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GEOENVIRONMENTAL APPRAISAL

of land at

UPPER BROOK STREET, MANCHESTER, M13 9QD

Prepared on behalf of McLaren Property Limited

Report 7293/1

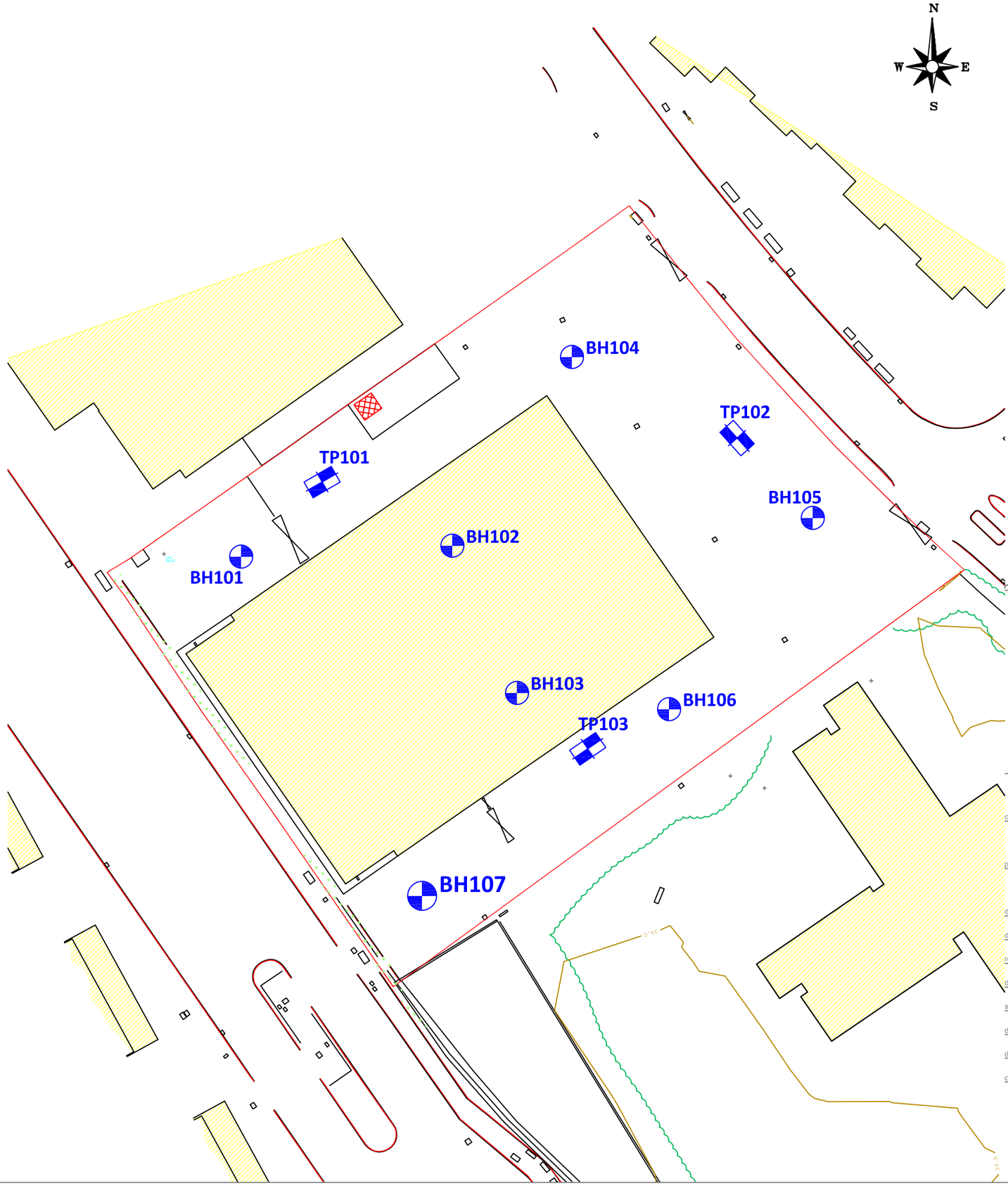
June 2024

GEOENVIRONMENTAL SUMMARY

Site Description	The site comprises a former car dealership and servicing centre. A single storey building lies in the central area of the site. External areas are all tarmac surfaced. In the north lies a small lean-too building formerly used for car cleaning and valeting. To the west of this is a small structure that houses waste materials and what appears to be a small above ground waste oil tank.
History	The site was developed with likely residential properties from at least the mid 19th Century until the mid 20th Century when a 'works' building occupied the site. The exiting building was likely constructed in the late 1980's.
Made Ground	Made ground was found across the site and was typically around 1.0m in thickness. A veneer of asphalt was found across all of the external site areas with concrete of around 200mm inside the building; this was typically underlain by a sandstone sub-base of approximately 300mm thickness. The made ground comprises a mixture of cohesive and granular soils with occasional thin horizons of ashy soil.
Natural Ground	Typically comprised medium dense sand becoming sand and sandstone gravel to approximately 3m depth where sandstone was encountered. Thin horizons of sandy clay were found immediately beneath the made ground at some locations.
Contamination & Remediation	Three samples yielded concentrations of lead above its Tier 1 criteria, two additional samples yielded elevated benzo(a)pyrene. Where residual made ground remains beneath landscaped areas (i.e. not beneath buildings or hardstanding) a 600mm thick surface cover of "clean" soil is recommended.
Hazardous Gas	There are no significant sources of hazardous gas generation within influencing distance of the site; however, on-site made ground does present a very low risk. initial gas monitoring has not yielded any elevated concentrations or flows of hazardous gas.
Mining & Quarrying	The site is located within a Coal Mining Reporting Area; however, there are no shallow coal seams beneath the site that could effect its stability. There are no quarries within 250m.
Foundations	Made ground is not generally considered a suitable founding material and foundations should be taken through it, into underlying natural in-situ strata of adequate bearing capacity. Weathered Chester Formation sandstone should provide sufficient bearing capacity to enable the adoption of deep spread foundations or short piles dependent upon proposed loads.
Groundwater & Excavations	To date monitoring has not identified any shallow groundwater although the use of water as a rotary drilling flush medium will have masked groundwater. The stability of excavations within both made and natural ground was generally good.
Flooding & Drainage	The EA indicate that the site is located within an indicative floodplain and is at risk from surface water flooding. Infiltration testing suggests that soakaways may provide a suitable means of surface water disposal.

Significant developer abnormals relating to geoenvironmental issues at the site are:
- Soil cover in any landscaped areas.
- Short piles.

This brief summary should not be assumed to represent a complete account of all the potential geoenvironmental issues that may exist at the site. As such it is strongly recommended that the report be read in its entirety.



notes

Proposed layout reproduced from Reform Landscape Architecture drawing referenced 0967-RFM-XX-00-DR-L-0001, Rev P02.

CALABRIAN 2024 INVESTIGATION

TRIAL PIT LOCATION

BOREHOLE LOCATION

APPROXIMATE SITE BOUNDARY

rev. description

client	MCLAREN PROPERTY LIMITED
project	UPPER BROOK STREET, MANCHESTER, M13 9QD
drawing title	GEOENVIRONMENTAL SUMMARY
drawing number	7293/7
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drawn by	RJH
checked by	–

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FOREWORD (Geoenvironmental Investigation Report)

This report has been prepared for the sole internal use and reliance of the McLaren Property Limited. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Calabrian Limited (Calabrian); such authorisation not to be unreasonably withheld. If any unauthorised third party comes into possession of this report, they rely on it at their peril 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 geoenvironmental issues with respect to information provided by the Client regarding the proposed development. Further advice should be sought from Calabrian prior to significant revision of the development proposals.

The report should be read in its entirety, including all associated drawings and appendices. Calabrian 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 Calabrian believes are reliable. All reasonable care and skill has been applied in examining the information obtained. Nevertheless, Calabrian 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 geoenvironmental consultants. Calabrian 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 Calabrian, whilst fully appropriate, may not have encountered all significant subsurface conditions. Consequently, no liability can be accepted for conditions not revealed by the exploratory holes. Any opinion expressed as to the possible configuration of strata between or below exploratory holes is 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 may 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 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 and that the development will be up of up to twenty two-storey construction. If this is not to be the case, then some modification to this report may be required.

Calabrian cannot be responsible for the consequences of changing practices, revisions to waste management legislation etc that may affect the viability of proposed remediation options.

Calabrian reserve the right to amend their conclusions and recommendations in the light of further information that may become available.

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1 INTRODUCTION

1.1 THE COMMISSION AND BRIEF

Calabrian Limited (Calabrian), were commissioned by McLaren Property Limited (McLaren) to carry out a geoenvironmental appraisal of land at Upper Brook Street, Manchester, M13 9QD.

Correspondence regarding Calabrian's appointment, including the brief for this investigation, is included in Appendix A. The agreed scope of works included:

- A review of third-party reports;
- a site walkover and inspection;
- an assessment of the land use history;
- determination of the site's environmental setting;
- an intrusive ground investigation comprising three trial pits and seven boreholes;
- assessment of the geotechnical properties of the near surface deposits to enable provision of foundation and highway recommendations;
- a qualitative assessment of contamination risks; and,
- recommendations for the necessary site preparatory and remediation works.

Factual information from the following report has been used within our assessment of the land use history and determination of the site's environmental setting:

- Phase 1 Ground Investigation Desk Study. Upper Brook Street Masterplan. Report prepared by A2 Site Investigation Limited on behalf of McLaren Property Limited and Kadans Science Partner. Report referenced 28723-A2SI-XX-XX-RP-Y-0001-01, dated June 2023.

1.2 OBJECTIVES

Primary aims of this investigation were to identify salient geoenvironmental issues affecting the site to enable McLaren to obtain budget costs for the necessary foundation, site preparatory and remediation works, and to support the submission of a planning application to the local authority.

1.3 DEVELOPMENT PROPOSALS

It is understood that consideration is being given to redevelopment of the site with two blocks of student accommodation of twenty-two and eleven storeys with a single storey podium linking them together. A proposed site layout has been provided by McLaren and is copied as Drawing 7293/2.

1.4 Report Format and Limitations

General notes and limitations relevant to all Calabrian investigations are described in the Foreword and should be read in conjunction with this report. The text of the report draws specific attention to any modification to these procedures and to any other special techniques employed.

2 SITE DESCRIPTION

2.1 General

Details of the site are given below:

- Location: 1.5km south-east of Manchester City Centre
- National Grid Reference: SJ 848 969
- Nearest Postcode: M13 9QD
- Area: 0.45 hectares

2.2 Site Features

Calabrian completed a walkover survey of the site on 13th May 2024.

The site comprises a former Citroen car dealership, MOT testing and servicing centre. A single storey brick and steel clad apparently steel framed building lies in the central area of the site.

The western section of the building comprises the former showroom with first floor offices whilst the eastern section housed workshops used for servicing and vehicle testing. The building has a concrete floor, and vehicles were accessed via hydraulic lifts rather than pits.

External areas are all tarmac surfaced. In the north lies a small lean-too building formerly used for car cleaning and valeting. To the west of this is a small structure that houses waste materials and what appears to be a small above ground waste oil tank. HazChem signs indicate that petrol and diesel may also have been stored in this area. Close by is an external area where oil traps/trays and 200 litre plastic drums (unknown contents) have been stored.

The site is predominately surrounded with a mix of brick walls and steel fence. The western section is open directly onto Upper Brook Street.

To the east beyond Kincardine Road is student accommodation, to the south lies Elizabeth Yarwood Court, a former sheltered housing scheme that ceased to be operational in June 2021. Land to the north comprises another vacant former car dealership. West beyond Upper Brook Street are buildings of Manchester University.

Existing salient features, at the time of the walkover are presented on Drawing No. 7293/3. A selection of site photographs are included on Drawing 7293/4.

3 SITE HISTORY

In order to investigate the development history and previous land uses at the site and immediate surrounding land, site centred extracts from Ordnance Survey (OS) plans dating back to 1848 have been examined. These plans are presented A2 Site Investigation Limited, June 2023 report.

Dates	On Site Features	Off Site Feature
1848	Likely residential housing.	Housing in the surrounding area.
1893	Approximately three houses with gardens appear to occupy the site. Robert Street runs inside the site along the northern boundary.	Upper Brook Street forms the western boundary. Surrounding areas are residential.
1922	Site seems to have been redeveloped with a number of larger buildings. Thornurn Street runs along the southern boundary.	
1954	Site redeveloped with an L-shaped 'Works' building.	A further 'Works' building lies immediately to the south-east although residential properties generally surround the immediate area.
1969		Areas immediately surrounding the site have been cleared. Kincardine Road forms the eastern boundary.
1978		Redevelopment of the cleared areas around the site has commenced with Elizabeth Yarwood Court immediately to the south.
1992	Robert Street and Thorurn Streets cleared and building of existing footprint shown on site.	

It is not the intention of this report to describe in detail all the changes that have occurred on or adjacent to the site. Significant former uses/operations are highlighted in bold text for ease of reference.

4 ENVIRONMENTAL SETTING

4.1 GENERAL

The responses have been reviewed from the Coal Authority, and Landmark. These responses are presented A2 Site Investigation Limited's June 2023 report.

Issue Data Reviewed	Remark
Geology 1:50,000 BGS map Borehole Data	Superficial – Till (likely gravelly clay). Solid – Chester Formation (sandstone). Shallowest coal seam - None. Faults – None on site. A number of shallow boreholes were drilled on site in 1970; these show made ground to around 4m depth overlying sandstone.

Issue Data Reviewed	Remark
Mining Coal Authority BGS maps	The site lies within the CAs 'Coal Mining Reporting Area' (within the defined coalfield, but no known defined risks have been recorded by the Coal Authority; there may still be unrecorded issues). Past and present workings - None. Opencast – None within 200m. Mine entries – None within 20m.
Quarrying Landmark Report Historical OS Plans	None noted within 250m.
Radon UKHSA Map Landmark Report	No measures required. The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level).
Hydrogeology Landmark Report Groundwater Vulnerability map	Source Protection Zone? No. Aquifers: Secondary (Drift); Principal (Solid). Groundwater abstractions? None within 600m. Pollution incidents? None relating to the site.
Hydrology Landmark Report	Source Protection Zone? No. Aquifers: Secondary (Drift); Principal (Solid). Groundwater abstractions? None within 600m. Pollution incidents? None relating to the site.
Landfill Sites Landmark Report	None within 250m.
Flood Risk Landmark Report	The site lies in both Flood Zones 2 and 3, where there is a risk of flooding from rivers but also appears to lie within a surface flooding area.

4.2 Unexploded Ordnance (UXO) Risk Assessment

Military activities including those conducted as part of both the First and Second World Wars have resulted in a legacy of unexploded ordnance (UXO) being present within the shallow soils of the UK.

UXO result from various sources including both allied (military training) and German (bombing raids) with a guide figure of approximately 10% of all munitions failing to function as designed.

The likelihood of UXO being encountered on a development site is influenced by several factors including: the proximity to strategic targets; the nature of the development works being undertaken; and evidence of local damage in the post-war periods amongst others. To determine the likelihood of UXO being present on a site, a stepwise risk assessment process is followed. This process is outlined within CIRIA C681[1].

A Detailed Unexploded Ordnance (UXO) Threat Assessment has been carried out by Landmark and Alpha Associates and the risk assessment is included in Appendix B. This concluded that no further action is required in respect of UXO at the site.

A Detailed Unexploded Ordnance (UXO) Threat Assessment has been carried out by Landmark and Alpha Associates and the risk assessment is included in Appendix B. The risk posed by UXO has been assessed as HIGH.

[1] CIRIA C681 Unexploded Ordnance: A Guide for the Construction Industry.

The following risk mitigation measures are recommended:

1. Operational UXO Emergency Response Plan; appropriate site management documentation should be held on-site to guide and plan for the actions which should be undertaken in the event of a suspected or real UXO;

2. UXO Safety & Awareness Briefings; the briefings are essential when there is a possibility of explosive ordnance encounter and are a vital part of the general safety All Activities in All Areas requirement. All personnel working on the site should receive a briefing on the identification of a UXB, what actions they should take to keep people and equipment away from such a hazard and to alert site management. Information concerning the nature of the UXB threat should be held in the site office and displayed for general information on notice boards, both for reference and as a reminder for ground workers. The safety awareness briefing is an essential part of the Health & Safety Plan for the site and helps to evidence conformity with the principles laid down in the CDM regulations 2015;

3. EOD Engineer in the Watching Brief Role; Where "open" intrusive works into previously undisturbed ground are proposed, an EOD Engineer should be present in the UXO Watching Brief role to monitor ongoing "open" intrusive works to identify any suspicious items that may be UXB or UXO.

4. Intrusive UXO Survey; Where "blind" intrusive works into previously undisturbed ground are proposed, an intrusive UXO survey (employing down-hole magnetometer or MagCone techniques) is strongly recommended. Such a survey should extend to the assessed average bomb penetration depth or to the maximum depth of the works, whichever is encountered first, or until geology is encountered through which it is assessed a UXB would not penetrate, to identify for signs of subsurface anomalies Which may model as the target UXO in advance of said works.

5 GROUND INVESTIGATION DESIGN

5.1 ANTICIPATED GROUND CONDITIONS

Based on the Environmental Setting and previous land use data reviewed anticipated ground conditions are expected to comprise:

- **Made Ground** - a veneer associated with previous phases of development anticipated.
- **Natural Soils** - possible gravelly clay (Till) although previous investigation did not identify any significant thickness.
- **Bedrock** – sandstone.
- **Mineworkings** – not in a coal mining area.
- **Groundwater** – possible at relatively shallow depth.

5.2 Potential Issues

Based on the data above and that in Sections 2 (Site Description) and 3 (History), potential ground-related issues associated with this site are likely to include:

Potential on-site contamination sources:

1. Spills and leaks from small above ground oil storage tank and drums;
2. spills and leaks from vehicles during maintenance;
3. made ground associated with previous phases of development; and,
4. raw material storage.

Potential off-site contamination sources:

1. Possible deep made ground associated with previous residential and commercial developments.

Potential geotechnical hazards:

1. None.

Other potential constraints:

1. None.

5.3 Preliminary Conceptual Site Model

The historical plans show that the site has been occupied by housing, an unspecified works and most recently a vehicle sales and service facility; which are considered to have the potential to have caused some ground contamination.

An assessment of potential contaminants associated with the former uses has been undertaken including reference to the following DETR Industry Profile:

- Road vehicle fuelling, service and repair - garages and filling stations.

Because of this assessment, anticipated potential contaminants, within soil and/or groundwater include:

- pH, and total metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, and zinc);
- asbestos;
- calorific Value (CV) within any ashy material;
- poly aromatic hydrocarbons (PAH); and,
- total petroleum hydrocarbons (TPH) includes BTEX.

Potential pollutant linkages are shown on a preliminary conceptual site model, presented as Drawing No 7293/5 with a summary of the possible source-pathway-receptor linkages and risk definitions provided in the table below. Clearly the conceptual model will be subject to modification in light of data arising from the proposed intrusive ground investigation.

Preliminary Conceptual Site Model – the table below summarises the possible source-pathway-receptor linkages with risk definitions in accordance with CIRIA C552[2].

Source	Exposure Pathway	Potential Receptor	Probability of Exposure	Consequence of Exposure	Discussion of Pollutant Linkage	Risk
Made Ground associated with previous development, waste oil tank, use of oils, fuels, and lubricants (heavy metals, PAHs, asbestos, and fuel / oil hydrocarbons).	Inhalation, Ingestion and Dermal Contact	Humans – future users of site infrastructure (Residents)	Likely	Medium (dependent on the types of contaminants someone is exposed to).	The presence of hardstanding across the vast majority of the site severs the potential pathway mechanism of the contaminant to the human receptor.	Moderate Risk
		Humans - construction & maintenance workers	Low (with appropriate use of PPE / RPE)	Medium (dependent on the types of contaminants someone is exposed to).	Potential for construction and maintenance workers to encounter contaminated soil / asbestos fibres. Exposure times likely to be limited and risks should be reduced by wearing appropriate personnel protective equipment (PPE/RPE).	Low to Moderate Risk
	Leaching and migration	Groundwater – underlying Secondary A Aquifer (superficial).	Low Likelihood	Medium	Potential for mobile contaminants on site. Hardstanding surfacing should act as a low permeability surface, thus infiltration to superficial geology should be limited.	Low to Moderate Risk
		Groundwater - Underlying Principal aquifer (bedrock).	Low Likelihood	Medium		Low to Moderate Risk
	Direct contact	Foundation	Likely	Mild	Potential for contaminants posing risk to new foundations and underground structures to be present.	Low to Moderate Risk
Hazardous ground gases from made.	Migration towards surface.	Humans – construction & maintenance workers	Unlikely	Severe	Potential for hazardous gas migration into new structures; on-going gas monitoring will allow for risk assessment.	Low to Moderate Risk
		Risk of explosion with future buildings and infrastructure				

[2] *Contaminated land risk assessment. A guide to good practice (C552), 2001.*

5.4 Investigation Strategy

The preliminary conceptual site model has used as a basis for design of an appropriate ground investigation, the scope of which is summarised below:

Exploratory Hole Type	Purpose
Trail Pits (Machine Excavated)	To determine the general nature of soils underlying the site, including the: • Nature, distribution, and thickness of made ground; • nature, degree, and extent of contamination; • proportion of undesirable elements eg biodegradable matter, foundations etc; and, • suitability of the ground for founding structures and pavements. To determine whether soakaways could be utilised for storm water drainage:
Cable Percussion Boreholes	To determine the general nature of soils underlying the site, including the: • retrieval of geotechnical data from depth; • nature, distribution, and thickness of made ground; • nature, degree, and extent of contamination; • proportion of undesirable elements eg biodegradable matter, foundations etc; and, • suitability of the ground for founding structures and pavements. To install monitoring wells across the site in order to: • Monitor for hazardous gas; and, • determine groundwater levels and assess flow direction.

Proposed exploratory hole locations should be selected to provide a representative view of the strata beneath the site and to target potential areas of interest identified in Section 5.3 above. A nominal 30m grid spacing should be appropriate, with additional exploratory locations scheduled as necessary in light of the ground conditions actually encountered.

The number of soil samples taken should be reflective of the geological complexity actually encountered, but in general at least three samples should be taken from each exploratory hole.

6 FIELDWORK

6.1 Objectives

The original investigation strategy is outlined in Section 5.4 above.

6.2 Exploratory Hole Location Constraints

No access was available within the former showroom/office area of the building due to limited access.

6.3 Scope of Works

Fieldwork was supervised by Calabrian between 13th and 20th May 2024 and comprised the exploratory holes listed below.

Technique Type	Exploratory Holes	Final depth(s)	Remarks
Trial pitting (machine dug)	TP101 to TP103	3.0m	
Soakaway Tests	Within TP10 to TP103	1m to 3m	
Dynamic Sampling boreholes	BH101, BH103, BH104, and BH106	3.0m to 4.0m	SPTs typically at 1m centres. Monitoring wells installed in each.
Dynamic Sampling & Rotary Cored boreholes	BH102, BH105 and BH107	18.0m to 20.4m	SPTs typically at 1m centres in superficial deposits, cored in rock. Monitoring wells installed in each.

Exploratory hole logs are presented in Appendix C. These logs include details of the:

- Samples taken;
- descriptions of the solid strata, and any groundwater encountered;
- results of the in-situ testing; and,
- the monitoring wells installed.

Exploratory hole locations are shown on Drawing No. 7293/6.

7 GROUND CONDITIONS

7.1 GENERAL

A complete record of strata encountered beneath the proposed development site is given on the various exploratory hole records, presented in Appendix C.

Typical ground conditions encountered in each of these areas are described below in Sections 7.2 (made ground) and 7.3 (natural ground.

7.2 MADE GROUND

The made ground on site is a heterogeneous mixture of materials and it is unlikely, even with a huge amount of sampling, that it could be accurately characterised.

Made ground was found across the site to depths of between 0.45m and 1.5m but was typically around 1.0m in thickness.

A veneer of asphalt was found across all of the external site areas with concrete of around 200mm thickness inside the building; this was typically underlain by a sandstone sub-base of approximately 300mm thickness.

The made ground comprised a vertically and laterally variable mixture of cohesive and granular soils with gravel and cobble sized anthropogenic fragment such as brick, sandstone, and concrete. Occasional thin horizons of ashy soil were also found at various locations.

7.3 Obstructions

It is apparent from a review of historical OS Plans (see Section 3) that buildings have historically been present much. A shallow brick wall was encountered within TP103 and it should be expected that shallow structures may be present across the site.

7.4 Natural Ground

Natural ground was encountered within each of exploratory holes, and typically comprised medium dense sand becoming sand and sandstone gravel (Granular Glacial Deposits) to approximately 3m depth where sandstone (Chester Formation) was encountered. Thin horizons of sandy clay (Cohesive Glacial deposits) were found immediately beneath the made ground at some locations.

7.5 Visual & Olfactory Evidence of Organic Contamination

No visual or olfactory evidence of organic contamination such as free fuel/oil product, oily sheens or discernible fuel/oil odours was noted during the investigation.

7.6 Groundwater

No significant inflows of groundwater were encountered during the investigation although the use of water as a rotary drilling flush medium will have masked groundwater.

Groundwater levels recorded in June 2024 in the monitoring wells are summarised below.

Exploratory Hole	Response Zone (depth range & stratum)	Groundwater Body	Typical standing water level (m bgl)
BH101	1.0m to 3.7m (Glacial Deposits)	Superficial	Dry
BH102	6.0m to 10.0m (Chester Formation)	Bedrock	Dry
BH103	1.0m to 3.0m (Glacial Deposits)	Superficial	Dry
BH104	1.0m to 3.0m (Glacial Deposits)	Superficial	Dry
BH105	6.0m to 10.0m (Chester Formation)	Bedrock	6.46
BH106	1.0m to 3.0m (Glacial Deposits)	Superficial	Dry
BH107	6.0m to 10.0m (Chester Formation)	Bedrock	Dry

7.7 Stability

The stability of excavations within both made and natural ground was generally good.

7.8 Revised Conceptual Ground Model (Ground Conditions)

The Preliminary Conceptual Site Model has been revised in light of data obtained during the ground investigation, most notably with respect to:

- The nature and distribution of made ground, including the presence of significant buried obstructions; and,
- the strength, nature, and depth of underlying natural strata.

Further refinement of the Conceptual Site Model is presented in Section 9, where the results of laboratory testing for contaminants have been considered.

8 CONTAMINATION (ANALYSIS)

8.1 General

The historical plans show that the site has been occupied by housing, an unspecified works and most recently a vehicle sales and service facility; which are considered to have the potential to have caused some ground contamination. Furthermore, made ground was encountered across the site during the ground investigation.

An assessment of potential contaminants associated with the former uses has been undertaken; see Section 5.3.

In the context of risks to human health associated with residential development, the Tier 1 Soil Screening Values referenced in this report have been derived by Land Quality Management Limited as their LQM/CIEH S4ULs, but amended, where appropriate, to be more specific to redevelopment within the planning process (see Notes in Annex I).

The Tier 1 Values used in this report have been derived with reference to a CSM that assumes residential apartments with landscaping (public open space) end-use (Calabrian Scenario C). In the event that determinands exceed these Tier 1 Values, the results will be reassessed.

8.2 Testing Scheduled

Based on the above assessment, Calabrian submitted a test schedule (summarised in the table below) to a UKAS accredited laboratory.

Type of Sample	No. of Samples	Determinands
Made Ground	11	Asbestos ID, pH, water soluble boron, and total metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, and zinc).
Natural Ground	13	
Made Ground	11	TOC, Speciated Poly Aromatic Hydrocarbons (sPAH), speciated Total Petroleum Hydrocarbons (sTPH) and BTEX
Natural Ground	7	
Natural Ground	4	TOC, Speciated Poly Aromatic Hydrocarbons (sPAH).
Made Ground	7	Water soluble sulphate, chloride, nitrate, and magnesium.
Natural Ground	1	

8.3 Soil Contamination Results

The soil contamination test results are summarised in the Tables in Annex I.

Laboratory test certificates as received from the laboratory are presented in Appendix D.

Inorganic Determinands

Of the twenty-four samples of natural and made ground analysed for inorganic parameters, only three could be classified as contaminated. Each of these samples yielded elevated concentrations of lead.

In late 2020 CL:AIRE published a revised approach to assessment of data in "*Professional Guidance: Comparing Soil Contamination Data with a Critical Concentration*". The CL:AIRE guidance suggests the use a more complex and nuanced statical model than that within CL& (withdrawn in September 2020) to answer the question *"what is the true mean concentration for the contaminant you are measuring?'*.

Statistical analysis of the lead concentrations could not be undertaken in this case due to the limited number of samples exceeding the Tier 1 criteria, the lack of spatial or material specific concentration.

Asbestos

No asbestos fibres were identified in any of the samples screened.

Organic Determinands

Samples have been classified by comparison with Calabrian risk-derived Tier 1 Values. These screening values assume a Soil Organic Matter (SOM) of 6% (equivalent to a TOC of 3.5%). Many organic contaminants are more mobile when the SOM is lower, and consequently lower screening values are then more appropriate for many organic contaminants.

In order to check the validity of Calabrian Tier 1 Values, the average TOC for each common fill type (beyond any areas of obvious hydrocarbon impact) have been determined.

Fill Type	Typical TOC/%	Comparison with revised Screening Value necessary?
Ash & Clinker	>8.6	No
Cohesive Made Ground	Variable	Yes, but generally no significant organic contamination was recorded in this soil type. All determinands well below "6%" screening value; most below limit of detection.
Sub-Base	<0.5	
Glacial Deposits	Variable (generally <3)	

Total Petroleum Hydrocarbons (TPH)

Calabrian have used the Tier 1 Soil Screening Values referenced in this report have been derived by Land Quality Management Limited as their LQM/CIEH S4ULs.

Assessment of TPH has been undertaken in accordance with a 3-step approach, (see notes in Annex I). The first two steps involve review of speciated results. The third step assesses cumulative effects.

Step 1 – Consideration of Indicator Compounds. (BTEX and naphthalene). None of the Indicator Compounds exceed their respective Tier 1 criteria.

Step 2 – TPH Fractions (does any individual fraction exceed Tier 1?). Only the sample of Granular Glacial Deposits from 2.5m depth within BH101 exceeded the C_{20} to C_{40} Tier 1 criteria; however, samples above and below this depth did not.

Step 3 – Assessing Cumulative Effects. As TPH fractions are made up of a range of different substances it is possible that a number of these can affect the same 'target organ' (i.e. cause skin irritation or affect the liver), resulting in cumulative effects.

The cumulative effect, associated with each sample, has been assessed via calculation of a Hazard Index (HI); HI < 1 indicates no cumulative effects; HI > 1, cumulative risk requires further consideration. The HI calculation for this site is contained in Annex 1.

The HI is only > 1 for the sample of Granular Glacial Deposits from 2.5m depth within BH101. Given the isolated nature of this exceedance and its depth further remedial action is not recommended.

Poly Aromatic Hydrocarbons (PAH)

Speciated PAH analysis has been undertaken in order to determine concentrations of the key "marker" compounds: benzo(a)pyrene (considered the most toxic of the PAHs); and naphthalene (the most mobile and volatile of the PAHs).

Speciated analysis has confirmed the absence of significant concentrations of naphthalene in the soils beneath this site.

Two elevated concentrations of benzo(a)pyrene in excess of Calabrian' Tier 1 Value of 3.7mg/kg were recorded in the Granular Made Ground at 0.2m depth within BH104 and the Ash & Clinker at 0.5m depth within TP101.

9 CONTAMINATION (RISK ASSESSMENT & REMEDIATION)

9.1 SUMMARY OF SIGNIFICANT CONTAMINATION

Made ground was found across the site to depths of between 0.45m and 1.5m but was typically around 1.0m in thickness. The made ground comprised a vertically and laterally variable mixture of cohesive and granular soils with gravel and cobble sized anthropogenic fragment such as brick, sandstone, and concrete. Occasional thin horizons of ashy soil were also found at various locations.

Three samples yielded concentrations of lead above the Tier 1 criteria and two additional samples yielded elevated benzo(a)pyrene concentrations.

9.2 REVISED CONCEPTUAL GROUND MODEL (CONTAMINATION)

The Preliminary Conceptual Site Model has been amended in light of data obtained during the ground investigation, most notably with respect to the distribution of made ground and contaminants.

9.3 Environmental Setting & End Use

As discussed in Section 9.1 above, some limited contamination exists in the soils beneath this site. In order to assess the significance of this contamination, consideration must be given to the site's environmental setting and the proposed end use.

The underlying glacial deposits are classified as a secondary aquifer with the underlying Chester Formation being a principal aquifer. Therefore, the site's environmental setting is considered to be moderate sensitivity within the urban setting.

With respect to human health, the proposed end use (residential) is also sensitive. Transient risks to construction workers can be addressed by the adoption of appropriate health and safety measures.

9.4 Pollutant Linkages

In terms of a proposed redevelopment of this site, plausible pollutant linkages can be summarised as follows.

Contaminants

Contaminants have been summarised in Section 9.1 above.

Pathways

Potential contaminant pathways include:

- Ingestion;
- dermal contact;
- inhalation of contaminated particulates;
- surface water run-off, including existing drainage infrastructure; and,
- downward infiltration of leachable/mobile contaminants to groundwater.

Receptors

Potential contaminant receptors include:

- the environment - aquifers; and,
- end users of the site (site workers and residents).

It can be concluded that there are plausible pathways between actual contaminant and potential receptors. Consequently, some remediation will be required; either treatment/removal of the contaminant, or "breakage" of the pathway.

9.5 Potential Remediation Options

General

Approval of the recommendations given below should be sought from the appropriate regulatory authorities prior to commencement of site redevelopment.

Inorganic contamination

The made ground has yielded elevated concentrations of lead within a number of isolated samples. Therefore, where residual made ground remains beneath landscaped areas (i.e. not beneath buildings or hardstanding) a 600mm thick surface cover of "clean" soil is recommended. This cover will break potential pollutant linkages between the contaminated made ground and future end-users.

Organic Contamination

No areas of gross organic contamination were encountered during the site works; however, localised elevated concentrations of benzo(a)pyrene have been identified across the site. The recommended 600mm thick surface cover of "clean" soil (as for inorganic contamination above) cover or handstand/buildings will break potential pollutant linkages between the contaminated made ground and future end-users.

Localised areas of more onerous contamination than that identified to date may be present on site. If any buried drums, "oily", odorous, brightly coloured etc. materials are encountered, further advice should be sought from Calabrian.

Given the anticipated 600mm cover, Calabrian Scenario C Screening Values (see notes in Annex I) could be adopted as target concentrations for remediation. Although these values are based on consideration of human health only, it is considered likely that clean-up to these values would reduce pollution risks to controlled waters to acceptable levels.

9.6 Waste Classification

Soils at the site have been classified using the HazWasteOnline™ toolkit as summarised in the table in Appendix F. Detailed classifications and notes on waste classification within the UK are also included in Appendix F.

It is considered likely that the majority of waste will have a non-hazardous classification.

WAC testing was undertaken on six samples of non-hazardous soil; the results are presented within Appendix F. The results suggest that the natural soils here would be classified as inert with made ground as likely stable non-reactive hazardous waste.

Contractors exporting waste from the site should be asked to review the site investigation data, consult with accepting landfill facilities, and make their own assessment.

10 HAZARDOUS GAS

10.1 General

Consideration of the conceptual site model and potential linkages has enabled a preliminary qualitative assessment of risks associated with gas:.

Source	Receptors	Hazard	Pathway	Initial Risk
On-site and possible off-site made ground	Human Health	Asphyxiation & explosion.	Vertical migration, ingress & accumulation	**Very Low**: made ground essentially inert, with little degradable matter.

Given the above, gas monitoring wells have been installed in four shallow boreholes across the site. Details of the installations are given on the borehole logs presented in Appendix C.

The generation potential of the gas source was initially considered to be Very Low and this has been confirmed by the monitoring results obtained. Consequently, in accordance with CIRIA Report C665, given the proposed residential end use, six visits have been scheduled over a three month period.

10.2 Scope Of Works

To date, the wells have been monitored on one occasions for groundwater levels and soils-gases and the results are presented in Appendix G.

A standard procedure was followed, in accordance with CIRIA guidance:

- Ambient oxygen concentration;
- atmospheric temperature & pressure;
- methane, oxygen and carbon dioxide concentrations and flow rates using a Geotechnical Instruments GA5000 infra-red gas analyser;
- standing water level using a dipmeter;
- ambient oxygen concentration (check for instrument drift).

10.3 Monitoring Results

The results of the monitoring completed to date are summarised below.

Monitoring Well	Response Zone	Range of Methane Concentrations (% v/v)	Range of Carbon Dioxide Concentrations (% v/v)	Range of Steady Flow Rates (litre/hour)
BH101	1.0m to 3.7m (Glacial Deposits)	0	0.1	0.4
BH103	1.0m to 3.0m (Glacial Deposits)	0	2.1	0.5
BH104	1.0m to 3.0m (Glacial Deposits)	0	0.4	0.5
BH106	1.0m to 3.0m (Glacial Deposits)	0	2.6	0.4

10.4 Discussion

A hazardous gas risk assessment incorporating all of the results will be issued on completion of monitoring in September 2024. Given the limited gas generation source and monitoring results to date the site is likely to be classified as Characteristic Situation 1 (CS1) where gas protection measures are not required.

10.5 Radon

UKHSA launched the new radon map on in December 2022 this indicates that radon protection measures are not required for new dwellings at the site. Information from Landmark confirms that the site is in an area where less than 1% of homes are estimated to be above the action level, and that radon protection measures are therefore not required.

11 GEOTECHNICAL TESTING

11.1 General

A total of forty-five samples of natural soil were delivered to a suitably accredited laboratory with a schedule of geotechnical testing drawn up by Calabrian.

The geotechnical laboratory test results are presented in Appendix E.

11.2 Atterberg Limits

The plasticity indices of two samples of Cohesive Glacial Deposits soil have been determined; results are summarised below.

Soil type	Range of Plasticity Indices* (Average)	Shrinkability
Cohesive Glacial Deposits	14 and 14	Low

** Modified where appropriate in accordance with revised Chapter 4.2 of the NHBC Standards (April 2003).*

Note. The term Shrinkability is equivalent to the term Volume Change Potential used in Chapter 4.2.

For the purposes of foundation design, it is recommended that all cohesive soils be regarded as being of low shrinkability.

11.3 Soluble Sulphate and pH

In accordance with BRE Special Digest 1:2005, this site has been classified as brownfield with a mobile groundwater regime.

It is envisaged foundations might extend to depths of about 5m to 8m through made ground and natural strata and samples taken from this depth range have been submitted for pH and water-soluble sulphate (2:1 soil/water extract).

The concentrations of sulphate in the aqueous natural soil extracts of thirteen samples were determined. In addition, eight samples of made ground were tested as part of the contamination suite. The pH value of each sample has also been determined.

The highest water-soluble sulphate concentration and the lowest pH value for each soil type analysed are shown in the Table below.

Soil type	Lowest pH values	Highest Soluble Sulphate Concentration (mg/l)
Made Ground	7.3	46*
Natural Ground	7.4	310

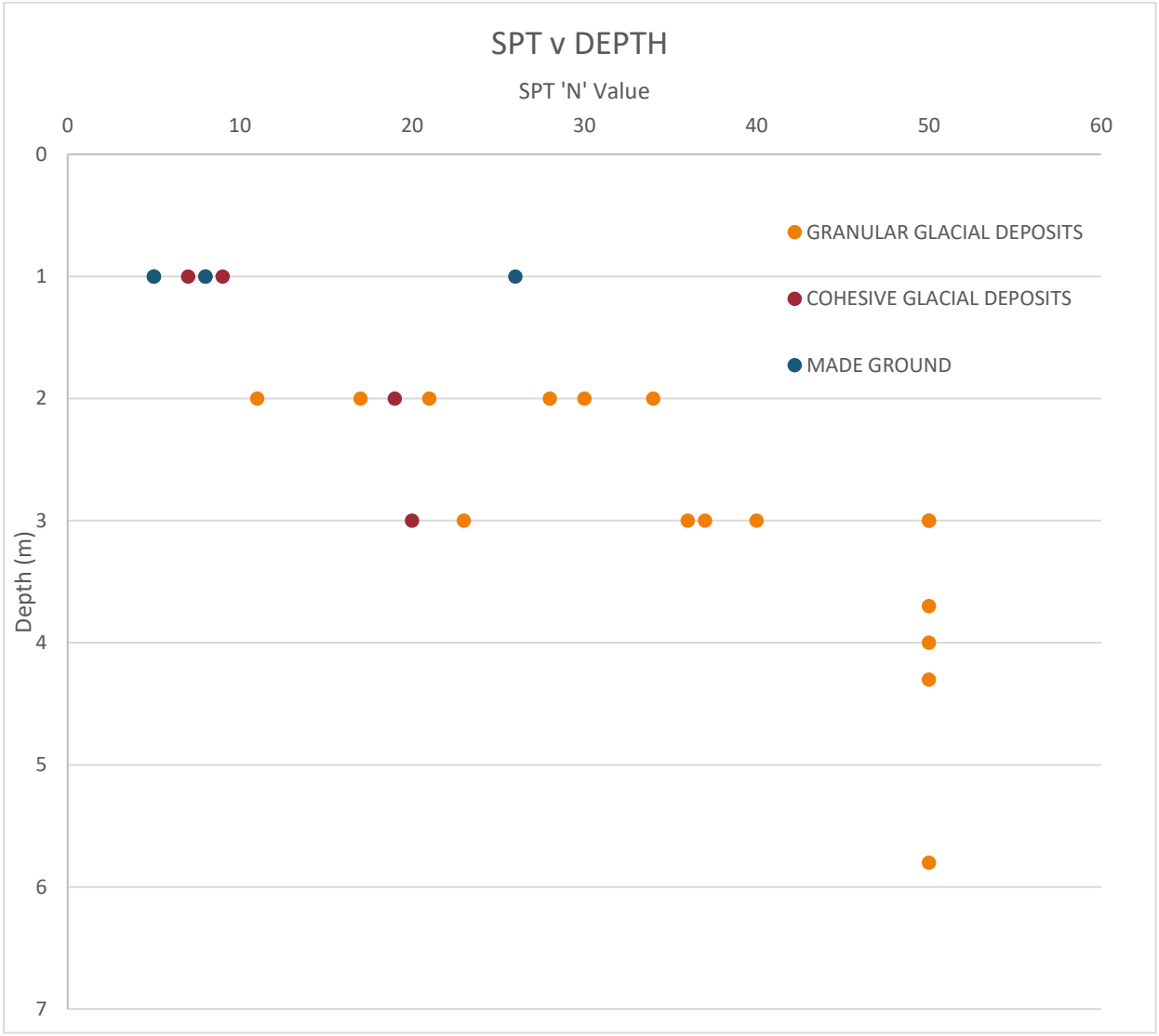
** A single sample of shallow Ash & Clinker yielded a soluble sulphate concentration of 830mg/l.*

pH values were all above 5.5, therefore concentrations of chloride and nitrate are considered insignificant.

In accordance with Tables C1 and C2 of SD1, sub-surface concrete should be Design Sulphate Class DS-1, with the site allocated an ACEC Classification of AC-1. Concrete in contact with Ash & Clinker will require a higher concrete specification.

11.4 Standard Penetration Test (SPT)

The in-situ relative density of granular soils was established by carrying out SPTs during the drilling of the boreholes. The reported blow counts suggest relative densities ranging from medium dense to dense for the Granular Glacial deposits.



11.5 Rock Testing

Point Load

The point load index of 52 specimens of intact core was determined. I_s50 values varied between 0.01MPa and 0.2MPa. Typically the I_s50 result is multiplied by 22 to provide an indicative UCS; this would yield 0.22MPa to 4.4MPa for the Chester Sandstone Formation.

Unconfined Compressive Strength (UCS)

The UCS of ten samples of rock core was determined; these ranged from 4MPa to 12.5mMPa and typically around 11MPa.

11.6 Infiltration Tests

Infiltration tests have been undertaken within three trial pits. Test were carried out in general accordance with BRE365[3] and C156:1996[4]. In accordance with C753:2015[5] tests were repeated three times. The locations of the soakaways are shown on Drawing No. 7293/6.

Infiltration Rates

Infiltration rates for each soakaway test have been calculated in accordance with BRE 365. This design takes into account the time for water level in to fall from 75% to 25% of its effective depth. The effective depth is the difference between the starting water level and the soakaway pit base depth.

Calculated infiltration rates for each successful test are summarised in the Table below, and copies of the associated calculations are presented in Appendix E.

