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GEO-ENVIRONMENTAL & GEOTECHNICAL ASSESSMENT (GROUND INVESTIGATION) REPORT

Tiverton Estate,
London,
N15 6RR



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EXECUTIVE SUMMARY

Site Details	Site Address	Tiverton Estate, London, N15 6RR
	National Grid Reference	E: 532677, N: 188234
	Site Area	0.15Ha
	Proposed Development	It is understood that the development proposals comprise the construction of either 2No. three/four-storey separate buildings or 1No. four-storey linear building containing 18-24 residential properties, alongside amenity space, landscaping, cycle parking and refuse storage. The soft landscaping is assumed to be for communal use, though areas of private amenity space are also proposed.
Encountered Conditions	Scope of Works	The assessment incorporated a desk study to determine the site's setting to inform a preliminary risk assessment followed by an intrusive investigation to confirm the ground and groundwater conditions and support the development of a geotechnical and geo-environmental assessment.
	Ground Conditions	The ground conditions encountered broadly consistent with those anticipated from the desk study, and comprised Made Ground, to depths of up to 1.50m, underlain by the London Clay Formation to the base of the boreholes (maximum depth of 25.00m).
	Groundwater	During drilling of the boreholes, groundwater seepages were encountered within BH2 and WS04 at depths of 15.5m and 4.00mbgl, respectively.
Geo-environmental Assessment Summary and Recommendations		Following generic risk assessments, elevated concentrations of lead, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(123-cd)pyrene, and dibenzo(ah)anthracene were detected in soils in excess of generic assessment criteria for the protection of human health within a residential with plant uptake end-use scenario. No asbestos fibres were detected in the samples analysed in the laboratory. The site proposal indicates that the majority of the site will remain covered by a combination of the proposed building footprint and hard surfacing. Where this is the case, no formal remedial measures are considered necessary in terms of human health, as the building and hard surfacing are expected to provide a barrier to potential receptors. In areas of gardens/soft landscaping, it would be prudent to replace Made Ground with at least 450mm of imported clean topsoil, placed on a geotextile membrane. Elevated levels of polycyclic aromatic hydrocarbons (PAHs) have been found in the Made Ground in excess of the generic screening criteria for human health. However, potentially mobile contaminants have not been found in significant concentrations, no visual or olfactory evidence of contamination has been reported and the underlying soils encountered were predominantly London Clay Formation with granular inclusions and sand pockets. As with any ground investigation, the presence of further hotspots between sampling points cannot be ruled out, and caution must be exercised during construction works. Should any contamination be encountered, a suitably qualified environmental consultant should be informed immediately, so that adequate measures may be recommended.

Geotechnical Considerations	Foundations	Based on the ground and groundwater conditions encountered, traditional strip/trench-fill foundations up to 1m wide may be formed within the underlying London Clay Formation at a minimum depth of 1.0m for an allowable bearing capacity of 125kPa. Alternatively, pad foundations with minimum dimensions of 1.0m x 1.0m could be formed, for an allowable bearing capacity of 170kPa. Total and differential settlements should be contained within tolerable limits. Alternatively, a piled foundation would be suitable and indicative pile carrying capacities are given in Table 9.1.
	Sulphates	Buried concrete for foundations should be designed to Class DS-5, AC-5 where the London Clay Formation is to be disturbed and exposed to air, due to significant concentrations of oxidisable sulphides reported in this deposit.
	Ground Floor Slabs	Given the likely presence of shrinkable soils, it is recommended that suspended floor slabs are used with an adequate void designed according to NHBC Standards. As a guide, initial modelling indicates a requirement for a sub-floor void of 300mm due to the presence of shrinkable soils of high volume change potential.
	Excavations	Temporary excavations in cohesive soils are likely to remain stable in the short term though some spalling may be anticipated. Temporary excavations within the Made Ground and granular soils are unlikely to remain stable and some form of temporary support or battering back to a safe angle is likely to be required. Subject to seasonal variations, surface water/groundwater encountered during site works could likely be dealt with by conventional pumping from a sump used to collate waters.
	Road Pavements	Preliminary CBR design values of 2.5% and 3.5% are recommended for pavements constructed within the Made Ground and London Clay Formation, respectively.
	Surface Water Drainage	Based on the results of in-situ testing, and ground conditions encountered, conventional soakaways are not likely to be suitable and an alternative drainage solution should be sought.
Recommended Further Work		The following works are recommended: • Submit chemical testing results to appropriate waste facility to confirm waste classification. • Provision of a Remediation Options Appraisal, Strategy & Verification Plan. • Seek confirmation of the water supply pipe requirements by the appropriate service provider.
<i>This Executive Summary is intended to provide a brief summary of the main findings and conclusions of the investigation. For detailed information, the reader is referred to the main report ref. P4219J2428b.</i>		

1 INTRODUCTION

1.1 Terms of Reference

- 1.1.1 Alexander James Contracts Ltd ("The Client") has commissioned Jomas Associates Ltd ('Jomas') to undertake an investigation of the geotechnical and geo-environmental factors pertaining to the proposed development at a site referred to as Tiverton Estate, London, N15 6RR (herein referred to as 'the site'). It should be noted the site comprises the external area only.
- 1.1.2 A site location plan is provided in Figure 1.
- 1.1.3 A Phase 1 Desk Study has been produced for the site and issued separately, as detailed in Table 1.1 below. This was followed by the intrusive investigation described in this report.
- 1.1.4 The intrusive investigation was undertaken in accordance with Jomas' proposal dated 12th August 2026.
- 1.1.5 This report is issued as a draft geo-environmental assessment, the geotechnical assessment and associated recommendations will be provided on receipt of the geotechnical results.

1.2 Proposed Development

- 1.2.1 The proposed development comprises either two separate three- to four-storey buildings or one four-storey linear building, providing approximately 18-24 residential properties. The development will also include amenity space, landscaping, cycle parking and refuse storage. Soft landscaping is assumed to comprise communal areas, although private amenity space may also be provided.
- 1.2.2 For the purpose of geo-environmental assessment and selection of generic assessment criteria, the development is considered 'residential with home-grown produce'.
- 1.2.3 A plan of the proposed development is provided as Figure 4.
- 1.2.4 For the purpose of geotechnical assessment, it is considered that the project could be classified as a Geotechnical Category (GC) 2 site in accordance with BS EN 1997.

1.3 Objectives

- 1.3.1 The objectives of Jomas' investigation are as follows:
- To undertake an intrusive investigation, to determine the ground and groundwater conditions as well as to assess the nature and extent of contaminants (if any) potentially present at the site,
 - To establish the presence of significant pollutant linkages, in accordance with the procedures set out within Part IIA of the Environmental Protection Act 1990, associated statutory guidance and current best practice including the EA land contamination risk management (LCRM), and,
 - To determine soil properties to inform the preliminary geotechnical assessment for foundations, drainage, excavation stability, pavement design and buried concrete and recommendations for further action (if required).

1.4 Scope of Works

1.4.1 The following tasks were undertaken to achieve the objectives listed above:

- Intrusive ground investigation to determine shallow ground conditions, and potential for contamination to be present at the site.
- Undertaking of laboratory chemical and geotechnical testing upon samples obtained.
- The compilation of this report, which collects and discusses the above data, and presents an assessment of the site conditions, conclusions and recommendations.

1.5 Previous/Supplied Documentation

1.5.1 A number of relevant reports prepared by or supplied to Jomas Associates prior to the commencement of this investigation are detailed in Table 1.1:

Table 1.1: Previous/Supplied Reports

Title	Author	Reference	Date
Desk Study/Preliminary Risk Assessment Report For 2-240 Tiverton Road, London, N15 6RR	Jomas Associates	P4008J2428	28 th October 2021

1.6 Previous Ground Investigations

1.6.1 Based on available information provided to Jomas, no previous intrusive investigation works are known to have been undertaken on the site.

1.7 Limitations

1.7.1 Jomas has prepared this report for the sole use of Alexander James Contracts Ltd, in accordance with the generally accepted consulting practices and for the intended purposes as stated in the agreement under which this work was completed. This report may not be relied upon by any other party without the explicit written agreement of Jomas. No other third-party warranty, expressed or implied, is made as to the professional advice included in this report. This report must be used in its entirety.

1.7.2 The records search was limited to information available from public sources; this information is changing continually and frequently incomplete. Unless Jomas has actual knowledge to the contrary, information obtained from public sources or provided to Jomas by site personnel and other information sources, have been assumed to be correct. Jomas does not assume any liability for the misinterpretation of information or for items not visible, accessible or present on the subject property at the time of this study.

1.7.3 Whilst every effort has been made to ensure the accuracy of the data supplied, and any analysis derived from it, there may be conditions at the site that have not been disclosed by the investigation and could not therefore be taken into account. As with any site, there may be differences in soil conditions between exploratory hole positions. Furthermore, it should be noted that groundwater conditions may vary due to seasonal and other effects and may at times be significantly different from those measured by the investigation. No liability can be accepted for any such variations in these conditions.

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- 1.7.4 Any reports provided to Jomas have been reviewed in good faith. Jomas cannot be held liable for any errors or omissions in these reports, or for any incorrect interpretation contained within them.
- 1.7.5 This investigation and report has been carried out in accordance with the relevant standards and guidance in place at the time of the works. Future changes to these may require a re-assessment of the recommendations made within this report.
- 1.7.6 **This report is not an engineering design and the figures and calculations contained in the report should be used by the Structural Engineer, taking note that variations may apply, depending on variations in design loading, in techniques used, and in site conditions. Our recommendations should therefore not supersede the Engineer's design.**

2 DESK STUDY SUMMARY

2.1 Site Information

2.1.1 The site location plan is appended to this report in Figure 1, Appendix 1.

Table 2.1: Site Information

Name of Site	Tiverton Estate – External Area
Address of Site	2-240 Tiverton Road London N15 6RR
Approx. National Grid Ref.	532677 188234
Site Area (Approx)	0.15ha
Site Occupation	Public grass covered open space
Local Authority	London Borough of Haringey
Proposed Site Use	Construction of residential properties, alongside amenity space, landscaping, cycle parking, refuse storage and soft landscaping.

2.2 Site Walkover

2.2.1 A site walkover survey was undertaken by Jomas on the 18th October 2021 as part of the Phase 1 Desk Study. The observations from this survey are summarised in Table 2.2 below. Given the time elapsed between the walkover and the 2026 intrusive investigation, the recorded site conditions should be considered in the context of the date of the survey.

Table 2.2: Site Description

Area	Item	Details
On-site:	Current Uses:	There is a hardstanding car park area towards the north of the site. In the southern area is a grassy soft cover public space. There are trees and foliage across the site. No fly tipping was evident on site.
	Evidence of historic uses:	There was no evidence of historic uses of the site.
	Surfaces:	There is an approximate 20% to 80% split between hard to soft standing. The hard cover is predominantly macadam.
	Vegetation:	There are approximately 15no. ~5m tall trees across the site, alongside foliage in raised beds. None of the vegetation seen appeared to be exhibiting any evidence of distress.
	Topography/Slope Stability:	Overall, there is a slight slope towards the north. There are small brick retaining walls acting as raised beds for foliage. These look to be for only cosmetic purposes.

Area	Item	Details
	Drainage:	2no. storm drains are noted in the centre of the site in a pathway. There are also 2no. presumed soakaways to the south of the site.
	Services:	Manholes are located on the road adjacent to the site.
	Controlled waters:	No controlled waters were noted on site.
	Tanks:	No tanks were noted on site.
Neighbouring land:	North:	Baptist church and Tiverton Road, beyond which are residential properties north of the site.
	East:	Immediately adjacent are residential properties alongside a primary school and grassy open areas.
	South:	Adjacent to the southern boundary are residential properties. Behind these are grassy areas.
	West:	Directly west is Tiverton Road alongside residential and commercial properties.

2.3 Summary of Preliminary Risk Assessment (Desk Study)

- 2.3.1 As detailed in Table 1.1, a Phase 1 Desk Study report has been produced for the site and issued separately (Jomas Associates Ref: P4008J2428, 28th October 2021). The findings of the Phase 1 Desk Study are presented in the following section. Reference should be made to the original reports and documents for further details. Comments made in the following section regarding possible ground conditions on the site and within the surrounding area are based purely on the desk study. Where appropriate, this information will be used in the later sections of this report as supplementary information to assist in the evaluation of the ground conditions and aid the identification of geotechnical and geo-environmental constraints and hazards that could impact on the scheme.
- 2.3.2 A review of historical ordnance survey maps indicates that, on the earliest available plan dated 1864, the site comprised agricultural land. By 1894, the site is shown to be occupied by a number of residential-style buildings, with a road running across the southern section. Few changes are shown until the 1970 – 1971 map, when the site is depicted as vacant. By 1991-1994, structures believed to represent the brick wall planters observed during the site walkover are shown. No significant subsequent changes are identified on the remaining maps to present day.
- 2.3.3 The surrounding area has been utilised predominantly for residential use followed by industrial and commercial use. Industrial uses of note include various factories and works, close by, particularly to the south of the site. These include a brick works, a blouse factory, a confectionary works and a lace paper works.
- 2.3.4 Information provided by the British Geological Survey (BGS) indicates that the site is directly underlain by solid deposits of the London Clay Formation. No artificial deposits are reported within the site.
- 2.3.5 With reference to BGS records, borehole records from approximately 17.00m south-east of the site, indicated made ground extending to approximately 0.90m bgl, underlain by firm to stiff

clay assumed to represent the London Clay Formation to a maximum depth of 15.24m bgl. These conditions are indicative of the local area and may not be representative of the entire site.

- 2.3.6 A review of the EnviroInsight report indicates that the site is within a type 1 source protection zone.
- 2.3.7 There are 18no. groundwater and 16no. potable water abstractions reported within 2km of the site. The closest record for both refers to an active source for potable water supply located 247m to the south.
- 2.3.8 There are no surface water abstractions reported within 2km of the site.
- 2.3.9 There are no river entry and surface water features reported within 250m of the site.
- 2.3.10 There are no Environment Agency Zone 2 or 3 floodplains reported within 250m of the site.
- 2.3.11 An intrusive investigation was recommended to confirm the preliminary geo-environmental risks identified and to provide geotechnical information for use in design.
- 2.3.12 The conceptual site model is reproduced in Table 2.3 overleaf.

Table 2.3: Preliminary Risk Assessment for the Site

Sources	Pathways (P)	Receptors	Consequence of Impact	Probability of Impact	Risk Estimation	Hazard Assessment
- Potential for Made Ground associated with previous development operations – on and off site (S1) - Potential asbestos impacted soils from demolition of previous buildings – on and off site (S2) - Potential hydrocarbon impacted ground from previous industrial use – off site (S3) - Current and previous industrial use – off site (S4)	- Ingestion and dermal contact with contaminated soil (P1) - Inhalation or contact with potentially contaminated dust and vapours (P2) - Permeation of water pipes and attack on concrete foundations by aggressive soil conditions (P6)	- Construction workers (R1) - Maintenance workers (R2) - Neighbouring site users (R3) - Future site users (R4) - Building foundations and on site buried services (water mains, electricity and sewer) (R5)	Medium	Low Likelihood	Moderate	GI – Ground Investigation
	Accumulation and migration of soil gases (P5)		Severe for Asbestos	Likely	High for Asbestos	
			Severe	Unlikely	Low	
	- Leaching through permeable soils, migration within the vadose zone (i.e., unsaturated soil above the water table) and/or lateral migration within surface water, as a result of cracked hardstanding or via service pipe/corridors and surface water runoff. (P3) - Horizontal and vertical migration of contaminants within groundwater (P4)	- Neighbouring site users (R3) - Building foundations and on site buried services (water mains, electricity and sewer) (R5) - Controlled waters (R6) - potable abstraction 247m south - Source protection zone 1 on site	Medium	Low Likelihood	Moderate	

3 GROUND INVESTIGATION

3.1 Scope of Works

3.1.1 A ground investigation was undertaken on the 12th & 13th August 2026.

3.1.2 A summary of the fieldwork carried out at the site, with justifications for exploratory hole positions, is presented in Table 3.1 below.

Table 3.1: Scope of Intrusive Investigation

Investigation Type	Number of Exploratory Holes Achieved	Exploratory Hole Designation	Depth Achieved	Justification
Windowless Sample Boreholes	5	WS01-WS05	Up to 6mbgl	Obtain shallow samples for laboratory chemical and geotechnical testing. To allow in-situ geotechnical testing. Boreholes were positioned across the site to provide a spread of information targeting the previous, existing and proposed development.
Cable Percussion Boreholes	2	BH1, BH2	Up to 25mbgl	Obtain deeper samples for laboratory geotechnical testing. To allow in-situ geotechnical testing.
Falling-head test	3	BH1, WS03, WS05	Up to 2mbgl	Provide indicative infiltration rates.
California Bearing Ratio (CBR) testing	5	WS01 -WS05	Up to 1mbgl	To determine CBR values across the site and provide assessment of the shallow soils for road and pavement design

3.1.3 The ground investigation was undertaken in accordance with British Standard BS5930:2015+A1:2020 "Code of practice for ground investigations", British Standard BS10175:2011+A2:2017 "Investigation of potentially contaminated sites - code of practice", NHBC Standards, Chapter 4.1 and AGS Guidelines for Good Practice in Site Investigations.

3.1.4 Exploratory hole positions are shown on the exploratory hole location plan presented in Figure 2, Appendix 1. The exploratory hole records are included in Appendix 2.

3.1.5 Where monitoring well installations were not installed, the exploratory holes were backfilled with the arisings (in the reverse order in which they were drilled) and the ground surface was reinstated so that no depression was left.

3.2 Sampling Rationale

3.2.1 Our soil sampling rationale for the site investigation was developed with reference to EA guidance 'Secondary Model Procedure for the Development of Appropriate Soil Sampling Strategies for Land Contamination' (Technical Report P5-066/TR).

- 3.2.2 The exploratory holes were positioned by applying a combined non-targeted sampling strategy, as well as sample locations positioned with reference to sources identified from the desk study.
- 3.2.3 Soil samples were taken from across the site at various depths as shown in the exploratory hole logs.
- 3.2.4 Jomas Associates Limited's engineers normally collect samples at appropriate depths based on field observations such as:
- appearance, colour and odour of the strata and other materials, and changes in these,
 - the presence or otherwise of sub-surface features such as pipework, tanks, foundations and walls, and
 - areas of obvious damage, e.g. to the building fabric.
- 3.2.5 A number of the samples were taken from the top 0-1m to aid in the assessment of the pollutant linkages identified at the site. In addition, some deeper samples were taken to aid in the interpretation of fate and transport of any contamination identified.
- 3.2.6 Samples were stored in cool boxes (<4°C) and preserved in accordance with laboratory guidance.
- 3.2.7 Groundwater strikes noted during drilling, are recorded within the exploratory hole records in Appendix 2.

3.3 In-situ Geotechnical Testing

- 3.3.1 In-situ geotechnical testing included Standard Penetration Tests. The determined 'N' values have been used to determine the relative density of granular materials and have been used with standard correlations to infer various other derived geotechnical parameters including the undrained shear strength of the cohesive strata. The results of the individual tests are on the appropriate exploratory hole logs in Appendix 2.
- 3.3.2 In-situ California Bearing Ratios (CBRs) were determined using a TRL dynamic cone penetrometer (DCP) and the methodology laid out in IAN 73/06. The CBR values have then been calculated using the methodology laid out in both IAN 73/06 and TRL 587. Copies of the test results and calculations are provided in Appendix 5.
- 3.3.3 The determination of permeability of the underlying ground was undertaken by carrying out in-situ falling head tests. These were carried out to conform with the methodology for falling head permeability test formerly outlined in BS: 5930 (1999) and recently in BS EN ISO 22282-2. Copies of the results and calculations are provided in Appendix 6.

3.4 Laboratory Analysis

- 3.4.1 A programme of laboratory testing, scheduled by Jomas Associates Limited, was carried out on selected samples of Made Ground and natural strata.

Chemical Testing

3.4.2 Chemical testing of soils was undertaken by Environmental Chemistry Testing Laboratories, which holds UKAS and MCERTS accreditations for a wide range of determinands.

3.4.3 The samples were analysed for a wide range of contaminants as shown in Table 3.2 below:

Table 3.2: Chemical Tests Scheduled

Test Suite	No. of tests	
	Made Ground / Topsoil	Natural
Basic Suite 3	6	0
Basic Suite 5	2	0
Hydrocarbon Suite	2	0
Soil Organic Matter	3	0
Jomas Modified BRE SD-1 Suite	1	7
TPHCWG (inc. BTEX)	2	0
VOCs	2	0
Asbestos Screen & ID	8	0
Waste Acceptance Criteria	3	0

3.4.4 The determinands contained in the Basic Suite 3 are as detailed in Table 3.3 below. Basic Suite 5 contains the same determinands but without the hydrocarbon compounds to avoid overlapping with the extended hydrocarbon testing.

3.4.5 The Hydrocarbon Suite includes TPHCWG, PAH, phenols and VOCs including BTEX & MTBE.

Table 3.3: Basic Suite of Determinands

DETERMINAND	LIMIT OF DETECTION (mg/kg)	UKAS ACCREDITATION	TECHNIQUE
Arsenic	2	Y (MCERTS)	ICP-EOS
Cadmium	0.2	Y (MCERTS)	ICP-EOS
Chromium	2	Y (MCERTS)	ICP-EOS
Chromium (Hexavalent)	4	N	ICP-EOS
Lead	3	Y (MCERTS)	ICP-EOS
Mercury	1	Y (MCERTS)	ICP-EOS
Nickel	3	Y (MCERTS)	ICP-EOS
Selenium	2	Y (MCERTS)	ICP-EOS
Copper	4	Y (MCERTS)	ICP-EOS
Zinc	3	Y (MCERTS)	ICP-EOS
Boron (Water Soluble)	0.1	N	ICP-EOS
pH Value	0.1 units	Y (MCERTS)	Electrometric Measurement
Sulphate (Water Soluble)	0.01g/l	Y (MCERTS)	Ion Chromatography/ICP-EOS
Total Cyanide	1	N	Distillation followed by Chromatography
Speciated/Total PAH	0.10/1.6	Y (MCERTS)	GC-MS
Phenols	2	N	Distillation followed by Colorimetry
Total Petroleum Hydrocarbons (banded)	6	N	GC-FID/Headspace GS-MS

3.4.6 To support the selection of appropriate tier 1 screening values, 3No samples were analysed for soil organic matter.

3.4.7 The chemical laboratory test results are included in Appendix 3.

Geotechnical Testing

3.4.8 In addition to the contamination assessment, soil samples were submitted to the UKAS accredited Professional Soils Laboratory for a series of geotechnical analyses.

3.4.9 This testing was designed to classify the samples and to obtain parameters (either directly or sufficient to allow relevant correlations to be used) relevant to the technical objectives of the investigation.

3.4.10 The following laboratory geotechnical testing was carried out:

Table 3.4: Laboratory Geotechnical Analysis

Methodology	Test Description	Number of tests
BS1377 – Part 2: 2022 BS EN ISO 17892-1: 2014 + A1: 2022	Moisture Content Determination	9
BS1377 – Part 2: 2022 BS EN ISO 17892-12: 2018 + A2: 2022	Liquid and Plastic Limit Determination (Atterberg Limits)	9
BS1377 – Part 2: 2022 BS EN ISO 17892-4: 2016	Particle Size Distribution - Sieving	2
BS1377 – Part 2: 2022 BS EN ISO 17892-8: 2018	Determination of the undrained shear strength in triaxial compression with single-stage loading and without measurement of pore pressure	8

3.4.11 In addition, 8No. soil samples were analysed for a modified BRE Special Digest 1 suite (acid and water-soluble sulphate, total sulphur and pH) to assist with the ACEC classification for buried concrete.

3.4.12 The geotechnical laboratory test results will be included in Appendix 4 once obtained.

4 GROUND CONDITIONS ENCOUNTERED

4.1 General

4.1.1 A factual record of the conditions encountered during the physical investigation of the site is presented in the following section.

4.2 Ground Conditions

4.2.1 The ground conditions encountered were broadly consistent with those anticipated, i.e. a thickness of Made Ground overlying the London Clay Formation and are summarised in Table 4.1 below.

Table 4.1: Ground Conditions Encountered

Stratum and Description	Encountered from (mbgl)	Base of strata (mbgl)	Thickness range (m)
Grass over light grey and light brown gravelly sand with low cobble content and rootlets. Gravel consists of flint and occasional brick and concrete. Cobble consists of angular brick and concrete. (MADE GROUND)	0.00	0.80 – 1.50	0.80 – 1.50
Red sandy gravel with high cobble content. Gravel consists of brick and flint. Cobbles consist of brick. (MADE GROUND) <i>Encountered within WS05 only.</i>	0.80	1.10	0.30
Medium dense dark brown clayey gravelly SAND. Sand is fine to coarse. Gravel consists of fine to medium sub-angular to sub-rounded claystone/calcareous nodules. (LONDON CLAY FORMATION – Granular Layer) <i>Only encountered within WS05.</i>	2.00	3.00	1.00
Firm becoming very stiff consistency** orangish brown mottled grey becoming dark bluish grey CLAY with occasional sandy gravelly layers comprising fine to medium sub-angular to rounded claystone/calcareous nodules. (LONDON CLAY FORMATION)	0.80 – 1.50	>25.00m (Base not proven)	>24.20m (Thickness not proven)

***Consistency estimated using semi-empirical correlations with SPT N-values, Plasticity Indices and published literature*

4.2.2 Depths of the Made Ground were relatively consistent across the site.

4.2.3 Although uncommon for the London Clay Formation, a layer of sand was reported within WS05 between 2.0m and 3.0mbgl. Elsewhere on site, the London Clay Formation was often described as sandy and gravelly.

4.3 Groundwater

4.3.1 Recorded groundwater strikes are summarised in Table 4.2 overleaf.

Table 4.2: Groundwater Strikes During Investigation

Exploratory Hole ID	Depth Encountered (mbgl)	Stratum
BH2	15.50	London Clay Formation
WS04	4.00	London Clay Formation

4.3.2 Alongside the groundwater strikes reported above, it should be noted that falling head permeability tests were undertaken within BH1, WS03 and WS05.

