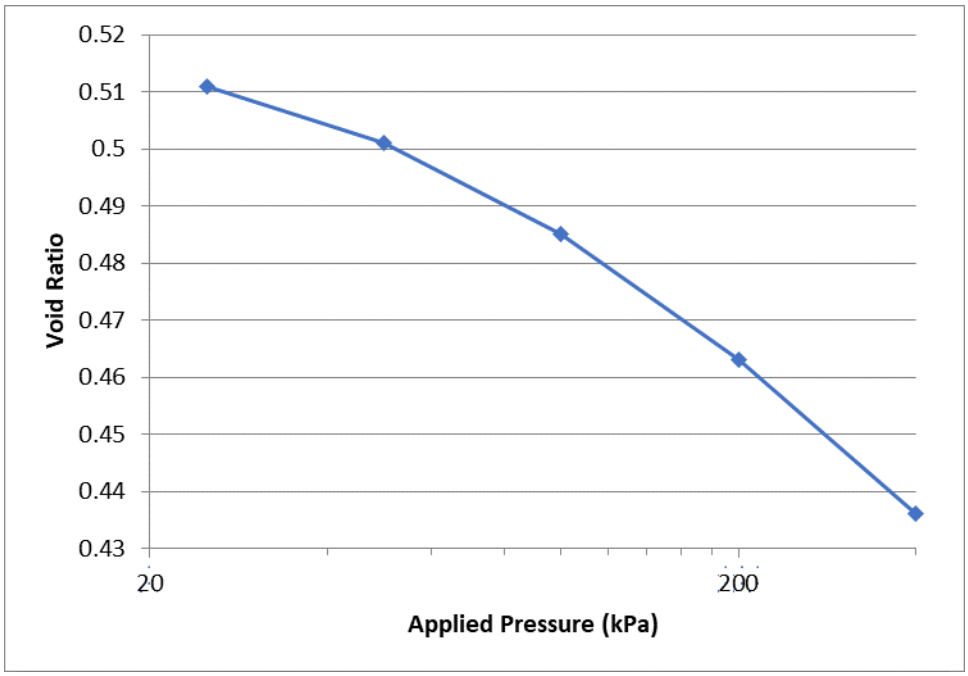
One Dimensional Consolidation Properties
(Oedometer)

Client	SUTCLIFFE	**Lab Ref**	
Project	CHEETHAM HILL, MANCHESTER	**Job**	CCG C 23 14399
Borehole	WS104	**Sample**	1

Test Details			
Standard	BS 1377: Part 5: 1990: Clause 3	**Particle Density (assumed)**	2.65 Mg/m3
Sample Type	Undisturbed sample - open drive	**Lab Temperature**	20.0 deg.C
Sample Depth	1.80 m		
Sample Description	Brown slightly sandy silty CLAY		
Variations from Procedure	None		

Specimen Details			
Specimen Reference	A	**Description**	
Depth within Sample	N/A	**Orientation within Sample**	
Specimen Mass	187.09 g	**Condition**	Natural Moisture
Specimen Height	20.22 mm	**Preparation**	
Comments			

Test Apparatus			
Ring Number	9	**Ring Diameter**	75.01 mm
Ring Height	20.22 mm	**Ring Weight**	127.43 g
Lever Ratio	9.00: 1		



Height of Solid Particles	13.07 mm	**Swelling Pressure**	

One Dimensional Consolidation Properties
(Oedometer)

Client	SUTCLIFFE	**Lab Ref**	
Project	CHEETHAM HILL, MANCHESTER	**Job**	CCG C 23 14399
Borehole	WS104	**Sample**	1

Initial Moisture Content*	22.3 %	**Final Moisture Content**	21.2 %
Initial Bulk Density	2.09 Mg/m^3	**Final Bulk Density**	2.24 Mg/m^3
Initial Dry Density	1.71 Mg/m^3	**Final Dry Density**	1.84 Mg/m^3
Initial Void Ratio	0.5473	**Final Void Ratio**	0.4365
Initial Degree of Saturation	107.76 %	**Final Degree of Saturation**	128.47 %

* Calculated from initial and dry weights of whole specimen

Pressure (Loading Stages)	**Coefficient of Volume Compressibility (m_v)**	**Coefficient of Consolidation (c_v)**
0.00		
25.0 kPa	Sample swelled	-------
50.0 kPa	0.26 m^2/MN	**2.8 m^2/ yr**
100.0 kPa	0.21 m^2/MN	**2.8 m^2/ yr**
200.0 kPa	0.15 m^2/MN	**1.9 m^2/ yr**
400.0 kPa	0.090 m^2/MN	**2.0 m^2/ yr**

Method of Time Fitting Used	Log time

Tested by and Date:	DK 05.12.23
Checked by and Date:	DK 05.12.23
Approved by and Date:	CB 05.12.23

Units 1 & 2
Deltic Place
Deltic Way
Knowsley Industrial Estate
Liverpool
L33 7BU

Telephone: (0151) 545 2750
Fax: (0151) 548 7892
Email: enquiries@ccgeotechnical.com
www.ccgeotechnical.com

CC GEOTECHNICAL LTD
Consulting Geoenvironmental and Geotechnical Engineers

LABORATORY REPORT

CONTRACT NUMBER: CCG-C-24-14516

CONTRACT TITLE: CHEETHAM HILL

CLIENT: SUTCLIFFE
18-20 Harrington Street, Liverpool L2 9QA

DATE RECEIVED: 12/02/24
DATE COMMENCED: 12/02/24
DATE COMPLETED: 14/02/24
REPORT DATE: 14/02/24

Test Description	Qty
Determination of Moisture Content BS1377-2:1990 (a)	2
Determination of Liquid & Plastic Limits BS 1377-2:1990 (a)	5
Unconsolidated Undrained Triaxial Compression BS1377-7:1990 (a)	3

Notes: Observations and interpretations are not accredited by UKAS
All testing undertaken at laboratory permanent facilities
# denotes non-accredited test
a denotes UKAS accredited test
s denotes test undertaken by approved subcontractor
Test results only relate to the samples tested
Sample and sample information supplied by client

This report is issued in accordance with the requirements of the United kingdom Accreditation Services and EN ISO/IEC 17025:2017. The results reported herein relate only to the material supplied to the laboratory. This report shall not be reproduced except in full, without the prior written approval of the laboratory.
Approved Signatories: Chris Bolan (Managing Director) – Daniel Kerfoot (Laboratory Manager)

SUMMARY OF LABORATORY SOIL TEST RESULTS

BH / TP / WS Number	Sample Type	Depth From (m)	Depth To (m)	Moisture Content (%)	Bulk Density (Mg/m^3)	Dry Density (Mg/m^3)	Shear Strength (kN/m^2)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425mm (%)	Soil Classification	UKAS accredited test (Y/N)	Description / Test Method Samples described in accordance with BS EN ISO 14688-2 2004
BH201	U	3.00	3.45	24	2.11	1.70	96	51	21	30	100	CH	Y	Brown slightly sandy silty CLAY of high undrained shear strength. (BS1377Pt2:3.2,4.4,5,Pt7:8)
BH201	U	8.00	8.45	28	-	-	60*	47	20	27	99	CI	Y	Brown slightly sandy silty CLAY with occasional sand laminations. (BS1377Pt2:3.2,4.4,5)
BH202	U	6.50	6.95	23	2.03	1.65	47	42	19	23	96	CI	Y	Brown slightly sandy slightly gravelly silty CLAY of high undrained shear strength. Gravel is fine to medium subrounded sandstone and mudstone. (BS1377Pt2:3.2,4.4,5,Pt7:8)
BH203	U	2.00	2.45	21	-	-	>110*	45	20	25	99	CI	Y	Brown slightly sandy silty CLAY. (BS1377Pt2:3.2,4.4,5)
BH203	U	9.50	9.95	22	2.05	1.67	86	46	19	27	94	CI	Y	Brown slightly sandy slightly gravelly silty CLAY of high undrained shear strength. Gravel is fine to medium subrounded sandstone, mudstone, coal (BS1377Pt2:3.2,4.4,5,Pt7:8)

SITE: CHEETHAM HILL (CCG-C-24-14516)

DATE: 14.02.24

CLIENT: SUTCLIFFE

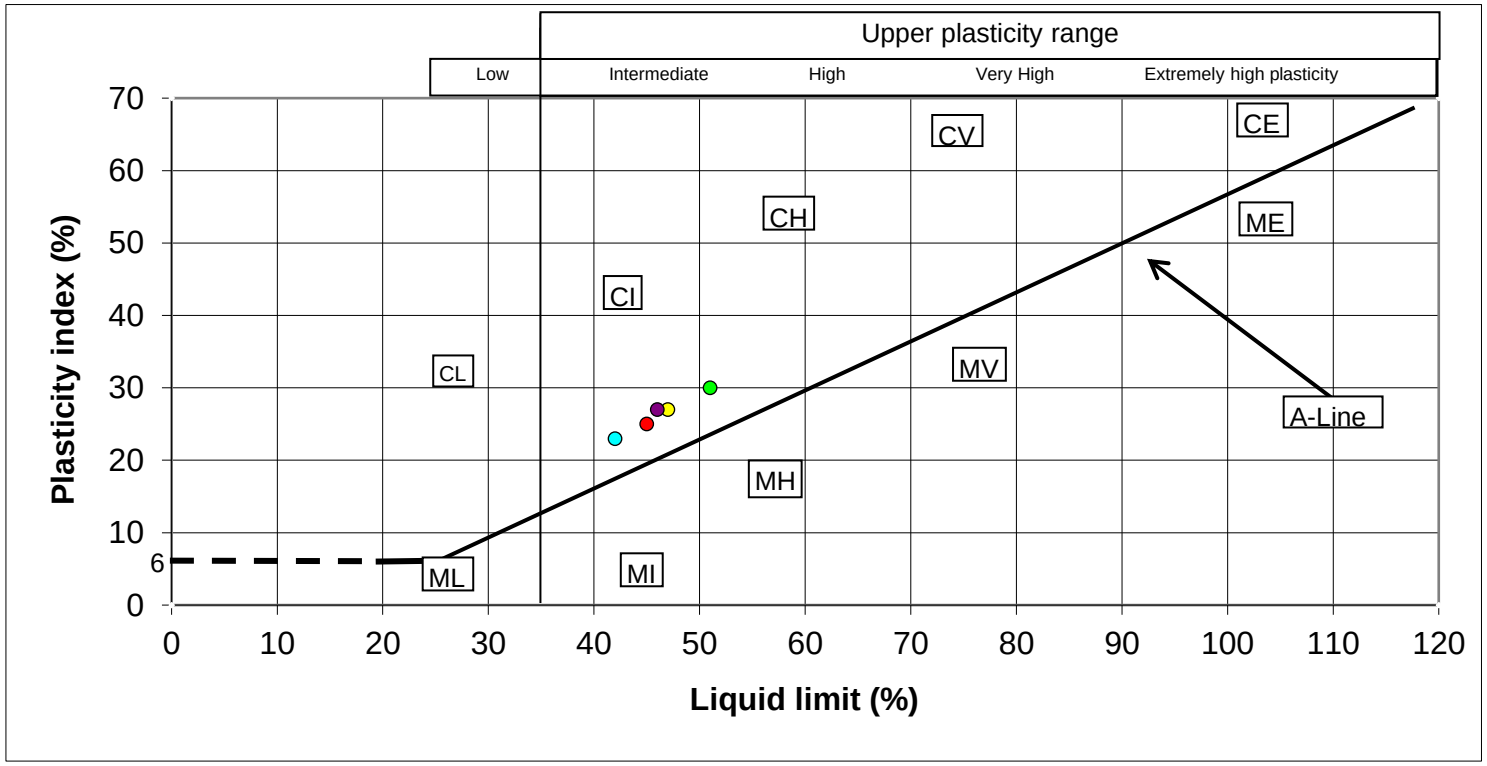
UKAS TESTING 4514

Key:- BD = Bulk Disturbed; SD = Small Disturbed; U100 = Undisturbed 100mm; WS = Window Sample
CL = Low Plasticity; CI = Intermediate; CH = High; CV = Very high; CE = Extremely high; NP = Non-plastic
(* Denotes Hand Shear Vane test result)
Sample description not accredited by UKAS

ATTERBERG TEST RESULT SHEET

BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line , CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.



BH	Sample Depth	Liquid limit	Plasticity index
BH201	3.00	51.0	30.0
BH201	8.00	47.0	27.0
BH202	6.50	42.0	23.0
BH203	2.00	45.0	25.0
BH203	9.50	46.0	27.0

UKAS TESTING
4514

APPROVED BY	DK

CLIENT: SUTCLIFFE	SITE: CHEETHAM HILL (CCG-C-24-14516)

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Tel: 0151 545 2750
e: lab@ccgeotechnical.com

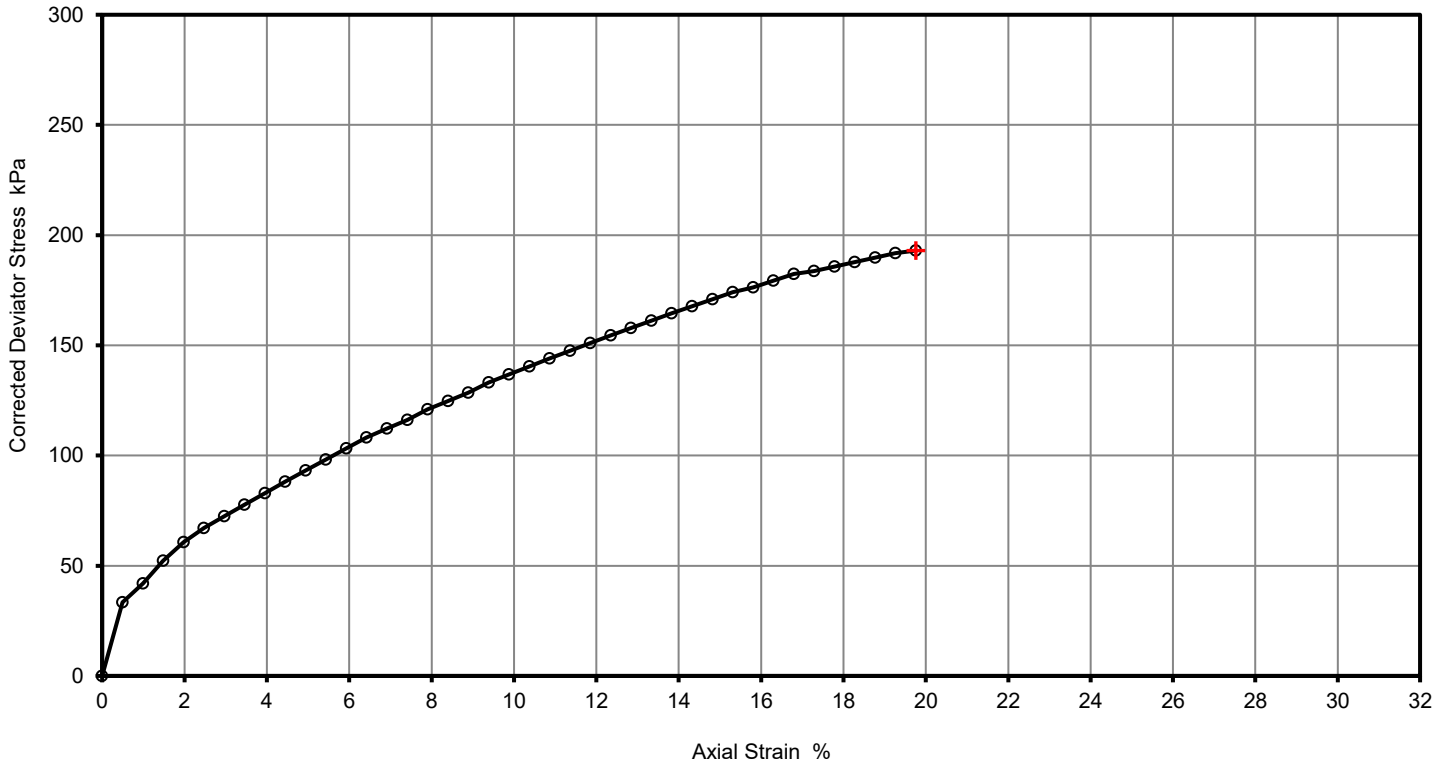
Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

Job Ref	CCG-C-24-14516				
Borehole/Pit No.	BH201				
Site Name	CHEETHAM HILL		Sample No.	1	
Soil Description			Depth	3.00	
Specimen Reference		Specimen Depth m	Sample Type	U	
Specimen Description	Brown slightly gravelly silty CLAY		Date of test		
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen		12/02/2024		

UKAS TESTING 4514

Test Number		1	
Length		202.5	mm
Diameter		101.2	mm
Bulk Density		2.11	Mg/m3
Moisture Content		24.1	%
Dry Density		1.70	Mg/m3
Rate of Strain		2.0	%/min
Cell Pressure		60	kPa
At failure	Axial Strain	19.8	%
	Deviator Stress, (σ1 - σ3)f	193	kPa
	Undrained Shear Strength, cu	96	kPa ½(σ1 - σ3)f
	Mode of Failure	Plastic	

Deviator Stress v Axial Strain



Remarks

0.5mm membrane, correction factor = 1.88

Approved: DanielKerfoot

Printed: 14/02/2024 10:39

Fig. No. 1

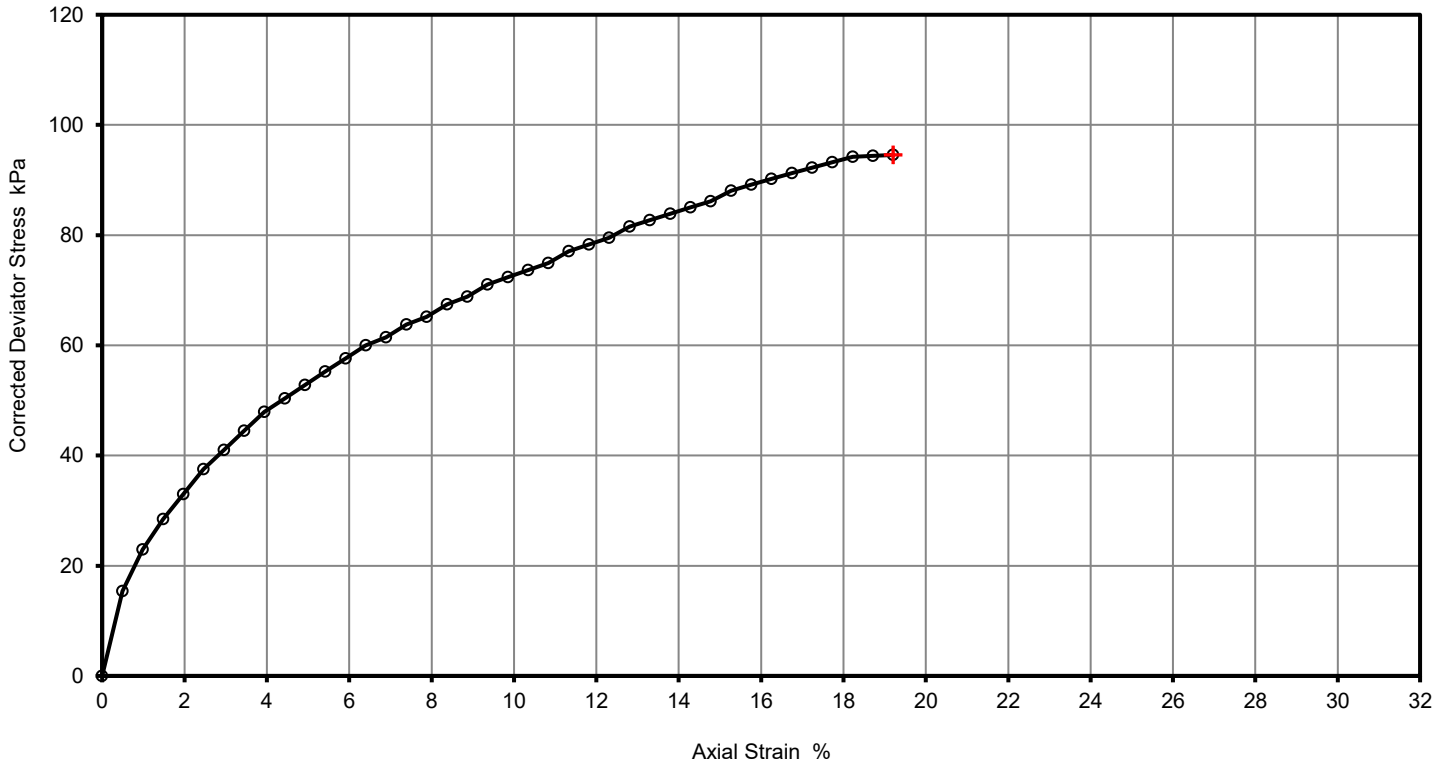
Sheet 1

CC Geotechnical Ltd Tel: 0151 545 2750 e: lab@ccgeotechnical.com	**Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen**			Job Ref	CCG-C-24-14516
				Borehole/Pit No.	BH202
Site Name	CHEETHAM HILL			Sample No.	1
Soil Description				Depth	6.50
Specimen Reference		Specimen Depth	m	Sample Type	U
Specimen Description	Brown slightly sandy slightly gravelly silty CLAY			Date of test	12/02/2024
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen				

UKAS TESTING 4514

Test Number		1	
Length		203.0	mm
Diameter		102.1	mm
Bulk Density		2.03	Mg/m3
Moisture Content		22.8	%
Dry Density		1.65	Mg/m3
Rate of Strain		2.0	%/min
Cell Pressure		130	kPa
At failure	Axial Strain	19.2	%
	Deviator Stress, (σ1 - σ3)f	95	kPa
	Undrained Shear Strength, cu	47	kPa ½(σ1 - σ3)f
	Mode of Failure	Plastic	

Deviator Stress v Axial Strain



Remarks

0.5mm membrane, correction factor = 1.82

Approved: DanielKerfoot

Printed: 14/02/2024 10:39

Fig. No. 1

Sheet 2

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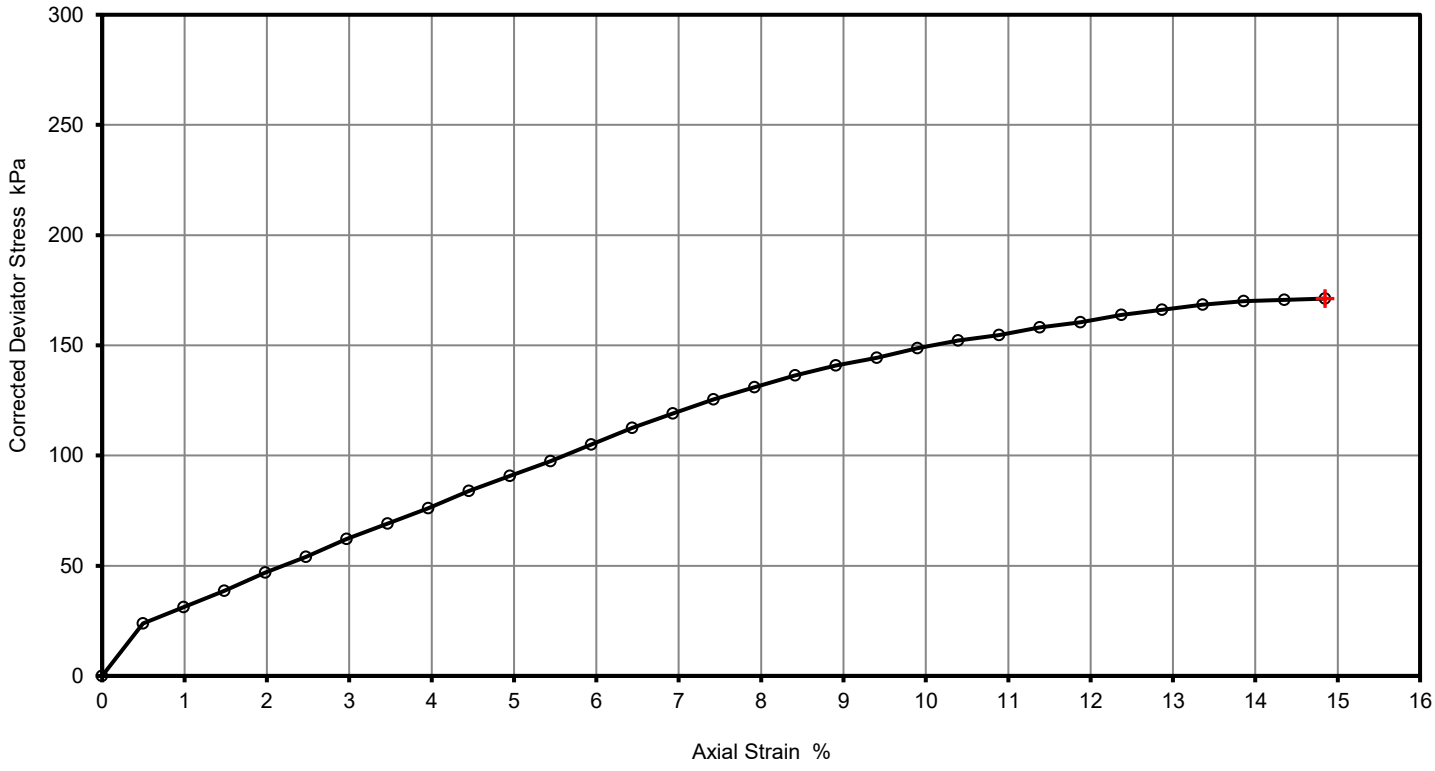
Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

				Job Ref	CCG-C-24-14516
				Borehole/Pit No.	BH203
Site Name	CHEETHAM HILL			Sample No.	1
Soil Description				Depth	9.50
Specimen Reference		Specimen Depth	m	Sample Type	U
Specimen Description	Brown slightly sandy slightly gravelly silty CLAY			Date of test	13/02/2024
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen				