Soakaway	Stratum	Infiltration Rate (m/s)	Remarks
TP101	Granular Glacial Deposits	6.0×10^{-5}	
		4.4×10^{-5}	
		3.2×10^{-5}	
TP102	Granular Glacial Deposits	5.4×10^{-5}	
		4.8×10^{-5}	
		5.0×10^{-5}	
TP103	Granular Glacial Deposits	1.1×10^{-4}	
		1.0×10^{-4}	
		1.4×10^{-4}	

Drainage Engineers could use the infiltration rates reported above to determine the feasibility of soakaways as a solution for the discharge of surface water run-off.

[3] BRE (1991) Soakaway Design, BRE Digest 365, Building Research Establishment, Bracknell UK.
[4] BETTESS R (1996), Infiltration drainage - manual of good practice, R156D, CIRIA, London.
[5] SuDS Manual. CIRIA C753 2015.

However, regard must be made to seasonal groundwater levels. UK guidance (most notably BRE365 and CIRIA C753:2015) indicates that the seasonally high groundwater table must be at least 1m below the base the soakaway. Monitoring to date suggests that ground water lies at least 6m below the site surface.

Consequently, soakaways are likely to provide a suitable drainage solution for the discharge of surface water run-off at the site.

12 GEOTECHNICAL ISSUES

12.1 CONCEPTUAL SITE MODEL

A veneer of asphalt was found across all of the external site areas with concrete of around 200mm inside the building; this was typically underlain by a sandstone sub-base of approximately 300mm thickness. The made ground comprised a variable mixture of cohesive and granular soils with gravel and cobble sized anthropogenic fragments

Natural ground comprised medium dense sand becoming sand and sandstone gravel to approximately 3m depth where sandstone was encountered. Thin horizons of sandy clay were found immediately beneath the made ground at some locations.

12.2 MINING & QUARRYING

The site lies within the CAs 'Coal Mining Reporting Area' which is an area within the defined coalfield, but with no known defined risks have been recorded by the Coal Authority. No shallow coal seams lie beneath the site and no evidence of intact coal seams or worked seams was found during the investigation. The coal mining risk at the site is negligible.

There are no known quarries on, or within 250m of the site.

12.3 FOUNDATION RECOMMENDATIONS

General

We have assumed that final development levels will not differ significantly from ground levels existing at the time of investigation.

Made ground is not considered a suitable foundation material and foundations should therefore be taken through these materials into underlying natural strata of adequate bearing capacity.

Sub-surface concrete in contact with the made and natural ground should be Design Sulphate Class DS-1, with the site allocated an ACEC Classification of AC-1.

Strip/Trench Fill Footings

It is considered that shallow strip footings will be the most suitable foundation solution for lower load structures constructed at the site. This solution is viable where the made ground is less than about 2.0m thick and firm clay or medium dense sand and gravel is the founding material.

General

Founding depths are from original or finished ground level, whichever is the lower, to the underside of the footing.

Where existing buildings are to be demolished, it is considered that all concrete slabs and service ducts will require breaking out prior to re-development. However, relict foundations could probably be left in-situ and an allowance made for local breaking out where these conflict with new foundations.

Foundations of plots placed over relict foundations should be taken to greater depth than the relict foundations and into natural ground of adequate bearing capacity.

Overdeepened foundations should be stepped in accordance with NHBC Standards, Chapter 4.4.

Foundations will be required to be placed below a line drawn up at 45° from the base of any service or similar excavation.

Cohesive Glacial Deposits

Assuming a maximum foundation line load of 110kN/m run, a foundation geometry of say length = 8m, breadth = 0.6m, thickness = 225mm, founding at 1m depth and assuming an undrained shear strength of 50kPa for the firm clay (typical minimum recorded on site) then theoretical safe bearing capacities as detailed below can be calculated:

- Meyerhof (Factor of Safety) Approach = 150kPa (FoS=2.5)
- Lumped Factor of Safety = 150kPa (Fos=2.5)

A Eurocode 7 approach provides the following ultimate bearing capacities including the use of depth factors. Applying 75mm of eccentricity to the line load has negligible effect in either case:

- DA1 Combination 1 = 150kPa (ultimate)
- DA2 Combination 2 = 150kPa

However, consideration should also be given to the effect of settlement on the above safe bearing capacities in order to assess meaningful allowable bearing capacities.

Assuming the foundation geometry detailed above minimal settlements would be anticipated.

Clay classification tests suggest that natural cohesive soils at the site should be regarded as being of low shrinkability. A minimum founding depth of 750mm is therefore recommended for all soils on the site where strip footings are proposed.

Granular Glacial Deposits (Sand & Gravel)

The sand and gravel is assumed to have a relative density of at least medium dense (in accordance with BS5930:1991).

Assuming a maximum foundation line load of 110kN/m run, a foundation geometry of say length = 8m, breadth = 0.6m, thickness = 225mm, founding at 1m depth, and assuming an angle of shearing resistance of ϕ=28° for the granular deposits then this would suggest a safe bearing capacity of around 150kPa.

Assuming the foundation geometry detailed above, minimal settlements would be anticipated.

Bedrock

For higher loads deepened pad foundations would be suitable. The sandstone rock stratum is generally considered to have a safe bearing capacity of at least 250kPa below 3m depth and minimal settlements would be anticipated.

Piled Foundations

Given the presence of deep made ground underlain by lower strength glacial deposits piled foundations end-bearing within the Chester Formation Sandstone rock might be required for new structures at the site.

The following general comments relating to piling are provided for guidance, and further advice should be sought from a specialist-piling contractor.

Piled foundations should extend into the underlying bedrock. The safe working load that may be supported on a pile is dependent on the pile diameter, its founding depth, and the method of installation.

The boreholes indicated that competent sandstone lies below depths of around 3m, below current ground levels.

As piles would be founded in bedrock, they will be essentially end-bearing, although there may also be some shaft adhesion in the superficial deposits.

Consequently, preliminary estimates for pile lengths in the order of 6m to 10m.

The design of working platforms for tracked plant is a geotechnical design process and should be carried out by a competent person. The following parties should have input into the design:

Permanent works designer, to consider additional uses for platform material as part of the overall development;

Principal contractor, to define any other purposes for which the platform might be used; and,

Contractor or subcontractor, to specify requirements for the platform, including gradients, ramps, and edges.

12.4 Floor Slabs

Ground bearing floor slabs should not be constructed onto unprocessed made ground. The Granular Glacial Deposits would provide a suitable founding stratum for lightly loaded floor slabs. can be constructed on clay soils if an appropriate layer of engineered crushed stone is placed. The depth of crushed stone placed should be equal to 50% of the strip/trench fill foundation that would be depth determined in accordance with NHBC Chapter 4.2 considering minimum depth based on trees.

12.5 Excavations

Based on the results of the investigation it is unlikely that major groundwater flows will be encountered in shallow excavations.

Excavations should remain stable in the short term but if left open for any significant period of time may require shoring most notably in granular soils and made ground.

12.6 Drainage

Soakaways are likely to provide a suitable drainage solution for the discharge of surface water run-off at the site. With a design infiltration rate of around $6x10^{-5}$ m/s.

13 REDEVELOPMENT ISSUES

13.1 General

This report has presented options with respect to foundation solutions, treatment of contamination etc that are considered technically feasible and in line with current good practice. Consequently, we would expect to obtain regulatory approval for whichever option is adopted, although this cannot be guaranteed. Copies of this report should be forwarded to the relevant regulatory authorities (Local Authority) for their comment/approval.

13.2 Remediation Strategy

Redevelopment of this site will almost certainly be subject to planning conditions relating to remediation and validation. Once a specific, preferred development strategy has been decided, Calabrian will prepare a detailed Remediation Strategy document for approval.

The Remediation Strategy document would include:

- General background information, including site location, site description and a summary of ground investigation data;
- An overview of existing constraints on development and the aims of the proposed remediation works;
- Specific details of the anticipated site remediation/preparatory works;
- Details of site supervision and verification; and,
- A summary of implications for redevelopment.

The Remediation Strategy will describe what is required, but not how it is achieved; the appointed Contractor would normally be expected to undertake an Options Appraisal, and then prepare a Method Statement.

The anticipated remediation works are summarised:

- Demolition of buildings;
- break-up of slabs and hardstand and grubbing up of foundations;
- crushing of all suitable artificial hard material (i.e. concrete/brick etc); and,
- provision of a minimum 600mm thick cover layer of 'clean' soils in all landscaped areas.

It is strongly recommended that the demolition contractor should chase-out all significant buried structures, and survey-in the resultant excavations before making them safe by backfilling. At the very least, relevant features should be surveyed-in before "hiding" them beneath a veneer of rubble. Similarly, it would be prudent to complete a drainage survey prior to blading rubble across the site to leave it safe and secure.

13.3 Health & Safety Issues - Construction Workers

The bulk of the made ground will be retained on site. This made ground contains contaminants at concentrations above the guidance threshold values for an end use that includes landscaping. Workers involved in excavations for foundations, drainage, utilities etc are likely to come into direct contact with the made ground.

Consequently, during the earthworks and construction phases of the site development it will be necessary to protect the health and safety of site personnel. General guidance on these matters is given in the Health and Safety Executive (HSE) document "Protection of Workers and the General Public during the Redevelopment of Contaminated Land". In summary, the following measures are suggested to provide a minimum level of protection:

- All ground workers should be issued with protective clothing, footwear and gloves. Personnel should be instructed in why and how they are to be used;
- hand-washing and boot-washing facilities;
- care should be taken to minimise the potential for off-site migration of contamination by the provision of dust suppression control and wheel cleaning equipment during the construction works;
- good practices relating to personal hygiene should be adopted on the site; and,
- the contractor should satisfy the Health & Safety Executive with regard to any other matters concerning the health, safety and welfare of persons on the site.

Access into excavations etc. must be controlled and only undertaken in accordance with the Confined Spaces Regulations 1997. The atmosphere in shored trenches in excess of 1.2m should be monitored for oxygen and hazardous gas (methane & carbon dioxide), prior to personnel entering such excavations. Monitoring should continue whilst personnel are working in deep excavations.

Before site operations are started, the necessary COSHH statements and Health & Safety Plan should be drafted in accordance with the CDM regulations.

14 CONCLUSIONS & RECOMMENDATIONS

14.1 General

Consideration is being given to redevelopment of the site with two blocks of student accommodation of twenty-two and eleven storeys with a single storey podium linking them together.

14.2 History

The site was developed with likely residential properties from at least the mid-19th Century until the mid-20th Century when a 'works' building occupied the site. The exiting building was likely constructed in the late 1980's.

14.3 Ground Conditions

A veneer of asphalt was found across all of the external site areas with concrete of around 200mm inside the building; this was typically underlain by a sandstone sub-base of approximately 300mm thickness. The made ground comprised a variable mixture of cohesive and granular soils with gravel and cobble sized anthropogenic fragments

Natural ground comprised medium dense sand becoming sand and sandstone gravel to approximately 3m depth where sandstone was encountered. Thin horizons of sandy clay were found immediately beneath the made ground at some locations.

14.4 Hazardous Gas

There are no known or suspected areas of landfilling within 250m, and the site is not in area considered susceptible to mines gas, nor is it underlain by shallow mineworkings.

The site is in an area where less than 1% of homes are estimated to be above the radon action level and protective measures are not required.

Given the limited gas generation source (on site made ground) and monitoring results to date the site is likely to be classified as Characteristic Situation 1 (CS1) where gas protection measures are not required.

14.5 Mining & Quarrying

The site lies within the CAs 'Coal Mining Reporting Area'. No shallow coal seams lie beneath the site and no evidence of intact coal seams or worked seams was found during the investigation. The coal mining risk at the site is negligible.

There are no known quarries on, or within 250m of the site.

14.6 Contamination & Remediation

Three samples yielded concentrations of lead above its Tier 1 criteria, two additional samples yielded elevated benzo(a)pyrene. Where residual made ground remains beneath landscaped areas (i.e. not beneath buildings or hardstanding) a 600mm thick surface cover of "clean" soil is recommended.

14.7 Foundations

Lower load structures could be founded at shallow depth within the cohesive or granular glacial deposits. Higher loads will be required to found on or in the Chester Formation sandstone at depth either on deep pad or short piled foundations.

14.8 Flooding

The EA indicate that the site is not located within an indicative floodplain.

14.9 DRAINAGE

Soakaways are likely to provide a suitable drainage solution for the discharge of surface water run-off at the site.

DRAWINGS	
7293/1	Site Location Plan
7293/2	Proposed Site Layout
7293/3	Existing Site Features
7293/4	Site Photographs
7293/5	Preliminary Conceptual Site Model
7293/6	Exploratory Hole Location Plan
7293/8	Geoenvironmental Summary





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client	MCLAREN PROPERTY LIMITED
project	UPPER BROOK STREET, MANCHESTER, M13 9QD
drawing title	SITE LOCATION
drawing number	7293/1
revision	–
drawing status	Final
scale	1:25,000 @ A4
date	18/04/2024
drawn by	RJH
checked by	–

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notes

Proposed layout reproduced from Reform Landscape Architecture drawing referenced 0967-RFM-XX-00-DR-L-0001, Rev P02.

N
W E
S

rev. description

MCLAREN PROPERTY LIMITED

client

UPPER BROOK STREET,
MANCHESTER, M13 9QD

project

PROPOSED LAYOUT

drawing title

drawing number 7293/2

revision –

drawing status Final

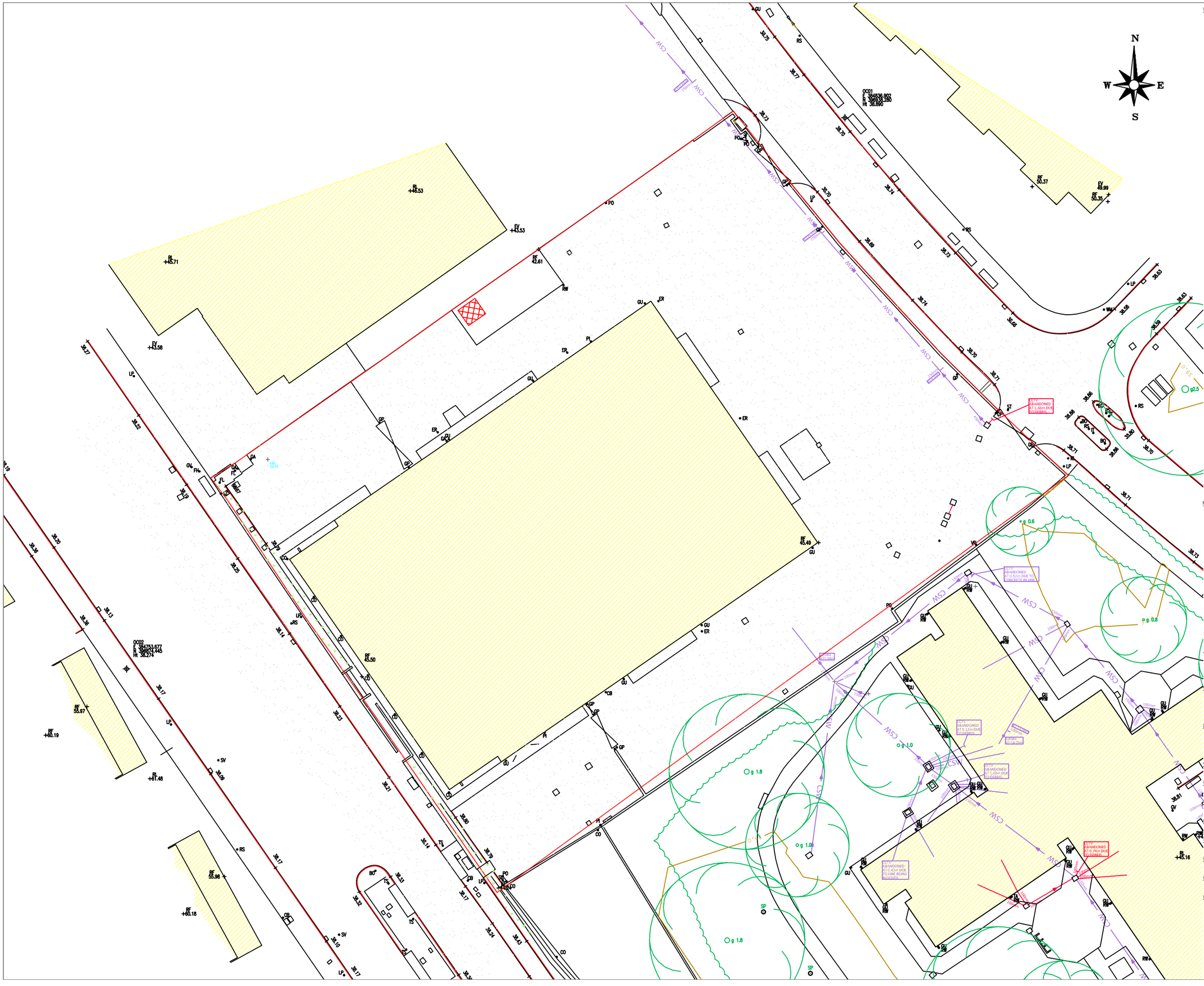
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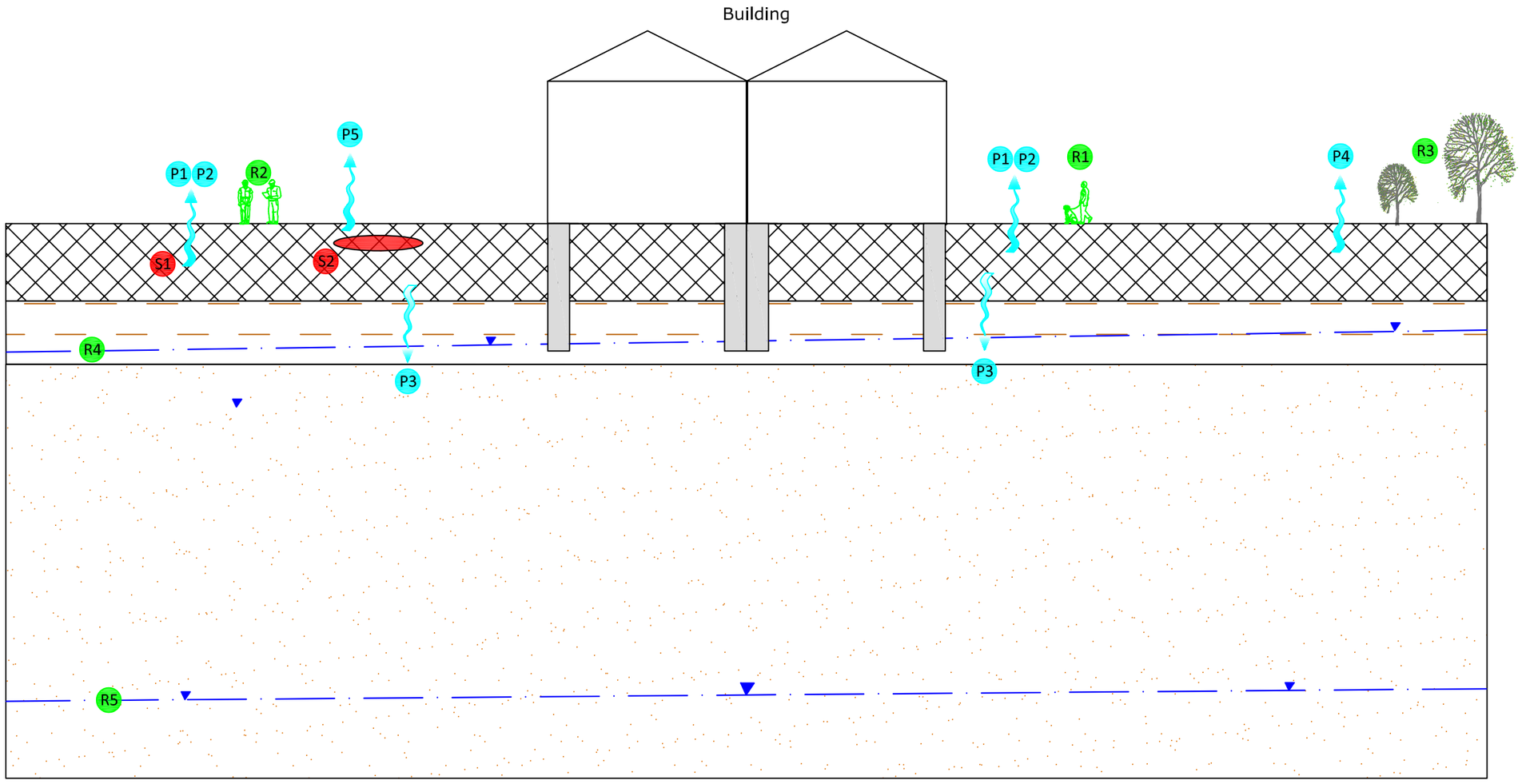
date 18/04/2024

drawn by RJH

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N
W
E
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notes
GRASS & OVERGROWN AREAS
BUILDING
TARMAC HARDSTAND
WASTE OIL TANK
APPROXIMATE SITE BOUNDARY
rev. description
MCLAREN PROPERTY LIMITED
client
UPPER BROOK STREET, MANCHESTER, M13 9QD
project
SITE FEATURES
drawing title
drawing number 7293/3
revision –
drawing status Final
scale 1:400 @A3
date 14/05/2024
drawn by RJH
checked by –
calabrian
GEOTECHNICAL | GEOENVIRONMENTAL
info@calabrian.co.uk



GEOLOGY

- **MADE GROUND**
- **TILL** (Clay)
- **CHESTER FORMATION** (Sandstone)

SOURCES

- S1 **MADE GROUND** (Inorganics, orgaincs, asbestos, hazardous gas)
- S2 **LEAKAGE\SPILLAGE** (Organics)

POTENTIAL PATHWAYS

- P1 **DERMAL CONTACT**
- P2 **INGESTION\INHALATION**
- P3 **LEACHING OF CONTAMINANTS**
- P4 **UPTAKE BY PLANTS**
- P5 **VOLATILISATION**

SIGNIFICANT RECEPTORS

- R1 **END USERS** (Residents)
- R2 **SITE WORKERS**
- R3 **VEGETATION**
- R4 **SECONDARY AQUIFER** (superficial)
- R5 **PRINCIPAL AQUIFER** (Bedrock)

notes

rev. description

MCLAREN PROPERTY LIMITED

client

UPPER BROOK STREET, MANCHESTER, M13 9QD

project

PRELIMINARY CONCEPTUAL SITE MODEL

drawing title

drawing number 7293/5

revision –

drawing status Final

scale Not to Scale

date 18/04/2024

drawn by RJH

checked by –

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notes

CALABRIAN 2024 INVESTIGATION

- TRIAL PIT LOCATION
- BOREHOLE LOCATION
- APPROXIMATE SITE BOUNDARY

N
W E
S

BH101
BH102
BH103
BH104
BH105
BH106
BH107
TP101
TP102
TP103

rev. description

MCLAREN PROPERTY LIMITED
client

UPPER BROOK STREET,
MANCHESTER, M13 9QD
project

EXPLORATORY HOLE
LOCATION PLAN
drawing title

drawing number	7293/6
revision	–
drawing status	FINAL
scale	1:400 @A3
date	21/05/2024
drawn by	RJH
checked by	–

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APPENDIX A COMMISSION



7293/002/RJH/rjh

4th April 2024

Mr D Gent
Roscoe
1A Brewery Place
Brewery Wharf
Leeds
LS10 1NE

Dear Dan

Upper Brook Street, Manchester M13 9QD

Please find enclosed our fee proposal for undertaking a site investigation on the above land in general accordance with your proposed scope of works.

Your drawing suggests that the site consists of a single parcel of land with a plan area of approximately 0.44 hectares. The site currently comprises a temporary paid car park which is located around a rectangular single-storey structure that was most recently used as car dealership. Accessed can be gained from both Upper Brook Street and Kincardine Road.

We understand that the proposed redevelopment comprises two blocks of student accommodation of twenty-two and eleven storeys with a single storey podium linking them together.

We have been provided with a copy of the following report that we have briefly reviewed (the report covers a larger area of land extending to the north):

- Phase 1 Ground Investigation Desk Study. Upper Brook Street Masterplan. Report prepared by A2 Site Investigation Limited on behalf of McLaren Property Limited and Kadans Science Partner. Report referenced 28723-A2SI-XX-XX-RP-Y-0001-01, dated June 2023.

Note: Copies of the Landmark Report and UXO Risk Assessment are not provided within the appendices of the report.

A brief review of the above report suggests that the site:

- appears (we have not had access to copies of the historical OS Maps) to have been developed with hosing from at least the mid-19th Century later being redeveloped with a timber yard, and works buildings before construction of the existing car dealership building in the late 1990's;
- is not within 250m of an area of current or known historical landfilling;
- is located beyond the Coal Authority's defined coalfields; and,
- is not within a source protection zone.

The geological map for the area suggests the site is underlain by Till overlying Chester Sandstone Formation. Three BGS archive boreholes are located on or very close to the site and these indicate around 4m of made ground and/or sand and gravel overlying sandstone.

Our site investigation proposal allows for the following works:

Phase 1 Desk Study

We have assumed that the full A2 Desk Study report will be made available for our review and incorporation into our final comprehensive report. If this is not the case, then an additional fee of £1,200 will be required to produce an up-to-date desk study.

Preliminary and detailed unexploded ordnance (UXO) risk assessments are advocated as good practice by industry guidance such as CIRIA C681 'Unexploded Ordnance (UXO), a guide for the construction industry'. The A2 report suggest that further detailed assessment of the site is required. An initial UXO threat assessment has been undertaken using the ZeticaUXO risk map. The site is located in a medium-risk area and a Detailed UXO Threat Assessment should be undertaken, and our proposal allows for this.

Fieldwork

We have allowed for the drilling of seven boreholes using dynamic sampling and rotary core techniques (four to rockhead and three continued by rotary coring to 20m depth) and the excavation of three trial pits. All trial pits and boreholes will be supervised and logged by an experienced geoenvironmental engineer.

Soakaway testing will also be carried out in three pits in order to assess suitability of the ground for house and highway surface water drainage. In-line with current UK guidance, (most notably BRE365 and CIRIA C753:2015) soakaways should not be advocated where the seasonally high groundwater table lies within 1m of the soakaway base. Consequently, assuming the initial soakaway tests yield satisfactory results, we have allowed for the installation of groundwater monitoring wells to depths of between 4m and 10m within each borehole.

Given the potential for excavation instability, we have allowed for the import of gravel (20mm, single size) to site to fill the pits and prevent collapse during testing. We will leave stone at least 300mm below ground level, so that the pits can be reinstated with compacted Type-1 sub-base. However, we will have to dispose of surplus spoil via skips.

Representative soil samples of natural and man-made ground, including any contaminated samples, will be taken during the works. In-situ shear strengths of any cohesive soils encountered will be determined by the use of a hand-held shear vane.

The mechanical excavator will be equipped with a breaker to enable excavation through near-surface and buried concrete slabs and obstructions.

The boreholes are primarily intended to enable the retrieval of geotechnical data from depth but will also allow the installation of gas wells. Given the likely presence of made ground and potential nearby filled ground, we have allowed for the installation of wells in four holes and monitoring for hazardous gas (and any shallow groundwater).

The generation potential of this gas source is considered likely to be Very Low. Therefore, in accordance with CIRIA Report C665, we have initially allowed for six visits over a three=month period. A hazardous gas risk assessment will be issued on completion of monitoring.

This proposal has been put together without a visit to the site and it has been assumed that access is available for a JCB-type excavator along with a road going water tanker and track mounted drilling rig. In order to undertake works within the building we have assumed a ceiling height of 4.5m and that good ventilation can be created via multiple openings.

Soils/rock Testing: This will comprise routine geotechnical soils analysis, typical of that normally required for greenfield sites. Although no allowance has been made for in-situ or laboratory CBR testing, CBR values will be estimated from the strata descriptions and classification test results, where appropriate (i.e. if no significant regrading or reworking of made ground is proposed).

Appropriate chemical analyses, based on our review of existing report and knowledge of the site's history, have been allowed for; this will comprise twenty-one samples for a suite including asbestos, heavy metals, TPH and PAH. In the event that ground contamination is more significant or different to that anticipated, it might be necessary to carry out additional chemical testing.

Waste Acceptance Criteria (WAC) analysis will be undertaken on five samples of soils that are likely to require removal from site to landfill.

Reporting & Timescales

In order to provide you with sufficient information to enable assessment of abnormal costs at the earliest opportunity we will issue a concise overview report within five days of fieldwork completion.

On completion of the desk study, fieldwork and laboratory testing a comprehensive, factual, and interpretative report will be issued. This will contain detailed engineering records, laboratory test results, copies of all relevant correspondence and drawings of the site. The report will include qualitative risk assessment with respect to both controlled waters and human health.

The report will also provide technically feasible options for redevelopment of the site with housing, including consideration of foundation types and treatment\removal of contamination.

Fieldwork could be commenced within around three weeks of receipt of your written instruction to proceed. Our comprehensive geoenvironmental appraisal report will be issued within four weeks of fieldwork completion. This report will comment on issues associated with hazardous gas, but the gas risk assessment will not be issued until monitoring is completed.

Given previous usage of this land, it is considered highly likely that significant contamination will be encountered. Consequently, a Remediation Strategy report will be required by the Local Authority at an early stage in the planning approval process, and our proposal allows for this.

It should be noted that a Remediation Strategy outlines the remediation objectives necessary to protect environmental receptors and render a site suitable for the proposed end use. A Remediation Strategy is not the same as a Method Statement; the latter should be prepared subsequently, usually by a Contractor, in order to detail how the objectives will be achieved.

Copies of the final reports will be issued to the relevant regulatory authorities on receipt of written instruction from yourselves.

Invoicing: The attached proposal provides a breakdown of the costs associated with this project. This breakdown is for information only and the proposal can be regarded as a lump sum price of £**,*** plus VAT. Variation will only occur in the event that a given item is not undertaken or that substantial additional works are recommended, in which case we will inform you immediately, provide costs for the required works, and seek your prior consent.

Our proposal allows for submission of the report to the Local Authority and for submission of a single piece of subsequent correspondence with each regulator to address any queries they may have. Any further meetings, correspondence etc, would be chargeable.

The investigation should be considered to comprise four elements. Each will be invoiced on completion of the relevant report as defined below:

1. Items A to E within five days of fieldwork completion, with exploratory hole logs and an interim letter report outlining our initial findings and Preliminary Recommendations Report;
2. Items F to I on issue of the comprehensive geoenvironmental appraisal report;
3. Item J on issue of the Remediation Strategy Report; and,
4. Item K after completion of the gas monitoring/issue of the Hazardous Gas risk Assessment Report.

Health, Safety & Welfare

The works outlined above will be carried out in accordance with Calabrian task- and site- specific Risk Assessments and Method Statements.

Details of welfare will be included within the Method Statements; however, this investigation is expected to last for at least six working days and therefore this proposal includes for provision of a Welfare Unit, with the benefit of full canteen facilities, hot water with full size sink, toilet, and drying room. We have assumed that the drilling rig and equipment can be securely stored within the building.

A detailed utilities survey including ground penetrating radar is required in order to protect operatives from the hazards associated with striking buried services and avoid potentially substantial disruption\repair costs. We assume that this survey will be available ahead of our proposed fieldwork. We will make every effort not to damage any services (including review of utility plans and use of a CAT detector).

Terms & Conditions

This work will be undertaken in accordance with our Standard Terms and Conditions, a copy of which are enclosed.

Should you require any further information, please contact the undersigned.

Yours sincerely

Richard Hey - Managing Director
for and on behalf of
CALABRIAN LIMITED

enc

Terms and Conditions for the Appointment of Calabrian Limited

1 DEFINITIONS AND INTERPRETATION

1.1 In this Agreement, unless the context otherwise requires, the following words and expressions have the following meanings:

"Agreement" shall mean these Terms (entitled "Terms and Conditions for the Appointment of Calabrian Limited"), the Proposal, any document recording the Client's unequivocal acceptance of the Proposal and any other documents or parts of other documents expressly referred to in any of the foregoing:

"Client" shall mean the party for whom the Services are being provided by Calabrian;

"Documents" shall mean all documents of any kind and includes plans, drawings, reports, programmes, specifications, Bills of Quantities, calculations, letters, e-mails, faxes, memoranda, films and photographs (including negatives), or any other form of record prepared or provided or received by, or on behalf of Calabrian, and whether in paper form or stored electronically or on disk, or otherwise;

"Calabrian" shall mean Calabrian Limited whose registered office is at Spring Royd, Clapham Road, Austwick, Lancaster, LA2 8BE.

"Intellectual Property" includes all rights to, and any interests in, any patents, designs, trade marks,

right, know-how, trade secrets and any other proprietary rights or forms of intellectual property (protectable by registration or not) in respect of any technology, concept, idea, data, programme or other software (including source and object codes), specification, plan, drawing, schedule, minutes, correspondence, scheme, programme, design, system, process logo, mark, style, or other matter or thing, existing or conceived, used, developed or produced by any person;

"Parties" shall mean the Client and Calabrian

"Project" shall mean the project described in the Proposal and any enquiry from the Client on which Calabrian has based its Proposal;

"Proposal" means the offer document prepared by Calabrian in response to an enquiry or otherwise, in connection with the proposed provision of the Services;

"Services" means the work and services relating to the Project to be provided by Calabrian pursuant to the Agreement and as set out in the Proposal and shall include any additions or amendments thereto made in accordance with these Terms;

"Terms" means these terms entitled "Calabrian Terms of Appointment";

1.2 Words importing the singular only shall also include the plural and vice versa, where the context requires.

1.3 Words importing persons or parties shall include firms, corporations and any organisation having legal capacity and vice versa, where the context requires; and words importing a particular gender include all genders.

1.4 The sub-headings to the clauses of these Terms are for convenience only and shall not affect the construction of the Agreement.

1.5 A reference to legislation includes that legislation as from time to time amended, re-enacted or substituted and any Orders in Council, orders, rules, regulations, schemes, warrants, by-laws, directives or codes of practice issued under any such legislation.

1.6 In the event of conflict between the documents forming part of the Agreement, the Proposal shall prevail, followed by the Terms.

2 APPOINTMENT

2.1 The Client agrees to engage Calabrian and Calabrian agrees to provide the Services in accordance with the provisions of the Agreement.

3 OBLIGATIONS OF CALABRIAN

3.1 Calabrian shall perform the Services using the reasonable standard of skill and care normally exercised by similar professional Environmental firms in performing similar services under similar conditions.

3.2 Calabrian shall use all reasonable endeavours to perform the Services in accordance with all relevant environmental and safety legislation.

4 OBLIGATIONS OF THE CLIENT

4.1 Throughout the period of this Agreement the Client shall afford to Calabrian or procure the affording to Calabrian of access to any site where access is required for the performance of the Services.

4.2 The Client accepts responsibility for ensuring that Calabrian is notified in writing of all special site and/or plant conditions, including without prejudice to the generality of the foregoing, the existence and precise location of all underground services, cables, pipes, drains or underground buildings, constructions or any hazards known or suspected by the Client, which the Client shall clearly mark on the ground or identify on accurate location plans supplied to Calabrian prior to the commencement of the Services. The Client shall also inform Calabrian in writing of any relevant operating procedures including any site safe operating procedures and any other regulations relevant to the carrying out of the Services. The Client shall indemnify Calabrian against all costs, claims, demands and expenses arising as a result of any non-disclosure in this respect, including but not limited to indemnification against any action brought by the owner of the land or otherwise.

4.3 If the Client discovers any conflict, defect or other fault in the information or designs provided by Calabrian pursuant to the Agreement, he will advise Calabrian in writing of such defect, conflict or other fault and Calabrian shall have the right to rectify the same or where necessary, to design the solution for rectification of any works carried out by others pursuant the conflicting, defective or in any other way faulty information or designs.

5 INTELLECTUAL PROPERTY

5.1 The copyright in all Intellectual Property prepared by or on behalf of Calabrian in connection with the Project for delivery to the Client shall remain vested in Calabrian.

5.2 The Client shall have a non-exclusive licence to copy and use such Intellectual Property for purposes directly related to the Project. Such licence shall enable the Client to copy and use the Intellectual Property but solely for its own purposes in connection with the Project and such use shall not include any licence to reproduce any conceptual designs or professional opinions contained therein nor shall it include any license to amend any drawing, design or other Intellectual Property produced by Calabrian.

5.3 Should the Client wish to use such Intellectual Property in connection with any other works or for any other purpose not directly related to the Project or wish to pass any Intellectual Property to any third party, it must obtain the prior written consent of Calabrian. The giving of such consent shall be at the discretion of Calabrian and shall be upon such terms as may be required by Calabrian. Calabrian shall not be liable for the use by any person of such Intellectual Property for any purpose other than that for which the same were prepared by or on behalf of Calabrian.

5.4 Ownership of any proposals submitted to the Client that are not subsequently confirmed as part of the Services to be provided for the Client remain with Calabrian and such proposals must not be used as the basis for any future work undertaken by the Client or a third party and no liability can be accepted howsoever arising from such proposals.

5.5 In the event of the Client being in default of payment of any fees or other amounts due, Calabrian may suspend further use of the licence on giving 2 days' notice of the intention to do so. Use of the licence may be resumed on receipt of the outstanding amounts

6 TITLE

6.1 Calabrian shall transfer only such title or rights in respect of the Documents as it has, and if any part is purchased from a third party Calabrian shall transfer only such title or rights as that party had and has transferred to Calabrian.

6.2 Title in the Documents shall remain with and shall not pass to the Client until the amount due under the invoice(s) (including interest and costs) has been paid in full.

6.3 Until title passes, the Client shall hold the Documents as bailee for Calabrian and shall store or mark them so that they can at all times be identified as the property of Calabrian.

6.4 At any time before title passes (save and except where payment is not due), but only after prior consultation with the Client, Calabrian may without any liability to the Client repossess and use or sell all or any of part of the Documents and by doing so terminate the right of the Client to use, sell or otherwise deal in the Documents.

6.5 Calabrian may maintain an action for the price of the Documents notwithstanding that title in them has not passed to the Client.

7 CONFIDENTIALITY

7.1 Calabrian undertakes not to divulge or disclose to any third party without the written consent of the Client information which is designated confidential by the Client or which can reasonably be considered to be confidential and arises during the performance of the Services unless required to do so by law or necessary in the proper performance of its duties in relation to the Project, or in order to make full frank and proper disclosure to its insurers or intended insurers, or to obtain legal or accounting advice.

7.2 Subject to the above, Calabrian shall be permitted to use information related to the Services it provides in connection with the Project for the purposes of marketing its services and in proposals for work of a similar type.

8 THIRD PARTIES

8.1 The Agreement or any part thereof or any benefit or interest thereunder may not be assigned by the Client without the prior written consent of Calabrian. The giving of such consent shall be at the discretion of Calabrian and Calabrian will only agree to an assignment on its terms and in return for payment of a fee by the Client to Calabrian to cover Calabrian's legal and other costs associated with any assignment.

8.2 The Agreement shall not confer and shall not purport to confer on any third party any benefit or any right to enforce any term of this Agreement for the purposes of the Contracts (Rights of Third Parties) Act 1999 or otherwise.

8.3 Calabrian will consider and may consent to any request from the Client for Calabrian to enter a collateral warranty with a third party with regard to the Services provided under the Agreement. The giving of such consent shall be at the discretion of Calabrian and Calabrian will only enter a collateral warranty on its terms and in return for payment of a fee by the Client to Calabrian to cover Calabrian's legal and other costs associated with any collateral warranty.

9 INSURANCE

9.1 Calabrian warrants to the Client that there is in force a policy of Professional Indemnity insurance covering its liabilities for negligence under this Agreement, with a limit of indemnity of £5,000,000 (FIVE MILLION POUNDS) any one Single Claim, Defence Costs in addition. This policy is annually renewable and whilst renewal is not automatic, Calabrian agrees to use reasonable endeavours to maintain such insurance at all times until six years from the date of the completion (or termination) of the Services under the Agreement, provided such insurance is available at commercially reasonable rates having regard, inter alia, to premiums required and policy terms obtainable.

9.2 If for any period such insurance is not available at commercially reasonable rates, Calabrian shall forthwith inform the Client and shall obtain in respect of such period such reduced level of Professional Indemnity insurance as is available and as would be fair and reasonable in the circumstances for Calabrian to obtain.

10 LIMITATIONS ON LIABILITY

10.1 Unless otherwise agreed in writing, Calabrian's liability under or in connection with the Agreement whether in contract, tort, negligence, breach of statutory duty or otherwise (other than in respect of personal injury or death) shall be limited to and shall not exceed the lesser of either five million pounds in the aggregate or 10 times the total value of invoices issued to the Client for consultancy work instructed under the Agreement.

10.2 No action or proceedings under or in respect of the Agreement whether in contract, tort, negligence, under statute or otherwise shall be commenced against Calabrian after the expiry of a period of six years from the date of the completion (or termination) of the Services under the Agreement.

10.3 Whilst Calabrian will scan all potential exploratory locations with a Cable Avoidance Tool, Calabrian shall not be liable for any damage to underground services, cables, pipes, drains or underground buildings, constructions and the like which were either not marked on site or for which accurate plans were not provided.

10.4 Calabrian shall not be liable for the cost of rectifying any defect, conflict or other fault in the information or designs provided by Calabrian or for the cost of designing a solution for and rectifying any subsequent works carried out by others pursuant to the conflicting, defective or in any other way faulty information or designs, unless Calabrian has been advised in writing of the same by the Client and has been given the opportunity to rectify the same or where necessary, to design the solution for rectification of any subsequent works carried out by others pursuant to the same.

11 PAYMENT

11.1 Invoices for services rendered will be submitted for payment in accordance with the Proposal.

11.2 The due date for payment is the date of the invoice and the final date for payment is 28 days from the date of the invoice.

11.3 If the Client disputes the amount included for payment in an invoice a written notice must be served on Calabrian by the Client not later than 14 days before the final date for payment. If no notice is given the amount due shall be the amount stated in the invoice.

11.4 In the event of failure on the part of the Client to pay any monies in accordance with the foregoing payment provisions, Calabrian will be entitled to charge interest on any monies owed to it by the Client, such interest to be at a rate of 8% above the base rate of a clearing bank from time to time calculated from the final date for payment to the date of actual payment on a compound basis.

12 DELAY

12.1 Calabrian will comply with any timescale agreed for completion of the Services unless delayed or prevented by circumstances beyond its reasonable control and in the event of any such circumstances arising Calabrian undertakes to complete the Services within a reasonable period, but will not be liable to the Client for any delay as a result.

13 TERMINATION

13.1 The Agreement may be determined by either party in the event of the other making a composition or arrangement with its creditors, becoming bankrupt, or being a company, making a proposal for a voluntary arrangement for a composition of debts, or has a provisional liquidator appointed, or has a winding-up order made, or passes a resolution for voluntary winding-up (except for the purposes of a bona fide scheme of amalgamation or reconstruction), or has an administrator or an administrative receiver appointed to the whole or any part of its assets. Notice of determination must be given to the party which is insolvent by the other party.

13.2 If for any reason the performance of the Services by Calabrian is suspended for a period in excess of three calendar months then Calabrian shall be entitled to determine its appointment in respect of the Services by seven days written notice to the Client.

13.3 If the Client shall fail to pay in full any sum due under the terms of the Agreement by the final date for payment for that sum and no effective notice of intention to withhold payment has been issued, Calabrian may serve written notice on the Client demanding payment within 14 days of such notice. If the Client shall fail to comply with such notice, Calabrian shall be entitled to terminate its employment under the Agreement forthwith.

13.4 Any determination of the appointment of Calabrian howsoever caused shall be without prejudice to the right of Calabrian to require payment for all services performed up to the date of such determination including but not limited to payment of a fair and reasonable proportion of any figure identified in the Proposal or otherwise for fees in respect of a particular service which Calabrian has started, but not completed.

14 NOTICES

14.1 Any notice provided for in the Agreement shall be in writing and shall be deemed to be properly given if delivered by hand or sent by first class post to the address of the relevant party as may have been notified by each party to the other or, in the absence of notification, to the address of Calabrian set out above or to the registered address of the Client.

14.2 Such notice shall be deemed to have been received on the day of delivery if delivered by hand or on the second working day after the day of posting if sent by first class post.

15 ENTIRE AGREEMENT

15.1 The Agreement constitutes the complete and entire agreement between the Client and Calabrian with respect to the Services and supersedes any prior oral and/or written warranties, terms, conditions, communications and representations, whether express or implied and any claim against Calabrian in respect of the Services can only be made in contract under the provisions of the Agreement and not otherwise under the law or tort or otherwise.

15.2 No amendments, modifications or variation of the Agreement shall be valid unless made in writing and agreed to by both the Client and Calabrian; such agreement must be recorded in writing by at least one of the Parties.

15.3 Calabrian will not be bound by any standard or printed terms or conditions furnished by the Client in any of its documents unless Calabrian specifically states in writing separately from such documents that it intends such terms and conditions to apply.