4.3.3 It should be noted that changes in groundwater levels can occur for a number of reasons including seasonal effects and variations in drainage. Such fluctuations may only be recorded by the measurement of the groundwater level within a standpipe or piezometer installed within appropriate response zones. Changes in groundwater level can have a direct effect on excavation stability and dewatering requirements, and cohesive soils can soften under rising or high groundwater levels.

4.4 Physical and Olfactory Evidence of Contamination

4.4.1 No visual or olfactory evidence of potential contamination was identified within the investigation positions.

4.5 Limitations

4.5.1 The possible presence of unidentified natural and/or manmade obstructions on site cannot be discounted.

5 RISK ASSESSMENT – ANALYTICAL FRAMEWORK

5.1 Context and Objectives

5.1.1 This section seeks to evaluate the level of chronic risk pertaining to human health and the environment which may result from both the existing use and proposed future use of the site. It makes use of the ground investigation findings, as described in the previous sections, to evaluate further the potential pollutant linkages identified in the desk study. A combination of qualitative and quantitative techniques is used, as described below.

5.1.2 The purpose of generic quantitative risk assessment is to compare concentrations of contaminants found on site against generic assessment criteria (GAC) to establish whether there are actual or potential unacceptable risks. It also determines whether further detailed assessment is required. The approaches detailed all broadly fit within a tiered assessment structure in line with the framework set out in the Department of Environment, Food and Rural Affairs (DEFRA), EA and Institute for Environment and Health Publication, Guidelines for Environmental Risk Assessment and Management.

5.2 Analytical Framework – Soils

5.2.1 There is no single methodology that covers all the various aspects of the assessment of potentially contaminated land and groundwater. Therefore, the analytical framework adopted for this investigation is made up of a number of procedures, which are outlined below. All of these are based on a Risk Assessment methodology centred on the identification and analysis of Source – Pathway – Receptor linkages.

5.2.2 The soil analytical test results have been compared to Suitable 4 Use Levels (S4UL) published by the Chartered Institute of Environmental Health in order to assess the potential long-term risks to human health posed by contaminants in the soils. S4ULs have been derived for a range of land uses and Soil Organic Matter contents. They represent the minimal or tolerable risk, above which further assessment of the risks or remedial action may be required.

5.2.3 In the absence of a S4UL recommended concentration, other available general assessment criteria (GAC), including the Category 4 Screening Levels (C4SL) published by DEFRA have been used. Site-specific assessments are undertaken wherever possible and/or applicable. All assessments are carried out in accordance with the CLEA protocol.

5.2.4 The assessment criteria used for the screening of determinands within soils are identified within Table 5.1.

Table 5.1: Selected Assessment Criteria - Contaminants in Soils

Substance Group	Determinand(s)	Assessment Criteria Selected
<u>Organic Substances</u>		
Non-halogenated Hydrocarbons	Total Petroleum Hydrocarbons (TPHCWG banded)	S4UL
	Total Phenols	S4UL
Polycyclic Aromatic Hydrocarbons (PAH-16)	Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(123-cd)pyrene, Dibenzo(ah)anthracene, Benzo(ghi)perylene	S4UL
Volatile Organic Compounds (VOCs/sVOCs)	Toluene, Ethylbenzene, Benzene, Xylenes	S4UL
<u>Inorganic Substances</u>		
Heavy Metals and Metalloids	Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Zinc	S4UL
	Copper, Zinc, Nickel	BS: 3882 (2015).
Cyanides	Free Cyanide	CLEA v1.06
Sulphates	Water Soluble Sulphate	BRE Special Digest 1:2005

5.2.5 It is understood that the site is to be converted to provide residential units with private gardens. As a result, the site has been assessed with regards to a 'residential with home grown produce' end use scenario.

5.2.6 The average soil organic matter content reported for the Made Ground was 4.63%. The assessment criteria selected for the site are based on a soil organic matter content of 2.5%, which is considered to provide a conservative screening basis for the assessment.

5.3 BRE

5.3.1 The BRE Special Digest 1:2005, 'Concrete in Aggressive Ground' is used with soluble sulphate and pH results to assess the aggressive chemical environment of future underground concrete structures at the site.

6 GENERIC QUANTITATIVE RISK ASSESSMENT – SOIL DATA

6.1 Screening of Soil Chemical Analysis Results – Human Health Risk Assessment

6.1.1 The laboratory analysis results for soils are summarised in Table 6.1 to Table 6.4. Raw laboratory data is included in Appendix 3.

6.1.2 Results have been screened against generic assessment criteria for a ‘residential with home grown produce’ end use, assuming 2.5% soil organic matter.

Table 6.1: Soil Laboratory Test Results - Metals, Metalloids, Phenol, Cyanide

Determinand	Unit	No. samples tested	Screening Criteria	Min	Max	No. Exceeding
Arsenic	mg/kg	8	S4UL 37	10	29	0
Cadmium	mg/kg	8	S4UL 11	0.7	1.7	0
Chromium	mg/kg	8	S4UL 910	5.2	24	0
Lead	mg/kg	8	C4SL 200	45	920	4No: WS01 0.40m WS03 0.40m WS04 0.15m WS05 1.00m
Mercury	mg/kg	8	S4UL 40	<2.5	<2.5	0
Nickel	mg/kg	8	S4UL 180	15	31	0
Copper	mg/kg	8	S4UL 2400	22	130	0
Zinc	mg/kg	8	S4UL 3700	66	1000	0
Total Cyanide ^A	mg/kg	8	CLEA v 1.06 33	<1	<1	0
Selenium	mg/kg	8	S4UL 250	<8	<8	0
Boron Water Soluble	mg/kg	8	S4UL 290	<2.5	<2.5	0
Phenols	mg/kg	8	S4UL 200	<1	<1	0

Notes: ^A Generic assessment criteria derived for free inorganic cyanide.

Table 6.2: Soil Laboratory Test Results - Polycyclic Aromatic Hydrocarbons (PAHs)

Determinand	Unit	No. Samples Tested	Screening Criteria	Min	Max	No. Exceeding
Naphthalene	mg/kg	8	S4UL 5.6	<0.02	0.5	0
Acenaphthylene	mg/kg	8	S4UL 420	0.04	1.9	0
Acenaphthene	mg/kg	8	S4UL 510	<0.02	4.2	0
Fluorene	mg/kg	8	S4UL 400	<0.02	2.6	0
Phenanthrene	mg/kg	8	S4UL 220	0.14	26	0
Anthracene	mg/kg	8	S4UL 5400	0.05	11	0

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Determinand	Unit	No. Samples Tested	Screening Criteria		Min	Max	No. Exceeding
Fluoranthene	mg/kg	8	S4UL	560	0.32	83	0
Pyrene	mg/kg	8	S4UL	1200	0.26	65	0
Benzo(a)anthracene	mg/kg	8	S4UL	11	0.19	55	6No: BH1 at 0.50m WS01 at 0.40m WS02 at 0.55m WS02 at 1.35m WS03 at 0.40m WS04 at 0.15m
Chrysene	mg/kg	8	S4UL	22	0.17	48	1No: WS03 at 0.40m
Benzo(b)fluoranthene	mg/kg	8	S4UL	3.3	0.27	57	6No: BH1 at 0.50m WS01 at 0.40m WS02 at 0.55m WS02 at 1.35m WS03 at 0.40m WS04 at 0.15m
Benzo(k)fluoranthene	mg/kg	8	S4UL	93	0.12	37	0
Benzo(a)pyrene	mg/kg	8	S4UL	2.7	0.23	47	6No: BH1 at 0.50m WS01 at 0.40m WS02 at 0.55m WS02 at 1.35m WS03 at 0.40m WS04 at 0.15m
Indeno(123-cd)pyrene	mg/kg	8	S4UL	36	0.27	38	2No: WS02 at 1.35m WS03 at 0.40m
Dibenzo(ah)anthracene	mg/kg	8	S4UL	0.28	0.06	27	7No: BH1 at 0.50m BH2 at 0.55m WS01 at 0.40m WS02 at 0.55m WS02 at 1.35m WS03 at 0.40m WS04 at 0.15m
Benzo(ghi)perylene	mg/kg	8	S4UL	340	0.25	34	0
Total PAH	mg/kg	8	-	-	2.4	540	-

Table 6.3: Soil Laboratory Test Results - Total Petroleum Hydrocarbons (TPH)

TPH Band	Unit	No. Samples Tested	Screening Criteria		Min	Max	No. Exceeding
C ₈ -C ₁₀	mg/kg	6	S4UL	65	<5	7.0	0
>C ₁₀ -C ₁₂	mg/kg	6	S4UL	180	<5	5.9	0
>C ₁₂ -C ₁₆	mg/kg	6	S4UL	330	<5	52	0
>C ₁₆ -C ₂₁	mg/kg	6	S4UL	540	7.3	290	0
>C ₂₁ -C ₃₅	mg/kg	6	S4UL	1500	67	1500	0
Total TPH	mg/kg	6	-	-	100	2100	-

Notes: *The lower value of guidelines for Aromatic/Aliphatics has been selected

Table 6.4: Soil Laboratory Analysis Results - Total Petroleum Hydrocarbons (TPHCWG)

TPH Band	Unit	No. Samples Tested	Screening Criteria		Min	Max	No. Exceeding
>C ₅ -C ₆ Aliphatic	mg/kg	2	S4UL	78	<0.06	0.09	0
>C ₆ -C ₈ Aliphatic	mg/kg	2	S4UL	230	<0.06	<0.06	0
>C ₈ -C ₁₀ Aliphatic	mg/kg	2	S4UL	65	<0.06	<0.06	0
>C ₁₀ -C ₁₂ Aliphatic	mg/kg	2	S4UL	330	1.5	2.0	0
>C ₁₂ -C ₁₆ Aliphatic	mg/kg	2	S4UL	2400	18	23	0
>C ₁₆ -C ₃₅ Aliphatic	mg/kg	2	S4UL	92000	25.9	47	0
>C ₅ -C ₇ Aromatic	mg/kg	2	S4UL	140	<0.01	<0.01	0
>C ₇ -C ₈ Aromatic	mg/kg	2	S4UL	290	<0.01	<0.01	0
>C ₈ -C ₁₀ Aromatic	mg/kg	2	S4UL	83	<0.06	<0.06	0
>C ₁₀ -C ₁₂ Aromatic	mg/kg	2	S4UL	180	<1.0	<1.0	0
>C ₁₂ -C ₁₆ Aromatic	mg/kg	2	S4UL	330	22	44	0
>C ₁₆ -C ₂₁ Aromatic	mg/kg	2	S4UL	540	260	460	0
>C ₂₁ -C ₃₅ Aromatic	mg/kg	2	S4UL	1500	700	1100	0
Total TPH (Ali/Aro)	mg/kg	2	-	-	1100	1700	-

6.2 Asbestos in Soil

6.2.1 8No. samples of the Made Ground were screened in the laboratory for the presence of asbestos.

6.2.2 No asbestos containing materials (ACM) or fibres were reported in samples analysed in the laboratory.

6.3 Volatile Organic Compounds

- 6.3.1 In addition to the suites outlined above, 2No. samples were tested for the presence of volatile organic compounds (VOCs) including BTEX compounds (benzene, toluene, ethylbenzene, xylene).
- 6.3.2 No VOCs were reported above the laboratory detection limit within any of the samples tested.

6.4 Vapour Risk Assessment from a Soil Source

- 6.4.1 As outlined in Table 6.2, a number of polycyclic aromatic hydrocarbons have been found in excess of their generic screening criteria for the protection of human health within a 'residential with home-grown produce' end-use scenario. The generic screening criteria considers all possible pathways between the source and the receptor. In order to assess potential risks from inhalation of vapour, each organic compound that has been found in excess of its GAC will be assessed in terms of the contribution to total exposure from vapour inhalation inside a structure as reported within the LQM/CIEH S4UL document. Where a significant proportion of the total exposure is reported from vapour inhalation, there could be a potential risk from vapour inhalation.

Table 6.5: Soil Laboratory Analysis Results - Contribution to Total Exposure from Vapour Inhalation (Indoor)

Compound	Contribution of Vapour Inhalation to Total Exposure (%)	Screening Criteria (mg/kg)	Maximum Recorded Value (mg/kg)	Potential Vapour Risk?
Benzo(a)anthracene	0.1	11	55	X
Chrysene	<0.1	22	48	X
Benzo(b)fluoranthene	<0.1	3.3	57	X
Indeno(123-cd)pyrene	<0.1	36	38	X
Benzo(a)pyrene	0.0	2.7	47	X
Dibenzo(ah)anthracene	<0.1	0.28	27	X

- 6.4.2 As shown in the table above, all of the potentially volatile compounds detected in soils in excess of generic assessment criteria have a negligible contribution to total exposure via inhalation pathway (less than or equal to 0.1%).
- 6.4.3 Therefore, it is considered that there is a negligible risk to end users of the proposed development associated with vapour risk inhalation from soils.

6.5 Summary of Human Health Generic Quantitative Risk Assessment

- 6.5.1 In summary, elevated concentrations of lead and several PAHs were identified within selected samples of Made Ground at concentrations exceeding the generic assessment criteria for the proposed residential with home-grown produce end use. The exceedances were identified within Made Ground. On the basis of the available data, the identified contamination can be managed through appropriate remediation and development controls. Further isolated contamination between investigation locations cannot, however, be ruled out.

6.6 Screening of Soil Chemical Analysis Results – Potential Risks to Plant Growth

6.6.1 Zinc, copper and nickel are phytotoxins and could therefore inhibit plant growth in soft landscaped areas. Concentrations measured in soil for these determinands have been compared with the pH dependent values given in BS:3882 (2015). This does not constitute a full BS:3882 topsoil test.

6.6.2 Table 6.6 shows the soil analytical results compared with the relevant screening values, adopting a pH value of greater than 7, as indicated by the results of the laboratory analysis.

Table 6.6: Soil Laboratory Analysis Results - Phytotoxic Determinands

Determinand	Threshold level (mg/kg)	Min (mg/kg)	Max (mg/kg)	No. Exceeding
Nickel	110	15	31	0
Copper	200	22	130	0
Zinc	300	66	1000	6No: BH1 at 0.50m WS01 at 0.40m WS02 at 0.55m WS02 at 1.35m WS03 at 0.40m WS04 at 0.15m

6.6.3 A number of samples have recorded zinc in excess of the threshold level. The current soil may not satisfy the requirements of BS:3882 but as no signs of dieback or vegetation distress were observed, it is not considered to be significantly detrimental to plant growth

6.7 Screening for Water Pipes Materials

6.7.1 The results of the analysis have been assessed for potential impact upon water supply pipes. Table 6.7 below summarises the findings of the assessment:

Table 6.7: Screening Guide for Water Pipes

Determinand	No. of tests	Threshold for Polyethylene Pipes* (mg/kg)	Value for site data (mg/kg)		No of Exceedances
			Min	Max	
Total VOCs	2	0.5	<1.10	<1.10	0 (Not above LOD)
BTEX	2	0.1	<0.06	<0.06	0
MTBE	2	0.1	<0.01	<0.01	0
EC5-EC10	8	1	<0.26	7.0	BH1 at 0.50m WS01 at 0.40m WS04 at 0.15m
EC10-EC16	8	10	<10	65	BH1 at 0.50m WS02 at 0.55m WS02 at 1.35m

Determinand	No. of tests	Threshold for Polyethylene Pipes* (mg/kg)	Value for site data (mg/kg)		No of Exceedances
			Min	Max	
					WS03 at 0.40m WS04 at 0.15m
EC16-EC40	8	500	91.3	2040	BH1 at 0.50m WS02 at 0.55m WS03 at 0.40m WS02 at 1.35m WS04 at 0.15m
Naphthalene	8	5	<0.02	0.5	0
Phenols	8	2	<1	<1	0

* UK Water Industry Research (2010) Source Guidance for Selection of Water Supply Pipes to be Used in Brownfield Sites. Report No. 10/WM/03/21.

- 6.7.4 The above suggests that upgraded pipe work may be required.
- 6.7.5 Alternatively, it may be possible to utilise other protection methods including (but not limited to):
- Diversion of the pipe
 - Localised remediation
 - Embedding the pipe in a sufficient thickness of clean granular material
- 6.7.6 The water supply pipe requirements for this site should be discussed at an early stage with the relevant utility provider.
- 6.8 Assessment of Soil Analytical Data with Respect to Controlled Waters**
- 6.8.1 At the Preliminary Risk Assessment (Desk Study) stage, risks to controlled waters were moderate.
- 6.8.2 The following controlled waters receptors were identified:
- Potable abstraction 247m south.
 - SPZ1 on site.
- 6.8.3 At the desk study stage, the potential for migration of leachable or mobile contaminants was considered to be limited by the predominantly cohesive and relatively low-permeability nature of the underlying London Clay Formation.
- 6.8.4 However, during the investigation, granular inclusions and sandy layers have been reported within the underlying London Clay Formation beneath the site. Given the granular content is not widespread across the site and more likely pockets/lenses within a predominantly clay stratum, perched water is not expected to travel at great distances.

- 6.8.5 No specific source of mobile contamination was observed within the site during the desk study stage. Works and factories were visible during the historical map review, located from 100m south, south-west and north-west of the site and a laundry was reported 160m south-east.
- 6.8.6 Elevated levels of polycyclic aromatic hydrocarbons (PAHs) have been found in the Made Ground in excess of the generic assessment criteria for human health. These GAC are, however, not relevant to controlled waters risk assessment.
- 6.8.7 The only PAHs with stated “moderate” or “high” mobility rankings in groundwater (as per CL:AIRE, 2017) are naphthalene, acenaphthylene, and acenaphthene. Of these compounds, only naphthalene has a statutory water quality standard. As naphthalene has only been detected at low concentrations (maximum 0.5mg/kg) with the majority of the samples reporting concentrations below the laboratory detection limit and no visual/olfactory evidence of potentially mobile contamination has been encountered, the concentrations of PAHs detected in soils are not considered to pose a risk to controlled waters.

6.9 Waste Characterisation

- 6.9.1 Waste soil must be classified using the characterisation assessment and analysis described by the WM3 technical guidance to determine whether soils may be treated as hazardous or non-hazardous prior to removal from site.
- 6.9.2 Preliminary waste classification has been carried out (see Appendix 3) and has resulted in the following:
- Made Ground is provisionally classified as hazardous waste.
- 6.9.3 Waste Acceptance Criteria testing results are summarised in Table 6.8 below.

Table 6.8: Waste Acceptance Criteria Testing Summary

Sample	Material Type	Preliminary Hazwaste classification	Exceeds “Inert Waste Landfill” Thresholds?	Exceeds “Stable Non-Reactive Hazardous Waste in Non-Hazardous Landfill” Thresholds?	Exceeds “Hazardous Waste Landfill” Thresholds?	Notes
WS02 at 0.25m – 0.55m	Made Ground	Hazardous	-	No	-	HP7 – Carcinogenic HP11 - Mutagenic
WS04 at 0.15m – 0.50m	Made Ground	Hazardous	-	No	-	HP7 – Carcinogenic HP11 - Mutagenic
BH1 at 0.20m – 0.50m	Made Ground	Hazardous	-	No	-	HP7 – Carcinogenic HP11 - Mutagenic HP14 - Ecotoxic
WS01 at 0.55m	Made Ground	Hazardous	-	-	-	HP14 - Ecotoxic
WS02 at 1.35m						HP7 – Carcinogenic HP11 - Mutagenic
WS03 at 0.40m						HP7 – Carcinogenic HP11 - Mutagenic

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Sample	Material Type	Preliminary Hazwaste classification	Exceeds "Inert Waste Landfill" Thresholds?	Exceeds "Stable Non-Reactive Hazardous Waste in Non-Hazardous Landfill" Thresholds?	Exceeds "Hazardous Waste Landfill" Thresholds?	Notes
BH2 at 0.55m WS05 at 1.00m	Made Ground	Non-hazardous	-	-	-	-

- 6.9.6 Waste Acceptance Criteria (WAC) testing indicates that the Made Ground may likely be disposed of as stable non-reactive hazardous waste. The final waste classification and disposal route must be confirmed by the waste producer and receiving facility.
- 6.9.7 The natural soils are likely to be suitable for disposal at an inert landfill, though the landfill operator may request WAC testing on these soils to confirm.
- 6.9.8 Additional testing will be required by the landfill operator to confirm the above preliminary assessment during construction. Surplus Made Ground and natural soils should be segregated on excavation and placed in separate stockpiles underlain by polythene sheeting (to prevent potential cross-contamination of underlying soils) before further testing is carried out.
- 6.9.9 Any soils containing >0.1% asbestos or visible asbestos containing materials would be considered hazardous waste and as such must be managed and disposed of in accordance with the applicable waste regulations and the requirements of the receiving facility.
- 6.9.10 The above comments are given as guidance and should be confirmed by the waste disposal facility accepting the waste. The waste disposal facility may have their own classification methodology and are under no obligation to honour the comments given above.
- 6.9.11 Alternatively, if Made Ground soils are to be excavated and re-used on site, a Materials Management Plan (MMP) must be produced in accordance with CL:AIRE Definition of Waste: Development Industry Code of Practice (DoWCoP) and approved by a Qualified Person ahead of the commencement of any material movement.

7 GEO-ENVIRONMENTAL ASSESSMENT SUMMARY AND RECOMMENDATIONS

7.1 Land Quality Impact Summary

7.1.1 Following the ground investigation, the following is noted:

- The proposed development is understood to comprise either two three- to four-storey buildings or one four-storey linear building containing approximately 18–24 residential units, together with amenity space, landscaping, cycle parking and refuse storage. The final development layout and the extent of private and communal soft landscaping should be confirmed as the design progresses.
- Following generic risk assessments, elevated concentrations of lead, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(123-cd)pyrene, and dibenzo(ah)anthracene were detected in soils in excess of generic assessment criteria for the protection of human health within a residential with home-grown end-use scenario. However, it should be noted that exceedances of such determinands would still exist (with the exception of indeno(123-cd)pyrene) if a residential without home-grown end-use scenario screening criteria was used.
- No asbestos containing materials or fibres were detected in the Made Ground samples analysed in the laboratory.
- The site proposal indicates that the majority of the site will remain covered by a combination of the proposed building footprint and hard surfacing. Where this is the case, no additional human-health remediation may be required, as the building and hard surfacing are expected to provide a barrier to potential receptors. In areas of gardens/soft landscaping, Made Ground should be removed or encapsulated beneath at least 450mm of imported clean topsoil, placed on a geotextile membrane.
- The risk to end users associated with vapour risk inhalation from soils is considered negligible.
- The risk to controlled waters from soils is considered low.
- Although the current soil exceeds the threshold level for zinc as a phytotoxin, a significant risk to plant growth has not been identified.
- Upgraded potable water supply pipe materials may be required. The water supply pipe requirements for this site should be discussed at an early stage with the relevant utility provider.
- Made Ground is provisionally classified as hazardous waste and Waste Acceptance Criteria (WAC) testing indicates that the Made Ground may likely be disposed of as stable non-reactive hazardous waste.
- A remedial strategy will be required to address the identified soil contamination and to define the measures required for gardens, soft landscaping, construction workers, waste management and the protection of buried services. The remedial strategy should also

include procedures for the identification and management of unexpected contamination encountered during construction.

- As with any ground investigation, the presence of further hotspots between sampling points cannot be ruled out. Should any contamination be encountered, a suitably qualified environmental consultant should be informed immediately, so that adequate measures may be recommended.

7.1.2 The above conclusions are made subject to approval by the statutory regulatory bodies.

7.2 Review of Pollutant Linkages Following Ground Investigation

7.2.1 The site CSM has been revised and updated from that suggested in the desk study in view of the ground investigation data, including soil laboratory analysis results. Table 7.1 highlights whether pollutant linkages identified in the original CSM are still relevant following the risk assessment, or whether pollutant linkages, not previously identified, exist.

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GEO-ENVIRONMENTAL ASSESSMENT SUMMARY AND RECOMMENDATIONS

Table 7.1: Plausible Pollutants Linkages Summary (Pre-Remediation)

Potential Source (from desk study)	Pathway	Receptor	Relevant Pollutant Linkage?	Comment
- Potential for Made Ground associated with previous development operations – on and off site (S1) - Potential asbestos impacted soils from demolition of previous buildings – on and off site (S2) - Potential hydrocarbon impacted ground from previous industrial use – off site (S3) - Current and previous industrial use – off site (S4)	- Ingestion and dermal contact with contaminated soil (P1) - Inhalation or contact with potentially contaminated dust and vapours (P2) - Permeation of water pipes and attack on concrete foundations by aggressive soil conditions (P6)	- Construction workers (R1) - Maintenance workers (R2) - Neighbouring site users (R3) - Future site users (R4) - Building foundations and on site buried services (water mains, electricity and sewer) (R5)	Y	See section 7.1 above for remedial measures. The findings of this report should be included in the construction health and safety file, with adequate measures put in place for the protection of construction and maintenance workers. Contact should be made with relevant utility providers to confirm if upgraded materials are required. The concrete classification to protect buried concrete is discussed in Section 9.3.
	Accumulation and migration of soil gases (P5)		N	A potential source of ground gas has not been identified.
	- Leaching through permeable soils, migration within the vadose zone (i.e., unsaturated soil above the water table) and/or lateral migration within surface water, as a result of cracked hardstanding or via service pipe/corridors and surface water runoff (P3) - Horizontal and vertical migration of contaminants within groundwater (P4)	- Neighbouring site users (R3) - Building foundations and on site buried services (water mains, electricity and sewer) (R5) - Controlled waters (R6) - Potable abstraction 247m south - Source Protection Zone 1 on site	N	A significant risk of impact to controlled waters has not been identified. The concrete classification to protect buried concrete is discussed in Section 9.3.

8 DERIVATION OF GEOTECHNICAL PARAMETERS

8.1 Introduction

8.1.1 A summary of ground conditions obtained from the ground investigation and the derived geotechnical parameters is provided below.