UKAS TESTING 4514

Test Number		1	
Length		202.1	mm
Diameter		102.6	mm
Bulk Density		2.05	Mg/m3
Moisture Content		22.2	%
Dry Density		1.67	Mg/m3
Rate of Strain		2.0	%/min
Cell Pressure		190	kPa
At failure	Axial Strain	14.8	%
	Deviator Stress, (σ1 - σ3)f	171	kPa
	Undrained Shear Strength, cu	86	kPa ½(σ1 - σ3)f
	Mode of Failure	Plastic	

Deviator Stress v Axial Strain



Remarks

0.5mm membrane, correction factor = 1.47

Approved: DanielKerfoot

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Fig. No. 1

Sheet 3

Appendix G – Soil Screening Tables

Sutcliffe	SUTCLIFFE INVESTIGATIONS TEL: 0151 227 3155 FAX: 0151 227 3156	Human Health Assessment	
Job Name:	Cheetham Hill, Manchester	Job No.:	33716LG
Proposed Land Use:	Residential With Plant Uptake	S.O.M.:	2.5

Above Threshold:			Sample ID:	WS101	WS102	WS103	WS104	WS105	WS106	WS107	WS108	WS109	WS110	WS110	WS111	WS112	WS113	WS114	WS114	WS115	WS115	WS116
Below Limit of Detection:	<0.01		Depth Top (m bgl):	0.40	0.20	0.00	0.00	0.40	0.40	0.00	0.00	0.40	0.30	1.00	0.30	0.30	0.50	0.30	0.60	0.20	0.80	0.00
Not Tested:	n/t		Depth Base (m bgl):	1.00	0.60	0.40	0.40	0.80	0.80	0.40	0.40	1.00	0.60	1.60	0.60	0.60	1.00	0.60	0.90	0.75	1.20	0.20
No Asbestos Detected:	NAD		Date Sampled:	30-Nov-23	30-Nov-23	30-Nov-23	29-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	28-Nov-23	29-Nov-23	29-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23	29-Nov-23	29-Nov-23	27-Nov-23	27-Nov-23	27-Nov-23

	Contaminant	Units	Threshold Source	Threshold Value	WS101	WS102	WS103	WS104	WS105	WS106	WS107	WS108	WS109	WS110	WS110	WS111	WS112	WS113	WS114	WS114	WS115	WS115	WS116
Metals / Non-Metals / Other Suite	Arsenic (Total)	mg/kg	LQM S4UL	37	6	3	6	2	9	17	20	7	12	13	27	10	10	6	13	10	12	n/t	8
	Boron (Soluble)	mg/kg	LQM S4UL	290	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	n/t	<1.0
	Cadmium (Total)	mg/kg	LQM S4UL	11	0.8	1	1	<0.5	0.7	1	1.1	0.5	0.8	1.3	1.9	0.7	0.5	0.6	1.4	0.9	1.1	n/t	0.8
	Chromium III	mg/kg	LQM S4UL	910	22	25	21	11	15	23	23	17	16	22	37	29	19	23	19	17	31	n/t	20
	Chromium VI	mg/kg	LQM S4UL	6	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	n/t	<1
	Copper (Total)	mg/kg	LQM S4UL	2400	30	27	37	14	59	67	72	28	51	121	100	44	37	31	43	28	55	n/t	37
	Lead (Total)	mg/kg	C4SL	200	87	43	62	29	69	161	196	57	118	138	790	109	88	79	76	65	154	n/t	88
	Mercury (Total)	mg/kg	LQM S4UL	40	0.4	<0.17	0.61	<0.17	1.6	1.43	1.15	<0.17	0.83	0.8	0.69	1.41	0.48	0.43	<0.17	<0.17	1.8	n/t	<0.17
	Nickel (Total)	mg/kg	LQM S4UL	180	16	30	19	11	17	20	20	14	19	20	31	27	21	24	18	14	24	n/t	20
	Selenium (Total)	mg/kg	LQM S4UL	250	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	n/t	<1
	Zinc (Total)	mg/kg	LQM S4UL	3700	92	59	160	26	60	83	214	62	81	119	223	124	61	67	80	65	133	n/t	85
	Cyanide (Total)	mg/kg	ATKINS	34	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	n/t	<1
	Phenols (Total)	mg/kg	LQM S4UL	550	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	n/t	<0.2
	Organic matter	%	LQM S4UL	N/a	3.5	8.2	4.3	1.3	5.2	4.2	5.1	4.9	4.6	5.4	6.5	3.9	4	2	4.9	5.9	5.7	n/t	7.2
	Sulphate (Acid Soluble)	mg/kg	LQM S4UL	N/a	370	<200	1600	210	650	620	640	440	480	430	710	2400	480	660	600	500	920	n/t	660
	Sulphate as Water Soluble	g/l	LQM S4UL	N/a	<0.01	0.01	0.05	<0.01	0.06	0.05	0.02	0.03	<0.01	<0.01	0.02	0.08	0.03	0.04	0.04	<0.01	0.04	n/t	<0.01
	Sulphide	mg/kg	LQM S4UL	N/a	52	110	70	9	11	19	53	48	33	<5	<5	59	61	73	<5	<5	80	n/t	110
	pH	pH units	LQM S4UL	N/a	8.35	7.63	8.59	6.94	8.09	8.47	8.08	7.68	7.94	7.76	7.84	8.49	8.16	7.92	7.54	7.72	7.14	7.73	6.67
	Sulphur (Elemental)	mg/kg	LQM S4UL	N/a	38	<5	10	<5	<5	<5	<5	<5	<5	<5	10	<5	<5	11	<5	<5	<5	n/t	<5
Asbestos Suite	Asbestos in soil	N/a		N/a	NAD	Amosite & Chrysotile	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	n/t	NAD
	Asbestos Matrix (microscope)	N/a		N/a	-	Loose Fibres	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n/t	-
	ACM - Suitable for Water Absorption Test?	N/a		N/a	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	n/t	N/A
	Asbestos in soil % composition	% w/w		0.001	n/t	<0.001	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
TPH Suite	TPH (Total)	mg/kg		N/a	72	36	199	37	183	137	262	66	59	165	406	220	65	158	22	34	99	n/t	53
	Total Aliphatic	mg/kg		N/a	26	10	105	10	30	54	110	20	5	28	38	48	19	23	6	9	24	n/t	13
	C5 to C6 aliphatic	mg/kg	LQM S4UL	78	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	C6 to C8 aliphatic	mg/kg	LQM S4UL	230	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	C8 to C10 aliphatic	mg/kg	LQM S4UL	65	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	C10 to C12 aliphatic	mg/kg	LQM S4UL	330	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	C12 to C16 aliphatic	mg/kg	LQM S4UL	2400	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	2	1	<1	<1	<1	<1	<1	<1	<1
	C16 to C35 aliphatic	mg/kg	LQM S4UL	92000	18	8	n/t	9	26	42	83	18	4	24	29	38	16	19	6	9	20	5	12
	C35 to C44 aliphatic	mg/kg	LQM S4UL	92000	7	2	20	<1	4	11	26	2	<1	4	7	9	2	3	<1	<1	3	n/t	1
	Total Aromatic	mg/kg		N/a	46	26	94	27	153	83	152	46	54	138	367	171	46	135	15	25	75	n/t	40
	C5 to C7 aromatic (Benzene)	mg/kg	LQM S4UL	140	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	C7 to C8 aromatic (Toluene)	mg/kg	LQM S4UL	290	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	C8 to C10 aromatic	mg/kg	LQM S4UL	83	<1	<1	<10	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	5	<3	<3	<3	<1	<3
	C10 to C12 aromatic	mg/kg	LQM S4UL	180	<1	<1	<10	<1	<1	<1	2	<1	<1	<1	2	1	<1	3	<1	<1	<1	<1	<1
	C12 to C16 aromatic	mg/kg	LQM S4UL	330	2	2	<10	<1	8	5	8	2	3	9	14	7	2	6	<1	<1	3	<1	3
	C16 to C21 aromatic	mg/kg	LQM S4UL	540	7	6	23	6	35	19	29	10	11	29	74	32	7	24	4	5	12	3	8
	C21 to C35 aromatic	mg/kg	LQM S4UL	1500	30	17	60	22	107	54	99	32	41	96	269	125	36	95	12	20	58	10	30
	C35 to C44 aromatic	mg/kg	LQM S4UL	1500	8	1	12	<1	3	5	14	1	<1	3	7	5	<1	3	<1	<1	2	n/t	<1
	Aliphatic + Aromatic EC >44-70	mg/kg	LQM S4UL	N/a	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
BTEX Suite	benzene	mg/kg	LQM S4UL	0.17	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	toluene	mg/kg	LQM S4UL	290	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	ethylbenzene	mg/kg	LQM S4UL	110	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	M&P Xylene	mg/kg	LQM S4UL	130	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	O-Xylene	mg/kg	LQM S4UL	140	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PAH Suite	naphthalene	mg/kg	LQM S4UL	5.6	0.04	<0.03	0.07	<0.03	0.12	0.06	0.92	<0.03	0.04	0.06	0.29	0.5	<0.03	<0.03	<0.03	0.11	<0.03	n/t	<0.03
	acenaphthylene	mg/kg	LQM S4UL	420	<0.01	<0.01	0.03	<0.01	<0.01	0.02	0.08	<0.01	0.02	<0.01	0.15	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	n/t	<0.01
	acenaphthene	mg/kg	LQM S4UL	510	0.02	0.02	0.3	<0.01	0.22	0.23	2.41	0.04	0.09	0.32	1.01	0.89	0.03	0.07	0.03	0.05	0.03	n/t	0.04
	fluorene	mg/kg	LQM S4UL	400	0.01	0.01	0.17	<0.01	0.11	0.12	1.87	0.03	0.05	0.14	0.84	0.72	<0.01	0.04	<0.01	0.03	0.02	n/t	0.03
	phenanthrene	mg/kg	LQM S4UL	220	0.23	0.25	2.01	0.04	1.11	1.37	11.8	0.4	0.58	1.4	8.72	5.31	0.21	0.48	0.18	0.39	0.29	n/t	0.23
	anthracene	mg/kg	LQM S4UL	5400	0.05	0.06	0.46	<0.02	0.28	0.33	3.13	0.08	0.14	0.34	1.95	1.16	0.05	0.11	0.04	0.09	0.06	n/t	0.05
	fluoranthene	mg/kg	LQM S4UL	560	0.47	0.39	3.31	0.1	2.04	2.73	12.2	0.77	1.41	2.77	12.8	6.3	0.53	0.96	0.39	0.71	0.51	n/t	0.47
	pyrene	mg/kg	LQM S4UL	1200	0.45	0.33	3.1	0.1	1.71	2.3	10.2	0.67	1.27	2.23	11.8	5.49	0.52	0.84	0.35	0.62	0.47	n/t	0.45
	benzo(a)anthracene	mg/kg	LQM S4UL	11	0.23	0.15	1.53	0.06	0.96	1.21	4.68	0.34	0.65	1.25	5.15	2.6	0.31	0.46	0.18	0.32	0.22	n/t	0.24
	chrysene	mg/kg	LQM S4UL	22	0.27	0.15	1.63	0.08	1.04	1.23	4.47	0.4	0.72	1.29	5.32	2.71	0.37	0.53	0.22	0.35	0.26	n/t	0.31
	benzo(b)fluoranthene	mg/kg	LQM S4UL	3.3	0.31	0.15	1.73	0.07	1.05	1.24	3.75	0.39	0.69	1.41	4.66	2.44	0.4	0.54	0.21	0.32	0.24	n/t	0.31
	benzo(k)fluoranthene	mg/kg	LQM S4UL	93	0.11	<0.07	0.55	<0.07	0.43	0.47	1.28	0.18	0.29	0.58	1.89	0.97	0.18	0.22	0.09	0.15	0.12	n/t	0.14
	benzo(a)pyrene	mg/kg	LQM S4UL	2.7	0.21	0.1	1.35	0.06	0.86	1.05	3.23	0.31	0.56	1.12	4.07	2.09	0.33	0.43	0.17	0.27	0.19	n/t	0.26
	dibenzo(ah)anthracene	mg/kg	LQM S4UL	0.28	<0.04	<0.04	0.16	<0.04	0.1	0.12	0.36	<0.04	0.06	0.12	0.45	0.22	0.05	0.06	<0.04	<0.04	<0.04	n/t	<0.04
	benzo(ghi)perylene	mg/kg	LQM S4UL	340	0.16	0.06	0.92	<0.05	0.49	0.54	1.47	0.18	0.29	0.61	2	0.99	0.22	0.26	0.09	0.15	0.12	n/t	0.15
	indeno(123cd)pyrene	mg/kg	LQM S4UL	36	0.17	0.07	1	0.04	0.56	0.65	1.82	0.2	0.34	0.71	2.28	1.12	0.23	0.3	0.1	0.18	0.12	n/t	0.18

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	SUTCLIFFE INVESTIGATIONS TEL: 0151 227 3155 FAX: 0151 227 3156		**Human Health Assessment**								
	Job Name:	Cheetham Hill, Manchester		**Job No.:**	33716LG						
	Proposed Land Use:	Residential With Plant Uptake		**S.O.M.:**	2.5						
	Above Threshold:			**Sample ID:**	TP101	TP101	TP102	TP104	TP105	TP106	TP108
	Below Limit of Detection:	<0.01		**Depth Top (m bgl):**	0.00	0.30	0.20	2.00	1.00	0.30	0.30
	Not Tested:	n/t		**Depth Base (m bgl):**	0.30	0.80	0.50	2.50	1.50	0.60	0.75
	No Asbestos Detected:	NAD		**Date Sampled:**	01-Dec-23	01-Dec-23	01-Dec-23	01-Dec-23	01-Dec-23	01-Dec-23	01-Dec-23
	Contaminant	**Units**	**Threshold Source**	**Threshold Value**	**TP101**	**TP101**	**TP102**	**TP104**	**TP105**	**TP106**	**TP108**
Metals / Non-Metals / Other Suite	Arsenic (Total)	mg/kg	LQM S4UL	37	7	6	4	4	12	7	8
	Boron (Soluble)	mg/kg	LQM S4UL	290	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0
	Cadmium (Total)	mg/kg	LQM S4UL	11	1	1	0.5	1.1	1.2	0.7	1
	Chromium III	mg/kg	LQM S4UL	910	17	20	15	33	19	17	23
	Chromium VI	mg/kg	LQM S4UL	6	<1	<1	<1	<1	<1	<1	<1
	Copper (Total)	mg/kg	LQM S4UL	2400	38	32	19	45	49	31	36
	Lead (Total)	mg/kg	C4SL	200	106	106	28	56	108	107	92
	Mercury (Total)	mg/kg	LQM S4UL	40	0.53	0.54	0.54	0.22	0.43	0.24	0.36
	Nickel (Total)	mg/kg	LQM S4UL	180	17	17	14	30	18	16	19
	Selenium (Total)	mg/kg	LQM S4UL	250	<1	<1	<1	<1	<1	<1	<1
	Zinc (Total)	mg/kg	LQM S4UL	3700	92	123	96	52	86	69	115
	Cyanide (Total)	mg/kg	ATKINS	34	<1	<1	<1	<1	<1	<1	<1
	Phenols (Total)	mg/kg	LQM S4UL	550	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Organic matter	%	LQM S4UL	N/a	6.4	4	3.6	6.8	4.6	3.1	6.4
	Sulphate (Acid Soluble)	mg/kg	LQM S4UL	N/a	640	890	1400	340	480	810	720
	Sulphate as Water Soluble	g/l	LQM S4UL	N/a	0.02	0.03	0.04	0.03	0.01	0.01	0.03
	Sulphide	mg/kg	LQM S4UL	N/a	66	57	62	97	66	75	73
	pH	pH units	LQM S4UL	N/a	8.03	8.37	8.56	8.26	7.89	7.96	7.66
	Sulphur (Elemental)	mg/kg	LQM S4UL	N/a	50	12	8	150	17	<5	70
Asbestos Suite	Asbestos in soil	N/a		N/a	NAD	NAD	NAD	NAD	NAD	**Chrysotile**	NAD
	Asbestos Matrix (microscope)	N/a		N/a	-	-	-	-	-	Cement	-
	ACM - Suitable for Water Absorption Test?	N/a		N/a	N/A	N/A	N/A	N/A	N/A	No	N/A
	Asbestos in soil % composition	% w/w		0.001	n/t	n/t	n/t	n/t	n/t	0.032	n/t
TPH Suite	TPH (Total)	mg/kg		N/a	300	128	402	110	118	75	50
	Total Aliphatic	mg/kg		N/a	39	16	177	10	25	24	8
	C5 to C6 aliphatic	mg/kg	LQM S4UL	78	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	C6 to C8 aliphatic	mg/kg	LQM S4UL	230	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	C8 to C10 aliphatic	mg/kg	LQM S4UL	65	<1	<1	<1	<1	<1	<1	<1
	C10 to C12 aliphatic	mg/kg	LQM S4UL	330	<1	<1	<1	<1	<1	<1	<1
	C12 to C16 aliphatic	mg/kg	LQM S4UL	2400	2	<1	<1	<1	<1	<1	<1
	C16 to C35 aliphatic	mg/kg	LQM S4UL	92000	24	11	140	6	18	19	6
	C35 to C44 aliphatic	mg/kg	LQM S4UL	92000	14	5	37	4	6	5	2
	Total Aromatic	mg/kg		N/a	261	112	224	101	93	51	42
	C5 to C7 aromatic (Benzene)	mg/kg	LQM S4UL	140	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	C7 to C8 aromatic (Toluene)	mg/kg	LQM S4UL	290	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	C8 to C10 aromatic	mg/kg	LQM S4UL	83	<1	<1	<1	<1	<1	<1	<1
	C10 to C12 aromatic	mg/kg	LQM S4UL	180	<1	<1	<1	4	<1	<1	<1
	C12 to C16 aromatic	mg/kg	LQM S4UL	330	12	5	6	11	3	3	2
	C16 to C21 aromatic	mg/kg	LQM S4UL	540	53	24	33	23	15	7	8
	C21 to C35 aromatic	mg/kg	LQM S4UL	1500	180	78	136	60	69	38	30
	C35 to C44 aromatic	mg/kg	LQM S4UL	1500	15	5	49	4	5	3	2
	Aliphatic + Aromatic EC >44-70	mg/kg	LQM S4UL	N/a	n/t	n/t	n/t	n/t	n/t	n/t	n/t
BTEX Suite	benzene	mg/kg	LQM S4UL	0.17	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	toluene	mg/kg	LQM S4UL	290	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	ethylbenzene	mg/kg	LQM S4UL	110	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	M&P Xylene	mg/kg	LQM S4UL	130	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	O-Xylene	mg/kg	LQM S4UL	140	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PAH Suite	naphthalene	mg/kg	LQM S4UL	5.6	0.22	0.06	0.17	0.38	0.03	<0.03	<0.03
	acenaphthylene	mg/kg	LQM S4UL	420	0.06	0.02	0.03	0.06	0.05	<0.01	0.02
	acenaphthene	mg/kg	LQM S4UL	510	0.53	0.08	0.22	0.89	0.12	0.02	0.08
	fluorene	mg/kg	LQM S4UL	400	0.41	0.05	0.24	0.49	0.07	0.01	0.07
	phenanthrene	mg/kg	LQM S4UL	220	4.92	0.74	2.32	1.97	0.86	0.23	0.9
	anthracene	mg/kg	LQM S4UL	5400	1.11	0.17	0.49	0.53	0.23	0.05	0.17
	fluoranthene	mg/kg	LQM S4UL	560	7.59	1.52	3.44	2.53	1.76	0.42	1.37
	pyrene	mg/kg	LQM S4UL	1200	6.99	1.49	3.16	2.63	1.58	0.4	1.34
	benzo(a)anthracene	mg/kg	LQM S4UL	11	3.39	0.81	1.48	1.18	0.79	0.22	0.63
	chrysene	mg/kg	LQM S4UL	22	3.6	0.92	1.49	1.27	0.91	0.25	0.72
	benzo(b)fluoranthene	mg/kg	LQM S4UL	3.3	4.15	1.13	1.6	1.3	1.14	0.3	0.74
	benzo(k)fluoranthene	mg/kg	LQM S4UL	93	1.44	0.36	0.56	0.42	0.34	0.09	0.27
	benzo(a)pyrene	mg/kg	LQM S4UL	2.7	3.26	0.78	1.19	1.01	0.74	0.2	0.51
	dibenzo(ah)anthracene	mg/kg	LQM S4UL	0.28	0.33	0.09	0.13	0.12	0.08	<0.04	0.06
	benzo(ghi)perylene	mg/kg	LQM S4UL	340	1.79	0.47	0.7	0.58	0.4	0.14	0.31
	indeno(123cd)pyrene	mg/kg	LQM S4UL	36	2	0.52	0.79	0.61	0.47	0.15	0.33

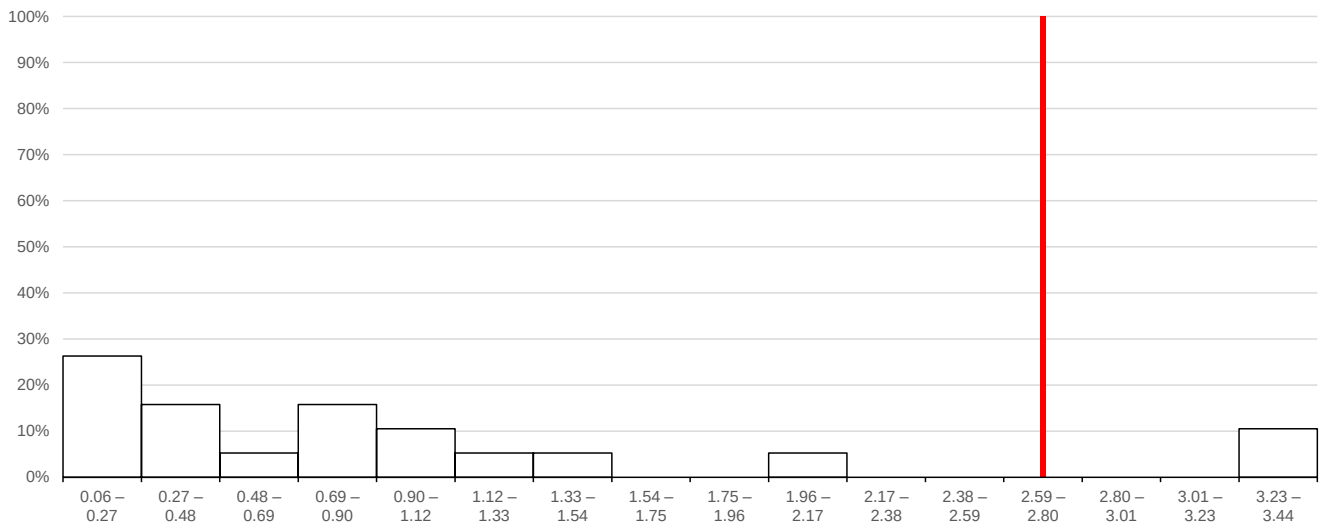
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SUTCLIFFE INVESTIGATIONS

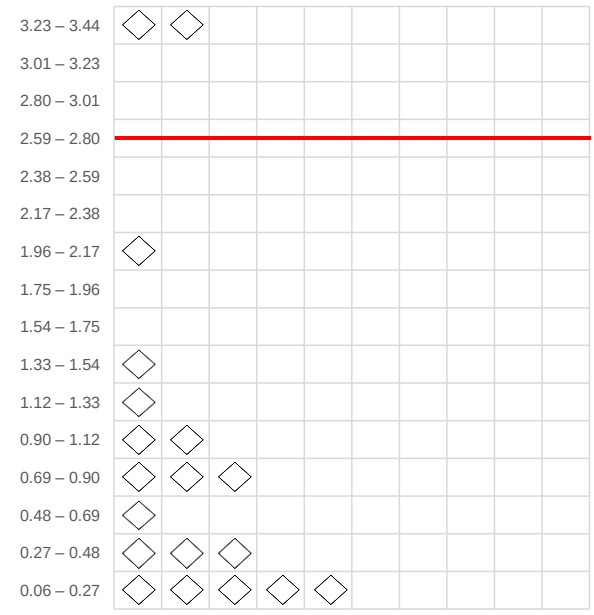
TEL: 0151 227 3155
FAX: 0151 227 3156

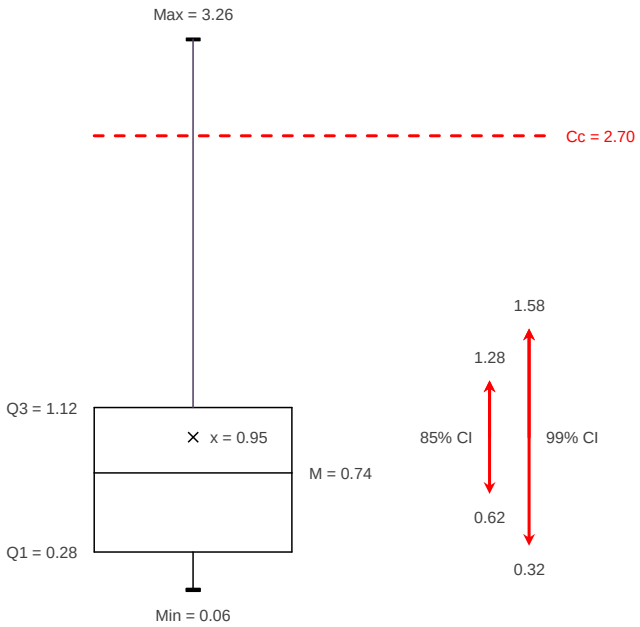
Statistical Analysis (2-Way Confidence Intervals)

Job Name:	Cheetham Hill, Manchester (Alderford Parade)	**Job No.:**	33716LG
Proposed Land Use:	Residential With Plant Uptake	**No. of Samples:**	19
Contaminant:	benzo(a)pyrene	**No. of Bin:**	15
Data Type:	Symmetric	**% Confidence Interval:**	85% CI
Non-detect Rule	No Non-detects		99% CI



Maximum (Max):	3.26		**Critical Concentration (Cc):**	2.70	
Upper Quartile (Q3):	1.12		**Mean (x):**	0.95	
Median (M):	0.74		**Range (R):**	3.20	
Lower Quartile (Q1):	0.28		**Standard Deviation (s):**	0.96	
Minimum (Min):	0.06		**Interquartile Range (IQR):**	0.84	
85% CI	0.62	1.28	**99% CI**	0.32	1.58





Summary

Sutcliffe are 85% confident that the true mean concentration (μ) for benzo(a)pyrene lies between 0.62mg/kg and 1.28mg/kg.