16 DISPUTES AND GOVERNING LAW

16.1 The Agreement shall be governed by and construed in accordance with English law and the Parties irrevocably and unconditionally submit to the jurisdiction of the English Courts.

16.2 Where the Housing Grants, Construction and Regeneration Act 1996 applies, any dispute between the Parties may be referred to adjudication in accordance with The Scheme for Construction Contracts Regulations 1998 or any amendment or modification thereof being in force at the time of the dispute, as applicable to England, Wales, Scotland and Northern Ireland.

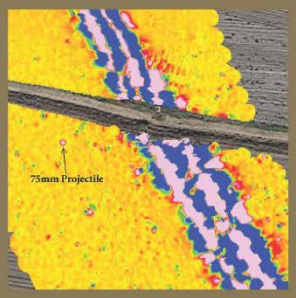
APPENDIX B	SEARCHES
Alpha Associates	Detailed UXO Threat Assessment

calabrian

Landmark Information

alpha ASSOCIATES






Upper Brook Street

Landmark Order No: 344685601_1

Client Reference: 7293

Detailed Unexploded Ordnance (UXO) Threat and Risk Assessment with Risk Mitigation Strategy

Meeting the requirements of the United Kingdom's Construction Industry Research and Information Association's Unexploded Ordnance Risk Management Framework: "Unexploded Ordnance (UXO) – A Guide for the Construction Industry" (C681) and in compliance with the Construction (Design and Management) Regulations 2015

Landmark Information Group in partnership with 6 Alpha Associates Ltd

Project No.: 11217

8th May 2024

V1.0

Achilles UVDB SILVER PLUS · BUILDER'S PROFILE · Constructionline Gold Member Verified Member · SafeContractor APPROVED · Institute of Explosives Engineers · bmtrada · UKAS

Using This Report

This Detailed UXO Threat and Risk Assessment with Risk Mitigation Strategy is designed to inform the reader whether military related Unexploded Ordnance (UXO) is likely to pose a hazard at the Study Site and if so, calculate the level of risk generated by proposed or likely ground intrusive operations at the Site. The assessment is intended to meet with the requirement of Stages 2 and 3 of the *Health and Safety Executive* endorsed *CIRIA C681 UXO Risk Management Framework* – for which *6 Alpha* were the lead technical author.

There are two prospective outcomes of this report; either the risk level requires a Risk Mitigation Strategy (Stage 3 of the *CIRIA C681* framework) aimed at reducing UXO risks As Low As Reasonably Practicable (ALARP) in accordance with the Project's minimum legal responsibility; or that no further action is required. In the former instance *6 Alpha* will provide a Risk Mitigation Strategy consisting of proactive and/or reactive risk mitigation measures aimed at reducing the identified risks to ALARP.

Document Control

Version	Author(s)	Reviewed By	Recipient
1.0	Beth Skoulding	Laurence Gregory	Client Reference: 7293

Landmark Information Group

Imperium, Imperial Way

Reading, Berkshire

RG2 0TD

Tel: +44 (0) 330 036 6618

Web: www.envirocheck.co.uk

Executive Summary

Document Scope

6 Alpha Associates Limited (6 Alpha) has been commissioned in partnership with the *Landmark Information Group* to provide a UXO Threat and Risk Assessment with Risk Mitigation Strategy, for the Site described as "Site at 384813, 396894". The Study Site is centred on *British National Grid Reference* 384812, 396894.

UXO Threat Assessment Summary

The output of *6 Alpha*'s UXO Threat Assessment is summarised at Table I:

UXO Threat Assessment Summary			
Threat Source		**Result**	**Comments**
	Was the Site or its vicinity considered a primary bombing target during WWII?	✔	*Luftwaffe* aerial photography identified the *Victoria University* (located 305m to the south-west) as a primary bombing target.
	Was the Site or its vicinity bombed during WWII?	✔	*ARP* records identified 55 HE bomb strikes within a 1,000m radius, one of which was documented on-site.
	Was the Site or its vicinity damaged by bombing during WWII?	✔	Residential structures in the north of the Site were destroyed by bombing during WWII, with additional bomb damage likely recorded as close as 35m to the south-east of the Study Site boundary.
	Has any *British* military activity been identified in the area?	✘	Although the *Ardwick Green Barracks* (located approximately 425m to the north-east) served as the *Headquarters* of the *8th (Ardwick) Battalion of the Manchester Regiment* during WWII.
	Has ordnance been manufactured and/or stored at the Site or its vicinity?	✘	None recorded within 1,000m.
	Does UXO contamination pose a potential hazard at the Study Site?	✔	Given the bombing and bomb damage was recorded on-site, it is considered possible that UXO might be encountered.

Table I: UXO Threat Assessment Summary

UXO Threat Items

Given the evidence presented at Table I, *6 Alpha* consider it reasonably foreseeable that a UXO encounter could occur at this Site. The most probable UXO threat items are *German* HE bombs and IBs. *British* AAA projectiles may also pose a residual threat.

Potential UXO Burial Depth

Given the likely ground conditions at the Study Site, the average WWII bomb penetration depth has been calculated as 5m below WWII ground level at this Study Site. Although larger UXBs could be present below this depth (potentially up to 10m), they were deployed infrequently during WWII and are highly unlikely to be encountered.

UXO Risk Pathways

The Study Site has undergone notable post-WWII developments, with bomb-damaged structures cleared across the Site by 1946. The remainder of the pre-existing structures were cleared from the Site by 1992. At that time, the existing structure appears to have been built across much of the Site, along with areas of hardstanding. Consequently, it is considered likely that any UXO contamination within ground that has been disturbed since WWII would likely have been discovered and removed.

Nonetheless, given the depths of the proposed intrusive works below ground level, a potential UXO risk pathway could be generated by intrusive works within any remaining area(s) of ground that has not been disturbed **since the time it might have been contaminated with UXO**.

UXO Risk Assessment

A Semi-Quantitative UXO Risk Assessment has been undertaken and the UXO risk rating is assessed to be:

HIGH

Such risks may pose harm to human health and damage any equipment involved in intrusive activities; the former is intolerable. Therefore, such risks will require mitigating in accordance with the ALARP principle, through the implementation of a risk mitigation strategy (see below, and Part III of the report).

Risk Mitigation Strategy

6 Alpha recommends that the UXO risk to the proposed intrusive works is reduced ALARP, through the implementation of both proactive and reactive UXO risk mitigation measures.

Recommended UXO Risk Mitigation Measures

There following risk mitigation measures summarised at Table II, are recommended as a minimum in order to reduce risks ALARP during intrusive works in **all previously undisturbed ground**.

UXO Risk Mitigation Measures Overview							
Proposed Intrusive Works		Emergency Response Plan	Safety and Awareness Briefings	On-Call EOD Engineer	UXO Watching Brief	Non-Intrusive UXO Survey	Intrusive UXO Survey
Open Works	Trial Pits	✔	✔	✘	✔	✘	✘
	Excavations	✔	✔	✘	✔	✘	✘
Blind Work	Boreholes	✔	✔	✘	✘	✘	✔
Residual UXO Risk Rating		ALARP					

Table II: UXO Risk Mitigation Measures Overview

Recommended Next Steps

We recommend that the Client's next steps are focused upon phase four of the UXO Risk Management Framework namely, the detailed designs of the recommended UXO risk mitigation measures as outlined above. The design ought to be finalised and the UXO risk mitigation measures are to be executed in advance of the GI and/or construction phases of work, in order to warrant and to evidence that UXO risks can be mitigated and reduced to ALARP.

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Acronyms and Abbreviations

AAA	Anti-Aircraft Artillery	**NEQ**	Net Explosive Quantity
ALARP	As Low As Reasonably Practicable	**NGR**	National Grid Reference
ARP	Air Raid Precaution	**OS**	Ordnance Survey
AXO	Abandoned Explosive Ordnance	**PoW**	Prisoner of War
BDO	Bomb Disposal Officer	**RAF**	Royal Air Force
bgl	Below Ground Level	**RMS**	Risk Mitigation Strategy
BGS	British Geological Survey	**RN**	Royal Navy
BH	Borehole	**SAA**	Small Arms Ammunition
BPD	Bomb Penetration Depth	**SQRA**	Semi-Quantitative Risk Assessment
CIRIA	Construction Industry Research and Information Association	**TA**	Territorial Army
CS	County Series	**TARA**	Threat and Risk Assessment
EOD	Explosive Ordnance Disposal	**TNT**	Trinitrotoluene
HE	High Explosive	**UK**	United Kingdom
HSE	Health and Safety Executive	**UN**	United Nations
IB	Incendiary Bomb	**USAAF**	United States Army Air Force
kg	Kilogram	**UXB**	Unexploded Bomb
km	Kilometre	**UXO**	Unexploded Ordnance
LCC	London County Council	**V Weapons**	*Vergeltungswaffen* – Vengeance Weapons
LSA	Land Service Ammunition	**WWI**	World War One
m	Metre	**WWII**	World War Two

Part I: Introduction

1 Document Overview

1.1 Scope of Work

6 Alpha Associates Limited (6 Alpha) has been commissioned in partnership with the *Landmark Information Group* to provide an Unexploded Ordnance (UXO) Threat and Risk Assessment with Risk Mitigation Strategy, for the Site described as "Site at 384813,396894".

1.2 Study Site Location

The Study Site is situated within the *City of Manchester* and totals an area of less than one hectare (ha). The Study Site is centred on *British National Grid Reference* 384812, 396894. An industrial structure is situated within the centre of the Study Site, surrounded by areas of hardstanding ground utilised as car parking space.

The Site's Location and Site Boundary is depicted at Appendices 1 and 2, with aerial photography of the Study Site presented at Appendix 3.

1.3 Aims and Objectives

This document has the following aims and objectives:

1.3.1 Aims

The document aims to assess and evidence the nature and scope of the UXO risks to people, plant, equipment and/or the environment at this Study Site. In the event that an intolerable UXO risk is identified, a recommended UXO risk mitigation strategy will also be articulated.

1.3.2 Objectives

The document has the following objectives:

- To assess the nature and scope of potential UXO contamination at the Study Site;
- To assess whether any UXO contamination generated at the Site is likely to remain extant;
- To consider whether the proposed intrusive works will generate a viable UXO risk pathway;
- To identify those sensitive receptors likely to be impacted by an inadvertent UXO encounter during the proposed intrusive works;
- To assess the UXO risk to those sensitive risk receptors during intrusive works;
- To outline proportional risk mitigation measures that are consistent with a coherent overarching risk mitigation strategy, in order to effectively manage the UXO risk ALARP.

2 Introduction to UXO Risk Management

2.1 Definition of UXO

For the purposes of this risk assessment, *6 Alpha* have adopted the definition of UXO outlined in the undermentioned *CIRIA C681* guide, as follows:

"Explosive ordnance that has been primed, fuzed, armed, or otherwise prepared for use and used in an armed conflict. It may have been fired, dropped, launched or projected and should have exploded but failed to do so…UXO also refers to explosive ordnance that has not been used during an armed conflict, that has been left behind or dumped by a party to an armed conflict, and which is no longer under control of the party that left it behind or dumped it..."

2.2 Generic UXO Threats

There are multiple factors which may have contributed to the UXO contamination of a construction site in the *UK* but generally, UXO contamination is likely to result from the warfighting activity associated with WWI and WWII, the military occupation and use of land such as airfields, camps and training areas; and the manufacture of munitions to support the armed forces.

For example, *WWII Bomb Census* data from the *Ministry of Home Security* calculated that approximately 10% of bombs dropped on *Britain* during WWII failed to function as designed. If the bomb did not detonate when it was dropped, the force of impact enabled the Unexploded Bomb (UXB) to penetrate the ground. Whilst efforts were made to locate and render safe those UXBs that were observed entering the ground (or left behind clear evidence of having done so) during WWII, evidence of such UXBs was readily obscured by bomb damage debris, vegetation and a lack of footfall in some settings – thus, ensuring that an unquantifiable number of UXBs were left *in situ* below the surface of the ground.

Additionally, it has been estimated that at least 20% of the *UK's* land surface area has been used for military training activities or has otherwise been requisitioned for military use historically. Therefore, *British* Abandoned Explosive Ordnance (AXO), Land Service Ammunition (LSA), Small Arms Ammunition (SAA) and aerially delivered ordnance is also commonly encountered in areas that were formerly occupied by military forces (such as *Royal Air Force* (RAF) airfields, military camps and/or military training areas). Conventional and chemical munitions dumping was also prevalent in these periods with little consideration given to future safety implications. There was also widespread unrecorded dumping of LSA and SAA below the ground that was rarely recorded because the activity was often perceived to be inconsequential.

2.3 Generic UXO Risks

The explosive or chemical fill within UXO rarely becomes inert or loses its effectiveness with age, but the explosive fill may change or crystallise over time – increasing the high explosive's sensitivity to a physical shock or an impact. Trigger mechanisms and fuses, which may have failed, may corrode and deteriorate over time, becoming more sensitive to detonation. It is therefore possible that a significant impact on the UXO case, and the resultant effect upon the fuse, may cause its inadvertent detonation.

2.4 UXO Industry Best Practice

In the absence of specific legislation concerning the management of UXO risks during construction projects, the *UK*'s *Construction Industry Research and Information Association* (CIRIA) has published a best practice guide for the assessment and management of UXO risk in the construction industry (*CIRIA* document reference C681). The *CIRIA C681* guide has been judged and recognised by the *Health and Safety Executive* (HSE) as a minimum standard of good practice, that satisfies the law when applied in an appropriate manner.

6 Alpha were *CIRIA's* lead technical author for their *C681* publication and as such, are in a unique position to ensure that Client's manage UXO risk in a safe, cost-effective and time-efficient manner.

2.5 UXO Risk Management Strategic Framework

At Section 5 of *CIRIA's* C681 guide, a framework for the management of UXO risk is articulated and consists of four key stages. These correspond with the framework employed by *6 Alpha*, as presented at Table 1.

6 Alpha Risk Management Framework	UXO Risk Management Phase	CIRIA C681 Risk Management Framework	Delivered within Report? (✔/✘)
UXO Threat Assessment	**STAGE ONE**	Preliminary Risk Assessment	✔
UXO Risk Assessment	**STAGE TWO**	Detailed Risk Assessment	✔
Risk Mitigation Strategy	**STAGE THREE**	Risk Mitigation	✔
Implementation	**STAGE FOUR**	Implementation	✘

Table 1: 6 Alpha and CIRIA UXO Risk Management Frameworks

3 UXO Threat and Risk Assessment Methodology

3.1 Source – Pathway – Receptor Risk Model

The source-pathway-receptor model is a conceptual risk model employed by *6 Alpha* across all projects that informs how UXO risks are assessed. The model also helps to explain the link between the separate sections of this report and the UXO risk assessment at Section 7. The components of the model are as follows:

3.1.1 UXO Sources

The nature and scope of the UXO threat is summarised in the UXO threat assessment (at Section 4) and it forms the source element of the source-pathway-receptor model.

3.1.2 UXO Pathways

The UXO pathways are the routes by which the sources can reach the receptors. UXO pathways are likely to be either by contact and/or through soil energy transfer, through which the resulting shock wave (generated by a UXO source, or sources) may reach potential receptors. Nonetheless, surface events may also generate a through-air risk pathway in which blast and fragmentation from the UXO sources may also reach the receptors.

UXO risk pathways may be generated by a variety of operations that interact with the ground. Therefore, likely operations have been assessed and summarised (at Section 6), to demonstrate the potential risk pathway elements of the model.

3.1.3 UXO Receptors

Receptors are defined as anything which might be adversely affected by the consequences of an inadvertent detonation of any UXO source through an identified pathway. The proximity, robustness, and sensitivity of such receptors is essential in determining their capacity to withstand such high explosive effects and defining what degree of UXO risk might be tolerated (if any).

3.2 Semi-Quantitative Risk Assessment Methodology

The assessment of UXO risk is a semi-quantitative measure of the probability of UXO encounter and initiation and the consequence of an inadvertent UXO initiation; the former being a function of the identified hazard and proposed development methodology and the latter being a function of the type of hazard and the proximity of personnel (and/or other sensitive receptors) to the hazard.

UXO risk is calculated using the following formula:

Risk **(R)** = Probability **(P)** x Consequence **(C)**

3.3 Information Sources

Significant archive research associated with the Study Site has been undertaken to corroborate and to highlight, any and all potential sources of UXO contamination as well as to assess their likelihood of encounter. For the production of this report, *6 Alpha* have reviewed information from the following sources:

- Information gathered from the *National Archives* at *Kew*, including but not limited to:
  - *Ministry of National Security WWII Bomb Census* statistics;
  - *Air Raid Precaution* (ARP) written records and associated bomb strike mapping;
  - Official WWII bomb damage mapping;
- *Ministry of Defence* (MoD) *Abandoned Bomb Register*;
- *Former 33 Engineer Regiment* (Explosive Ordnance Disposal) records at *Carver Barracks, Wimbish*;
- Post-WWII *RAF* aerial photography;
- *County Series* (CS) and *Ordnance Survey* (OS) mapping.

3.3.1 Azimuth© UXO Threat Database

The above list is not exhaustive, and *6 Alpha's Azimuth*© database has also been heavily drawn upon to deliver the UXO threat assessment element of this report. The *Azimuth*© database contains digitised historic charts, aerial photographs and other extensive analogue records from an exhaustive range of additional national, regional and global archives and/or data sets that have been digitised.

3.4 Constraints

This UXO threat and risk assessment is constrained and limited by that information which is reasonably available to *6 Alpha* at the time of writing, as well as that UXO information that is reasonably accessible in a variety of archives, which *6 Alpha* have digitised and georeferenced or have otherwise summarised in written form.

This document may also require updates and changes, especially wherever and whenever the circumstances and factors associated with assessing UXO risk change. For example, if UXO threats are subsequently discovered and they are different from those that have been anticipated, and/or if proposed intrusive operations are significantly changed.

In such circumstances, risks may require re-evaluation and any such changes are to be made by *6 Alpha*, to ensure the continued technical veracity and risk management efficacy of this document.

Part II: UXO Threat & Risk Assessment

4 UXO Threat Assessment

4.1 WWII Aerial Bombing

The *Luftwaffe* bombing campaign of *Manchester* peaked between the 22nd and the 24th December 1940 (the *Manchester,* or *Christmas, Blitz* as it was known) and involved over 400 aircraft delivering more than 460 tons of HE bombs and 37,000 IBs. An estimated 684 people were killed, and a further 2,364 people were injured.

4.1.1 WWII HE Bomb Density

The Study Site was located within *Manchester County Borough,* as presented at Appendix 4. This region recorded six HE bomb strikes per 100 hectares, a "very low" level of bombing. However, further site-specific data has been considered regarding the potential bombing of the Site during WWII.

4.1.2 WWII Luftwaffe Bombing Targets

Luftwaffe aerial reconnaissance photography identified the *Victoria University* (located 305m to the south-west of the Study Site) and the *London Road Railway Station* (located 715m to the north-north-east of the Study Site) as primary bombing targets.

The locations of *Luftwaffe* bombing targets, in relation to the Study Site, are presented at Appendix 5.

4.1.3 WWII Bomb Strikes

During WWII, *ARP* wardens and other local officials compiled detailed logs of bomb strikes across their respective districts that were then often consolidated and mapped at the end of WWII. *ARP* records identified 55 HE bomb strikes were identified within a 1,000m radius of the Study Site, one of which was documented within the north of the Study Site itself. A further 54 HE bomb strikes were recorded impacting within a 1,000m radius of the Study Site, with the closest of these bomb strikes documented between 210m to the north-west and 420m to the north of the Study Site. In addition, six unexploded bombs (UXBs) were identified within a 1,000m radius, the closest of which was located 475m to the north-east of the Site. *ARP* records also identified 165 incendiary bombs (IBs) within 1,000m, the closest five which were documented between 85m to the north-west and 260m to the south-east.

In addition to IBs and HE bomb strikes, during the latter stage of WWII, when more conventional aerial bombardment of the *UK* had significantly declined, the main threat came from *V* type weapons. *V1* and *V2* rockets were thin-skinned, unmanned and inaccurate weapons and generally exploded upon impact and thus, are less likely to pose a UXO threat. There is no evidence to suggest that the Study Site (or its immediate vicinity) was subjected to rockets strikes during WWII.

The locations of WWII-era bomb strikes, in relation to the Study Site, are presented at Appendix 6.

4.1.4 WWII Bomb Damage

Official bomb damage mapping associated with the Study Site was not available, but an analysis of post-wartime mapping and aerial photography identified that several residential structures in the north of the Site were demolished as a result of the HE bomb strike on what was then *Robert Street* (now *Kincardine Road*). Further evidence of potential bomb damage was recorded within the immediate vicinity of the Study Site boundary, including to *Cottenham Street* (located 35m to the south-east), to *Upper Brook Street* (located 55m to the south-west) and to *Arkley Street* (located 65m to the north-east).

Extensive archival research similarly documented significant bomb damage to structures located along *Oxford Road* (275m to the south-west), to the *Ardwick Picture House* (located 475m to the north-east), and to the *St Thomas's Church* (located approximately 520m to the north-east).

WWII bomb damage mapping covering the Study Site and its surrounding area is presented at Appendix 7.

4.1.5 UXB Entry Holes

The CS mapping prior to WWII (1932) and aerial photography (1946) shows that the Study Site was situated within a densely developed area, with the Site itself consisting of several structures and hardstanding ground. Therefore, it is likely that the Study Site would have been accessed frequently during WWII and as such, there an elevated likelihood that any clearly visible UXB entry points would have been observed and recorded at the time.

However, given that evidence of significant bomb damage was identified on-site and within the immediate vicinity of the Study Site boundary, it is possible that bomb damage debris could have concealed UXB entry points, causing them to have gone unnoticed.

4.2 *British* Military Activity

Although there is no evidence to suggest that the Study Site itself or its immediate vicinity has previously been occupied by military personnel, there is some evidence of military activity within the wider area, as detailed below:

4.2.1 Historic Military Activity

Ardwick Green (located approximately 425m to the north-east of the Study Site) was selected as the *Headquarters* of the *5th (Ardwick) Volunteer Battalion of the Manchester Regiment* in the late-1880s, with the *Ardwick Green Barracks* officially opening in September 1887. By 1908, the *5th (Ardwick) Battalion* had evolved into the *8th Battalion*. Troops of the *8th (Ardwick) Battalion* were subsequently mobilised within the drill hall at the *Ardwick Green Barracks* in August 1914, before being deployed to the *Western Front* during WWI.

The *Ardwick Green Barracks* remained operational during WWII, with the barracks primarily utilised as a detention centre of soldiers who had deserted. After WWII, the barracks were restored for the use as the *Headquarters* of the *8th (Ardwick) Battalion of the Manchester Regiment*. Later on in 1967, the *Ardwick Green Barracks* became home to the *Manchester Regiment (Ardwick and Ashton) Territorials*, then later to the *C Company of the 5th/8th (Volunteer) Battalion of the King's Regiment*.

From 2006, the *Ardwick Green Barracks* were home to the *D (Inkerman) Company of the 4TH Battalion of the Duke of Lancaster's Regiment*. However, the barracks were vacated in 2018 and were put up for sale the following year. Therefore, it is possible that munitions may have been stored or otherwise located in the wider area; though such activity is unlikely to have generated a UXO hazard at the Site itself.

4.3 Previous UXO Encounters

An analysis of historic records noted several UXO encounters within the vicinity of the Study Site, as follows:

4.3.1 Abandoned Bombs

The Abandoned Bomb register was compiled from wartime records and was published in the form of a written answer to the *House of Commons* in 1996. The list initially only covered abandoned bombs in *London* but has since been released for the rest of the UK.

An examination of the *MoD*'s official abandoned bomb records has not identified any abandoned bombs on-site nor within a 1,000m radius.

4.3.2 WWII UXO Disposal Tasks

An examination of pertinent historical records associated with the Study Site has identified at least six unexploded bombs (UXBs) as being disposed of within a 1,000m radius of the Study Site boundary during WWII, the closest of which was located 475m to the north-east.

4.3.3 Post-WWII UXO Encounters

An examination of pertinent historical records associated with the Study Site has not identified any post-WWII UXO encounters on-site nor within a 1,000m radius.

4.4 UXO Threat Summary

Given the evidence presented above, *6 Alpha* consider it reasonably foreseeable that a UXO encounter could occur at this Site. The most probable UXO threat items are *German* HE bombs and IBs. *British* AAA projectiles may also pose a residual threat, which were likely fired in the defence of the local area during WWII bombing raids.

5 UXO Burial Depths

5.1 Overview

It is important to establish the likely burial depth for threat spectrum UXO at the Study Site. The potential penetration depth of an UXB was dependent on a number of factors including but not restricted to those prior to striking the ground (e.g. velocity and orientation of the UXB), which in turn will be influenced on factors such as the release altitude from the aircraft and encounters with infrastructure during its fall; those encountered at the point of impact (i.e. was the impact on concrete, grass, water etc.) and finally, the below ground level conditions (e.g. infrastructure/services, basements, foundations, and geology).

Accordingly, the ground conditions at the Study Site must be understood in order to determine the average and maximum *German* UXB penetration depths, as well as the potential for other types of munitions to be buried. The provenance of made ground must also be considered in order to accurately determine the ground levels at the time when UXO contamination may have occurred (so as to accurately determine the average/maximum bomb penetration depths) and subsequently to inform any further recommendations.

5.2 Ground Conditions

The Client has described the ground conditions as follows:

- *"The geological map for the area suggests the site is underlain by Till overlying Chester Sandstone Formation. Three BGS archive boreholes are located on or very close to the site and these indicate around 4m of made ground and/or sand and gravel overlying sandstone."*

In addition, an analysis of *BGS* mapping associated with the Study Site suggests that the Site is likely to be underlain by a bedrock of "*Chester Formation - Sandstone*".

5.3 UXB Burial Depths

Based on the ground conditions described above, the average BPD for a 250kg *German* HE bomb is assessed to be approximately 5m bgl, with the maximum BPD considered to be approximately 10m bgl.

Although it is possible that the *Luftwaffe* deployed larger bombs in the area, an analysis of WWII bomb census data clearly evidences that their deployment was infrequent. Therefore, to use such larger bombs for BPD calculations **are not justifiable under the ALARP principle and thus, CIRIA C681 guidance**.

WWII *German* bombs have a greater penetration depth when compared to IBs and AAA projectiles, which are unlikely to be encountered at depths greater than 1m bgl.

5.3.1 The J-Curve Effect

As a UXB penetrated the ground, it's velocity naturally slowed where it either came to an abrupt stop (e.g., against foundations) or would continue along a route of least resistance – which often resulted in a curving of the trajectory back towards the surface. This is known as the "J Curve" effect and often resulted in a considerable horizontal off-set from the point of entry. This explains why UXBs have been discovered against or under the foundations of buildings which were present during WWII, or many meters from their entry holes. A diagrammatical representation of the "J Curve" effect is presented at Figure 1.

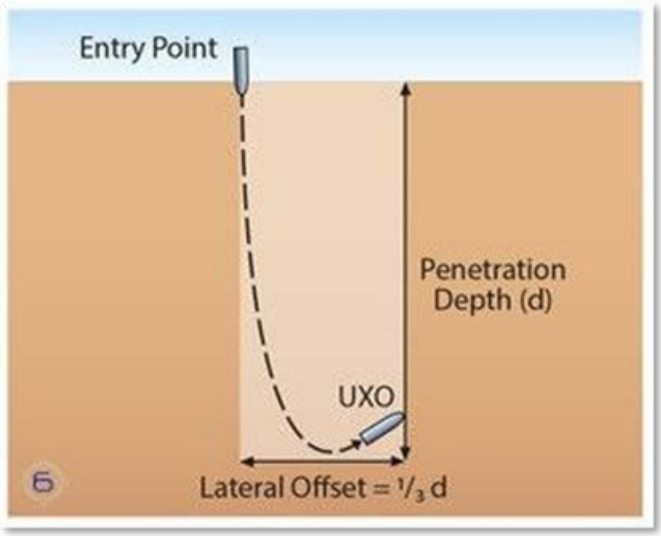


Figure 1: The "J Curve" Effect

6 UXO Risk Pathways

6.1 Overview

In order to assess whether a viable UXO risk pathway might exist at the Study Site, potential UXO contamination sources must be assessed (and have been at Section 4 of the report) and the likely depth of UXO contamination ought to be established (as per Section 5 of the report). Additionally, the Site's construction history ought to be considered to assess whether any previous intrusive works will have encountered and removed any UXO contamination present at the Site.

6.2 Study Site Construction History

From an analysis of CS and OS mapping, together with aerial photography, the following site history can be deduced:

Year	Development History
1932 CS Map	The Study Site was situated within a densely developed area, with the Site itself consisting of several structures and hardstanding ground.
1946 Aerial Photography	Residential structures in the north of the Site had been demolished and cleared.
1969 OS Map	Several structures located in the north-eastern sector of the Study Site had been cleared.
1978 OS Map	Changes were not recorded at the Study Site.
1992 OS Map	The remaining structures had been cleared from the Study Site, with a larger structure developed across the majority of the Site. The structure was surrounding by hardstanding ground utilised as car parking space.
2003 Aerial Photography	Changes were not recorded at the Study Site.
2016 OS Map	Changes were not recorded at the Study Site.
2024 OS Map	Changes were not recorded at the Study Site.

Table 2: Study Site Development History

As per Table 2, it is apparent that the Study Site has undergone notable post-WWII developments, with bomb damaged structures cleared across the Site by 1946. The remainder of the pre-existing structures were cleared from the Site by 1992. At that time, the existing structure appears to have been built across much of the Site, along with areas of hardstanding. Consequently, it is considered likely that any UXO contamination within ground that has been disturbed since WWII would likely have been discovered and removed.

Nonetheless, it is apparent that the previous intrusive works are unlikely to have mitigated the UXO risk in all areas of the Study Site down to the likely average UXO burial depth of 5m bgl.

6.3 Proposed Works

An outline of the proposed intrusive works is also presented in order to evidence the potential UXO risk pathways that may be generated, should such work encounter those threat spectrum UXO that have been identified in Section 4.

A general overview of the scope of works for the project has been communicated to *6 Alpha* and consists of:

- *"Medium Trial Pit between 1m and 5m below ground level;*
- *Seven boreholes to 20m depth plus three trial pits to 3m depth;*
- *Excavation Depth: 3m."*

Consequently, it is apparent that the proposed works might generate a UXO risk pathway in ground that has not been previously disturbed (including any ground below post-WWII intrusive work) to a depth of 5m bgl.

If the planned methods are changed, then the risk assessment is to be reviewed and updated if necessary.

7 UXO Risk Assessment

7.1 Threat Items

The most probable sources of UXO risk at this Study Site are *German* HE bombs and IBs, whilst *British* AAA projectiles may pose a residual threat. The consequences of initiating *German* HE bombs are generally more severe than initiating IBs or AAA projectiles, and thus they pose the greatest prospective risk to intrusive works.

7.2 Risk Pathways

Given the nature and scope of the prospective UXO hazard at the Study Site, all types of aggressive intrusive activities (i.e., investigative groundworks and construction methodologies) into previously undisturbed ground (including ground below any post-WWII redevelopment) to a depth of 5m bgl may generate a significant risk pathway.

7.3 Risk Receptors

The likely risk receptors include:

- Site personnel;
- Plant and equipment;
- Third-party infrastructure (utilities/services) and buildings;
- The natural environment.

Consequences of UXO initiation include:

- Injuries and/or fatalities to personnel;
- Damage to plant and equipment, nearby buildings and infrastructure;
- Rupture and damage underground utilities/services and the natural environment.

Consequences of an unexpected and unplanned UXO discovery include:

- Incurring delays and additional costs through the expenditure of additional risk mitigation resources and EOD clearance;
- Disruption to local community;
- Negative publicity.

7.4 Semi-Quantitative Risk Assessment

A semi-quantitative risk assessment has been undertaken and the results of the SQRA are presented at Table 3.

Activity	UXO Threat Item	Probability (SH+EM=P)	Consequence (D+PSR=C)	Risk (PxC=R)
Trial Pits	Aerial Bombs	2+2=4	3+3=6	**4x6=24**
	AAA Projectiles	1+2=3	3+1=4	**3x4=12**
Boreholes	Aerial Bombs	2+3=5	3+2=5	**5x5=25**
	AAA Projectiles	1+3=4	3+1=4	**4x4=16**
Excavations	Aerial Bombs	2+2=4	3+3=6	**4x6=24**
	AAA Projectiles	1+2=3	3+1=4	**3x4=12**

Table 3: UXO SQRA Results

7.4.1 SQRA Conclusions

The SRQA has determined that the proposed intrusive works may generate, as a reasonable worst-case scenario, a ***HIGH*** level of risk at the Study Site. Such risks may pose harm to human health and damage any equipment involved in intrusive activities, the former are intolerable. Therefore, such risks will require mitigating in accordance with the ALARP principle, as per Part III of this report.

Part III: UXO Risk Mitigation Strategy

8 UXO Risk Mitigation Strategy

8.1 Strategic Overview

As per *CIRIA* C681 guidance, *6 Alpha* recommended that the identified UXO risks are reduced ALARP. Crucially, the ALARP principle states that if the cost of reducing a risk significantly outweighs the benefit, then the risk may be considered tolerable. This does not mean that there is never a requirement for UXO risk mitigation, but that any mitigation must demonstrate that it is beneficial. Any additional mitigation that delivers diminishing benefits and that consumes disproportionate time, money and effort are considered *de minimis* and thus unnecessary. Because of this principle, UXO risks will rarely be reduced to zero (nor need they be).

Consequently, the following proactive and reactive UXO risk mitigation measures ought to be implemented ahead of proposed intrusive operations at the Study Site in order to reduce the identified UXO risks to ALARP.

8.2 Proactive UXO Risk Mitigation Measures

The following proactive risk mitigation measures should be undertaken prior to the commencement of intrusive works:

8.2.1 EOD Engineer in the Watching Brief Role

Where "open" intrusive works into previously undisturbed ground are proposed, an EOD Engineer should be present in the UXO Watching Brief role to monitor ongoing "open" intrusive works to identify any suspicious items that may be UXO related (this service can be provided by *6 Alpha*).

8.2.2 Intrusive Magnetometer Survey

Where "blind" intrusive works into previously undisturbed ground are proposed, an intrusive UXO survey (employing down-hole magnetometer or *MagCone* techniques) is strongly recommended. Such a survey should extend to the **assessed average bomb penetration depth of 5m bgl** or to the maximum depth of the works, whichever is encountered first, or until geology is encountered through which it is assessed a UXB would not penetrate, to identify for signs of sub-surface anomalies which may model as threat spectrum UXO in advance of said works. (This service can be provided by *6 Alpha*).

8.2.3 Geophysical UXO Survey Efficacy

Certain ground conditions may constrain geophysical UXO survey, as magnetometer survey is adversely affected in mineralised and made ground. Nonetheless, *6 Alpha* can advise the likely efficacy of such survey work in advance of their trial and implementation as and when required.

8.3 Reactive UXO Risk Mitigation Measures

The following reactive risk mitigation measures should also be undertaken for all activities in all areas:

8.3.1 Operational UXO Emergency Response Plan

Appropriate site management documentation should be held on-site to guide and plan for the actions which should be undertaken in the event of a suspected or real UXO discovery (this plan can be supplied by *6 Alpha*).

8.3.2 UXO Safety and Awareness Briefings

The briefings are essential when there is a possibility of an explosive ordnance encounter and are a vital part of the general safety requirement. All personnel working on the Site should receive a briefing on the following:

- The identification of threat spectrum UXO;
- What actions they should take to keep people and equipment away from such a hazard and to alert site management.

Information concerning the nature of the UXO threat should also be held in the site office and displayed for general information on noticeboards - both for reference and as a reminder for ground workers.

The safety awareness briefing is an essential part of the *Health & Safety Plan* for the site and helps to evidence conformity with the appropriate health and safety standards and legislation.

8.4 ALARP Safety Sign Off Certification

ALARP safety sign-off certification provides an independent source of evidence that a Client has followed industry best practice and has successfully managed and reduced UXO risks to ALARP. Following the execution of *6 Alpha's* UXO risk mitigation measures, we can deliver ALARP safety sign-off certification, in advance of the proposed operations.

In such circumstances the project will be able to certify for the benefit of all of its stakeholders, that all reasonably practicable measures have been taken to protect contractors from UXO hazards and that the commissioning Client will have acted in compliance with industry best practice as well as the national safety legislation.

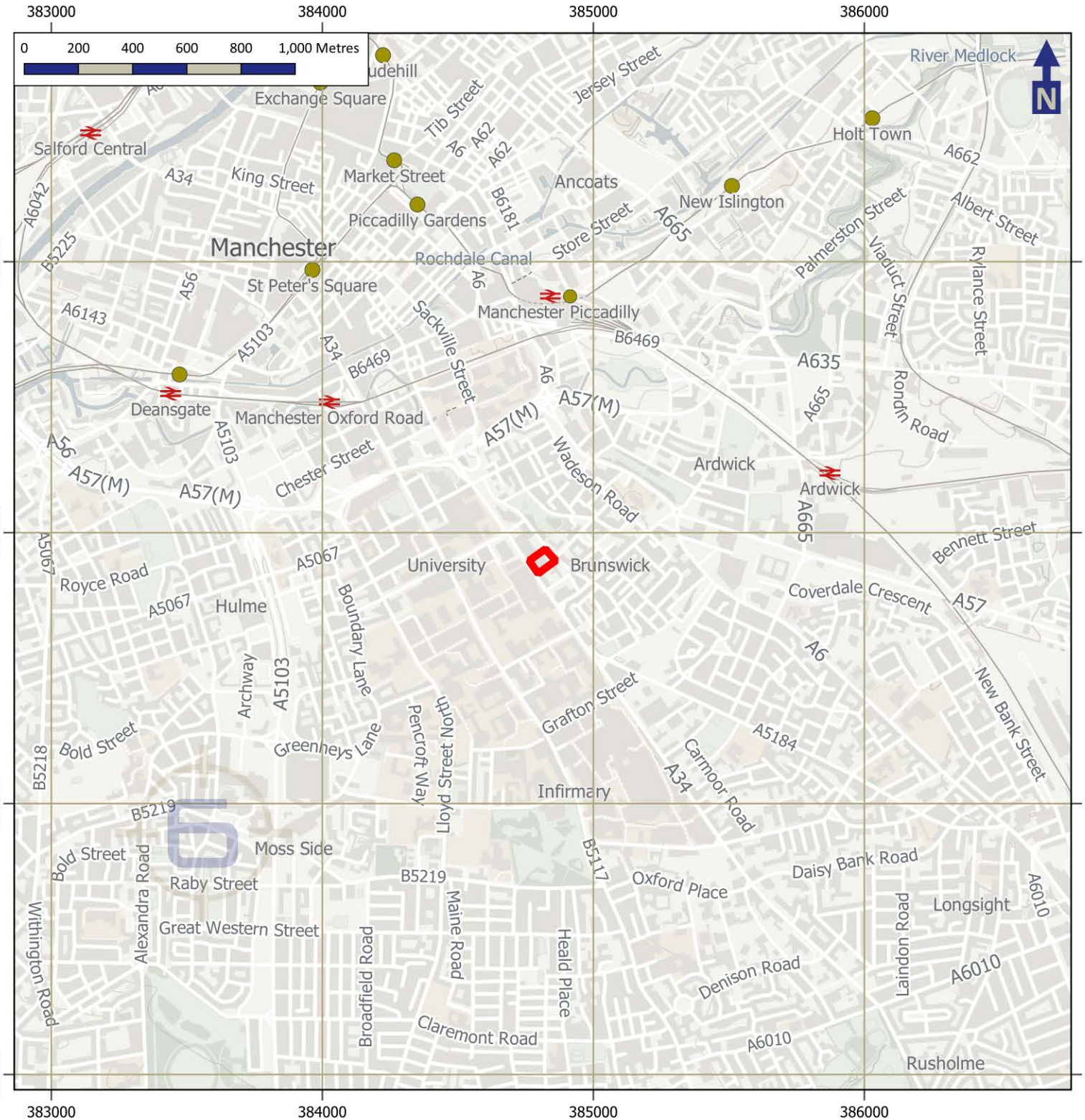
In accordance with best practice therefore, *6 Alpha* ALARP safety sign-off certification does not imply that any site is free from UXO, rather, that the necessary and appropriate UXO risk mitigation measures have been appropriately applied to evidence that UXO risks have been reduced ALARP.

8.5 Recommended Next Steps

We recommend that the Client's next steps are focused upon phase four of the UXO Risk Management Framework namely, the detailed designs of the recommended UXO risk mitigation measures as outlined above. The specifications are to be delivered and the UXO risk mitigation measures are to be executed in advance of the GI and construction phases of work, in order to warrant and to evidence that UXO risks can be mitigated and reduced to ALARP.