8.2 Plasticity of Cohesive Materials

8.2.1 The plasticity indices are illustrated in Figure 8.1: Plasticity Chart below.

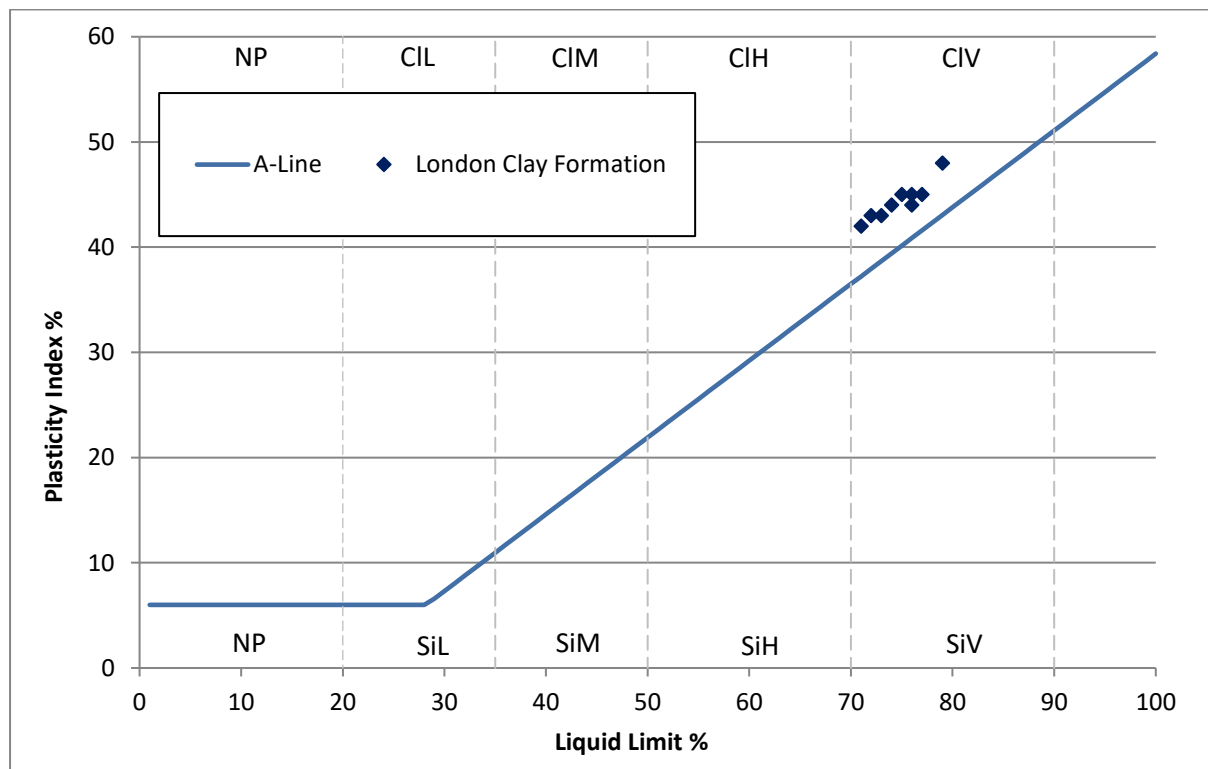
London Clay Formation

8.2.2 9No samples of London Clay Formation from depths of 2.0mbgl and 24.5mbgl were subject to Atterberg Limit determination.

8.2.3 The plasticity index values ranged between 42% and 48% and were indicative of “very high” plasticity.

8.2.4 The modified plasticity index values were 42% and 48%, indicating soils with “high” volume change potential.

Figure 8.1: Plasticity Chart



8.3 Undrained Shear Strength

8.3.1 Standard penetration tests (SPT) were undertaken at regular intervals throughout the windowless sample boreholes and cable percussive boreholes. The results of the SPTs have

been used to infer the undrained shear strength using the correlation suggested by Stroud (1974).

$c_u = f_1 \times N$ can be applied,

in which

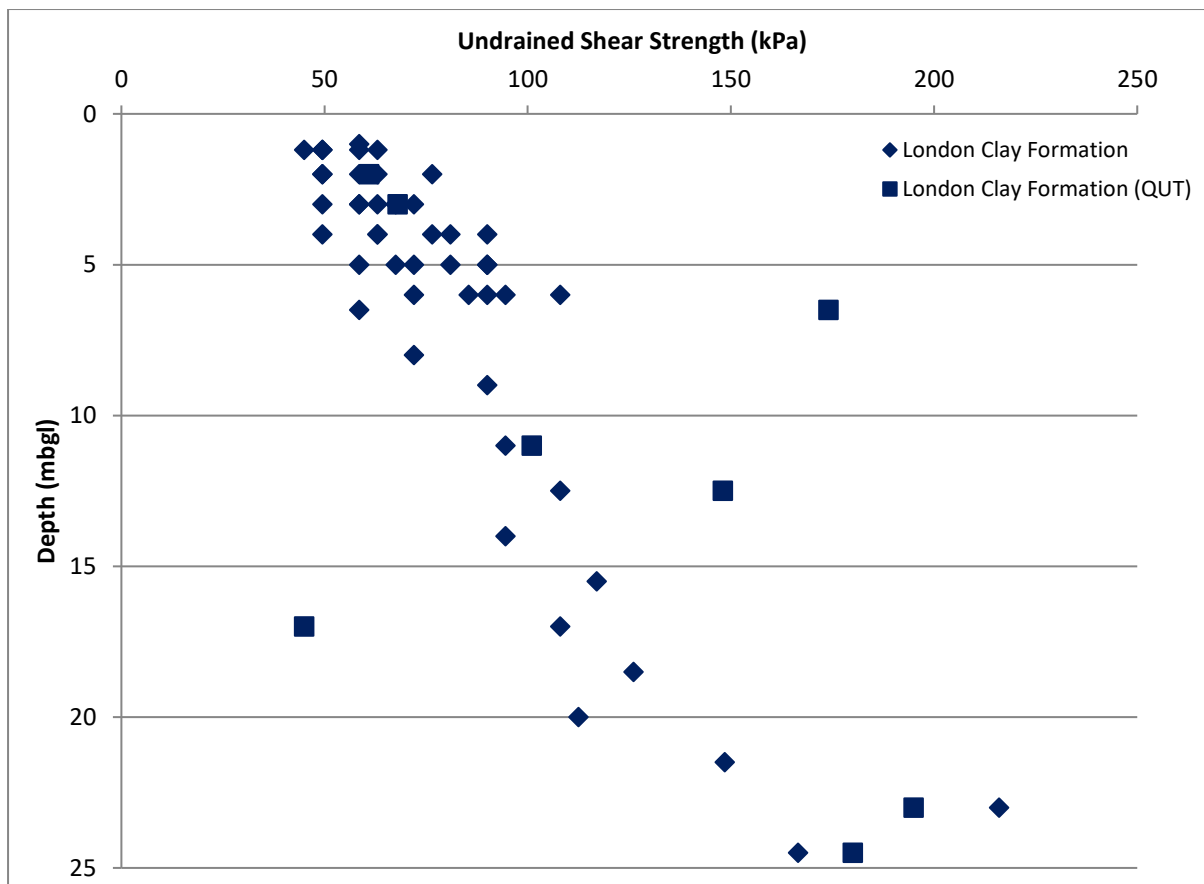
c_u = mass shear strength (kN)

f_1 = constant

N = SPT value achieved during boring operations

- 8.3.2 In the above equation f_1 is dependent on the plasticity of the material that the SPT is being carried out in. As the plasticity indices were shown to be greater than 25%, a value for f_1 of 4.5 has been adopted after Tomlinson (2001).
- 8.3.3 The graph below shows the shear strength profile of the encountered cohesive materials at the site, based on the SPT to shear strength correlation described above, as well as the results of undrained triaxial tests on undisturbed samples taken from the borehole.
- 8.3.4 A single SPT was undertaken in a layer of sand (WS05 at 2.0-3.0mbgl), hence it has been excluded from the graph below.

Figure 8.2: Undrained Shear Strength v Depth



8.4 Coefficient of Compressibility

8.4.1 Stroud and Butler (1974) developed a relationship between the coefficient of compressibility (m_v) and SPT N-value.

$m_v = 1 / f_2 \times N$ can be applied,

in which

m_v = coefficient of compressibility (m^2/MN)

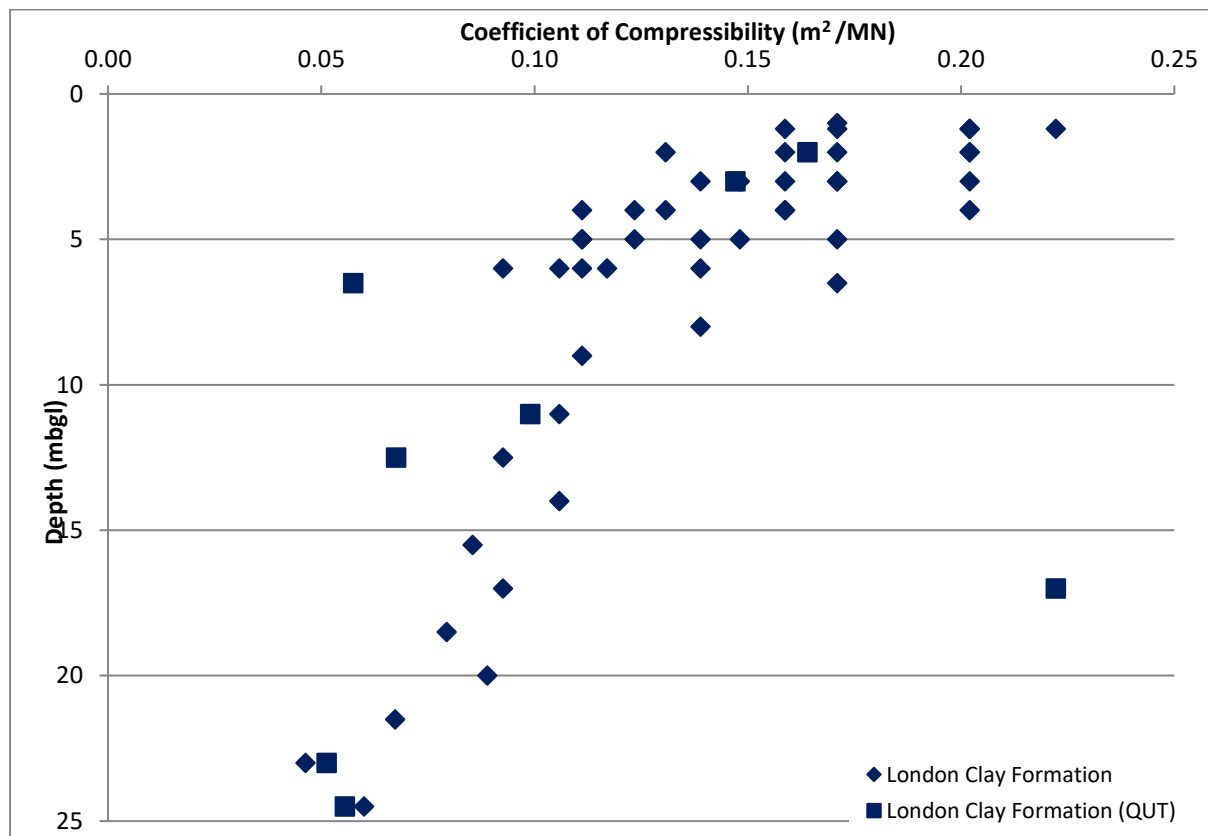
f_2 = constant dependent on the plasticity index

N = SPT value achieved during boring operations

8.4.2 Using the plasticity indices obtained and the graphs provided in Tomlinson (2001) a value of f_2 of 0.45 has been taken and used with the SPT N-values to infer coefficient of compressibility (m_v).

8.4.3 Where the undrained shear strength of the clays was measured using the quick undrained triaxial methodology, the m_v value was calculated by rearranging the equations for f_1 and f_2 and substituting in the measured undrained shear strength.

Figure 8.3: Coefficient of Volume Compressibility (m_v) v Depth



8.4.4 As would be expected, the results generally reduce with depth as the clay increases in strength and the overburden increases, reducing the potential for compressibility.

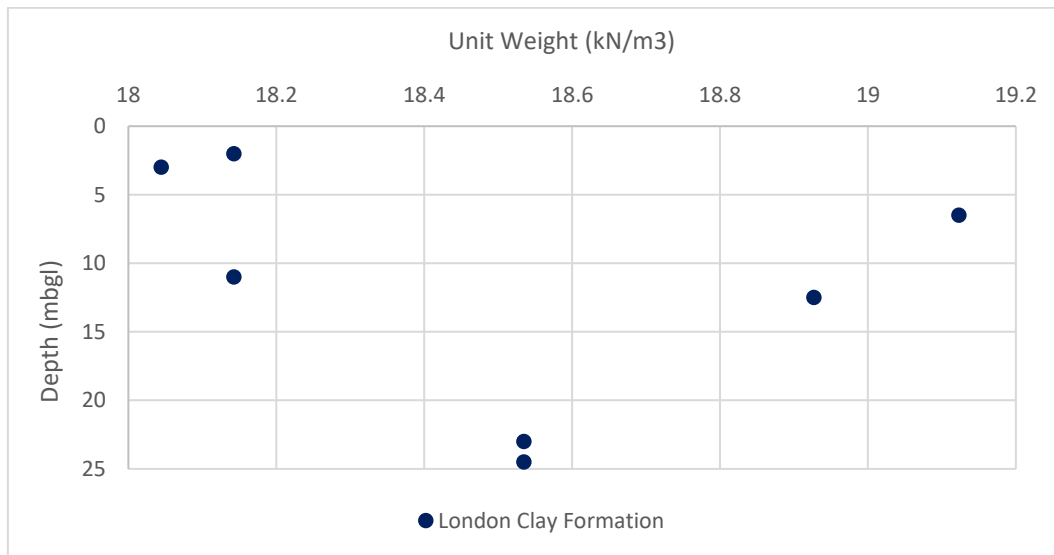
8.4.5 The results from the London Clay Formation are generally of “medium compressibility” with some deeper clays of “low compressibility”.

8.4.6 The shallow deposits of the London Clay Formation are generally of “medium compressibility”. This is considered to be due to a combination of weathering and softening of the upper horizon of the London Clay, and the lack of overburden pressure at shallow depth allowing the clays to relax and so compress slightly when loaded.

8.5 Density

8.5.1 In order to calculate the undrained shear strength using the quick undrained triaxial methodology the bulk density of the materials has to be calculated. These values are provided on the quick undrained triaxial (QUT) testing certificates provided in Appendix 4. These values can be converted to a unit weight value in kN/m^3 .

Figure 8.4: Unit Weight v Depth



8.5.2 A characteristic unit weight of 18.5kN/m^3 has been adopted for the London Clay Formation.

8.5.3 A unit weight of 17kN/m^3 has been adopted for the Made Ground based on correlations and suggested values given in BS8004:2015.

8.5.4 The derived unit weights are summarised below in Table 8.1: Derived Unit Weights

Table 8.1: Derived Unit Weights

Strata	Unit Weight (kN/m^3)
Made Ground	17
London Clay Formation	18.5

8.6 Effective Angle of Shearing Resistance/Angle of Friction

- 8.6.1 In cohesive soils, the effective angle of shearing resistance can be derived from the plasticity index of the soil, using the following equation presented in BS8004:2015.

$$\phi' = 42 - (12.5 \times \text{LOG}_{10}(\text{PI}))$$

Where PI = Plasticity Index.

- 8.6.2 Values have been calculated for all available plasticity index results and are presented in Table 8.2.

Table 8.2 Derived Angles of Shearing Resistance

Sample	Stratum	Derived Angle of Shearing Resistance (°)
BH1 at 2.00m	London Clay Formation	21.7
BH1 at 6.50m	London Clay Formation	21.5
BH1 at 12.50m	London Clay Formation	21.6
BH1 at 24.50m	London Clay Formation	21.0
BH2 at 3.00m	London Clay Formation	21.6
BH2 at 11.00m	London Clay Formation	21.3
BH2 at 17.00m	London Clay Formation	21.3
WS01 at 3.50m	London Clay Formation	21.3
WS01 at 2.10m	London Clay Formation	21.5

- 8.6.3 In granular materials, the effective angle of friction can be derived directly from shear box testing, or indirectly using the methodology outlined in Table 1 of BS8004:2015, using a combination of the SPT N-Values, particle size distribution (PSD) of the soil, and the field descriptions of angularity of the gravel fraction. This method assumes that the fines content of the material is less than 15%. An alternative method is to refer to the correlation between angle of friction and SPT N-values postulated by Peck *et al* (1967) and reproduced in Tomlinson (2001).

8.7 Stiffness Moduli

- 8.7.1 In cohesive soils of the London Clay Formation, the undrained stiffness modulus (Young's Modulus) can be derived using the correlation with undrained shear strength as postulated by Jardine et al. (1985):

$$Eu \text{ (kPa)} = 400 * Cu$$

- 8.7.2 The drained Young's Modulus for the London Clay Formation can then be derived from Eu, as follows:

$$E' = 0.6 * E_u$$

- 8.7.3 In granular materials, the drained Young's Modulus can be derived using the following correlation:

$$E' = N$$

8.8 Summary of Derived General Properties

- 8.8.1 Based on the analysis of the ground investigation data and past experience with similar deposits, the following derived general parameters are given in Figure 8.2.

Table 8.3 Derived Geotechnical Parameters

Property	London Clay Formation (Granular Layer)	London Clay Formation
Unit Weight (kN/m ³) ¹⁾	18.5	18.5
Drained Friction, ϕ' (°) ^{2)/3)}	30 ²⁾	21.0 – 21.7 ³⁾
Drained Cohesion, c' (kPa)	-	0
SPT N-Value	11	10 - 48
Undrained Young's Modulus, E_u (MPa) ⁴⁾	-	18 – 86.4
Drained Young's Modulus E' (MPa) ^{5)/6)}	11 ⁵⁾	10.8 – 51.8 ⁶⁾
Undrained Shear Strength, c_u (kPa) ⁷⁾	-	45 - 216
Undrained Shear Strength, c_u (kPa) ⁸⁾	-	45 - 195
Plasticity Index (%)	-	42 - 48
Modified Plasticity Index (%)	-	42 - 48
Volume Change Potential [NHBC]	-	High
Modulus of Volume Compressibility, m_v (m ² /MN) ⁹⁾	-	0.046 – 0.222

¹⁾ Derived using the results of unconsolidated undrained triaxial compression testing in accordance with BS1377: Part 7: 1990, Clause 8

²⁾ Correlation between N-value and Φ

³⁾ Calculated from: $\phi' = (42^\circ - 12.5 \log 10 I_p)$ for $5\% \leq I_p \leq 100\%$ Where, I_p is the soil's plasticity index (BS8004:2015)

⁴⁾ Calculated from $E_u = 0.4 \times c_u$ (MPa), based on the guidance given in Jardine et al 1985

⁵⁾ Calculated from: $E' = 1.0 \times N$ MPa, based on the guidance given in CIRIA Report 143

⁶⁾ Calculated from $E' = 0.6 \times E_u$ (MPa), based on the guidance given in Jardine et al 1985

⁷⁾ The undrained shear strength (c_u) of the cohesive soils was correlated to the SPT N-values using Stroud (1974), where $c_u = f_1 N$ and f_1 is factor related to the Plasticity Index (PI) of the clay (a value of f_1 equal to 5.0 for $PI \leq 25\%$ and a value of f_1 value equal to 4.5 for $PI > 25\%$)

⁸⁾ These values have been determined from the unconsolidated undrained triaxial compression testing in accordance with BS1377: Part 7: 1990, Clause 8

⁹⁾ Calculated from: $m_v = 1/f_2 \times N$ m²/MN, f_2 is a coefficient proposed by Stroud and Butler (1975) and varies with Plasticity Index (PI) as presented in Figure 27 of CIRIA Report 27 or $10/c_u$.

9 GEOTECHNICAL ENGINEERING RECOMMENDATIONS

9.1 General

- 9.1.1 Subsequent to intrusive investigation of the site and receipt of the laboratory test results, the following geotechnical assessments have been made.

9.2 Proposed Foundations

General

- 9.2.1 All topsoil is to be stripped from beneath proposed structures ahead of development.
- 9.2.2 The Made Ground is not considered to provide suitable bearing strata due to its low and variable bearing properties, and the unacceptable risk of total and differential settlement.
- 9.2.3 All foundations should be deepened beneath these deposits and any soft/loose soils encountered in order to found within underlying competent strata.
- 9.2.4 If foundations span different strata, e.g. sand and clay, they should either be deepened to terminate in a single soil stratum, or suitable reinforcement included (to be detailed by the structural engineer).
- 9.2.5 Assuming soils of high volume change potential are present, heave precautions will be required against the side of foundations and ground beams in accordance with the requirements set out in NHBC Standards Chapter 4.2.

Conventional Foundations

- 9.2.6 It is considered that traditional strip/trench-fill foundations up to 1m wide may be formed within the underlying London Clay Formation at a minimum depth of 1.0m for an allowable bearing capacity of 125kPa. Alternatively, pad foundations with minimum dimensions of 1.0m x 1.0m could be formed, for an allowable bearing capacity of 170kPa. Total and differential settlements should be contained within tolerable limits.
- 9.2.7 This depth, however, does not take into account the depth of Made Ground, or the distance to and species of any previous, existing and proposed trees, and foundations may need to be deepened further accordingly, in accordance with NHBC requirements, for soils of high volume change potential.
- 9.2.8 Where foundations need to change levels as a result, the foundations should be stepped and reinforced. These steps should be no deeper than half of the width of the foundation and each step should not exceed 0.5m.
- 9.2.9 Where foundations are likely to be situated within the Root Protection Area of mature trees to be retained, it may be necessary to adopt piled foundations, depending on the type, size and proximity of trees. An arboricultural survey may be required to confirm these details as there are trees present within the site boundary.
- 9.2.10 If foundations span different strata, e.g. sand and clay, they should either be deepened to terminate in a single soil stratum, or suitable reinforcement included (to be detailed by the structural engineer).

9.2.11 Foundations greater than 2.50m deep would require structure-specific design by a structural engineer. In this instance, consideration could be given to the use of piled foundations instead, which might be preferable in terms of economy and practicality.

9.2.12 Where any unexpected or soft ground conditions are encountered during the groundworks, works in that area should cease and the advice of a suitably qualified geotechnical engineer sought.

Piled Foundations

9.2.13 In the event that conventional foundations are not suitable, e.g. due to high structural loads, the presence of deeper zones of Made Ground or very soft and loose soils and/or where tree influence would dictate conventional foundations exceeding 2.5mbgl, an alternative such as piled foundations would be considered suitable.

9.2.14 Preliminary load capacities calculated for varying diameter of CFA piles taken into the London Clay Formation are given in **Error! Reference source not found.**. The design should be used for preliminary purposes only as the actual working load is dependent on the type of pile and method of installation.

Table 9.1: Indicative Pile Capacities (kN)

Pile toe depth (mbgl)	Pile diameter (mm)		
	450	600	800
Indicative Allowable Pile Capacity (kN)			
12	283	402	578
14	334	471	674
16	386	543	774
18	443	621	881
20	503	703	995

9.2.15 To comply with BS EN 1997 and the guidance given by the Federation of Piling Specialists the ground must be proven to a minimum of 5m below the proposed toe of the piles. Consequently, values below 20mbgl have been excluded.

9.2.16 The construction of a piled foundation is a specialist job and the advice of a reputable local contractor familiar with the type of ground and groundwater conditions encountered on this site should be sought prior to finalising the design.

9.2.17 These working loads have been calculated on the basis of the ground and groundwater conditions encountered in the boreholes and assume the following:

- The contribution to the working load on the upper 1.50m has been ignored due to the presence of Made Ground.
- Partial factors were applied on the sum of the end bearing and skin friction working loads as defined by BS EN 1997 using Design Approach 1 Combination 2.
- No allowance has been made for additional forces acting on the pile shaft, such as negative skin friction, or loading due to desiccation or heave forces.

- Groundwater level was adopted as 4.0mbgl.

9.2.18 The preliminary working loads given are applicable to single vertically loaded piles. Where groups of piles are to be constructed, the working load of each individual pile should be reduced appropriately and a calculation made to check for the factor of safety against block failure.

9.2.19 A temporary working platform is likely to be required. In addition, some form of temporary drainage may also be required to prevent the working platform becoming waterlogged or deteriorating during use. A working platform should be designed in accordance with BRE BR470, or similar design standard.

9.3 Aggressive Ground Conditions

9.3.1 Sulphate attack on building foundations occurs where sulphate solutions react with the various products of hydration in Ordinary Portland Cement (OPC) or converted High-Alumina Cement (HAC). The reaction is expansive, and therefore disruptive, not only due to the formation of minute cracks, but also due to loss of cohesion in the matrix.

9.3.2 In accordance with BRE Special Digest 1, the characteristic values of sulphate used to determine the concrete classification are determined using the methodology summarised in **Error! Reference source not found.** below.

Table 9.2: Concrete in the Ground Characteristic Value Determination

No Samples in the dataset	Method for determining the sulphate characteristic value
1 - 4	Highest value
5 - 9	Mean of the top 2No highest results
10 or greater	Mean of the top 20% highest results

9.3.3 **Error! Reference source not found.** summarises the analysis of the aggressive nature of the ground for each of the strata encountered within the ground investigation.

Table 9.3: Concrete in the Ground Class

Stratum	No Samples	pH range	Characteristic WS Sulphate (mg/l)	Characteristic Total Potential Sulphate (%) ¹⁾	Design Sulphate Class	ACEC Class
Made Ground	8	8.3 – 8.7	330	N/A	DS-1	AC-1s
London Clay Formation	6	8.0 – 8.8	1950	2.67	DS-5	AC-5

1) Applies to soils containing more than 0.3% of oxidisable sulphides, calculated in accordance with BRE SD-1

9.3.4 Analysis of the results indicates that the London Clay Formation contains significant concentrations of oxidisable sulphides (e.g. pyrite), which can be oxidised to form additional sulphate on disturbance and exposure to air as outlined in BRE SD-1:2005. The total potential sulphate must therefore also be considered in the designation of a Design Class, in cases where the London Clay Formation is to be disturbed and exposed to air.