Sutcliffe are 99% confident that the true mean concentration (μ) for benzo(a)pyrene does not lie outside of 0.32mg/kg and 1.58mg/kg.

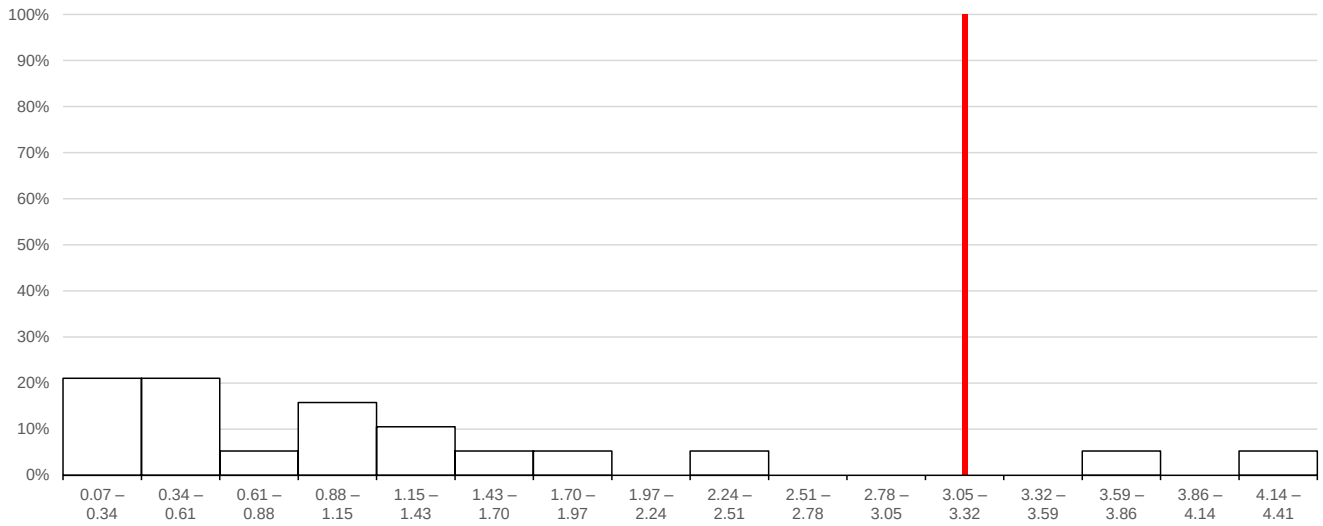
The Critical Concentration (Cc) for benzo(a)pyrene under a 2.5% S.O.M. Residential With Plant Uptake end use is 2.70mg/kg.

SUTCLIFFE INVESTIGATIONS

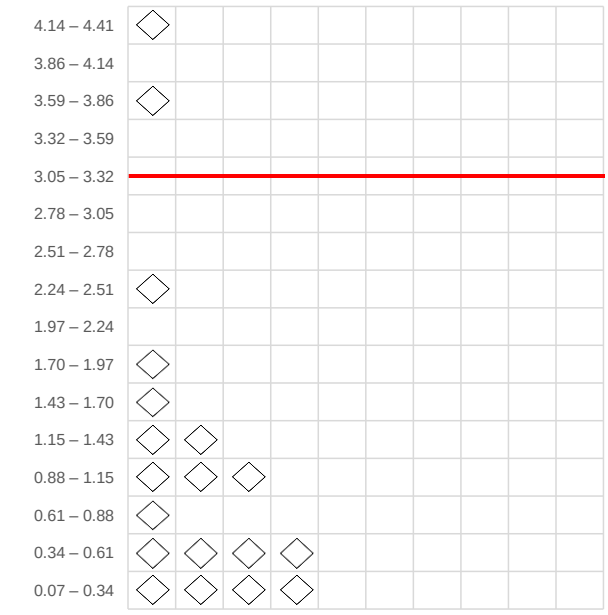
TEL: 0151 227 3155
FAX: 0151 227 3156

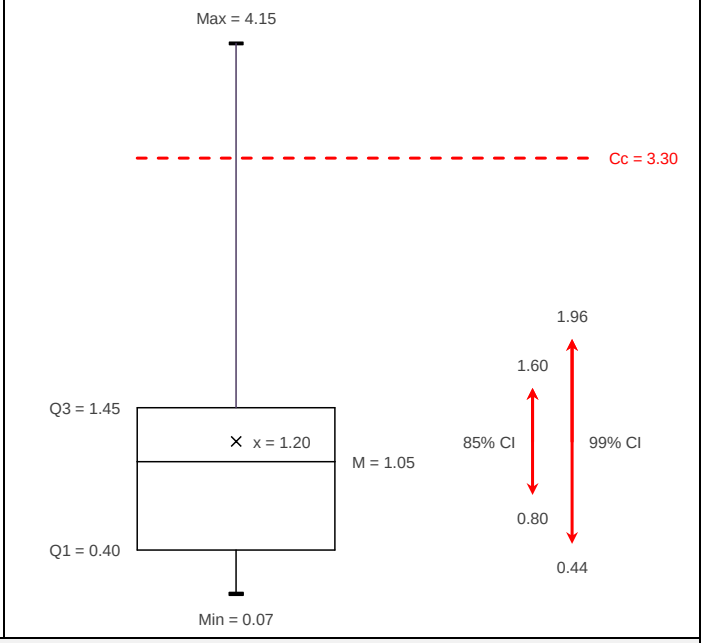
Statistical Analysis (2-Way Confidence Intervals)

Job Name:	Cheetham Hill, Manchester (Alderford Parade)	**Job No.:**	33716LG
Proposed Land Use:	Residential With Plant Uptake	**No. of Samples:**	19
Contaminant:	benzo(b)fluoranthene	**No. of Bin:**	15
Data Type:	Symmetric	**% Confidence Interval:**	85% CI
Non-detect Rule	No Non-detects		99% CI



Maximum (Max):	4.15	**Critical Concentration (Cc):**	3.30
Upper Quartile (Q3):	1.45	**Mean (x):**	1.20
Median (M):	1.05	**Range (R):**	4.08
Lower Quartile (Q1):	0.40	**Standard Deviation (s):**	1.15
Minimum (Min):	0.07	**Interquartile Range (IQR):**	1.06
85% CI	0.80 – 1.60	**99% CI**	0.44 – 1.96





Summary

Sutcliffe are 85% confident that the true mean concentration (μ) for benzo(b)fluoranthene lies between 0.80mg/kg and 1.60mg/kg.

Sutcliffe are 99% confident that the true mean concentration (μ) for benzo(b)fluoranthene does not lie outside of 0.44mg/kg and 1.96mg/kg.

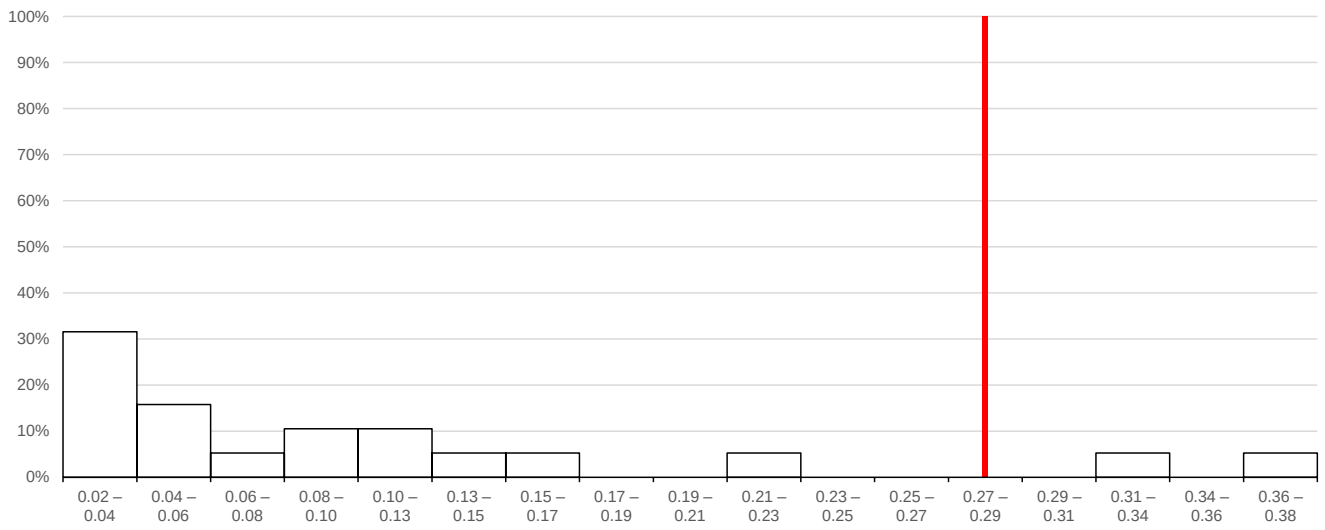
The Critical Concentration (Cc) for benzo(b)fluoranthene under a 2.5% S.O.M. Residential With Plant Uptake end use is 3.30mg/kg.

SUTCLIFFE INVESTIGATIONS

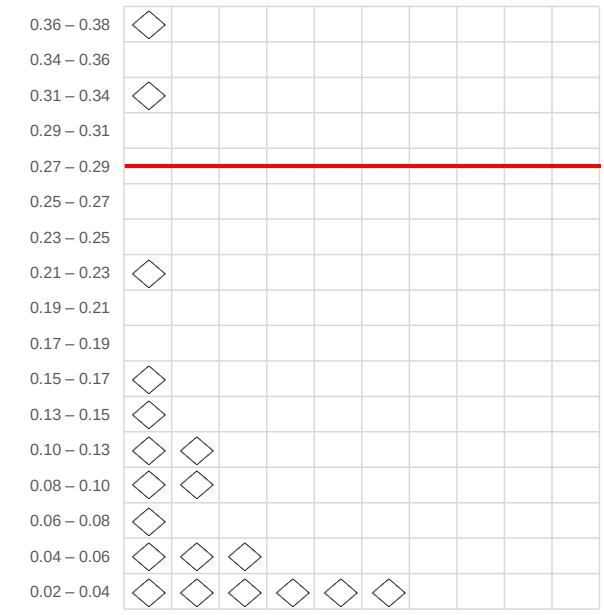
TEL: 0151 227 3155
FAX: 0151 227 3156

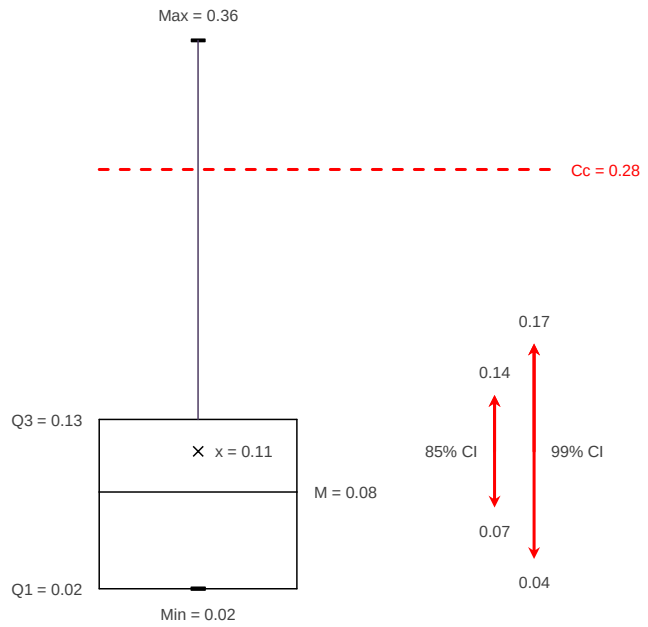
Statistical Analysis (2-Way Confidence Intervals)

Job Name:	Cheetham Hill, Manchester (Alderford Parade)	**Job No.:**	33716LG
Proposed Land Use:	Residential With Plant Uptake	**No. of Samples:**	19
Contaminant:	dibenzo(ah)anthracene	**No. of Bin:**	15
Data Type:	Symmetric	**% Confidence Interval:**	85% CI
Non-detect Rule	Detection Limit		99% CI



Maximum (Max):	0.36		**Critical Concentration (Cc):**	0.28	
Upper Quartile (Q3):	0.13		**Mean (x):**	0.11	
Median (M):	0.08		**Range (R):**	0.34	
Lower Quartile (Q1):	0.02		**Standard Deviation (s):**	0.10	
Minimum (Min):	0.02		**Interquartile Range (IQR):**	0.11	
85% CI	0.07	0.14	**99% CI**	0.04	0.17





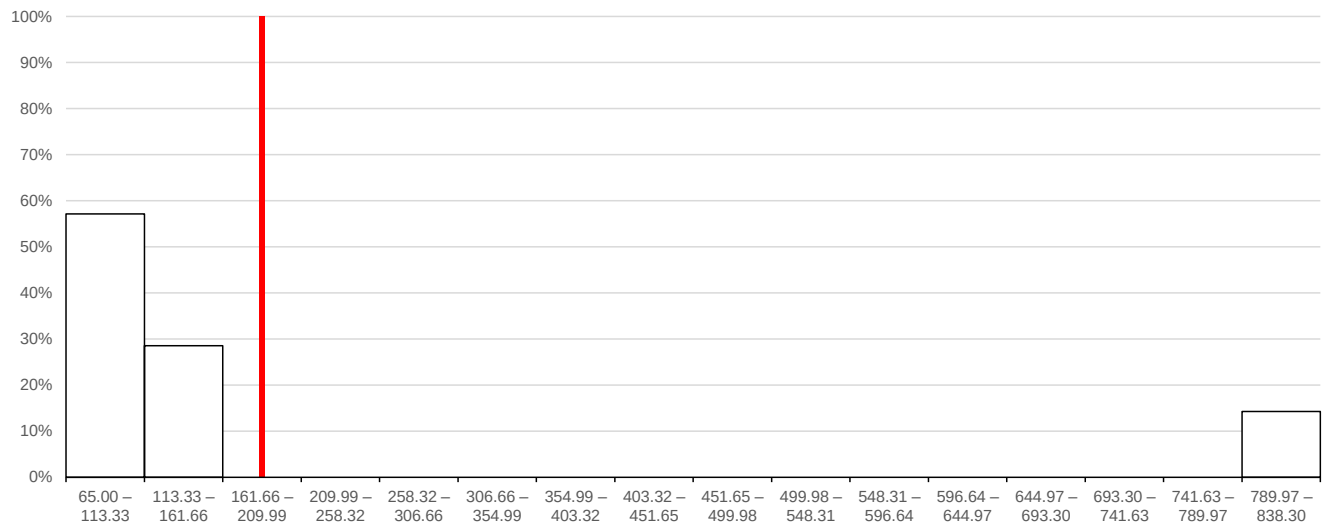
Summary

Sutcliffe are 85% confident that the true mean concentration (μ) for dibenzo(ah)anthracene lies between 0.07mg/kg and 0.14mg/kg.

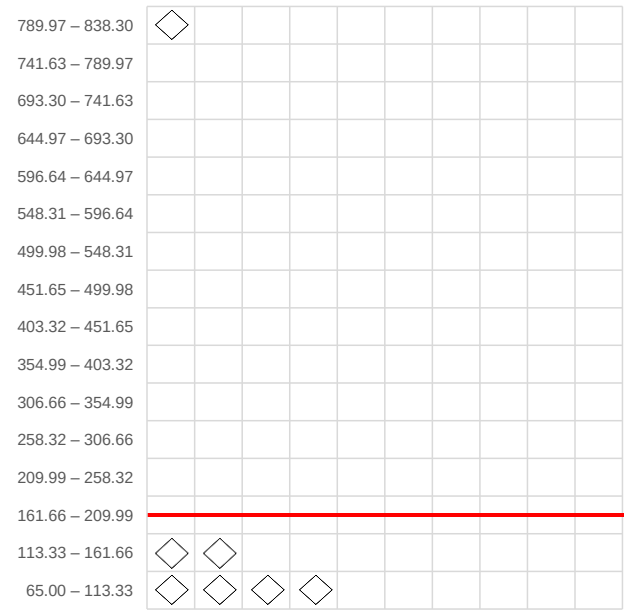
Sutcliffe are 99% confident that the true mean concentration (μ) for dibenzo(ah)anthracene does not lie outside of 0.04mg/kg and 0.17mg/kg.

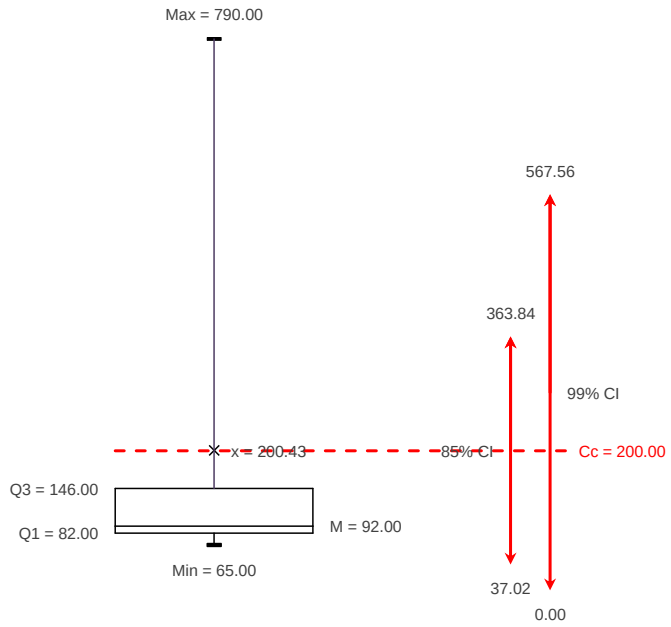
The Critical Concentration (Cc) for dibenzo(ah)anthracene under a 2.5% S.O.M. Residential With Plant Uptake end use is 0.28mg/kg.

Sutcliffe	**SUTCLIFFE INVESTIGATIONS** TEL: 0151 227 3155 FAX: 0151 227 3156		**Statistical Analysis (2-Way Confidence Intervals)**
Job Name:	Cheetham Hill, Manchester (Heatherdale Drive)	**Job No.:**	33716LG
Proposed Land Use:	Residential With Plant Uptake	**No. of Samples:**	7
Contaminant:	Lead (Total)	**No. of Bin:**	15
Data Type:	Symmetric	**% Confidence Interval:**	85% CI
Non-detect Rule	No Non-detects		99% CI



Maximum (Max):	790.00		**Critical Concentration (Cc):**	200.00	
Upper Quartile (Q3):	146.00		**Mean (x):**	200.43	
Median (M):	92.00		**Range (R):**	725.00	
Lower Quartile (Q1):	82.00		**Standard Deviation (s):**	262.00	
Minimum (Min):	65.00		**Interquartile Range (IQR):**	64.00	
85% CI	37.02	363.84	**99% CI**	0.00	567.56





Summary

Sutcliffe are 85% confident that the true mean concentration (μ) for Lead (Total) lies between 37.02mg/kg and 363.84mg/kg.

Sutcliffe are 99% confident that the true mean concentration (μ) for Lead (Total) does not lie outside of 0.00mg/kg and 567.56mg/kg.

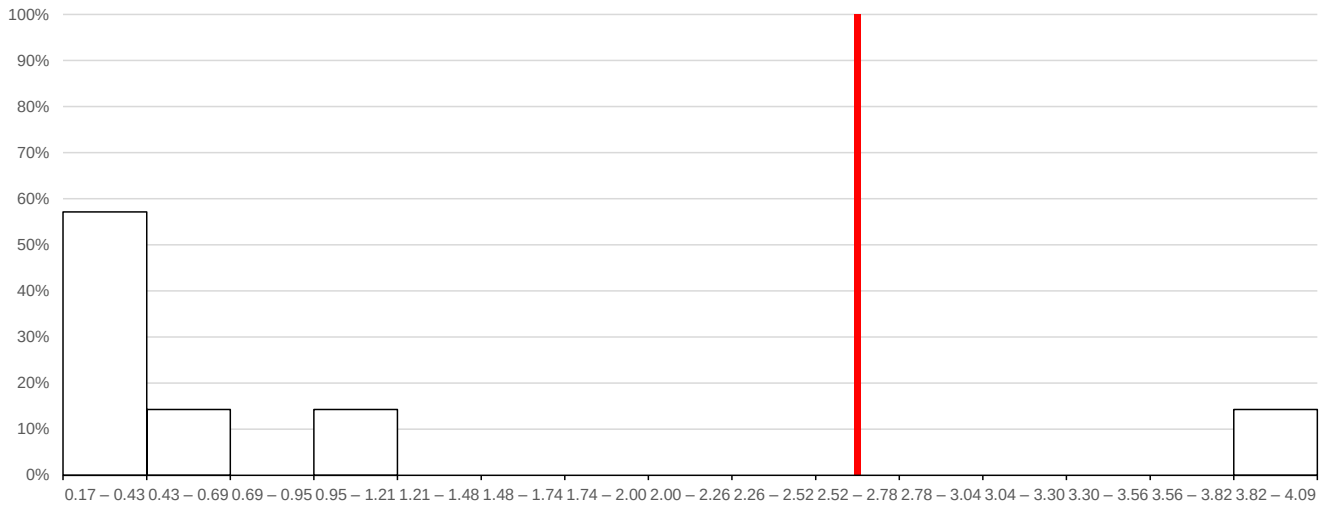
The Critical Concentration (Cc) for Lead (Total) under a 2.5% S.O.M. Residential With Plant Uptake end use is 200.00mg/kg.

SUTCLIFFE INVESTIGATIONS

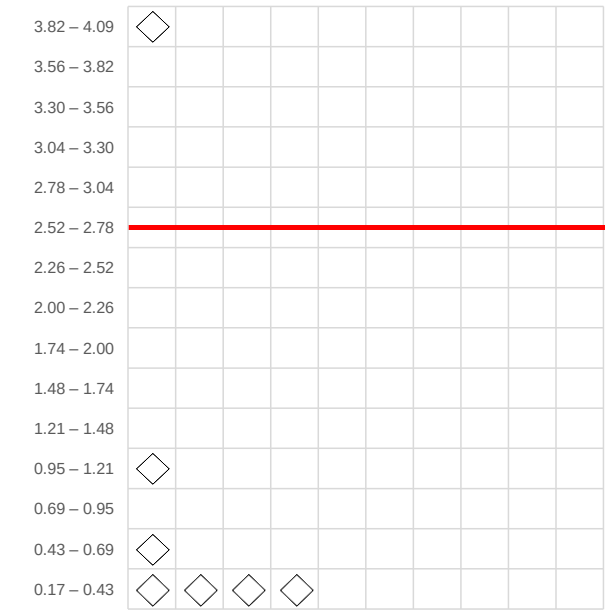
TEL: 0151 227 3155
FAX: 0151 227 3156

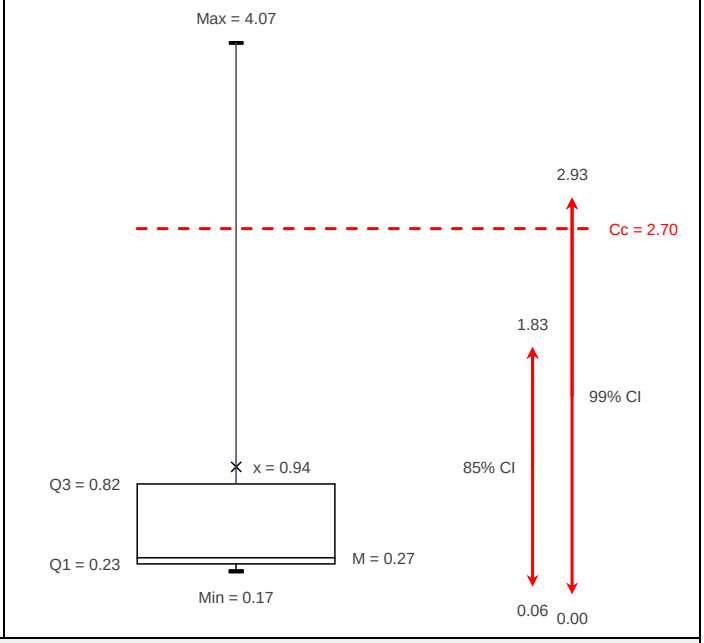
Statistical Analysis (2-Way Confidence Intervals)

Job Name:	Cheetham Hill, Manchester (Heatherdale Drive)	**Job No.:**	33716LG
Proposed Land Use:	Residential With Plant Uptake	**No. of Samples:**	7
Contaminant:	benzo(a)pyrene	**No. of Bin:**	15
Data Type:	Symmetric	**% Confidence Interval:**	85% CI
Non-detect Rule	No Non-detects		99% CI



Maximum (Max):	4.07		**Critical Concentration (Cc):**	2.70	
Upper Quartile (Q3):	0.82		**Mean (x):**	0.94	
Median (M):	0.27		**Range (R):**	3.90	
Lower Quartile (Q1):	0.23		**Standard Deviation (s):**	1.42	
Minimum (Min):	0.17		**Interquartile Range (IQR):**	0.59	
85% CI	0.06	1.83	**99% CI**	0.00	2.93





Summary

Sutcliffe are 85% confident that the true mean concentration (μ) for benzo(a)pyrene lies between 0.06mg/kg and 1.83mg/kg.