Appendices

Appendix 1 – Site Location



Site Location

BOMB SEARCH

LEGEND

Site Boundary



British National Grid

Address

SITE AT 384813, 396894

PROJECT NO.	FIGURE	DRAWN	CHECKED	DATE
11217	1	BS	LG	30/04/2024

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Appendix 2 – Site Boundary



Site Boundary

BOMB SEARCH

LEGEND

Site Boundary



British National Grid

Address

SITE AT 384813, 396894

PROJECT NO.	FIGURE	DRAWN	CHECKED	DATE
11217	2	BS	LG	30/04/2024

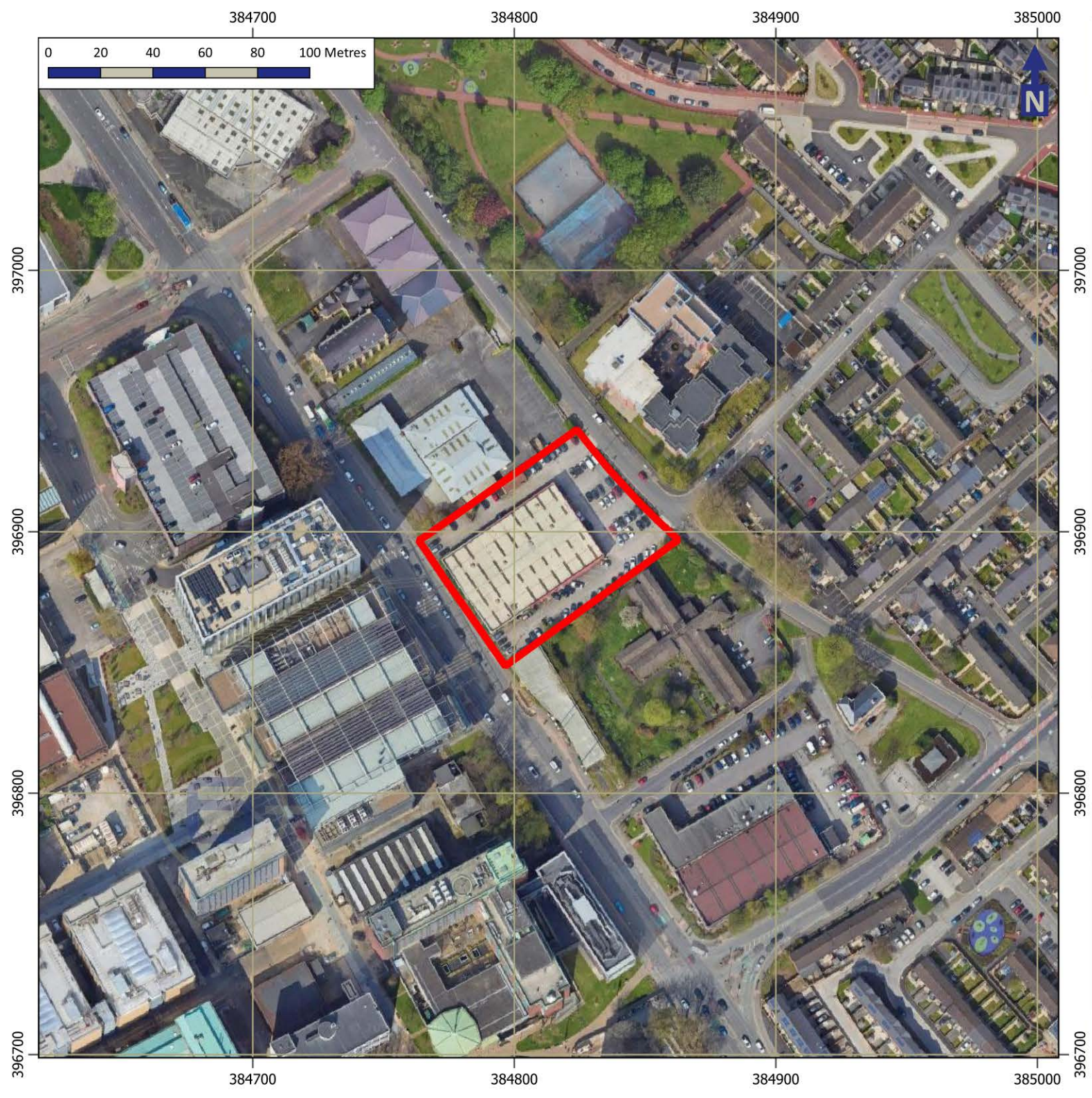
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Appendix 3 – Modern Aerial Photography



Modern Aerial Photography

BOMB SEARCH

LEGEND

Site Boundary



British National Grid

Address

SITE AT 384813, 396894

PROJECT NO.	FIGURE	DRAWN	CHECKED	DATE
11217	3	BS	LG	30/04/2024

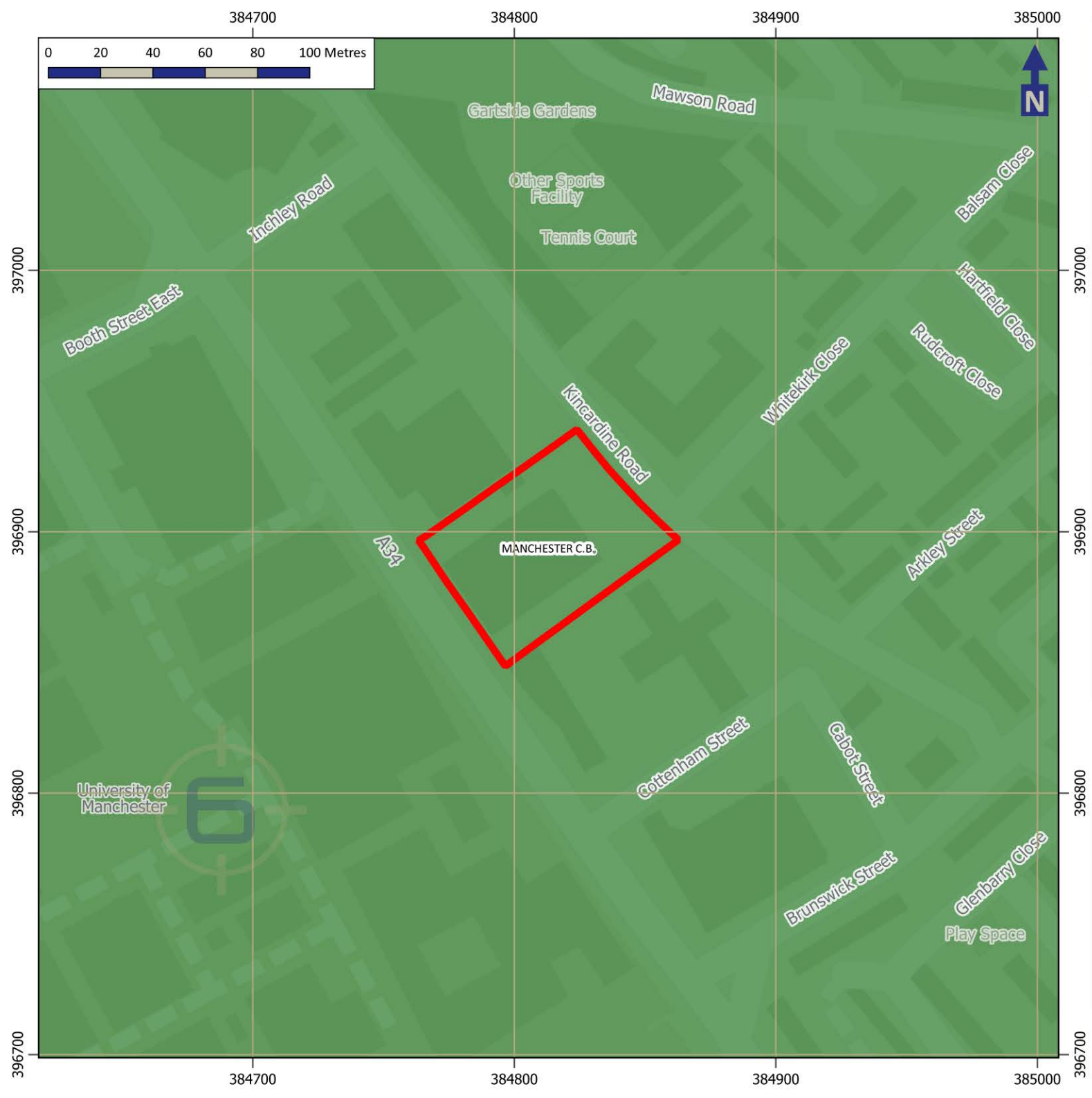
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Map data: Google, The GeoInformation Group, Infoterra Ltd, Bluesky, Getmapping plc

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Appendix 4 – WWII High Explosive Bomb Density



WWII High Explosive Bomb Density

BOMB SEARCH

LEGEND

Site Boundary

High Explosive Bomb Density

- Less than 15 bombs per 100 hectares
- 16-25 bombs per 100 hectares
- 26-35 bombs per 100 hectares
- 36-45 bombs per 100 hectares
- Over 46 bombs per 100 hectares



British National Grid

Address

SITE AT 384813, 396894

PROJECT NO.	FIGURE	DRAWN	CHECKED	DATE
11217	4	BS	LG	30/04/2024

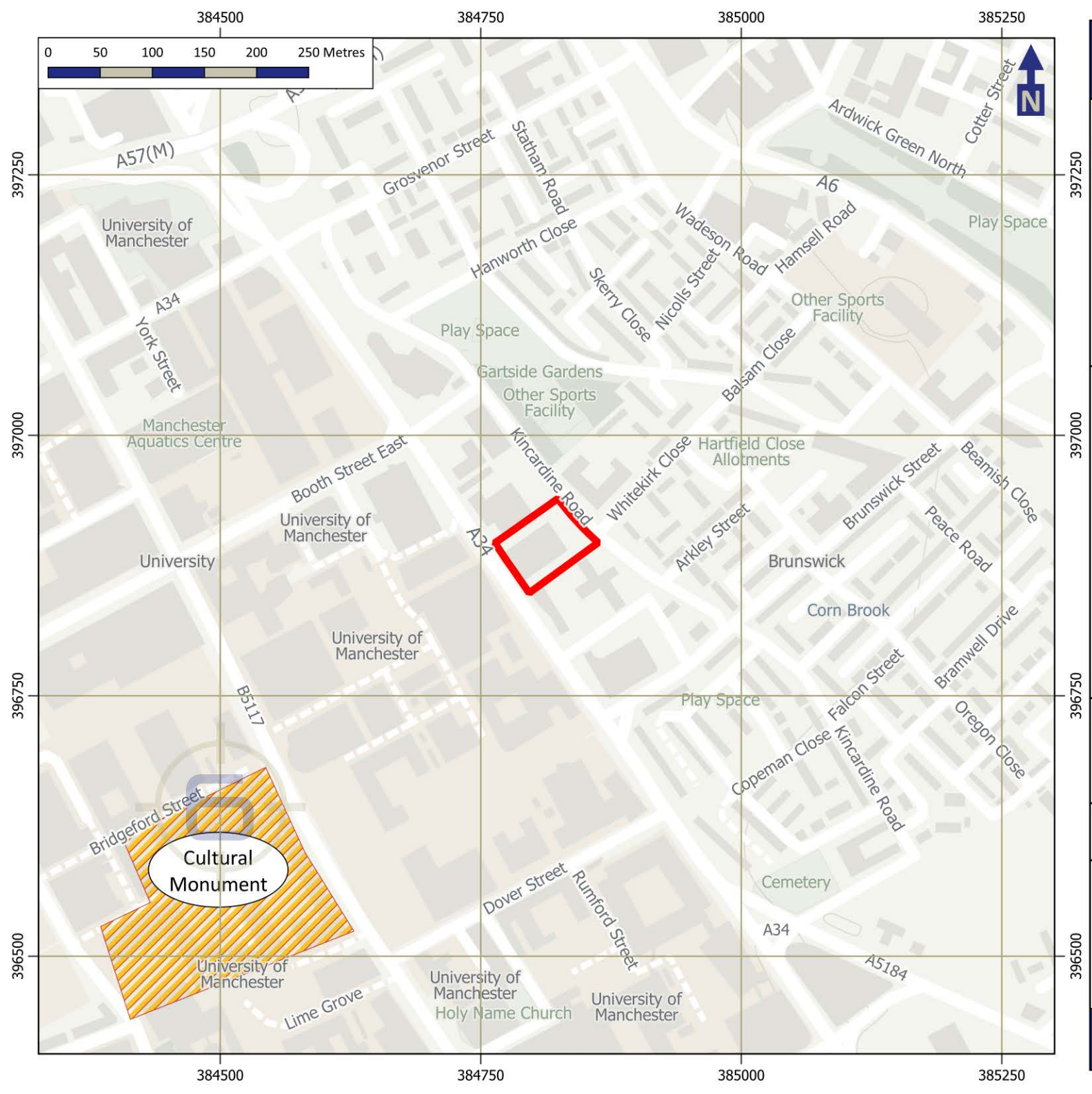
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Appendix 5 – WWII Luftwaffe Bombing Targets



WWII Luftwaffe Bombing Targets

BOMB SEARCH

LEGEND

- Site Boundary
- Luftwaffe Target



British National Grid

Address

SITE AT 384813, 396894

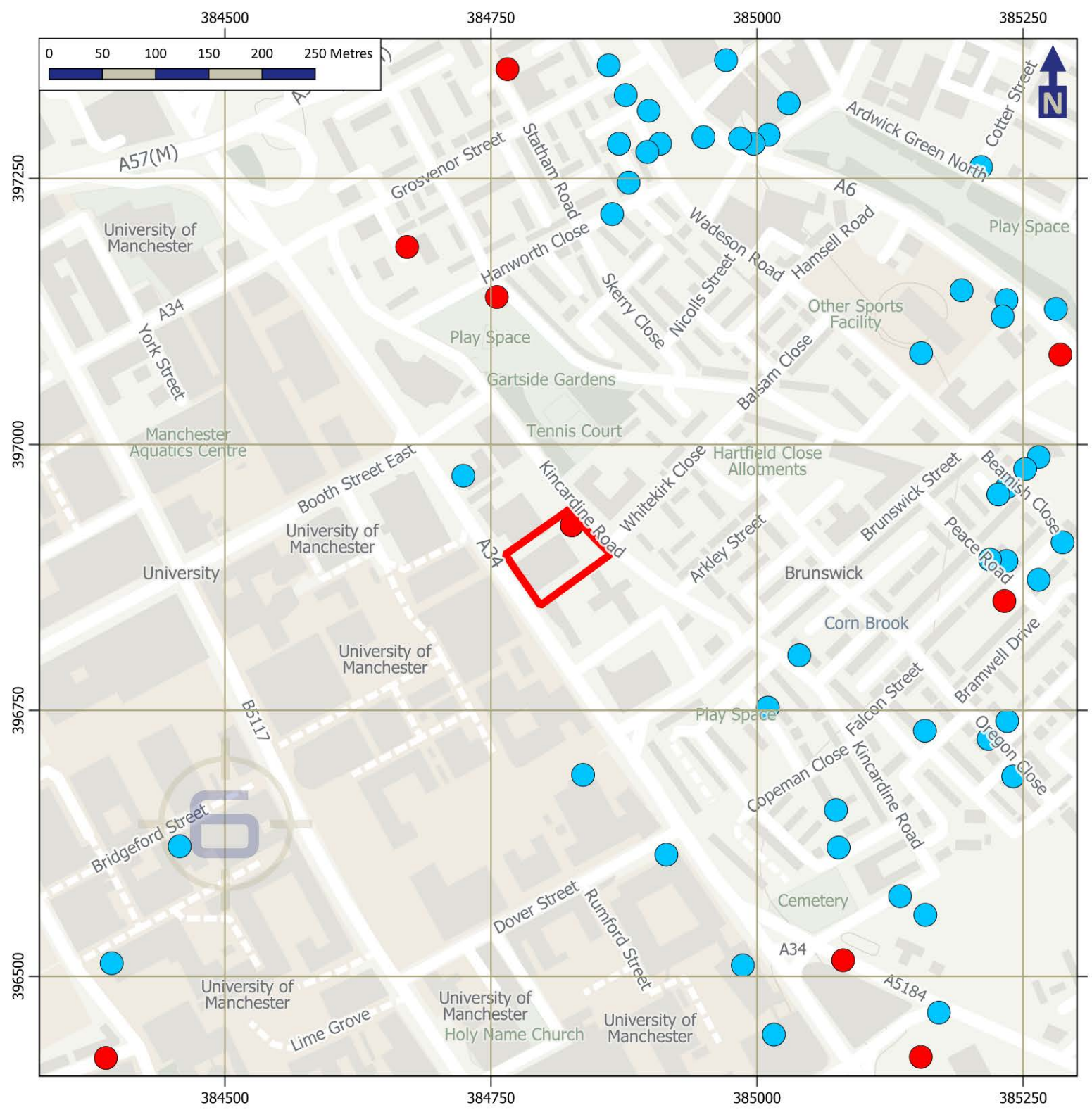
PROJECT NO.	FIGURE	DRAWN	CHECKED	DATE
11217	5	BS	LG	30/04/2024

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WWII Bomb Strikes

BOMB SEARCH

LEGEND

Site_Boundary

Consolidated Bomb Strikes

- High Explosive Bomb
- Incendiary Bomb



British National Grid

Address

Site at 384813,396894

PROJECT NO.	FIGURE	DRAWN	CHECKED	DATE
11217	6	LG	BW	07/05/2024

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APPENDIX C	EXPLORATORY HOLE RECORDS
Trial Pits	TP101 to TP103
Dynamic Sampling & Rotary Openhole Boreholes	BH101 to BH107



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Borehole Log

Borehole No.
BH101
Sheet 1 of 1

Project Name:	Upper Brook Street	Project No. 7293	Co-ords:	384778.97 - 396898.41	Hole Type WLS
Location:	Manchester M13 9QD		Level:	38.65	Scale 1:50
Client:	McLaren Property		Dates:	13/05/2024 - 13/05/2024	Logged By RJH

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.05	38.60		ASPHALT.
		0.30	J,K&T					MADE GROUND: Compact light brown angular and subangular gravel sized sandstone fragments with a little sand.
		0.60	J,K&T		0.45	38.20		SUB-BASE
		1.00		N=8 (1,2/2,2,2,2)	0.90	37.75		Soft dark brown slightly sandy CLAY. COHESIVE GLACIAL DEPOSITS
		1.40	D					Firm to stiff slightly sandy CLAY with rare rounded fine to coarse quartzite gravel. COHESIVE GLACIAL DEPOSITS
					1.60	37.05		Dense reddish brown fine to coarse SAND. GRANULAR GLACIAL DEPOSITS
		2.00		N=30 (5,6/6,6,7,11)	1.90	36.75		Dense reddish brown fine to coarse SAND AND subrounded and subangular sandstone GRAVEL. Rare rounded quartzite gravel. GRANULAR GLACIAL DEPOSITS
		2.50	J,K&T					
		3.00		N=23 (5,5/6,6,5,6)				
		3.50	J,K&T					
		3.70		N=50 (25 for 40mm/50,0,0,0)	3.70	34.95		End of borehole at 3.78 m

Remarks
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Flush returns were lost from 7.0m to 30.0m.

AGS

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Borehole Log

Borehole No. **BH102** Sheet 1 of 2

Project Name:	Upper Brook Street	Project No. 7293	Co-ords:	384803E - 396900N	Hole Type CP+RC
Location:	Manchester M13 9QD		Level:	39.00	Scale 1:50
Client:	McLaren Property		Dates:	15/05/2024	Logged By RJH

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
					0.20	39.00		CONCRETE.
		0.30	J,K&T		0.45	38.80		MADE GROUND: Compact light brown angular and subangular gravel sized sandstone fragments with a little sand. SUB-BASE
		0.80	J,K&T		0.60	38.55		CONCRETE (weak).
		1.00	D					MADE GROUND: Loose and locally compact dark brown clayey ash sand and gravel sized clinker with occasional angular gravel sized brick fragments. ASH & CLINKER
		1.00	SPT	N=5 (1,1/1,2,1,1)	1.05	38.40		
		1.50	J,K&T		1.50	37.95		MADE GROUND: Firm reddish brown slightly sandy clay with occasional angular gravel sized brick fragments. COHESIVE MADE GROUND
		2.00	D					Firm to stiff slightly sandy CLAY with rare rounded fine to coarse quartzite gravel. COHESIVE GLACIAL DEPOSITS
		2.00	SPT	N=19 (3,3/4,4,5,6)				
		3.00	D					
		3.00	SPT	N=20 (3,3/3,5,6,6)				
					3.50	37.50		Dense reddish brown fine to coarse SAND. GRANULAR GLACIAL DEPOSITS
		4.00	D					
		4.00	SPT	N=49 (6,8/49 for 250mm)				
		4.00 - 5.00		57 27 13	4.70			Weak and moderately weak thinly to thickly horizontally bedded indistinctly fractured reddish brown fine and medium grained SANDSTONE. CHESTER FORMATION
		5.00 - 6.50		23 23 23				
		6.30	U					
		6.50 - 7.50		84 84 84	6.50			Weak reddish brown MUDSTONE. CHESTER FORMATION
		7.10	U		7.10			Moderately strong predominately thickly horizontally bedded indistinctly fractured reddish brown fine grained SANDSTONE. CHESTER FORMATION
		7.50 - 8.00		100 92 20				
		8.10	U					
		8.00 - 9.50		100 100 71				
		9.00	U					

Continued on Next Sheet

Remarks

AGS

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Rotary Core Log

Borehole No.
BH102
Sheet 2 of 2

Project Name: Upper Brook Street	Project No. 7293	Co-ords: 384803.46 - 396899.66	Hole Type CP+RC
Location: Manchester M13 9QD		Level: 39.00	Scale 1:50
Client: McLaren Property		Dates: 15/05/2024	Logged By RJH

Well	Water Strikes	Depth (m)	Type /Fl	Coring TCR	Coring SCR	Coring RQD	Depth (m)	Level (m)	Legend	Stratum Description
		9.50 - 11.00 10.60	U	100	93	57				
		11.60 11.00 - 12.50	U	92	85	71				
		13.00 12.50 - 14.00	U	100	83	40				*12.5m to 14.0m, fine to coarse grained with occasional rounded predominately coarse quartzite gravel.*
		14.70 14.00 - 15.50	U	67	54	26				
		16.00 15.50 - 17.00	U	98	95	63				
		17.00 17.00 - 18.50	U	98	97	61				
		18.30 18.50 - 20.00	U	89	80	50				
		19.50	U				20.00			End of Borehole at 20.000m

Remarks

AGS

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Borehole Log

Borehole No.
BH103
Sheet 1 of 1

Project Name:	Upper Brook Street	Project No. 7293	Co-ords:	384810.96 - 396882.61	Hole Type WLS
Location:	Manchester M13 9QD		Level:	39.00	Scale 1:50
Client:	McLaren Property		Dates:	15/05/2024 - 17/05/2024	Logged By RJH

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20	38.80		CONCRETE.
					0.60	38.40		MADE GROUND: Compact light brown angular and subangular gravel sized sandstone fragments with a little sand. SUB-BASE
		1.00 1.00	D	N=8 (10,7/2,2,2,2)	0.90	38.10		MADE GROUND: Intermixed firm dark brown sandy clay with angular gravel and cobble sized brick and concrete fragments. COHESIVE MADE GROUND
					1.40	37.60		MADE GROUND: Dense red brown angular gravel and cobble sized brick fragments. BRICKFILL
		2.00 2.00	D	N=11 (2,2/2,3,3,3)	1.90	37.10		Firm to stiff slightly sandy CLAY with rare rounded fine to coarse quartzite gravel. COHESIVE GLACIAL DEPOSITS
		3.00 3.00	D	N=36 (10,8/8,8,8,12)				Dense reddish brown fine to coarse SAND AND subrounded and subangular sandstone GRAVEL. Rare rounded quartzite gravel. GRANULAR GLACIAL DEPOSITS
					3.45	35.55		End of borehole at 3.45 m

Remarks
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Flush returns were lost from 7.0m to 30.0m.

AGS

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Borehole Log

Borehole No.
BH104
Sheet 1 of 1

Project Name:	Upper Brook Street	Project No. 7293	Co-ords:	384817.30 - 396921.50	Hole Type WLS
Location:	Manchester M13 9QD		Level:	39.25	Scale 1:50
Client:	McLaren Property		Dates:	13/05/2024 - 13/05/2024	Logged By RJH

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.05	39.20		ASPHALT.
		0.20	J,K&T		0.20	39.05		MADE GROUND: Firm reddish brown clayey sand with some angular gravel sized sandstone fragments. GRANULAR MADE GROUND
		0.60	J,K&T		0.35	38.90		MADE GROUND: Loose and locally compact dark brown slightly clayey ash sand and gravel sized clinker with occasional angular gravel sized brick fragments. ASH & CLINKER
		1.00		N=26 (2,3/4,5,6,11)	1.10	38.15		MADE GROUND: Compact light reddish brown angular and subangular gravel and cobbles sized sandstone fragments with some fine to coarse sand. GRANULAR MADE GROUND
		1.20	J,K&T		1.60	37.65		Firm to stiff slightly sandy CLAY with rare rounded fine to coarse quartzite gravel. COHESIVE GLACIAL DEPOSITS
		2.00		N=34 (3,5/6,8,9,11)				Dense reddish brown fine to coarse SAND AND subrounded and subangular sandstone GRAVEL. Rare rounded quartzite gravel. GRANULAR GLACIAL DEPOSITS
		2.50	D					
		3.00		50 (4,5/50 for 210mm)				
					3.36	35.89		End of borehole at 3.36 m

1 2 3 4 5 6 7 8 9 10

Remarks
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Flush returns were lost from 7.0m to 30.0m.

AGS

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Borehole Log

Borehole No. **BH105**

Sheet 1 of 3

Project Name:	Upper Brook Street	Project No. 7293	Co-ords:	384845E - 396903N	Hole Type CP+RC
Location:	Manchester M13 9QD		Level:	38.85	Scale 1:50
Client:	McLaren Property		Dates:	14/05/2024	Logged By

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
					0.05	38.85		ASPHALT. MADE GROUND: Recovered as brown angular gravel and cobbles sized concrete fragments. GRANULAR MADE GROUND
		0.50	J,K&T					
		1.00	SPT	N=5 (1,1/1,1,1,2)				
		1.20	J,K&T		1.10	38.80		
					1.15	37.75		MADE GROUND: Loose and locally compact dark brown slightly clayey ash sand and gravel sized clinker with occasional angular gravel sized brick fragments. ASH & CLINKER
		1.70	J,K&T		1.60	37.70		Soft dark brown slightly sandy CLAY. COHESIVE GLACIAL DEPOSITS
		2.00	SPT	N=28 (7 for 15mm/6,7,8,7)	1.90	37.25		Firm to stiff slightly sandy CLAY with rare rounded fine to coarse quartzite gravel. COHESIVE GLACIAL DEPOSITS
		2.50	D					Dense reddish brown fine to coarse SAND AND subrounded and subangular sandstone GRAVEL. Rare rounded quartzite gravel. GRANULAR GLACIAL DEPOSITS
		3.00	SPT	N=37 (5,6/7,9,10,11)				
		5.80	D		5.90			Reddish brown fine and medium grained SANDSTONE. Recovery poor generally as rounded coarse gravel sized quartzite gravel. CHESTER FORMATION
		5.90 - 6.90	D	86 19 10	6.40			Moderately strong predominately thinly and thickly horizontally bedded indistinctly fractured c. 60 degrees reddish brown fine and medium locally coarsely grained SANDSTONE. CHESTER FORMATION
		6.50	D					
		6.80	U					
		6.90 - 8.30		65 62 9				
		7.80	U					
		8.30 - 9.90		59 34 14				*8.9m to 9.0m, non-intact.*
		9.50	U					*9.4m to 9.45m, non-intact.*
								9.8m to 9.85m, non-intact.

Continued on Next Sheet

Remarks

AGS

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Rotary Core Log

Borehole No.
BH105
Sheet 2 of 3

Project Name: Upper Brook Street	Project No. 7293	Co-ords: 384845.22 - 396902.87	Hole Type CP+RC
Location: Manchester M13 9QD		Level: 38.85	Scale 1:50
Client: McLaren Property		Dates: 14/05/2024	Logged By

Well	Water Strikes	Depth (m)	Type /Fl	Coring TCR	Coring SCR	Coring RQD	Depth (m)	Level (m)	Legend	Stratum Description
		10.20	U							*Below 10.2m, thinly to medium bedded.*
		9.90 - 11.40		93	61	40				
		11.40	U							
		11.40 - 12.90		92	85	50				*12.1m to 12.35m, mudstone.*
		12.80	D							*12.35m to 12.9m, weak with 80 degree (sub-vertical) fracture. Clean and tight.*
		12.90 - 14.40		66	57	34				*12.9m to 13.4m, Assumed Zone of Core Loss.*
		13.90	U							*13.6m to 13.9m, weak thickly bedded reddish brown MUDSTONE.*
		14.70	U							
		14.40 - 15.90		92	83	55				
		15.50	U							*15.9m to 16.8m, Assumed Zone of Core Loss.*
		15.90 - 17.40		38	32	23				
		17.20	U							*17.4m to 18.1m, thickly bedded.*
		18.10								
		17.40 - 18.90	U	97	90	19				
		19.40	D							*Below 19.9m, fine grained.*
		18.90 - 20.40		88	73	35				

Continued on Next Sheet

Remarks

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Rotary Core Log

Borehole No.
BH105
Sheet 3 of 3

Project Name: Upper Brook Street	Project No. 7293	Co-ords: 384845.22 - 396902.87	Hole Type CP+RC
Location: Manchester M13 9QD		Level: 38.85	Scale 1:50
Client: McLaren Property		Dates: 14/05/2024	Logged By

Well	Water Strikes	Depth (m)	Type /FI	Coring TCR	Coring SCR	Coring RQD	Depth (m)	Level (m)	Legend	Stratum Description
		20.30	U				20.40			End of Borehole at 20.400m

21
22
23
24
25
26
27
28
29
30

Remarks

AGS

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Borehole Log

Borehole No.
BH106
Sheet 1 of 1

Project Name:	Upper Brook Street	Project No. 7293	Co-ords:	384828.57 - 396880.71	Hole Type WLS
Location:	Manchester M13 9QD		Level:	38.65	Scale 1:50
Client:	McLaren Property		Dates:	13/05/2024 - 13/05/2024	Logged By RJH

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.05	38.60		ASPHALT.
		0.20	J,K&T					MADE GROUND: Firm reddish brown clayey sand with some angular gravel sized sandstone fragments.
					0.40	38.25		GRANULAR MADE GROUND
		0.60	J,K&T		0.60	38.05		MADE GROUND: Loose and locally compact dark brown slightly clayey ash sand and gravel sized clinker with occasional angular gravel sized brick fragments.
		0.90	J,K&T					ASH & CLINKER
		1.00		N=9 (11,11/2,2,2,3)				Firm to stiff slightly sandy CLAY with rare rounded fine to coarse quartzite gravel.
					1.40	37.25		COHESIVE GLACIAL DEPOSITS
		1.50	D					Dense reddish brown fine to coarse SAND AND subrounded and subangular sandstone GRAVEL. Rare rounded quartzite gravel.
		2.00		N=21 (4,5/6,5,5,5)				GRANULAR GLACIAL DEPOSITS
		3.00	D					
		3.00		N=50 (4,7/9,12,14,15)				
					3.45	35.20		End of borehole at 3.45 m

Remarks
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Flush returns were lost from 7.0m to 30.0m.

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Borehole Log

Borehole No. **BH107** Sheet 1 of 2

Project Name:	Upper Brook Street	Project No. 7293	Co-ords:	384800E - 396859N	Hole Type CP+RC
Location:	Manchester M13 9QD		Level:	38.65	Scale 1:50
Client:	McLaren Property		Dates:	17/05/2024	Logged By

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
					0.05	38.65		ASPHALT.
		0.40	J,K&T		0.30	38.60		MADE GROUND: Compact light brown angular and subangular gravel sized sandstone fragments with a little sand. SUB-BASE
					0.80	38.35		MADE GROUND: Soft dark brown slightly sandy clay with a occasional angular gravel and cobbles sized brick and concrete fragments. COHESIVE MADE GROUND
		1.00	SPT	N=7 (1,1/1,2,2,2)	1.00	37.85		CONCRETE (weak).
		1.30	J,K&T					Firm to stiff slightly sandy CLAY with rare rounded fine to coarse quartzite gravel. COHESIVE GLACIAL DEPOSITS
					1.80	37.65		Dense reddish brown fine to coarse SAND AND subrounded and subangular sandstone GRAVEL. Rare rounded quartzite gravel. GRANULAR GLACIAL DEPOSITS
		2.00	D					
		2.00	SPT	N=17 (2,3/4,4,5,4)				
		3.00	SPT	N=40 (5,5/8,8,10,14)				
					3.40	36.85		Weak thinly horizontally bedded indistinctly fractured reddish brown fine and medium grained SANDSTONE. CHESTER FORMATION
		3.45 - 4.95		65 43 0	4.40			*3.45m to 3.95m, Assumed Zone of Core Loss.*
		4.50	U					*3.95m to 4.2m, non-intact.*
								Moderately strong thickly to medium horizontally bedded indistinctly fractured reddish brown fine and medium grained SANDSTONE. CHESTER FORMATION
		5.50	U					
		4.95 - 6.45		96 86 34				
								6.7m to 6.9m, non-intact.
		7.00	U					
		6.45 - 8.00		99 70 32				*7.4m to 7.7m, non-intact.*
		7.80	U					*Below 7.7m, fine grained.*
		8.00 - 9.50		91 87 61				
		9.00	U					

Continued on Next Sheet

Remarks

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Rotary Core Log

Borehole No.
BH107
Sheet 2 of 2

Project Name: Upper Brook Street	Project No. 7293	Co-ords: 384799.93 - 396859.06	Hole Type CP+RC
Location: Manchester M13 9QD		Level: 38.65	Scale 1:50
Client: McLaren Property		Dates: 17/05/2024	Logged By

Well	Water Strikes	Depth (m)	Type /Fl	Coring TCR	Coring SCR	Coring RQD	Depth (m)	Level (m)	Legend	Stratum Description
		10.30 9.50 - 11.00	U	94	94	75				
		11.00 - 12.00 11.60	U	46	29	25				*11.0m to 11.5m, Assumed Zone of Core Loss.*
		12.40 12.00 - 13.50	U	95	61	41				*13.0m to 13.4m, non-intact.*
		13.90 13.50 - 15.00	U	79	76	59	14.10			Moderately strong thickly horizontally bedded very closely fractured reddish slightly sandy MUDSTONE. Fractures clean, tight and slightly stained dark brown. CHESTER FORMATION
		14.90	U							
		15.00 - 16.50 15.90	U	100	99	59	15.10			Moderately strong thickly horizontally bedded indistinctly fractured reddish brown fine grained SANDSTONE. CHESTER FORMATION
		16.35	U							
		16.50 - 18.00 17.30	U	100	98	93				
							18.00			End of Borehole at 18.000m

Remarks

AGS

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Trial Pit Log

Trialpit No
TP101
Sheet 1 of 1

Project Name: Upper Brook Street	Project No. 7293	Co-ords: 384789.44 - 396908.14 Level: 38.70	Date 16/05/2024
Location: Manchester M13 9QD		Dimensions (m): Depth 3.00	Scale 1:25
Client: McLaren Property			Logged RJG

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.05	38.65		ASPHALT.
							MADE GROUND: Compact light brown angular and subangular gravel sized sandstone fragments with a little sand. SUB-BASE
	0.50	J,K&T		0.45	38.25		MADE GROUND: Loose and locally compact dark brown slightly clayey ash sand and gravel sized clinker with occasional angular gravel sized brick farments. ASH & CLINKER
				0.90	37.80		Firm to stiff slightly sandy CLAY with rare rounded fine to coarse quartzite gravel. COHESIVE GLACIAL DEPOSITS
	1.10	J,K&T					
				1.60	37.10		Dense reddish brown fine to coarse SAND AND subrounded and subangular sandstone GRAVEL. Rare rounded quartzite gravel. GRANULAR GLACIAL DEPOSITS
				3.00	35.70		End of pit at 3.00 m

1
2
3
4
5

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. The sides of the trial pit remained stable during excavation. 4. Backfilled with materials arising upon completion.

Stability:

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Trial Pit Log

Trialpit No
TP102
Sheet 1 of 1

Project Name: Upper Brook Street	Project No. 7293	Co-ords: 384836.47 - 396912.14 Level: 40.20	Date 16/05/2024
Location: Manchester M13 9QD		Dimensions (m): Depth 2.80	Scale 1:25
Client: McLaren Property			Logged RJG

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.05	40.15		ASPHALT.
							MADE GROUND: Compact light brown angular and subangular gravel sized sandstone fragments with a little sand.
				0.40	39.80		CONCRETE (weak).
				0.50	39.70		MADE GROUND: Loose and locally compact dark brown clayey ash sand and gravel sized clinker with occasional angular gravel sized brick fragments. ASH & CLINKER
	0.80	J,K&T		0.65	39.55		MADE GROUND: Firm reddish brown slightly sandy clay with occasional angular gravel and cobbles sized brick fragments. COHESIVE MADE GROUND
	1.20	J,K&T		0.90	39.30		Firm to stiff slightly sandy CLAY with rare rounded fine to coarse quartzite gravel. COHESIVE GLACIAL DEPOSITS
				1.60	38.60		Dense reddish brown fine to coarse SAND AND subrounded and subangular sandstone GRAVEL. Rare rounded quartzite gravel. GRANULAR GLACIAL DEPOSITS
				2.80	37.40		End of pit at 2.80 m

1 2 3 4 5

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. The sides of the trial pit remained stable during excavation. 4. Backfilled with materials arising upon completion.

Stability:

AGS

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Trial Pit Log

Trialpit No
TP103
Sheet 1 of 1

Project Name: Upper Brook Street	Project No. 7293	Co-ords: 384819.16 - 396876.12 Level: 68.70	Date 16/05/2024
Location: Manchester M13 9QD		Dimensions (m): Depth 3.00	Scale 1:25
Client: McLaren Property			Logged RJG

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.05	68.65		ASPHALT.
							MADE GROUND: Compact light brown angular and subangular gravel sized sandstone fragments with a little sand. SUB-BASE
				0.40	68.30		MADE GROUND: Soft and firm brown slightly sandy clay with some angular gravel and cobbles sized brick fragments. COHESIVE MADE GROUND
	0.60	J,K&T					*Below 0.5m, brick wall identified in western face of pit.*
				1.30	67.40		Firm to stiff slightly sandy CLAY with rare rounded fine to coarse quartzite gravel. COHESIVE GLACIAL DEPOSITS
	1.40	J,K&T					
				1.70	67.00		Dense reddish brown fine to coarse SAND AND subrounded and subangular sandstone GRAVEL. Rare rounded quartzite gravel. GRANULAR GLACIAL DEPOSITS
				3.00	65.70		End of pit at 3.00 m

1 2 3 4 5

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. The sides of the trial pit remained stable during excavation. 4. Backfilled with materials arising upon completion.

Stability:

AGS

APPENDIX D CHEMICAL TEST RESULTS

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Certificate of Analysis

Certificate Number 24-10556 *Issued:* 31-May-24

Client Calabrian Ltd
8 I'Anson Close
Leyburn
DL8 5LF

Our Reference 24-10556

Client Reference ~ 7293

Order No ~ PO-3554

Contract Title ~ UPPER BROOK STREET, MANCHESTER, M13 9QG

Description 24 Soil samples, 6 Leachate prepared by DETS samples.

Date Received 23-May-24

Date Started 23-May-24

Date Completed 31-May-24

Test Procedures Identified by prefix DETSn (details on request).

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

Approved By [redacted]

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 24-10556
Client Ref ~ 7293
Contract Title ~ UPPER BROOK STREET, MANCHESTER, M13 9QG

				Lab No	2341538	2341539	2341540	2341541	2341542	2341543
				Sample ID ~	BH101	BH101	BH101	BH101	BH102	BH102
				Depth ~	0.30	0.60	2.50	3.50	0.30	0.80
				Other ID ~	1	2	4	5	1	2
				Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date ~	13/05/2024	13/05/2024	13/05/2024	13/05/2024	16/04/2024	16/04/2024
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Metals										
Arsenic	DETSC 2301#	0.2	mg/kg	1.1	8.2	4.5	6.1	1.0	17
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	< 0.2	0.6	1.3	< 0.2	< 0.2	1.7
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.1	< 0.1	0.5
Chromium	DETSC 2301#	0.15	mg/kg	6.3	13	19	18	6.4	17
Chromium III	DETSC 2301*	0.15	mg/kg	6.3	13	19	18	6.4	17
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	5.6	23	8.7	13	6.1	86
Lead	DETSC 2301#	0.3	mg/kg	10	52	8.2	13	2.1	420
Magnesium Aqueous Extract (2:1)	DETSC 2076*	10	mg/l		< 10				20
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.12	< 0.05	< 0.05	< 0.05	0.37
Nickel	DETSC 2301#	1	mg/kg	9.0	11	16	16	9.0	24
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	43	41	61	51	24	220
Inorganics										
pH	DETSC 2008#		pH	9.0	7.4	7.7	8.0	8.5	7.6
Total Organic Carbon	DETSC 2084#	0.5	%	< 0.5	2.9	0.9		< 0.5	8.6
Ammonia Aqueous Extract as N	DETSC 2119*	10	mg/l		< 10				< 10
Chloride Aqueous Extract (2:1)	DETSC 2055	1	mg/l		11				20
Nitrate Aqueous Extract as NO3 (2:1)	DETSC 2055	1	mg/l		1.3				230
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l		29				830
Sulphur as S, Total	DETSC 2320	0.01	%		0.02				0.09
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.05				0.24
Petroleum Hydrocarbons										
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5		29		< 1.5	< 1.5
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg	< 1.2		52		< 1.2	< 1.2
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5		220		< 1.5	< 1.5
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg	< 3.4		6800		< 3.4	< 3.4
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	mg/kg	< 10		7100		< 10	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg	< 0.9		5.9		< 0.9	< 0.9
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg	< 0.5		18		< 0.5	< 0.5
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg	< 0.6		74		< 0.6	< 0.6
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg	< 1.4		1000		< 1.4	< 1.4
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	mg/kg	< 10		1100		< 10	< 10
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	mg/kg	< 10		8300		< 10	< 10

Summary of Chemical Analysis
Soil Samples

Our Ref 24-10556
Client Ref ~ 7293
Contract Title ~ UPPER BROOK STREET, MANCHESTER, M13 9QG

			Lab No	2341538	2341539	2341540	2341541	2341542	2341543
			Sample ID ~	BH101	BH101	BH101	BH101	BH102	BH102
			Depth ~	0.30	0.60	2.50	3.50	0.30	0.80
			Other ID ~	1	2	4	5	1	2
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	13/05/2024	13/05/2024	13/05/2024	13/05/2024	16/04/2024	16/04/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03		< 0.03	0.34
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03		< 0.03	0.06
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03		< 0.03	0.31
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.07		< 0.03	0.31
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.18		0.09	2.1
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.09		< 0.03	0.45
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.13		0.11	2.1
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.31		0.08	2.0
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.13		0.05	0.74
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.11		0.04	0.70
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.13		0.05	0.69
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.04		< 0.03	0.23
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.10		0.04	0.58
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.12		< 0.03	0.19
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.05		< 0.03	0.05
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.17		< 0.03	0.23
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	1.6		0.46	11

Summary of Chemical Analysis
Soil Samples

Our Ref 24-10556
Client Ref ~ 7293
Contract Title ~ UPPER BROOK STREET, MANCHESTER, M13 9QG

				Lab No	2341544	2341545	2341546	2341547	2341548	2341549
				Sample ID ~	BH102	BH104	BH104	BH104	BH105	BH105
				Depth ~	1.50	0.20	0.60	1.20	0.50	1.20
				Other ID ~	4	1	2	3	1	2
				Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date ~	16/04/2024	13/05/2024	13/05/2024	13/05/2024	14/05/2024	14/05/2024
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Metals										
Arsenic	DETSC 2301#	0.2	mg/kg	6.2	21	1.0	6.1	0.8	29
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	1.0	0.6	< 0.2	0.3	< 0.2	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	0.3	< 0.1	< 0.1	0.3	1.4
Chromium	DETSC 2301#	0.15	mg/kg	10	220	4.7	20	3.2	17
Chromium III	DETSC 2301*	0.15	mg/kg	10	220	4.7	20	3.2	17
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	21	110	4.2	18	2.3	92
Lead	DETSC 2301#	0.3	mg/kg	47	77	4.2	75	< 0.3	4400
Magnesium Aqueous Extract (2:1)	DETSC 2076*	10	mg/l			< 10		< 10	
Mercury	DETSC 2325#	0.05	mg/kg	0.12	0.16	< 0.05	< 0.05	< 0.05	0.63
Nickel	DETSC 2301#	1	mg/kg	11	45	6.5	14	1.9	19
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	57	77	74	73	21	430
Inorganics									
pH	DETSC 2008#		pH	8.3	8.0	8.5	7.7	9.0	8.2
Total Organic Carbon	DETSC 2084#	0.5	%	2.2	16	< 0.5	1.3	7.0	4.0
Ammonia Aqueous Extract as N	DETSC 2119*	10	mg/l			< 10		< 10	
Chloride Aqueous Extract (2:1)	DETSC 2055	1	mg/l			4.3		5.9	
Nitrate Aqueous Extract as NO3 (2:1)	DETSC 2055	1	mg/l			3.6		< 1.0	
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l			11		< 10	
Sulphur as S, Total	DETSC 2320	0.01	%			0.78		0.01	
Sulphate as SO4, Total	DETSC 2321#	0.01	%			0.01		0.02	
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg		< 1.5	< 1.5		< 1.5	< 1.5
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg		< 1.2	< 1.2		< 1.2	< 1.2
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg		< 1.5	< 1.5		< 1.5	< 1.5
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg		< 3.4	< 3.4		< 3.4	33
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	mg/kg		< 10	< 10		< 10	33
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg		< 0.9	< 0.9		< 0.9	< 0.9
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg		5.8	< 0.5		< 0.5	0.8
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg		80	< 0.6		< 0.6	< 0.6
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg		140	< 1.4		< 1.4	84
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	mg/kg		220	< 10		< 10	84
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	mg/kg		220	< 10		< 10	120

Summary of Chemical Analysis
Soil Samples

Our Ref 24-10556
Client Ref ~ 7293
Contract Title ~ UPPER BROOK STREET, MANCHESTER, M13 9QG

				Lab No	2341544	2341545	2341546	2341547	2341548	2341549
				Sample ID ~	BH102	BH104	BH104	BH104	BH105	BH105
				Depth ~	1.50	0.20	0.60	1.20	0.50	1.20
				Other ID ~	4	1	2	3	1	2
				Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date ~	16/04/2024	13/05/2024	13/05/2024	13/05/2024	14/05/2024	14/05/2024
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Benzene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
PAHs										
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	1.4	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.50	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	7.0	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	5.4	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.08	48	0.19	< 0.03	0.04	0.15
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	13	0.04	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.08	84	0.42	< 0.03	0.06	0.24
Pyrene	DETSC 3303#	0.03	mg/kg	0.09	80	0.41	< 0.03	0.05	0.24
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.04	38	0.20	< 0.03	0.03	0.10
Chrysene	DETSC 3303	0.03	mg/kg	0.04	36	0.20	< 0.03	< 0.03	0.12
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.04	46	0.30	< 0.03	< 0.03	0.11
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	16	0.09	< 0.03	< 0.03	0.04
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	39	0.26	< 0.03	< 0.03	0.08
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	15	0.11	< 0.03	< 0.03	0.05
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	3.7	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	17	0.14	< 0.03	< 0.03	0.05
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.37	450	2.4	< 0.10	0.17	1.2

Summary of Chemical Analysis
Soil Samples

Our Ref 24-10556
Client Ref ~ 7293
Contract Title ~ UPPER BROOK STREET, MANCHESTER, M13 9QG