9.3.5 The concrete structures, including foundations, will need to be designed in accordance with BS EN 1992-1-1:2004+A1:2014. It is recommended that the advice of this publication be taken for the design and specification of all sub-surface concrete.

9.4 Ground Floor Slabs

9.4.1 Given the presence of shrinkable soils and likely piling foundation solution, it is recommended that suspended floor slabs are used with an adequate void designed according to NHBC Standards. As a guide, initial modelling indicates a requirement for a sub-floor void of at least 300mm due to the presence of shrinkable soils of high-volume change potential.

9.5 Excavations

9.5.1 Temporary excavations within the cohesive soils are likely to remain relatively stable in the short term though some spalling may be anticipated.

9.5.2 Temporary excavations within the Made Ground and granular soils are unlikely to remain stable and some form of temporary support or battering back to a safe angle is likely to be required.

9.5.3 Ground works should always be designed in such a manner to avoid entry into excavations by construction or maintenance personnel. However, in the event that such works cannot be avoided or designed out, they should only be undertaken in accordance with a safe system of work, following an appropriate risk assessment and in accordance with any legislative requirements, e.g. Confined Spaces Regulations.

9.6 Road Pavements

9.6.1 **Error! Reference source not found.** summarises the results of the in-situ CBR testing.

Table 9.4: Summary of CBR Test Results

Position	Depth Range (mm)	Stratum	Average DCP CBR (%)
CBR01	0-200	Made Ground	11.6
	200-400		19.5
	400-500		12.9
	500-1000	Made Ground/London Clay Formation	8.2
CBR02	0-200	Made Ground	26.2
	200-500		44.1
	500-700		18.2
	700-1000		36.0

Position	Depth Range (mm)	Stratum	Average DCP CBR (%)
CBR03	0-300	Made Ground	20.0
	300-500		66.7
	500-700		121.4
CBR04	0-200	Made Ground	12.9
	200-500		20.0
	500-1000		11.9
CBR05	0-300	Made Ground	6.00
	300-600		2.5
	600-800		5.1
	800-1000		3.8

9.6.2 The engineering characteristics of Made Ground are variable, and the results of in-situ testing do not predict the overall settlements that may occur. It would therefore be prudent to assume a CBR value of 2.5% for the preliminary design of pavements constructed upon Made Ground.

9.6.3 In-situ CBR testing using a TRL DCP gives only a short-term estimated value, which may be influenced by seasonal variations in the moisture content of the soil or due to resistance against local granular inclusions.

9.6.4 Based on the test results, and with reference to the equilibrium suction-index CBR values provided in the Transport Road Research Laboratory (TRRL) Laboratory Report 1132 (1984), a preliminary CBR value of 3.5% is considered suitable for the London Clay Formation.

9.6.5 Additional CBR testing should be undertaken after detailed design is complete to confirm suitability.

9.7 Surface Water Drainage

Falling Head Permeability Tests

9.7.1 Three falling head permeability tests were undertaken within the boreholes BH1, WS03, and WS05 at 2.0m depth and infiltration rates have been calculated. Each test was undertaken over a 1-hour period. **Error! Reference source not found.** summaries the falling head permeability tests' results:

Table 9.5: Summary of Soakage Test Results

Position	Depth Range of Test (m)	Results (m/s)
BH01	1.74 – 2.00	0 <i>No fall in head</i>
WS03	1.15 – 2.00	2.48×10^{-8}
WS05	1.14 – 2.00	1.22×10^{-8}

9.7.2 It should be noted that the water levels in both WS03 and WS05 reduced by only 1-2cm over the first 2-3mins of the tests. The results are indicative of practically impermeable soils.

9.8 Groundwater Control

9.8.1 During the investigation groundwater was reported within cable percussive borehole BH2 at 15.50mbgl and windowless sampler borehole WS04 within the London Clay Formation.

9.8.2 Given the underlying ground conditions encountered are predominantly clay, it is likely that the water encountered is perched within the sandier layers.

9.8.3 Subject to seasonal variations, any groundwater encountered during site works could be readily dealt with by conventional pumping from a sump used to collate waters.

9.8.4 Surface water or rainfall ingress could be similarly dealt with.

10 REFERENCES

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APPENDICES

APPENDIX 1 – FIGURES

PROJECT NAME	Tiverton Estate	CLIENT	Alexander James Contracts Ltd
TITLE	Site Location Plan	PROJECT NO.	P4219J2428b
DATE	September 2026	FIGURE NO.	1



PROJECT NAME	Tiverton Estate	CLIENT	Alexander James Contracts Ltd
TITLE	Completed Ground Investigation Plan	PROJECT NO.	P4219J2428b
DATE	August 2026	FIGURE NO.	2



PROJECT NAME	Tiverton Estate	CLIENT	Alexander James Contracts Ltd
TITLE	Soil arisings photo plan	FIGURE	3

Photo 1: WS01



Photo 2: WS02



PROJECT NAME	Tiverton Estate	CLIENT	Alexander James Contracts Ltd
TITLE	Soil arisings photo plan	FIGURE	3

Photo 3: WS03



Photo 4: WS04



PROJECT NAME	Tiverton Estate	CLIENT	Alexander James Contracts Ltd
TITLE	Soil arisings photo plan	FIGURE	3

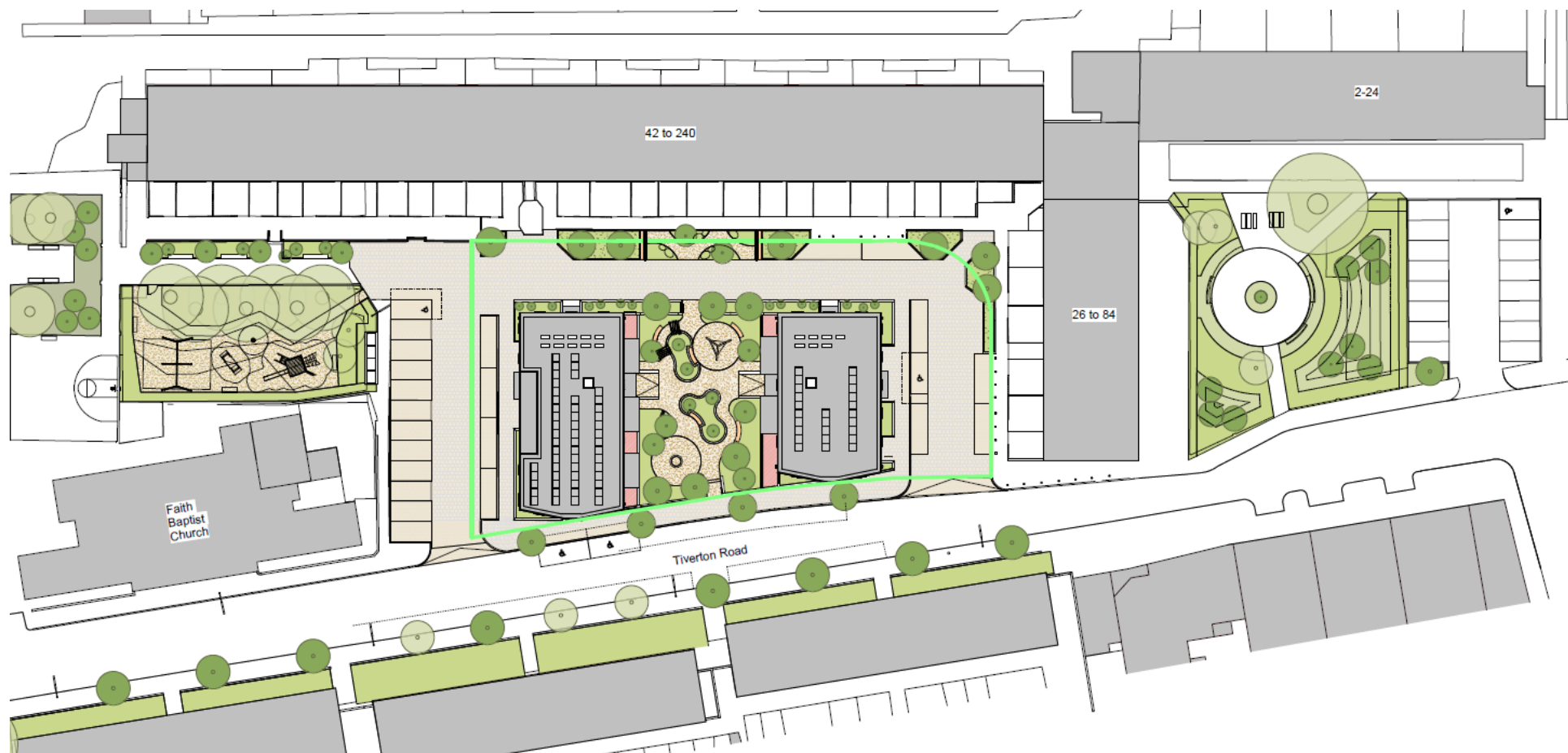
Photo 5: WS05



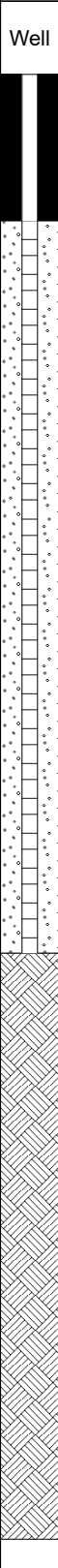
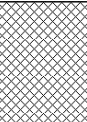
Photo 6: WS05

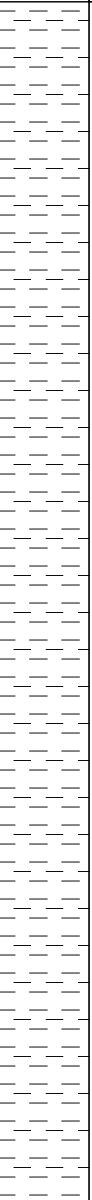
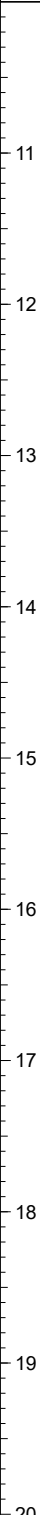


PROJECT NAME	Tiverton Estate	CLIENT	Alexander James Contracts Ltd
TITLE	Proposed development layout	PROJECT NO.	P4219J2428b
DATE	September 2026	FIGURE NO.	4



APPENDIX 2 – EXPLORATORY HOLE RECORDS

JOMAS ENGINEERING ENVIRONMENTAL LAND REMEDIATION		CABLE PERCUSSION RECORD					Borehole Number BH1											
Project Name: Tiverton Estate			Client: Alexander James Contracts Ltd			Date: 13/08/2026 - 13/08/2026												
Location: London, N15 6RR			Logged by: SLN			Co-ords: E532666.00 N188224.00												
Project No. : P4219J2428b			Crew Name: RT			Drilling Equipment: Dando												
Log Status FINAL		Hole Type CP		Level 14.72m AoD		Approved By CLP		Scale 1:50	Page Number Sheet 1 of 3									
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description										
		Depth (m)	Type	Results														
		0.20	ES	N=11 (2,2/3,3,2,3)	0.80	13.92		Grass over brown slightly gravelly sand with rootlets. Sand is fine to medium. Gravel consists of fine to medium sub-angular to sub-rounded flint and occasional brick and concrete. (MADE GROUND).	1									
	0.50	ES																
	0.75	ES																
	1.00	D																
	1.20	SPT																
		2.00	D	100% Recovery					2									
	2.00	ES																
	2.00	U																
		3.00	D	N=11 (3,3/3,2,3,3)					3									
	3.00	SPT																
		4.00	D	100% Recovery					4									
	4.00	U																
		5.00	D	N=13 (3,4/3,3,4,3)					5									
	5.00	SPT																
		5.50	ES						6									
	6.00	D																
		6.50	U	100% Recovery					7									
	7.00	D																
	7.00	ES						8										
8.00	D																	
	8.00	SPT	N=16 (3,3/4,3,4,5)					9										
9.00	D																	
	9.50	U	100% Recovery					10										
10.00	D																	
Remarks:							Casing Diameter by Depth			Chiselling								
No groundwater reported. Falling head test undertake at 2mbgl.							Depth Top		Depth Base		Diameter		Depth Top		Depth Base		Duration	
JOMAS ASSOCIATES LTD Unit 24 Sarum Complex, Salisbury Road, Uxbridge UB8 2RZ www.jomasassociates.com 0333-305-9054 info@jomasassociates.com Jomas Associates Ltd Registered in England and Wales No. 7095350																		

JOMAS ENGINEERING ENVIRONMENTAL LAND REMEDIATION		CABLE PERCUSSION RECORD					Borehole Number BH1																	
Project Name: Tiverton Estate			Client: Alexander James Contracts Ltd			Date: 13/08/2026 - 13/08/2026																		
Location: London, N15 6RR			Logged by: SLN			Co-ords: E532666.00 N188224.00																		
Project No. : P4219J2428b			Crew Name: RT			Drilling Equipment: Dando																		
Log Status FINAL		Hole Type CP		Level 14.72m AoD		Approved By CLP		Scale 1:50	Page Number Sheet 2 of 3															
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description																
		Depth (m)	Type	Results																				
		10.00	ES	N=21 (5,4/5,5,6,5)				Firm to very stiff consistency** dark grey and bluish grey CLAY. (LONDON CLAY FORMATION)																
		11.00	D																					
		11.00	SPT																					
		12.00	D	80% Recovery																				
		12.50	U																					
		13.00	D																					
		14.00	D	N=21 (6,5/5,6,5,5)																				
		14.00	ES																					
		14.00	SPT																					
		15.00	D	100% Recovery																				
		15.50	U																					
		16.00	D																					
17.00	D	N=24 (6,6/5,6,6,7)																						
17.00	SPT																							
18.00	D																							
18.00	D	Claystone. (LONDON CLAY FORMATION)						18.00	-3.28															
19.00	D																							
19.00	ES																							
19.00	D	Stiff to very stiff consistency** dark grey and bluish grey CLAY. (LONDON CLAY FORMATION)											19.20	-4.47										
20.00	D																							
20.00	D																							

Remarks:

No groundwater reported. Falling head test undertake at 2mbgl.

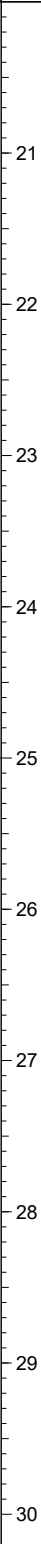
Casing Diameter by Depth			Chiselling		
Depth Top	Depth Base	Diameter	Depth Top	Depth Base	Duration

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JOMAS ENGINEERING ENVIRONMENTAL LAND REMEDIATION		CABLE PERCUSSION RECORD					Borehole Number BH1					
Project Name: Tiverton Estate			Client: Alexander James Contracts Ltd			Date: 13/08/2026 - 13/08/2026						
Location: London, N15 6RR			Logged by: SLN			Co-ords: E532666.00 N188224.00						
Project No. : P4219J2428b			Crew Name: RT			Drilling Equipment: Dando						
Log Status FINAL		Hole Type CP		Level 14.72m AoD		Approved By CLP		Scale 1:50	Page Number Sheet 3 of 3			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description				
		Depth (m)	Type	Results								
		20.00	SPT	N=25 (7,6/6,5,6,8)	25.00	-10.28		Stiff to very stiff consistency** dark grey and bluish grey CLAY. (LONDON CLAY FORMATION)				
		21.00	D									
		21.50	U	100% Recovery								
		22.00	D									
		22.00	ES									
		23.00	D									
		23.00	SPT	N=48 (8,9/9,11,13,15)								
		24.00	D									
		24.50	U	100% Recovery								
		25.00	D									
		25.00	D									
End of Borehole at 25.00m												
Remarks:							Casing Diameter by Depth			Chiselling		
No groundwater reported. Falling head test undertake at 2mbgl.							Depth Top	Depth Base	Diameter	Depth Top	Depth Base	Duration
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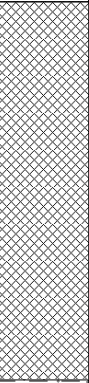
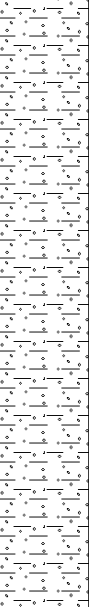
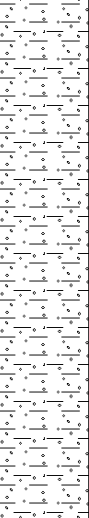
JOMAS ENGINEERING ENVIRONMENTAL LAND REMEDIATION		CABLE PERCUSSION RECORD					Borehole Number BH2					
Project Name: Tiverton Estate			Client: Alexander James Contracts Ltd			Date: 13/08/2026 - 14/08/2026						
Location: London, N15 6RR			Logged by: SLN			Co-ords: E532673.00 N188243.00						
Project No. : P4219J2428b			Crew Name: RT			Drilling Equipment: Dando						
Log Status FINAL		Hole Type CP		Level 15.00m AoD		Approved By CLP		Scale 1:50	Page Number Sheet 1 of 3			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description				
		Depth (m)	Type	Results								
		0.10	ES	85% Recovery	0.85	14.15		Grass over brown slightly gravelly sand with rootlets. Sand is fine to medium. Gravel consists of fine to medium sub-angular to sub-rounded flint and occasional brick and concrete. (MADE GROUND).	1			
		0.55	ES									
		0.75	ES									
		1.00	D									
		1.20	U									
		1.70	D	N=11 (2,2/3,2,3,3)	2							
		2.00	B									
		2.00	SPT									
		3.00	U			100% Recovery						
		3.30	ES									
		3.50	D									
		4.00	B	N=11 (3,3/2,3,3,3)	4							
		4.00	SPT									
		5.00	U			100% Recovery						
		5.50	D									
		6.50	B	N=13 (3,4/3,3,4,3)	6							
		6.50	ES									
		6.50	SPT									
		8.00	U	100% Recovery	7							
		8.50	D									
8.50	ES											
9.00	SPT	N=20 (4,5/5,4,5,6)	9									
9.50	B											
Remarks:							Casing Diameter by Depth					
Groundwater reported at 15.5m							Chiselling					
							Depth Top	Depth Base	Diameter	Depth Top	Depth Base	Duration
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JOMAS ENGINEERING ENVIRONMENTAL LAND REMEDIATION		CABLE PERCUSSION RECORD					Borehole Number BH2				
Project Name: Tiverton Estate			Client: Alexander James Contracts Ltd			Date: 13/08/2026 - 14/08/2026					
Location: London, N15 6RR			Logged by: SLN			Co-ords: E532673.00 N188243.00					
Project No. : P4219J2428b			Crew Name: RT			Drilling Equipment: Dando					
Log Status FINAL		Hole Type CP		Level 15.00m AoD		Approved By CLP		Scale 1:50	Page Number Sheet 2 of 3		
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
		11.00	U	100% Recovery				Stiff becoming very stiff consistency** dark grey and bluish grey CLAY. (LONDON CLAY FORMATION)	11		
		11.50 11.50	D ES						12		
		12.50 12.50 12.50	B ES SPT	N=24 (5,6/6,5,7,6)					13		
		14.00	U	80% Recovery					14		
		14.50	D						15		
		15.50 15.50 15.50	B ES SPT	N=26 (6,5/6,7,7,6)					16		
		17.00	U	75% Recovery					17		
		17.50	D						18		
		18.50 18.50	ES SPT	N=28 (7,7/6,6,7,9)					19		
		19.00	B						19		
		20.00	U	100% Recovery					20		
		Remarks: Groundwater reported at 15.5m							Casing Diameter by Depth		Chiselling
						Depth Top	Depth Base	Diameter	Depth Top	Depth Base	Duration
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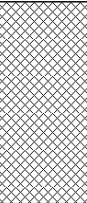
JOMAS ENGINEERING ENVIRONMENTAL LAND REMEDIATION		CABLE PERCUSSION RECORD					Borehole Number BH2					
Project Name: Tiverton Estate			Client: Alexander James Contracts Ltd			Date: 13/08/2026 - 14/08/2026						
Location: London, N15 6RR			Logged by: SLN			Co-ords: E532673.00 N188243.00						
Project No. : P4219J2428b			Crew Name: RT			Drilling Equipment: Dando						
Log Status FINAL		Hole Type CP		Level 15.00m AoD		Approved By CLP		Scale 1:50	Page Number Sheet 3 of 3			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description				
		Depth (m)	Type	Results								
		20.50	D	N=33 (8,7/7,7,8,11)	25.00	-10.00		Stiff becoming very stiff consistency** dark grey and bluish grey CLAY. (LONDON CLAY FORMATION)	21			
		21.50	B ES SPT						65% Recovery	22		
		21.50								U	23	
		21.50		D								24
		23.00	B ES SPT						N=37 (9,8/8,8,9,12)	25		
		23.50		End of Borehole at 25.00m							26	
		24.50							27			
		24.50								28		
		24.50							29			
										30		
Remarks:							Casing Diameter by Depth		Chiselling			
Groundwater reported at 15.5m							Depth Top	Depth Base	Diameter	Depth Top	Depth Base	Duration
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JOMAS ENGINEERING ENVIRONMENTAL LAND REMEDIATION		WINDOWLESS SAMPLER RECORD				Borehole Number WS01			
Project Name: Tiverton Estate			Client: Alexander James Contracts Ltd			Date: 12/08/2026 - 12/08/2026			
Location: London, N15 6RR			Logged by: SLN			Co-ords: E532695.52 N188244.03			
Project No. : P4219J2428b			Crew Name: RT			Drilling Equipment: Archway			
Log Status FINAL		Hole Type WLS		Level 15.06m AoD		Approved By CLP		Scale 1:30	Page Number Sheet 1 of 2
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.05	ES		0.80	14.26		Grass over light grey and light brown gravelly sand with low cobble content and rootlets. Sand is fine to coarse. Gravel consists of fine to coarse angular to sub-rounded flint and occasional brick and concrete. Cobble consists of angular brick and concrete. (MADE GROUND)	
	0.40	ES							
	0.65	ES							
	1.00	SPT	N=13 (2,3/3,3,4,3)				Firm becoming stiff consistency** orangish brown mottled light grey slightly gravelly CLAY. Gravel consists of fine to medium sub-angular to sub-rounded claystone/ calcareous nodules. (LONDON CLAY FORMATION)	1	
	1.30	D							
	2.00	SPT	N=17 (3,3/4,4,5,4)					2	
	2.50	D							
	3.00	SPT	N=14 (4,3/3,3,4,4)					3	
	3.50	D							
	4.00	SPT	N=20 (4,4/4,5,5,6)					4	
	4.50	D							
	5.00	SPT	N=20 (4,5/5,4,5,6)					5	
	5.20	ES							
	5.90	D							
6.00	SPT				6.00	9.06			6
Remarks: No groundwater reported								Key: ES - Environmental Sample D - Small Disturbed Sample B - Bulk Disturbed Sample PID - Photo-ionisation Detector Reading	
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		WINDOWLESS SAMPLER RECORD					Borehole Number WS01		
Project Name: Tiverton Estate				Client: Alexander James Contracts Ltd			Date: 12/08/2026 - 12/08/2026		
Location: London, N15 6RR				Logged by: SLN			Co-ords: E532695.52 N188244.03		
Project No. : P4219J2428b				Crew Name: RT			Drilling Equipment: Archway		
Log Status FINAL		Hole Type WLS		Level 15.06m AoD		Approved By CLP		Scale 1:30	Page Number Sheet 2 of 2
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
				N=24 (5,5/5,6,6,7)				End of Borehole at 6.00m	
									7
									8
									9
									10
									11
									12
Remarks: No groundwater reported								Key: ES - Environmental Sample D - Small Disturbed Sample B - Bulk Disturbed Sample PID - Photo-ionisation Detector Reading	
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		WINDOWLESS SAMPLER RECORD				Borehole Number WS02			
Project Name: Tiverton Estate			Client: Alexander James Contracts Ltd			Date: 12/08/2026 - 12/08/2026			
Location: London, N15 6RR			Logged by: SLN			Co-ords: E532676.00 N188256.00			
Project No. : P4219J2428b			Crew Name: RT			Drilling Equipment: Archway			
Log Status FINAL		Hole Type WLS		Level 14.54m AoD		Approved By CLP		Scale 1:30	Page Number Sheet 1 of 2
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.25	ES	N=13 (3,2/3,3,4,3)	1.50	13.04		Grass over light grey gravelly sand with low cobble content and rootlets. Sand is fine to coarse. Gravel consists of fine to coarse angular to sub-rounded flint and occasional brick and concrete. Cobble consists of angular brick and concrete. (MADE GROUND)	1
		0.55	ES						
		0.95	ES						
		1.20	SPT						
		1.35	ES						
		2.00	SPT	N=14 (3,3/4,3,3,4)			Firm becoming stiff consistency** orangish brown mottled light grey slightly gravelly CLAY. Gravel consists of fine to medium sub-angular to sub-rounded claystone/ calcareous nodules. (LONDON CLAY FORMATION)	2	
		2.10	D						
		3.00	SPT	N=16 (2,3/3,4,4,5)				3	
		3.10	D						
		4.00	SPT	N=14 (3,4/3,3,4,4)				4	
		4.10	D						
		4.60	ES	N=16 (4,3/3,4,4,5)				5	
5.00	SPT								
5.50	D								
		6.00	SPT		6.00	8.54			6
Remarks: No groundwater reported								Key: ES - Environmental Sample D - Small Disturbed Sample B - Bulk Disturbed Sample PID - Photo-ionisation Detector Reading	
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 JOMAS ENGINEERING ENVIRONMENTAL LAND REMEDIATION		WINDOWLESS SAMPLER RECORD					Borehole Number WS02		
Project Name: Tiverton Estate			Client: Alexander James Contracts Ltd			Date: 12/08/2026 - 12/08/2026			
Location: London, N15 6RR			Logged by: SLN			Co-ords: E532676.00 N188256.00			
Project No. : P4219J2428b			Crew Name: RT			Drilling Equipment: Archway			
Log Status FINAL		Hole Type WLS		Level 14.54m AoD		Approved By CLP		Scale 1:30	Page Number Sheet 2 of 2
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
				N=19 (3,4/4,5,5,5)				End of Borehole at 6.00m	
									7
									8
									9
									10
									11
									12
Remarks: No groundwater reported								Key: ES - Environmental Sample D - Small Disturbed Sample B - Bulk Disturbed Sample PID - Photo-ionisation Detector Reading	
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		WINDOWLESS SAMPLER RECORD				Borehole Number WS03						
Project Name: Tiverton Estate			Client: Alexander James Contracts Ltd			Date: 12/08/2026						
Location: London, N15 6RR			Logged by: SLN			Co-ords: E532670.78 N188234.17						
Project No. : P4219J2428b			Crew Name: RT			Drilling Equipment:						
Log Status FINAL		Hole Type WLS		Level 14.84m AoD		Approved By CLP		Scale 1:30	Page Number Sheet 1 of 2			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description				
		Depth (m)	Type	Results								
		0.10	ES		0.80	14.04		Light brown gravelly sand with rootlets. Sand is fine to coarse. Gravel consists of fine to coarse angular to subrounded flint and brick. (MADE GROUND)	1			
		0.40	ES									
		0.70	ES									
		1.20	D SPT	N=10 (2,3/3,2,2,3)				Firm becoming stiff consistency** orangish brown mottled grey CLAY. (LONDON CLAY FORMATION)				
		1.20										
		2.00	SPT	N=11 (3,2/2,3,3,3)						2		
		2.40	D									
		3.00	SPT	N=13 (2,3/3,3,4,3)						3		
		3.40	D ES								Firm becoming stiff consistency** orangish brown mottled grey CLAY. (LONDON CLAY FORMATION)	
		3.40										
		4.00	SPT	N=14 (3,3/4,3,3,4)								4
		4.70	D									
		5.00	SPT	N=18 (4,3/5,4,4,5)								5
5.60	D											
6.00	SPT		6									

Remarks:
Falling head test undertake at 2mbgl.