Sutcliffe are 99% confident that the true mean concentration (μ) for benzo(a)pyrene does not lie outside of 0.00mg/kg and 2.93mg/kg.

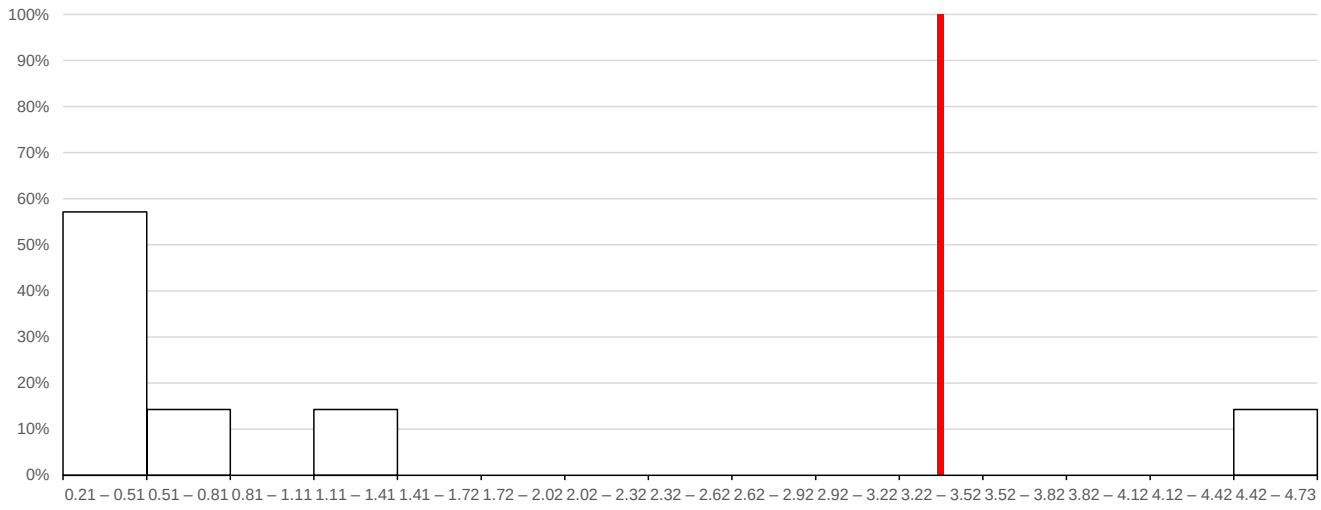
The Critical Concentration (Cc) for benzo(a)pyrene under a 2.5% S.O.M. Residential With Plant Uptake end use is 2.70mg/kg.

SUTCLIFFE INVESTIGATIONS

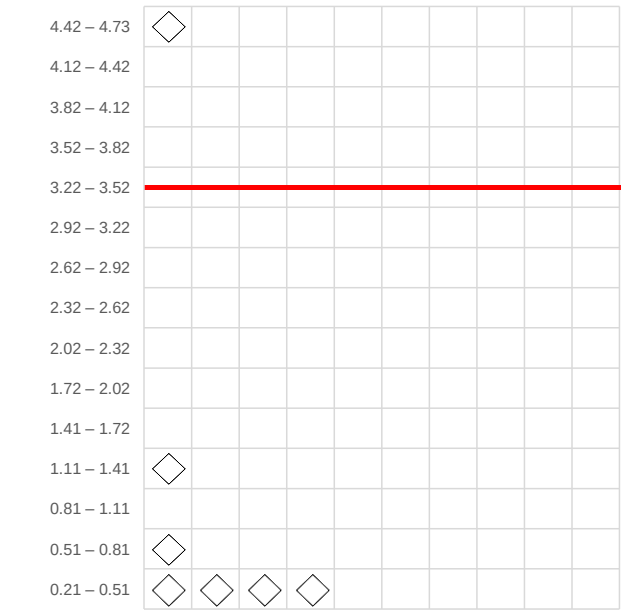
TEL: 0151 227 3155
FAX: 0151 227 3156

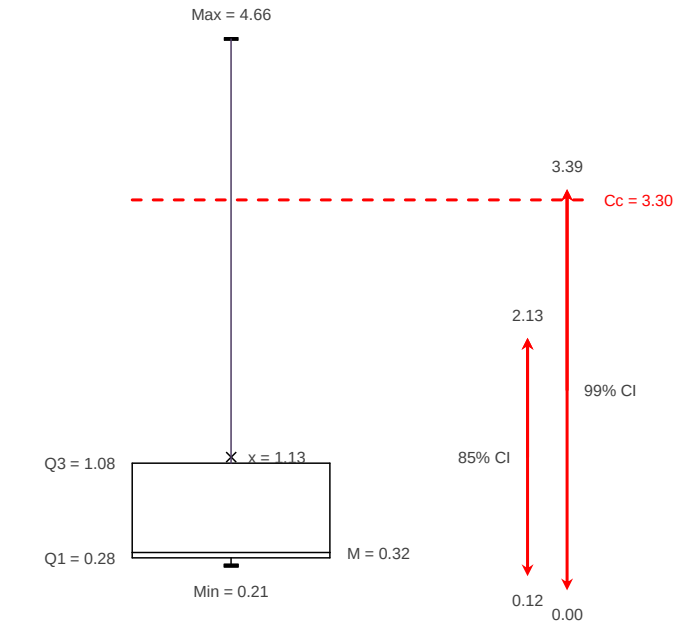
Statistical Analysis (2-Way Confidence Intervals)

Job Name:	Cheetham Hill, Manchester (Heatherdale Drive)	**Job No.:**	33716LG
Proposed Land Use:	Residential With Plant Uptake	**No. of Samples:**	7
Contaminant:	benzo(b)fluoranthene	**No. of Bin:**	15
Data Type:	Symmetric	**% Confidence Interval:**	85% CI
Non-detect Rule	No Non-detects		99% CI



Maximum (Max):	4.66		**Critical Concentration (Cc):**	3.30	
Upper Quartile (Q3):	1.08		**Mean (x):**	1.13	
Median (M):	0.32		**Range (R):**	4.45	
Lower Quartile (Q1):	0.28		**Standard Deviation (s):**	1.62	
Minimum (Min):	0.21		**Interquartile Range (IQR):**	0.80	
85% CI	0.12	2.13	**99% CI**	0.00	3.39





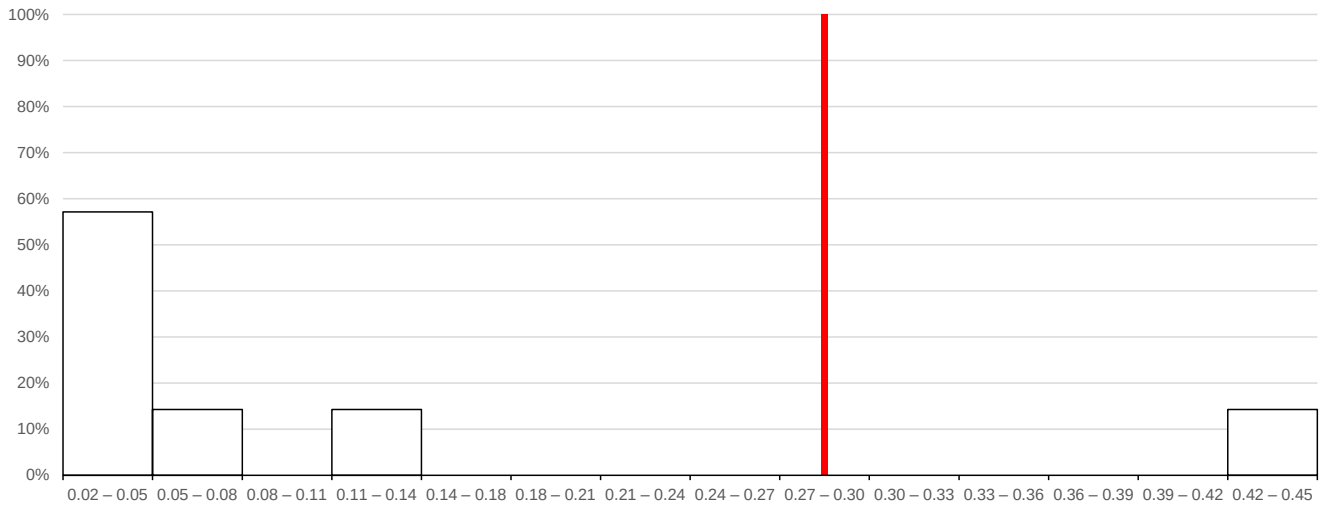
Summary

Sutcliffe are 85% confident that the true mean concentration (μ) for benzo(b)fluoranthene lies between 0.12mg/kg and 2.13mg/kg.

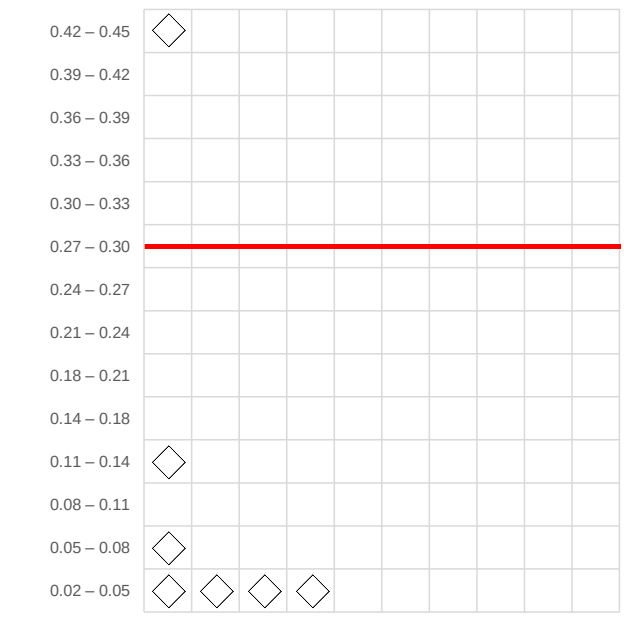
Sutcliffe are 99% confident that the true mean concentration (μ) for benzo(b)fluoranthene does not lie outside of 0.00mg/kg and 3.39mg/kg.

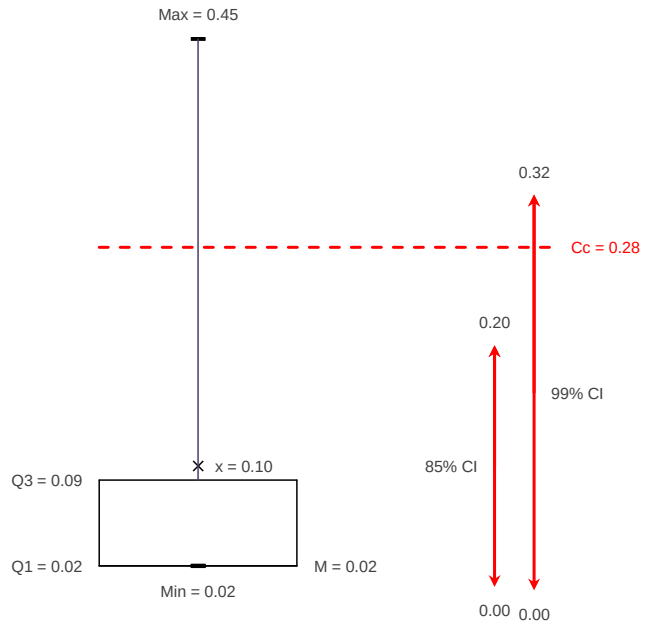
The Critical Concentration (Cc) for benzo(b)fluoranthene under a 2.5% S.O.M. Residential With Plant Uptake end use is 3.30mg/kg.

Sutcliffe	**SUTCLIFFE INVESTIGATIONS** TEL: 0151 227 3155 FAX: 0151 227 3156		**Statistical Analysis (2-Way Confidence Intervals)**
Job Name:	Cheetham Hill, Manchester (Heatherdale Drive)	**Job No.:**	33716LG
Proposed Land Use:	Residential With Plant Uptake	**No. of Samples:**	7
Contaminant:	dibenzo(ah)anthracene	**No. of Bin:**	15
Data Type:	Symmetric	**% Confidence Interval:**	85% CI
Non-detect Rule	Detection Limit		99% CI



Maximum (Max):	0.45		**Critical Concentration (Cc):**	0.28	
Upper Quartile (Q3):	0.09		**Mean (x):**	0.10	
Median (M):	0.02		**Range (R):**	0.43	
Lower Quartile (Q1):	0.02		**Standard Deviation (s):**	0.16	
Minimum (Min):	0.02		**Interquartile Range (IQR):**	0.07	
85% CI	0.00	0.20	**99% CI**	0.00	0.32





Summary

Sutcliffe are 85% confident that the true mean concentration (μ) for dibenzo(ah)anthracene lies between 0.00mg/kg and 0.20mg/kg.

Sutcliffe are 99% confident that the true mean concentration (μ) for dibenzo(ah)anthracene does not lie outside of 0.00mg/kg and 0.32mg/kg.

The Critical Concentration (Cc) for dibenzo(ah)anthracene under a 2.5% S.O.M. Residential With Plant Uptake end use is 0.28mg/kg.

	Sutcliffe	**SUTCLIFFE INVESTIGATIONS** TEL: 0151 227 3155 FAX: 0151 227 3156		**Controlled Waters Assessment**						
	Job Name:	Cheetham Hill, Manchester		**Job No.:**	33716LG					
	Above EQS Threshold:			**Sample ID:**		**TP101**	**WS112**	**WS107**	**TP108**	**WS110**
	Above UK DWS Threshold:									
	Above all Thresholds:			**Depth Top:**		0.00	0.00	0.00	0.00	0.00
	Below Limit of Detection:	<0.01		**Depth Base:**		0.20	0.30	0.30	0.30	0.30
	Not tested:	n/t		**Date Sampled:**		19-Jan-24	19-Jan-24	19-Jan-24	19-Jan-24	19-Jan-24
	Contaminant Leachate Prep (10:1 Std NRA)*	**Units**	**EQS Threshold**	**UK DWS Threshold**		**TP101**	**WS112**	**WS107**	**TP108**	**WS110**
Metals / Non-Metals / Other Suite	Arsenic (Soluble)*	µg/l	50	10		<1	<1	5	1	4
	Boron (Soluble)	µg/l	1000	1000		11	11	<10	11	12
	Cadmium (Soluble)	µg/l	0.45 - 1.5	5		<1	<1	<1	<1	<1
	Chromium Trivalent (Soluble)	µg/l	4.7	50		<0.05	<0.05	<0.05	<0.05	<0.05
	Chromium Hexavalent (Soluble)	µg/l	3.4	50		<0.05	<0.05	<0.05	<0.05	<0.05
	Copper (Soluble)	µg/l	1	2000		<4	8	20	9	7
	Lead (Soluble)	µg/l	14	10		<1	4	60	11	9
	Mercury (Soluble)	µg/l	0.07	1		<0.1	<0.1	<0.1	<0.1	<0.1
	Nickel (Soluble)	µg/l	34	20		<2	<2	<2	<2	<2
	Selenium (Soluble)*	µg/l	-	10		<1	<1	<1	<1	<1
	Sulphur (Free)	mg/l	-	-		<0.1	<0.1	<0.1	<0.1	<0.1
	Zinc (Soluble)	µg/l	10.9	5000		3	19	19	18	9
	Cyanide (Total)*	mg/l	1	50		<0.005	<0.005	<0.005	<0.005	<0.005
	Phenols (Total)	µg/l	7.7	-		<0.01	<0.01	<0.01	<0.01	<0.01
	Sulphate as SO_3	mg/l	400	250		5.36	<1.00	<1.00	1.41	1.89
	Sulphide as S	µg/l	0.25	-		<0.1	<0.1	<0.1	<0.1	<0.1
	pH	pH units	-	-		7.99	6.99	7.51	7.23	7.67
	TPH Total C6-C40 (leachable)		-	-		<80	<80	<80	<80	<80
PAH Suite	naphthalene*	µg/l	130	-		<0.01	<0.01	<0.01	<0.01	<0.01
	acenaphthylene*	µg/l	-	-		<0.01	<0.01	<0.01	<0.01	<0.01
	acenaphthene*	µg/l	-	-		0.01	<0.01	<0.01	<0.01	<0.01
	fluorene*	µg/l	-	-		0.02	<0.01	<0.01	<0.01	<0.01
	phenanthrene*	µg/l	-	-		0.12	<0.01	0.02	0.01	<0.01
	anthracene*	µg/l	0.1	-		0.04	<0.01	<0.01	<0.01	<0.01
	fluoranthene*	µg/l	0.12	-		0.19	<0.01	0.04	<0.01	<0.01
	pyrene*	µg/l	-	-		0.17	<0.01	0.03	<0.01	<0.01
	benzo(a)anthracene*	µg/l	-	-		0.15	<0.01	0.01	<0.01	<0.01
	chrysene*	µg/l	-	-		0.16	<0.01	0.02	<0.01	<0.01
	benzo(b)fluoranthene*	µg/l	0.017	-		0.14	<0.01	0.02	<0.01	<0.01
	benzo(k)fluoranthene*	µg/l	0.017	-		0.06	<0.01	<0.01	<0.01	<0.01
	benzo(a)pyrene*	µg/l	0.27	0.01		0.14	<0.01	0.02	<0.01	<0.01
	dibenzo(ah)anthracene*	µg/l	-	-		0.03	<0.01	<0.01	<0.01	<0.01
	benzo(ghi)perylene*	µg/l	0.0082	-		0.07	<0.01	0.01	<0.01	<0.01
	indeno(123cd)pyrene*	µg/l	0.002	-		0.08	<0.01	0.01	<0.01	<0.01

Appendix H – Waste Classification Report

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:

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

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

1VWSL-TP6AR-1NHQA

Job name

33716LG - Cheetham Hill, Manchester

Description/Comments

Project

33716LG

Site

Cheetham Hill, Manchester

Classified by

Name:
Daniel Evans
Date:
05 Feb 2024 11:01 GMT
Telephone:
0151 227 3155

Company:
Sutcliffe Projects Ltd
18-20 Harrington St
Liverpool
L2 9QA

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: -

Course	Date
Hazardous Waste Classification	-

Purpose of classification

2 - Material Characterisation

Address of the waste

Alderford Parade / Heatherdale Drive, Cheetham Hill, Manchester **Post Code** M8 0TF

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Redevelopment of the site for Residential Housing

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

Waste created by excavation of foundations / service trenches

Description of the waste

MADE GROUND

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	WS101	0.4-1	Non Hazardous		3
2	WS102	0.2-0.6	Non Hazardous		6
3	WS103	0-0.4	Non Hazardous		9
4	WS104	0-0.4	Non Hazardous		12
5	WS105	0.4-0.8	Non Hazardous		15
6	WS106	0.4-0.8	Non Hazardous		18
7	WS107	0-0.4	Non Hazardous		21
8	WS108	0-0.4	Non Hazardous		24
9	WS109	0.4-1	Non Hazardous		27
10	WS110	0.3-0.6	Non Hazardous		30
11	WS110[2]	1-1.6	Non Hazardous		33
12	WS111	0.3-0.6	Non Hazardous		36
13	WS112	0.3-0.6	Non Hazardous		39
14	WS113	0.5-1	Non Hazardous		42
15	WS114	0.3-0.6	Non Hazardous		45
16	WS114[2]	0.6-0.9	Non Hazardous		48
17	WS115	0.2-0.75	Non Hazardous		51
18	WS116	0-0.2	Non Hazardous		54
19	TP101	0-0.3	Non Hazardous		57
20	TP101[2]	0.3-0.8	Non Hazardous		60
21	TP102	0.2-0.5	Non Hazardous		63
22	TP104	2-2.5	Non Hazardous		66
23	TP105	1-1.5	Non Hazardous		69
24	TP106	0.3-0.6	Non Hazardous		72
25	TP108	0.3-0.75	Non Hazardous		75

Related documents

#	Name	Description
1	Sutcliffe Suite 2 2023	waste stream template used to create this Job

Report

Created by: Daniel Evans

Created date: 05 Feb 2024 11:01 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	78
Appendix B: Rationale for selection of metal species	79
Appendix C: Version	80

Classification of sample: WS101

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

Sample details

Sample name:
WS101
Sample Depth:
0.4-1 m
Moisture content:
11.8%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 11.8% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6 mg/kg	1.32	7.922 mg/kg	0.000792 %		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		**<LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.8 mg/kg	1.142	0.914 mg/kg	0.0000914 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		22 mg/kg	1.462	32.154 mg/kg	0.00322 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		**<LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		30 mg/kg	1.126	33.777 mg/kg	0.00338 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	87 mg/kg	1.56	135.704 mg/kg	0.0087 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.4 mg/kg	1.353	0.541 mg/kg	0.0000541 %		
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		16 mg/kg	2.976	47.62 mg/kg	0.00476 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		**<LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		92 mg/kg	2.774	255.221 mg/kg	0.0255 %		
12	TPH (C6 to C40) petroleum group			TPH		72 mg/kg		72 mg/kg	0.0072 %		
13	pH			PH		8.35 pH		8.35 pH	8.35 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		0.04 mg/kg		0.04 mg/kg	0.000004 %		

#		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									
15		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
16		acenaphthene				0.02	mg/kg		0.02	mg/kg	0.000002 %		
			201-469-6	83-32-9									
17		fluorene				0.01	mg/kg		0.01	mg/kg	0.000001 %		
			201-695-5	86-73-7									
18		phenanthrene				0.23	mg/kg		0.23	mg/kg	0.000023 %		
			201-581-5	85-01-8									
19		anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			204-371-1	120-12-7									
20		fluoranthene				0.47	mg/kg		0.47	mg/kg	0.000047 %		
			205-912-4	206-44-0									
21		pyrene				0.45	mg/kg		0.45	mg/kg	0.000045 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.23	mg/kg		0.23	mg/kg	0.000023 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.27	mg/kg		0.27	mg/kg	0.000027 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				0.31	mg/kg		0.31	mg/kg	0.000031 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.11	mg/kg		0.11	mg/kg	0.000011 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.21	mg/kg		0.21	mg/kg	0.000021 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.17	mg/kg		0.17	mg/kg	0.000017 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.16	mg/kg		0.16	mg/kg	0.000016 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0547 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0072%)

Classification of sample: WS102

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

Sample details

Sample name:
WS102
Sample Depth:
0.2-0.6 m
Moisture content:
12%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 12% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		3 mg/kg	1.32	3.961 mg/kg	0.000396 %		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1 mg/kg	1.142	1.142 mg/kg	0.000114 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		25 mg/kg	1.462	36.539 mg/kg	0.00365 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		27 mg/kg	1.126	30.399 mg/kg	0.00304 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	43 mg/kg	1.56	67.072 mg/kg	0.0043 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17 mg/kg	1.353	<0.23 mg/kg	<0.000023 %		<**LOD**
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		30 mg/kg	2.976	89.288 mg/kg	0.00893 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		59 mg/kg	2.774	163.675 mg/kg	0.0164 %		
12	TPH (C6 to C40) petroleum group			TPH		36 mg/kg		36 mg/kg	0.0036 %		
13	pH			PH		7.63 pH		7.63 pH	7.63 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			205-917-1	208-96-8									
16		acenaphthene				0.02	mg/kg		0.02	mg/kg	0.000002 %		
			201-469-6	83-32-9									
17		fluorene				0.01	mg/kg		0.01	mg/kg	0.000001 %		
			201-695-5	86-73-7									
18		phenanthrene				0.25	mg/kg		0.25	mg/kg	0.000025 %		
			201-581-5	85-01-8									
19		anthracene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
			204-371-1	120-12-7									
20		fluoranthene				0.39	mg/kg		0.39	mg/kg	0.000039 %		
			205-912-4	206-44-0									
21		pyrene				0.33	mg/kg		0.33	mg/kg	0.000033 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.15	mg/kg		0.15	mg/kg	0.000015 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.15	mg/kg		0.15	mg/kg	0.000015 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				0.15	mg/kg		0.15	mg/kg	0.000015 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0413 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0036%)

Classification of sample: WS103

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

Sample details

Sample name:
WS103
Sample Depth:
0-0.4 m
Moisture content:
17.4%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 17.4% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6 mg/kg	1.32	7.922 mg/kg	0.000792 %		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		**<LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1 mg/kg	1.142	1.142 mg/kg	0.000114 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		21 mg/kg	1.462	30.693 mg/kg	0.00307 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		**<LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		37 mg/kg	1.126	41.658 mg/kg	0.00417 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	62 mg/kg	1.56	96.709 mg/kg	0.0062 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.61 mg/kg	1.353	0.826 mg/kg	0.0000826 %		
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		19 mg/kg	2.976	56.549 mg/kg	0.00565 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		**<LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		160 mg/kg	2.774	443.863 mg/kg	0.0444 %		
12	TPH (C6 to C40) petroleum group			TPH		199 mg/kg		199 mg/kg	0.0199 %		
13	pH			PH		8.59 pH		8.59 pH	8.59 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		0.07 mg/kg		0.07 mg/kg	0.000007 %		

#		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									
15		acenaphthylene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
			205-917-1	208-96-8									
16		acenaphthene				0.3	mg/kg		0.3	mg/kg	0.00003 %		
			201-469-6	83-32-9									
17		fluorene				0.17	mg/kg		0.17	mg/kg	0.000017 %		
			201-695-5	86-73-7									
18		phenanthrene				2.01	mg/kg		2.01	mg/kg	0.000201 %		
			201-581-5	85-01-8									
19		anthracene				0.46	mg/kg		0.46	mg/kg	0.000046 %		
			204-371-1	120-12-7									
20		fluoranthene				3.31	mg/kg		3.31	mg/kg	0.000331 %		
			205-912-4	206-44-0									
21		pyrene				3.1	mg/kg		3.1	mg/kg	0.00031 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				1.53	mg/kg		1.53	mg/kg	0.000153 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				1.63	mg/kg		1.63	mg/kg	0.000163 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				1.73	mg/kg		1.73	mg/kg	0.000173 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.55	mg/kg		0.55	mg/kg	0.000055 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				1.35	mg/kg		1.35	mg/kg	0.000135 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				1	mg/kg		1	mg/kg	0.0001 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.16	mg/kg		0.16	mg/kg	0.000016 %		
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.92	mg/kg		0.92	mg/kg	0.000092 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0869 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0199%)