	Lab No	2341550	2341551	2341552	2341553	2341554	2341555
	Sample ID ~	BH105	BH106	BH106	BH106	BH107	BH107
	Depth ~	1.70	0.20	0.60	0.90	0.40	1.30
	Other ID ~	3	1	2	3	1	2
	Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampling Date ~	14/05/2024	13/05/2024	13/05/2024	13/05/2024	17/04/2024	17/04/2024
	Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	4.6	2.3	26	11	14	12
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	< 0.2	< 0.2	0.5	0.5	0.6	0.4
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	0.5	0.2	0.1	0.4	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	14	4.8	13	15	14	16
Chromium III	DETSC 2301*	0.15	mg/kg	14	4.8	13	15	14	16
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	11	8.7	120	36	72	39
Lead	DETSC 2301#	0.3	mg/kg	9.9	15	220	62	720	85
Magnesium Aqueous Extract (2:1)	DETSC 2076*	10	mg/l		< 10				
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	0.23	0.12	0.25	0.21
Nickel	DETSC 2301#	1	mg/kg	8.3	3.9	27	16	16	18
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	57	39	99	59	180	71
Inorganics									
pH	DETSC 2008#		pH	7.7	8.6	7.4	7.7	8.0	7.6
Total Organic Carbon	DETSC 2084#	0.5	%		4.9	15		7.3	3.8
Ammonia Aqueous Extract as N	DETSC 2119*	10	mg/l		< 10				
Chloride Aqueous Extract (2:1)	DETSC 2055	1	mg/l		8.8				
Nitrate Aqueous Extract as NO3 (2:1)	DETSC 2055	1	mg/l		< 1.0				
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l		14				
Sulphur as S, Total	DETSC 2320	0.01	%		0.01				
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.01				
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01		< 0.01	
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01		< 0.01	
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01		< 0.01	
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg		< 1.5	< 1.5		< 1.5	
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg		< 1.2	< 1.2		< 1.2	
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg		< 1.5	< 1.5		< 1.5	
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg		< 3.4	< 3.4		29	
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	mg/kg		< 10	< 10		29	
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01		< 0.01	
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01		< 0.01	
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01		< 0.01	
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg		< 0.9	< 0.9		2.1	
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg		< 0.5	< 0.5		18	
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg		< 0.6	< 0.6		150	
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg		< 1.4	< 1.4		330	
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	mg/kg		< 10	< 10		510	
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	mg/kg		< 10	< 10		530	

Summary of Chemical Analysis
Soil Samples

Our Ref 24-10556
Client Ref ~ 7293
Contract Title ~ UPPER BROOK STREET, MANCHESTER, M13 9QG

				Lab No	2341550	2341551	2341552	2341553	2341554	2341555
				Sample ID ~	BH105	BH106	BH106	BH106	BH107	BH107
				Depth ~	1.70	0.20	0.60	0.90	0.40	1.30
				Other ID ~	3	1	2	3	1	2
				Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date ~	14/05/2024	13/05/2024	13/05/2024	13/05/2024	17/04/2024	17/04/2024
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Benzene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01		< 0.01	
Ethylbenzene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01		< 0.01	
Toluene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01		< 0.01	
Xylene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01		< 0.01	
MTBE	DETSC 3321	0.01	mg/kg		< 0.01	< 0.01		< 0.01	
PAHs										
Naphthalene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03		0.22	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03		0.06	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03		0.50	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg		< 0.03	< 0.03		0.59	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg		0.10	0.05		4.2	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg		0.04	< 0.03		1.2	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg		0.30	0.15		7.3	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg		0.35	0.17		6.7	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg		0.17	0.11		2.8	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg		0.22	0.11		2.9	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg		0.26	0.10		3.2	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg		0.08	0.04		1.1	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg		0.22	0.07		2.6	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg		0.11	0.04		0.86	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03		0.26	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg		0.16	0.04		1.2	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg		2.0	0.88		36	< 0.10

Summary of Chemical Analysis
Soil Samples

Our Ref 24-10556
Client Ref ~ 7293
Contract Title ~ UPPER BROOK STREET, MANCHESTER, M13 9QG

			Lab No	2341556	2341557	2341558	2341559	2341560	2341561
			Sample ID ~	TP101	TP101	TP102	TP102	TP103	TP103
			Depth ~	0.50	1.10	0.80	1.20	0.60	1.40
			Other ID ~	1	2	1	2	1	2
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	16/04/2024	16/05/2024	16/05/2024	16/04/2024	16/05/2024	16/05/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	17	7.9	6.3	5.2	5.0	21
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.4	0.5	0.8	0.3	0.5	0.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	0.1	0.1	< 0.1	< 0.1	0.4
Chromium	DETSC 2301#	0.15	mg/kg	28	22	15	16	16	16
Chromium III	DETSC 2301*	0.15	mg/kg	28	22	15	16	16	16
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	110	28	18	10	12	76
Lead	DETSC 2301#	0.3	mg/kg	130	53	41	10	13	690
Magnesium Aqueous Extract (2:1)	DETSC 2076*	10	mg/l	< 10		< 10		< 10	
Mercury	DETSC 2325#	0.05	mg/kg	0.26	0.07	< 0.05	< 0.05	< 0.05	0.69
Nickel	DETSC 2301#	1	mg/kg	28	29	14	11	11	18
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	120	68	58	46	48	250
Inorganics									
pH	DETSC 2008#		pH	7.9	8.1	7.3	7.7	7.4	7.9
Total Organic Carbon	DETSC 2084#	0.5	%	15	1.4	1.8	0.6	0.7	2.7
Ammonia Aqueous Extract as N	DETSC 2119*	10	mg/l	< 10		< 10		< 10	
Chloride Aqueous Extract (2:1)	DETSC 2055	1	mg/l	4.8		5.3		7.8	
Nitrate Aqueous Extract as NO3 (2:1)	DETSC 2055	1	mg/l	1.1		< 1.0		3.1	
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	29		46		21	
Sulphur as S, Total	DETSC 2320	0.01	%	0.05		0.09		0.01	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.04		0.05		0.05	
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	21	< 3.4	< 3.4
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	21	< 10	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	21	< 10	< 10

Summary of Chemical Analysis
Soil Samples

Our Ref 24-10556
Client Ref ~ 7293
Contract Title ~ UPPER BROOK STREET, MANCHESTER, M13 9QG

				Lab No	2341556	2341557	2341558	2341559	2341560	2341561
				Sample ID ~	TP101	TP101	TP102	TP102	TP103	TP103
				Depth ~	0.50	1.10	0.80	1.20	0.60	1.40
				Other ID ~	1	2	1	2	1	2
				Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date ~	16/04/2024	16/05/2024	16/05/2024	16/04/2024	16/05/2024	16/05/2024
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAHs										
Naphthalene	DETSC 3303#	0.03	mg/kg	0.51	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.51	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	6.4	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	4.1	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	44	0.03	< 0.03	< 0.03	< 0.03	0.17
Anthracene	DETSC 3303	0.03	mg/kg	11	< 0.03	< 0.03	< 0.03	< 0.03	0.04
Fluoranthene	DETSC 3303#	0.03	mg/kg	100	< 0.03	< 0.03	< 0.03	< 0.03	0.37
Pyrene	DETSC 3303#	0.03	mg/kg	97	< 0.03	< 0.03	< 0.03	< 0.03	0.36
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	53	< 0.03	< 0.03	< 0.03	< 0.03	0.13
Chrysene	DETSC 3303	0.03	mg/kg	51	< 0.03	< 0.03	< 0.03	< 0.03	0.15
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	70	< 0.03	< 0.03	< 0.03	< 0.03	0.15
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	26	< 0.03	< 0.03	< 0.03	< 0.03	0.06
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	60	< 0.03	< 0.03	< 0.03	< 0.03	0.13
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	22	< 0.03	< 0.03	< 0.03	< 0.03	0.07
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	7.6	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	29	< 0.03	< 0.03	< 0.03	< 0.03	0.08
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	590	< 0.10	< 0.10	< 0.10	< 0.10	1.7

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-10556
Client Ref 7293
Contract Title UPPER BROOK STREET, MANCHESTER, M13 9QG
Sample Id BH102 2 0.80
Sample Numbers 2341543 2341562
Date Analysed 31/05/2024

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	8.6	3	5	6
DETSC 2003# Loss On Ignition	%	6.3	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	11.0	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	11.0	100	n/a	n/a
DETSC 2008# pH	pH Units	7.6	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.74	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	38	0.38	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	0.77	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.59	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	0.43	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	1.7	0.017	4	50	200
DETSC 2055 Chloride as Cl	2600	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	710	7.1	10	150	500
DETSC 2055 Sulphate as SO4	60000	600	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	160000	1600	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	6.3
DETSC 2009 Conductivity uS/cm	228.0
* Temperature*	18.0
Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.097
Stage 1	
Volume of Leachant L2*	0.955
Volume of Eluate VE1*	0.9

Disclaimer: *The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.*

V.2.06 ** DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.*

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-10556
Client Ref 7293
Contract Title UPPER BROOK STREET, MANCHESTER, M13 9QG
Sample Id BH104 2 0.60
Sample Numbers 2341546 2341563
Date Analysed 31/05/2024

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	< 0.5	3	5	6
DETSC 2003# Loss On Ignition	%	0.54	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	93.0	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	2.4	100	n/a	n/a
DETSC 2008# pH	pH Units	8.5	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.25	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	4.6	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	< 0.40	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.094	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	< 1.3	< 0.01	4	50	200
DETSC 2055 Chloride as Cl	750	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	170	1.7	10	150	500
DETSC 2055 Sulphate as SO4	1800	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	27000	270	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	6.7
DETSC 2009 Conductivity uS/cm	38.0
* Temperature*	19.0

Mass of Sample Kg*	0.100
Mass of dry Sample Kg*	0.095

Stage 1

Volume of Leachant L2*	0.947
Volume of Eluate VE1*	0.888

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-10556
Client Ref 7293
Contract Title UPPER BROOK STREET, MANCHESTER, M13 9QG
Sample Id BH105 1 0.50
Sample Numbers 2341548 2341564
Date Analysed 31/05/2024

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	7.0	3	5	6
DETSC 2003# Loss On Ignition	%	0.40	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	18.0	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	9.0	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	2.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.74	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	6	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	0.87	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.11	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	< 1.3	< 0.01	4	50	200
DETSC 2055 Chloride as Cl	640	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETSC 2055 Sulphate as SO4	1400	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	30000	300	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	6.7
DETSC 2009 Conductivity uS/cm	43.5
* Temperature*	19.0

Mass of Sample Kg*	0.100
Mass of dry Sample Kg*	0.099

Stage 1

Volume of Leachant L2*	0.99
Volume of Eluate VE1*	0.95

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-10556
Client Ref 7293
Contract Title UPPER BROOK STREET, MANCHESTER, M13 9QG
Sample Id BH106 1 0.20
Sample Numbers 2341551 2341565
Date Analysed 31/05/2024

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	4.9	3	5	6
DETSC 2003# Loss On Ignition	%	1.0	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	350.0	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	4.3	100	n/a	n/a
DETSC 2008# pH	pH Units	8.6	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	4.4	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.95	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	6.8	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	1.2	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.45	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	0.18	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	< 1.3	< 0.01	4	50	200
DETSC 2055 Chloride as Cl	880	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	260	2.6	10	150	500
DETSC 2055 Sulphate as SO4	1700	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	37000	370	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	6.7
DETSC 2009 Conductivity uS/cm	53.3
* Temperature*	19.0
Mass of Sample Kg*	0.100
Mass of dry Sample Kg*	0.096
Stage 1	
Volume of Leachant L2*	0.958
Volume of Eluate VE1*	0.902

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-10556
Client Ref 7293
Contract Title UPPER BROOK STREET, MANCHESTER, M13 9QG
Sample Id BH107 1 0.40
Sample Numbers 2341554 2341566
Date Analysed 31/05/2024

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	7.3	3	5	6
DETSC 2003# Loss On Ignition	%	5.0	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	440.0	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	60.0	100	n/a	n/a
DETSC 2008# pH	pH Units	8.0	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.5	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	5.8	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	0.64	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	1.8	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.1	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	2.1	0.021	4	50	200
DETSC 2055 Chloride as Cl	1800	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	370	3.7	10	150	500
DETSC 2055 Sulphate as SO4	5400	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	30000	300	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	6.7
DETSC 2009 Conductivity uS/cm	42.3
* Temperature*	19.0

Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.095

Stage 1

Volume of Leachant L2*	0.929
Volume of Eluate VE1*	0.881

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-10556
Client Ref 7293
Contract Title UPPER BROOK STREET, MANCHESTER, M13 9QG
Sample Id TP102 1 0.80
Sample Numbers 2341558 2341567
Date Analysed 31/05/2024

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	1.8	3	5	6
DETSC 2003# Loss On Ignition	%	4.6	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	7.3	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.97	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	1.7	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	0.91	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	3.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.26	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	0.33	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	< 1.3	< 0.01	4	50	200
DETSC 2055 Chloride as Cl	880	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	270	2.7	10	150	500
DETSC 2055 Sulphate as SO4	3000	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	31000	310	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	6.6
DETSC 2009 Conductivity uS/cm	43.5
* Temperature*	19.0

Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.000

Stage 1

Volume of Leachant L2*	0
Volume of Eluate VE1*	0.887

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Summary of Asbestos Analysis
Soil Samples

Our Ref 24-10556
Client Ref ~ 7293
Contract Title ~ UPPER BROOK STREET, MANCHESTER, M13 9QG

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2341538	BH101 1 0.30	SOIL	NAD	none	Lee Kerridge
2341539	BH101 2 0.60	SOIL	NAD	none	Lee Kerridge
2341540	BH101 4 2.50	SOIL	NAD	none	Lee Kerridge
2341542	BH102 1 0.30	SOIL	NAD	none	Lee Kerridge
2341543	BH102 2 0.80	SOIL	NAD	none	Lee Kerridge
2341544	BH102 4 1.50	SOIL	NAD	none	Lee Kerridge
2341545	BH104 1 0.20	SOIL	NAD	none	Lee Kerridge
2341546	BH104 2 0.60	SOIL	NAD	none	Lee Kerridge
2341547	BH104 3 1.20	SOIL	NAD	none	Lee Kerridge
2341548	BH105 1 0.50	SOIL	NAD	none	Lee Kerridge
2341549	BH105 2 1.20	SOIL	NAD	none	Lee Kerridge
2341551	BH106 1 0.20	SOIL	NAD	none	Lee Kerridge
2341552	BH106 2 0.60	SOIL	NAD	none	Lee Kerridge
2341554	BH107 1 0.40	SOIL	NAD	none	Lee Kerridge
2341556	TP101 1 0.50	SOIL	NAD	none	Lee Kerridge
2341557	TP101 2 1.10	SOIL	NAD	none	Lee Kerridge
2341558	TP102 1 0.80	SOIL	NAD	none	Lee Kerridge
2341559	TP102 2 1.20	SOIL	NAD	none	Lee Kerridge
2341560	TP103 1 0.60	SOIL	NAD	none	Lee Kerridge
2341561	TP103 2 1.40	SOIL	NAD	none	Lee Kerridge

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-10556
Client Ref ~ 7293
Contract ~ UPPER BROOK STREET, MANCHESTER, M13 9QG

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2341538	BH101 0.30 SOIL	13/05/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2341539	BH101 0.60 SOIL	13/05/24	GJ 250ml, GJ 60ml, PT 1L	Ammonia Aqueous Extract (3 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2341540	BH101 2.50 SOIL	13/05/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2341541	BH101 3.50 SOIL	13/05/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2341542	BH102 0.30 SOIL	16/04/24	GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX / C5-C10 (14 days), Mercury (28 days), Kone Cr6 (30 days), Naphthalene (14 days), Organic Matter (Auto) (28 days), PAH MS (14 days), pH + Conductivity (7 days)	
2341543	BH102 0.80 SOIL	16/04/24	GJ 250ml, GJ 60ml, PT 1L	Anions 2:1 (30 days), Aliphatics/Aromatics (14 days), Ammonia Aqueous Extract (3 days), BTEX / C5-C10 (14 days), Mercury (28 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Kone Cr6 (30 days), Naphthalene (14 days), Organic Matter (Auto) (28 days), PAH FID (14 days), PAH MS (14 days), PCB (30 days), pH + Conductivity (7 days), EPH/TPH (14 days)	
2341544	BH102 1.50 SOIL	16/04/24	GJ 250ml, GJ 60ml, PT 1L	Mercury (28 days), Kone Cr6 (30 days), Naphthalene (14 days), Organic Matter (Auto) (28 days), PAH MS (14 days), pH + Conductivity (7 days)	
2341545	BH104 0.20 SOIL	13/05/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2341546	BH104 0.60 SOIL	13/05/24	GJ 250ml, GJ 60ml, PT 1L	Ammonia Aqueous Extract (3 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2341547	BH104 1.20 SOIL	13/05/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2341548	BH105 0.50 SOIL	14/05/24	GJ 250ml, GJ 60ml, PT 1L	Ammonia Aqueous Extract (3 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2341549	BH105 1.20 SOIL	14/05/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2341550	BH105 1.70 SOIL	14/05/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2341551	BH106 0.20 SOIL	13/05/24	GJ 250ml, GJ 60ml, PT 1L	Ammonia Aqueous Extract (3 days), Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2341552	BH106 0.60 SOIL	13/05/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2341553	BH106 0.90 SOIL	13/05/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2341554	BH107 0.40 SOIL	17/04/24	GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX / C5-C10 (14 days), Mercury (28 days), Kone Cr6 (30 days), Naphthalene (14 days), Organic Matter (Auto) (28 days), PAH FID (14 days), PAH MS (14 days), PCB (30 days), pH + Conductivity (7 days), EPH/TPH (14 days)	
2341555	BH107 1.30 SOIL	17/04/24	GJ 250ml, GJ 60ml, PT 1L	Mercury (28 days), Kone Cr6 (30 days), Naphthalene (14 days), Organic Matter (Auto) (28 days), PAH MS (14 days), pH + Conductivity (7 days)	

Information in Support of the Analytical Results

Our Ref 24-10556
Client Ref ~ 7293
Contract ~ UPPER BROOK STREET, MANCHESTER, M13 9QG

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2341556	TP101 0.50 SOIL	16/04/24	GJ 250ml, GJ 60ml, PT 1L	Anions 2:1 (30 days), Aliphatics/Aromatics (14 days), Ammonia Aqueous Extract (3 days), BTEX / C5-C10 (14 days), Mercury (28 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Kone Cr6 (30 days), Naphthalene (14 days), Organic Matter (Auto) (28 days), PAH MS (14 days), pH + Conductivity (7 days)	
2341557	TP101 1.10 SOIL	16/05/24	GJ 250ml, GJ 60ml, PT 1L		
2341558	TP102 0.80 SOIL	16/05/24	GJ 250ml, GJ 60ml, PT 1L	Ammonia Aqueous Extract (3 days)	
2341559	TP102 1.20 SOIL	16/04/24	GJ 250ml, GJ 60ml, PT 1L	Aliphatics/Aromatics (14 days), BTEX / C5-C10 (14 days), Mercury (28 days), Kone Cr6 (30 days), Naphthalene (14 days), Organic Matter (Auto) (28 days), PAH MS (14 days), pH + Conductivity (7 days)	
2341560	TP103 0.60 SOIL	16/05/24	GJ 250ml, GJ 60ml, PT 1L	Ammonia Aqueous Extract (3 days)	
2341561	TP103 1.40 SOIL	16/05/24	GJ 250ml, GJ 60ml, PT 1L		
2341562	BH102 0.80 LEACHATE	16/04/24	GJ 250ml, GJ 60ml, PT 1L	Conductivity (non reportable) (28 days), Conductivity uS/cm (28 days), Anions (28 days), pH/Cond (1 days), Phenol Index (30 days), Cyanide/Mono pHoh (14 days), Total Dissolved s (28 days), TOC AN (28 days)	
2341563	BH104 0.60 LEACHATE	13/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2341564	BH105 0.50 LEACHATE	14/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2341565	BH106 0.20 LEACHATE	13/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2341566	BH107 0.40 LEACHATE	17/04/24	GJ 250ml, GJ 60ml, PT 1L	Conductivity (non reportable) (28 days), Conductivity uS/cm (28 days), Anions (28 days), pH/Cond (1 days), Phenol Index (30 days), Cyanide/Mono pHoh (14 days), Total Dissolved s (28 days), TOC AN (28 days)	
2341567	TP102 0.80 LEACHATE	16/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C5-C35	EH_CU+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C5-C35	EH_CU+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_CU+HS_1D_Total
TPH (C10-C40)	EH_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

***** -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-11381	*Issued:*	11-Jun-24
Client	Calabrian Ltd 8 I'Anson Close Leyburn DL8 5LF		

Our Reference	24-11381
Client Reference ~	7293
Order No ~	PO-3554
Contract Title ~	UPPER BROOK STREET, MANCHESTER, M13 9QG
Description	One Soil sample.
Date Received	23-May-24
Date Started	04-Jun-24
Date Completed	11-Jun-24
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 24-11381
Client Ref ~ 7293
Contract Title ~ UPPER BROOK STREET, MANCHESTER, M13 9QG

Lab No	2346020
Sample ID ~	BH101
Depth ~	3.50
Other ID ~	5
Sample Type ~	SOIL
Sampling Date ~	13/05/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Petroleum Hydrocarbons				
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg	< 1.2
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg	< 3.4
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	mg/kg	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg	< 0.9
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg	< 0.5
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg	< 0.6
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg	< 1.4
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	mg/kg	< 10
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	mg/kg	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01

Information in Support of the Analytical Results

Our Ref 24-11381
Client Ref ~ 7293
Contract ~ UPPER BROOK STREET, MANCHESTER, M13 9QG

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2346020	BH101 3.50 SOIL	13/05/24	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

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Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
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Total	Aliphatics & Aromatics
AL	Aliphatics only
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#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C5-C35	EH_CU+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C5-C35	EH_CU+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_CU+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

APPENDIX E GEOTECHNICAL TEST RESULTS

calabrian

LABORATORY REPORT

Contract Number: PSL24/3666

Report Date: 20 June 2024

Client's Reference: 7293

Client Name: Calabrian
8 l'Anson Close
Leyburn
Yorkshire
DL8 5LF

For the attention of: Richard Hey

Contract Title: Upper Brook Street, Manchester, M13 9QD

Date Received: 23/5/2024
Date Commenced: 23/5/2024
Date Completed: 20/6/2024

Notes: **Opinions and Interpretations are outside the UKAS Accreditation**

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

[redacted]

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
BH101	3	D	1.40		Brown slightly gravelly very sandy CLAY.
BH102	5	D	2.00		Brown slightly gravelly very sandy CLAY.

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Upper Brook Street, Manchester, M13 9QD

Contract No: PSL24/3666

Client Ref: 7293

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
BH101	3	D	1.40		16			33	18	15	91	Low Plasticity CL
BH102	5	D	2.00		13			32	17	15	92	Low Plasticity CL

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

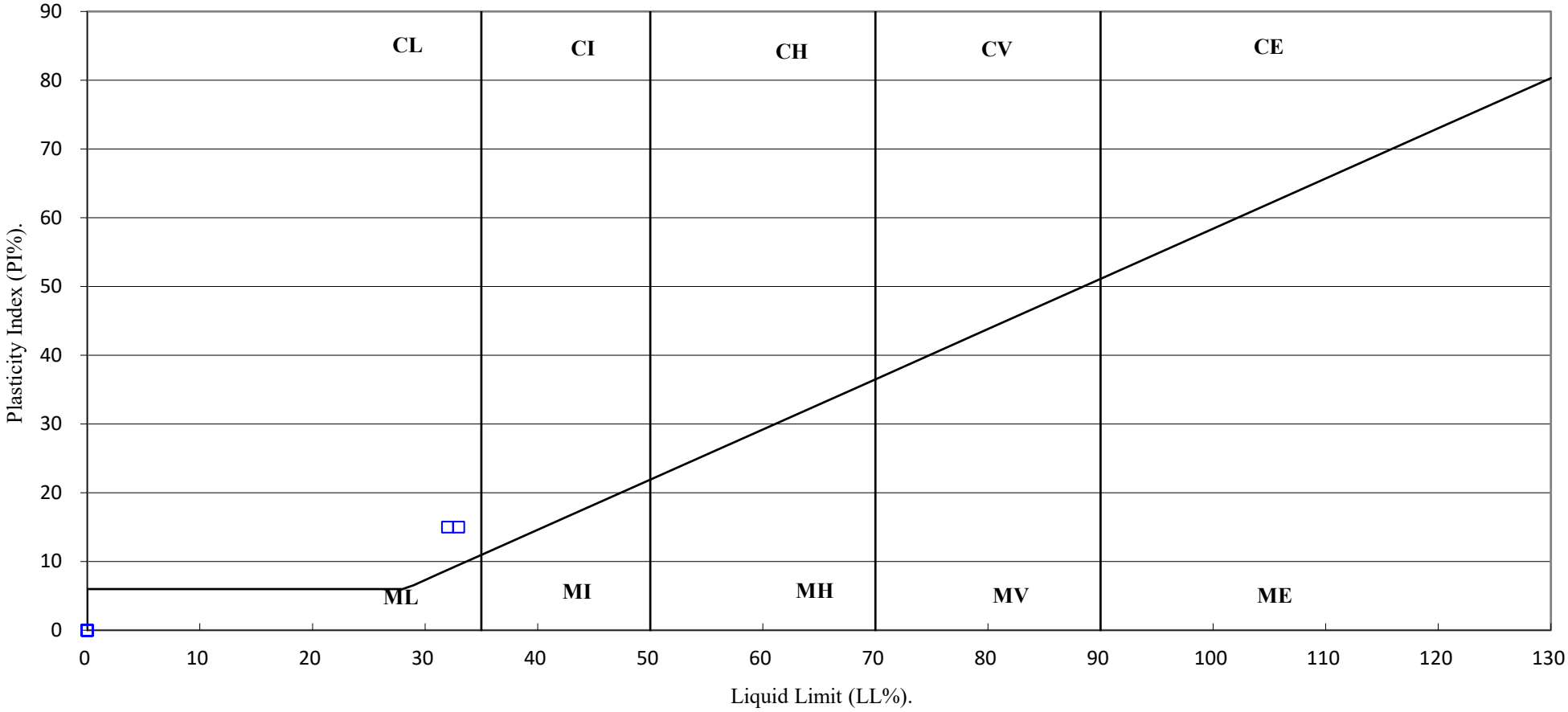
UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Upper Brook Street, Manchester, M13 9QD

Contract No:
PSL24/3666
Client Ref:
7293

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



UKAS TESTING 4043 / PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY	Upper Brook Street, Manchester, M13 9QD	Contract No: PSL24/3666 Client Ref: 7293

SUMMARY OF POINT LOAD TEST RESULTS

ISRM Suggested Methods : 2007

Borehole Number	Depth (m)	Sample Ref	Test Type	Orientation	Dimensions (mm)		Area	D_e^2	D_e	Failure Load (P)		I_s	Corr Fac	I_{s50}	Failure Type	Remarks
				Par / Perp	W	D	(mm2)		(mm)	(Mpa)	(kN)	(MPa)	F	(MPa)		
BH102	6.30	8	A	Perp	87	44	3828	4873.96	69.81	-	0.38	0.08	1.162	0.09	Valid	
BH102	7.10	9	A	Perp	88	31	2728	3473.40	58.94	-	0.30	0.09	1.077	0.09	Valid	
BH102	9.00	11	A	Perp	85	46	3910	4978.37	70.56	-	0.46	0.09	1.168	0.11	Valid	
BH102	11.60	13	A	Perp	88	48	4224	5378.16	73.34	-	0.51	0.09	1.188	0.11	Valid	
BH102	14.70	15	A	Perp	87	49	4263	5427.82	73.67	-	0.36	0.07	1.191	0.08	Valid	
BH102	17.00	17	A	Perp	89	45	4005	5099.32	71.41	-	0.64	0.13	1.174	0.15	Valid	
BH102	18.30	18	A	Perp	88	42	3696	4705.89	68.60	-	0.27	0.06	1.153	0.07	Valid	
BH102	19.50	19	A	Perp	88	58	5104	6498.61	80.61	-	0.36	0.06	1.240	0.07	Valid	
BH105	6.50	6	A	Perp	69	48	3312	4216.97	64.94	-	0.41	0.10	1.125	0.11	Valid	
BH105	6.80	7	A	Perp	87	60	5220	6646.31	81.52	-	0.52	0.08	1.246	0.10	Valid	
BH105	7.80	8	A	Perp	87	53	4611	5870.91	76.62	-	0.45	0.08	1.212	0.09	Valid	
BH105	10.20	10	A	Perp	86	49	4214	5365.43	73.25	-	0.28	0.05	1.187	0.06	Valid	
BH105	11.40	11	A	Perp	86	36	3096	3941.95	62.78	-	0.05	0.01	1.108	0.01	Valid	
BH105	12.80	12	A	Perp	86	57	4902	6241.42	79.00	-	0.16	0.03	1.229	0.03	Valid	
BH105	13.90	13	A	Perp	88	57	5016	6386.57	79.92	-	0.23	0.04	1.235	0.04	Valid	
BH105	14.70	14	A	Perp	86	48	4128	5255.93	72.50	-	0.47	0.09	1.182	0.11	Valid	
BH105	17.20	16	A	Perp	89	36	3204	4079.46	63.87	-	0.29	0.07	1.116	0.08	Valid	
BH105	19.40	18	A	Perp	86	60	5160	6569.92	81.06	-	0.44	0.07	1.243	0.08	Valid	
BH105	20.30	19	A	Perp	87	41	3567	4541.65	67.39	-	0.79	0.17	1.144	0.20	Valid	

Note All testing carried out on samples at as received water content

Par = parallel, Perp = perpendicular, U = Random

A = Axial, D = Diametral, I = Irregular

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Upper Brook Street, Manchester, M13 9QD

Contract No:

PSL24/3666

Client Ref:

7293

SUMMARY OF POINT LOAD TEST RESULTS

ISRM Suggested Methods : 2007

Borehole Number	Depth (m)	Sample Ref	Test Type	Orientation	Dimensions (mm)		D_e^2	D_e	Failure Load		I_s	Corr Fac	I_{s50}	Failure Type	Remarks
				Par / Perp	L	D		(mm)	(Mpa)	(kN)	(MPa)	F	(MPa)		
BH102	9.00	11	D	Par	-	85	7225	85.00	-	0.26	0.036	1.270	0.05	Valid	
BH102	11.60	13	D	Par	-	88	7744	88.00	-	0.27	0.035	1.290	0.04	Valid	
BH102	14.70	15	D	Par	-	87	7569	87.00	-	0.19	0.025	1.283	0.03	Valid	
BH102	17.00	17	D	Par	-	89	7921	89.00	-	0.46	0.058	1.296	0.08	Valid	
BH102	18.30	18	D	Par	-	88	7744	88.00	-	0.31	0.040	1.290	0.05	Valid	
BH102	19.50	19	D	Par	-	88	7744	88.00	-	0.36	0.046	1.290	0.06	Valid	
BH105	6.50	6	D	Par	-	69	4761	69.00	-	0.18	0.038	1.156	0.04	Valid	
BH105	6.80	7	D	Par	-	87	7569	87.00	-	0.28	0.037	1.283	0.05	Valid	
BH105	7.80	8	D	Par	-	87	7569	87.00	-	0.35	0.046	1.283	0.06	Valid	
BH105	10.20	10	D	Par	-	86	7396	86.00	-	0.29	0.039	1.276	0.05	Valid	
BH105	11.40	11	D	Par	-	86	7396	86.00	-	0.19	0.026	1.276	0.03	Valid	
BH105	13.90	13	D	Par	-	88	7744	88.00	-	0.14	0.018	1.290	0.02	Valid	
BH105	14.70	14	D	Par	-	86	7396	86.00	-	0.17	0.023	1.276	0.03	Valid	
BH105	17.20	16	D	Par	-	89	7921	89.00	-	0.33	0.042	1.296	0.05	Valid	
BH105	20.30	19	D	Par	-	87	7569	87.00	-	0.68	0.090	1.283	0.12	Valid	

Note All testing carried out on samples at as received water content

Par = parallel, Perp = perpendicular, U = Random

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Upper Brook Street, Manchester, M13 9QD

Contract No:

PSL24/3666

Client Ref:

7293

SUMMARY OF POINT LOAD TEST RESULTS

ISRM Suggested Methods : 2007

Borehole Number	Depth (m)	Sample Ref	Test Type	Orientation	Dimensions (mm)		Area	D_e^2	D_e	Failure Load (P)		I_s	Corr Fac	I_{s50}	Failure Type	Remarks
				Par / Perp	W	D	(mm2)		(mm)	(Mpa)	(kN)	(MPa)	F	(MPa)		
BH107	4.50	4	A	Perp	87	48	4176	5317.05	72.92	-	0.07	0.01	1.185	0.02	Valid	
BH107	5.50	5	A	Perp	87	54	4698	5981.68	77.34	-	0.47	0.08	1.217	0.10	Valid	
BH107	7.00	6	A	Perp	87	49	4263	5427.82	73.67	-	0.20	0.04	1.191	0.04	Valid	
BH107	7.80	7	A	Perp	88	63	5544	7058.84	84.02	-	0.62	0.09	1.263	0.11	Valid	
BH107	9.00	8	A	Perp	88	48	4224	5378.16	73.34	-	0.42	0.08	1.188	0.09	Valid	
BH107	10.30	9	A	Perp	88	51	4488	5714.30	75.59	-	0.37	0.06	1.204	0.08	Valid	
BH107	12.40	11	A	Perp	81	46	3726	4744.09	68.88	-	0.52	0.11	1.155	0.13	Valid	
BH107	14.90	13	A	Perp	87	58	5046	6424.77	80.15	-	0.55	0.09	1.237	0.11	Valid	
BH107	16.35	15	A	Perp	89	60	5340	6799.10	82.46	-	0.96	0.14	1.252	0.18	Valid	
BH107	17.30	16	A	Perp	87	55	4785	6092.45	78.05	-	0.94	0.15	1.222	0.19	Valid	

Note All testing carried out on samples at as received water content

Par = parallel, Perp = perpendicular, U = Random

A = Axial, D = Diametral, I = Irregular

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Upper Brook Street, Manchester, M13 9QD

Contract No:

PSL24/3666

Client Ref:

7293

SUMMARY OF POINT LOAD TEST RESULTS

ISRM Suggested Methods : 2007

Borehole Number	Depth (m)	Sample Ref	Test Type	Orientation	Dimensions (mm)		D_e^2	D_e	Failure Load		I_s	Corr Fac	I_{s50}	Failure Type	Remarks
				Par / Perp	L	D		(mm)	(Mpa)	(kN)	(MPa)	F	(MPa)		
BH107	4.50	4	D	Par	-	87	7569	87.00	-	0.06	0.008	1.283	0.01	Valid	
BH107	5.50	5	D	Par	-	87	7569	87.00	-	0.25	0.033	1.283	0.04	Valid	
BH107	7.00	6	D	Par	-	87	7569	87.00	-	0.09	0.012	1.283	0.02	Valid	
BH107	7.80	7	D	Par	-	88	7744	88.00	-	0.24	0.031	1.290	0.04	Valid	
BH107	9.00	8	D	Par	-	88	7744	88.00	-	0.19	0.025	1.290	0.03	Valid	
BH107	10.30	9	D	Par	-	88	7744	88.00	-	0.25	0.032	1.290	0.04	Valid	
BH107	12.40	11	D	Par	-	81	6561	81.00	-	0.20	0.030	1.242	0.04	Valid	
BH107	16.35	15	D	Par	-	89	7921	89.00	-	0.23	0.029	1.296	0.04	Valid	

Note All testing carried out on samples at as received water content

Par = parallel, Perp = perpendicular, U = Random

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Upper Brook Street, Manchester, M13 9QD

Contract No:

PSL24/3666

Client Ref:

7293

UNIAXIAL COMPRESSIVE STRENGTH

ISRM Suggested Methods - Rock Characterization Testing and Monitoring 1974 - 2006

Borehole Number:	**BH102**	**Top Depth (m):**	**8.10**
Sample Number:	**10**	**Base Depth (m):**	**-**
Sample Type:	**U**	**Sample Date:**	**-**
Storage Condition:	**Sealed in plastic**	**Date of Receipt**	**23/05/2024**
Sample Description:	**Brown SANDSTONE.**		

Specimen Details/Conditions	
Diameter - mm:	87.66
Height - mm:	129.46
Water Content - %:	8.3
Sample Mass - g:	1635.1
Bulk Density - Mg/m^3:	2.09
Dry Density - Mg/m^3:	1.93
Height Ratio: * Sample does not comply with H:D ratio	1.5
Degree of Saturation - %:	48
Assumed Specific Gravity for Degree of Saturation:	2.90

Test Result	
Load Frame/Machine:	CM1/Controls
Date of test:	17/06/2024
Test Duration - mins:	00:10
Orientation:	Unknown
Stress Rate - MPa/s:	0.54
Strain at Failure - kN:	32.80
Unconfined Compressive Strength - Mpa:	5.43
Mode of Failure:	Vertical Shear

Remarks: -

UNIAXIAL COMPRESSIVE STRENGTH

ISRM Suggested Methods - Rock Characterization Testing and Monitoring 1974 - 2006

Borehole Number:	**BH102**	**Top Depth (m):**	**10.60**
Sample Number:	**12**	**Base Depth (m):**	**-**
Sample Type:	**U**	**Sample Date:**	**-**
Storage Condition:	**Sealed in plastic**	**Date of Receipt**	**23/05/2024**
Sample Description:	**Brown SANDSTONE.**		

Specimen Details/Conditions	
Diameter - mm:	87.57
Height - mm:	130.34
Water Content - %:	5.3
Sample Mass - g:	1667.5
Bulk Density - Mg/m^3:	2.12
Dry Density - Mg/m^3:	2.02
Height Ratio: * Sample does not comply with H:D ratio	1.5
Degree of Saturation - %:	35
Assumed Specific Gravity for Degree of Saturation:	2.90

Test Result	
Load Frame/Machine:	CM1/Controls
Date of test:	17/06/2024
Test Duration - mins:	00:10
Orientation:	Unknown
Stress Rate - MPa/s:	0.64
Strain at Failure - kN:	38.70
Unconfined Compressive Strength - Mpa:	6.43
Mode of Failure:	Vertical Shear

Remarks: -

UNIAXIAL COMPRESSIVE STRENGTH

ISRM Suggested Methods - Rock Characterization Testing and Monitoring 1974 - 2006

Borehole Number:	**BH102**	**Top Depth (m):**	**13.00**
Sample Number:	**14**	**Base Depth (m):**	**-**
Sample Type:	**U**	**Sample Date:**	**-**
Storage Condition:	**Sealed in plastic**	**Date of Receipt**	**23/05/2024**
Sample Description:	**Brown SANDSTONE.**		

Specimen Details/Conditions	
Diameter - mm:	88.73
Height - mm:	132.33
Water Content - %:	6.5
Sample Mass - g:	1779.9
Bulk Density - Mg/m^3:	2.18
Dry Density - Mg/m^3:	2.04
Height Ratio: * Sample does not comply with H:D ratio	1.5
Degree of Saturation - %:	45
Assumed Specific Gravity for Degree of Saturation:	2.90

Test Result	
Load Frame/Machine:	CM1/Controls
Date of test:	17/06/2024
Test Duration - mins:	00:15
Orientation:	Unknown
Stress Rate - MPa/s:	0.79
Strain at Failure - kN:	73.20
Unconfined Compressive Strength - Mpa:	11.8
Mode of Failure:	Vertical Shear

Remarks: -

UNIAXIAL COMPRESSIVE STRENGTH

ISRM Suggested Methods - Rock Characterization Testing and Monitoring 1974 - 2006

Borehole Number:	**BH102**	**Top Depth (m):**	**16.00**
Sample Number:	**16**	**Base Depth (m):**	**-**
Sample Type:	**U**	**Sample Date:**	**-**
Storage Condition:	**Sealed in plastic**	**Date of Receipt**	**23/05/2024**
Sample Description:	**Brown SANDSTONE.**		

Specimen Details/Conditions	
Diameter - mm:	88.67
Height - mm:	132.68
Water Content - %:	7.8
Sample Mass - g:	1702.2
Bulk Density - Mg/m^3:	2.08
Dry Density - Mg/m^3:	1.93
Height Ratio: * Sample does not comply with H:D ratio	1.5
Degree of Saturation - %:	45
Assumed Specific Gravity for Degree of Saturation:	2.90

Test Result	
Load Frame/Machine:	CM1/Controls
Date of test:	17/06/2024
Test Duration - mins:	00:10
Orientation:	Unknown
Stress Rate - MPa/s:	0.42
Strain at Failure - kN:	26.20
Unconfined Compressive Strength - Mpa:	4.24
Mode of Failure:	Vertical Shear

Remarks: -

UNIAXIAL COMPRESSIVE STRENGTH

ISRM Suggested Methods - Rock Characterization Testing and Monitoring 1974 - 2006

Borehole Number:	**BH105**	**Top Depth (m):**	**9.50**
Sample Number:	**9**	**Base Depth (m):**	**-**
Sample Type:	**U**	**Sample Date:**	**-**
Storage Condition:	**Sealed in plastic**	**Date of Receipt**	**23/05/2024**
Sample Description:	**Brown SANDSTONE.**		

Specimen Details/Conditions	
Diameter - mm:	84.58
Height - mm:	126.29
Water Content - %:	9.0
Sample Mass - g:	1549.4
Bulk Density - Mg/m^3:	2.18
Dry Density - Mg/m^3:	2.00
Height Ratio: * Sample does not comply with H:D ratio	1.5
Degree of Saturation - %:	58
Assumed Specific Gravity for Degree of Saturation:	2.90

Test Result	
Load Frame/Machine:	CM1/Controls
Date of test:	17/06/2024
Test Duration - mins:	00:13
Orientation:	Unknown
Stress Rate - MPa/s:	0.83
Strain at Failure - kN:	60.70
Unconfined Compressive Strength - Mpa:	10.8
Mode of Failure:	Vertical Shear

Remarks: -

UNIAXIAL COMPRESSIVE STRENGTH

ISRM Suggested Methods - Rock Characterization Testing and Monitoring 1974 - 2006

Borehole Number:	**BH105**	**Top Depth (m):**	**15.50**
Sample Number:	**15**	**Base Depth (m):**	**-**
Sample Type:	**U**	**Sample Date:**	**-**
Storage Condition:	**Sealed in plastic**	**Date of Receipt**	**23/05/2024**
Sample Description:	**Brown SANDSTONE.**		

Specimen Details/Conditions	
Diameter - mm:	87.12
Height - mm:	132.33
Water Content - %:	7.3
Sample Mass - g:	1759.4
Bulk Density - Mg/m^3:	2.23
Dry Density - Mg/m^3:	2.08
Height Ratio: * Sample does not comply with H:D ratio	1.5
Degree of Saturation - %:	54
Assumed Specific Gravity for Degree of Saturation:	2.90

Test Result	
Load Frame/Machine:	CM1/Controls
Date of test:	17/06/2024
Test Duration - mins:	00:14
Orientation:	Unknown
Stress Rate - MPa/s:	0.81
Strain at Failure - kN:	67.20
Unconfined Compressive Strength - Mpa:	11.3
Mode of Failure:	Vertical Shear

Remarks: -

UNIAXIAL COMPRESSIVE STRENGTH

ISRM Suggested Methods - Rock Characterization Testing and Monitoring 1974 - 2006

Borehole Number:	**BH105**	**Top Depth (m):**	**18.10**
Sample Number:	**17**	**Base Depth (m):**	**-**
Sample Type:	**U**	**Sample Date:**	**-**
Storage Condition:	**Sealed in plastic**	**Date of Receipt**	**23/05/2024**
Sample Description:	**Brown SANDSTONE.**		

Specimen Details/Conditions	
Diameter - mm:	85.60
Height - mm:	128.01
Water Content - %:	7.9
Sample Mass - g:	1609.7
Bulk Density - Mg/m^3:	2.19
Dry Density - Mg/m^3:	2.03
Height Ratio: * Sample does not comply with H:D ratio	1.5
Degree of Saturation - %:	53
Assumed Specific Gravity for Degree of Saturation:	2.90

Test Result	
Load Frame/Machine:	CM1/Controls
Date of test:	17/06/2024
Test Duration - mins:	00:13
Orientation:	Unknown
Stress Rate - MPa/s:	0.78
Strain at Failure - kN:	58.40
Unconfined Compressive Strength - Mpa:	10.1
Mode of Failure:	Vertical Shear

Remarks: -

UNIAXIAL COMPRESSIVE STRENGTH

ISRM Suggested Methods - Rock Characterization Testing and Monitoring 1974 - 2006

Borehole Number:	**BH107**	**Top Depth (m):**	**11.60**
Sample Number:	**10**	**Base Depth (m):**	**-**
Sample Type:	**U**	**Sample Date:**	**-**
Storage Condition:	**Sealed in plastic**	**Date of Receipt**	**23/05/2024**
Sample Description:	**Brown SANDSTONE.**		

Specimen Details/Conditions	
Diameter - mm:	88.46
Height - mm:	132.39
Water Content - %:	7.0
Sample Mass - g:	1782.6
Bulk Density - Mg/m^3:	2.19
Dry Density - Mg/m^3:	2.05
Height Ratio: * Sample does not comply with H:D ratio	1.5
Degree of Saturation - %:	49
Assumed Specific Gravity for Degree of Saturation:	2.90

Test Result	
Load Frame/Machine:	CM1/Controls
Date of test:	17/06/2024
Test Duration - mins:	00:15
Orientation:	Unknown
Stress Rate - MPa/s:	0.76
Strain at Failure - kN:	70.30
Unconfined Compressive Strength - Mpa:	11.4
Mode of Failure:	Vertical Shear

Remarks: -

UNIAXIAL COMPRESSIVE STRENGTH

ISRM Suggested Methods - Rock Characterization Testing and Monitoring 1974 - 2006

Borehole Number:	**BH107**	**Top Depth (m):**	**13.90**
Sample Number:	**12**	**Base Depth (m):**	**-**
Sample Type:	**U**	**Sample Date:**	**-**
Storage Condition:	**Sealed in plastic**	**Date of Receipt**	**23/05/2024**
Sample Description:	**Brown SANDSTONE.**		

Specimen Details/Conditions	
Diameter - mm:	87.62
Height - mm:	130.14
Water Content - %:	7.6
Sample Mass - g:	1654.9
Bulk Density - Mg/m^3:	2.11
Dry Density - Mg/m^3:	1.96
Height Ratio: * Sample does not comply with H:D ratio	1.5
Degree of Saturation - %:	46
Assumed Specific Gravity for Degree of Saturation:	2.90

Test Result	
Load Frame/Machine:	CM1/Controls
Date of test:	17/06/2024
Test Duration - mins:	00:11
Orientation:	Unknown
Stress Rate - MPa/s:	0.67
Strain at Failure - kN:	44.30
Unconfined Compressive Strength - Mpa:	7.35
Mode of Failure:	Vertical Shear

Remarks: -

UNIAXIAL COMPRESSIVE STRENGTH

ISRM Suggested Methods - Rock Characterization Testing and Monitoring 1974 - 2006

Borehole Number:	**BH107**	**Top Depth (m):**	**15.90**
Sample Number:	**14**	**Base Depth (m):**	**-**
Sample Type:	**U**	**Sample Date:**	**-**
Storage Condition:	**Sealed in plastic**	**Date of Receipt**	**23/05/2024**
Sample Description:	**Brown SANDSTONE.**		

Specimen Details/Conditions	
Diameter - mm:	88.35
Height - mm:	131.91
Water Content - %:	9.5
Sample Mass - g:	1711.2
Bulk Density - Mg/m^3:	2.12
Dry Density - Mg/m^3:	1.93
Height Ratio: * Sample does not comply with H:D ratio	1.5
Degree of Saturation - %:	55
Assumed Specific Gravity for Degree of Saturation:	2.90

Test Result	
Load Frame/Machine:	CM1/Controls
Date of test:	17/06/2024
Test Duration - mins:	00:16
Orientation:	Unknown
Stress Rate - MPa/s:	0.78
Strain at Failure - kN:	76.90
Unconfined Compressive Strength - Mpa:	12.5
Mode of Failure:	Vertical Shear

Remarks: -

4161

CTS Group
7 - 11 Harding Street
Leicester
LE1 4DH

Professional Soils Laboratory
5/7 Hexthorpe Road
Hexthorpe
Doncaster
DN4 0AR

Analytical Test Report: L24/05076/PSL - 24-46001

Your Project Reference:	**PSL24/3666 7293**		
Your Order Number:	PSL24/3666	Samples Received / Instructed:	05/06/2024 / 05/06/2024
Report Issue Number:	1	Sample Tested:	05/06 to 11/06/2024
Samples Analysed:	13 soil samples	Report issued:	11/06/2024

[redacted]

Notes:

General

Please refer to Methodologies page for details pertaining to the analytical methods undertaken.