Key:
ES - Environmental Sample
D - Small Disturbed Sample
B - Bulk Disturbed Sample
PID - Photo-ionisation Detector Reading

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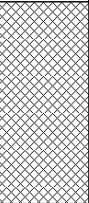
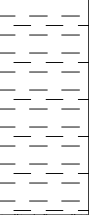
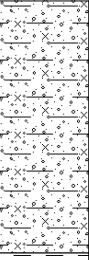
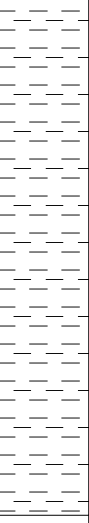
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		WINDOWLESS SAMPLER RECORD					Borehole Number WS03		
Project Name: Tiverton Estate				Client: Alexander James Contracts Ltd			Date: 12/08/2026		
Location: London, N15 6RR				Logged by: SLN			Co-ords: E532670.78 N188234.17		
Project No. : P4219J2428b				Crew Name: RT			Drilling Equipment:		
Log Status FINAL		Hole Type WLS		Level 14.84m AoD		Approved By CLP		Scale 1:30	Page Number Sheet 2 of 2
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
				N=20 (4,5/5,5,4,6)				End of Borehole at 6.00m	
									7
									8
									9
									10
									11
									12
Remarks: Falling head test undertake at 2mbgl.								Key: ES - Environmental Sample D - Small Disturbed Sample B - Bulk Disturbed Sample PID - Photo-ionisation Detector Reading	
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		WINDOWLESS SAMPLER RECORD				Borehole Number WS04			
Project Name: Tiverton Estate			Client: Alexander James Contracts Ltd			Date: 12/08/2026			
Location: London, N15 6RR			Logged by: SLN			Co-ords: E532679.30 N188226.07			
Project No. : P4219J2428b			Crew Name:			Drilling Equipment:			
Log Status FINAL		Hole Type WLS		Level 15.28m AoD		Approved By CLP		Scale 1:30	Page Number Sheet 1 of 2
	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.15	ES		1.00	14.28		Grass over light brown gravelly sand with rootlets. Sand is fine to coarse. Gravel consists of fine to coarse angular to sub-rounded flint, brick and occasional concrete. (MADE GROUND)	
		0.50	ES						
		0.90	ES						
		1.20	SPT	N=11 (3,3/2,3,3,3)				Firm consistency** orangish brown mottled grey CLAY. (LONDON CLAY FORMATION)	1
		1.50	D						
		2.00	SPT	N=13 (3,2/3,3,4,3)					
		2.50	D		3.00	12.28		Firm consistency** reddish brown CL AY. (LONDON CLAY FORMATION)	3
		3.00	SPT	N=13 (4,3/3,3,3,4)					
		3.50 3.50	D ES						
		4.00	SPT	N=18 (4,5/4,4,5,5)	4.00	11.28		Stiff becoming firm consistency** light brown slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel consists of fine to medium sub-angular to rounded claystone/ calcareous nodules. (LONDON CLAY FORMATION)	4
		4.50	ES						
5.00	SPT	N=15 (3,3/3,4,4,4)							
		6.00	SPT		6.00	9.28			6
Remarks:							Key: ES - Environmental Sample D - Small Disturbed Sample B - Bulk Disturbed Sample PID - Photo-ionisation Detector Reading		
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		WINDOWLESS SAMPLER RECORD					Borehole Number WS04		
Project Name: Tiverton Estate				Client: Alexander James Contracts Ltd			Date: 12/08/2026		
Location: London, N15 6RR				Logged by: SLN			Co-ords: E532679.30 N188226.07		
Project No. : P4219J2428b				Crew Name:			Drilling Equipment:		
Log Status FINAL		Hole Type WLS		Level 15.28m AoD		Approved By CLP		Scale 1:30	Page Number Sheet 2 of 2
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
				N=16 (4,3/4,3,4,5)				End of Borehole at 6.00m	
									7
									8
									9
									10
									11
									12
Remarks:								Key: ES - Environmental Sample D - Small Disturbed Sample B - Bulk Disturbed Sample PID - Photo-ionisation Detector Reading	
JOMAS ASSOCIATES LTD Unit 24 Sarum Complex, Salisbury Road, Uxbridge UB8 2RZ www.jomasassociates.com 0333-305-9054 info@jomasassociates.com Jomas Associates Ltd Registered in England and Wales No. 7095350									

		WINDOWLESS SAMPLER RECORD				Borehole Number WS05			
Project Name: Tiverton Estate			Client: Alexander James Contracts Ltd			Date: 12/08/2026 - 12/08/2026			
Location: London, N15 6RR			Logged by: SLN			Co-ords: E532671.73 N188217.09			
Project No. : P4219J2428b			Crew Name:			Drilling Equipment: Windowless Sampler			
Log Status FINAL		Hole Type WLS		Level 15.28m AoD		Approved By CLP		Scale 1:30	Page Number Sheet 1 of 2
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES					Grass over light brown gravelly sand with rootlets. Sand is fine to coarse. Gravel consists of fine to coarse angular to sub-rounded flint, brick and occasional concrete. (MADE GROUND)	
		0.75	ES		0.80	14.48		Red sandy gravel with high cobble content. Sand is fine to coarse. Gravel consists of fine to coarse angular brick and occasional flint. Cobble consists of angular brick. (MADE GROUND).	1
		1.00	ES		1.10	14.18			
		1.20	SPT	N=13 (3,4/3,3,4,3)					
		1.80	D					Firm consistency** orangish brown mottled grey CLAY. (LONDON CLAY FORMATION)	
		2.00	SPT	N=11 (2,3/2,3,3,3)	2.00	13.28			
		2.30	D						
		2.60	ES						
		3.00	SPT	N=15 (3,3/4,4,3,4)	3.00	12.28		Firm becoming stiff consistency** orangish brown mottled grey CLAY. (LONDON CLAY FORMATION)	3
		3.70	D						
		4.00	SPT	N=17 (2,3/3,4,5,5)					
		4.50	D						
		5.00	SPT	N=20 (4,4/5,4,5,6)					
		5.90	D						
6.00	SPT		6.00	9.28				6	
Remarks: Falling head test undertake at 2mbgl.								Key: ES - Environmental Sample D - Small Disturbed Sample B - Bulk Disturbed Sample PID - Photo-ionisation Detector Reading	
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 JOMAS ENGINEERING ENVIRONMENTAL LAND REMEDIATION		WINDOWLESS SAMPLER RECORD					Borehole Number WS05		
Project Name: Tiverton Estate			Client: Alexander James Contracts Ltd			Date: 12/08/2026 - 12/08/2026			
Location: London, N15 6RR			Logged by: SLN			Co-ords: E532671.73 N188217.09			
Project No. : P4219J2428b			Crew Name:			Drilling Equipment: Windowless Sampler			
Log Status FINAL		Hole Type WLS		Level 15.28m AoD		Approved By CLP		Scale 1:30	Page Number Sheet 2 of 2
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
				N=21 (4,4/4,5,6,6)				End of Borehole at 6.00m	
									7
									8
									9
									10
									11
									12
Remarks: Falling head test undertake at 2mbgl.								Key: ES - Environmental Sample D - Small Disturbed Sample B - Bulk Disturbed Sample PID - Photo-ionisation Detector Reading	
JOMAS ASSOCIATES LTD Unit 24 Sarum Complex, Salisbury Road, Uxbridge UB8 2RZ www.jomasassociates.com 0333-305-9054 info@jomasassociates.com Jomas Associates Ltd Registered in England and Wales No. 7095350									

APPENDIX 3 – CHEMICAL LABORATORY TEST RESULTS

Analytical Test Report

E26/11078/JOM/26-36635

Tested on Behalf of

Clients Project Reference 2428b Tiverton Estate London, N15 6RR
Clients Order Number P42192428B.8
Sample(s) Analysed 18
Sample(s) received / instructed 18/08/2026 / 18/08/2026
Sample(s) Tested 18/08/2026 to 02/09/2026
Report issued 02/09/2026
Report issue number 1

Jomas Associates
Unit 24 Sarum Complex,
Salisbury Road,

UB8 2RZ

Signed



James Gane
Analytical Services Manager

Notes:

General

This report shall not be reproduced except in full

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

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

Samples will be retained for 14 days after issue of this report with the exception of the asbestos test portion which is held for 6 months unless otherwise requested.

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.

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

Stone Content was determined in accordance with CTS method statement MS - CL - Sample Prep and refers to the percentage of stones retained on a 10mm BS test sieve.

MCERTS Accreditation only covers the SAND, CLAY and LOAM matrices

Please note: Where further analysis is required, samples identified as containing asbestos are screened and tested on an as received basis. No correction is made for moisture content and other than the asbestos test(s) these results are not covered by our accreditation.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

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

U = UKAS Accreditation, M = MCERTS Accreditation, N = Unaccredited, SC = Subcontracted

E26/11078/JOM/26-36635

2428b Tiverton Estate London, N15 6RR

Analytical Test Results - ENV Analysis Solids

Lab Reference					864069	864070	864071
Client Sample ID					ES	ES	ES
Client Sample Location					BH1	BH2	WS01
Client Sample Type					-	-	-
Client Sample Number					-	-	-
Supplier / Source					-	-	-
Client Material					-	-	-
Depth - Top (m)					0.5	0.55	0.4
Depth - Bottom (m)					0.5	0.55	0.4
Date of Sampling					-	-	-
Time of Sampling					-	-	-
Sample Matrix					Sand	Clay	Clay
Determinant	Code	Units	LOD	Accreditation			
Arsenic	ICPMETS	mg/kg	10	M	10	11	20
Boron (Water Soluble)	WSBORONS	mg/kg	2.5	N	< 2.5	< 2.5	< 2.5
Cadmium	ICPMETS	mg/kg	0.2	M	0.7	0.7	1.7
Chromium (Total)	ICPMETS	mg/kg	1	U	5.2	8.7	24
Copper	ICPMETS	mg/kg	2	M	28	22	100
Lead	ICPMETS	mg/kg	1.5	M	59	45	910
Mercury	ICPMETS	mg/kg	2.5	U	< 2.5	< 2.5	< 2.5
Nickel	ICPMETS	mg/kg	1	M	15	17	27
Selenium	ICPMETS	mg/kg	8	N	< 8.0	< 8.0	< 8.0
Zinc	ICPMETS	mg/kg	2	M	72	66	830
Total Phenols	SKALARPHS	mg/kg	1	M	< 1.0	< 1.0	< 1.0
Cyanide (Total)	SKALARCNS	mg/kg	1	M	< 1.0	< 1.0	< 1.0
Chromium (Hexavalent)	SKALARHCS	mg/kg	1	N	< 1.0	< 1.0	< 1.0
Acid Soluble Sulphate	ASSO4S	%	0.01	N	0.18	0.17	0.09
pH	PHS	pH units	1	M	8.7	8.6	8.5
Water Soluble Sulphate (as SO4)	ANIONSS	mg/L	10	N	100	220	46
SOM	TOCS	%	0.86	U	6.4	-	4.4
Asbestos	ASB	p/a	-	U	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Acenaphthene	PAHASRDS	mg/kg	0.02	M	2.0	0.14	1.0
Acenaphthylene	PAHASRDS	mg/kg	0.02	U	0.50	0.08	0.55
Anthracene	PAHASRDS	mg/kg	0.02	U	4.2	0.60	4.0
Benzo[a]anthracene	PAHASRDS	mg/kg	0.02	M	12	1.8	21
Benzo[a]pyrene	PAHASRDS	mg/kg	0.02	M	13	1.9	27
Benzo[b]fluoranthene	PAHASRDS	mg/kg	0.02	M	16	2.2	26
Benzo[ghi]perylene	PAHASRDS	mg/kg	0.02	M	9.9	1.5	18
Benzo[k]fluoranthene	PAHASRDS	mg/kg	0.02	M	6.3	0.92	11
Chrysene	PAHASRDS	mg/kg	0.02	M	10	1.6	18
Dibenzo[a,h]anthracene	PAHASRDS	mg/kg	0.02	M	2.7	0.40	4.3
Fluoranthene	PAHASRDS	mg/kg	0.02	M	23	3.8	44
Fluorene	PAHASRDS	mg/kg	0.02	M	1.4	0.11	0.78
Indeno[1,2,3-cd]pyrene	PAHASRDS	mg/kg	0.02	M	11	1.7	20
Naphthalene	PAHASRDS	mg/kg	0.02	M	< 0.20	< 0.02	0.27
Phenanthrene	PAHASRDS	mg/kg	0.02	M	12	2.0	13

E26/11078/JOM/26-36635

2428b Tiverton Estate London, N15 6RR

Analytical Test Results - ENV Analysis Solids

Lab Reference					864072	864073	864074
Client Sample ID					ES	ES	ES
Client Sample Location					WS02	WS02	WS03
Client Sample Type					-	-	-
Client Sample Number					-	-	-
Supplier / Source					-	-	-
Client Material					-	-	-
Depth - Top (m)					0.55	1.35	0.4
Depth - Bottom (m)					0.55	1.35	0.4
Date of Sampling					-	-	-
Time of Sampling					-	-	-
Sample Matrix					Sand	Sand	Sand
Determinant	Code	Units	LOD	Accreditation			
Arsenic	ICPMETS	mg/kg	10	M	27	23	23
Boron (Water Soluble)	WSBORONS	mg/kg	2.5	N	< 2.5	< 2.5	< 2.5
Cadmium	ICPMETS	mg/kg	0.2	M	1.0	1.0	1.2
Chromium (Total)	ICPMETS	mg/kg	1	U	7.4	12	9.1
Copper	ICPMETS	mg/kg	2	M	24	39	60
Lead	ICPMETS	mg/kg	1.5	M	53	170	480
Mercury	ICPMETS	mg/kg	2.5	U	< 2.5	< 2.5	< 2.5
Nickel	ICPMETS	mg/kg	1	M	18	22	22
Selenium	ICPMETS	mg/kg	8	N	< 8.0	< 8.0	< 8.0
Zinc	ICPMETS	mg/kg	2	M	180	160	190
Total Phenols	SKALARPHS	mg/kg	1	M	< 1.0	< 1.0	< 1.0
Cyanide (Total)	SKALARCNS	mg/kg	1	M	< 1.0	< 1.0	< 1.0
Chromium (Hexavalent)	SKALARHCS	mg/kg	1	N	< 1.0	< 1.0	< 1.0
Acid Soluble Sulphate	ASSO4S	%	0.01	N	0.07	0.14	0.27
pH	PHS	pH units	1	M	8.7	8.7	8.6
Water Soluble Sulphate (as SO4)	ANIONSS	mg/L	10	N	26	200	440
SOM	TOCS	%	0.86	U	-	-	-
Asbestos	ASB	p/a	-	U	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Acenaphthene	PAHASRDS	mg/kg	0.02	M	1.3	1.4	4.2
Acenaphthylene	PAHASRDS	mg/kg	0.02	U	1.0	0.82	1.9
Anthracene	PAHASRDS	mg/kg	0.02	U	4.7	4.9	11
Benzo[a]anthracene	PAHASRDS	mg/kg	0.02	M	24	20	55
Benzo[a]pyrene	PAHASRDS	mg/kg	0.02	M	29	26	47
Benzo[b]fluoranthene	PAHASRDS	mg/kg	0.02	M	33	29	57
Benzo[ghi]perylene	PAHASRDS	mg/kg	0.02	M	21	34	33
Benzo[k]fluoranthene	PAHASRDS	mg/kg	0.02	M	13	12	37
Chrysene	PAHASRDS	mg/kg	0.02	M	20	16	48
Dibenzo[a,h]anthracene	PAHASRDS	mg/kg	0.02	M	6.0	8.7	27
Fluoranthene	PAHASRDS	mg/kg	0.02	M	42	37	83
Fluorene	PAHASRDS	mg/kg	0.02	M	0.68	0.87	2.3
Indeno[1,2,3-cd]pyrene	PAHASRDS	mg/kg	0.02	M	24	38	38
Naphthalene	PAHASRDS	mg/kg	0.02	M	< 0.20	< 0.20	< 0.20
Phenanthrene	PAHASRDS	mg/kg	0.02	M	11	12	26

E26/11078/JOM/26-36635

2428b Tiverton Estate London, N15 6RR

Analytical Test Results - ENV Analysis Solids

Lab Reference					864075	864076
Client Sample ID					ES	ES
Client Sample Location					WS04	WS05
Client Sample Type					-	-
Client Sample Number					-	-
Supplier / Source					-	-
Client Material					-	-
Depth - Top (m)					0.15	1
Depth - Bottom (m)					0.15	1
Date of Sampling					-	-
Time of Sampling					-	-
Sample Matrix					Sand	Clay
Determinant	Code	Units	LOD	Accreditation		
Arsenic	ICPMETS	mg/kg	10	M	22	29
Boron (Water Soluble)	WSBORONS	mg/kg	2.5	N	< 2.5	< 2.5
Cadmium	ICPMETS	mg/kg	0.2	M	1.5	0.9
Chromium (Total)	ICPMETS	mg/kg	1	U	20	14
Copper	ICPMETS	mg/kg	2	M	130	76
Lead	ICPMETS	mg/kg	1.5	M	810	920
Mercury	ICPMETS	mg/kg	2.5	U	< 2.5	< 2.5
Nickel	ICPMETS	mg/kg	1	M	31	18
Selenium	ICPMETS	mg/kg	8	N	< 8.0	< 8.0
Zinc	ICPMETS	mg/kg	2	M	1000	150
Total Phenols	SKALARPHS	mg/kg	1	M	< 1.0	< 1.0
Cyanide (Total)	SKALARCNS	mg/kg	1	M	< 1.0	< 1.0
Chromium (Hexavalent)	SKALARHCS	mg/kg	1	N	< 1.0	< 1.0
Acid Soluble Sulphate	ASSO4S	%	0.01	N	0.17	0.05
pH	PHS	pH units	1	M	8.4	8.3
Water Soluble Sulphate (as SO4)	ANIONSS	mg/L	10	N	86	54
SOM	TOCS	%	0.86	U	-	3.1
Asbestos	ASB	p/a	-	U	No Asbestos Detected	No Asbestos Detected
Acenaphthene	PAHASRDS	mg/kg	0.02	M	2.7	< 0.02
Acenaphthylene	PAHASRDS	mg/kg	0.02	U	0.52	0.04
Anthracene	PAHASRDS	mg/kg	0.02	U	6.0	0.05
Benzo[a]anthracene	PAHASRDS	mg/kg	0.02	M	13	0.19
Benzo[a]pyrene	PAHASRDS	mg/kg	0.02	M	11	0.23
Benzo[b]fluoranthene	PAHASRDS	mg/kg	0.02	M	13	0.27
Benzo[ghi]perylene	PAHASRDS	mg/kg	0.02	M	7.1	0.25
Benzo[k]fluoranthene	PAHASRDS	mg/kg	0.02	M	5.1	0.12
Chrysene	PAHASRDS	mg/kg	0.02	M	11	0.17
Dibenzo[a,h]anthracene	PAHASRDS	mg/kg	0.02	M	2.3	0.06
Fluoranthene	PAHASRDS	mg/kg	0.02	M	30	0.32
Fluorene	PAHASRDS	mg/kg	0.02	M	2.6	< 0.02
Indeno[1,2,3-cd]pyrene	PAHASRDS	mg/kg	0.02	M	8.4	0.27
Naphthalene	PAHASRDS	mg/kg	0.02	M	0.50	< 0.02
Phenanthrene	PAHASRDS	mg/kg	0.02	M	22	0.14

E26/11078/JOM/26-36635

2428b Tiverton Estate London, N15 6RR

Analytical Test Results - ENV Analysis Solids

Lab Reference					864069	864070	864071
Client Sample ID					ES	ES	ES
Client Sample Location					BH1	BH2	WS01
Client Sample Type					-	-	-
Client Sample Number					-	-	-
Supplier / Source					-	-	-
Client Material					-	-	-
Depth - Top (m)					0.5	0.55	0.4
Depth - Bottom (m)					0.5	0.55	0.4
Date of Sampling					-	-	-
Time of Sampling					-	-	-
Sample Matrix					Sand	Clay	Clay
Determinant	Code	Units	LOD	Accreditation			
Pyrene	PAHASRDS	mg/kg	0.02	M	17	2.8	44
Total PAH (Sum of USEPA 16)	PAHASRDS	mg/kg	0.32	U	140	22	250
Petrol or Diesel contamination?	FUELID	-	-	N	Neither Detected	Neither Detected	Neither Detected

E26/11078/JOM/26-36635

2428b Tiverton Estate London, N15 6RR

Analytical Test Results - ENV Analysis Solids

Lab Reference					864072	864073	864074
Client Sample ID					ES	ES	ES
Client Sample Location					WS02	WS02	WS03
Client Sample Type					-	-	-
Client Sample Number					-	-	-
Supplier / Source					-	-	-
Client Material					-	-	-
Depth - Top (m)					0.55	1.35	0.4
Depth - Bottom (m)					0.55	1.35	0.4
Date of Sampling					-	-	-
Time of Sampling					-	-	-
Sample Matrix					Sand	Sand	Sand
Determinant	Code	Units	LOD	Accreditation			
Pyrene	PAHASRDS	mg/kg	0.02	M	32	28	65
Total PAH (Sum of USEPA 16)	PAHASRDS	mg/kg	0.32	U	260	270	540
Petrol or Diesel contamination?	FUELID	-	-	N	None detected	Neither Detected	None detected

E26/11078/JOM/26-36635

2428b Tiverton Estate London, N15 6RR

Analytical Test Results - ENV Analysis Solids

Lab Reference					864075	864076
Client Sample ID					ES	ES
Client Sample Location					WS04	WS05
Client Sample Type					-	-
Client Sample Number					-	-
Supplier / Source					-	-
Client Material					-	-
Depth - Top (m)					0.15	1
Depth - Bottom (m)					0.15	1
Date of Sampling					-	-
Time of Sampling					-	-
Sample Matrix					Sand	Clay
Determinant	Code	Units	LOD	Accreditation		
Pyrene	PAHASRDS	mg/kg	0.02	M	21	0.26
Total PAH (Sum of USEPA 16)	PAHASRDS	mg/kg	0.32	U	160	2.4
Petrol or Diesel contamination?	FUELID	-	-	N	Neither Detected	Neither Detected