Classification of sample: WS104

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

Sample details

Sample name:
WS104
Sample Depth:
0-0.4 m
Moisture content:
16.9%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 16.9% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2 mg/kg	1.32	2.641 mg/kg	0.000264 %		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.5 mg/kg	1.142	<0.571 mg/kg	<0.0000571 %		<**LOD**
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		11 mg/kg	1.462	16.077 mg/kg	0.00161 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		14 mg/kg	1.126	15.762 mg/kg	0.00158 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	29 mg/kg	1.56	45.235 mg/kg	0.0029 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17 mg/kg	1.353	<0.23 mg/kg	<0.000023 %		<**LOD**
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		11 mg/kg	2.976	32.739 mg/kg	0.00327 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		26 mg/kg	2.774	72.128 mg/kg	0.00721 %		
12	TPH (C6 to C40) petroleum group			TPH		37 mg/kg		37 mg/kg	0.0037 %		
13	pH			PH		6.94 pH		6.94 pH	6.94 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			205-917-1	208-96-8									
16		acenaphthene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			201-469-6	83-32-9									
17		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			201-695-5	86-73-7									
18		phenanthrene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
			201-581-5	85-01-8									
19		anthracene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<**LOD**
			204-371-1	120-12-7									
20		fluoranthene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
			205-912-4	206-44-0									
21		pyrene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.08	mg/kg		0.08	mg/kg	0.000008 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0214 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0037%)

Classification of sample: WS105

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

Sample details

Sample name:
WS105
Sample Depth:
0.4-0.8 m
Moisture content:
15.8%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 15.8% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		9 mg/kg	1.32	11.883 mg/kg	0.00119 %		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		**<LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.7 mg/kg	1.142	0.8 mg/kg	0.00008 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		15 mg/kg	1.462	21.923 mg/kg	0.00219 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		**<LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		59 mg/kg	1.126	66.427 mg/kg	0.00664 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	69 mg/kg	1.56	107.627 mg/kg	0.0069 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		1.6 mg/kg	1.353	2.166 mg/kg	0.000217 %		
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		17 mg/kg	2.976	50.597 mg/kg	0.00506 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		**<LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		60 mg/kg	2.774	166.449 mg/kg	0.0166 %		
12	TPH (C6 to C40) petroleum group			TPH		183 mg/kg		183 mg/kg	0.0183 %		
13	pH			PH		8.09 pH		8.09 pH	8.09 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		0.12 mg/kg		0.12 mg/kg	0.000012 %		

#		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									
15		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
16		acenaphthene				0.22	mg/kg		0.22	mg/kg	0.000022 %		
			201-469-6	83-32-9									
17		fluorene				0.11	mg/kg		0.11	mg/kg	0.000011 %		
			201-695-5	86-73-7									
18		phenanthrene				1.11	mg/kg		1.11	mg/kg	0.000111 %		
			201-581-5	85-01-8									
19		anthracene				0.28	mg/kg		0.28	mg/kg	0.000028 %		
			204-371-1	120-12-7									
20		fluoranthene				2.04	mg/kg		2.04	mg/kg	0.000204 %		
			205-912-4	206-44-0									
21		pyrene				1.71	mg/kg		1.71	mg/kg	0.000171 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.96	mg/kg		0.96	mg/kg	0.000096 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				1.04	mg/kg		1.04	mg/kg	0.000104 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				1.05	mg/kg		1.05	mg/kg	0.000105 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.43	mg/kg		0.43	mg/kg	0.000043 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.86	mg/kg		0.86	mg/kg	0.000086 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.56	mg/kg		0.56	mg/kg	0.000056 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.49	mg/kg		0.49	mg/kg	0.000049 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.059 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0183%)

Classification of sample: WS106

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

Sample details

Sample name:
WS106
Sample Depth:
0.4-0.8 m
Moisture content:
10.8%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 10.8% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		17	mg/kg	1.32	22.446	mg/kg	0.00224 %		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1	mg/kg	1.142	1.142	mg/kg	0.000114 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		23	mg/kg	1.462	33.616	mg/kg	0.00336 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		67	mg/kg	1.126	75.435	mg/kg	0.00754 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	161	mg/kg	1.56	251.13	mg/kg	0.0161 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		1.43	mg/kg	1.353	1.935	mg/kg	0.000194 %		
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		20	mg/kg	2.976	59.525	mg/kg	0.00595 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		83	mg/kg	2.774	230.254	mg/kg	0.023 %		
12	TPH (C6 to C40) petroleum group			TPH		137	mg/kg		137	mg/kg	0.0137 %		
13	pH			PH		8.47	pH		8.47	pH	8.47 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		0.06	mg/kg		0.06	mg/kg	0.000006 %		

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
15		acenaphthylene		205-917-1	208-96-8		0.02	mg/kg		0.02	mg/kg	0.000002 %		
16		acenaphthene		201-469-6	83-32-9		0.23	mg/kg		0.23	mg/kg	0.000023 %		
17		fluorene		201-695-5	86-73-7		0.12	mg/kg		0.12	mg/kg	0.000012 %		
18		phenanthrene		201-581-5	85-01-8		1.37	mg/kg		1.37	mg/kg	0.000137 %		
19		anthracene		204-371-1	120-12-7		0.33	mg/kg		0.33	mg/kg	0.000033 %		
20		fluoranthene		205-912-4	206-44-0		2.73	mg/kg		2.73	mg/kg	0.000273 %		
21		pyrene		204-927-3	129-00-0		2.3	mg/kg		2.3	mg/kg	0.00023 %		
22		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		1.21	mg/kg		1.21	mg/kg	0.000121 %		
23		chrysene	601-048-00-0	205-923-4	218-01-9		1.23	mg/kg		1.23	mg/kg	0.000123 %		
24		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.24	mg/kg		1.24	mg/kg	0.000124 %		
25		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.47	mg/kg		0.47	mg/kg	0.000047 %		
26		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.05	mg/kg		1.05	mg/kg	0.000105 %		
27		indeno[123-cd]pyrene		205-893-2	193-39-5		0.65	mg/kg		0.65	mg/kg	0.000065 %		
28		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.12	mg/kg		0.12	mg/kg	0.000012 %		
29		benzo[ghi]perylene		205-883-8	191-24-2		0.54	mg/kg		0.54	mg/kg	0.000054 %		
30		benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
31		toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
32		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
33		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		**<LOD**
											Total:	0.0743 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0137%)

Classification of sample: WS107

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

Sample details

Sample name:
WS107
Sample Depth:
0-0.4 m
Moisture content:
13.2%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 13.2% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		20 mg/kg	1.32	26.407 mg/kg	0.00264 %		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.1 mg/kg	1.142	1.257 mg/kg	0.000126 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		23 mg/kg	1.462	33.616 mg/kg	0.00336 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		72 mg/kg	1.126	81.064 mg/kg	0.00811 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	196 mg/kg	1.56	305.724 mg/kg	0.0196 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		1.15 mg/kg	1.353	1.557 mg/kg	0.000156 %		
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		20 mg/kg	2.976	59.525 mg/kg	0.00595 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		214 mg/kg	2.774	593.667 mg/kg	0.0594 %		
12	TPH (C6 to C40) petroleum group			TPH		262 mg/kg		262 mg/kg	0.0262 %		
13	pH			PH		8.08 pH		8.08 pH	8.08 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		0.92 mg/kg		0.92 mg/kg	0.000092 %		

#		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									
15		acenaphthylene				0.08	mg/kg		0.08	mg/kg	0.000008 %		
			205-917-1	208-96-8									
16		acenaphthene				2.41	mg/kg		2.41	mg/kg	0.000241 %		
			201-469-6	83-32-9									
17		fluorene				1.87	mg/kg		1.87	mg/kg	0.000187 %		
			201-695-5	86-73-7									
18		phenanthrene				11.8	mg/kg		11.8	mg/kg	0.00118 %		
			201-581-5	85-01-8									
19		anthracene				3.13	mg/kg		3.13	mg/kg	0.000313 %		
			204-371-1	120-12-7									
20		fluoranthene				12.2	mg/kg		12.2	mg/kg	0.00122 %		
			205-912-4	206-44-0									
21		pyrene				10.2	mg/kg		10.2	mg/kg	0.00102 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				4.68	mg/kg		4.68	mg/kg	0.000468 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				4.47	mg/kg		4.47	mg/kg	0.000447 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				3.75	mg/kg		3.75	mg/kg	0.000375 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				1.28	mg/kg		1.28	mg/kg	0.000128 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				3.23	mg/kg		3.23	mg/kg	0.000323 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				1.82	mg/kg		1.82	mg/kg	0.000182 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.36	mg/kg		0.36	mg/kg	0.000036 %		
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				1.47	mg/kg		1.47	mg/kg	0.000147 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.133 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0262%)

Classification of sample: WS108

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

Sample details

Sample name:
WS108
Sample Depth:
0-0.4 m
Moisture content:
19.8%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 19.8% No Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		7	mg/kg	1.32	9.242	mg/kg	0.000924 %		
2		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
3		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.5	mg/kg	1.142	0.571	mg/kg	0.0000571 %		
4		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		17	mg/kg	1.462	24.846	mg/kg	0.00248 %		
5		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<**LOD**
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		28	mg/kg	1.126	31.525	mg/kg	0.00315 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	57	mg/kg	1.56	88.909	mg/kg	0.0057 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
9		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		14	mg/kg	2.976	41.668	mg/kg	0.00417 %		
10		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		62	mg/kg	2.774	171.997	mg/kg	0.0172 %		
12		TPH (C6 to C40) petroleum group			TPH		66	mg/kg		66	mg/kg	0.0066 %		
13		pH			PH		7.68	pH		7.68	pH	7.68 pH		
14		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			205-917-1	208-96-8									
16		acenaphthene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
			201-469-6	83-32-9									
17		fluorene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
			201-695-5	86-73-7									
18		phenanthrene				0.4	mg/kg		0.4	mg/kg	0.00004 %		
			201-581-5	85-01-8									
19		anthracene				0.08	mg/kg		0.08	mg/kg	0.000008 %		
			204-371-1	120-12-7									
20		fluoranthene				0.77	mg/kg		0.77	mg/kg	0.000077 %		
			205-912-4	206-44-0									
21		pyrene				0.67	mg/kg		0.67	mg/kg	0.000067 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.34	mg/kg		0.34	mg/kg	0.000034 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.4	mg/kg		0.4	mg/kg	0.00004 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				0.39	mg/kg		0.39	mg/kg	0.000039 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.18	mg/kg		0.18	mg/kg	0.000018 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.31	mg/kg		0.31	mg/kg	0.000031 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.2	mg/kg		0.2	mg/kg	0.00002 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.18	mg/kg		0.18	mg/kg	0.000018 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0414 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0066%)

Classification of sample: WS109

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

Sample details

Sample name:
WS109
Sample Depth:
0.4-1 m
Moisture content:
15.6%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 15.6% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12 mg/kg	1.32	15.844 mg/kg	0.00158 %		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.8 mg/kg	1.142	0.914 mg/kg	0.0000914 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		16 mg/kg	1.462	23.385 mg/kg	0.00234 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		51 mg/kg	1.126	57.42 mg/kg	0.00574 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	118 mg/kg	1.56	184.058 mg/kg	0.0118 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.83 mg/kg	1.353	1.123 mg/kg	0.000112 %		
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		19 mg/kg	2.976	56.549 mg/kg	0.00565 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		81 mg/kg	2.774	224.706 mg/kg	0.0225 %		
12	TPH (C6 to C40) petroleum group			TPH		59 mg/kg		59 mg/kg	0.0059 %		
13	pH			PH		7.94 pH		7.94 pH	7.94 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		0.04 mg/kg		0.04 mg/kg	0.000004 %		

#		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									
15		acenaphthylene				0.02	mg/kg		0.02	mg/kg	0.000002 %		
			205-917-1	208-96-8									
16		acenaphthene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
			201-469-6	83-32-9									
17		fluorene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			201-695-5	86-73-7									
18		phenanthrene				0.58	mg/kg		0.58	mg/kg	0.000058 %		
			201-581-5	85-01-8									
19		anthracene				0.14	mg/kg		0.14	mg/kg	0.000014 %		
			204-371-1	120-12-7									
20		fluoranthene				1.41	mg/kg		1.41	mg/kg	0.000141 %		
			205-912-4	206-44-0									
21		pyrene				1.27	mg/kg		1.27	mg/kg	0.000127 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.65	mg/kg		0.65	mg/kg	0.000065 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.72	mg/kg		0.72	mg/kg	0.000072 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				0.69	mg/kg		0.69	mg/kg	0.000069 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.29	mg/kg		0.29	mg/kg	0.000029 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.56	mg/kg		0.56	mg/kg	0.000056 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.34	mg/kg		0.34	mg/kg	0.000034 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.29	mg/kg		0.29	mg/kg	0.000029 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0571 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0059%)

Classification of sample: WS110

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

Sample details

Sample name:
WS110
Sample Depth:
0.3-0.6 m
Moisture content:
16.3%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 16.3% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		13 mg/kg	1.32	17.164 mg/kg	0.00172 %		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.3 mg/kg	1.142	1.485 mg/kg	0.000149 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		22 mg/kg	1.462	32.154 mg/kg	0.00322 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		121 mg/kg	1.126	136.232 mg/kg	0.0136 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	138 mg/kg	1.56	215.254 mg/kg	0.0138 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.8 mg/kg	1.353	1.083 mg/kg	0.000108 %		
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		20 mg/kg	2.976	59.525 mg/kg	0.00595 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		119 mg/kg	2.774	330.123 mg/kg	0.033 %		
12	TPH (C6 to C40) petroleum group			TPH		165 mg/kg		165 mg/kg	0.0165 %		
13	pH			PH		7.76 pH		7.76 pH	7.76 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		0.06 mg/kg		0.06 mg/kg	0.000006 %		

#		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									
15		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			205-917-1	208-96-8									
16		acenaphthene				0.32	mg/kg		0.32	mg/kg	0.000032 %		
			201-469-6	83-32-9									
17		fluorene				0.14	mg/kg		0.14	mg/kg	0.000014 %		
			201-695-5	86-73-7									
18		phenanthrene				1.4	mg/kg		1.4	mg/kg	0.00014 %		
			201-581-5	85-01-8									
19		anthracene				0.34	mg/kg		0.34	mg/kg	0.000034 %		
			204-371-1	120-12-7									
20		fluoranthene				2.77	mg/kg		2.77	mg/kg	0.000277 %		
			205-912-4	206-44-0									
21		pyrene				2.23	mg/kg		2.23	mg/kg	0.000223 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				1.25	mg/kg		1.25	mg/kg	0.000125 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				1.29	mg/kg		1.29	mg/kg	0.000129 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				1.41	mg/kg		1.41	mg/kg	0.000141 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.58	mg/kg		0.58	mg/kg	0.000058 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				1.12	mg/kg		1.12	mg/kg	0.000112 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.71	mg/kg		0.71	mg/kg	0.000071 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.12	mg/kg		0.12	mg/kg	0.000012 %		
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.61	mg/kg		0.61	mg/kg	0.000061 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0902 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0165%)

Classification of sample: WS110[2]

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

Sample details

Sample name:
WS110[2]
Sample Depth:
1-1.6 m
Moisture content:
15.4%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 15.4% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		27 mg/kg	1.32	35.649 mg/kg	0.00356 %		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.9 mg/kg	1.142	2.17 mg/kg	0.000217 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		37 mg/kg	1.462	54.078 mg/kg	0.00541 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		100 mg/kg	1.126	112.589 mg/kg	0.0113 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	790 mg/kg	1.56	1232.254 mg/kg	0.079 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.69 mg/kg	1.353	0.934 mg/kg	0.0000934 %		
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		31 mg/kg	2.976	92.264 mg/kg	0.00923 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		223 mg/kg	2.774	618.635 mg/kg	0.0619 %		
12	TPH (C6 to C40) petroleum group			TPH		406 mg/kg		406 mg/kg	0.0406 %		
13	pH			PH		7.84 pH		7.84 pH	7.84 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		0.29 mg/kg		0.29 mg/kg	0.000029 %		

#		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									
15		acenaphthylene				0.15	mg/kg		0.15	mg/kg	0.000015 %		
			205-917-1	208-96-8									
16		acenaphthene				1.01	mg/kg		1.01	mg/kg	0.000101 %		
			201-469-6	83-32-9									
17		fluorene				0.84	mg/kg		0.84	mg/kg	0.000084 %		
			201-695-5	86-73-7									
18		phenanthrene				8.72	mg/kg		8.72	mg/kg	0.000872 %		
			201-581-5	85-01-8									
19		anthracene				1.95	mg/kg		1.95	mg/kg	0.000195 %		
			204-371-1	120-12-7									
20		fluoranthene				12.8	mg/kg		12.8	mg/kg	0.00128 %		
			205-912-4	206-44-0									
21		pyrene				11.8	mg/kg		11.8	mg/kg	0.00118 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				5.15	mg/kg		5.15	mg/kg	0.000515 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				5.32	mg/kg		5.32	mg/kg	0.000532 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				4.66	mg/kg		4.66	mg/kg	0.000466 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				1.89	mg/kg		1.89	mg/kg	0.000189 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				4.07	mg/kg		4.07	mg/kg	0.000407 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				2.28	mg/kg		2.28	mg/kg	0.000228 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.45	mg/kg		0.45	mg/kg	0.000045 %		
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				2	mg/kg		2	mg/kg	0.0002 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.218 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0406%)

Classification of sample: WS111

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

Sample details

Sample name:
WS111
Sample Depth:
0.3-0.6 m
Moisture content:
15.9%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 15.9% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		10 mg/kg	1.32	13.203 mg/kg	0.00132 %		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.7 mg/kg	1.142	0.8 mg/kg	0.00008 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		29 mg/kg	1.462	42.385 mg/kg	0.00424 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		44 mg/kg	1.126	49.539 mg/kg	0.00495 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	109 mg/kg	1.56	170.02 mg/kg	0.0109 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		1.41 mg/kg	1.353	1.908 mg/kg	0.000191 %		
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		27 mg/kg	2.976	80.359 mg/kg	0.00804 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		124 mg/kg	2.774	343.994 mg/kg	0.0344 %		
12	TPH (C6 to C40) petroleum group			TPH		220 mg/kg		220 mg/kg	0.022 %		
13	pH			PH		8.49 pH		8.49 pH	8.49 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		0.5 mg/kg		0.5 mg/kg	0.00005 %		

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
15		acenaphthylene		205-917-1	208-96-8		0.05	mg/kg		0.05	mg/kg	0.000005 %		
16		acenaphthene		201-469-6	83-32-9		0.89	mg/kg		0.89	mg/kg	0.000089 %		
17		fluorene		201-695-5	86-73-7		0.72	mg/kg		0.72	mg/kg	0.000072 %		
18		phenanthrene		201-581-5	85-01-8		5.31	mg/kg		5.31	mg/kg	0.000531 %		
19		anthracene		204-371-1	120-12-7		1.16	mg/kg		1.16	mg/kg	0.000116 %		
20		fluoranthene		205-912-4	206-44-0		6.3	mg/kg		6.3	mg/kg	0.00063 %		
21		pyrene		204-927-3	129-00-0		5.49	mg/kg		5.49	mg/kg	0.000549 %		
22		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		2.6	mg/kg		2.6	mg/kg	0.00026 %		
23		chrysene	601-048-00-0	205-923-4	218-01-9		2.71	mg/kg		2.71	mg/kg	0.000271 %		
24		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		2.44	mg/kg		2.44	mg/kg	0.000244 %		
25		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.97	mg/kg		0.97	mg/kg	0.000097 %		
26		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		2.09	mg/kg		2.09	mg/kg	0.000209 %		
27		indeno[123-cd]pyrene		205-893-2	193-39-5		1.12	mg/kg		1.12	mg/kg	0.000112 %		
28		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.22	mg/kg		0.22	mg/kg	0.000022 %		
29		benzo[ghi]perylene		205-883-8	191-24-2		0.99	mg/kg		0.99	mg/kg	0.000099 %		
30		benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
31		toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
32		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
33		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
											Total:	0.0902 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.022%)

Classification of sample: WS112

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

Sample details

Sample name:
WS112
Sample Depth:
0.3-0.6 m
Moisture content:
12.6%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 12.6% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		10 mg/kg	1.32	13.203 mg/kg	0.00132 %		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.5 mg/kg	1.142	0.571 mg/kg	0.0000571 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		19 mg/kg	1.462	27.77 mg/kg	0.00278 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		37 mg/kg	1.126	41.658 mg/kg	0.00417 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	88 mg/kg	1.56	137.264 mg/kg	0.0088 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.48 mg/kg	1.353	0.65 mg/kg	0.000065 %		
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		21 mg/kg	2.976	62.502 mg/kg	0.00625 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		61 mg/kg	2.774	169.223 mg/kg	0.0169 %		
12	TPH (C6 to C40) petroleum group			TPH		65 mg/kg		65 mg/kg	0.0065 %		
13	pH			PH		8.16 pH		8.16 pH	8.16 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
16		acenaphthene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
			201-469-6	83-32-9									
17		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
18		phenanthrene				0.21	mg/kg		0.21	mg/kg	0.000021 %		
			201-581-5	85-01-8									
19		anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			204-371-1	120-12-7									
20		fluoranthene				0.53	mg/kg		0.53	mg/kg	0.000053 %		
			205-912-4	206-44-0									
21		pyrene				0.52	mg/kg		0.52	mg/kg	0.000052 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.31	mg/kg		0.31	mg/kg	0.000031 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.37	mg/kg		0.37	mg/kg	0.000037 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				0.4	mg/kg		0.4	mg/kg	0.00004 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.18	mg/kg		0.18	mg/kg	0.000018 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.33	mg/kg		0.33	mg/kg	0.000033 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.23	mg/kg		0.23	mg/kg	0.000023 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.22	mg/kg		0.22	mg/kg	0.000022 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0479 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0065%)

Classification of sample: WS113

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

Sample details

Sample name:
WS113
Sample Depth:
0.5-1 m
Moisture content:
14.2%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 14.2% No Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6	mg/kg	1.32	7.922	mg/kg	0.000792 %		
2		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
3		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.6	mg/kg	1.142	0.685	mg/kg	0.0000685 %		
4		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		23	mg/kg	1.462	33.616	mg/kg	0.00336 %		
5		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<**LOD**
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		31	mg/kg	1.126	34.903	mg/kg	0.00349 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	79	mg/kg	1.56	123.225	mg/kg	0.0079 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.43	mg/kg	1.353	0.582	mg/kg	0.0000582 %		
9		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		24	mg/kg	2.976	71.43	mg/kg	0.00714 %		
10		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		67	mg/kg	2.774	185.868	mg/kg	0.0186 %		
12		TPH (C6 to C40) petroleum group			TPH		158	mg/kg		158	mg/kg	0.0158 %		
13		pH			PH		7.92	pH		7.92	pH	7.92 pH		
14		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			205-917-1	208-96-8									
16		acenaphthene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
			201-469-6	83-32-9									
17		fluorene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
			201-695-5	86-73-7									
18		phenanthrene				0.48	mg/kg		0.48	mg/kg	0.000048 %		
			201-581-5	85-01-8									
19		anthracene				0.11	mg/kg		0.11	mg/kg	0.000011 %		
			204-371-1	120-12-7									
20		fluoranthene				0.96	mg/kg		0.96	mg/kg	0.000096 %		
			205-912-4	206-44-0									
21		pyrene				0.84	mg/kg		0.84	mg/kg	0.000084 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.46	mg/kg		0.46	mg/kg	0.000046 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.53	mg/kg		0.53	mg/kg	0.000053 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				0.54	mg/kg		0.54	mg/kg	0.000054 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.22	mg/kg		0.22	mg/kg	0.000022 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.43	mg/kg		0.43	mg/kg	0.000043 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.3	mg/kg		0.3	mg/kg	0.00003 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.26	mg/kg		0.26	mg/kg	0.000026 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0584 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0158%)

Classification of sample: WS114

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

Sample details

Sample name:
WS114
Sample Depth:
0.3-0.6 m
Moisture content:
22.3%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 22.3% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		13 mg/kg	1.32	17.164 mg/kg	0.00172 %		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.4 mg/kg	1.142	1.599 mg/kg	0.00016 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		19 mg/kg	1.462	27.77 mg/kg	0.00278 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		43 mg/kg	1.126	48.413 mg/kg	0.00484 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	76 mg/kg	1.56	118.546 mg/kg	0.0076 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17 mg/kg	1.353	<0.23 mg/kg	<0.000023 %		<**LOD**
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		18 mg/kg	2.976	53.573 mg/kg	0.00536 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		80 mg/kg	2.774	221.932 mg/kg	0.0222 %		
12	TPH (C6 to C40) petroleum group			TPH		22 mg/kg		22 mg/kg	0.0022 %		
13	pH			PH		7.54 pH		7.54 pH	7.54 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
16		acenaphthene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
			201-469-6	83-32-9									
17		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
18		phenanthrene				0.18	mg/kg		0.18	mg/kg	0.000018 %		
			201-581-5	85-01-8									
19		anthracene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
			204-371-1	120-12-7									
20		fluoranthene				0.39	mg/kg		0.39	mg/kg	0.000039 %		
			205-912-4	206-44-0									
21		pyrene				0.35	mg/kg		0.35	mg/kg	0.000035 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.18	mg/kg		0.18	mg/kg	0.000018 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.22	mg/kg		0.22	mg/kg	0.000022 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				0.21	mg/kg		0.21	mg/kg	0.000021 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.17	mg/kg		0.17	mg/kg	0.000017 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0478 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0022%)