Samples will be retained for 14 days after issue of this report unless otherwise requested.

Moisture Content was determined in accordance with CTS method statement MS - CL - Sample Prep, oven dried at <30˚C.

Moisture Content is reported as a percentage of the dry mass of soil, this calculation is in accordance with BS1377, Part 2, 1990, Clause 3.2

Where specification limits are included these are for guidance only. Where a measured value has been highlighted this is not implying acceptance or failure and certainty of measurement values have not been taken into account.

Uncertainty of measurement values are available on request.

Samples were supplied by customer, results apply to the samples as received.

Deviating Samples

On receipt samples are compared against our sample holding and handling protocols, where any deviations have been noted these are reported on our deviating sample page (if present)

Accreditation Key

UKAS = UKAS Accreditation, MCERTS = MCERTS Accreditation, u = Unaccredited, subUKAS - Subcontracted to a laboratory UKAS accredited for this test, subMCERTS - Subcontracted to a laboratory MCERTS accredited for this test

MCERTS Accreditation only covers the SAND, CLAY and LOAM matrices

Date of Issue: 29.05.2024

Issued by: J. Gane

Issue No: 4

Rev No: 10

4161

CTS Group
7 - 11 Harding Street
Leicester
LE1 4DH

L24/05076/PSL - 24-46001

Project Reference - PSL24/3666 7293

Analytical Test Results - Chemical Analysis

Lab Reference			370023	370024	370025	370026	370027	370028
Client Sample ID			-	-	-	-	-	-
Client Sample Location			BH102	BH102	BH102	BH102	BH103	BH105
Client Sample Type			D	D	U	U	D	D
Client Sample Number			5	7	10	15	2	4
Depth - Top (m)			2.00	4.00	8.10	14.70	2.00	2.50
Depth - Bottom (m)			2.00	4.00	8.10	14.70	2.00	2.50
Date of Sampling			-	-	-	-	-	-
Time of Sampling			-	-	-	-	-	-
Sample Matrix			Sand	Sand	Sand	Sand	Sand	Sand
Determinant	**Units**	**Accreditation**						
Water soluble sulphate (as SO_4)	(mg/l)	u	310	52	12	< 10	32	42
pH Value	pH Units	MCERTS	7.4	8.6	8.8	8.1	8.5	9.2

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Leicester
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L24/05076/PSL - 24-46001

Project Reference - PSL24/3666 7293

Analytical Test Results - Chemical Analysis

Lab Reference			370029	370030	370031	370032	370033	370034
Client Sample ID			-	-	-	-	-	-
Client Sample Location			BH105	BH105	BH105	BH106	BH107	BH107
Client Sample Type			U	U	U	D	D	U
Client Sample Number			7	11	15	4	3	10
Depth - Top (m)			6.80	11.4	15.50	1.50	2.00	11.60
Depth - Bottom (m)			6.80	11.40	15.50	1.50	2.00	11.60
Date of Sampling			-	-	-	-	-	-
Time of Sampling			-	-	-	-	-	-
Sample Matrix			Sand	Sand	Sand	Sand	Sand	Sand
Determinant	**Units**	**Accreditation**						
Water soluble sulphate (as SO_4)	(mg/l)	u	< 10	< 10	24	14	76	< 10
pH Value	pH Units	MCERTS	8.4	8.1	8.6	8.5	8.1	8.1

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7 - 11 Harding Street
Leicester
LE1 4DH

L24/05076/PSL - 24-46001

Project Reference - PSL24/3666 7293

Analytical Test Results - Chemical Analysis

Lab Reference			**370035**
Client Sample ID			-
Client Sample Location			BH107
Client Sample Type			U
Client Sample Number			15
Depth - Top (m)			16.35
Depth - Bottom (m)			16.35
Date of Sampling			-
Time of Sampling			-
Sample Matrix			Sand
Determinant	**Units**	**Accreditation**	
Water soluble sulphate (as SO_4)	(mg/l)	u	33
pH Value	pH Units	MCERTS	8.0

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CTS Group
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Leicester
LE1 4DH

L24/05076/PSL - 24-46001

Project Reference - PSL24/3666 7293

Sample Descriptions

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Description	Moisture Content (%)	Stone Content (%)	Passing 2mm test sieve (%)
370023	-	BH102	D	5	Made Ground- brown gravelly slightly clayey silty sand with occasional slag	-	-	51
370024	-	BH102	D	7	Reddish brown coarse sand	-	-	92
370025	-	BH102	U	10	Reddish brown coarse sand	-	-	88
370026	-	BH102	U	15	Reddish brown coarse slightly clayey sand	-	-	100
370027	-	BH103	D	2	Brown slightly gravelly slightly clayey silty sand	-	-	68
370028	-	BH105	D	4	Brown gravelly slightly clayey silty sand	-	-	80
370029	-	BH105	U	7	Reddish brown coarse sand	-	-	100
370030	-	BH105	U	11	Reddish brown coarse sand	-	-	100
370031	-	BH105	U	15	Reddish brown coarse sand	-	-	100
370032	-	BH106	D	4	Made Ground- brown slightly gravelly clayey silty sand with occasional concrete	-	-	64
370033	-	BH107	D	3	Brown slightly gravelly clayey silty sand	-	-	64
370034	-	BH107	U	10	Reddish brown coarse sand	-	-	100
370035	-	BH107	U	15	Reddish brown coarse sand	-	-	100

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Leicester
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L24/05076/PSL - 24-46001

Project Reference - PSL24/3666 7293

Sample Comments

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Comments
370023	-	BH102	D	5	
370024	-	BH102	D	7	
370025	-	BH102	U	10	
370026	-	BH102	U	15	
370027	-	BH103	D	2	
370028	-	BH105	D	4	
370029	-	BH105	U	7	
370030	-	BH105	U	11	
370031	-	BH105	U	15	
370032	-	BH106	D	4	
370033	-	BH107	D	3	
370034	-	BH107	U	10	
370035	-	BH107	U	15	

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L24/05076/PSL - 24-46001

Project Reference - PSL24/3666 7293

Analysis Methodologies

Test Code	Test Name / Reference	Sample condition for analysis	Sample Preperation	Test Details
ANIONSS	MS - CL - Anions by Aquakem (2:1Extract)	Oven dried	Passing 2mm test sieve	Determination of Anions (inc Sulphate, chloride etc.) in soils by Aquakem. Analysis is based on a 2:1 water to soil extraction ratio
PHS	MS - CL - pH in Soils	As received	Passing 10mm test sieve	Determination of pH in soils using a pH probe (using a 1:3 soil to water extraction)
SAMPLEPREP	MS - CL - Sample Preparation	-	-	Preparation of samples (including determination of moisture content) to allow for subsequent analysis

L24/05076/PSL - 24-46001

Project Reference - PSL24/3666 7293

Sample Deviations

Deviations are listed below against each sample and associated test method, where deviation(s) are noted it means data may not be representative of the sample at the time of sampling and it is possible that results provided may be compromised.

Observations on receipt

A - No date of sampling provided
C - Received in inappropriate container
H - Contains headspace
T - Temperature on receipt exceeds storage temperature
R - Sample(s) received with less than 96 hours for testing to commence/complete, any result formally classed as deviating will be marked with an X against the applicable test (i.e. RX)

Observations whilst in laboratory

X - Exceeds sampling to extraction or analysis timescales

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Test	Deviations
370023	-	BH102	D	5		A
370024	-	BH102	D	7		A
370025	-	BH102	U	10		A
370026	-	BH102	U	15		A
370027	-	BH103	D	2		A
370028	-	BH105	D	4		A
370029	-	BH105	U	7		A
370030	-	BH105	U	11		A
370031	-	BH105	U	15		A
370032	-	BH106	D	4		A
370033	-	BH107	D	3		A
370034	-	BH107	U	10		A
370035	-	BH107	U	15		A

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Project Name:	Upper Brook Street, Manchester M13 9QD
Project No.:	7293

Trial Pit No.	TP101
Test No.	1

Time	Elpsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
16/05/2024 13:38	0	1.79	1790
	9	2.44	2440
	14	2.64	2640
	17	2.68	2680
	19	2.74	2740

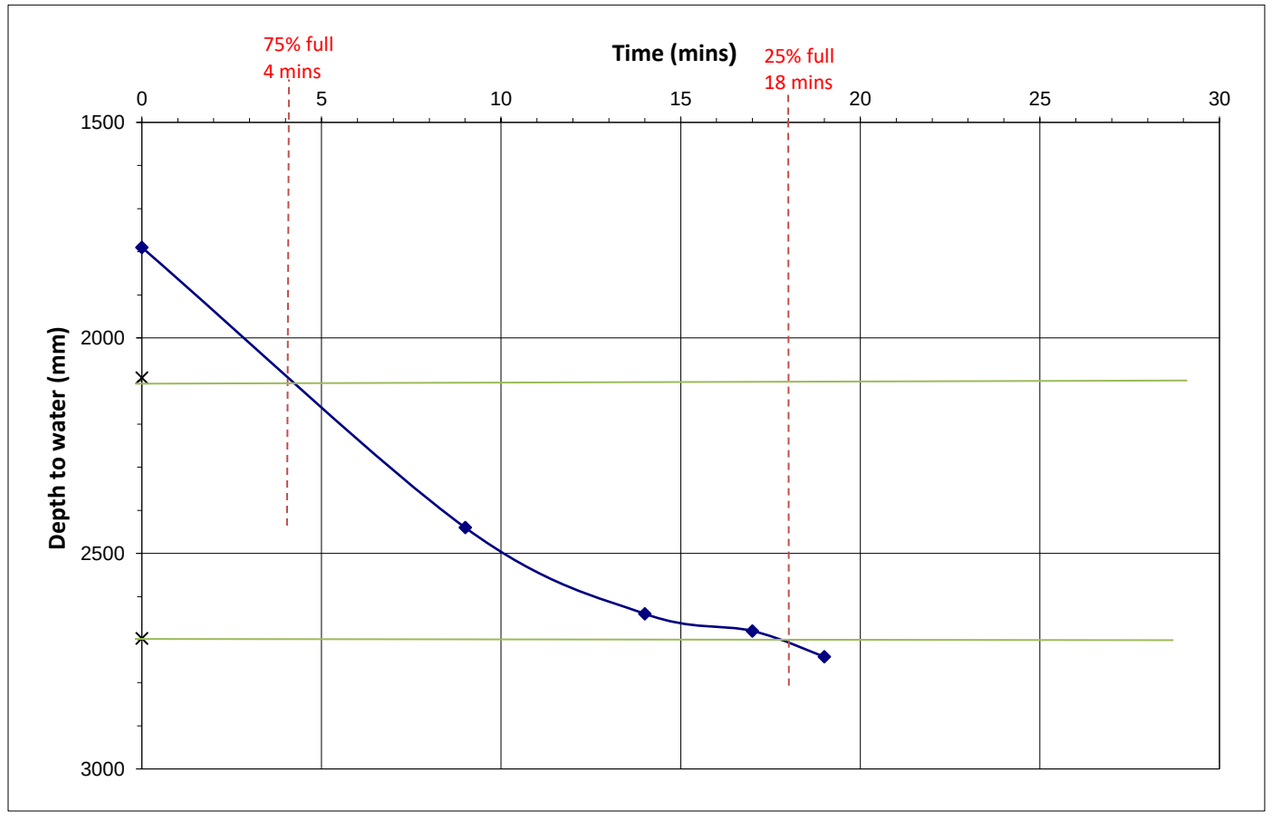
SOAKAWAY TRIAL PIT		
Dimensions	**(m)**	**(mm)**
Length	2.2	2200.00
Width	0.6	600.00
Depth	3.0	3000.00

Effective Depth	**mm**	**m**
25%	2697.5	2.70
50%	2395.0	2.40
75%	2092.5	2.09

Depth at start of test (mm)	1790.00
Depth at end of test (mm)	2740.00

Base area of pit	1.32
a_{p50} - 50% int. surface area	4.71
V_{p75-25} - Volume 75 - 25%	0.80

Read from the graph:	
$t_{p\ 75}$ (min)	4.0
$t_{p\ 25}$ (min)	18.0



Soil infiltration rate, f, (m/s)	**6.06E-05**	**(pit filled with stone)**

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Project Name:	Upper Brook Street, Manchester M13 9QD
Project No.:	7293

Trial Pit No.	TP101
Test No.	2

Time	Elpsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
16/05/2024 14:01	0	1.66	1660
	7	2.20	2200
	13	2.41	2410
	20	2.57	2570
	25	2.70	2700

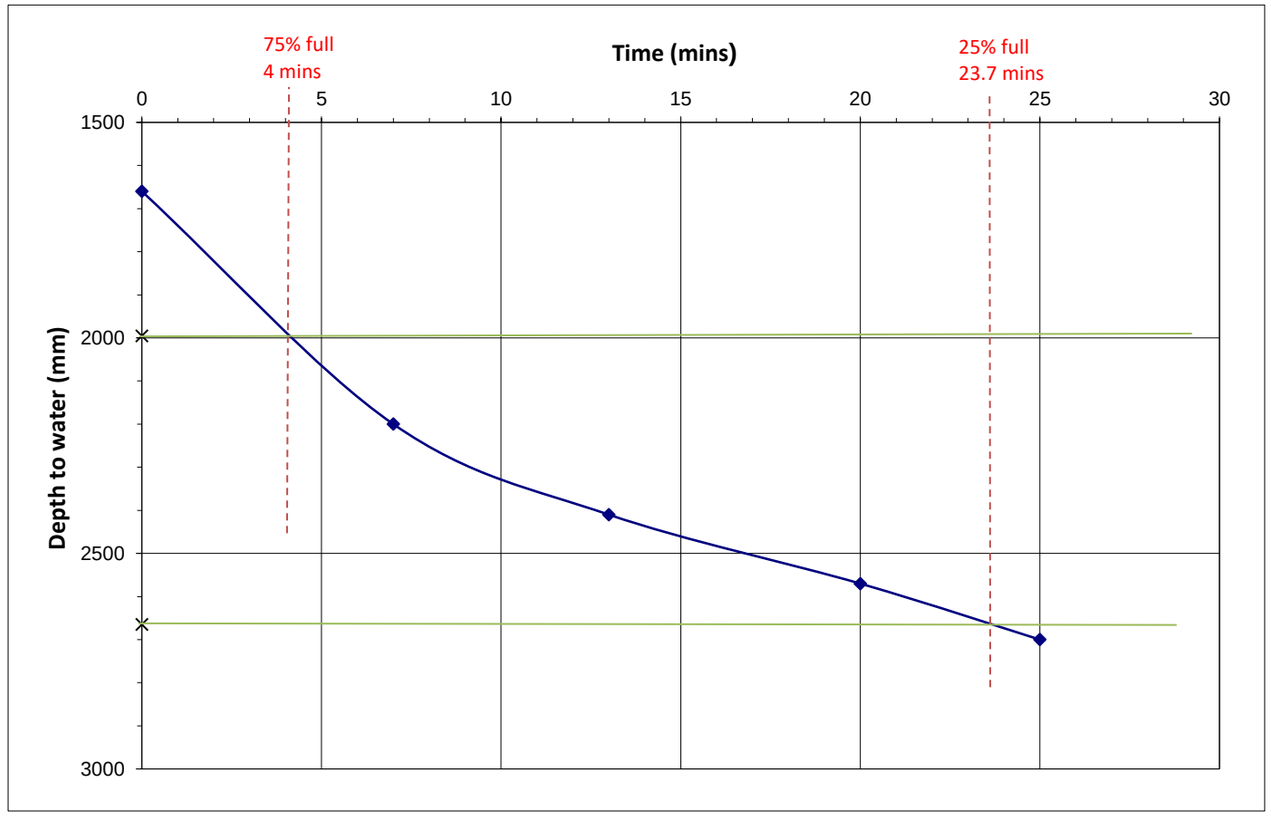
SOAKAWAY TRIAL PIT		
Dimensions	**(m)**	**(mm)**
Length	2.2	2200.00
Width	0.6	600.00
Depth	3.0	3000.00

Effective Depth	**mm**	**m**
25%	2665.0	2.67
50%	2330.0	2.33
75%	1995.0	2.00

Depth at start of test (mm)	1660.00
Depth at end of test (mm)	2700.00

Base area of pit	1.32
a_{p50} - 50% int. surface area	5.07
V_{p75-25} - Volume 75 - 25%	0.88

Read from the graph:	
$t_{p\,75}$ (min)	4.0
$t_{p\,25}$ (min)	23.7



Soil infiltration rate, f, (m/s)	**4.43E-05**	**(pit filled with stone)**

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Project Name:	Upper Brook Street, Manchester M13 9QD
Project No.:	7293

Trial Pit No.	TP101
Test No.	3

Time	Elpsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
16/05/2024 14:30	0	1.86	1860
	5	2.15	2150
	10	2.37	2370
	18	2.52	2520
	25	2.66	2660
	31	2.72	2720

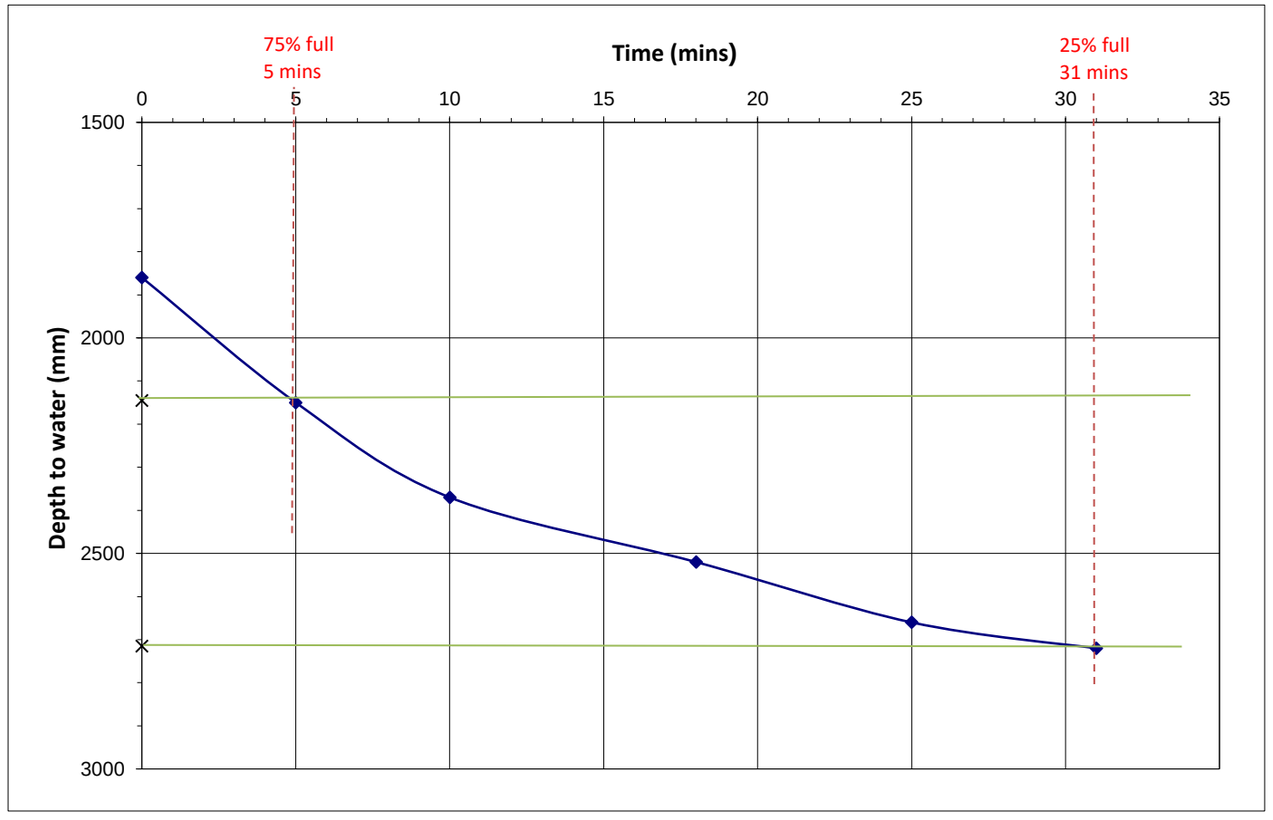
SOAKAWAY TRIAL PIT		
Dimensions	**(m)**	**(mm)**
Length	2.2	2200.00
Width	0.6	600.00
Depth	3.0	3000.00

Effective Depth	**mm**	**m**
25%	2715.0	2.72
50%	2430.0	2.43
75%	2145.0	2.15

Depth at start of test (mm)	1860.00
Depth at end of test (mm)	2720.00

Base area of pit	1.32
a_{p50} - 50% int. surface area	4.51
$V_{p75\text{-}25}$ - Volume 75 - 25%	0.75

Read from the graph:	
$t_{p\,75}$ (min)	5.0
$t_{p\,25}$ (min)	31.0



Soil infiltration rate, f, (m/s)	**3.21E-05**	**(pit filled with stone)**

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Project Name:	Upper Brook Street, Manchester M13 9QD
Project No.:	7293

Trial Pit No.	TP102
Test No.	1

Time	Elpsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
16/05/2024 09:54	0	1.75	1750
	2	2.00	2000
	3	2.12	2120
	6	2.24	2240
	9	2.36	2360
	11	2.43	2430
	13	2.47	2470
	19	2.56	2560

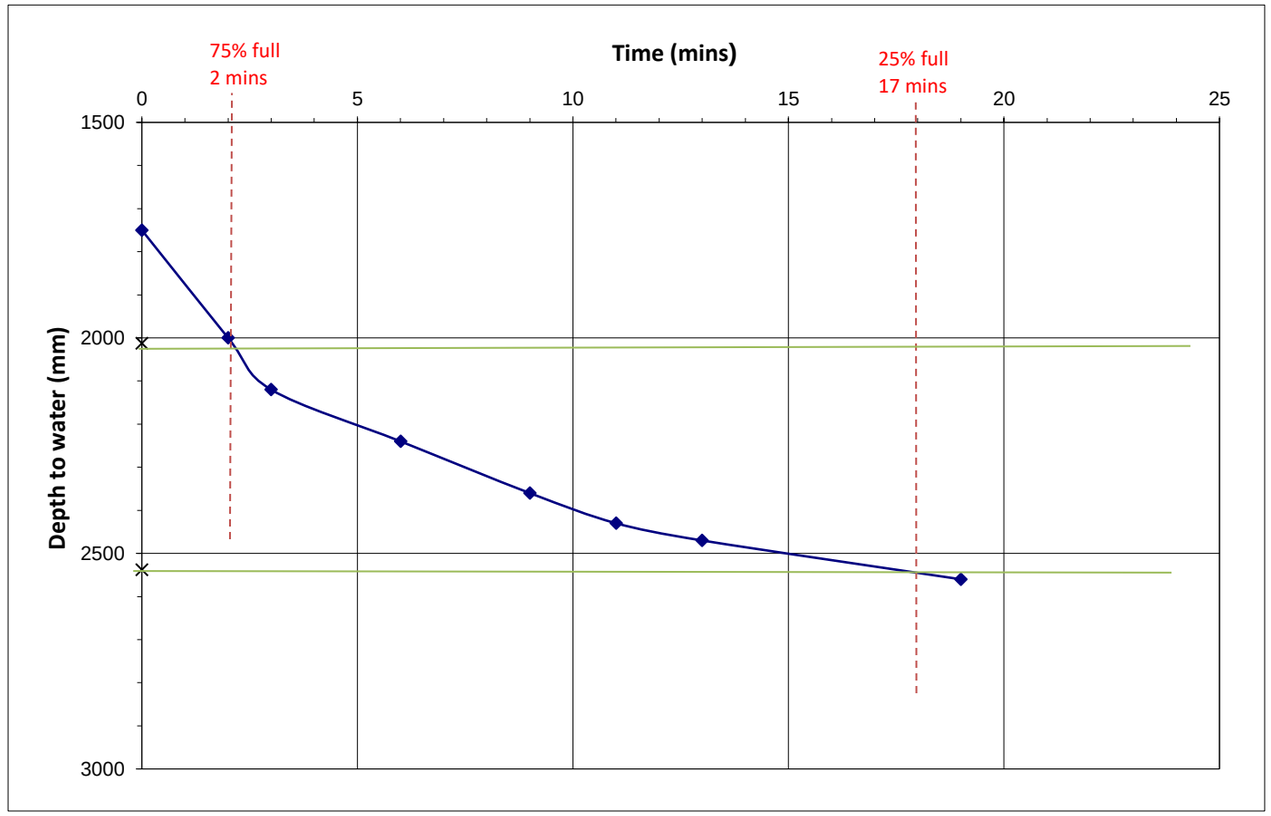
SOAKAWAY TRIAL PIT		
Dimensions	**(m)**	**(mm)**
Length	2.2	2200.00
Width	0.6	600.00
Depth	2.8	2800.00

Effective Depth	**mm**	**m**
25%	2537.5	2.54
50%	2275.0	2.28
75%	2012.5	2.01

Depth at start of test (mm)	1750.00
Depth at end of test (mm)	2560.00

Base area of pit	1.32
a_{p50} - 50% int. surface area	4.26
V_{p75-25} - Volume 75 - 25%	0.69

Read from the graph:	
$t_{p\ 75}$ (min)	2.0
$t_{p\ 25}$ (min)	17.0



Soil infiltration rate, f, (m/s)	**5.42E-05**	**(pit filled with stone)**

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Project Name:	Upper Brook Street, Manchester M13 9QD
Project No.:	7293

Trial Pit No.	TP102
Test No.	2

Time	Elpsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
16/05/2024 10:11	0	1.49	1490
	1	1.72	1720
	2	1.86	1860
	4	2.01	2010
	7	2.23	2230
	15	2.41	2410
	21	2.48	2480

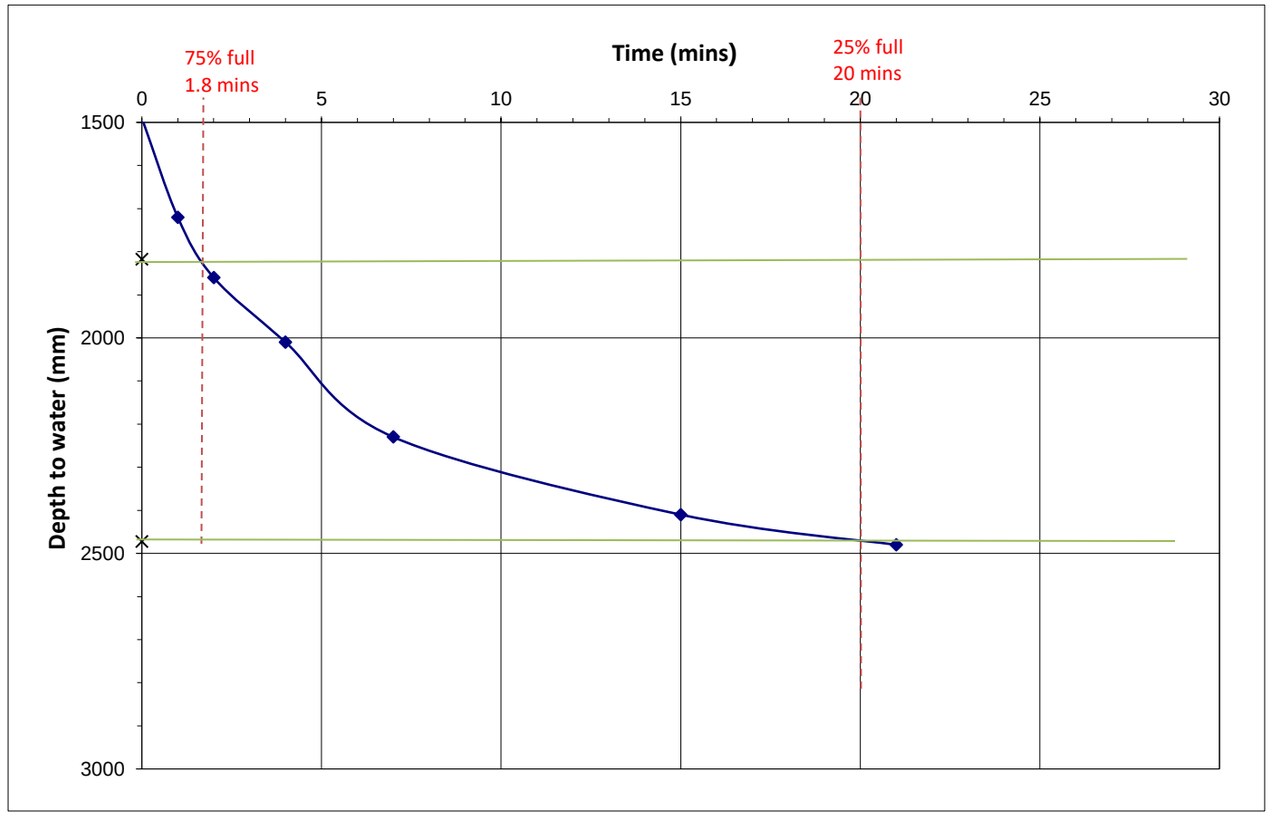
SOAKAWAY TRIAL PIT		
Dimensions	**(m)**	**(mm)**
Length	2.2	2200.00
Width	0.6	600.00
Depth	2.8	2800.00

Effective Depth	**mm**	**m**
25%	2472.5	2.47
50%	2145.0	2.15
75%	1817.5	1.82

Depth at start of test (mm)	1490.00
Depth at end of test (mm)	2480.00

Base area of pit	1.32
a_{p50} - 50% int. surface area	4.99
$V_{p75\text{-}25}$ - Volume 75 - 25%	0.86

Read from the graph:	
$t_{p\ 75}$ (min)	1.8
$t_{p\ 25}$ (min)	20.0



Soil infiltration rate, f, (m/s)	**4.76E-05**	**(pit filled with stone)**

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Project Name:	Upper Brook Street, Manchester M13 9QD
Project No.:	7293

Trial Pit No.	TP102
Test No.	3

Time	Elpsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
16/05/2024 11:13	0	1.59	1590
	2	1.85	1850
	7	2.14	2140
	12	2.33	2330
	22	2.54	2540

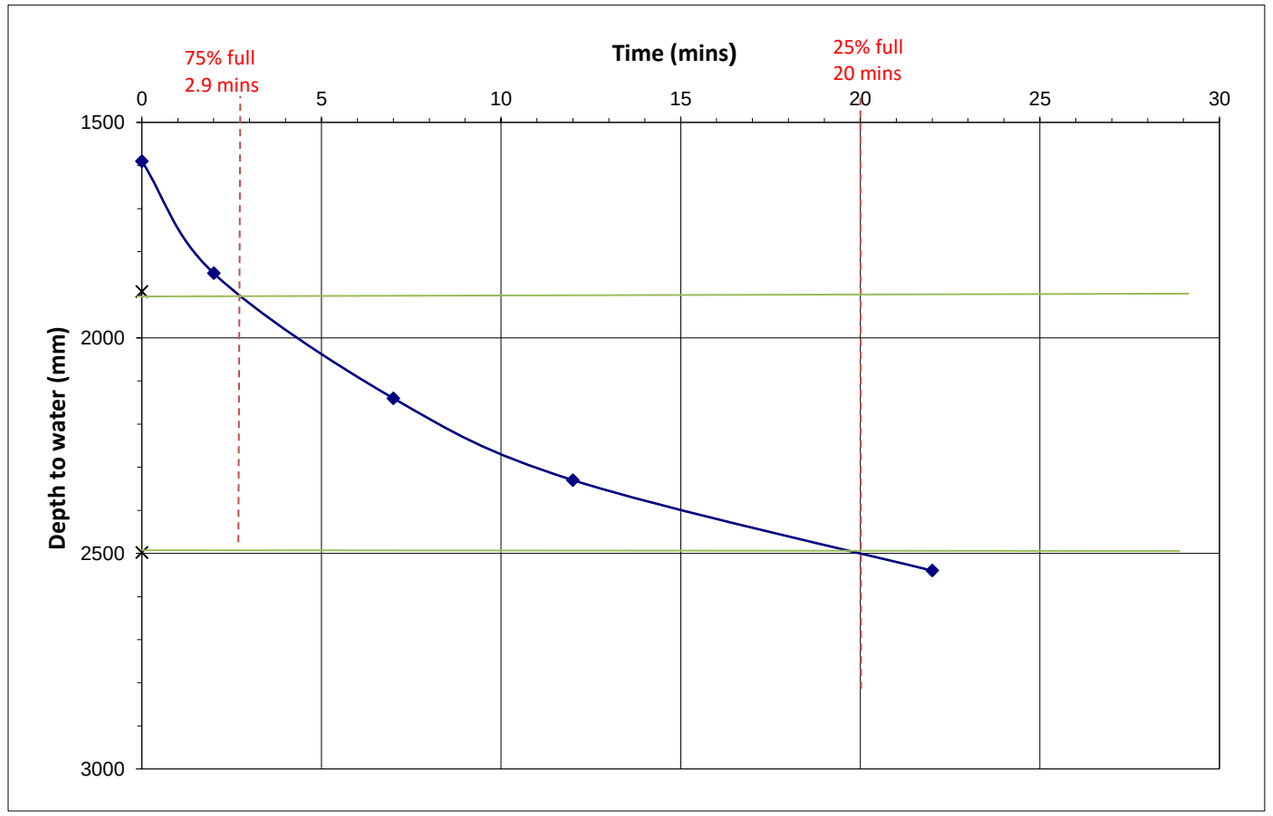
SOAKAWAY TRIAL PIT		
Dimensions	**(m)**	**(mm)**
Length	2.2	2200.00
Width	0.6	600.00
Depth	2.8	2800.00

Effective Depth	mm	m
25%	2497.5	2.50
50%	2195.0	2.20
75%	1892.5	1.89

Depth at start of test (mm)	1590.00
Depth at end of test (mm)	2540.00

Base area of pit	1.32
a_{p50} - 50% int. surface area	4.71
V_{p75-25} - Volume 75 - 25%	0.80

Read from the graph:	
$t_{p\ 75}$ (min)	2.9
$t_{p\ 25}$ (min)	20.0



Soil infiltration rate, f, (m/s)	**4.96E-05**	**(pit filled with stone)**

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Project Name:	Upper Brook Street, Manchester M13 9QD
Project No.:	7293

Trial Pit No.	TP103
Test No.	1

Time	Elpsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
16/05/2024 12:38	0	2.17	2170
	1	2.30	2300
	3	2.45	2450
	5	2.57	2570
	9	2.69	2690
	12	2.80	2800

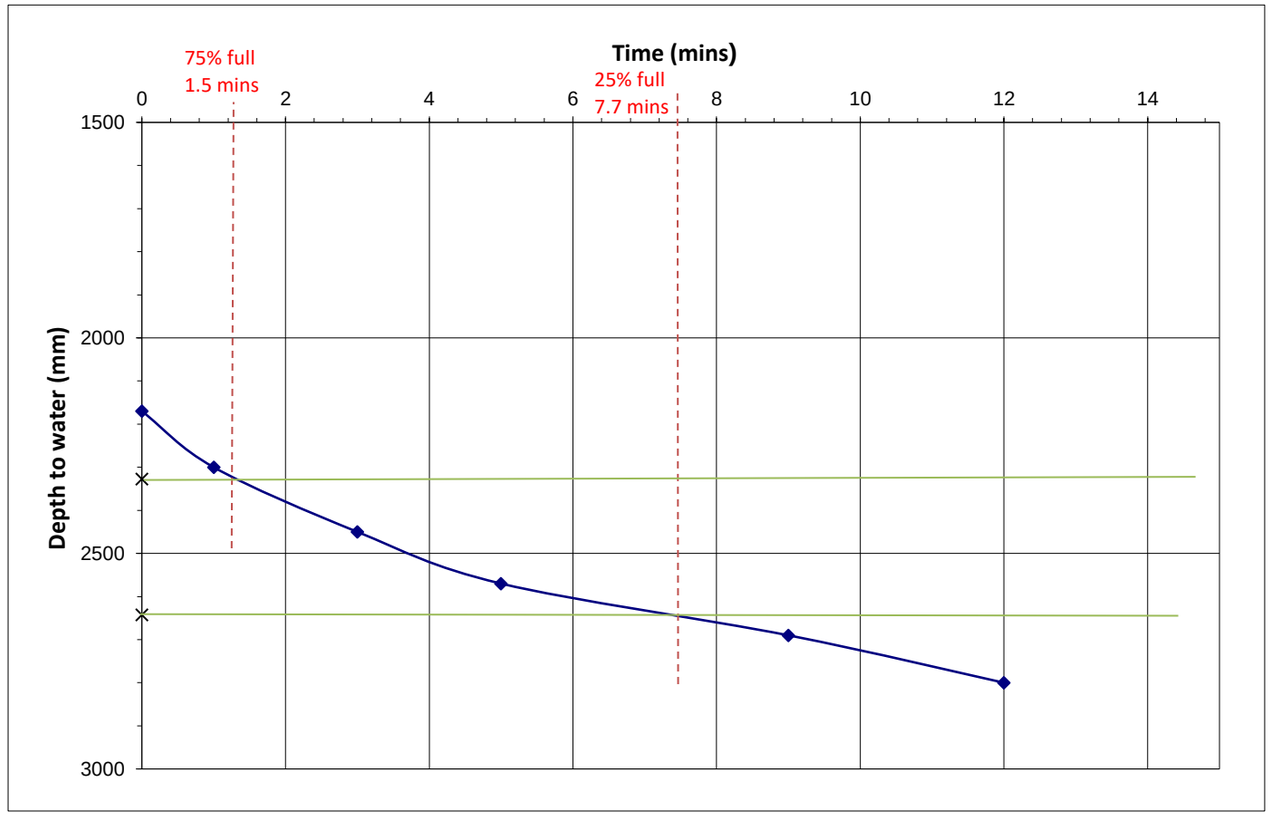
SOAKAWAY TRIAL PIT		
Dimensions	**(m)**	**(mm)**
Length	2.2	2200.00
Width	0.6	600.00
Depth	2.8	2800.00

Effective Depth	**mm**	**m**
25%	2642.5	2.64
50%	2485.0	2.49
75%	2327.5	2.33

Depth at start of test (mm)	2170.00
Depth at end of test (mm)	2800.00

Base area of pit	1.32
a_{p50} - 50% int. surface area	3.08
$V_{p75\text{-}25}$ - Volume 75 - 25%	0.42

Read from the graph:	
$t_{p\ 75}$ (min)	1.5
$t_{p\ 25}$ (min)	7.7



Soil infiltration rate, f, (m/s)	**1.09E-04**	**(pit filled with stone)**

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Project Name:	Upper Brook Street, Manchester M13 9QD
Project No.:	7293

Trial Pit No.	TP103
Test No.	2

Time	Elpsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
16/05/2024 12:56	0	1.97	1970
	4	2.33	2330
	9	2.59	2590
	14	2.71	2710
	17	2.76	2760

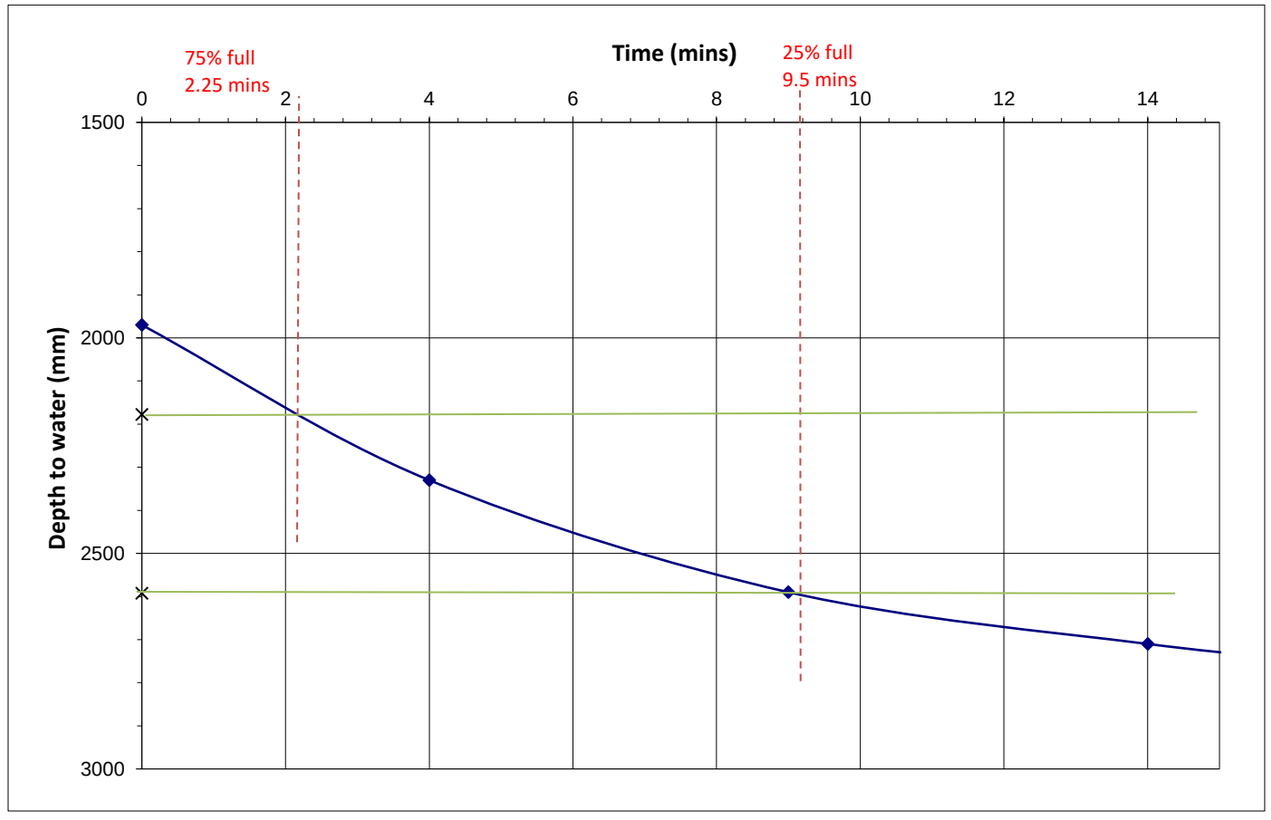
SOAKAWAY TRIAL PIT		
Dimensions	**(m)**	**(mm)**
Length	2.2	2200.00
Width	0.6	600.00
Depth	2.8	2800.00

Effective Depth	**mm**	**m**
25%	2592.5	2.59
50%	2385.0	2.39
75%	2177.5	2.18

Depth at start of test (mm)	1970.00
Depth at end of test (mm)	2760.00

Base area of pit	1.32
a_{p50} - 50% int. surface area	3.64
$V_{p75\text{-}25}$ - Volume 75 - 25%	0.55

Read from the graph:	
$t_{p\,75}$ (min)	2.3
$t_{p\,25}$ (min)	9.5



Soil infiltration rate, f, (m/s)	**1.04E-04**	**(pit filled with stone)**

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Project Name:	Upper Brook Street, Manchester M13 9QD
Project No.:	7293

Trial Pit No.	TP103
Test No.	3

Time	Elpsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
16/05/2024 13:16	0	2.00	2000
	5	2.38	2380
	12	2.80	2800

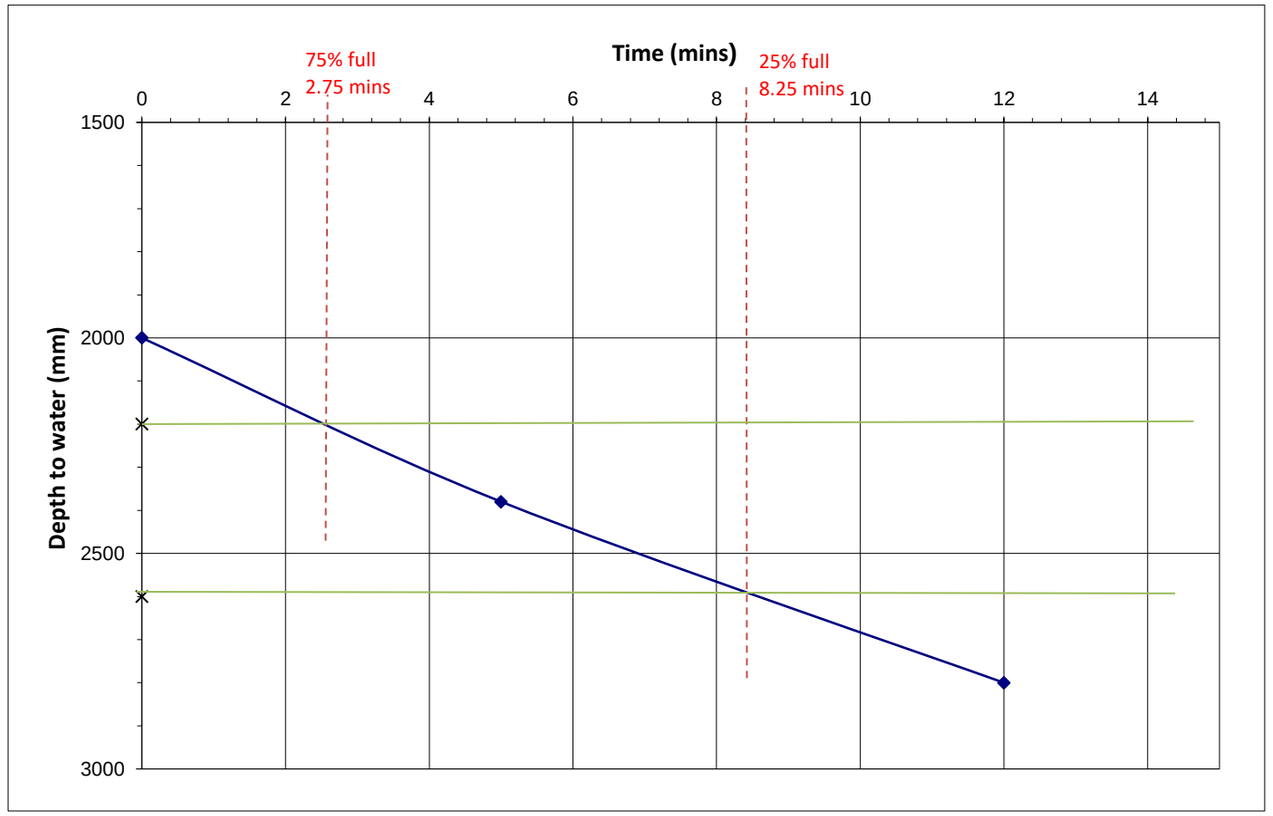
SOAKAWAY TRIAL PIT		
Dimensions	**(m)**	**(mm)**
Length	2.2	2200.00
Width	0.6	600.00
Depth	2.8	2800.00

Effective Depth	mm	m
25%	2600.0	2.60
50%	2400.0	2.40
75%	2200.0	2.20

Depth at start of test (mm)	2000.00
Depth at end of test (mm)	2800.00

Base area of pit	1.32
a_{p50} - 50% int. surface area	3.56
V_{p75-25} - Volume 75 - 25%	0.53

Read from the graph:	
$t_{p\ 75}$ (min)	2.8
$t_{p\ 25}$ (min)	8.3



Soil infiltration rate, f, (m/s)	**1.35E-04**	**(pit filled with stone)**

APPENDIX F HAZWASTEONLINE CLASSIFICATIONS



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.