E26/11078/JOM/26-36635

2428b Tiverton Estate London, N15 6RR

Analytical Test Results - EPHVPHS

Lab Reference					864069	864070	864071
Client Sample ID					ES	ES	ES
Client Sample Location					BH1	BH2	WS01
Client Sample Type					-	-	-
Client Sample Number					-	-	-
Supplier / Source					-	-	-
Client Material					-	-	-
Depth - Top (m)					0.5	0.55	0.4
Depth - Bottom (m)					0.5	0.55	0.4
Date of Sampling					-	-	-
Time of Sampling					-	-	-
Sample Matrix					Sand	Clay	Clay
Determinant	Code	Units	LOD	Accreditation			
Benzene	VPHS	mg/kg	0.01	M	-	-	-
Toluene	VPHS	mg/kg	0.01	M	-	-	-
Ethylbenzene	VPHS	mg/kg	0.01	M	-	-	-
m&p Xylene	VPHS	mg/kg	0.02	M	-	-	-
o-Xylene	VPHS	mg/kg	0.01	M	-	-	-
Methyl tert-butyl ether (MTBE)	VPHS	mg/kg	0.01	M	-	-	-
Aliphatic >C5 to C6 [5]	VPHS	mg/kg	0.06	M	-	-	-
Aliphatic >C6 to C8 [5]	VPHS	mg/kg	0.06	M	-	-	-
Aliphatic >C8 to C10 [5]	VPHS	mg/kg	0.06	M	-	-	-
Aliphatic >C10-C12 [13]	GCXGCS	mg/kg	1	M	-	-	-
Aliphatic >C12-C16 [13]	GCXGCS	mg/kg	1	M	-	-	-
Aliphatic >C16-C21 [13]	GCXGCS	mg/kg	1	M	-	-	-
Aliphatic >C21-C35 [13]	GCXGCS	mg/kg	2	M	-	-	-
Aliphatic >C35-C44 [13]	GCXGCS	mg/kg	5	N	-	-	-
Aromatic >C5 to C7 [6]	VPHS	mg/kg	0.01	M	-	-	-
Aromatic >C7 to C8 [6]	VPHS	mg/kg	0.01	M	-	-	-
Aromatic >C8 to C10 [6]	VPHS	mg/kg	0.06	M	-	-	-
Aromatic >C10-C12 [14]	GCXGCS	mg/kg	1	M	-	-	-
Aromatic >C12-C16 [14]	GCXGCS	mg/kg	1	M	-	-	-
Aromatic >C16-C21 [14]	GCXGCS	mg/kg	1	M	-	-	-
Aromatic >C21-C35 [14]	GCXGCS	mg/kg	2	M	-	-	-
Aromatic >C35-C44 [14]	GCXGCS	mg/kg	5	N	-	-	-
Total >C5-C35 (Ali/Aro) [10]	CWGS	mg/kg	10	M	-	-	-
Total TPH (>C8 to C10) [1]	TPHS	mg/kg	5	M	6.5	< 5.0	5.9
Total TPH (>C10 to C12) [1]	TPHS	mg/kg	5	M	< 5.0	< 5.0	< 5.0
Total TPH (>C12 to C16) [1]	TPHS	mg/kg	5	M	30	7.4	8.1
Total TPH (>C16 to C21) [1]	TPHS	mg/kg	5	M	150	28	21
Total TPH (>C21 to C35) [1]	TPHS	mg/kg	5	M	780	170	170
Total TPH (>C35 to C40) [1]	TPHS	mg/kg	5	M	200	42	60
Total TPH (>C10 to C21) [1]	TPHS	mg/kg	10	M	190	38	35
Total TPH (>C21 to C40) [1]	TPHS	mg/kg	10	M	980	210	230
Total TPH (>C8 to C40) [1]	TPHS	mg/kg	15	M	1200	260	270

E26/11078/JOM/26-36635

2428b Tiverton Estate London, N15 6RR

Analytical Test Results - EPHVPHS

Lab Reference					864072	864073	864074
Client Sample ID					ES	ES	ES
Client Sample Location					WS02	WS02	WS03
Client Sample Type					-	-	-
Client Sample Number					-	-	-
Supplier / Source					-	-	-
Client Material					-	-	-
Depth - Top (m)					0.55	1.35	0.4
Depth - Bottom (m)					0.55	1.35	0.4
Date of Sampling					-	-	-
Time of Sampling					-	-	-
Sample Matrix					Sand	Sand	Sand
Determinant	Code	Units	LOD	Accreditation			
Benzene	VPHS	mg/kg	0.01	M	< 0.01	-	< 0.01
Toluene	VPHS	mg/kg	0.01	M	< 0.01	-	< 0.01
Ethylbenzene	VPHS	mg/kg	0.01	M	< 0.01	-	< 0.01
m&p Xylene	VPHS	mg/kg	0.02	M	< 0.02	-	< 0.02
o-Xylene	VPHS	mg/kg	0.01	M	< 0.01	-	< 0.01
Methyl tert-butyl ether (MTBE)	VPHS	mg/kg	0.01	M	< 0.01	-	< 0.01
Aliphatic >C5 to C6 [5]	VPHS	mg/kg	0.06	M	< 0.06	-	0.09
Aliphatic >C6 to C8 [5]	VPHS	mg/kg	0.06	M	< 0.06	-	< 0.06
Aliphatic >C8 to C10 [5]	VPHS	mg/kg	0.06	M	< 0.06	-	< 0.06
Aliphatic >C10-C12 [13]	GCXGCS	mg/kg	1	M	1.5	-	2.0
Aliphatic >C12-C16 [13]	GCXGCS	mg/kg	1	M	23	-	18
Aliphatic >C16-C21 [13]	GCXGCS	mg/kg	1	M	18	-	7.9
Aliphatic >C21-C35 [13]	GCXGCS	mg/kg	2	M	29	-	18
Aliphatic >C35-C44 [13]	GCXGCS	mg/kg	5	N	< 5.0	-	< 5.0
Aromatic >C5 to C7 [6]	VPHS	mg/kg	0.01	M	< 0.01	-	< 0.01
Aromatic >C7 to C8 [6]	VPHS	mg/kg	0.01	M	< 0.01	-	< 0.01
Aromatic >C8 to C10 [6]	VPHS	mg/kg	0.06	M	< 0.06	-	< 0.06
Aromatic >C10-C12 [14]	GCXGCS	mg/kg	1	M	< 1.0	-	< 1.0
Aromatic >C12-C16 [14]	GCXGCS	mg/kg	1	M	22	-	44
Aromatic >C16-C21 [14]	GCXGCS	mg/kg	1	M	260	-	460
Aromatic >C21-C35 [14]	GCXGCS	mg/kg	2	M	700	-	1100
Aromatic >C35-C44 [14]	GCXGCS	mg/kg	5	N	130	-	200
Total >C5-C35 (Ali/Aro) [10]	CWGS	mg/kg	10	M	1100	-	1700
Total TPH (>C8 to C10) [1]	TPHS	mg/kg	5	M	-	< 5.0	-
Total TPH (>C10 to C12) [1]	TPHS	mg/kg	5	M	-	< 5.0	-
Total TPH (>C12 to C16) [1]	TPHS	mg/kg	5	M	-	52	-
Total TPH (>C16 to C21) [1]	TPHS	mg/kg	5	M	-	290	-
Total TPH (>C21 to C35) [1]	TPHS	mg/kg	5	M	-	1500	-
Total TPH (>C35 to C40) [1]	TPHS	mg/kg	5	M	-	250	-
Total TPH (>C10 to C21) [1]	TPHS	mg/kg	10	M	-	340	-
Total TPH (>C21 to C40) [1]	TPHS	mg/kg	10	M	-	1700	-
Total TPH (>C8 to C40) [1]	TPHS	mg/kg	15	M	-	2100	-

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Analytical Test Results - EPHVPHS

Lab Reference					864075	864076
Client Sample ID					ES	ES
Client Sample Location					WS04	WS05
Client Sample Type					-	-
Client Sample Number					-	-
Supplier / Source					-	-
Client Material					-	-
Depth - Top (m)					0.15	1
Depth - Bottom (m)					0.15	1
Date of Sampling					-	-
Time of Sampling					-	-
Sample Matrix					Sand	Clay
Determinant	Code	Units	LOD	Accreditation		
Benzene	VPHS	mg/kg	0.01	M	-	-
Toluene	VPHS	mg/kg	0.01	M	-	-
Ethylbenzene	VPHS	mg/kg	0.01	M	-	-
m&p Xylene	VPHS	mg/kg	0.02	M	-	-
o-Xylene	VPHS	mg/kg	0.01	M	-	-
Methyl tert-butyl ether (MTBE)	VPHS	mg/kg	0.01	M	-	-
Aliphatic >C5 to C6 [5]	VPHS	mg/kg	0.06	M	-	-
Aliphatic >C6 to C8 [5]	VPHS	mg/kg	0.06	M	-	-
Aliphatic >C8 to C10 [5]	VPHS	mg/kg	0.06	M	-	-
Aliphatic >C10-C12 [13]	GCXGCS	mg/kg	1	M	-	-
Aliphatic >C12-C16 [13]	GCXGCS	mg/kg	1	M	-	-
Aliphatic >C16-C21 [13]	GCXGCS	mg/kg	1	M	-	-
Aliphatic >C21-C35 [13]	GCXGCS	mg/kg	2	M	-	-
Aliphatic >C35-C44 [13]	GCXGCS	mg/kg	5	N	-	-
Aromatic >C5 to C7 [6]	VPHS	mg/kg	0.01	M	-	-
Aromatic >C7 to C8 [6]	VPHS	mg/kg	0.01	M	-	-
Aromatic >C8 to C10 [6]	VPHS	mg/kg	0.06	M	-	-
Aromatic >C10-C12 [14]	GCXGCS	mg/kg	1	M	-	-
Aromatic >C12-C16 [14]	GCXGCS	mg/kg	1	M	-	-
Aromatic >C16-C21 [14]	GCXGCS	mg/kg	1	M	-	-
Aromatic >C21-C35 [14]	GCXGCS	mg/kg	2	M	-	-
Aromatic >C35-C44 [14]	GCXGCS	mg/kg	5	N	-	-
Total >C5-C35 (Ali/Aro) [10]	CWGS	mg/kg	10	M	-	-
Total TPH (>C8 to C10) [1]	TPHS	mg/kg	5	M	7.0	< 5.0
Total TPH (>C10 to C12) [1]	TPHS	mg/kg	5	M	5.9	< 5.0
Total TPH (>C12 to C16) [1]	TPHS	mg/kg	5	M	48	< 5.0
Total TPH (>C16 to C21) [1]	TPHS	mg/kg	5	M	280	7.3
Total TPH (>C21 to C35) [1]	TPHS	mg/kg	5	M	1000	67
Total TPH (>C35 to C40) [1]	TPHS	mg/kg	5	M	200	17
Total TPH (>C10 to C21) [1]	TPHS	mg/kg	10	M	340	16
Total TPH (>C21 to C40) [1]	TPHS	mg/kg	10	M	1200	84
Total TPH (>C8 to C40) [1]	TPHS	mg/kg	15	M	1600	100

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Analytical Test Results - VOCS

Lab Reference					864072	864074
Client Sample ID					ES	ES
Client Sample Location					WS02	WS03
Client Sample Type					-	-
Client Sample Number					-	-
Supplier / Source					-	-
Client Material					-	-
Depth - Top (m)					0.55	0.4
Depth - Bottom (m)					0.55	0.4
Date of Sampling					-	-
Time of Sampling					-	-
Sample Matrix					Sand	Sand
Determinant	Code	Units	LOD	Accreditation		
Benzene	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
Toluene	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
Ethylbenzene	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
m&p Xylene	VOCS	mg/kg	0.02	M	< 0.02	< 0.02
o-Xylene	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
Dichlorodifluoromethane	VOCS	mg/kg	0.05	U	< 0.05	< 0.05
Chloromethane	VOCS	mg/kg	0.02	U	< 0.02	< 0.02
Vinyl Chloride	VOCS	mg/kg	0.02	M	< 0.02	< 0.02
Bromomethane	VOCS	mg/kg	0.05	N	< 0.05	< 0.05
Chloroethane	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
Trichlorofluoromethane	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
1,1-Dichloroethene	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
Dichloromethane	VOCS	mg/kg	0.1	N	< 0.10	< 0.10
Methyl tert-butyl ether (MTBE)	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
trans-1,2,-Dichloroethene	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
1,1-Dichloroethane	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
2,2-Dichloropropane	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
cis-1,2,-Dichloroethene	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
Bromochloromethane	VOCS	mg/kg	0.05	M	< 0.05	< 0.05
Trichloromethane (Chloroform)	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
1,1,1-Trichloroethane	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
1,1-Dichloropropene	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
Tetrachloromethane(Carbon Tetrachloride)	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
1,2-Dichloroethane	VOCS	mg/kg	0.02	M	< 0.02	< 0.02
Trichloroethene	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
1,2-Dichloropropane	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
Dibromomethane	VOCS	mg/kg	0.02	M	< 0.02	< 0.02
Bromodichloromethane	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
cis-1,2-Dichloropropene	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
trans-1,3-Dichloropropene	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
1,1,2-Trichloroethane	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
1,3-Dichloropropane	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
Tetrachloroethene	VOCS	mg/kg	0.01	M	< 0.01	< 0.01

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Analytical Test Results - VOCS

Lab Reference					864072	864074
Client Sample ID					ES	ES
Client Sample Location					WS02	WS03
Client Sample Type					-	-
Client Sample Number					-	-
Supplier / Source					-	-
Client Material					-	-
Depth - Top (m)					0.55	0.4
Depth - Bottom (m)					0.55	0.4
Date of Sampling					-	-
Time of Sampling					-	-
Sample Matrix					Sand	Sand
Determinant	Code	Units	LOD	Accreditation		
Chlorodibromomethane	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
1,2-Dibromoethane	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
Chlorobenzene	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
Ethynylbenzene (Styrene)	VOCS	mg/kg	0.01	U	< 0.01	< 0.01
Isopropylbenzene	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
Tribromomethane (Bromoform)	VOCS	mg/kg	0.05	M	< 0.05	< 0.05
1,1,1,2,2-Tetrachloroethane	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
1,2,3-Trichloropropane	VOCS	mg/kg	0.02	M	< 0.02	< 0.02
n-Propylbenzene	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
Bromobenzene	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
1,3,5-Trimethylbenzene	VOCS	mg/kg	0.01	U	< 0.01	< 0.01
2-Chlorotoluene	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
4-Chlorotoluene	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
tert-Butylbenzene	VOCS	mg/kg	0.01	U	< 0.01	< 0.01
1,2,4-Trimethylbenzene	VOCS	mg/kg	0.01	U	< 0.01	< 0.01
sec-Butylbenzene	VOCS	mg/kg	0.01	U	< 0.01	< 0.01
4-Isopropyltoluene (p-Cymene)	VOCS	mg/kg	0.01	U	< 0.01	< 0.01
1,3-Dichlorobenzene	VOCS	mg/kg	0.01	N	< 0.01	< 0.01
1,4-Dichlorobenzene	VOCS	mg/kg	0.01	N	< 0.01	< 0.01
n-Butylbenzene	VOCS	mg/kg	0.01	U	< 0.01	< 0.01
1,2-Dichlorobenzene	VOCS	mg/kg	0.01	M	< 0.01	< 0.01
1,2-Dibromo-3-chloropropane	VOCS	mg/kg	0.05	N	< 0.05	< 0.05
1,2,4-Trichlorobenzene	VOCS	mg/kg	0.05	N	< 0.05	< 0.05
Hexachlorobutadiene	VOCS	mg/kg	0.05	N	< 0.05	< 0.05
Naphthalene	VOCS	mg/kg	0.05	N	< 0.05	< 0.05
1,2,3-Trichlorobenzene	VOCS	mg/kg	0.05	N	< 0.05	< 0.05

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Analytical Test Results - BRE Associated Analysis

Lab Reference					864075	864080	864081
Client Sample ID					ES	ES	ES
Client Sample Location					WS04	BH1	BH1
Client Sample Type					-	-	-
Client Sample Number					-	-	-
Supplier / Source					-	-	-
Client Material					-	-	-
Depth - Top (m)					0.15	7	14
Depth - Bottom (m)					0.15	7	14
Date of Sampling					-	-	-
Time of Sampling					-	-	-
Sample Matrix					Sand	Clay	Clay
Determinant	Code	Units	LOD	Accreditation			
Water Soluble Sulphate (as SO ₄)	ANIONSSBRE	mg/L	10	N	86	2300	540
Acid Soluble Sulphate	ASSO4SBRE	%	0.01	N	0.17	0.67	0.14
Total Sulphur Content (as S)	1377TS-EBR	%	0.01	U	0.11	0.63	0.43
pH	PHSBRE	pH units	1	M	8.4	8.0	8.8

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Analytical Test Results - BRE Associated Analysis

Lab Reference					864082	864083	864084
Client Sample ID					ES	ES	ES
Client Sample Location					BH2	BH2	WS01
Client Sample Type					-	-	-
Client Sample Number					-	-	-
Supplier / Source					-	-	-
Client Material					-	-	-
Depth - Top (m)					15.5	24.5	5.2
Depth - Bottom (m)					15.5	24.5	5.2
Date of Sampling					-	-	-
Time of Sampling					-	-	-
Sample Matrix					Clay	Clay	Clay
Determinant	Code	Units	LOD	Accreditation			
Water Soluble Sulphate (as SO ₄)	ANIONSSBRE	mg/L	10	N	1400	1200	1600
Acid Soluble Sulphate	ASSO4SBRE	%	0.01	N	0.38	0.30	0.36
Total Sulphur Content (as S)	1377TS-EBR	%	0.01	U	1.15	0.55	0.16
pH	PHSBRE	pH units	1	M	8.1	8.4	8.0

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Analytical Test Results - BRE Associated Analysis

Lab Reference					
864086					
Client Sample ID					
ES					
Client Sample Location					
WS05					
Client Sample Type					
-					
Client Sample Number					
-					
Supplier / Source					
-					
Client Material					
-					
Depth - Top (m)					
2.6					
Depth - Bottom (m)					
2.6					
Date of Sampling					
-					
Time of Sampling					
-					
Sample Matrix					
Clay					
Determinant	Code	Units	LOD	Accreditation	
Water Soluble Sulphate (as SO ₄)	ANIONSSBRE	mg/L	10	N	120
Acid Soluble Sulphate	ASSO4SBRE	%	0.01	N	0.13
Total Sulphur Content (as S)	1377TS-EBR	%	0.01	U	0.09
pH	PHSBRE	pH units	1	M	8.4

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Certificate Of Analysis - WAC Suite

Lab Reference	864077
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Client Sample ID	ES
Client Sample Location	WS02
Client Sample Type	-
Client Sample Number	-
Depth - Top (m)	0.25
Depth - Bottom (m)	0.55
Date of Sampling	-
Time of Sampling	-
Sample Description	Brown very gravelly silty sand with rare rootlets
Sample Matrix	Sand
Moisture Content (%)	1.5
Stone content (%)	59

			Determined Result	Inert Waste Landfill	Stable non reactive hazardous waste in a non hazardous landfill	Hazardous Waste Landfill
Solid Analysis						
Total Organic Carbon	%	MCERTS	2.5	3.0	5.0	6.0
Loss on Ignition	%	UKAS	4.2	-	-	10.0
BTEX	mg/kg	MCERTS	< 0.06	6.00	-	-
PCB's (7 Congeners)	mg/kg	MCERTS	< 0.025	1.00	-	-
Mineral Oil (>C10 to C40) [EH_CU_1D_Total]	mg/kg	MCERTS	3000	500	-	-
PAH	mg/kg	N	600	100	-	-
pH	units	MCERTS	8.5	-	> 6	-

Eluate Analysis						
Arsenic	mg/kg	UKAS	0.09	0.50	2	25
Barium	mg/kg	UKAS	0.12	20	100	300
Cadmium	mg/kg	UKAS	< 0.0025	0.04	1	5
Chromium (total)	mg/kg	UKAS	0.05	0.5	10	70
Copper	mg/kg	UKAS	0.11	2.0	50	100
Mercury	mg/kg	UKAS	< 0.00050	0.01	0.2	2
Molybdenum	mg/kg	UKAS	< 0.010	0.5	10.0	30
Nickel	mg/kg	UKAS	< 0.075	0.4	10.0	40
Lead	mg/kg	UKAS	< 0.035	0.5	10.0	50
Antimony	mg/kg	UKAS	< 0.050	0.06	0.7	5
Selenium	mg/kg	UKAS	< 0.0050	0.1	0.5	7
Zinc	mg/kg	N	< 0.25	4	50	200
Chloride	mg/kg	UKAS	46	800	15000	25000
Fluoride	mg/kg	N	2	10	150	500
Sulphate (as SO ₄)	mg/kg	UKAS	96	1000	20000	50000
Total Dissolved Solids	mg/kg	N	980	4000	60000	100000
Phenol Index	mg/kg	N	< 1.0	1	-	-
Dissolved Organic Carbon	mg/kg	UKAS	87.0	500	800	1000

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Certificate Of Analysis - WAC Suite

Lab Reference	864078
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Client Sample ID	ES
Client Sample Location	WS04
Client Sample Type	-
Client Sample Number	-
Depth - Top (m)	0.15
Depth - Bottom (m)	0.5
Date of Sampling	-
Time of Sampling	-
Sample Description	Made Ground- brown very gravelly shredded with occasional brick fragments concrete rootlets
Sample Matrix	Sand
Moisture Content (%)	3.9
Stone content (%)	43

			Determined Result	Inert Waste Landfill	Stable non reactive hazardous waste in a non hazardous landfill	Hazardous Waste Landfill
Solid Analysis						
Total Organic Carbon	%	MCERTS	4.6	3.0	5.0	6.0
Loss on Ignition	%	UKAS	7.8	-	-	10.0
BTEX	mg/kg	MCERTS	< 0.06	6.00	-	-
PCB's (7 Congeners)	mg/kg	MCERTS	< 0.025	1.00	-	-
Mineral Oil (>C10 to C40) [EH_CU_1D_Total]	mg/kg	MCERTS	1400	500	-	-
PAH	mg/kg	N	260	100	-	-
pH	units	MCERTS	8.3	-	> 6	-

Eluate Analysis						
Arsenic	mg/kg	UKAS	0.12	0.50	2	25
Barium	mg/kg	UKAS	0.18	20	100	300
Cadmium	mg/kg	UKAS	< 0.0025	0.04	1	5
Chromium (total)	mg/kg	UKAS	0.02	0.5	10	70
Copper	mg/kg	UKAS	0.15	2.0	50	100
Mercury	mg/kg	UKAS	< 0.00050	0.01	0.2	2
Molybdenum	mg/kg	UKAS	0.02	0.5	10.0	30
Nickel	mg/kg	UKAS	< 0.075	0.4	10.0	40
Lead	mg/kg	UKAS	0.08	0.5	10.0	50
Antimony	mg/kg	UKAS	0.30	0.06	0.7	5
Selenium	mg/kg	UKAS	0.01	0.1	0.5	7
Zinc	mg/kg	N	< 0.25	4	50	200
Chloride	mg/kg	UKAS	33	800	15000	25000
Fluoride	mg/kg	N	7	10	150	500
Sulphate (as SO ₄)	mg/kg	UKAS	120	1000	20000	50000
Total Dissolved Solids	mg/kg	N	920	4000	60000	100000
Phenol Index	mg/kg	N	< 1.0	1	-	-
Dissolved Organic Carbon	mg/kg	UKAS	34.0	500	800	1000

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Certificate Of Analysis - WAC Suite

Lab Reference	864079
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Client Sample ID	ES
Client Sample Location	BH1
Client Sample Type	-
Client Sample Number	-
Depth - Top (m)	0.2
Depth - Bottom (m)	0.5
Date of Sampling	-
Time of Sampling	-
Sample Description	Brown gravelly silty sand with occasional rootlets
Sample Matrix	Sand
Moisture Content (%)	2.6
Stone content (%)	10

			Determined Result	Inert Waste Landfill	Stable non reactive hazardous waste in a non hazardous landfill	Hazardous Waste Landfill
Solid Analysis						
Total Organic Carbon	%	MCERTS	4.8	3.0	5.0	6.0
Loss on Ignition	%	UKAS	8.4	-	-	10.0
BTEX	mg/kg	MCERTS	< 0.06	6.00	-	-
PCB's (7 Congeners)	mg/kg	MCERTS	< 0.025	1.00	-	-
Mineral Oil (>C10 to C40) [EH_CU_1D_Total]	mg/kg	MCERTS	110	500	-	-
PAH	mg/kg	N	5.9	100	-	-
pH	units	MCERTS	8.1	-	> 6	-

Eluate Analysis						
Arsenic	mg/kg	UKAS	0.05	0.50	2	25
Barium	mg/kg	UKAS	2.11	20	100	300
Cadmium	mg/kg	UKAS	< 0.0025	0.04	1	5
Chromium (total)	mg/kg	UKAS	0.01	0.5	10	70
Copper	mg/kg	UKAS	0.11	2.0	50	100
Mercury	mg/kg	UKAS	< 0.00050	0.01	0.2	2
Molybdenum	mg/kg	UKAS	0.03	0.5	10.0	30
Nickel	mg/kg	UKAS	< 0.075	0.4	10.0	40
Lead	mg/kg	UKAS	< 0.035	0.5	10.0	50
Antimony	mg/kg	UKAS	< 0.050	0.06	0.7	5
Selenium	mg/kg	UKAS	< 0.0050	0.1	0.5	7
Zinc	mg/kg	N	< 0.25	4	50	200
Chloride	mg/kg	UKAS	91	800	15000	25000
Fluoride	mg/kg	N	1	10	150	500
Sulphate (as SO ₄)	mg/kg	UKAS	19	1000	20000	50000
Total Dissolved Solids	mg/kg	N	2000	4000	60000	100000
Phenol Index	mg/kg	N	< 1.0	1	-	-
Dissolved Organic Carbon	mg/kg	UKAS	230.0	500	800	1000

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Analytical Test Results - ENV Analysis Leachates

Lab Reference					864077	864078	864079
Client Sample ID					ES	ES	ES
Client Sample Location					WS02	WS04	BH1
Client Sample Type					-	-	-
Client Sample Number					-	-	-
Supplier / Source					-	-	-
Client Material					-	-	-
Depth - Top (m)					0.25	0.15	0.2
Depth - Bottom (m)					0.55	0.5	0.5
Date of Sampling					-	-	-
Time of Sampling					-	-	-
Sample Matrix					Sand	Sand	Sand
Determinant	Code	Units	LOD	Accreditation			
10:1 SS Soil Leachate Prep	LEACH-SS-P	-	-	U	10:1 Extraction	10:1 Extraction	10:1 Extraction