Classification of sample: WS114[2]

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

Sample details

Sample name:
WS114[2]
Sample Depth:
0.6-0.9 m
Moisture content:
20.8%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 20.8% No Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		10	mg/kg	1.32	13.203	mg/kg	0.00132 %		
2		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
3		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.9	mg/kg	1.142	1.028	mg/kg	0.000103 %		
4		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		17	mg/kg	1.462	24.846	mg/kg	0.00248 %		
5		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<**LOD**
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		28	mg/kg	1.126	31.525	mg/kg	0.00315 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	65	mg/kg	1.56	101.388	mg/kg	0.0065 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
9		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		14	mg/kg	2.976	41.668	mg/kg	0.00417 %		
10		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		65	mg/kg	2.774	180.32	mg/kg	0.018 %		
12		TPH (C6 to C40) petroleum group			TPH		34	mg/kg		34	mg/kg	0.0034 %		
13		pH			PH		7.72	pH		7.72	pH	7.72 pH		
14		naphthalene	601-052-00-2	202-049-5	91-20-3		0.11	mg/kg		0.11	mg/kg	0.000011 %		

#		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									
15		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			205-917-1	208-96-8									
16		acenaphthene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			201-469-6	83-32-9									
17		fluorene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
			201-695-5	86-73-7									
18		phenanthrene				0.39	mg/kg		0.39	mg/kg	0.000039 %		
			201-581-5	85-01-8									
19		anthracene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
			204-371-1	120-12-7									
20		fluoranthene				0.71	mg/kg		0.71	mg/kg	0.000071 %		
			205-912-4	206-44-0									
21		pyrene				0.62	mg/kg		0.62	mg/kg	0.000062 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.32	mg/kg		0.32	mg/kg	0.000032 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.35	mg/kg		0.35	mg/kg	0.000035 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				0.32	mg/kg		0.32	mg/kg	0.000032 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.15	mg/kg		0.15	mg/kg	0.000015 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.27	mg/kg		0.27	mg/kg	0.000027 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.18	mg/kg		0.18	mg/kg	0.000018 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.15	mg/kg		0.15	mg/kg	0.000015 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0402 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0034%)

Classification of sample: WS115

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

Sample details

Sample name:
WS115
Sample Depth:
0.2-0.75 m
Moisture content:
18.3%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 18.3% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12 mg/kg	1.32	15.844 mg/kg	0.00158 %		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.1 mg/kg	1.142	1.257 mg/kg	0.000126 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		31 mg/kg	1.462	45.308 mg/kg	0.00453 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		55 mg/kg	1.126	61.924 mg/kg	0.00619 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	154 mg/kg	1.56	240.212 mg/kg	0.0154 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		1.8 mg/kg	1.353	2.436 mg/kg	0.000244 %		
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		24 mg/kg	2.976	71.43 mg/kg	0.00714 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		133 mg/kg	2.774	368.961 mg/kg	0.0369 %		
12	TPH (C6 to C40) petroleum group			TPH		99 mg/kg		99 mg/kg	0.0099 %		
13	pH			PH		7.14 pH		7.14 pH	7.14 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
16		acenaphthene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
			201-469-6	83-32-9									
17		fluorene				0.02	mg/kg		0.02	mg/kg	0.000002 %		
			201-695-5	86-73-7									
18		phenanthrene				0.29	mg/kg		0.29	mg/kg	0.000029 %		
			201-581-5	85-01-8									
19		anthracene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
			204-371-1	120-12-7									
20		fluoranthene				0.51	mg/kg		0.51	mg/kg	0.000051 %		
			205-912-4	206-44-0									
21		pyrene				0.47	mg/kg		0.47	mg/kg	0.000047 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.22	mg/kg		0.22	mg/kg	0.000022 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.26	mg/kg		0.26	mg/kg	0.000026 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				0.24	mg/kg		0.24	mg/kg	0.000024 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.12	mg/kg		0.12	mg/kg	0.000012 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.19	mg/kg		0.19	mg/kg	0.000019 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.12	mg/kg		0.12	mg/kg	0.000012 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.12	mg/kg		0.12	mg/kg	0.000012 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.083 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0099%)

Classification of sample: WS116

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

Sample details

Sample name:
WS116
Sample Depth:
0-0.2 m
Moisture content:
22.1%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 22.1% No Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8	mg/kg	1.32	10.563	mg/kg	0.00106 %		
2		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
3		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.8	mg/kg	1.142	0.914	mg/kg	0.0000914 %		
4		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		20	mg/kg	1.462	29.231	mg/kg	0.00292 %		
5		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<**LOD**
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		37	mg/kg	1.126	41.658	mg/kg	0.00417 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	88	mg/kg	1.56	137.264	mg/kg	0.0088 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
9		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		20	mg/kg	2.976	59.525	mg/kg	0.00595 %		
10		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		85	mg/kg	2.774	235.802	mg/kg	0.0236 %		
12		TPH (C6 to C40) petroleum group			TPH		53	mg/kg		53	mg/kg	0.0053 %		
13		pH			PH		6.67	pH		6.67	pH	6.67 pH		
14		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			205-917-1	208-96-8									
16		acenaphthene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
			201-469-6	83-32-9									
17		fluorene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
			201-695-5	86-73-7									
18		phenanthrene				0.23	mg/kg		0.23	mg/kg	0.000023 %		
			201-581-5	85-01-8									
19		anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			204-371-1	120-12-7									
20		fluoranthene				0.47	mg/kg		0.47	mg/kg	0.000047 %		
			205-912-4	206-44-0									
21		pyrene				0.45	mg/kg		0.45	mg/kg	0.000045 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.24	mg/kg		0.24	mg/kg	0.000024 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.31	mg/kg		0.31	mg/kg	0.000031 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				0.31	mg/kg		0.31	mg/kg	0.000031 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.14	mg/kg		0.14	mg/kg	0.000014 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.26	mg/kg		0.26	mg/kg	0.000026 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.18	mg/kg		0.18	mg/kg	0.000018 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.15	mg/kg		0.15	mg/kg	0.000015 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0529 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0053%)

Classification of sample: TP101

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

Sample details

Sample name:
TP101
Sample Depth:
0-0.3 m
Moisture content:
16.1%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 16.1% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		7 mg/kg	1.32	9.242 mg/kg	0.000924 %		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		**<LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1 mg/kg	1.142	1.142 mg/kg	0.000114 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		17 mg/kg	1.462	24.846 mg/kg	0.00248 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		**<LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		38 mg/kg	1.126	42.784 mg/kg	0.00428 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	106 mg/kg	1.56	165.34 mg/kg	0.0106 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.53 mg/kg	1.353	0.717 mg/kg	0.0000717 %		
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		17 mg/kg	2.976	50.597 mg/kg	0.00506 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		**<LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		92 mg/kg	2.774	255.221 mg/kg	0.0255 %		
12	TPH (C6 to C40) petroleum group			TPH		300 mg/kg		300 mg/kg	0.03 %		
13	pH			PH		8.03 pH		8.03 pH	8.03 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		0.22 mg/kg		0.22 mg/kg	0.000022 %		

#		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									
15		acenaphthylene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
			205-917-1	208-96-8									
16		acenaphthene				0.53	mg/kg		0.53	mg/kg	0.000053 %		
			201-469-6	83-32-9									
17		fluorene				0.41	mg/kg		0.41	mg/kg	0.000041 %		
			201-695-5	86-73-7									
18		phenanthrene				4.92	mg/kg		4.92	mg/kg	0.000492 %		
			201-581-5	85-01-8									
19		anthracene				1.11	mg/kg		1.11	mg/kg	0.000111 %		
			204-371-1	120-12-7									
20		fluoranthene				7.59	mg/kg		7.59	mg/kg	0.000759 %		
			205-912-4	206-44-0									
21		pyrene				6.99	mg/kg		6.99	mg/kg	0.000699 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				3.39	mg/kg		3.39	mg/kg	0.000339 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				3.6	mg/kg		3.6	mg/kg	0.00036 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				4.15	mg/kg		4.15	mg/kg	0.000415 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				1.44	mg/kg		1.44	mg/kg	0.000144 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				3.26	mg/kg		3.26	mg/kg	0.000326 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				2	mg/kg		2	mg/kg	0.0002 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.33	mg/kg		0.33	mg/kg	0.000033 %		
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				1.79	mg/kg		1.79	mg/kg	0.000179 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0839 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.03%)

Classification of sample: TP101[2]

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

Sample details

Sample name:
TP101[2]
Sample Depth:
0.3-0.8 m
Moisture content:
16.2%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 16.2% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6 mg/kg	1.32	7.922 mg/kg	0.000792 %		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1 mg/kg	1.142	1.142 mg/kg	0.000114 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		20 mg/kg	1.462	29.231 mg/kg	0.00292 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		32 mg/kg	1.126	36.028 mg/kg	0.0036 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	106 mg/kg	1.56	165.34 mg/kg	0.0106 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.54 mg/kg	1.353	0.731 mg/kg	0.0000731 %		
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		17 mg/kg	2.976	50.597 mg/kg	0.00506 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		123 mg/kg	2.774	341.22 mg/kg	0.0341 %		
12	TPH (C6 to C40) petroleum group			TPH		128 mg/kg		128 mg/kg	0.0128 %		
13	pH			PH		8.37 pH		8.37 pH	8.37 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		0.06 mg/kg		0.06 mg/kg	0.000006 %		

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
15		acenaphthylene		205-917-1	208-96-8		0.02	mg/kg		0.02	mg/kg	0.000002 %		
16		acenaphthene		201-469-6	83-32-9		0.08	mg/kg		0.08	mg/kg	0.000008 %		
17		fluorene		201-695-5	86-73-7		0.05	mg/kg		0.05	mg/kg	0.000005 %		
18		phenanthrene		201-581-5	85-01-8		0.74	mg/kg		0.74	mg/kg	0.000074 %		
19		anthracene		204-371-1	120-12-7		0.17	mg/kg		0.17	mg/kg	0.000017 %		
20		fluoranthene		205-912-4	206-44-0		1.52	mg/kg		1.52	mg/kg	0.000152 %		
21		pyrene		204-927-3	129-00-0		1.49	mg/kg		1.49	mg/kg	0.000149 %		
22		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.81	mg/kg		0.81	mg/kg	0.000081 %		
23		chrysene	601-048-00-0	205-923-4	218-01-9		0.92	mg/kg		0.92	mg/kg	0.000092 %		
24		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.13	mg/kg		1.13	mg/kg	0.000113 %		
25		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.36	mg/kg		0.36	mg/kg	0.000036 %		
26		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.78	mg/kg		0.78	mg/kg	0.000078 %		
27		indeno[123-cd]pyrene		205-893-2	193-39-5		0.52	mg/kg		0.52	mg/kg	0.000052 %		
28		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.09	mg/kg		0.09	mg/kg	0.000009 %		
29		benzo[ghi]perylene		205-883-8	191-24-2		0.47	mg/kg		0.47	mg/kg	0.000047 %		
30		benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
31		toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
32		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
33		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
											Total:	0.0717 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0128%)

Classification of sample: TP102

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

Sample details

Sample name:
TP102
Sample Depth:
0.2-0.5 m
Moisture content:
13.9%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 13.9% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		4 mg/kg	1.32	5.281 mg/kg	0.000528 %		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		**<LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.5 mg/kg	1.142	0.571 mg/kg	0.0000571 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		15 mg/kg	1.462	21.923 mg/kg	0.00219 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		**<LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		19 mg/kg	1.126	21.392 mg/kg	0.00214 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	28 mg/kg	1.56	43.675 mg/kg	0.0028 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.54 mg/kg	1.353	0.731 mg/kg	0.0000731 %		
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		14 mg/kg	2.976	41.668 mg/kg	0.00417 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		**<LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		96 mg/kg	2.774	266.318 mg/kg	0.0266 %		
12	TPH (C6 to C40) petroleum group			TPH		402 mg/kg		402 mg/kg	0.0402 %		
13	pH			PH		8.56 pH		8.56 pH	8.56 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		0.17 mg/kg		0.17 mg/kg	0.000017 %		

#		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									
15		acenaphthylene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
			205-917-1	208-96-8									
16		acenaphthene				0.22	mg/kg		0.22	mg/kg	0.000022 %		
			201-469-6	83-32-9									
17		fluorene				0.24	mg/kg		0.24	mg/kg	0.000024 %		
			201-695-5	86-73-7									
18		phenanthrene				2.32	mg/kg		2.32	mg/kg	0.000232 %		
			201-581-5	85-01-8									
19		anthracene				0.49	mg/kg		0.49	mg/kg	0.000049 %		
			204-371-1	120-12-7									
20		fluoranthene				3.44	mg/kg		3.44	mg/kg	0.000344 %		
			205-912-4	206-44-0									
21		pyrene				3.16	mg/kg		3.16	mg/kg	0.000316 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				1.48	mg/kg		1.48	mg/kg	0.000148 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				1.49	mg/kg		1.49	mg/kg	0.000149 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				1.6	mg/kg		1.6	mg/kg	0.00016 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.56	mg/kg		0.56	mg/kg	0.000056 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				1.19	mg/kg		1.19	mg/kg	0.000119 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.79	mg/kg		0.79	mg/kg	0.000079 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.13	mg/kg		0.13	mg/kg	0.000013 %		
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.7	mg/kg		0.7	mg/kg	0.00007 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0813 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0402%)

Classification of sample: TP104

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

Sample details

Sample name:
TP104
Sample Depth:
2-2.5 m
Moisture content:
16.8%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 16.8% No Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		4	mg/kg	1.32	5.281	mg/kg	0.000528 %		
2		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
3		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.1	mg/kg	1.142	1.257	mg/kg	0.000126 %		
4		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		33	mg/kg	1.462	48.231	mg/kg	0.00482 %		
5		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<**LOD**
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		45	mg/kg	1.126	50.665	mg/kg	0.00507 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	56	mg/kg	1.56	87.35	mg/kg	0.0056 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.22	mg/kg	1.353	0.298	mg/kg	0.0000298 %		
9		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		30	mg/kg	2.976	89.288	mg/kg	0.00893 %		
10		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		52	mg/kg	2.774	144.256	mg/kg	0.0144 %		
12		TPH (C6 to C40) petroleum group			TPH		110	mg/kg		110	mg/kg	0.011 %		
13		pH			PH		8.26	pH		8.26	pH	8.26 pH		
14		naphthalene	601-052-00-2	202-049-5	91-20-3		0.38	mg/kg		0.38	mg/kg	0.000038 %		

#		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									
15		acenaphthylene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
			205-917-1	208-96-8									
16		acenaphthene				0.89	mg/kg		0.89	mg/kg	0.000089 %		
			201-469-6	83-32-9									
17		fluorene				0.49	mg/kg		0.49	mg/kg	0.000049 %		
			201-695-5	86-73-7									
18		phenanthrene				1.97	mg/kg		1.97	mg/kg	0.000197 %		
			201-581-5	85-01-8									
19		anthracene				0.53	mg/kg		0.53	mg/kg	0.000053 %		
			204-371-1	120-12-7									
20		fluoranthene				2.53	mg/kg		2.53	mg/kg	0.000253 %		
			205-912-4	206-44-0									
21		pyrene				2.63	mg/kg		2.63	mg/kg	0.000263 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				1.18	mg/kg		1.18	mg/kg	0.000118 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				1.27	mg/kg		1.27	mg/kg	0.000127 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				1.3	mg/kg		1.3	mg/kg	0.00013 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.42	mg/kg		0.42	mg/kg	0.000042 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				1.01	mg/kg		1.01	mg/kg	0.000101 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.61	mg/kg		0.61	mg/kg	0.000061 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.12	mg/kg		0.12	mg/kg	0.000012 %		
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.58	mg/kg		0.58	mg/kg	0.000058 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0528 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.011%)

Classification of sample: TP105

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

Sample details

Sample name:
TP105
Sample Depth:
1-1.5 m
Moisture content:
14.6%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 14.6% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12 mg/kg	1.32	15.844 mg/kg	0.00158 %		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		**<LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.2 mg/kg	1.142	1.371 mg/kg	0.000137 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		19 mg/kg	1.462	27.77 mg/kg	0.00278 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		**<LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		49 mg/kg	1.126	55.169 mg/kg	0.00552 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	108 mg/kg	1.56	168.46 mg/kg	0.0108 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.43 mg/kg	1.353	0.582 mg/kg	0.0000582 %		
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		18 mg/kg	2.976	53.573 mg/kg	0.00536 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		**<LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		86 mg/kg	2.774	238.577 mg/kg	0.0239 %		
12	TPH (C6 to C40) petroleum group			TPH		118 mg/kg		118 mg/kg	0.0118 %		
13	pH			PH		7.89 pH		7.89 pH	7.89 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		0.03 mg/kg		0.03 mg/kg	0.000003 %		

#		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									
15		acenaphthylene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			205-917-1	208-96-8									
16		acenaphthene				0.12	mg/kg		0.12	mg/kg	0.000012 %		
			201-469-6	83-32-9									
17		fluorene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
			201-695-5	86-73-7									
18		phenanthrene				0.86	mg/kg		0.86	mg/kg	0.000086 %		
			201-581-5	85-01-8									
19		anthracene				0.23	mg/kg		0.23	mg/kg	0.000023 %		
			204-371-1	120-12-7									
20		fluoranthene				1.76	mg/kg		1.76	mg/kg	0.000176 %		
			205-912-4	206-44-0									
21		pyrene				1.58	mg/kg		1.58	mg/kg	0.000158 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.79	mg/kg		0.79	mg/kg	0.000079 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.91	mg/kg		0.91	mg/kg	0.000091 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				1.14	mg/kg		1.14	mg/kg	0.000114 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.34	mg/kg		0.34	mg/kg	0.000034 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.74	mg/kg		0.74	mg/kg	0.000074 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.47	mg/kg		0.47	mg/kg	0.000047 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.08	mg/kg		0.08	mg/kg	0.000008 %		
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.4	mg/kg		0.4	mg/kg	0.00004 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0635 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0118%)

Classification of sample: TP106

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

Sample details

Sample name:
TP106
Sample Depth:
0.3-0.6 m
Moisture content:
12.1%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 12.1% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		7 mg/kg	1.32	9.242 mg/kg	0.000924 %		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.7 mg/kg	1.142	0.8 mg/kg	0.00008 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		17 mg/kg	1.462	24.846 mg/kg	0.00248 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		31 mg/kg	1.126	34.903 mg/kg	0.00349 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	107 mg/kg	1.56	166.9 mg/kg	0.0107 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.24 mg/kg	1.353	0.325 mg/kg	0.0000325 %		
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		16 mg/kg	2.976	47.62 mg/kg	0.00476 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		69 mg/kg	2.774	191.416 mg/kg	0.0191 %		
12	TPH (C6 to C40) petroleum group			TPH		75 mg/kg		75 mg/kg	0.0075 %		
13	pH			PH		7.96 pH		7.96 pH	7.96 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			205-917-1	208-96-8									
16		acenaphthene				0.02	mg/kg		0.02	mg/kg	0.000002 %		
			201-469-6	83-32-9									
17		fluorene				0.01	mg/kg		0.01	mg/kg	0.000001 %		
			201-695-5	86-73-7									
18		phenanthrene				0.23	mg/kg		0.23	mg/kg	0.000023 %		
			201-581-5	85-01-8									
19		anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			204-371-1	120-12-7									
20		fluoranthene				0.42	mg/kg		0.42	mg/kg	0.000042 %		
			205-912-4	206-44-0									
21		pyrene				0.4	mg/kg		0.4	mg/kg	0.00004 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.22	mg/kg		0.22	mg/kg	0.000022 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.25	mg/kg		0.25	mg/kg	0.000025 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				0.3	mg/kg		0.3	mg/kg	0.00003 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.2	mg/kg		0.2	mg/kg	0.00002 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.15	mg/kg		0.15	mg/kg	0.000015 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.14	mg/kg		0.14	mg/kg	0.000014 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.05 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0075%)

Classification of sample: TP108

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

Sample details

Sample name:
TP108
Sample Depth:
0.3-0.75 m
Moisture content:
20.1%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 20.1% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8 mg/kg	1.32	10.563 mg/kg	0.00106 %		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1 mg/kg	1.142	1.142 mg/kg	0.000114 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		23 mg/kg	1.462	33.616 mg/kg	0.00336 %		
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		36 mg/kg	1.126	40.532 mg/kg	0.00405 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	92 mg/kg	1.56	143.503 mg/kg	0.0092 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.36 mg/kg	1.353	0.487 mg/kg	0.0000487 %		
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		19 mg/kg	2.976	56.549 mg/kg	0.00565 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		115 mg/kg	2.774	319.027 mg/kg	0.0319 %		
12	TPH (C6 to C40) petroleum group			TPH		50 mg/kg		50 mg/kg	0.005 %		
13	pH			PH		7.66 pH		7.66 pH	7.66 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthylene				0.02	mg/kg		0.02	mg/kg	0.000002 %		
			205-917-1	208-96-8									
16		acenaphthene				0.08	mg/kg		0.08	mg/kg	0.000008 %		
			201-469-6	83-32-9									
17		fluorene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
			201-695-5	86-73-7									
18		phenanthrene				0.9	mg/kg		0.9	mg/kg	0.00009 %		
			201-581-5	85-01-8									
19		anthracene				0.17	mg/kg		0.17	mg/kg	0.000017 %		
			204-371-1	120-12-7									
20		fluoranthene				1.37	mg/kg		1.37	mg/kg	0.000137 %		
			205-912-4	206-44-0									
21		pyrene				1.34	mg/kg		1.34	mg/kg	0.000134 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.63	mg/kg		0.63	mg/kg	0.000063 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.72	mg/kg		0.72	mg/kg	0.000072 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				0.74	mg/kg		0.74	mg/kg	0.000074 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.27	mg/kg		0.27	mg/kg	0.000027 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.51	mg/kg		0.51	mg/kg	0.000051 %		
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.33	mg/kg		0.33	mg/kg	0.000033 %		
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.31	mg/kg		0.31	mg/kg	0.000031 %		
			205-883-8	191-24-2									
30		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
32		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.0618 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Concentrations too low to be considered a flammable risk.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.005%)

Appendix A: Classifier defined and non GB MCL determinands

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

GB MCL index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

- **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

- **pH** (CAS Number: PH)

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

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

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

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

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

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

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

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

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

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

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds (edit as required)

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

Worst Case

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. (edit as required) Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history (edit as required)

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

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass (edit as required)

chromium in chromium(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight (edit as required)

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected. (edit as required)

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2024.30.5942.10989 (30 Jan 2024)
HazWasteOnline Database: 2024.26.5938.10982 (26 Jan 2024)

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
GB MCL List v2.0 - version 2.0 of 20th October 2023

Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

HAZARDOUS WASTE CLASSIFICATION REPORT

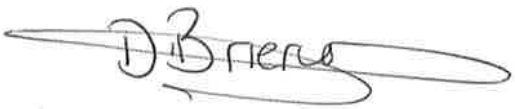
Envirolab Job Number:23/12007
Issue Number:1 **Date:21/12/23**

Client: Sutcliffe

Project Manager: David Bowen/Alex Tosh/William Baldwin/Sara Hale/Ethan Davies/Jack Smith/Michael Wiggins
Project Name: Cheetham Hill, Manchester
Project Ref: 33716LG
Order No: 10120
Date Samples Received: 04/12/2023
Date Instructions Received: 05/12/2023

Appended hazardous waste assessment, RSK ref 11505-R149, 15 pages.

Approved by:



Administration & Client Services Supervisor

WM3 PRELIMINARY WASTE ASSESSMENT AND CLASSIFICATION REPORT

RSK REPORT REFERENCE: 3020010-R149

INTRODUCTION

On behalf of Envirolab, RSK was requested to undertake waste assessment and classification on two soil samples collected by a third party from an unknown site on 2 December 2023.

Information relating to historical operations at the site was not reviewed as part of RSK's assessment. In addition, RSK was not present during the collection of the samples nor had any input on the chemical testing suite. Therefore, the waste assessment and classification detailed in this report are based solely on the laboratory chemical data that were provided to RSK by Envirolab and were completed without prejudice for our client, Envirolab.

CHEMICAL TESTING

The samples were analysed for a **chemical testing suite** comprising: TPH (C6-C40) with oil source ID, TPH CWG with BTEX and MTBE, pH, speciated PAH, heavy metals including hexavalent chromium, cyanide (free), total phenols, asbestos screen and moisture content.

A copy of the certificate of chemical analysis is provided in **Appendix B.**

WASTE ASSESSMENT AND CLASSIFICATION

The following assessments assume the material tested is classified subsequently as waste. Envirolab, an RSK company, has developed a waste soils characterisation assessment tool (HASWASTE), which follows the guidance within Technical Guidance WM3. The analytical results have been assessed using this tool to determine if the samples contain hazardous properties.

The results of the assessment are summarised below. A copy of the HASWASTE assessment spreadsheet is provided in **Appendix C.**

Sample Reference	Waste classification of sample	Hazardous property code(s)	Hazardous chemical component(s) and concentration(s)
MG- WS102 – 1.50-1.60m	**Non-hazardous**	Not applicable	Not applicable
Cl - WS103 – 3.10-3.40m	**Non-hazardous**	Not applicable	Not applicable

CONCLUSIONS

Waste assessment and classification were completed by RSK solely on the basis of chemical data provided by Envirolab. Using the data available for assessment the assessed samples may be classified as **non-hazardous** waste.