Y0OAP-18A45-9GKIY

Job name

7293 HWOL

Description/Comments

Project

7293

Site

Upper Brook Street, Manchester M13 9QD

Classified by

Name:
Richard Hey
Date:
25 Jun 2024 12:26 GMT
Telephone:
01969 623803

Company:
Calabrian Limited
8 l'Anson Close
Leyburn

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

Upper Brook Street, Manchester **Post Code** M13 9QD

SIC for the process giving rise to the waste

41202 Construction of domestic buildings

Description of industry/producer giving rise to the waste

Construction of student accommodation.

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

Excavation for foundation and infrastructure.

Description of the waste

Soil

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	WAC Results			Page
					Inert	SNRHW	Hazardous	
1	BH101 1/0.30/2024-05-13		Non Hazardous		N/A	-	-	4
2	BH101 2/0.60/2024-05-13		Non Hazardous		N/A	-	-	7
3	BH101 4/2.50/2024-05-13		Non Hazardous		N/A	-	-	10
4	BH101 5/3.50/2024-05-13		Non Hazardous		-	-	-	13
5	BH102 1/0.30/2024-04-16		Non Hazardous		N/A	-	-	14
6	BH102 2/0.80/2024-04-16		Non Hazardous		N/A	Fail	Fail	17
7	BH102 4/1.50/2024-04-16		Non Hazardous		N/A	-	-	20
8	BH104 1/0.20/2024-05-13		Non Hazardous		N/A	-	-	23
9	BH104 2/0.60/2024-05-13		Non Hazardous		N/A	Pass	Pass	26
10	BH104 3/1.20/2024-05-13		Non Hazardous		N/A	-	-	29
11	BH105 1/0.50/2024-05-14		Non Hazardous		N/A	Fail	Fail	32
12	BH105 2/1.20/2024-05-14		Hazardous	HP 7, HP 10, HP 14	N/A	-	-	35
13	BH105 3/1.70/2024-05-14		Non Hazardous		-	-	-	39
14	BH106 1/0.20/2024-05-13		Non Hazardous		N/A	Pass	Pass	40
15	BH106 2/0.60/2024-05-13		Non Hazardous		N/A	-	-	43
16	BH106 3/0.90/2024-05-13		Non Hazardous		-	-	-	46
17	BH107 1/0.40/2024-04-17		Non Hazardous		N/A	Fail	Fail	47
18	BH107 2/1.30/2024-04-17		Non Hazardous		N/A	-	-	50
19	TP101 1/0.50/2024-04-16		Non Hazardous		N/A	-	-	53
20	TP101 2/1.10/2024-05-16		Non Hazardous		N/A	-	-	56
21	TP102 1/0.80/2024-05-16		Non Hazardous		N/A	Pass	Pass	59
22	TP102 2/1.20/2024-04-16		Non Hazardous		N/A	-	-	62
23	TP103 1/0.60/2024-05-16		Non Hazardous		N/A	-	-	65
24	TP103 2/1.40/2024-05-16		Non Hazardous		N/A	-	-	68

Related documents

#	Name	Description
1	7293 HWOL.hwol	DETS North .hwol file used to populate the Job
2	Example waste stream template for contaminated soils	waste stream template used to create this Job

WAC results

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate the samples in this Job: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

Report

Created by: Richard Hey

Created date: 25 Jun 2024 12:26 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	71
Appendix B: Rationale for selection of metal species	72
Appendix C: Version	72

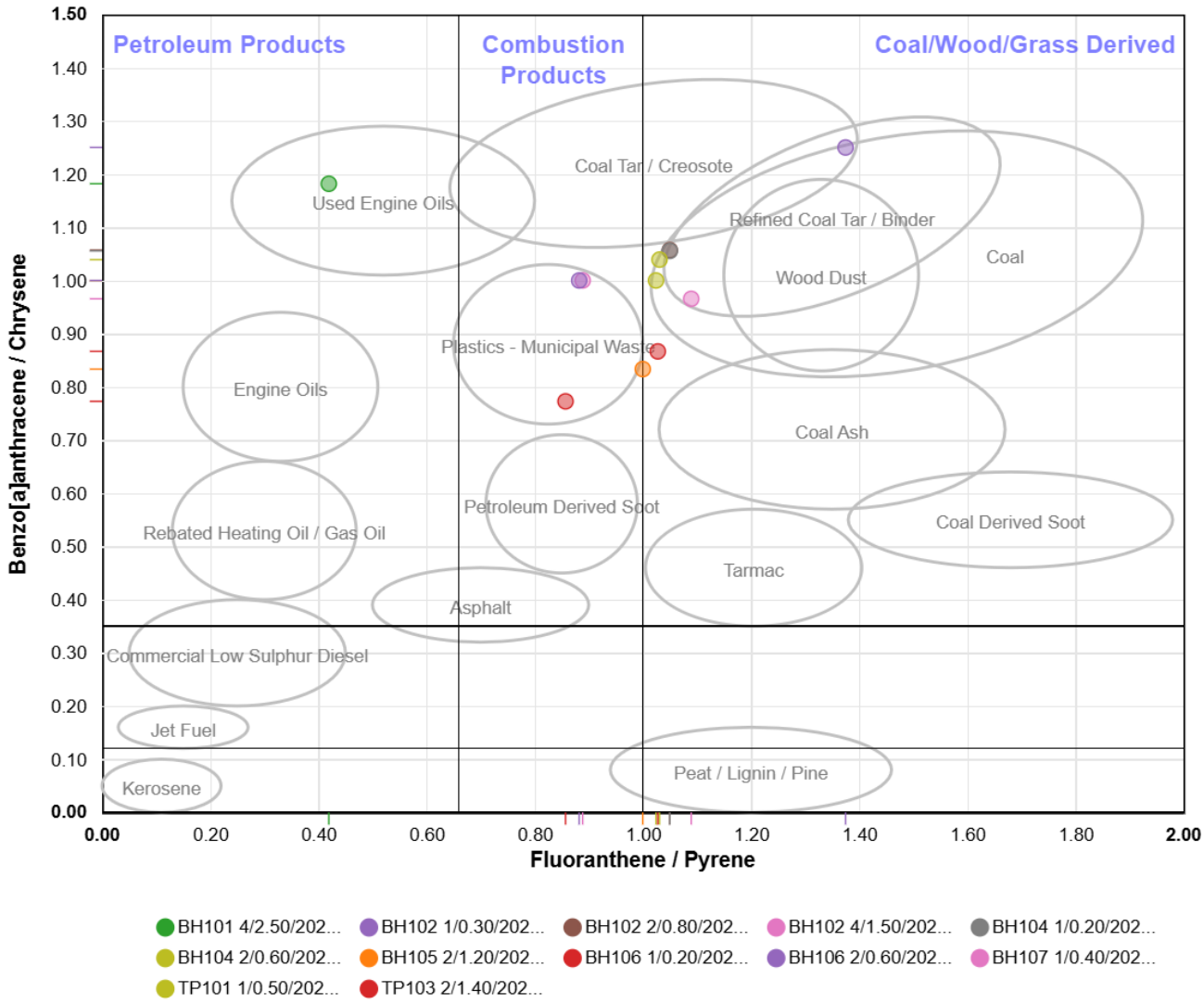
PAH Double Ratio Plot

Disclaimer

The domains, oval areas and the plotted points are **indicators only** and must be combined with other lines of evidence to form conclusions. Samples marked with an empty circle are not plotted as they fall outside of the graph's boundaries.

Credits

The domains and the horizontal and vertical lines are derived from Yunker et al. 2002 (Organic Geochemistry 33, 489-515)



Credits for the oval areas and labels

HazWasteOnline, 2023; Jones Environmental Forensics, 2014

Classification of sample: BH101 1/0.30/2024-05-13

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

Sample details

Sample name:
BH101 1/0.30/2024-05-13

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: 0% 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		1.1 mg/kg	1.32	1.452 mg/kg	0.000145 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		<0.2 mg/kg	3.22	<0.644 mg/kg	<0.0000644 %		<LOD
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		6.3 mg/kg	1.462	9.208 mg/kg	0.000921 %		
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		5.6 mg/kg	1.126	6.305 mg/kg	0.00063 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	10 mg/kg	1.56	15.598 mg/kg	0.001 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		9 mg/kg	2.976	26.786 mg/kg	0.00268 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<LOD
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		43 mg/kg	2.774	119.288 mg/kg	0.0119 %		
12	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
13	benzene	601-020-00-8	200-753-7	71-43-2		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
14	toluene	601-021-00-3	203-625-9	108-88-3		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
15	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
16	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
17	pH			PH		9 pH		9 pH	9pH		

#		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									
18		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
19		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
20		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-469-6	83-32-9									
21		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-695-5	86-73-7									
22		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
23		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-371-1	120-12-7									
24		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-912-4	206-44-0									
25		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-927-3	129-00-0									
26		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
27		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
28		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
29		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
30		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
31		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
32		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
33		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-883-8	191-24-2									
										Total:	0.0178 %		

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

WAC results for sample: BH101 1/0.30/2024-05-13

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the Hazardous (Hazardous waste landfill) criteria because of missing determinand values.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	<0.5	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg		1	-	-
5	Mineral oil (C10 to C40)	mg/kg		500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<0.1	100	-	-
7	pH	pH		-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg		0.5	2	25
10	barium	mg/kg		20	100	300
11	cadmium	mg/kg		0.04	1	5
12	chromium	mg/kg		0.5	10	70
13	copper	mg/kg		2	50	100
14	mercury	mg/kg		0.01	0.2	2
15	molybdenum	mg/kg		0.5	10	30
16	nickel	mg/kg		0.4	10	40
17	lead	mg/kg		0.5	10	50
18	antimony	mg/kg		0.06	0.7	5
19	selenium	mg/kg		0.1	0.5	7
20	zinc	mg/kg		4	50	200
21	chloride	mg/kg		800	15,000	25,000
22	fluoride	mg/kg		10	150	500
23	sulphate	mg/kg		1,000	20,000	50,000
24	phenol index	mg/kg		1	-	-
25	DOC (dissolved organic carbon)	mg/kg		500	800	1,000
26	TDS (total dissolved solids)	mg/kg		4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Missing WAC determinand value

Classification of sample: BH101 2/0.60/2024-05-13

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

Sample details

Sample name:
BH101 2/0.60/2024-05-13

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: 0% 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		8.2	mg/kg	1.32	10.827	mg/kg	0.00108 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.6	mg/kg	3.22	1.932	mg/kg	0.000193 %		
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<LOD
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		13	mg/kg	1.462	19	mg/kg	0.0019 %		
5	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		23	mg/kg	1.126	25.895	mg/kg	0.00259 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	52	mg/kg	1.56	81.11	mg/kg	0.0052 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.12	mg/kg	1.353	0.162	mg/kg	0.0000162 %		
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		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		41	mg/kg	2.774	113.74	mg/kg	0.0114 %		
12	pH			PH		7.4	pH		7.4	pH	7.4 pH		
13	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
14	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
15	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
16	fluorene		201-695-5	86-73-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
17	phenanthrene		201-581-5	85-01-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
18	anthracene		204-371-1	120-12-7		<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									
19		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-912-4	206-44-0									
20		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-927-3	129-00-0									
21		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-883-8	191-24-2									
29		sulfur { sulphur dioxide }			5	200	mg/kg	1.998	399.587	mg/kg	0.04 %		
		016-011-00-9	231-195-2	7446-09-5									
										Total:	0.066 %		

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

WAC results for sample: BH101 2/0.60/2024-05-13

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the Hazardous (Hazardous waste landfill) criteria because of missing determinand values.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	2.9	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg		6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg		1	-	-
5	Mineral oil (C10 to C40)	mg/kg		500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<0.1	100	-	-
7	pH	pH		-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg		0.5	2	25
10	barium	mg/kg		20	100	300
11	cadmium	mg/kg		0.04	1	5
12	chromium	mg/kg		0.5	10	70
13	copper	mg/kg		2	50	100
14	mercury	mg/kg		0.01	0.2	2
15	molybdenum	mg/kg		0.5	10	30
16	nickel	mg/kg		0.4	10	40
17	lead	mg/kg		0.5	10	50
18	antimony	mg/kg		0.06	0.7	5
19	selenium	mg/kg		0.1	0.5	7
20	zinc	mg/kg		4	50	200
21	chloride	mg/kg		800	15,000	25,000
22	fluoride	mg/kg		10	150	500
23	sulphate	mg/kg		1,000	20,000	50,000
24	phenol index	mg/kg		1	-	-
25	DOC (dissolved organic carbon)	mg/kg		500	800	1,000
26	TDS (total dissolved solids)	mg/kg		4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Missing WAC determinand value

Classification of sample: BH101 4/2.50/2024-05-13

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

Sample details

Sample name:
BH101 4/2.50/2024-05-13

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: 0% 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		4.5 mg/kg	1.32	5.941 mg/kg	0.000594 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		1.3 mg/kg	3.22	4.186 mg/kg	0.000419 %		
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
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		8.7 mg/kg	1.126	9.795 mg/kg	0.00098 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	8.2 mg/kg	1.56	12.79 mg/kg	0.00082 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
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		<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<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	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
13	benzene	601-020-00-8	200-753-7	71-43-2		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
14	toluene	601-021-00-3	203-625-9	108-88-3		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
15	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
16	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
17	pH			PH		7.7 pH		7.7 pH	7.7 pH		

#		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									
18		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
19		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
20		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-469-6	83-32-9									
21		fluorene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
			201-695-5	86-73-7									
22		phenanthrene				0.18	mg/kg		0.18	mg/kg	0.000018 %		
			201-581-5	85-01-8									
23		anthracene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
			204-371-1	120-12-7									
24		fluoranthene				0.13	mg/kg		0.13	mg/kg	0.000013 %		
			205-912-4	206-44-0									
25		pyrene				0.31	mg/kg		0.31	mg/kg	0.000031 %		
			204-927-3	129-00-0									
26		benzo[a]anthracene				0.13	mg/kg		0.13	mg/kg	0.000013 %		
		601-033-00-9	200-280-6	56-55-3									
27		chrysene				0.11	mg/kg		0.11	mg/kg	0.000011 %		
		601-048-00-0	205-923-4	218-01-9									
28		benzo[b]fluoranthene				0.13	mg/kg		0.13	mg/kg	0.000013 %		
		601-034-00-4	205-911-9	205-99-2									
29		benzo[k]fluoranthene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
		601-036-00-5	205-916-6	207-08-9									
30		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									
31		indeno[123-cd]pyrene				0.12	mg/kg		0.12	mg/kg	0.000012 %		
			205-893-2	193-39-5									
32		dibenz[a,h]anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		601-041-00-2	200-181-8	53-70-3									
33		benzo[ghi]perylene				0.17	mg/kg		0.17	mg/kg	0.000017 %		
			205-883-8	191-24-2									
										Total:	0.0278 %		

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

WAC results for sample: BH101 4/2.50/2024-05-13

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the Hazardous (Hazardous waste landfill) criteria because of missing determinand values.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	0.9	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg		1	-	-
5	Mineral oil (C10 to C40)	mg/kg		500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	1.6	100	-	-
7	pH	pH		-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg		0.5	2	25
10	barium	mg/kg		20	100	300
11	cadmium	mg/kg		0.04	1	5
12	chromium	mg/kg		0.5	10	70
13	copper	mg/kg		2	50	100
14	mercury	mg/kg		0.01	0.2	2
15	molybdenum	mg/kg		0.5	10	30
16	nickel	mg/kg		0.4	10	40
17	lead	mg/kg		0.5	10	50
18	antimony	mg/kg		0.06	0.7	5
19	selenium	mg/kg		0.1	0.5	7
20	zinc	mg/kg		4	50	200
21	chloride	mg/kg		800	15,000	25,000
22	fluoride	mg/kg		10	150	500
23	sulphate	mg/kg		1,000	20,000	50,000
24	phenol index	mg/kg		1	-	-
25	DOC (dissolved organic carbon)	mg/kg		500	800	1,000
26	TDS (total dissolved solids)	mg/kg		4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Missing WAC determinand value

Classification of sample: BH101 5/3.50/2024-05-13

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

Sample details

Sample name:
BH101 5/3.50/2024-05-13

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: 0% 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		6.1	mg/kg	1.32	8.054	mg/kg	0.000805 %		
2		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		<0.2	mg/kg	3.22	<0.644	mg/kg	<0.0000644 %		<**LOD**
3		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.1	mg/kg	1.142	0.114	mg/kg	0.0000114 %		
4		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		18	mg/kg	1.462	26.308	mg/kg	0.00263 %		
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		13	mg/kg	1.126	14.637	mg/kg	0.00146 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	13	mg/kg	1.56	20.278	mg/kg	0.0013 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<**LOD**
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		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		51	mg/kg	2.774	141.481	mg/kg	0.0141 %		
12		pH			PH		8	pH		8	pH	8pH		
											Total:	0.0255 %		

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

Classification of sample: BH102 1/0.30/2024-04-16

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

Sample details

Sample name:
BH102 1/0.30/2024-04-16

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: 0% 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		1 mg/kg	1.32	1.32 mg/kg	0.000132 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		<0.2 mg/kg	3.22	<0.644 mg/kg	<0.0000644 %		<LOD
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		6.4 mg/kg	1.462	9.354 mg/kg	0.000935 %		
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		6.1 mg/kg	1.126	6.868 mg/kg	0.000687 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	2.1 mg/kg	1.56	3.276 mg/kg	0.00021 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		9 mg/kg	2.976	26.786 mg/kg	0.00268 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<LOD
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		24 mg/kg	2.774	66.58 mg/kg	0.00666 %		
12	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
13	benzene	601-020-00-8	200-753-7	71-43-2		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
14	toluene	601-021-00-3	203-625-9	108-88-3		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
15	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
16	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
17	pH			PH		8.5 pH		8.5 pH	8.5 pH		

#		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									
18		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
19		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
20		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-469-6	83-32-9									
21		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-695-5	86-73-7									
22		phenanthrene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
			201-581-5	85-01-8									
23		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-371-1	120-12-7									
24		fluoranthene				0.11	mg/kg		0.11	mg/kg	0.000011 %		
			205-912-4	206-44-0									
25		pyrene				0.08	mg/kg		0.08	mg/kg	0.000008 %		
			204-927-3	129-00-0									
26		benzo[a]anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		601-033-00-9	200-280-6	56-55-3									
27		chrysene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
		601-048-00-0	205-923-4	218-01-9									
28		benzo[b]fluoranthene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		601-034-00-4	205-911-9	205-99-2									
29		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
30		benzo[a]pyrene; benzo[def]chrysene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
		601-032-00-3	200-028-5	50-32-8									
31		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
32		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
33		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-883-8	191-24-2									
										Total:	0.0118 %		

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

WAC results for sample: BH102 1/0.30/2024-04-16

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the Hazardous (Hazardous waste landfill) criteria because of missing determinand values.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	<0.5	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg		1	-	-
5	Mineral oil (C10 to C40)	mg/kg		500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	0.46	100	-	-
7	pH	pH		-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg		0.5	2	25
10	barium	mg/kg		20	100	300
11	cadmium	mg/kg		0.04	1	5
12	chromium	mg/kg		0.5	10	70
13	copper	mg/kg		2	50	100
14	mercury	mg/kg		0.01	0.2	2
15	molybdenum	mg/kg		0.5	10	30
16	nickel	mg/kg		0.4	10	40
17	lead	mg/kg		0.5	10	50
18	antimony	mg/kg		0.06	0.7	5
19	selenium	mg/kg		0.1	0.5	7
20	zinc	mg/kg		4	50	200
21	chloride	mg/kg		800	15,000	25,000
22	fluoride	mg/kg		10	150	500
23	sulphate	mg/kg		1,000	20,000	50,000
24	phenol index	mg/kg		1	-	-
25	DOC (dissolved organic carbon)	mg/kg		500	800	1,000
26	TDS (total dissolved solids)	mg/kg		4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Missing WAC determinand value

Classification of sample: BH102 2/0.80/2024-04-16

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

Sample details

Sample name:
BH102 2/0.80/2024-04-16

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: 0% 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	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		1.7	mg/kg	3.22	5.474	mg/kg	0.000547 %		
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		86	mg/kg	1.126	96.826	mg/kg	0.00968 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	420	mg/kg	1.56	655.122	mg/kg	0.042 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.37	mg/kg	1.353	0.501	mg/kg	0.0000501 %		
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		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		220	mg/kg	2.774	610.312	mg/kg	0.061 %		
12	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
13	benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
14	toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
15	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
16	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
17	pH			PH		7.6	pH		7.6	pH	7.6 pH		

#		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									
18		naphthalene				0.34	mg/kg		0.34	mg/kg	0.000034 %		
		601-052-00-2	202-049-5	91-20-3									
19	•	acenaphthylene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
			205-917-1	208-96-8									
20	•	acenaphthene				0.31	mg/kg		0.31	mg/kg	0.000031 %		
			201-469-6	83-32-9									
21	•	fluorene				0.31	mg/kg		0.31	mg/kg	0.000031 %		
			201-695-5	86-73-7									
22	•	phenanthrene				2.1	mg/kg		2.1	mg/kg	0.00021 %		
			201-581-5	85-01-8									
23	•	anthracene				0.45	mg/kg		0.45	mg/kg	0.000045 %		
			204-371-1	120-12-7									
24	•	fluoranthene				2.1	mg/kg		2.1	mg/kg	0.00021 %		
			205-912-4	206-44-0									
25	•	pyrene				2	mg/kg		2	mg/kg	0.0002 %		
			204-927-3	129-00-0									
26		benzo[a]anthracene				0.74	mg/kg		0.74	mg/kg	0.000074 %		
		601-033-00-9	200-280-6	56-55-3									
27		chrysene				0.7	mg/kg		0.7	mg/kg	0.00007 %		
		601-048-00-0	205-923-4	218-01-9									
28		benzo[b]fluoranthene				0.69	mg/kg		0.69	mg/kg	0.000069 %		
		601-034-00-4	205-911-9	205-99-2									
29		benzo[k]fluoranthene				0.23	mg/kg		0.23	mg/kg	0.000023 %		
		601-036-00-5	205-916-6	207-08-9									
30		benzo[a]pyrene; benzo[def]chrysene				0.58	mg/kg		0.58	mg/kg	0.000058 %		
		601-032-00-3	200-028-5	50-32-8									
31	•	indeno[123-cd]pyrene				0.19	mg/kg		0.19	mg/kg	0.000019 %		
			205-893-2	193-39-5									
32		dibenz[a,h]anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		601-041-00-2	200-181-8	53-70-3									
33	•	benzo[ghi]perylene				0.23	mg/kg		0.23	mg/kg	0.000023 %		
			205-883-8	191-24-2									
34	•	polychlorobiphenyls; PCB				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
35		sulfur { sulphur dioxide }			5	900	mg/kg	1.998	1798.142	mg/kg	0.18 %		
		016-011-00-9	231-195-2	7446-09-5									
										Total:	0.307 %		

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

WAC results for sample: BH102 2/0.80/2024-04-16

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

The sample FAILS the Hazardous (Hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	8.6	3	5	6
2	LOI (loss on ignition)	%	6.3	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.01	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	11	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	11	100	-	-
7	pH	pH	7.6	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	<1	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	<0.01	0.5	2	25
10	barium	mg/kg	0.38	20	100	300
11	cadmium	mg/kg	<0.02	0.04	1	5
12	chromium	mg/kg	<0.1	0.5	10	70
13	copper	mg/kg	<0.02	2	50	100
14	mercury	mg/kg	<0.002	0.01	0.2	2
15	molybdenum	mg/kg	<0.1	0.5	10	30
16	nickel	mg/kg	<0.1	0.4	10	40
17	lead	mg/kg	<0.05	0.5	10	50
18	antimony	mg/kg	<0.05	0.06	0.7	5
19	selenium	mg/kg	<0.03	0.1	0.5	7
20	zinc	mg/kg	0.017	4	50	200
21	chloride	mg/kg	<100	800	15,000	25,000
22	fluoride	mg/kg	7.1	10	150	500
23	sulphate	mg/kg	600	1,000	20,000	50,000
24	phenol index	mg/kg	<1	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	1600	4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	SNRHW WAC criteria fail
	Hazardous WAC criteria fail

Classification of sample: BH102 4/1.50/2024-04-16

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

Sample details

Sample name:
BH102 4/1.50/2024-04-16

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: 0% 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		6.2 mg/kg	1.32	8.186 mg/kg	0.000819 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		1 mg/kg	3.22	3.22 mg/kg	0.000322 %		
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<**LOD**
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		10 mg/kg	1.462	14.616 mg/kg	0.00146 %		
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		21 mg/kg	1.126	23.644 mg/kg	0.00236 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	47 mg/kg	1.56	73.311 mg/kg	0.0047 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.12 mg/kg	1.353	0.162 mg/kg	0.0000162 %		
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		<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		57 mg/kg	2.774	158.126 mg/kg	0.0158 %		
12	pH			PH		8.3 pH		8.3 pH	8.3 pH		
13	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
14	acenaphthylene		205-917-1	208-96-8		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
15	acenaphthene		201-469-6	83-32-9		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
16	fluorene		201-695-5	86-73-7		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
17	phenanthrene		201-581-5	85-01-8		0.08 mg/kg		0.08 mg/kg	0.000008 %		
18	anthracene		204-371-1	120-12-7		<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									
19		fluoranthene				0.08	mg/kg		0.08	mg/kg	0.000008 %		
			205-912-4	206-44-0									
20		pyrene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
			204-927-3	129-00-0									
21		benzo[a]anthracene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-883-8	191-24-2									
										Total:	0.0292 %		

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

WAC results for sample: BH102 4/1.50/2024-04-16

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the Hazardous (Hazardous waste landfill) criteria because of missing determinand values.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	2.2	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg		6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg		1	-	-
5	Mineral oil (C10 to C40)	mg/kg		500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	0.37	100	-	-
7	pH	pH		-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg		0.5	2	25
10	barium	mg/kg		20	100	300
11	cadmium	mg/kg		0.04	1	5
12	chromium	mg/kg		0.5	10	70
13	copper	mg/kg		2	50	100
14	mercury	mg/kg		0.01	0.2	2
15	molybdenum	mg/kg		0.5	10	30
16	nickel	mg/kg		0.4	10	40
17	lead	mg/kg		0.5	10	50
18	antimony	mg/kg		0.06	0.7	5
19	selenium	mg/kg		0.1	0.5	7
20	zinc	mg/kg		4	50	200
21	chloride	mg/kg		800	15,000	25,000
22	fluoride	mg/kg		10	150	500
23	sulphate	mg/kg		1,000	20,000	50,000
24	phenol index	mg/kg		1	-	-
25	DOC (dissolved organic carbon)	mg/kg		500	800	1,000
26	TDS (total dissolved solids)	mg/kg		4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Missing WAC determinand value

Classification of sample: BH104 1/0.20/2024-05-13

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

Sample details

Sample name:
BH104 1/0.20/2024-05-13

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: 0% 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		21	mg/kg	1.32	27.727	mg/kg	0.00277 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.6	mg/kg	3.22	1.932	mg/kg	0.000193 %		
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.3	mg/kg	1.142	0.343	mg/kg	0.0000343 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		220	mg/kg	1.462	321.542	mg/kg	0.0322 %		
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		110	mg/kg	1.126	123.848	mg/kg	0.0124 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	77	mg/kg	1.56	120.106	mg/kg	0.0077 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.16	mg/kg	1.353	0.217	mg/kg	0.0000217 %		
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		45	mg/kg	2.976	133.932	mg/kg	0.0134 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		77	mg/kg	2.774	213.609	mg/kg	0.0214 %		
12	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**
13	benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
14	toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
15	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
16	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**
17	pH			PH		8	pH		8	pH	8pH		

#		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									
18		naphthalene				1.4	mg/kg		1.4	mg/kg	0.00014 %		
		601-052-00-2	202-049-5	91-20-3									
19	●	acenaphthylene				0.5	mg/kg		0.5	mg/kg	0.00005 %		
			205-917-1	208-96-8									
20	●	acenaphthene				7	mg/kg		7	mg/kg	0.0007 %		
			201-469-6	83-32-9									
21	●	fluorene				5.4	mg/kg		5.4	mg/kg	0.00054 %		
			201-695-5	86-73-7									
22	●	phenanthrene				48	mg/kg		48	mg/kg	0.0048 %		
			201-581-5	85-01-8									
23	●	anthracene				13	mg/kg		13	mg/kg	0.0013 %		
			204-371-1	120-12-7									
24	●	fluoranthene				84	mg/kg		84	mg/kg	0.0084 %		
			205-912-4	206-44-0									
25	●	pyrene				80	mg/kg		80	mg/kg	0.008 %		
			204-927-3	129-00-0									
26		benzo[a]anthracene				38	mg/kg		38	mg/kg	0.0038 %		
		601-033-00-9	200-280-6	56-55-3									
27		chrysene				36	mg/kg		36	mg/kg	0.0036 %		
		601-048-00-0	205-923-4	218-01-9									
28		benzo[b]fluoranthene				46	mg/kg		46	mg/kg	0.0046 %		
		601-034-00-4	205-911-9	205-99-2									
29		benzo[k]fluoranthene				16	mg/kg		16	mg/kg	0.0016 %		
		601-036-00-5	205-916-6	207-08-9									
30		benzo[a]pyrene; benzo[def]chrysene				39	mg/kg		39	mg/kg	0.0039 %		
		601-032-00-3	200-028-5	50-32-8									
31	●	indeno[123-cd]pyrene				15	mg/kg		15	mg/kg	0.0015 %		
			205-893-2	193-39-5									
32		dibenz[a,h]anthracene				3.7	mg/kg		3.7	mg/kg	0.00037 %		
		601-041-00-2	200-181-8	53-70-3									
33	●	benzo[ghi]perylene				17	mg/kg		17	mg/kg	0.0017 %		
			205-883-8	191-24-2									
										Total:	0.135 %		

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

WAC results for sample: BH104 1/0.20/2024-05-13

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the Hazardous (Hazardous waste landfill) criteria because of missing determinand values.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	16	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg		1	-	-
5	Mineral oil (C10 to C40)	mg/kg		500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	450	100	-	-
7	pH	pH		-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg		0.5	2	25
10	barium	mg/kg		20	100	300
11	cadmium	mg/kg		0.04	1	5
12	chromium	mg/kg		0.5	10	70
13	copper	mg/kg		2	50	100
14	mercury	mg/kg		0.01	0.2	2
15	molybdenum	mg/kg		0.5	10	30
16	nickel	mg/kg		0.4	10	40
17	lead	mg/kg		0.5	10	50
18	antimony	mg/kg		0.06	0.7	5
19	selenium	mg/kg		0.1	0.5	7
20	zinc	mg/kg		4	50	200
21	chloride	mg/kg		800	15,000	25,000
22	fluoride	mg/kg		10	150	500
23	sulphate	mg/kg		1,000	20,000	50,000
24	phenol index	mg/kg		1	-	-
25	DOC (dissolved organic carbon)	mg/kg		500	800	1,000
26	TDS (total dissolved solids)	mg/kg		4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Missing WAC determinand value
	SNRHW WAC criteria fail
	Hazardous WAC criteria fail

Classification of sample: BH104 2/0.60/2024-05-13

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

Sample details

Sample name:
BH104 2/0.60/2024-05-13

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: 0% 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		1 mg/kg	1.32	1.32 mg/kg	0.000132 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		<0.2 mg/kg	3.22	<0.644 mg/kg	<0.0000644 %		<LOD
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		4.7 mg/kg	1.462	6.869 mg/kg	0.000687 %		
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		4.2 mg/kg	1.126	4.729 mg/kg	0.000473 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	4.2 mg/kg	1.56	6.551 mg/kg	0.00042 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		6.5 mg/kg	2.976	19.346 mg/kg	0.00193 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<LOD
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		74 mg/kg	2.774	205.287 mg/kg	0.0205 %		
12	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
13	benzene	601-020-00-8	200-753-7	71-43-2		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
14	toluene	601-021-00-3	203-625-9	108-88-3		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
15	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
16	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
17	pH			PH		8.5 pH		8.5 pH	8.5 pH		

#		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									
18		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
19		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
20		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-469-6	83-32-9									
21		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-695-5	86-73-7									
22		phenanthrene				0.19	mg/kg		0.19	mg/kg	0.000019 %		
			201-581-5	85-01-8									
23		anthracene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
			204-371-1	120-12-7									
24		fluoranthene				0.42	mg/kg		0.42	mg/kg	0.000042 %		
			205-912-4	206-44-0									
25		pyrene				0.41	mg/kg		0.41	mg/kg	0.000041 %		
			204-927-3	129-00-0									
26		benzo[a]anthracene				0.2	mg/kg		0.2	mg/kg	0.00002 %		
		601-033-00-9	200-280-6	56-55-3									
27		chrysene				0.2	mg/kg		0.2	mg/kg	0.00002 %		
		601-048-00-0	205-923-4	218-01-9									
28		benzo[b]fluoranthene				0.3	mg/kg		0.3	mg/kg	0.00003 %		
		601-034-00-4	205-911-9	205-99-2									
29		benzo[k]fluoranthene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
		601-036-00-5	205-916-6	207-08-9									
30		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									
31		indeno[123-cd]pyrene				0.11	mg/kg		0.11	mg/kg	0.000011 %		
			205-893-2	193-39-5									
32		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
33		benzo[ghi]perylene				0.14	mg/kg		0.14	mg/kg	0.000014 %		
			205-883-8	191-24-2									
34		polychlorobiphenyls; PCB				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
35		sulfur { sulphur dioxide }			5	7800	mg/kg	1.998	15583.896	mg/kg	1.558 %		
		016-011-00-9	231-195-2	7446-09-5									
										Total:	1.583 %		

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

WAC results for sample: BH104 2/0.60/2024-05-13

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

The sample PASSES the Hazardous (Hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	<0.5	3	5	6
2	LOI (loss on ignition)	%	0.54	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.01	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	93	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	2.4	100	-	-
7	pH	pH	8.5	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	<1	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	<0.01	0.5	2	25
10	barium	mg/kg	<0.1	20	100	300
11	cadmium	mg/kg	<0.02	0.04	1	5
12	chromium	mg/kg	<0.1	0.5	10	70
13	copper	mg/kg	<0.02	2	50	100
14	mercury	mg/kg	<0.002	0.01	0.2	2
15	molybdenum	mg/kg	<0.1	0.5	10	30
16	nickel	mg/kg	<0.1	0.4	10	40
17	lead	mg/kg	<0.05	0.5	10	50
18	antimony	mg/kg	<0.05	0.06	0.7	5
19	selenium	mg/kg	<0.03	0.1	0.5	7
20	zinc	mg/kg	<0.01	4	50	200
21	chloride	mg/kg	<100	800	15,000	25,000
22	fluoride	mg/kg	1.7	10	150	500
23	sulphate	mg/kg	<100	1,000	20,000	50,000
24	phenol index	mg/kg	<1	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	270	4,000	60,000	100,000

Key

	User supplied data
	Not applicable

Classification of sample: BH104 3/1.20/2024-05-13

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

Sample details

Sample name:
BH104 3/1.20/2024-05-13

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: 0% 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		6.1	mg/kg	1.32	8.054	mg/kg	0.000805 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.3	mg/kg	3.22	0.966	mg/kg	0.0000966 %		
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<LOD
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		18	mg/kg	1.126	20.266	mg/kg	0.00203 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	75	mg/kg	1.56	116.986	mg/kg	0.0075 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<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		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		73	mg/kg	2.774	202.513	mg/kg	0.0203 %		
12	pH			PH		7.7	pH		7.7	pH	7.7 pH		
13	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
14	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
15	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
16	fluorene		201-695-5	86-73-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
17	phenanthrene		201-581-5	85-01-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
18	anthracene		204-371-1	120-12-7		<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							
19		fluoranthene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
			205-912-4	206-44-0							
20		pyrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
			204-927-3	129-00-0							
21		benzo[a]anthracene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3							
22		chrysene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9							
23		benzo[b]fluoranthene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2							
24		benzo[k]fluoranthene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9							
25		benzo[a]pyrene; benzo[def]chrysene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8							
26		indeno[123-cd]pyrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5							
27		dibenz[a,h]anthracene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3							
28		benzo[ghi]perylene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
			205-883-8	191-24-2							
								Total:	0.0382 %		

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

WAC results for sample: BH104 3/1.20/2024-05-13

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the Hazardous (Hazardous waste landfill) criteria because of missing determinand values.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	1.3	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg		6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg		1	-	-
5	Mineral oil (C10 to C40)	mg/kg		500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<0.1	100	-	-
7	pH	pH		-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg		0.5	2	25
10	barium	mg/kg		20	100	300
11	cadmium	mg/kg		0.04	1	5
12	chromium	mg/kg		0.5	10	70
13	copper	mg/kg		2	50	100
14	mercury	mg/kg		0.01	0.2	2
15	molybdenum	mg/kg		0.5	10	30
16	nickel	mg/kg		0.4	10	40
17	lead	mg/kg		0.5	10	50
18	antimony	mg/kg		0.06	0.7	5
19	selenium	mg/kg		0.1	0.5	7
20	zinc	mg/kg		4	50	200
21	chloride	mg/kg		800	15,000	25,000
22	fluoride	mg/kg		10	150	500
23	sulphate	mg/kg		1,000	20,000	50,000
24	phenol index	mg/kg		1	-	-
25	DOC (dissolved organic carbon)	mg/kg		500	800	1,000
26	TDS (total dissolved solids)	mg/kg		4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Missing WAC determinand value

Classification of sample: BH105 1/0.50/2024-05-14

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

Sample details

Sample name:
BH105 1/0.50/2024-05-14

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: 0% 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		0.8 mg/kg	1.32	1.056 mg/kg	0.000106 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		<0.2 mg/kg	3.22	<0.644 mg/kg	<0.0000644 %		<LOD
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.3 mg/kg	1.142	0.343 mg/kg	0.0000343 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		3.2 mg/kg	1.462	4.677 mg/kg	0.000468 %		
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		2.3 mg/kg	1.126	2.59 mg/kg	0.000259 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	<0.3 mg/kg	1.56	<0.468 mg/kg	<0.00003 %		<LOD
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		1.9 mg/kg	2.976	5.655 mg/kg	0.000565 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<LOD
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		21 mg/kg	2.774	58.257 mg/kg	0.00583 %		
12	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
13	benzene	601-020-00-8	200-753-7	71-43-2		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
14	toluene	601-021-00-3	203-625-9	108-88-3		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
15	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
16	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
17	pH			PH		9 pH		9 pH	9pH		

#		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									
18		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
19		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
20		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-469-6	83-32-9									
21		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-695-5	86-73-7									
22		phenanthrene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
			201-581-5	85-01-8									
23		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-371-1	120-12-7									
24		fluoranthene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
			205-912-4	206-44-0									
25		pyrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			204-927-3	129-00-0									
26		benzo[a]anthracene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
		601-033-00-9	200-280-6	56-55-3									
27		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
28		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
29		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
30		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
31		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
32		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
33		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-883-8	191-24-2									
34		polychlorobiphenyls; PCB				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
35		sulfur { sulphur dioxide }			5	100	mg/kg	1.998	199.794	mg/kg	0.02 %		
		016-011-00-9	231-195-2	7446-09-5									
										Total:	0.0278 %		

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

WAC results for sample: BH105 1/0.50/2024-05-14

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

The sample FAILS the Hazardous (Hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	7	3	5	6
2	LOI (loss on ignition)	%	0.4	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.01	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	18	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	0.17	100	-	-
7	pH	pH	9	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	<1	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	<0.01	0.5	2	25
10	barium	mg/kg	<0.1	20	100	300
11	cadmium	mg/kg	<0.02	0.04	1	5
12	chromium	mg/kg	<0.1	0.5	10	70
13	copper	mg/kg	<0.02	2	50	100
14	mercury	mg/kg	<0.002	0.01	0.2	2
15	molybdenum	mg/kg	<0.1	0.5	10	30
16	nickel	mg/kg	<0.1	0.4	10	40
17	lead	mg/kg	<0.05	0.5	10	50
18	antimony	mg/kg	<0.05	0.06	0.7	5
19	selenium	mg/kg	<0.03	0.1	0.5	7
20	zinc	mg/kg	<0.01	4	50	200
21	chloride	mg/kg	<100	800	15,000	25,000
22	fluoride	mg/kg	<0.1	10	150	500
23	sulphate	mg/kg	<100	1,000	20,000	50,000
24	phenol index	mg/kg	<1	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	300	4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	SNRHW WAC criteria fail
	Hazardous WAC criteria fail

Classification of sample: BH105 2/1.20/2024-05-14

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

Sample details

Sample name:	LoW Code:	
BH105 2/1.20/2024-05-14	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry:	17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

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

Hazard Statements hit:

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

Because of determinand:

zinc chromate: (compound conc.: 0.119%)

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

Because of determinand:

lead chromate: (Note 1 conc.: 0.44%)

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

Hazard Statements hit:

Repr. 1A; H360Df "May damage the unborn child. Suspected of damaging fertility."