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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 (%)
864069	ES	BH1	SOIL	-	Brown clayey gravelly silty sand	5.4	17	76
864070	ES	BH2	SOIL	-	Brown sandy gravelly silty clay	9.4	14	64
864071	ES	WS01	SOIL	-	Made Ground- brown sandy gravelly silty clay with occasional brick fragments bituminous material	9.3	38	73
864072	ES	WS02	SOIL	-	Made Ground- brown very gravelly silty sand with frequent bituminous material	1.9	58	64
864073	ES	WS02	SOIL	-	Brown very gravelly silty sand	3.2	55	71
864074	ES	WS03	SOIL	-	Made Ground- brown very gravelly silty sand with occasional bituminous material	1.8	41	72
864075	ES	WS04	SOIL	-	Made Ground- brown very gravelly silty sand with frequent concrete bituminous material	3.5	22	80
864076	ES	WS05	SOIL	-	Made Ground- orangish brown sandy very gravelly silty clay with frequent brick fragments	13	22	14
864077	ES	WS02	SOIL	-	Brown very gravelly silty sand with rare rootlets	1.5	59	67
864078	ES	WS04	SOIL	-	Made Ground- brown very gravelly shredded with occasional brick fragments concrete rootlets	3.9	43	66
864079	ES	BH1	SOIL	-	Brown gravelly silty sand with occasional rootlets	2.6	10	91
864080	ES	BH1	SOIL	-	Mottled brown grey silty clay	-	-	100
864081	ES	BH1	SOIL	-	Grey silty clay	-	-	100
864082	ES	BH2	SOIL	-	Brown silty clay	-	-	100
864083	ES	BH2	SOIL	-	Greyish brown silty clay	-	-	100
864084	ES	WS01	SOIL	-	Brown silty clay	-	-	100
864086	ES	WS05	SOIL	-	Made Ground- dark brown silty gravelly sandy clay with occasional brick fragments rootlets	-	-	100

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Sample Comments

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Comments
864069	ES	BH1	SOIL	-	PAHAR - 1/10 DILUTION
864071	ES	WS01	SOIL	-	PAHAR - 1/10 DILUTION
864072	ES	WS02	SOIL	-	VPH/BTEX - Sample taken from container with headspace. PAHAR - 1/10 DILUTION VOC - Sample taken from container with headspace.
864073	ES	WS02	SOIL	-	PAHAR - 1/10 DILUTION
864074	ES	WS03	SOIL	-	VPH/BTEX - Sample taken from container with headspace. PAHAR - 1/10 DILUTION VOC - Sample taken from container with headspace.
864077	ES	WS02	SOIL	-	PAHAR - 1/10 DILUTION

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Analysis Methodologies - Please refer to sample comments page (if present) for any changes to methods Methods

Site addresses where testing is performed: Leicester - 7-11 Harding Street, Leicester, LE1 4DH Poole - Unit D11, Admiralty Park, Station Road, Holton Heath, Poole, BH16 6HX

Test Code	Test Name / Reference	Sample condition for analysis	Sample Preparation	Test Site	Accredited Matrices	Test Details
1377LOIWAC	BS1377 Lol	Oven dried	Passing 2mm test sieve	Leicester	SOIL	Testing was in accordance with BS 1377: Part 3: 2018 + A1 :2021 Clause 6. Determination of the mass loss on ignition. Some information required by BS1377: 2016: Part 1 has not been reported. This information is available on request.
1377TS-EBR	BS1377 Total Sulphur Content by HTC	Oven dried	BS1377 : Part 1 : 2016	Leicester	SOIL	Total Sulphur Content testing of Soil in accordance with BS 1377 : Part 3 : 2018 + A1 : 2021 Clause 7.10 (using Eltra CS-800 Analyser)
ANIONSS	MS - CL - Anions by Aquakem (2:1Extract)	Oven dried	Passing 2mm test sieve	Leicester		Determination of Anions (inc Sulphate, chloride etc.) in soils by Aquakem. Analysis is based on a 2:1 water to soil extraction ratio
ANIONSSBRE	MS - CL - Anions by Aquakem (2:1Extract)	Oven dried	Passing 2mm test sieve	Leicester		Determination of Anions (inc Sulphate, chloride etc.) in soils by Aquakem. Analysis is based on a 2:1 water to soil extraction ratio
ASB	MS - AS - Asbestos	-	-	Leicester	SOIL, BULK MATERIAL	Fibre identification is in accordance with in house documented methods which are based on the procedure documented in the HSE Document HSG 248 "Asbestos: The analysts guide for sampling, analysis and clearance procedures"
ASSO4S	MS - CL - Acid Soluble Sulphate	Oven Dried	Passing 2mm test sieve	Leicester		Determination of total sulphate in soils by acid extraction followed by ICP analysis
ASSO4SBRE	MS - CL - Acid Soluble Sulphate	Oven Dried	Passing 2mm test sieve	Leicester		Determination of total sulphate in soils by acid extraction followed by ICP analysis
CWGS	Calculation from VPH-S and EPH-S	As received	Passing 10mm test sieve	Leicester	SOIL	Determination of TPH CWG (Volatile Petroleum Hydrocarbons and Extractable Petroleum Hydrocarbons) in soils via Headspace-GC-MS and GC-GC-FID respectively
FUELID	Chromatograph	-	-	Leicester		In house review of scheduled hydrocarbon analysis based on chromatographs, results are qualitative and indicative only
GCXGCS	MS - CL - TPH & EPH by GCXGC	As received	Passing 10mm test sieve	Leicester	SOIL	Determination of TPH and EPH in soils via GCxGC-FID
ICPMETS	MS - CL - ICP Metals	Air dried	Passing 10mm test sieve	Leicester	SOIL	Determination of metals in soils via ICP
LEACH-SS-P	MS-CL-Soil Leachate Preparation (SS)	As Received	All crushed to pass 4mm test sieve	Leicester	SOIL	Preparation of single stage soil leachates in accordance with MS-CL-Soil Leachate Preparation
PAHASRDS	MS - CL - PAH (As Received)	As received	Passing 10mm test sieve	Leicester	SOIL	Determination of Polyaromatic hydrocarbons in soil via GC-MS
PAHASRDSW	MS - CL - PAH (As Received - WAC)	As received	Passing 10mm test sieve	Leicester		Determination of Polyaromatic hydrocarbons in soil via GC-MS
PCB7S	MS - CL - PCB Soils	As received	Passing 10mm test sieve	Leicester	SOIL	Determination of PCB's (7 congeners) in soils via GC-MS
PHS	MS - CL - pH in Soils	As received	Passing 10mm test sieve	Leicester	SOIL	Determination of pH in soils using a pH probe (using a 1:3 soil to water extraction)
PHSBRE	MS - CL - pH in Soils	As received	Passing 10mm test sieve	Leicester	SOIL	Determination of pH in soils using a pH probe (using a 1:3 soil to water extraction)
SAMPLEPREP	MS - CL - Sample Preparation	-	-	Leicester		Preparation of samples (including determination of moisture content) to allow for subsequent analysis
SKALARCNS	MS - CL - Cyanide by Skalar	As received	Passing 10mm test sieve	Leicester	SOIL	Determination of cyanide (total / free / complex) in soil using a Skalar segmented flow analyser

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Analysis Methodologies - Please refer to sample comments page (if present) for any changes to methods Methods

Site addresses where testing is performed: Leicester - 7-11 Harding Street, Leicester, LE1 4DH Poole - Unit D11, Admiralty Park, Station Road, Holton Heath, Poole, BH16 6HX

Test Code	Test Name / Reference	Sample condition for analysis	Sample Preparation	Test Site	Accredited Matrices	Test Details
SKALARHCS	MS - CL - Hexavalent Chromium by Skalar	As received	Passing 10mm test sieve	Leicester		Determination of hexavalent chromium in soil using Skalar segmented flow analyser
SKALARPHS	MS - CL - Phenols by Skalar	As received	Passing 10mm test sieve	Leicester	SOIL	Determination of total phenols in soil using Skalar segmented flow analyser
TDSL	MS-CL-Conductivity in Water(TDS by Calc)	As received	BSEN:12457 Leaching	Leicester		Determination of total dissolved solids in leachates (by calculation)
TOCS	MS - CL - TOC Eltra	Air Dried	Passing 10mm test sieve	Leicester	SOIL	Determination of Total Organic Carbon in soils
TPHS	MS - CL - TPH (GC-FID)	As received	Passing 10mm test sieve	Leicester	SOIL	Determination of Total Petroleum Hydrocarbons in soil using GC-FID
TPHSCWAC	MS - CL - TPH (GC-FID) Scrubbed	As received	Passing 10mm test sieve	Leicester	SOIL	Determination of Total Petroleum Hydrocarbons in soil using GC-FID. Sample is subjected to a fluorocil cleanup (scrubbing stage) prior to analysis (WAC)
VOCS	MS - CL - VOC and MBTEX	As received	Passing 10mm test sieve	Leicester	SOIL	Determination of VOCs (inc BTEX) in soils via Headspace-GC-MS
VPHS	MS - CL - VPH	As received	Passing 10mm test sieve	Leicester	SOIL	Determination of VPH in soils via Headspace-GC-MS
VPHSWAC	MS - CL - VPH	As received	Passing 10mm test sieve	Leicester	SOIL	Determination of VPH in soils via Headspace-GC-MS
WACANIONS	MS - CL - Anions by Aquakem (WAC)	As received	BSEN:12457 Leaching	Leicester		Determination of sulphate, chloride and fluoride in a leachate as part of a WAC test using a Aquakem analyser
WACDOC	MS - CL - DOC (WAC)	As received	BSEN:12457 Leaching	Leicester		Determination of dissolved organic carbon in a leachate as part of a WAC test
WACMETALS1	MS-CL-Metals in Waters by ICP-MS (WAC)	As received	MS-CL-Soil Leachate Preparation	Leicester	Laboratory Prepared Leachate	Determination of dissolved metals in leachates via ICP-MS, expressed as quantity of analyte leached from the original material.
WACPHS	MS - CL - pH in Soils (WAC)	As received	BSEN:12457 Leaching	Leicester		Determination of pH in soils as part of a WAC test via pH probe
WACSKALAR	MS - CL - Phenols by Skalar (WAC)	As received	BSEN:12457 Leaching	Leicester		Determination of Total Phenols within leachate as part of a WAC test using a Skalar Segmented flow analyser
WACTOCS	MS - CL - TOC Eltra (WAC)	Air dried	Passing 10mm test sieve	Leicester	Laboratory Prepared Leachate	Determination of Total Organic Carbon in soil as part of a WAC test
WSBORONS	MS - CL - WS Boron	Air dried	Passing 10mm test sieve	Leicester		Determination of Water soluble Boron in soils via ICP

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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

W - No time of sampling provided

C - Received in inappropriate container

H - Contains headspace

T - Temperature on receipt exceeds storage temperature

R - Sample(s) received outside standard identified timescales 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
864069	ES	BH1				A
864070	ES	BH2				A
864071	ES	WS01				A
864072	ES	WS02				A
864073	ES	WS02				A
864074	ES	WS03				A
864075	ES	WS04				A
864076	ES	WS05				A
864077	ES	WS02			MS-CL-Soil Leachate Preparation (SS)	C
864078	ES	WS04			MS-CL-Soil Leachate Preparation (SS)	C
864079	ES	BH1			MS-CL-Soil Leachate Preparation (SS)	C
864080	ES	BH1				A
864081	ES	BH1				A
864082	ES	BH2				A
864083	ES	BH2				A
864084	ES	WS01				A
864086	ES	WS05				A

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HWOL TPH Acronym Index

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
Total	Aliphatics and Aromatics
AL	Aliphatics Only
AR	Aromatics Only
2D	GC-GC - Double Coil Gas Chromatography
#1	EH_Total but with humics mathematically subtracted
#2	EH_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (except for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry

Key of Codes	
[1]	EH_1D_TOTAL
[2]	EH_CU_1D_TOTAL
[3]	EH_CU+HS_1D_TOTAL
[4]	EH_1D+HS_MS_TOTAL
[5]	HS_MS_1D_AL
[6]	HS_MS_1D_AR
[7]	HS_MS_1D_TOTAL
[8]	EH_CU_1D_AL
[9]	EH_CU_1D_AR
[10]	EH_2D+HS_1D_TOTAL
[11]	EH_CU_2D+HS_1D_TOTAL
[12]	EH_2D_TOTAL
[13]	EH_2D_AL
[14]	EH_2D_AR
[15]	EH_CU_2D_TOTAL
[16]	EH_CU_2D_AL
[17]	EH_CU_2D_AR

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Additional Method Notes

Method	Notes
TRL 447 Suite	1. Sample preparation was in accordance with TRL 447 Appendix C. 2. Testing was carried out in accordance with methods 1, 2 and 4 of TRL 447 2001 (Updated 2005). 3. Oxidisable sulphides and total potential sulphate have been calculated in accordance with TRL 447, Appendix C Test 4. Values are reported against a dry mass of sample passing a 2mm test sieve after oven drying, where required material retained on the 2mm test sieve was recombined with the test portion prior to analysis.
BS1377 Acid Soluble Chloride	1. Sample preparation was in accordance with BS 1377 : Part 1 : 2016 2. Testing was in accordance with BS 1377 : Part 3 : 2018 + A1: 2021, acid soluble method. 3. Some information required by BS 1377 has not been reported. This information is available on request.
BS1377 Loss on Ignition	Testing was in accordance with BS 1377: Part 3: 2018 + A1: 2021 Clause 6. Determination of the mass loss on ignition. Some information required by BS1377: 2016: Part 1 has not been reported. This information is available on request.
BS1377 Organic Matter Content	1. Sample preparation was in accordance with BS 1377 : Part 1 : 2016 2. Testing was in accordance with BS 1377: Part 3: 2018 + A1: 2021 Clause 4. 3. The reported % organic content is the average organic matter content present in the soil fraction passing the 2mm test sieve to the nearest 0.1% of the original oven dry mass of soil. 4. Some information required by BS 1377 has not been reported. This information is available on request.
BS1377 pH Value	pH testing was in accordance with BS 1377 : Part 3 : 2018 + A1: 2021 Clause 12
BS1377 Sulphate (acid soluble)	1. Sample preparation was in accordance with BS 1377 : Part 1 : 2016. 2. Sulphate testing of Soil in accordance with BS 1377 : Part 3 : 2018 + A1 : 2021 Clause 7.9 & 7.5. 3. Some information required by BS 1377 has not been reported. This information is available on request.
BS1377 Total Dissolved Solids	Determination of TDS in accordance with BS 1377: Part 3
BS1377 Total Sulphur	1. Sample preparation was in accordance with BS 1377 : Part 1 : 2016.
BS1377 Water Soluble Chloride	1. Sample preparation was in accordance with BS 1377 : Part 1 : 2016 2. Testing was in accordance with BS 1377 : Part 3 : 2018 + A1: 2021, Clause 7.2, water soluble method. 3. Some information required by BS 1377 has not been reported. This information is available on request.
BS1377 Sulphate (water soluble) (ICP-OES)	1. Sample preparation was in accordance with BS 1377 : Part 1 : 2016. 2. Sulphate testing of Soil in accordance with BS 1377 : Part 3 : 2018 + A1 : 2021 Clause 7.3 & 7.5. 3. pH of the water extract was not recorded. 4. Some information required by BS 1377 has not been reported. This information is available on request.
EN1744 Acid Soluble Sulphate	Testing was in accordance with BS EN 1744-1:2009 + A1:2012 clause 12. Analysis subcontracted to a UKAS accredited laboratory
EN1744 Total Sulphur by HTC (Cl. 11.2)	Testing was in accordance with BS EN 1744-1:2009 + A1:2012 clause 11.2 Analysis subcontracted to a UKAS accredited laboratory
EN1744 Total Sulphur (Cl. 11.1)	Testing was in accordance with BS EN 1744-1:2009 + A1:2012 clause 11. Analysis subcontracted to a UKAS accredited laboratory
EN1744 Water Soluble Chloride	Testing was in accordance with BS EN 1744-1:2009 + A1:2012 clause 7 (Reference Method). Analysis subcontracted to a UKAS accredited laboratory

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Additional Method Notes

Method	Notes
EN1744 Water Soluble Sulphate	Testing was in accordance with BS EN 1744-1:2009 + A1:2012 clause 10. Analysis subcontracted to a UKAS accredited laboratory
Oxidisable Sulphides Calculation (HTC)	Calculated in accordance with TRL 447 using results determined in accordance with EN1744
Oxidisable Sulphides Calculation (Grav)	Calculated in accordance with TRL 447 using results determined in accordance with EN1744
Total Potential Sulphate (Calc from 1744 Total S)	Derived from the Total sulphur concentration determined in accordance with EN1744.
BS1881 Alkali (Na ₂ O + K ₂ O)	1. Testing was in accordance with BS 1881: Part 124: 2015 Clause 12.3. 2. A concrete density of 2300kg/m³ was used in the calculation of equivalent sodium oxide content per m³ of concrete. 3. Samples received were smaller than required by Clause 4.1 of BS 1881 : Part 124 :2015. 4. Quality control samples are tested with each batch of samples.
BS1881 Calcium Oxide Content (EDTA Titration)	1. Testing was in accordance with BS 1881: Part 124: 2015 Clause 6.4. 2. Cement content (%m/m) has been calculated assuming the presence in the concrete of Ordinary Portland Cement, containing 64.5% by mass of Calcium Oxide. 3. Samples of the original constituents of the mix were not submitted. 4. Samples received were smaller than required by Clause 4.1 of BS 1881 : Part 124 :2015. 5. Quality control samples are tested with each batch of samples. 6. Samples were identified as being part of a batch and therefore the results are from a single analysis only.
BS1881 Cement Content (ICP method)	1. Testing was in accordance with BS 1881: Part 124: 2015 Clause 6.5 by ICP. 2. Cement content has been calculated assuming the presence in the concrete of Ordinary Portland Cement, containing 20.2% and 64.5% by mass of soluble silica and calcium oxide respectively. 3. Samples of the original constituents of the mix were not submitted. 4. Samples received were smaller than required by Clause 4.1 of BS 1881 : Part 124 :2015. 5. Quality control samples are tested with each batch of samples. 6. Samples were identified as being part of a batch
Chloride in Concrete by Aquakem (Acid Soluble)	1. Testing was in accordance with in house method statement MS - CL - Chloride in Hardened concrete by Aquakem. 2. Samples were not passed over the 125micron BS Test Sieve before testing. 3. Quality control samples are tested with each batch of samples.
Moisture Content of Grout Mortar & Concrete	1. Testing was in accordance with in house method statement MS Moisture Content of Grout, Mortar and Concrete
MS - Sulphate in Hardened Concrete by ICP	1. Testing undertaken in accordance with in house method statement MS - Sulphate in hardened concrete by ICP. 2. Samples received were smaller than required by Clause 4.1 of BS 1881 : Part 124 :2015. 3. Quality control samples are tested with each batch of samples.
BS1881 Water Cement Ratio	1. Testing was in accordance with BS 1881: Part 124: 2015+A1:2021. 2. Cement content was determined in accordance with BS 1881: Part 124: 2015+A1:2021 Clause 6.5 by ICP. 3. Samples of the original constituents of the mix was/was not submitted. 4. Original water/cement ratio has been calculated in accordance with BS 1881: Part 124: 2015+A1:2021 Clause 9.6. 5. Samples received were smaller than required by Clause 4.1 of BS 1881 : Part 124 :2015+A1:2021.

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Additional Method Notes

Method	Notes
BS4551 Mix Proportion	1. Sample preparation was in accordance with BS4551 2005 + A2:2013 Clause 7. 4.5. 2. Testing was in accordance with BS 4551: Part 2: 2005 + A2:2013 Clause 7.5.3 and 7.5.3.4. 3. Cement content has been calculated assuming the presence in the mix of Ordinary Portland Cement containing 20.2% and 64.5% by mass of soluble silica and calcium oxide respectively.
BS6463-102 Neutralizing Value	Testing was undertaken in accordance with an in house method statement based on BS6463-102
BS3882:2015 Specification for topsoil	Testing was undertaken in accordance with the methodologies within BS3882:2015
BS8601:2013 Specification for subsoil	Testing was undertaken in accordance with the methodologies within BS8601:2013
Depth of Carbonation (BS EN 14630:2006)	1. Testing was carried out in accordance with BS EN 14630:2006 Depth of Carbonation. 2. Testing was carried out in the laboratory. 3. Indicator Solution Used– 1g of Phenolphthalein powder dissolved in a solution of 50ml of Methylated Spirits and 100ml of deionised water
HAC	1. Testing was in accordance with BRE Information Sheet IS 15/74. 2. Contaminated samples may give a false result. 3. Samples taken from extensively carbonated concrete containing Portland Cement may give a false positive result. 4. If conclusive identification of the presence of High Alumina Cement is required this result should be confirmed by a more definitive test.
pH Value of Concrete	1. Testing was in accordance with in house method statement MS – pH Value of Hardened Concrete, Grout and Water from voids
Sub - EN1744 Sulphide	Analysis was in accordance with BS EN 1744-1 : 2009 + A1 : 2012, clause 13 and subcontracted to a UKAS accredited laboratory for this test

Waste Classification Report

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

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



XOCDG-MUG0L-VYZQ8

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

Report is invalid if pages are removed.

Job name

J2428b - Tiverton Estate

Description/Comments

J2428b - Tiverton Estate

Project

J2428b - Tiverton Estate

Site

J2428b - Tiverton Estate

Classified by

Name: **Clare Prosser**
Date: **17 Sep 2026 14:18 GMT**
Telephone:
Company: **JOMAS Associates Ltd**
Unit 24 Sarum Complex, Salisbury Road
Uxbridge
UB8 2RZ

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
Hazardous Waste Classification

Date

Purpose of classification

2 - Material Characterisation

Address of the waste

Tiverton Estate - external area

Post Code N15 6RR

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Redevelopment of the site.

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

Waste created during groundworks.

Description of the waste

Grass/ over light grey and light brown gravelly sand with low cobble content and rootlets. Gravel consists of flint and occasional brick and concrete. Cobble consists of angular brick and concrete.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	ES-BH1---864069	0.50-0.50	Hazardous	HP 7, HP 11	3
2	ES-BH2---864070	0.55-0.55	Non Hazardous		6
3	ES-WS01---864071	0.40-0.40	Hazardous	HP 14	8
4	ES-WS02---864072	0.55-0.55	Hazardous	HP 7, HP 11	11
5	ES-WS02---864073	1.35-1.35	Hazardous	HP 7, HP 11	16
6	ES-WS03---864074	0.40-0.40	Hazardous	HP 7, HP 11	19
7	ES-WS04---864075	0.15-0.15	Hazardous	HP 7, HP 11, HP 14	24
8	ES-WS05---864076	1.00-1.00	Non Hazardous		27

Related documents

#	Name	Description
1	E26-11078-JOM - 26-36635 - HWOL.hwol	CTSGroup .hwol file used to populate the Job
2	Example worst case waste stream template: 17 05 04 or 17 05 03 * with 52 extra determinands	waste stream template used to create this Job

Report

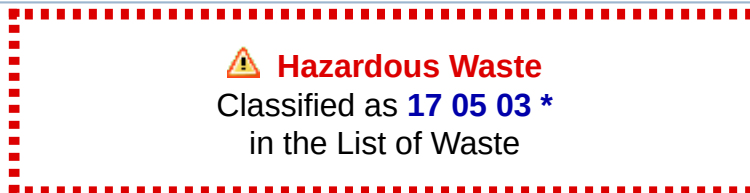
Created by: Clare Prosser

Created date: 17 Sep 2026 14:18 GMT

Appendices

	Page
Appendix A: Classifier defined and non GB MCL determinands	30
Appendix B: Rationale for selection of metal species	33
Appendix C: Version	34

Classification of sample: ES-BH1---864069



Sample details

Sample name:	LoW Code:
ES-BH1---864069	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.50-0.50 m	Entry:
Moisture content:	17 05 03 * (Soil and stones containing hazardous substances)
5.4%	
(dry weight correction)	

Hazard properties

HP 7: Carcinogenic "waste which may induce cancer or increase its incidence."

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.114%)

HP 11: Mutagenic "waste which may produce heritable increases in frequency of mutations in somatic and/or germ cells of humans and/or other organisms."