We are not aware of the source of the material that the samples were taken from therefore we cannot definitively assign the appropriate List of Waste (LoW) code (formerly the European Waste Catalogue (EWC)). However, if the samples were taken from material that is CONSTRUCTION AND DEMOLITION WASTE (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES) it may be possible for the waste producer to assign the non-hazardous waste LoW code **17 05 04 soil and stones.**

In the absence of specific information on the potential waste volume(s) and the waste stream(s) the tested samples are representative of, it is noted that the chemical testing and assessment undertaken on two samples may not necessarily be representative of the waste stream(s) requiring disposal. Therefore, further testing and assessment may be required to robustly characterise the waste and satisfy the requirements of

the waste receiving facility. Furthermore, specific waste receiving sites that are identified as potential disposal routes may have additional analytical requirements (e.g., asbestos screen, WAC testing) before they are either able or willing to accept the waste; therefore, it is advised that potential disposal sites are contacted at the earliest possible convenience so any further specific requirements to support disposal can be established.

Report author: **Josh Chorlton** Technical reviewer: **Karl Hall**

APPENDIX A
RSK SERVICE CONSTRAINTS

1. This report and the site investigation carried out in connection with the report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) for Envirolab (the "client") in accordance with the terms of the of the agreement between RSK and the "client". The Services were performed by RSK with the skill and care ordinarily exercised by a reasonable environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the client.

2. Other than that, expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.

3. Unless otherwise agreed in writing, the Services were performed by RSK exclusively for the purposes of the Client. RSK is not aware of any interest of or reliance by any party other than the Client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. **Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.**

4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK 's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date of this report, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.

5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the Client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.

6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the Client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off the site of asbestos, invasive plants, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials, unless specifically identified in the Services.

7. The Services are based upon RSK's observations of existing physical conditions at the Site gained from a visual inspection of the site together with RSK's interpretation of information, including documentation, obtained from third parties and from the Client on the history and usage of the site, unless specifically identified in the Services or accreditation system (such as UKAS ISO 17020:2012 clause 7.1.6):

    a. The Services were based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely.

    b. The Services were limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the visual inspection.

    c. The Services did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services.

    RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the Client and RSK.

8. The intrusive environmental site investigation aspects of the Services are a limited sampling of the site at pre-determined locations based on the known historic / operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the properties of the materials adjacent and local conditions, together with the position of any current structures and underground utilities and facilities, and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters (as stipulated in the scope between the client and RSK, based on an understanding of the available operational and historical information) and it should not be inferred that other chemical species are not present.

9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (intrusive and sample locations etc) annotated

on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for setting out and should be considered indicative only.

10. The comments given in this report and the opinions expressed are based on the ground conditions encountered during the site work and on the results of tests made in the field and in the laboratory. However, there may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account. In particular, it should be noted that there may be areas of made ground not detected due to the limited nature of the investigation or the thickness and quality of made ground across the site may be variable. In addition, groundwater levels and ground gas concentrations and flows, may vary from those reported due to seasonal, or other, effects and the limitations stated in the data should be recognised.

11. Asbestos is often observed to be present in soils in discrete areas. Whilst asbestos-containing materials may have been locally encountered during the fieldworks or supporting laboratory analysis, the history of brownfield and demolition sites indicates that asbestos fibres may be present more widely in soils and aggregates, which could be encountered during more extensive ground works.

12. Unless stated otherwise, only preliminary geotechnical recommendations are presented in this report and these should be verified in a Geotechnical Design Report, once proposed construction and structural design proposals are confirmed.

APPENDIX B
CERTIFICATES OF CHEMICAL ANALYSIS

Envirolab Job Number: 23/12087
Client:
Client Project Name:
Client Project Ref:

	Lab Sample ID				23/12087/6	23/12087/10
	Client Sample No				MG	Cl
	Client Sample ID				WS102	WS103
	Depth to Top				1.50	3.10
	Depth to Bottom				1.60	3.40
	Date Sampled				02-Dec-23	02-Dec-23
	Sample Type	Units	Limit of Detection	Method	Soil - ES	Soil - ES
	Sample Matrix Code				6AE	3
972	% Moisture at <40C	% w/w	0.1	A-T-044	17.7	23.3
625	% Stones >10mm	% w/w	0.1	A-T-044	11.1	12.5
599	pH	pH	0.01	A-T-031s	7.34	8.65
484	Ammonium NH4 (exchangeable/water soluble)	mg/kg	0.26	A-T-033s	27.6	8.84
660	Sulphate (water sol 2:1)	g/l	0.01	A-T-026s	0.02	0.17
574	Cyanide (free)	mg/kg	1	A-T-042sFCN	<1	<1
415	Phenols - Total by HPLC	mg/kg	0.2	A-T-050s	<0.2	<0.2
712	Organic Matter	% w/w	0.1	A-T-032s	0.8	0.3
711	Total Organic Carbon	% w/w	0.03	A-T-032s	0.44	0.14
690	Antimony	mg/kg	5	A-T-024s	<5	<5
691	Arsenic	mg/kg	1	A-T-024s	2	<1
693	Beryllium	mg/kg	0.5	A-T-024s	0.5	0.9
668	Boron (water soluble)	mg/kg	1	A-T-027s	<1.0	<1.0
694	Cadmium	mg/kg	0.5	A-T-024s	0.7	1.1
696	Copper	mg/kg	1	A-T-024s	12	18
697	Chromium	mg/kg	1	A-T-024s	49	53
716	Chromium (hexavalent)	mg/kg	1	A-T-040s	<1	<1
699	Lead	mg/kg	1	A-T-024s	13	12
701	Mercury	mg/kg	0.17	A-T-024s	<0.17	<0.17
703	Nickel	mg/kg	1	A-T-024s	24	28
704	Selenium	mg/kg	1	A-T-024s	<1	<1
707	Zinc	mg/kg	5	A-T-024s	26	40
631	Leachate Prep BS EN 12457-2 (10:1)			A-T-001	*	
742	pH (leachable)	pH	0.01	A-T-031w	6.92	
806	Alkalinity (total) (leachable) Colorimetry	mg/l Ca CO3	20	A-T-038w	82	
894	Ammoniacal nitrogen as N (leachable)	mg/l	0.05	A-T-033w	1.19	
1362	Ammonia / Ammoniacal Nitrogen as NH3 (leachable)	mg/l	0.065	A-T-033w	1.447	
734	Chloride (leachable)	mg/l	1	A-T-026w	23.77	
976	Nitrate (leachable)	mg/l	0.1	A-T-026w (N)	0.6	
736	Sulphate (leachable)	mg/l	1	A-T-026w	72.86	
812	Cyanide (total) (leachable)	mg/l	0.005	A-T-042wTCN	<0.005	
738	Phenols (total by HPLC) (leachable)	mg/l	0.01	A-T-050w	<0.01	
730	Antimony (leachable)	µg/l	1	A-T-025w	<1	
722	Arsenic (leachable)	µg/l	1	A-T-025w	4	
817	Boron (leachable)	µg/l	10	A-T-025w	<10	
723	Barium (leachable)	µg/l	1	A-T-025w	103	
724	Cadmium (leachable)	µg/l	1	A-T-025w	<1	
726	Copper (leachable)	µg/l	4	A-T-025w	29	
725	Chromium (leachable)	µg/l	1	A-T-025w	5	
543	Lead (leachable)	µg/l	1	A-T-025w	29	
733	Mercury (leachable)	µg/l	0.1	A-T-025w	<0.1	
728	Nickel (leachable)	µg/l	2	A-T-025w	3	
547	Selenium (leachable)	µg/l	1	A-T-025w	<1	
732	Zinc (leachable)	µg/l	2	A-T-025w	34	

Envirolab Job Number: 23/12087
Client:
Client Project Name:
Client Project Ref:

	Lab Sample ID	Units	Limit of Detection	Method	23/12087/6	23/12087/10
	Client Sample No				MG	Cl
	Client Sample ID				WS102	WS103
	Depth to Top				1.50	3.10
	Depth to Bottom				1.60	3.40
	Date Sampled				02-Dec-23	02-Dec-23
	Sample Type				Soil - ES	Soil - ES
	Sample Matrix Code				6AE	3
	Asbestos in Soil (inc. matrix) ^					
1817	Asbestos in soil			A-T-045	NAD	NAD
3251	Asbestos ACM - Suitable for Water Absorption Test?			A-T-045	N/A	N/A
	PAH-16MS (leachable)					
3871	Naphthalene (leachable)	µg/l	0.02	A-T-019w	<0.02	
3859	Acenaphthylene (leachable)	µg/l	0.02	A-T-019w	<0.02	
3858	Acenaphthene (leachable)	µg/l	0.02	A-T-019w	<0.02	
3869	Fluorene (leachable)	µg/l	0.02	A-T-019w	<0.02	
3872	Phenanthrene (leachable)	µg/l	0.02	A-T-019w	<0.02	
3860	Anthracene (leachable)	µg/l	0.02	A-T-019w	<0.02	
3868	Fluoranthene (leachable)	µg/l	0.02	A-T-019w	<0.02	
3873	Pyrene (leachable)	µg/l	0.02	A-T-019w	<0.02	
3861	Benzo(a)anthracene (leachable)	µg/l	0.02	A-T-019w	<0.02	
3866	Chrysene (leachable)	µg/l	0.02	A-T-019w	<0.02	
3863	Benzo(b)fluoranthene	µg/l	0.02	A-T-019w	<0.02	
3865	Benzo(k)fluoranthene	µg/l	0.02	A-T-019w	<0.02	
3862	Benzo(a)pyrene (leachable)	µg/l	0.02	A-T-019w	<0.02	
3870	Indeno(123-cd)pyrene (leachable)	µg/l	0.02	A-T-019w	<0.02	
3867	Dibenzo(ah)anthracene (leachable)	µg/l	0.02	A-T-019w	<0.02	
3864	Benzo(ghi)perylene (leachable)	µg/l	0.02	A-T-019w	<0.02	
GS666	Total PAH-16MS (leachable)	µg/l	0.02	A-T-019w	<0.02	
	PAH-16MS (MSD order)					
3826	Naphthalene	mg/kg	0.03	A-T-019s	<0.03	<0.03
3827	Acenaphthylene	mg/kg	0.01	A-T-019s	<0.01	<0.01
3828	Acenaphthene	mg/kg	0.01	A-T-019s	<0.01	<0.01
3829	Fluorene	mg/kg	0.01	A-T-019s	<0.01	<0.01
3831	Phenanthrene	mg/kg	0.03	A-T-019s	<0.03	<0.03
3832	Anthracene	mg/kg	0.02	A-T-019s	<0.02	<0.02
3830	Fluoranthene	mg/kg	0.08	A-T-019s	<0.08	<0.08
3841	Pyrene	mg/kg	0.07	A-T-019s	<0.07	<0.07
3833	Benzo(a)anthracene	mg/kg	0.04	A-T-019s	<0.04	<0.04
3838	Chrysene	mg/kg	0.06	A-T-019s	<0.06	<0.06
3835	Benzo(b)fluoranthene	mg/kg	0.05	A-T-019s	<0.05	<0.05
3837	Benzo(k)fluoranthene	mg/kg	0.07	A-T-019s	<0.07	<0.07
3834	Benzo(a)pyrene	mg/kg	0.04	A-T-019s	<0.04	<0.04
3840	Indeno(123-cd)pyrene	mg/kg	0.03	A-T-019s	<0.03	<0.03
3839	Dibenzo(ah)anthracene	mg/kg	0.04	A-T-019s	<0.04	<0.04
3836	Benzo(ghi)perylene	mg/kg	0.05	A-T-019s	<0.05	<0.05
GS662	Total PAH-16MS (MSD order)	mg/kg	0.03	A-T-019s	<0.08	<0.08
	TPH Total with ID + GC Trace					
333	TPH total (>C6-C40)	mg/kg	10	A-T-007s	<10	<10
1320	TPH FID Chromatogram			A-T-007s	Appended	Appended

Envirolab Job Number: 23/12087
Client:
Client Project Name:
Client Project Ref:

	Lab Sample ID	Units	Limit of Detection	Method	23/12087/6	23/12087/10
	Client Sample No				MG	Cl
	Client Sample ID				WS102	WS103
	Depth to Top				1.50	3.10
	Depth to Bottom				1.60	3.40
	Date Sampled				02-Dec-23	02-Dec-23
	Sample Type				Soil - ES	Soil - ES
	Sample Matrix Code				6AE	3
363	TPH ID Interpretation			A-T-007s	Concentration too low to identify	Concentration too low to identify
	TPH CWG (leachable) with Clean Up					
865	Ali >C5-C6 (leachable)	µg/l	1	A-T-022w	<2	
866	Ali >C6-C8 (leachable)	µg/l	1	A-T-022w	<2	
4926	Ali >C8-C10 (leachable)	µg/l	10	A-T-055w	<10	
4865	Ali >C10-C12 (leachable)	µg/l	10	A-T-055w	<10	
4914	Ali >C12-C16 (leachable)	µg/l	10	A-T-055w	<10	
4915	Ali >C16-C21 (leachable)	µg/l	10	A-T-055w	<10	
4921	Ali >C21-C35 (leachable)	µg/l	20	A-T-055w	<20	
4974	Total Aliphatics (leachable)	µg/l	10	Calc-As Recd	<22	
868	Aro >C5-C7 (leachable)	µg/l	1	A-T-022w	<1	
869	Aro >C7-C8 (leachable)	µg/l	1	A-T-022w	<1	
4948	Aro >C8-C10 (leachable)	µg/l	10	A-T-055w	<10	
4929	Aro >C10-C12 (leachable)	µg/l	10	A-T-055w	<10	
4932	Aro >C12-C16 (leachable)	µg/l	10	A-T-055w	<10	
4935	Aro >C16-C21 (leachable)	µg/l	10	A-T-055w	<10	
4979	Total Aromatics (leachable)	µg/l	20	Calc-As Recd	<20	
4982	TPH (Ali & Aro >C5-C35) (leachable)	µg/l	20	Calc-As Recd	<22	
873	BTEX - Benzene (leachable)	µg/l	1	A-T-022w	<1	
875	BTEX - Toluene (leachable)	µg/l	1	A-T-022w	<1	
874	BTEX - Ethyl Benzene (leachable)	µg/l	1	A-T-022w	<1	
876	BTEX - o Xylene (leachable)	µg/l	1	A-T-022w	<1	
877	BTEX - m & p Xylene	µg/l	1	A-T-022w	<1	
878	MTBE (leachable)	µg/l	1	A-T-022w	<1	
4939	Aro >C21-C35 (leachable)	µg/l	20	A-T-055w	<20	
	TPH CWG with Clean Up					
298	Ali >C5-C6	mg/kg	0.01	A-T-022s	<0.01	<0.01
300	Ali >C6-C8	mg/kg	0.01	A-T-022s	<0.01	<0.01
4876	Ali >C8-C10	mg/kg	1	A-T-055s	<1	<1
4863	Ali >C10-C12	mg/kg	1	A-T-055s	<1	<1
4868	Ali >C12-C16	mg/kg	1	A-T-055s	<1	<1
4869	Ali >C16-C21	mg/kg	1	A-T-055s	<1	<1
4870	Ali >C21-C35	mg/kg	1	A-T-055s	4	<1
4968	Total Aliphatics	mg/kg	1	Calc-As Recd	4	<1
304	Aro >C5-C7	mg/kg	0.01	A-T-022s	<0.01	<0.01
306	Aro >C7-C8	mg/kg	0.01	A-T-022s	<0.01	<0.01
4885	Aro >C8-C10	mg/kg	1	A-T-055s	<1	<1
4877	Aro >C10-C12	mg/kg	1	A-T-055s	<1	<1
4878	Aro >C12-C16	mg/kg	1	A-T-055s	<1	<1
4879	Aro >C16-C21	mg/kg	1	A-T-055s	<1	<1
4881	Aro >C21-C35	mg/kg	1	A-T-055s	2	<1
4969	Total Aromatics	mg/kg	1	Calc-As Recd	2	<1
4970	TPH (Ali & Aro >C5-C35)	mg/kg	1	Calc-As Recd	6	<1
286	BTEX - Benzene	mg/kg	0.01	A-T-022s	<0.01	<0.01

Envirolab Job Number: 23/12087
Client:
Client Project Name:
Client Project Ref:

	Lab Sample ID				23/12087/6	23/12087/10
	Client Sample No				MG	Cl
	Client Sample ID				WS102	WS103
	Depth to Top				1.50	3.10
	Depth to Bottom				1.60	3.40
	Date Sampled				02-Dec-23	02-Dec-23
	Sample Type				Soil - ES	Soil - ES
	Sample Matrix Code	**Units**	**Limit of Detection**	**Method**	6AE	3
288	BTEX - Toluene	mg/kg	0.01	A-T-022s	<0.01	<0.01
290	BTEX - Ethyl Benzene	mg/kg	0.01	A-T-022s	<0.01	<0.01
294	BTEX - m & p Xylene	mg/kg	0.01	A-T-022s	<0.01	<0.01
292	BTEX - o Xylene	mg/kg	0.01	A-T-022s	<0.01	<0.01
296	MTBE	mg/kg	0.01	A-T-022s	<0.01	<0.01

APPENDIX C
‘HASWASTE’ SPREADSHEET

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

3020010-R149

Ref. 1		WS102	WS103							
Ref. 2		1.50-1.60m	3.10-3.4							
Date		02-Dec-23	02-Dec-23							
% Moisture	%	17.7	23.3							
pH (soil)		7.34	8.65							
pH (leachate)										
Arsenic	mg/kg	2	1							
Cadmium	mg/kg	0.7	1.1							
Copper	mg/kg	12	18							
CrVI or Chromium	mg/kg	1	1							
Lead	mg/kg	13	12							
Mercury	mg/kg	0.17	0.17							
Nickel	mg/kg	24	28							
Selenium	mg/kg	1	1							
Zinc	mg/kg	26	40							
Barium	mg/kg									
Beryllium	mg/kg	0.5	0.9							
Vanadium	mg/kg									
Cobalt	mg/kg									
Manganese	mg/kg									
Molybdenum	mg/kg									
Antimony	mg/kg	5	5							
Aluminium	mg/kg									
Bismuth	mg/kg									
CrIII	mg/kg	49	53							
Iron	mg/kg									
Strontium	mg/kg									
Tellurium	mg/kg									
Thallium	mg/kg									
Titanium	mg/kg									
Tungsten	mg/kg									
Ammoniacal N	mg/kg									
ws Boron	mg/kg	1.0	1.0							
PAH (Input Total PAH **OR** individual PAH results)										
Acenaphthene	mg/kg	0.01	0.01							
Acenaphthylene	mg/kg	0.01	0.01							
Anthracene	mg/kg	0.02	0.02							
Benzo(a)anthracene	mg/kg	0.04	0.04							
Benzo(a)pyrene	mg/kg	0.04	0.04							
Benzo(b)fluoranthene	mg/kg	0.05	0.05							
Benzo(ghi)perylene	mg/kg	0.05	0.05							
Benzo(k)fluoranthene	mg/kg	0.07	0.07							
Chrysene	mg/kg	0.06	0.06							
Dibenzo(ah)anthracene	mg/kg	0.04	0.04							
Fluoranthene	mg/kg	0.08	0.08							
Fluorene	mg/kg	0.01	0.01							
Indeno(123cd)pyrene	mg/kg	0.03	0.03							
Naphthalene	mg/kg	0.03	0.03							
Phenanthrene	mg/kg	0.03	0.03							
Pyrene	mg/kg	0.07	0.07							
Coronene	mg/kg									
Total PAHs (16 or 17)	mg/kg									
TPH										
Petrol	mg/kg									
Diesel	mg/kg									
Lube Oil	mg/kg									
Crude Oil	mg/kg									
White Spirit / Kerosene	mg/kg									
Creosote	mg/kg									
Unknown TPH with ID	mg/kg	10.0	10.0							
Unknown TPHCWG	mg/kg									
Total Sulphide	mg/kg									
Complex Cyanide	mg/kg									
Free (or Total) Cyanide	mg/kg	1	1							
Thiocyanate	mg/kg									
Elemental/Free Sulphur	mg/kg									
Phenols Input Total Phenols HPLC **OR** individual Phenol results.										
Phenol	mg/kg									
Cresols	mg/kg									
Xylenols	mg/kg									
Resourcinol	mg/kg									
Phenols Total by HPLC	mg/kg	0.2	0.2							
BTEX Input Total BTEX **OR** individual BTEX results.										
Benzene	mg/kg	0.01	0.01							
Toluene	mg/kg	0.01	0.01							
Ethylbenzene	mg/kg	0.01	0.01							
Xylenes	mg/kg	0.02	0.02							
Total BTEX	mg/kg									
PCBs (POPs)										
PCBs Total (eg EC7/WHO12)	mg/kg									
PBBs (POPs)										
Hexabromobiphenyl (Total or PBB153; 2,2',4,4',5,5'- if only available)	mg/kg									

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

3020010-R149

Ref. 1	WS102	WS103							
Ref. 2	1.50-1.60m	3.10-3.4							
Date	02-Dec-23	02-Dec-23							

POPs Dioxins and Furans Input Total Dioxins and Furans **OR** individual Dioxin and Furan results.

2,3,7,8-TeCDD	mg/kg								
1,2,3,7,8-PeCDD	mg/kg								
1,2,3,4,7,8-HxCDD	mg/kg								
1,2,3,6,7,8-HxCDD	mg/kg								
1,2,3,7,8,9-HxCDD	mg/kg								
1,2,3,4,6,7,8-HpCDD	mg/kg								
OCDD	mg/kg								
2,3,7,8-TeCDF	mg/kg								
1,2,3,7,8-PeCDF	mg/kg								
2,3,4,7,8-PeCDF	mg/kg								
1,2,3,4,7,8-HxCDF	mg/kg								
1,2,3,6,7,8-HxCDF	mg/kg								
2,3,4,6,7,8-HxCDF	mg/kg								
1,2,3,7,8,9-HxCDF	mg/kg								
1,2,3,4,6,7,8-HpCDF	mg/kg								
1,2,3,4,7,8,9-HpCDF	mg/kg								
OCDF	mg/kg								
Total Dioxins and Furans	mg/kg								

Some Pesticides (POPs unless otherwise stated)

Aldrin	mg/kg								
α Hexachlorocyclohexane (alpha-HCH) *(leave empty if total HCH results used)*	mg/kg								
β Hexachlorocyclohexane (beta-HCH) *(leave empty if total HCH results used)*	mg/kg								
α Cis-Chlordane (alpha) ***OR*** *Total Chlordane*	mg/kg								
δ Hexachlorocyclohexane (delta-HCH) *(leave empty if total HCH results used)*	mg/kg								
Dieldrin	mg/kg								
Endrin	mg/kg								
χ Hexachlorocyclohexane (gamma-HCH) (lindane) ***OR*** *Total HCH*	mg/kg								
Heptachlor	mg/kg								
Hexachlorobenzene	mg/kg								
o,p'-DDT *(leave empty if total DDT results used)*	mg/kg								
p,p'-DDT ***OR*** *Total DDT*	mg/kg								
χ Trans-Chlordane (gamma) *(leave empty if total Chlordane results used)*	mg/kg								
Chlordecone (kepone)	mg/kg								
Pentachlorobenzene	mg/kg								
Mirex	mg/kg								
Toxaphene (camphechlor)	mg/kg								

Tin

Tin *(leave empty if Organotin and Tin excl Organotin results used)*	mg/kg								

Organotin

Dibutyltin; DiBT	mg/kg								
Tributyltin; TriBT	mg/kg								
Triphenyltin; TriPT	mg/kg								
Tetrabutyltin; TeBT	mg/kg								

Tin excluding Organotin

Tin excl Organotin	mg/kg								

Haswaste, developed by Dr. Iain Haslock.

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

3020010-R149									
Ref. 1	WS102	WS103							
Ref. 2	1.50-1.60m	3.10-3.4							
Date	02-Dec-23	02-Dec-23							
Asbestos in Soil	Thresholds								
Asbestos detected in Soil (enter Y or N)	Y	N	N						
		If Asbestos in Soil above is "Y", the soil is Hazardous Waste HP5 and HP7							
Asbestos % Composition in Soil (Matrix Loose Fibres or Microscopic Identifiable Pieces only)	see "Carc HP7 % Asbestos in Soil (Fibres)" below								
Carcinogenic HP7 % Asbestos in Soil (fibres or micro pieces) *Please be advised, if the calculation cell is "0.00000" DOES NOT MEAN asbestos testing has been undertaken and the result is zero.*	≥0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
		If Asbestos in Soil above is "Y", but Asbestos % above is "<0.1%", the soil is Non Hazardous Waste. You can only use Asbestos % results where loose fibres or micro pieces are only present. You cannot use Asbestos % results when visual identifiable pieces are present.							
Asbestos Identifiable Pieces visible with the naked eye detected in the Soil (enter Y or N)	Y	N	N						

If visual identifiable pieces of asbestos are present, you cannot use Asbestos % results and the whole soil sample is Hazardous Waste HP5 and HP7 Construction material containing Asbestos 17 06 05.
Therefore, if Asbestos in Soil above is "Y", the Asbestos % above is "<0.1%", but the Asbestos Identifiable Pieces visible with the naked eye is "Y", the soil is Hazardous Waste.

Identifiable Pieces are Cement, Fragments, Board, Rope etc. ie anything ACM that is not Loose Fibres.

All visual asbestos pieces need to be removed leaving only fibres (or micro pieces) with an Asbestos % Composition in Soil result of <0.1% for the soil to become non-hazardous waste.