Because of determinand:

lead chromate: (Note 1 conc.: 0.44%)

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

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinands:

lead chromate: (Note 1 conc.: 0.44%)
zinc chromate: (compound conc.: 0.119%)

Determinands

Moisture content: 0% 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		29 mg/kg	1.32	38.289 mg/kg	0.00383 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		<0.2 mg/kg	3.22	<0.644 mg/kg	<0.0000644 %		<**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		17 mg/kg	1.462	24.846 mg/kg	0.00248 %		

#		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
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		92	mg/kg	1.126	103.582	mg/kg	0.0104 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	4400	mg/kg	1.56	6863.187	mg/kg	0.44 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.63	mg/kg	1.353	0.853	mg/kg	0.0000853 %		
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		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		430	mg/kg	2.774	1192.883	mg/kg	0.119 %		
12		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
13		benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
14		toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
15		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
16		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
17		pH			PH		8.2	pH		8.2	pH	8.2 pH		
18		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
19		acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
20		acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
21		fluorene		201-695-5	86-73-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
22		phenanthrene		201-581-5	85-01-8		0.15	mg/kg		0.15	mg/kg	0.000015 %		
23		anthracene		204-371-1	120-12-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
24		fluoranthene		205-912-4	206-44-0		0.24	mg/kg		0.24	mg/kg	0.000024 %		
25		pyrene		204-927-3	129-00-0		0.24	mg/kg		0.24	mg/kg	0.000024 %		
26		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.1	mg/kg		0.1	mg/kg	0.00001 %		
27		chrysene	601-048-00-0	205-923-4	218-01-9		0.12	mg/kg		0.12	mg/kg	0.000012 %		
28		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.11	mg/kg		0.11	mg/kg	0.000011 %		
29		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.04	mg/kg		0.04	mg/kg	0.000004 %		
30		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.08	mg/kg		0.08	mg/kg	0.000008 %		
31		indeno[123-cd]pyrene		205-893-2	193-39-5		0.05	mg/kg		0.05	mg/kg	0.000005 %		
32		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
33		benzo[ghi]perylene		205-883-8	191-24-2		0.05	mg/kg		0.05	mg/kg	0.000005 %		

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
								Total:	0.582 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated 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

WAC results for sample: BH105 2/1.20/2024-05-14

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the Hazardous (Hazardous waste landfill) criteria because of missing determinand values.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	4	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg		1	-	-
5	Mineral oil (C10 to C40)	mg/kg		500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	1.2	100	-	-
7	pH	pH		-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg		0.5	2	25
10	barium	mg/kg		20	100	300
11	cadmium	mg/kg		0.04	1	5
12	chromium	mg/kg		0.5	10	70
13	copper	mg/kg		2	50	100
14	mercury	mg/kg		0.01	0.2	2
15	molybdenum	mg/kg		0.5	10	30
16	nickel	mg/kg		0.4	10	40
17	lead	mg/kg		0.5	10	50
18	antimony	mg/kg		0.06	0.7	5
19	selenium	mg/kg		0.1	0.5	7
20	zinc	mg/kg		4	50	200
21	chloride	mg/kg		800	15,000	25,000
22	fluoride	mg/kg		10	150	500
23	sulphate	mg/kg		1,000	20,000	50,000
24	phenol index	mg/kg		1	-	-
25	DOC (dissolved organic carbon)	mg/kg		500	800	1,000
26	TDS (total dissolved solids)	mg/kg		4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Missing WAC determinand value

Classification of sample: BH105 3/1.70/2024-05-14

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

Sample details

Sample name:
BH105 3/1.70/2024-05-14

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: 0% 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		4.6	mg/kg	1.32	6.073	mg/kg	0.000607 %		
2		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		<0.2	mg/kg	3.22	<0.644	mg/kg	<0.0000644 %		<**LOD**
3		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
4		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		14	mg/kg	1.462	20.462	mg/kg	0.00205 %		
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		11	mg/kg	1.126	12.385	mg/kg	0.00124 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	9.9	mg/kg	1.56	15.442	mg/kg	0.00099 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<**LOD**
9		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		8.3	mg/kg	2.976	24.703	mg/kg	0.00247 %		
10		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		57	mg/kg	2.774	158.126	mg/kg	0.0158 %		
12		pH			PH		7.7	pH		7.7	pH	7.7 pH		
											Total:	0.0236 %		

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

Classification of sample: BH106 1/0.20/2024-05-13

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

Sample details

Sample name:
BH106 1/0.20/2024-05-13

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: 0% 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		2.3 mg/kg	1.32	3.037 mg/kg	0.000304 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		<0.2 mg/kg	3.22	<0.644 mg/kg	<0.0000644 %		<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		4.8 mg/kg	1.462	7.015 mg/kg	0.000702 %		
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		8.7 mg/kg	1.126	9.795 mg/kg	0.00098 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	15 mg/kg	1.56	23.397 mg/kg	0.0015 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		3.9 mg/kg	2.976	11.607 mg/kg	0.00116 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<LOD
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		39 mg/kg	2.774	108.192 mg/kg	0.0108 %		
12	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
13	benzene	601-020-00-8	200-753-7	71-43-2		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
14	toluene	601-021-00-3	203-625-9	108-88-3		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
15	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
16	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
17	pH			PH		8.6 pH		8.6 pH	8.6 pH		

#		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									
18		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
19		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
20		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-469-6	83-32-9									
21		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-695-5	86-73-7									
22		phenanthrene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
			201-581-5	85-01-8									
23		anthracene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
			204-371-1	120-12-7									
24		fluoranthene				0.3	mg/kg		0.3	mg/kg	0.00003 %		
			205-912-4	206-44-0									
25		pyrene				0.35	mg/kg		0.35	mg/kg	0.000035 %		
			204-927-3	129-00-0									
26		benzo[a]anthracene				0.17	mg/kg		0.17	mg/kg	0.000017 %		
		601-033-00-9	200-280-6	56-55-3									
27		chrysene				0.22	mg/kg		0.22	mg/kg	0.000022 %		
		601-048-00-0	205-923-4	218-01-9									
28		benzo[b]fluoranthene				0.26	mg/kg		0.26	mg/kg	0.000026 %		
		601-034-00-4	205-911-9	205-99-2									
29		benzo[k]fluoranthene				0.08	mg/kg		0.08	mg/kg	0.000008 %		
		601-036-00-5	205-916-6	207-08-9									
30		benzo[a]pyrene; benzo[def]chrysene				0.22	mg/kg		0.22	mg/kg	0.000022 %		
		601-032-00-3	200-028-5	50-32-8									
31		indeno[123-cd]pyrene				0.11	mg/kg		0.11	mg/kg	0.000011 %		
			205-893-2	193-39-5									
32		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
33		benzo[ghi]perylene				0.16	mg/kg		0.16	mg/kg	0.000016 %		
			205-883-8	191-24-2									
34		polychlorobiphenyls; PCB				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
35		sulfur { sulphur dioxide }			5	100	mg/kg	1.998	199.794	mg/kg	0.02 %		
		016-011-00-9	231-195-2	7446-09-5									
										Total:	0.0361 %		

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

WAC results for sample: BH106 1/0.20/2024-05-13

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

The sample PASSES the Hazardous (Hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	4.9	3	5	6
2	LOI (loss on ignition)	%	1	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.01	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	350	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	4.3	100	-	-
7	pH	pH	8.6	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	<1	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	<0.01	0.5	2	25
10	barium	mg/kg	<0.1	20	100	300
11	cadmium	mg/kg	<0.02	0.04	1	5
12	chromium	mg/kg	<0.1	0.5	10	70
13	copper	mg/kg	<0.02	2	50	100
14	mercury	mg/kg	<0.002	0.01	0.2	2
15	molybdenum	mg/kg	<0.1	0.5	10	30
16	nickel	mg/kg	<0.1	0.4	10	40
17	lead	mg/kg	<0.05	0.5	10	50
18	antimony	mg/kg	<0.05	0.06	0.7	5
19	selenium	mg/kg	<0.03	0.1	0.5	7
20	zinc	mg/kg	<0.01	4	50	200
21	chloride	mg/kg	<100	800	15,000	25,000
22	fluoride	mg/kg	2.6	10	150	500
23	sulphate	mg/kg	<100	1,000	20,000	50,000
24	phenol index	mg/kg	<1	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	370	4,000	60,000	100,000

Key

	User supplied data
	Not applicable

Classification of sample: BH106 2/0.60/2024-05-13

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

Sample details

Sample name:
BH106 2/0.60/2024-05-13

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: 0% 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		26	mg/kg	1.32	34.328	mg/kg	0.00343 %		
2		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.5	mg/kg	3.22	1.61	mg/kg	0.000161 %		
3		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
4		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		13	mg/kg	1.462	19	mg/kg	0.0019 %		
5		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		120	mg/kg	1.126	135.107	mg/kg	0.0135 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	220	mg/kg	1.56	343.159	mg/kg	0.022 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.23	mg/kg	1.353	0.311	mg/kg	0.0000311 %		
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		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		99	mg/kg	2.774	274.641	mg/kg	0.0275 %		
12		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**
13		benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
14		toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
15		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
16		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**
17		pH			PH		7.4	pH		7.4	pH	7.4 pH		

#		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									
18		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
19		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
20		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-469-6	83-32-9									
21		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-695-5	86-73-7									
22		phenanthrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			201-581-5	85-01-8									
23		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-371-1	120-12-7									
24		fluoranthene				0.15	mg/kg		0.15	mg/kg	0.000015 %		
			205-912-4	206-44-0									
25		pyrene				0.17	mg/kg		0.17	mg/kg	0.000017 %		
			204-927-3	129-00-0									
26		benzo[a]anthracene				0.11	mg/kg		0.11	mg/kg	0.000011 %		
		601-033-00-9	200-280-6	56-55-3									
27		chrysene				0.11	mg/kg		0.11	mg/kg	0.000011 %		
		601-048-00-0	205-923-4	218-01-9									
28		benzo[b]fluoranthene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		601-034-00-4	205-911-9	205-99-2									
29		benzo[k]fluoranthene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
		601-036-00-5	205-916-6	207-08-9									
30		benzo[a]pyrene; benzo[def]chrysene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
		601-032-00-3	200-028-5	50-32-8									
31		indeno[123-cd]pyrene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
			205-893-2	193-39-5									
32		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
33		benzo[ghi]perylene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
			205-883-8	191-24-2									
										Total:	0.077 %		

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

WAC results for sample: BH106 2/0.60/2024-05-13

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the Hazardous (Hazardous waste landfill) criteria because of missing determinand values.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	15	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg		1	-	-
5	Mineral oil (C10 to C40)	mg/kg		500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	0.88	100	-	-
7	pH	pH		-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg		0.5	2	25
10	barium	mg/kg		20	100	300
11	cadmium	mg/kg		0.04	1	5
12	chromium	mg/kg		0.5	10	70
13	copper	mg/kg		2	50	100
14	mercury	mg/kg		0.01	0.2	2
15	molybdenum	mg/kg		0.5	10	30
16	nickel	mg/kg		0.4	10	40
17	lead	mg/kg		0.5	10	50
18	antimony	mg/kg		0.06	0.7	5
19	selenium	mg/kg		0.1	0.5	7
20	zinc	mg/kg		4	50	200
21	chloride	mg/kg		800	15,000	25,000
22	fluoride	mg/kg		10	150	500
23	sulphate	mg/kg		1,000	20,000	50,000
24	phenol index	mg/kg		1	-	-
25	DOC (dissolved organic carbon)	mg/kg		500	800	1,000
26	TDS (total dissolved solids)	mg/kg		4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Missing WAC determinand value
	SNRHW WAC criteria fail
	Hazardous WAC criteria fail

Classification of sample: BH106 3/0.90/2024-05-13

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

Sample details

Sample name:
BH106 3/0.90/2024-05-13

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: 0% 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		11 mg/kg	1.32	14.524 mg/kg	0.00145 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.5 mg/kg	3.22	1.61 mg/kg	0.000161 %		
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.1 mg/kg	1.142	0.114 mg/kg	0.0000114 %		
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		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	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		0.12 mg/kg	1.353	0.162 mg/kg	0.0000162 %		
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		<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<**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	pH			PH		7.7 pH		7.7 pH	7.7 pH		
								Total:	0.0356 %		

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

Classification of sample: BH107 1/0.40/2024-04-17

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

Sample details

Sample name:
BH107 1/0.40/2024-04-17

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: 0% 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		14	mg/kg	1.32	18.485	mg/kg	0.00185 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.6	mg/kg	3.22	1.932	mg/kg	0.000193 %		
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.4	mg/kg	1.142	0.457	mg/kg	0.0000457 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		14	mg/kg	1.462	20.462	mg/kg	0.00205 %		
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	720	mg/kg	1.56	1123.067	mg/kg	0.072 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.25	mg/kg	1.353	0.338	mg/kg	0.0000338 %		
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		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		180	mg/kg	2.774	499.346	mg/kg	0.0499 %		
12	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
13	benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
14	toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
15	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
16	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
17	pH			PH		8	pH		8	pH	8pH		

#		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									
18		naphthalene				0.22	mg/kg		0.22	mg/kg	0.000022 %		
		601-052-00-2	202-049-5	91-20-3									
19		acenaphthylene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
			205-917-1	208-96-8									
20		acenaphthene				0.5	mg/kg		0.5	mg/kg	0.00005 %		
			201-469-6	83-32-9									
21		fluorene				0.59	mg/kg		0.59	mg/kg	0.000059 %		
			201-695-5	86-73-7									
22		phenanthrene				4.2	mg/kg		4.2	mg/kg	0.00042 %		
			201-581-5	85-01-8									
23		anthracene				1.2	mg/kg		1.2	mg/kg	0.00012 %		
			204-371-1	120-12-7									
24		fluoranthene				7.3	mg/kg		7.3	mg/kg	0.00073 %		
			205-912-4	206-44-0									
25		pyrene				6.7	mg/kg		6.7	mg/kg	0.00067 %		
			204-927-3	129-00-0									
26		benzo[a]anthracene				2.8	mg/kg		2.8	mg/kg	0.00028 %		
		601-033-00-9	200-280-6	56-55-3									
27		chrysene				2.9	mg/kg		2.9	mg/kg	0.00029 %		
		601-048-00-0	205-923-4	218-01-9									
28		benzo[b]fluoranthene				3.2	mg/kg		3.2	mg/kg	0.00032 %		
		601-034-00-4	205-911-9	205-99-2									
29		benzo[k]fluoranthene				1.1	mg/kg		1.1	mg/kg	0.00011 %		
		601-036-00-5	205-916-6	207-08-9									
30		benzo[a]pyrene; benzo[def]chrysene				2.6	mg/kg		2.6	mg/kg	0.00026 %		
		601-032-00-3	200-028-5	50-32-8									
31		indeno[123-cd]pyrene				0.86	mg/kg		0.86	mg/kg	0.000086 %		
			205-893-2	193-39-5									
32		dibenz[a,h]anthracene				0.26	mg/kg		0.26	mg/kg	0.000026 %		
		601-041-00-2	200-181-8	53-70-3									
33		benzo[ghi]perylene				1.2	mg/kg		1.2	mg/kg	0.00012 %		
			205-883-8	191-24-2									
34		polychlorobiphenyls; PCB				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.143 %		

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

WAC results for sample: BH107 1/0.40/2024-04-17

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

The sample FAILS the Hazardous (Hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	7.3	3	5	6
2	LOI (loss on ignition)	%	5	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.01	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	440	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	60	100	-	-
7	pH	pH	8	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	<1	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	<0.01	0.5	2	25
10	barium	mg/kg	<0.1	20	100	300
11	cadmium	mg/kg	<0.02	0.04	1	5
12	chromium	mg/kg	<0.1	0.5	10	70
13	copper	mg/kg	<0.02	2	50	100
14	mercury	mg/kg	<0.002	0.01	0.2	2
15	molybdenum	mg/kg	<0.1	0.5	10	30
16	nickel	mg/kg	<0.1	0.4	10	40
17	lead	mg/kg	<0.05	0.5	10	50
18	antimony	mg/kg	<0.05	0.06	0.7	5
19	selenium	mg/kg	<0.03	0.1	0.5	7
20	zinc	mg/kg	0.021	4	50	200
21	chloride	mg/kg	<100	800	15,000	25,000
22	fluoride	mg/kg	3.7	10	150	500
23	sulphate	mg/kg	<100	1,000	20,000	50,000
24	phenol index	mg/kg	<1	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	300	4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	SNRHW WAC criteria fail
	Hazardous WAC criteria fail

Classification of sample: BH107 2/1.30/2024-04-17

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

Sample details

Sample name:
BH107 2/1.30/2024-04-17

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: 0% 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	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.4 mg/kg	3.22	1.288 mg/kg	0.000129 %		
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
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		39 mg/kg	1.126	43.91 mg/kg	0.00439 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	85 mg/kg	1.56	132.584 mg/kg	0.0085 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.21 mg/kg	1.353	0.284 mg/kg	0.0000284 %		
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		<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<LOD
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		71 mg/kg	2.774	196.964 mg/kg	0.0197 %		
12	pH			PH		7.6 pH		7.6 pH	7.6 pH		
13	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
14	acenaphthylene		205-917-1	208-96-8		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
15	acenaphthene		201-469-6	83-32-9		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
16	fluorene		201-695-5	86-73-7		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
17	phenanthrene		201-581-5	85-01-8		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
18	anthracene		204-371-1	120-12-7		<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									
19		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-912-4	206-44-0									
20		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-927-3	129-00-0									
21		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-883-8	191-24-2									
										Total:	0.0424 %		

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

WAC results for sample: BH107 2/1.30/2024-04-17

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the Hazardous (Hazardous waste landfill) criteria because of missing determinand values.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	3.8	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg		6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg		1	-	-
5	Mineral oil (C10 to C40)	mg/kg		500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<0.1	100	-	-
7	pH	pH		-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg		0.5	2	25
10	barium	mg/kg		20	100	300
11	cadmium	mg/kg		0.04	1	5
12	chromium	mg/kg		0.5	10	70
13	copper	mg/kg		2	50	100
14	mercury	mg/kg		0.01	0.2	2
15	molybdenum	mg/kg		0.5	10	30
16	nickel	mg/kg		0.4	10	40
17	lead	mg/kg		0.5	10	50
18	antimony	mg/kg		0.06	0.7	5
19	selenium	mg/kg		0.1	0.5	7
20	zinc	mg/kg		4	50	200
21	chloride	mg/kg		800	15,000	25,000
22	fluoride	mg/kg		10	150	500
23	sulphate	mg/kg		1,000	20,000	50,000
24	phenol index	mg/kg		1	-	-
25	DOC (dissolved organic carbon)	mg/kg		500	800	1,000
26	TDS (total dissolved solids)	mg/kg		4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Missing WAC determinand value

Classification of sample: TP101 1/0.50/2024-04-16

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

Sample details

Sample name:
TP101 1/0.50/2024-04-16

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: 0% 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		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.4	mg/kg	3.22	1.288	mg/kg	0.000129 %		
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		28	mg/kg	1.462	40.924	mg/kg	0.00409 %		
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		110	mg/kg	1.126	123.848	mg/kg	0.0124 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	130	mg/kg	1.56	202.776	mg/kg	0.013 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.26	mg/kg	1.353	0.352	mg/kg	0.0000352 %		
9		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		28	mg/kg	2.976	83.335	mg/kg	0.00833 %		
10		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		120	mg/kg	2.774	332.898	mg/kg	0.0333 %		
12		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
13		benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
14		toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
15		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
16		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
17		pH			PH		7.9	pH		7.9	pH	7.9 pH		

#		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									
18		naphthalene				0.51	mg/kg		0.51	mg/kg	0.000051 %		
		601-052-00-2	202-049-5	91-20-3									
19		acenaphthylene				0.51	mg/kg		0.51	mg/kg	0.000051 %		
			205-917-1	208-96-8									
20		acenaphthene				6.4	mg/kg		6.4	mg/kg	0.00064 %		
			201-469-6	83-32-9									
21		fluorene				4.1	mg/kg		4.1	mg/kg	0.00041 %		
			201-695-5	86-73-7									
22		phenanthrene				44	mg/kg		44	mg/kg	0.0044 %		
			201-581-5	85-01-8									
23		anthracene				11	mg/kg		11	mg/kg	0.0011 %		
			204-371-1	120-12-7									
24		fluoranthene				100	mg/kg		100	mg/kg	0.01 %		
			205-912-4	206-44-0									
25		pyrene				97	mg/kg		97	mg/kg	0.0097 %		
			204-927-3	129-00-0									
26		benzo[a]anthracene				53	mg/kg		53	mg/kg	0.0053 %		
		601-033-00-9	200-280-6	56-55-3									
27		chrysene				51	mg/kg		51	mg/kg	0.0051 %		
		601-048-00-0	205-923-4	218-01-9									
28		benzo[b]fluoranthene				70	mg/kg		70	mg/kg	0.007 %		
		601-034-00-4	205-911-9	205-99-2									
29		benzo[k]fluoranthene				26	mg/kg		26	mg/kg	0.0026 %		
		601-036-00-5	205-916-6	207-08-9									
30		benzo[a]pyrene; benzo[def]chrysene				60	mg/kg		60	mg/kg	0.006 %		
		601-032-00-3	200-028-5	50-32-8									
31		indeno[123-cd]pyrene				22	mg/kg		22	mg/kg	0.0022 %		
			205-893-2	193-39-5									
32		dibenz[a,h]anthracene				7.6	mg/kg		7.6	mg/kg	0.00076 %		
		601-041-00-2	200-181-8	53-70-3									
33		benzo[ghi]perylene				29	mg/kg		29	mg/kg	0.0029 %		
			205-883-8	191-24-2									
34		sulfur { sulphur dioxide }			5	500	mg/kg	1.998	998.968	mg/kg	0.0999 %		
		016-011-00-9	231-195-2	7446-09-5									
										Total:	0.232 %		

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

WAC results for sample: TP101 1/0.50/2024-04-16

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the Hazardous (Hazardous waste landfill) criteria because of missing determinand values.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	15	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg		1	-	-
5	Mineral oil (C10 to C40)	mg/kg		500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	590	100	-	-
7	pH	pH		-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg		0.5	2	25
10	barium	mg/kg		20	100	300
11	cadmium	mg/kg		0.04	1	5
12	chromium	mg/kg		0.5	10	70
13	copper	mg/kg		2	50	100
14	mercury	mg/kg		0.01	0.2	2
15	molybdenum	mg/kg		0.5	10	30
16	nickel	mg/kg		0.4	10	40
17	lead	mg/kg		0.5	10	50
18	antimony	mg/kg		0.06	0.7	5
19	selenium	mg/kg		0.1	0.5	7
20	zinc	mg/kg		4	50	200
21	chloride	mg/kg		800	15,000	25,000
22	fluoride	mg/kg		10	150	500
23	sulphate	mg/kg		1,000	20,000	50,000
24	phenol index	mg/kg		1	-	-
25	DOC (dissolved organic carbon)	mg/kg		500	800	1,000
26	TDS (total dissolved solids)	mg/kg		4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Missing WAC determinand value
	SNRHW WAC criteria fail
	Hazardous WAC criteria fail

Classification of sample: TP101 2/1.10/2024-05-16

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

Sample details

Sample name:
TP101 2/1.10/2024-05-16

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: 0% 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		7.9 mg/kg	1.32	10.431 mg/kg	0.00104 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.5 mg/kg	3.22	1.61 mg/kg	0.000161 %		
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.1 mg/kg	1.142	0.114 mg/kg	0.0000114 %		
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		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	53 mg/kg	1.56	82.67 mg/kg	0.0053 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.07 mg/kg	1.353	0.0947 mg/kg	0.00000947 %		
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		29 mg/kg	2.976	86.312 mg/kg	0.00863 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<LOD
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		68 mg/kg	2.774	188.642 mg/kg	0.0189 %		
12	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
13	benzene	601-020-00-8	200-753-7	71-43-2		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
14	toluene	601-021-00-3	203-625-9	108-88-3		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
15	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
16	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
17	pH			PH		8.1 pH		8.1 pH	8.1 pH		

#		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									
18		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
19		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
20		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-469-6	83-32-9									
21		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-695-5	86-73-7									
22		phenanthrene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
			201-581-5	85-01-8									
23		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-371-1	120-12-7									
24		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-912-4	206-44-0									
25		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-927-3	129-00-0									
26		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
27		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
28		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
29		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
30		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
31		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
32		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
33		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-883-8	191-24-2									
										Total:	0.0408 %		

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

WAC results for sample: TP101 2/1.10/2024-05-16

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the Hazardous (Hazardous waste landfill) criteria because of missing determinand values.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	1.4	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg		1	-	-
5	Mineral oil (C10 to C40)	mg/kg		500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<0.1	100	-	-
7	pH	pH		-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg		0.5	2	25
10	barium	mg/kg		20	100	300
11	cadmium	mg/kg		0.04	1	5
12	chromium	mg/kg		0.5	10	70
13	copper	mg/kg		2	50	100
14	mercury	mg/kg		0.01	0.2	2
15	molybdenum	mg/kg		0.5	10	30
16	nickel	mg/kg		0.4	10	40
17	lead	mg/kg		0.5	10	50
18	antimony	mg/kg		0.06	0.7	5
19	selenium	mg/kg		0.1	0.5	7
20	zinc	mg/kg		4	50	200
21	chloride	mg/kg		800	15,000	25,000
22	fluoride	mg/kg		10	150	500
23	sulphate	mg/kg		1,000	20,000	50,000
24	phenol index	mg/kg		1	-	-
25	DOC (dissolved organic carbon)	mg/kg		500	800	1,000
26	TDS (total dissolved solids)	mg/kg		4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Missing WAC determinand value

Classification of sample: TP102 1/0.80/2024-05-16

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

Sample details

Sample name:
TP102 1/0.80/2024-05-16

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: 0% 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		6.3	mg/kg	1.32	8.318	mg/kg	0.000832 %		
2		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.8	mg/kg	3.22	2.576	mg/kg	0.000258 %		
3		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.1	mg/kg	1.142	0.114	mg/kg	0.0000114 %		
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		18	mg/kg	1.126	20.266	mg/kg	0.00203 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	41	mg/kg	1.56	63.952	mg/kg	0.0041 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<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		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		58	mg/kg	2.774	160.9	mg/kg	0.0161 %		
12		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
13		benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
14		toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
15		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
16		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
17		pH			PH		7.3	pH		7.3	pH	7.3 pH		

#		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									
18		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
19	•	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
20	•	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-469-6	83-32-9									
21	•	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-695-5	86-73-7									
22	•	phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
23	•	anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-371-1	120-12-7									
24	•	fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-912-4	206-44-0									
25	•	pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-927-3	129-00-0									
26		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
27		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
28		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
29		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
30		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
31	•	indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
32		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
33	•	benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-883-8	191-24-2									
34	•	polychlorobiphenyls; PCB				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
35		sulfur { sulphur dioxide }			5	900	mg/kg	1.998	1798.142	mg/kg	0.18 %		
		016-011-00-9	231-195-2	7446-09-5									
										Total:	0.21 %		

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

WAC results for sample: TP102 1/0.80/2024-05-16

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

The sample PASSES the Hazardous (Hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	1.8	3	5	6
2	LOI (loss on ignition)	%	4.6	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.01	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<0.1	100	-	-
7	pH	pH	7.3	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	<1	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	<0.01	0.5	2	25
10	barium	mg/kg	<0.1	20	100	300
11	cadmium	mg/kg	<0.02	0.04	1	5
12	chromium	mg/kg	<0.1	0.5	10	70
13	copper	mg/kg	<0.02	2	50	100
14	mercury	mg/kg	<0.002	0.01	0.2	2
15	molybdenum	mg/kg	<0.1	0.5	10	30
16	nickel	mg/kg	<0.1	0.4	10	40
17	lead	mg/kg	<0.05	0.5	10	50
18	antimony	mg/kg	<0.05	0.06	0.7	5
19	selenium	mg/kg	<0.03	0.1	0.5	7
20	zinc	mg/kg	<0.01	4	50	200
21	chloride	mg/kg	<100	800	15,000	25,000
22	fluoride	mg/kg	2.7	10	150	500
23	sulphate	mg/kg	<100	1,000	20,000	50,000
24	phenol index	mg/kg	<1	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	310	4,000	60,000	100,000

Key

	User supplied data
	Not applicable

Classification of sample: TP102 2/1.20/2024-04-16

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

Sample details

Sample name:
TP102 2/1.20/2024-04-16

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: 0% 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		5.2 mg/kg	1.32	6.866 mg/kg	0.000687 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.3 mg/kg	3.22	0.966 mg/kg	0.0000966 %		
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
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		10 mg/kg	1.126	11.259 mg/kg	0.00113 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	10 mg/kg	1.56	15.598 mg/kg	0.001 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<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		0.5 mg/kg	2.554	1.277 mg/kg	0.000128 %		
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		46 mg/kg	2.774	127.611 mg/kg	0.0128 %		
12	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
13	benzene	601-020-00-8	200-753-7	71-43-2		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
14	toluene	601-021-00-3	203-625-9	108-88-3		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
15	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
16	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
17	pH			PH		7.7 pH		7.7 pH	7.7 pH		

#		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									
18		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
19		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
20		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-469-6	83-32-9									
21		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-695-5	86-73-7									
22		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
23		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-371-1	120-12-7									
24		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-912-4	206-44-0									
25		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-927-3	129-00-0									
26		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
27		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
28		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
29		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
30		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
31		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
32		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
33		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-883-8	191-24-2									
										Total:	0.0217 %		

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

WAC results for sample: TP102 2/1.20/2024-04-16

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the Hazardous (Hazardous waste landfill) criteria because of missing determinand values.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	0.6	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg		1	-	-
5	Mineral oil (C10 to C40)	mg/kg		500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<0.1	100	-	-
7	pH	pH		-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg		0.5	2	25
10	barium	mg/kg		20	100	300
11	cadmium	mg/kg		0.04	1	5
12	chromium	mg/kg		0.5	10	70
13	copper	mg/kg		2	50	100
14	mercury	mg/kg		0.01	0.2	2
15	molybdenum	mg/kg		0.5	10	30
16	nickel	mg/kg		0.4	10	40
17	lead	mg/kg		0.5	10	50
18	antimony	mg/kg		0.06	0.7	5
19	selenium	mg/kg		0.1	0.5	7
20	zinc	mg/kg		4	50	200
21	chloride	mg/kg		800	15,000	25,000
22	fluoride	mg/kg		10	150	500
23	sulphate	mg/kg		1,000	20,000	50,000
24	phenol index	mg/kg		1	-	-
25	DOC (dissolved organic carbon)	mg/kg		500	800	1,000
26	TDS (total dissolved solids)	mg/kg		4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Missing WAC determinand value

Classification of sample: TP103 1/0.60/2024-05-16

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

Sample details

Sample name:
TP103 1/0.60/2024-05-16

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: 0% 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		5	mg/kg	1.32	6.602	mg/kg	0.00066 %		
2		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.5	mg/kg	3.22	1.61	mg/kg	0.000161 %		
3		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<LOD
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		12	mg/kg	1.126	13.511	mg/kg	0.00135 %		
7		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	13	mg/kg	1.56	20.278	mg/kg	0.0013 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<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		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		48	mg/kg	2.774	133.159	mg/kg	0.0133 %		
12		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
13		benzene	601-020-00-8	200-753-7	71-43-2		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
14		toluene	601-021-00-3	203-625-9	108-88-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
15		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
16		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
17		pH			PH		7.4	pH		7.4	pH	7.4 pH		

#		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									
18		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
19		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
20		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-469-6	83-32-9									
21		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-695-5	86-73-7									
22		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
23		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-371-1	120-12-7									
24		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-912-4	206-44-0									
25		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-927-3	129-00-0									
26		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
27		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
28		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
29		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
30		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
31		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
32		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
33		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-883-8	191-24-2									
34		sulfur { sulphur dioxide }			5	100	mg/kg	1.998	199.794	mg/kg	0.02 %		
		016-011-00-9	231-195-2	7446-09-5									
										Total:	0.0428 %		

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

WAC results for sample: TP103 1/0.60/2024-05-16

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the Hazardous (Hazardous waste landfill) criteria because of missing determinand values.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	0.7	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg		1	-	-
5	Mineral oil (C10 to C40)	mg/kg		500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<0.1	100	-	-
7	pH	pH		-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg		0.5	2	25
10	barium	mg/kg		20	100	300
11	cadmium	mg/kg		0.04	1	5
12	chromium	mg/kg		0.5	10	70
13	copper	mg/kg		2	50	100
14	mercury	mg/kg		0.01	0.2	2
15	molybdenum	mg/kg		0.5	10	30
16	nickel	mg/kg		0.4	10	40
17	lead	mg/kg		0.5	10	50
18	antimony	mg/kg		0.06	0.7	5
19	selenium	mg/kg		0.1	0.5	7
20	zinc	mg/kg		4	50	200
21	chloride	mg/kg		800	15,000	25,000
22	fluoride	mg/kg		10	150	500
23	sulphate	mg/kg		1,000	20,000	50,000
24	phenol index	mg/kg		1	-	-
25	DOC (dissolved organic carbon)	mg/kg		500	800	1,000
26	TDS (total dissolved solids)	mg/kg		4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Missing WAC determinand value

Classification of sample: TP103 2/1.40/2024-05-16

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

Sample details

Sample name:
TP103 2/1.40/2024-05-16

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: 0% 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		21 mg/kg	1.32	27.727 mg/kg	0.00277 %		
2	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.5 mg/kg	3.22	1.61 mg/kg	0.000161 %		
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.4 mg/kg	1.142	0.457 mg/kg	0.0000457 %		
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		76 mg/kg	1.126	85.568 mg/kg	0.00856 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	690 mg/kg	1.56	1076.272 mg/kg	0.069 %		
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		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		<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<LOD
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		250 mg/kg	2.774	693.537 mg/kg	0.0694 %		
12	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
13	benzene	601-020-00-8	200-753-7	71-43-2		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
14	toluene	601-021-00-3	203-625-9	108-88-3		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
15	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
16	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
17	pH			PH		7.9 pH		7.9 pH	7.9 pH		

#		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									
18		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
19		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
20		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-469-6	83-32-9									
21		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-695-5	86-73-7									
22		phenanthrene				0.17	mg/kg		0.17	mg/kg	0.000017 %		
			201-581-5	85-01-8									
23		anthracene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
			204-371-1	120-12-7									
24		fluoranthene				0.37	mg/kg		0.37	mg/kg	0.000037 %		
			205-912-4	206-44-0									
25		pyrene				0.36	mg/kg		0.36	mg/kg	0.000036 %		
			204-927-3	129-00-0									
26		benzo[a]anthracene				0.13	mg/kg		0.13	mg/kg	0.000013 %		
		601-033-00-9	200-280-6	56-55-3									
27		chrysene				0.15	mg/kg		0.15	mg/kg	0.000015 %		
		601-048-00-0	205-923-4	218-01-9									
28		benzo[b]fluoranthene				0.15	mg/kg		0.15	mg/kg	0.000015 %		
		601-034-00-4	205-911-9	205-99-2									
29		benzo[k]fluoranthene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
		601-036-00-5	205-916-6	207-08-9									
30		benzo[a]pyrene; benzo[def]chrysene				0.13	mg/kg		0.13	mg/kg	0.000013 %		
		601-032-00-3	200-028-5	50-32-8									
31		indeno[123-cd]pyrene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
			205-893-2	193-39-5									
32		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
33		benzo[ghi]perylene				0.08	mg/kg		0.08	mg/kg	0.000008 %		
			205-883-8	191-24-2									
										Total:	0.158 %		

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

WAC results for sample: TP103 2/1.40/2024-05-16

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the Hazardous (Hazardous waste landfill) criteria because of missing determinand values.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	2.7	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg		1	-	-
5	Mineral oil (C10 to C40)	mg/kg		500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	1.7	100	-	-
7	pH	pH		-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg		0.5	2	25
10	barium	mg/kg		20	100	300
11	cadmium	mg/kg		0.04	1	5
12	chromium	mg/kg		0.5	10	70
13	copper	mg/kg		2	50	100
14	mercury	mg/kg		0.01	0.2	2
15	molybdenum	mg/kg		0.5	10	30
16	nickel	mg/kg		0.4	10	40
17	lead	mg/kg		0.5	10	50
18	antimony	mg/kg		0.06	0.7	5
19	selenium	mg/kg		0.1	0.5	7
20	zinc	mg/kg		4	50	200
21	chloride	mg/kg		800	15,000	25,000
22	fluoride	mg/kg		10	150	500
23	sulphate	mg/kg		1,000	20,000	50,000
24	phenol index	mg/kg		1	-	-
25	DOC (dissolved organic carbon)	mg/kg		500	800	1,000
26	TDS (total dissolved solids)	mg/kg		4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Missing WAC determinand value

Appendix A: Classifier defined and non GB MCL determinands

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

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

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

polychlorobiphenyls; PCB (EC Number: 215-648-1, CAS Number: 1336-36-3)

GB MCL index number: 602-039-00-4
Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans;

POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

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)

boron {diboron trioxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass (edit as required)

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)

sulfur {sulphur dioxide}

x

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2024.158.6092.11254 (06 Jun 2024)
HazWasteOnline Database: 2024.158.6092.11254 (06 Jun 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
GB MCL List v3.0 - version 3.0 of 11th January 2024
GB MCL List v4.0 - version 4.0 of 2nd March 2024

WASTE CLASSIFICATION

Is Soil Waste?

Any soils intended for disposal off-site at a landfill are waste.

Some excess arisings (topsoil & subsoil) may be generated by excavations for foundations, sewers etc. If these are intended for retention and reuse on the site, they would be classed as clean naturally occurring soils and would not be considered waste, under the Waste Framework Directive.

In accordance with the CL:AIRE Code of Practice[1] any excess natural soil arisings should be suitable for Direct Transfer to another development site, for use either as clean cover material, or bulk fill for use, without the need for waste legislation to be applied.

Basic Waste Characterisation

Government's aim of reducing reliance on landfill as a disposal option and minimising the impacts of landfills on the environment and human health has meant the introduction of more stringent regulatory procedures. In accordance with the Landfill Regulations[2] and Waste Framework Directive (WFD) (2008/98/EC), it is a statutory requirement that a waste is characterised and also meets specific Waste Acceptance Criteria (WAC) prior to disposal at a landfill site. The waste producer has a Duty of Care[3] to ensure that the waste is characterised, and the landfill operator must also be satisfied that a Basic Characterisation, is properly completed before the waste is accepted.

If arisings from construction works are intended for disposal, then there is a requirement to determine prior to disposal whether these would classify as **Hazardous** or **Non-Hazardous** (this is not the same as 'risk' posed to remaining on-site).

The Environment Agency's technical guidance 'Waste Classification (WM3, 1st edition 2015)' which came into force on 1st July 2015, sets out the requirement for the classification. It also provides the basis for the methodology to employ in order to ensure compliance with the regulations.

The classification assesses the composition of the material and determines the concentrations of the hazardous substances in the material. The assessment of contaminated soil (excavated soil) to determine whether it is hazardous waste is dependent on the presence of "hazardous substances" exceeding particular thresholds.

In the case of contaminated soil, the basic characterisation requires testing for potential contaminants, derived from the knowledge of the site history (see sections above).

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[1] *The Definition of Waste: Development Industry Code of Practice. CL:AIRE, 2011.*
[2] *The Landfill (England and Wales) Regulations 2005*
[3] *Duty of Care requirements contained in Section 34 of the Environmental Protection Act 1990 and The Waste (England and Wales) Regulations 2011.*

Waste Acceptance Criteria

Landfills are classified according to whether they can accept hazardous, non-hazardous, or inert wastes. Wastes can only be accepted at a landfill if they meet the waste acceptance criteria (WAC) for that class of landfill.

The WAC laboratory analysis includes solids and leachate testing to assess which class of landfill the waste can be accepted at.

Currently there are only acceptance criteria for inert, stable-non-reactive hazardous and hazardous landfills. This means that WAC testing is only required for wastes destined for Inert, Stable Non-Reactive Hazardous (SNRH) and Hazardous landfills.

If material is classified as non-hazardous, there is a choice of sending the material to a non-hazardous or an inert landfill (subject to meeting inert waste acceptance levels). Where the material is classified as hazardous, WAC analysis will be required to demonstrate that it meets the acceptance levels for hazardous landfill or SNRH landfill.

Asbestos

With respect to asbestos, waste soils will be classed hazardous if the soil mass contains more than 0.1% asbestos fibres that are free and dispersed. However, where the waste contains identifiable pieces of asbestos (i.e., any particle of a size that can be identified as potentially being asbestos by a competent person if examined by the naked eye), then the waste is hazardous if the concentration of asbestos in the pieces alone is 0.1%. If a stockpile of soil contained rare fragments of broken asbestos-cement sheeting, the whole stockpile would be classed as hazardous unless all the fragments could be picked-out (even though the concentration of asbestos in the soil mass might be an orders of magnitude less than 0.1%).

Tarmac/Road Asphalt

Older tarmac typically comprised coal tar which is potentially a hazardous substances. Benzo[a]pyrene (BaP) is typically used as a marker compound for the presence of coal tar. Where the concentration of benzo[a]pyrene is at or above 50mg/kg (within the binding material and excluding the aggregate) then the material would be classed hazardous.

APPENDIX G GAS MONITORING RESULTS



GAS & GROUNDWATER MONITORING

Project Name	Upper Brook Street, Manchester M13 9QD
Project Number	7293
Client	Mclaren Property
Date	20/05/2024
Start/Finish Time	09:10 - 09:45
Operator	RJH

Weather	
Raining/Dry	Dry
Cloud Cover (%)	10
Temperature (°C)	
Pressure (mb)	1012
Weather Station Trend	

Key	
ND	None Detected
NR	Not Recorded
1.0	Recorded value does not breach trigger levels
5.0	Recorded value breaches trigger level 1
10.0	Recorded value breaches trigger level 2

Monitoring Point	Base of well	Groundwater level	Concentrations					Gas Flow Rates			Remarks
			Initial / Highest		Steady		Lowest	Initial / Maximum	Steady	Time to fall from highest to steady	
			CH_4	CO_2	CH_4	CO_2	O_2				
	m	(m) bgl	% v/v	(%)	% v/v	(%)	(%)	litre/hr	litre/hr	secs	
Bh101		Dry	0.0	0.1	0.0	0.1	21.0	0.4	0.4		
BH103		Dry	0.0	2.1	0.0	2.1	19.0	0.5	0.5		
BH104		Dry	0.0	0.4	0.0	0.4	20.5	0.5	0.5		
BH106		Dry	0.0	2.6	0.0	2.6	16.6	0.4	0.4		

Equipment:
Gas Data GFM430 Infrared Gas Analyser
Geotechnical Instruments Dipmeter

	CH_4	CO_2	O_2
Trigger level 1	1	5	16
Trigger level 2	5	10	10