Hazardous Property	Thresholds	Cut Off Value	If cells below turn yellow and the text turns red, the samples should be classified as Hazardous Waste.								
Corrosive HP8	≥5%	<1%	0.00039	0.00026	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Irritant HP4	≥10%	<1%	0.00135	0.00168	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Irritant HP4	≥20%	<1%	0.00532	0.00624	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥1%		0.00015	0.00014	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥20%		0.00019	0.00031	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥1%		0.00399	0.00434	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥10%		0.00107	0.00092	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Aspiration Toxicity HP5	≥10%		0.00083	0.00077	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.1%	<0.1%	0.00015	0.00014	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.25%	<0.1%	0.00023	0.00011	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥5%	<0.1%	0.00048	0.00059	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥25%	<1%	0.00676	0.00739	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.25%	<0.1%	0.00017	0.00016	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥2.5%	<0.1%	0.00016	0.00015	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥15%	<0.1%	0.00002	0.00002	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥55%	<1%	0.00055	0.00055	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.1%	<0.1%	0.00015	0.00014	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.5%	<0.1%	0.00042	0.00056	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥3.5%	<0.1%	0.00013	0.00012	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥22.5%	<1%	0.00618	0.00682	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7	≥0.1%		0.00399	0.00434	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7	≥0.1%		0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
Carcinogenic HP7	≥1%		0.00049	0.00046	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7 Unknown TPH with ID	≥1,000mg/kg		8.23	7.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carcinogenic HP7 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		0.32920	0.30680	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
pH Corrosive HP8 pH (soil or leachate)	H8 ≥11.5		7.34	8.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pH Corrosive HP8 pH (soil or leachate)	H8 ≤2		7.34	8.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Toxic for Reproduction HP10	≥0.3%		0.00399	0.00434	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Toxic for Reproduction HP10	≥3%		0.00082	0.00077	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Mutagenic HP11	≥0.1%		0.00016	0.00015	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Mutagenic HP11 Unknown TPH with ID	≥1,000mg/kg		8.23	7.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mutagenic HP11 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		0.32920	0.30680	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Mutagenic HP11	≥1%		0.00399	0.00434	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Produces Toxic Gases HP12 Sulphide	≥1,400mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Cyanide	≥1,200mg/kg		0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Thiocyanate	≥2,600mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HP13 Sensitising	≥10%		0.00399	0.00434	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Haswaste, developed by Dr. Iain Haslock.

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If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

3020010-R149										
Ref. 1			WS102	WS103						
Ref. 2			1.50-1.60m	3.10-3.4						
Date			02-Dec-23	02-Dec-23						
Ecotoxic HP14 amended v6	≥25%	<0.1%	0.00963	0.01131	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Ecotoxic HP14 amended v6	≥25%	<0.1% (except Be, V, Te, Tl, Petrol, Diesel, Crude Oil, Kerosene, White Spirit, Crosote, TPH, TPHCWG, Phenol, Cresols, Xylenols, T-Phenols, CompCN, Thiocyanate, Toluene, Ethylbenzene, Xylene + BTEX 1%).	0.01065	0.01240	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Ecotoxic HP14 amended v6	≥25%	<0.1% (except Be, V, Te, Tl, Petrol, Diesel, Crude Oil, Kerosene, White Spirit, Crosote, TPH, TPHCWG, Phenol, Cresols, Xylenols, T-Phenols, CompCN, Thiocyanate, Toluene, Ethylbenzene, Xylene + BTEX 1%).	0.97203	1.14077	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Persistent Organic Pollutant (PCB, PBB or POP Pesticides)	>0.005%		0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Persistent Organic Pollutant (Total Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000
Persistent Organic Pollutant (Individual Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000

Sutcliffe

Waste Acceptance Criteria Data Sheet

Sample Details								Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	23/11847/14				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample Number										
Client Sample ID				WS104						
Depth to Top				0						
Depth to Bottom				0.40						
Date Sampled				29/11/2023						
Sample Type				Soil						
Sample Matrix Code				6AE						
Solid Waste Analysis										
pH (pH Units)$_D$	A-T-031	N	N	**6.94**				-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N	**0.02**				-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N	**<0.01**				-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	N	N	**2.9**				-	-	10
Total Organic Carbon (%)$_D$	A-T-032	N	N	**0.75**				3	5	6
PAH Sum of 17 (mg/kg) $_A$	A-T-019	N	N	**0.52**				100	-	-
Mineral Oil (mg/kg)$_A$	A-T-007	N	N	**<10**				500	-	-
Sum of 7 PCBs (mg/kg)$_A$	A-T-004	N	N	**<0.007**				1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N	**<0.01**				6	-	-
Eluate Analysis				**2:1**	**8:1**	**2:1**	**Cumulative 10:1**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)**		
				mg/l		**mg/kg**				
Arsenic	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.5	2	25
Barium	A-T-025	N	N	0.045	0.040	0.103	**0.420**	20	100	300
Cadmium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.04	1	5
Chromium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.5	10	70
Copper	A-T-025	N	N	0.005	0.004	0.011	**0.040**	2	50	100
Mercury	A-T-025	N	N	<0.0005	<0.0005	<0.001	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.5	10	30
Nickel	A-T-025	N	N	<0.002	<0.002	<0.004	**<0.02**	0.4	10	40
Lead	A-T-025	N	N	0.003	0.007	0.007	**0.070**	0.5	10	50
Antimony	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.06	0.7	5
Selenium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.1	0.5	7
Zinc	A-T-025	N	N	0.010	0.017	0.023	**0.170**	4	50	200
Chloride	A-T-026	N	N	5	2	12	**22**	800	15000	25000
Fluoride	A-T-026	N	N	0.4	0.2	0.8	**2**	10	150	500
Sulphate as SO_4	A-T-026	N	N	2	5	4	**50.000**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	85	26	194	**335**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	<0.01	<0.02	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<20.0	<20.0	<40	**<200**	500	800	1000
Leach Test Information										
pH (pH Units)	A-T-031	N	N	7.4	7.3					
Conductivity (µS/cm)	A-T-037	N	N	171	52					
Mass Sample (kg)				0.225						
Dry Matter (%)	A-T-044	N	N	77.7						
Stage 1										
Volume Leachant, L_2 (l)	A-T-046			0.350						
Filtered Eluate Volume, VE_1 (l)	A-T-046			0.200						
Stage 2										
Volume Leachant, L_8 (l)	A-T-046			1.400						

Note: The final decision on waste classification is determined by the accepting landfill, and consultation with landfill operators be carried out during the development of the SMMP.

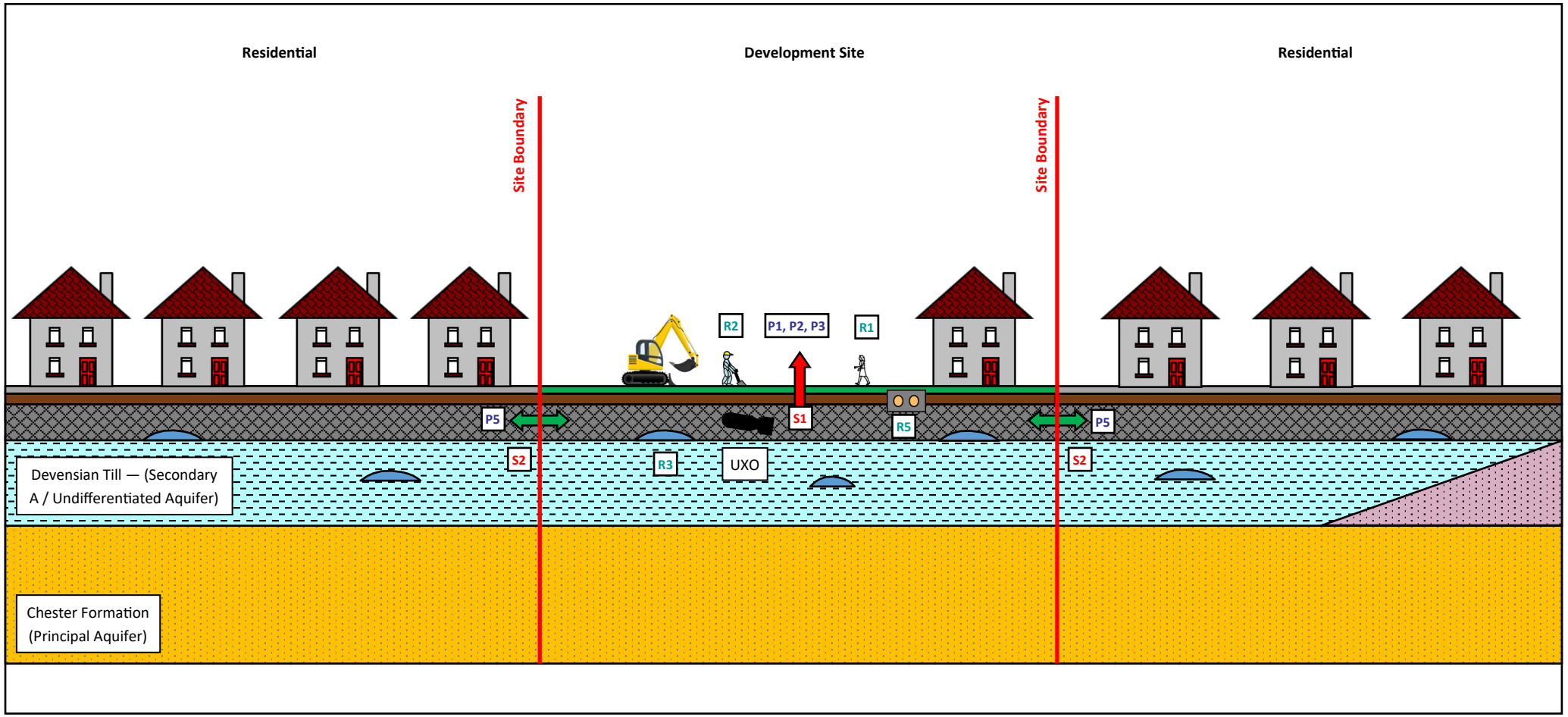
Asbestos Detection
No Asbestos Detected

Preliminary Waste Classification
Non-Hazardous

Waste Classification
Inert Waste

Figure 3 – Preliminary Conceptual Site Model

Preliminary Conceptual Site Model (CSM)



Contamination Source	
S1	Made Ground / UXO
S2	Made Ground

Legend	
	Infilled / Made Ground
	Underground Services
	Inferred Water Table

Receptor	
R1	Future Site Users
R2	Construction Workers
R3	Controlled Waters
R4	Adjacent Site Users
R5	Infrastructure & Buried Services

Pathway	
	Direct Contact / Ingestion
	Leachate Migration
	Ground Gas Migration
P1	Direct Contact
P2	Ingestion
P3	Inhalation
P4	Leaching & Migration
P5	Vertical & Lateral migration of Ground Gas

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Client: Mosscare St Vincent's Housing Group

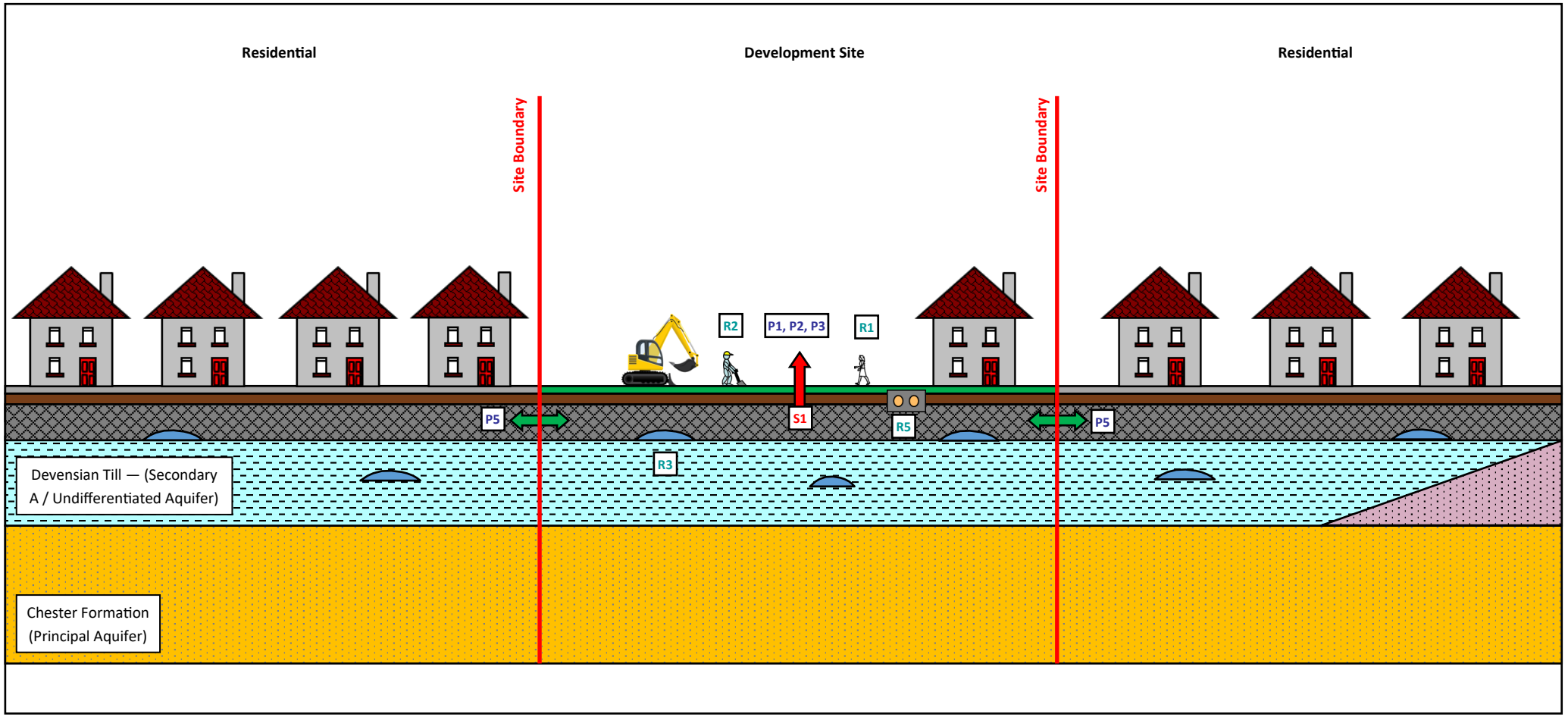
Project: 33716-SUT-ZZ-00-RP-G-7101

Site: Cheetham Hill, Manchester

Preliminary Conceptual Site Model (CSM)	Draft	1	Scale (at A3): Not to scale
	Issue	1	
Issuing Office: Liverpool	Drawing number: 1		Version: A
Telephone: 0151 227 3155			

Figure 7 – Revised Conceptual Site Model

Revised Conceptual Site Model (CSM)



Contamination Source	
S1	Made Ground / UXO
S2	Made Ground

Legend	
	Infilled / Made Ground
	Underground Services
	Inferred Water Table

Receptor	
R1	Future Site Users
R2	Construction Workers
R3	Controlled Waters
R4	Adjacent Site Users
R5	Infrastructure & Buried Services

Pathway	
	Direct Contact / Ingestion
	Leachate Migration
	Ground Gas Migration
P1	Direct Contact
P2	Ingestion
P3	Inhalation
P4	Leaching & Migration
P5	Vertical & Lateral migration of Ground Gas

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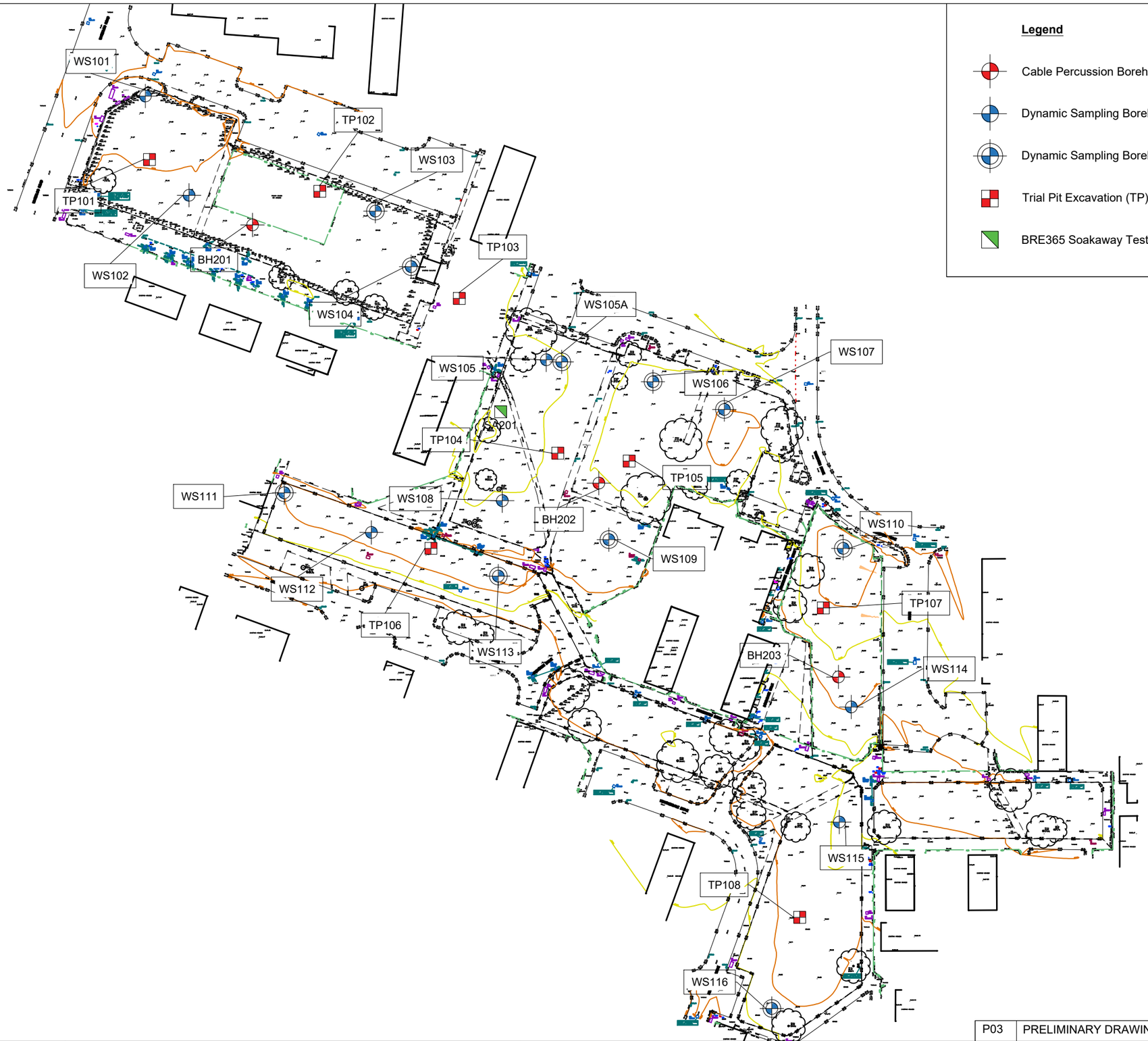
Client: Mosscare St Vincent's Housing Group

Project: 33716-SUT-ZZ-00-RP-G-7101

Site: Cheetham Hill, Manchester

Revised Conceptual Site Model (CSM)	Draft	1	Scale (at A3): Not to scale
	Issue	1	
Issuing Office: Liverpool	Drawing number: 1		Version: A
Telephone: 0151 227 3155			

Drawing Ref. – 33716-SUT-ZZ-00-DR-G-7251 P03 (SI on Existing)



Legend

- Cable Percussion Borehole (BH)
- Dynamic Sampling Borehole (WS)
- Dynamic Sampling Borehole with Gas / Groundwater Install (WS)
- Trial Pit Excavation (TP)
- BRE365 Soakaway Test (SA)

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Drawing Status

FOR INFORMATION ONLY

Client

MSV HOUSING

Project

CHEETHAM HILL, MANCHESTER

Drawing Title

SITE INVESTIGATION LOCATIONS ON EXISTING PLAN

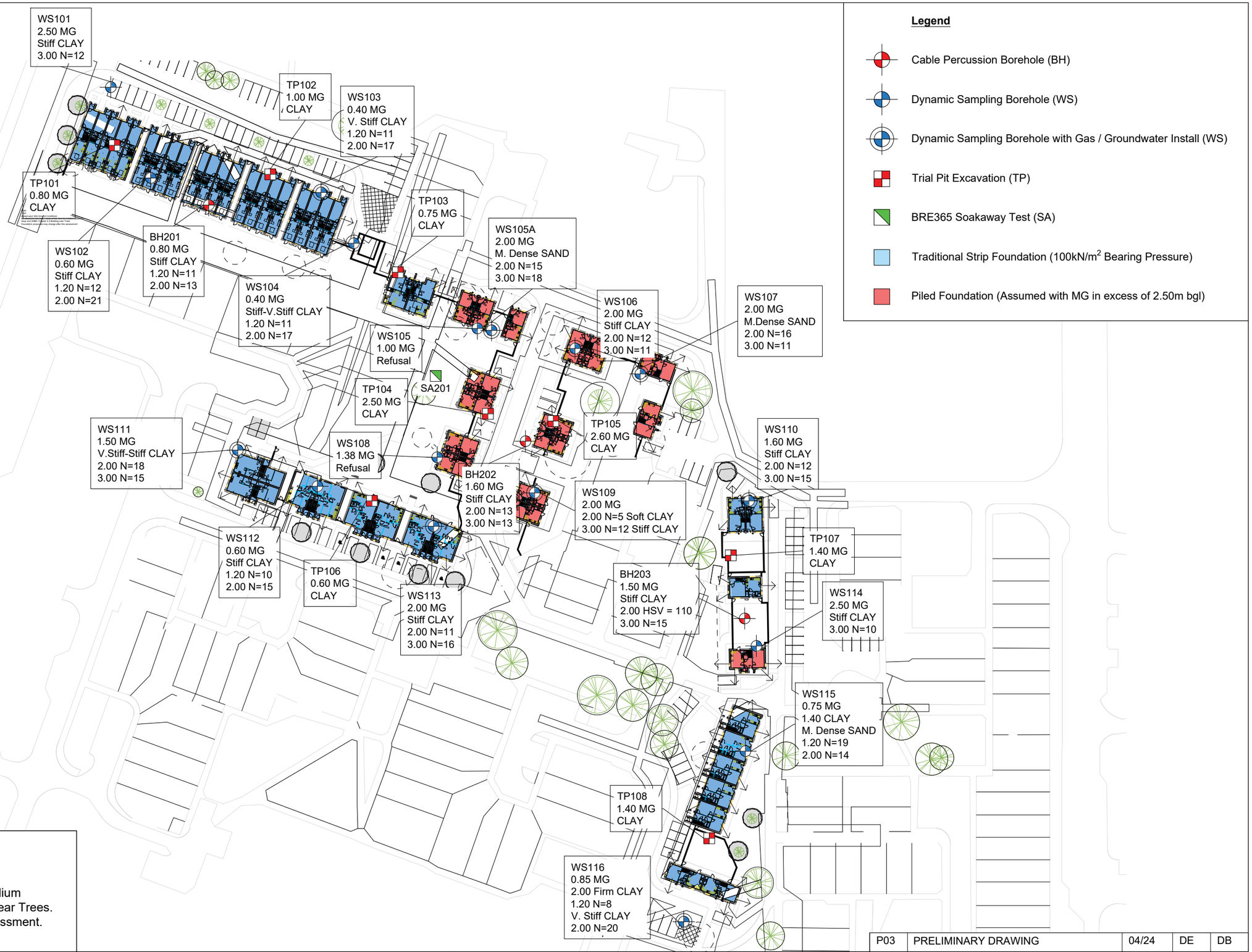
Rev	Description	Date	By	Chkd
P03	PRELIMINARY DRAWING	04/24	DE	DB

Date	Drawn By	Checked By
APR 2024	D EVANS	D BOWEN

Scale at A3	Project Number
AS SHOWN	33716LG

Sheet Number	Revision
33716-SUT-ZZ-00-DR-G-7251	P03

Drawing Ref. – 33716-SUT-ZZ-00-DR-G-7252 P03 (Foundation Zoning Plan)



Notes:-

- Approximate Foundation Zoning Plan.
- Based upon Site Ground Conditions.
- No allowance has been made at this time for medium plasticity clays and NHBC Chapter 4.2 Building near Trees.
- Foundation proposals may change after this assessment.

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MANCHESTER

Drawing Title

FOUNDATION ZONING PLAN

Rev	Description	Date	By	Chkd
P03	PRELIMINARY DRAWING	04/24	DE	DB

Date	Drawn By	Checked By
APR 2024	D EVANS	D BOWEN

Scale at A3	Project Number
AS SHOWN	33716LG

Sheet Number	Revision
33716-SUT-ZZ-00-DR-G-7252	P03

Drawing Ref. – 33716-SUT-ZZ-00-DR-G-7253 (Gas Risk Zoning Plan)



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Project
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MANCHESTER

Drawing Title
GAS RISK CLASSIFICATION
ZONING PLAN

Rev	Description	Date	By	Chkd
P01	PRELIMINARY DRAWING	04/24	DE	DB

Date	Drawn By	Checked By
APR 2024	D EVANS	D BOWEN

Scale at A3	Project Number
AS SHOWN	33716LG

Sheet Number	Revision
33716-SUT-ZZ-00-DR-G-7253	P01

Drawing Ref. – 33716-SUT-ZZ-00-DR-G-7254 P02 (Cover System Zoning Plan)



Legend

- Cable Percussion Borehole (BH)
- Dynamic Sampling Borehole (WS)
- Dynamic Sampling Borehole with Gas / Groundwater Install (WS)
- Trial Pit Excavation (TP)
- BRE365 Soakaway Test (SA)
- 300mm Cover System
- 600mm Cover System

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Drawing Title

COVER SYSTEM
ZONING PLAN

Rev	Description	Date	By	Chkd
P02	PRELIMINARY DRAWING	02/26	AW	DB

Date	Drawn By	Checked By
FEB 2026	A WOODS	D BOWEN

Scale at A3	Project Number
AS SHOWN	33716LG

Sheet Number	Revision
33716-SUT-ZZ-00-DR-G-7254	P02