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.114%)

Determinands

Moisture content: 5.4% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex } 033-005-00-1				10 mg/kg	1.895	17.975 mg/kg	0.0018 %	✓	
2	boron { boric acid; [1] boric acid; [2] } 005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<2.5 mg/kg	5.719	<14.298 mg/kg	<0.00143 %		<LOD
3	chromium in Cr(III) compounds { chromium(III) oxide (worst case) } 215-160-9		1308-38-9		5.2 mg/kg	1.462	7.211 mg/kg	0.000721 %	✓	
4	chromium in Cr(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
5	copper { copper sulphate pentahydrate } 029-023-00-4	231-847-6	7758-99-8		28 mg/kg	3.929	104.377 mg/kg	0.0104 %	✓	
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) } 082-001-00-6			1	59 mg/kg		55.977 mg/kg	0.0056 %	✓	

#	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								
7	mercury { mercury difulminate }				<2.5 mg/kg	1.419	<3.547 mg/kg	<0.000355 %			<LOD
	080-005-00-2	211-057-8	628-86-4								
8	nickel { nickel diiodide }				15 mg/kg	5.324	75.773 mg/kg	0.00758 %		✓	
	028-029-00-4	236-666-6	13462-90-3								
9	selenium { nickel selenate }				<8 mg/kg	2.554	<20.431 mg/kg	<0.00204 %			<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate) }				72 mg/kg	4.398	300.428 mg/kg	0.03 %		✓	
	030-006-00-9	616-096-8	7446-19-7, 13986-24-8, 7446-20-0								
11	TPH (C6 to C40) petroleum group				1200 mg/kg		1138.52 mg/kg	0.114 %		✓	
			TPH								
12	confirm TPH has NOT arisen from diesel or petrol				☒						
			TPH_CONFIRM								
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
14	pH				8.7 pH		8.7 pH	8.7 pH			
			PH								
15	naphthalene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
16	acenaphthylene				0.5 mg/kg		0.474 mg/kg	0.0000474 %		✓	
		205-917-1	208-96-8								
17	acenaphthene				2 mg/kg		1.898 mg/kg	0.00019 %		✓	
		201-469-6	83-32-9								
18	fluorene				1.4 mg/kg		1.328 mg/kg	0.000133 %		✓	
		201-695-5	86-73-7								
19	phenanthrene				12 mg/kg		11.385 mg/kg	0.00114 %		✓	
		201-581-5	85-01-8								
20	anthracene				4.2 mg/kg		3.985 mg/kg	0.000398 %		✓	
		204-371-1	120-12-7								
21	fluoranthene				23 mg/kg		21.822 mg/kg	0.00218 %		✓	
		205-912-4	206-44-0								
22	pyrene				17 mg/kg		16.129 mg/kg	0.00161 %		✓	
		204-927-3	129-00-0								
23	benzo[a]anthracene				12 mg/kg		11.385 mg/kg	0.00114 %		✓	
	601-033-00-9	200-280-6	56-55-3								
24	chrysene				10 mg/kg		9.488 mg/kg	0.000949 %		✓	
	601-048-00-0	205-923-4	218-01-9								
25	benzo[b]fluoranthene				16 mg/kg		15.18 mg/kg	0.00152 %		✓	
	601-034-00-4	205-911-9	205-99-2								
26	benzo[k]fluoranthene				6.3 mg/kg		5.977 mg/kg	0.000598 %		✓	
	601-036-00-5	205-916-6	207-08-9								
27	benzo[a]pyrene; benzo[def]chrysene				13 mg/kg		12.334 mg/kg	0.00123 %		✓	
	601-032-00-3	200-028-5	50-32-8								
28	indeno[123-cd]pyrene				11 mg/kg		10.436 mg/kg	0.00104 %		✓	
		205-893-2	193-39-5								
29	dibenz[a,h]anthracene				2.7 mg/kg		2.562 mg/kg	0.000256 %		✓	
	601-041-00-2	200-181-8	53-70-3								
30	benzo[ghi]perylene				9.9 mg/kg		9.393 mg/kg	0.000939 %		✓	
		205-883-8	191-24-2								
31	cadmium (non-pyrophoric)				0.7 mg/kg		0.664 mg/kg	0.0000664 %		✓	
	048-002-00-0	231-152-8	7440-43-9								
32	monohydric phenols				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
			P1186								
Total:									0.183 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous Property to non-hazardous for cumulative determinand results below the concentration of: 50000 mg/kg (5%) because: Not considered flammable below 50,000mg/kg. No free-phase product encountered.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.114%)

Classification of sample: ES-BH2---864070

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

Sample details

Sample name:	LoW Code:
ES-BH2---864070	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.55-0.55 m	
Moisture content:	
9.4%	
(dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 9.4% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }				11 mg/kg	1.895	19.049 mg/kg	0.0019 %	✓	
	033-005-00-1									
2	boron { boric acid; [1] boric acid; [2] }				<2.5 mg/kg	5.719	<14.298 mg/kg	<0.00143 %		<LOD
	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]							
3	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }				8.7 mg/kg	1.462	11.623 mg/kg	0.00116 %	✓	
		215-160-9	1308-38-9							
4	chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<LOD
	024-017-00-8									
5	copper { copper sulphate pentahydrate }				22 mg/kg	3.929	79.012 mg/kg	0.0079 %	✓	
	029-023-00-4	231-847-6	7758-99-8							
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	45 mg/kg		41.133 mg/kg	0.00411 %	✓	
	082-001-00-6									
7	mercury { mercury difulminate }				<2.5 mg/kg	1.419	<3.547 mg/kg	<0.000355 %		<LOD
	080-005-00-2	211-057-8	628-86-4							
8	nickel { nickel diiodide }				17 mg/kg	5.324	82.736 mg/kg	0.00827 %	✓	
	028-029-00-4	236-666-6	13462-90-3							
9	selenium { nickel selenate }				<8 mg/kg	2.554	<20.431 mg/kg	<0.00204 %		<LOD
	028-031-00-5	239-125-2	15060-62-5							
10	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate) }				66 mg/kg	4.398	265.323 mg/kg	0.0265 %	✓	
	030-006-00-9	616-096-8	7446-19-7, 13986-24-8, 7446-20-0							
11	TPH (C6 to C40) petroleum group				260 mg/kg		237.66 mg/kg	0.0238 %	✓	
			TPH							
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
13	pH				8.6 pH		8.6 pH	8.6 pH		
14	naphthalene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
15	acenaphthylene				0.08 mg/kg		0.0731 mg/kg	0.00000731 %	✓	
		205-917-1	208-96-8							
16	acenaphthene				0.14 mg/kg		0.128 mg/kg	0.0000128 %	✓	
		201-469-6	83-32-9							
17	fluorene				0.11 mg/kg		0.101 mg/kg	0.0000101 %	✓	
		201-695-5	86-73-7							
18	phenanthrene				2 mg/kg		1.828 mg/kg	0.000183 %	✓	
		201-581-5	85-01-8							
19	anthracene				0.6 mg/kg		0.548 mg/kg	0.0000548 %	✓	
		204-371-1	120-12-7							
20	fluoranthene				3.8 mg/kg		3.473 mg/kg	0.000347 %	✓	
		205-912-4	206-44-0							
21	pyrene				2.8 mg/kg		2.559 mg/kg	0.000256 %	✓	
		204-927-3	129-00-0							
22	benzo[a]anthracene				1.8 mg/kg		1.645 mg/kg	0.000165 %	✓	
	601-033-00-9	200-280-6	56-55-3							
23	chrysene				1.6 mg/kg		1.463 mg/kg	0.000146 %	✓	
	601-048-00-0	205-923-4	218-01-9							
24	benzo[b]fluoranthene				2.2 mg/kg		2.011 mg/kg	0.000201 %	✓	
	601-034-00-4	205-911-9	205-99-2							
25	benzo[k]fluoranthene				0.92 mg/kg		0.841 mg/kg	0.0000841 %	✓	
	601-036-00-5	205-916-6	207-08-9							
26	benzo[a]pyrene; benzo[def]chrysene				1.9 mg/kg		1.737 mg/kg	0.000174 %	✓	
	601-032-00-3	200-028-5	50-32-8							
27	indeno[123-cd]pyrene				1.7 mg/kg		1.554 mg/kg	0.000155 %	✓	
		205-893-2	193-39-5							
28	dibenz[a,h]anthracene				0.4 mg/kg		0.366 mg/kg	0.0000366 %	✓	
	601-041-00-2	200-181-8	53-70-3							
29	benzo[ghi]perylene				1.5 mg/kg		1.371 mg/kg	0.000137 %	✓	
		205-883-8	191-24-2							
30	cadmium (non-pyrophoric)				0.7 mg/kg		0.64 mg/kg	0.000064 %	✓	
	048-002-00-0	231-152-8	7440-43-9							
31	monohydric phenols				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
			P1186							
Total:								0.0757 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous Property to non-hazardous for cumulative determinand results below the concentration of: 50000 mg/kg (5%) because: Not considered flammable below 50,000mg/kg. No free-phase product encountered.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.0238%)

Classification of sample: ES-WS01---864071

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

Sample details

Sample name:	LoW Code:
ES-WS01---864071	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.40-0.40 m	Entry:
Moisture content:	17 05 03 * (Soil and stones containing hazardous substances)
9.3%	
(dry weight correction)	

Hazard properties

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 determinand:

zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate) (compound conc.: 0.334%)

Determinands

Moisture content: 9.3% Dry Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
1		arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }				20	mg/kg	1.895	34.666	mg/kg	0.00347 %	✓	
	033-005-00-1												
2		boron { boric acid; [1] boric acid; [2] }				<2.5	mg/kg	5.719	<14.298	mg/kg	<0.00143 %		<LOD
	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]										
3		chromium in Cr(III) compounds { chromium(III) oxide (worst case) }				24	mg/kg	1.462	32.093	mg/kg	0.00321 %	✓	
		215-160-9	1308-38-9										
4		chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
	024-017-00-8												
5		copper { copper sulphate pentahydrate }				100	mg/kg	3.929	359.474	mg/kg	0.0359 %	✓	
	029-023-00-4	231-847-6	7758-99-8										
6		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	910	mg/kg		832.571	mg/kg	0.0833 %	✓	
	082-001-00-6												
7		mercury { mercury difulminate }				<2.5	mg/kg	1.419	<3.547	mg/kg	<0.000355 %		<LOD
	080-005-00-2	211-057-8	628-86-4										
8		nickel { nickel diiodide }				27	mg/kg	5.324	131.524	mg/kg	0.0132 %	✓	
	028-029-00-4	236-666-6	13462-90-3										
9		selenium { nickel selenate }				<8	mg/kg	2.554	<20.431	mg/kg	<0.00204 %		<LOD
	028-031-00-5	239-125-2	15060-62-5										
10		zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate) }				830	mg/kg	4.398	3339.688	mg/kg	0.334 %	✓	
	030-006-00-9	616-096-8	7446-19-7, 13986-24-8, 7446-20-0										

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
11		TPH (C6 to C40) petroleum group				270 mg/kg		247.027 mg/kg	0.0247 %	✓	
				TPH							
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }					<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
		006-007-00-5									
13		pH				8.5 pH		8.5 pH	8.5 pH		
				PH							
14		naphthalene				0.27 mg/kg		0.247 mg/kg	0.0000247 %	✓	
		601-052-00-2	202-049-5	91-20-3							
15		acenaphthylene				0.55 mg/kg		0.503 mg/kg	0.0000503 %	✓	
			205-917-1	208-96-8							
16		acenaphthene				1 mg/kg		0.915 mg/kg	0.0000915 %	✓	
			201-469-6	83-32-9							
17		fluorene				0.78 mg/kg		0.714 mg/kg	0.0000714 %	✓	
			201-695-5	86-73-7							
18		phenanthrene				13 mg/kg		11.894 mg/kg	0.00119 %	✓	
			201-581-5	85-01-8							
19		anthracene				4 mg/kg		3.66 mg/kg	0.000366 %	✓	
			204-371-1	120-12-7							
20		fluoranthene				44 mg/kg		40.256 mg/kg	0.00403 %	✓	
			205-912-4	206-44-0							
21		pyrene				44 mg/kg		40.256 mg/kg	0.00403 %	✓	
			204-927-3	129-00-0							
22		benzo[a]anthracene				21 mg/kg		19.213 mg/kg	0.00192 %	✓	
		601-033-00-9	200-280-6	56-55-3							
23		chrysene				18 mg/kg		16.468 mg/kg	0.00165 %	✓	
		601-048-00-0	205-923-4	218-01-9							
24		benzo[b]fluoranthene				26 mg/kg		23.788 mg/kg	0.00238 %	✓	
		601-034-00-4	205-911-9	205-99-2							
25		benzo[k]fluoranthene				11 mg/kg		10.064 mg/kg	0.00101 %	✓	
		601-036-00-5	205-916-6	207-08-9							
26		benzo[a]pyrene; benzo[def]chrysene				27 mg/kg		24.703 mg/kg	0.00247 %	✓	
		601-032-00-3	200-028-5	50-32-8							
27		indeno[123-cd]pyrene				20 mg/kg		18.298 mg/kg	0.00183 %	✓	
			205-893-2	193-39-5							
28		dibenz[a,h]anthracene				4.3 mg/kg		3.934 mg/kg	0.000393 %	✓	
		601-041-00-2	200-181-8	53-70-3							
29		benzo[ghi]perylene				18 mg/kg		16.468 mg/kg	0.00165 %	✓	
			205-883-8	191-24-2							
30		cadmium (non-pyrophoric)				1.7 mg/kg		1.555 mg/kg	0.000156 %	✓	
		048-002-00-0	231-152-8	7440-43-9							
31		monohydric phenols				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
				P1186							
Total:									0.521 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous Property to non-hazardous for cumulative determinand results below the concentration of: 50000 mg/kg (5%)
because: Not considered flammable below 50,000mg/kg. No free-phase product encountered.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.0247%)

Classification of sample: ES-WS02---864072

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

Sample details

Sample name:	LoW Code:	
ES-WS02---864072	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 03 * (Soil and stones containing hazardous substances)
0.55-0.55 m		
Moisture content:		
1.9%		
(dry weight correction)		

Hazard properties

HP 7: Carcinogenic "waste which may induce cancer or increase its incidence."

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.121%)

HP 11: Mutagenic "waste which may produce heritable increases in frequency of mutations in somatic and/or germ cells of humans and/or other organisms."

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.121%)

Determinands

Moisture content: 1.9% Dry Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used		
		EU CLP index number	EC Number	CAS Number									
1		arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }				27	mg/kg	1.895	50.198	mg/kg	0.00502 %	✓	
	033-005-00-1												
2		boron { boric acid; [1] boric acid; [2] }				<2.5	mg/kg	5.719	<14.298	mg/kg	<0.00143 %		<LOD
	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]										
3		chromium in Cr(III) compounds {  chromium(III) oxide (worst case) }				7.4	mg/kg	1.462	10.614	mg/kg	0.00106 %	✓	
		215-160-9	1308-38-9										
4		chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
	024-017-00-8												
5		copper { copper sulphate pentahydrate }				24	mg/kg	3.929	92.539	mg/kg	0.00925 %	✓	
	029-023-00-4	231-847-6	7758-99-8										
6		lead {  lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	53	mg/kg		52.012	mg/kg	0.0052 %	✓	
	082-001-00-6												

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
7	mercury { mercury difulminate }				<2.5 mg/kg	1.419	<3.547 mg/kg	<0.000355 %			<LOD
	080-005-00-2	211-057-8	628-86-4								
8	nickel { nickel diiodide }				18 mg/kg	5.324	94.05 mg/kg	0.00941 %		✓	
	028-029-00-4	236-666-6	13462-90-3								
9	selenium { nickel selenate }				<8 mg/kg	2.554	<20.431 mg/kg	<0.00204 %			<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate) }				180 mg/kg	4.398	776.866 mg/kg	0.0777 %		✓	
	030-006-00-9	616-096-8	7446-19-7, 13986-24-8, 7446-20-0								
11	TPH (C6 to C40) petroleum group				1230 mg/kg		1207.066 mg/kg	0.121 %		✓	
			TPH								
12	confirm TPH has NOT arisen from diesel or petrol				☒						
			TPH_CONFIRM								
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
14	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
15	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
16	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
17	xylene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
	601-022-00-9	215-535-7	1330-20-7								
18	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
19	pH				8.7 pH		8.7 pH	8.7 pH			
			PH								
20	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
21	acenaphthylene				1 mg/kg		0.981 mg/kg	0.0000981 %		✓	
		205-917-1	208-96-8								
22	acenaphthene				1.3 mg/kg		1.276 mg/kg	0.000128 %		✓	
		201-469-6	83-32-9								
23	fluorene				0.68 mg/kg		0.667 mg/kg	0.0000667 %		✓	
		201-695-5	86-73-7								
24	phenanthrene				11 mg/kg		10.795 mg/kg	0.00108 %		✓	
		201-581-5	85-01-8								
25	anthracene				4.7 mg/kg		4.612 mg/kg	0.000461 %		✓	
		204-371-1	120-12-7								
26	fluoranthene				42 mg/kg		41.217 mg/kg	0.00412 %		✓	
		205-912-4	206-44-0								
27	pyrene				32 mg/kg		31.403 mg/kg	0.00314 %		✓	
		204-927-3	129-00-0								
28	benzo[a]anthracene				24 mg/kg		23.553 mg/kg	0.00236 %		✓	
	601-033-00-9	200-280-6	56-55-3								
29	chrysene				20 mg/kg		19.627 mg/kg	0.00196 %		✓	
	601-048-00-0	205-923-4	218-01-9								
30	benzo[b]fluoranthene				33 mg/kg		32.385 mg/kg	0.00324 %		✓	
	601-034-00-4	205-911-9	205-99-2								
31	benzo[k]fluoranthene				13 mg/kg		12.758 mg/kg	0.00128 %		✓	
	601-036-00-5	205-916-6	207-08-9								
32	benzo[a]pyrene; benzo[def]chrysene				29 mg/kg		28.459 mg/kg	0.00285 %		✓	
	601-032-00-3	200-028-5	50-32-8								
33	indeno[123-cd]pyrene				24 mg/kg		23.553 mg/kg	0.00236 %		✓	
		205-893-2	193-39-5								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
34	dibenz[a,h]anthracene				6 mg/kg		5.888 mg/kg	0.000589 %	✓	
	601-041-00-2	200-181-8	53-70-3							
35	benzo[ghi]perylene				21 mg/kg		20.608 mg/kg	0.00206 %	✓	
		205-883-8	191-24-2							
36	tetrachloroethylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-028-00-4	204-825-9	127-18-4							
37	carbon tetrachloride; tetrachloromethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-008-00-5	200-262-8	56-23-5							
38	trichloroethylene; trichloroethene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-027-00-9	201-167-4	79-01-6							
39	vinyl chloride; chloroethylene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-023-00-7	200-831-0	75-01-4							
40	cadmium (non-pyrophoric)				1 mg/kg		0.981 mg/kg	0.0000981 %	✓	
	048-002-00-0	231-152-8	7440-43-9							
41	monohydric phenols				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
			P1186							
42	chloroethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-009-00-0	200-830-5	75-00-3							
43	bromomethane; methylbromide				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	602-002-00-2	200-813-2	74-83-9							
44	chloromethane; methyl chloride				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-001-00-7	200-817-4	74-87-3							
45	dichlorodifluoromethane				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		200-893-9	75-71-8							
46	trichlorofluoromethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		200-892-3	75-69-4							
47	1,1-dichloroethylene; vinylidene chloride				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-025-00-8	200-864-0	75-35-4							
48	dichloromethane; methylene chloride				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	602-004-00-3	200-838-9	75-09-2							
49	trans-dichloroethylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-026-00-3	205-860-2	156-60-5							
50	1,1-dichloroethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-011-00-1	200-863-5	75-34-3							
51	2,2-dichloropropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		209-832-0	594-20-7							
52	cis-dichloroethylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-026-00-3	205-859-7	156-59-2							
53	bromochloromethane				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		200-826-3	74-97-5							
54	chloroform; trichloromethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-006-00-4	200-663-8	67-66-3							
55	1,1,1-trichloroethane; methyl chloroform				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-013-00-2	200-756-3	71-55-6							
56	1,1-dichloropropene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-031-00-0	209-253-3	563-58-6							
57	1,2-dichloroethane; ethylene dichloride				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-012-00-7	203-458-1	107-06-2							
58	1,2-dichloropropane; propylene dichloride				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-020-00-0	201-152-2	78-87-5							
59	dibromomethane				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-003-00-8	200-824-2	74-95-3							
60	bromodichloromethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		200-856-7	75-27-4							
61	trans-1,3-dichloropropene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		431-460-4	10061-02-6							
62	1,1,2-trichloroethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-014-00-8	201-166-9	79-00-5							

#	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							
63	1,3-dichloropropane	205-531-3	142-28-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
64	dibromochloromethane	204-704-0	124-48-1		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
65	1,2-dibromoethane	602-010-00-6	203-444-5	106-93-4	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
66	chlorobenzene	602-033-00-1	203-628-5	108-90-7	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
67	1,1,1,2-tetrachloroethane	211-135-1		630-20-6	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
68	styrene	601-026-00-0	202-851-5	100-42-5	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
69	cumene	601-024-00-X	202-704-5	98-82-8	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
70	bromoform; tribromomethane	602-007-00-X	200-854-6	75-25-2	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
71	1,1,2,2-tetrachloroethane	602-015-00-3	201-197-8	79-34-5	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
72	1,2,3-trichloropropane	602-062-00-X	202-486-1	96-18-4	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
73	propylbenzene	601-097-00-8	203-132-9	103-65-1	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
74	bromobenzene	602-060-00-9	203-623-8	108-86-1	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
75	mesitylene; 1,3,5-trimethylbenzene	601-025-00-5	203-604-4	108-67-8	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
76	2-chlorotoluene	602-040-00-X	202-424-3	95-49-8	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
77	4-chlorotoluene	602-040-00-X	203-397-0	106-43-4	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
78	tert-butylbenzene		202-632-4	98-06-6	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
79	1,2,4-trimethylbenzene	601-043-00-3	202-436-9	95-63-6	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
80	sec-butylbenzene		205-227-0	135-98-8	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
81	1-isopropyl-4-methylbenzene; p-cymene	601-094-00-1	202-796-7	99-87-6	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
82	1,3-dichlorobenzene	602-067-00-7	208-792-1	541-73-1	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
83	1,4-dichlorobenzene; p-dichlorobenzene	602-035-00-2	203-400-5	106-46-7	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
84	n-butylbenzene		203-209-7	104-51-8	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
85	1,2-dichlorobenzene; o-dichlorobenzene	602-034-00-7	202-425-9	95-50-1	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
86	1,2-dibromo-3-chloropropane	602-021-00-6	202-479-3	96-12-8	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
87	1,2,4-trichlorobenzene	602-087-00-6	204-428-0	120-82-1	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
88	hexachlorobutadiene		201-765-5	87-68-3	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
89	1,2,3-trichlorobenzene		201-757-1	87-61-6	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
Total:								0.254 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous Property to non-hazardous for cumulative determinand results below the concentration of: 50000 mg/kg (5%) because: Not considered flammable below 50,000mg/kg. No free-phase product encountered.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.121%)

Classification of sample: ES-WS02---864073

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

Sample details

Sample name:	LoW Code:
ES-WS02---864073	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.35-1.35 m	Entry:
Moisture content:	17 05 03 * (Soil and stones containing hazardous substances)
3.2%	
(dry weight correction)	

Hazard properties

HP 7: Carcinogenic "waste which may induce cancer or increase its incidence."

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.203%)

HP 11: Mutagenic "waste which may produce heritable increases in frequency of mutations in somatic and/or germ cells of humans and/or other organisms."

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.203%)

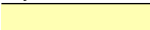
Determinands

Moisture content: 3.2% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex } 033-005-00-1				23 mg/kg	1.895	42.223 mg/kg		0.00422 %	✓	
2	boron { boric acid; [1] boric acid; [2] } 005-007-00-2 233-139-2 [1] 10043-35-3 [1] 234-343-4 [2] 11113-50-1 [2]				<2.5 mg/kg	5.719	<14.298 mg/kg		<0.00143 %		<LOD
3	chromium in Cr(III) compounds { chromium(III) oxide (worst case) } 215-160-9 1308-38-9				12 mg/kg	1.462	16.995 mg/kg		0.0017 %	✓	
4	chromium in Cr(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
5	copper { copper sulphate pentahydrate } 029-023-00-4 231-847-6 7758-99-8				39 mg/kg	3.929	148.482 mg/kg		0.0148 %	✓	
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) } 082-001-00-6			1	170 mg/kg		164.729 mg/kg		0.0165 %	✓	

#	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								
7	mercury { mercury difulminate }	080-005-00-2	211-057-8	628-86-4	<2.5 mg/kg	1.419	<3.547 mg/kg	<0.000355 %			<LOD
8	nickel { nickel diiodide }	028-029-00-4	236-666-6	13462-90-3	22 mg/kg	5.324	113.503 mg/kg	0.0114 %	✓		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5	<8 mg/kg	2.554	<20.431 mg/kg	<0.00204 %			<LOD
10	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate) }	030-006-00-9	616-096-8	7446-19-7, 13986-24-8, 7446-20-0	160 mg/kg	4.398	681.849 mg/kg	0.0682 %	✓		
11	TPH (C6 to C40) petroleum group		TPH		2100 mg/kg		2034.884 mg/kg	0.203 %	✓		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5			<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
13	pH		PH		8.7 pH		8.7 pH	8.7 pH			
14	naphthalene	601-052-00-2	202-049-5	91-20-3	<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
15	acenaphthylene		205-917-1	208-96-8	0.82 mg/kg		0.795 mg/kg	0.0000795 %	✓		
16	acenaphthene		201-469-6	83-32-9	1.4 mg/kg		1.357 mg/kg	0.000136 %	✓		
17	fluorene		201-695-5	86-73-7	0.87 mg/kg		0.843 mg/kg	0.0000843 %	✓		
18	phenanthrene		201-581-5	85-01-8	12 mg/kg		11.628 mg/kg	0.00116 %	✓		
19	anthracene		204-371-1	120-12-7	4.9 mg/kg		4.748 mg/kg	0.000475 %	✓		
20	fluoranthene		205-912-4	206-44-0	37 mg/kg		35.853 mg/kg	0.00359 %	✓		
21	pyrene		204-927-3	129-00-0	28 mg/kg		27.132 mg/kg	0.00271 %	✓		
22	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	20 mg/kg		19.38 mg/kg	0.00194 %	✓		
23	chrysene	601-048-00-0	205-923-4	218-01-9	16 mg/kg		15.504 mg/kg	0.00155 %	✓		
24	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	29 mg/kg		28.101 mg/kg	0.00281 %	✓		
25	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	12 mg/kg		11.628 mg/kg	0.00116 %	✓		
26	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	26 mg/kg		25.194 mg/kg	0.00252 %	✓		
27	indeno[123-cd]pyrene		205-893-2	193-39-5	38 mg/kg		36.822 mg/kg	0.00368 %	✓		
28	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	8.7 mg/kg		8.43 mg/kg	0.000843 %	✓		
29	benzo[ghi]perylene		205-883-8	191-24-2	34 mg/kg		32.946 mg/kg	0.00329 %	✓		
30	cadmium (non-pyrophoric)	048-002-00-0	231-152-8	7440-43-9	1 mg/kg		0.969 mg/kg	0.0000969 %	✓		
31	monohydric phenols		P1186		<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
Total:									0.346 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous Property to non-hazardous for cumulative determinand results below the concentration of: 50000 mg/kg (5%) because: Not considered flammable below 50,000mg/kg. No free-phase product encountered.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.203%)

Classification of sample: ES-WS03---864074

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

Sample details

Sample name:	LoW Code:	
ES-WS03---864074	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 03 * (Soil and stones containing hazardous substances)
0.40-0.40 m		
Moisture content:		
1.8%		
(dry weight correction)		

Hazard properties

HP 7: Carcinogenic "waste which may induce cancer or increase its incidence."

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.187%)

HP 11: Mutagenic "waste which may produce heritable increases in frequency of mutations in somatic and/or germ cells of humans and/or other organisms."

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.187%)

Determinands

Moisture content: 1.8% Dry Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
1		arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }				23 mg/kg	1.895	42.804 mg/kg	0.00428 %	✓	
	033-005-00-1										
2		boron { boric acid; [1] boric acid; [2] }				<2.5 mg/kg	5.719	<14.298 mg/kg	<0.00143 %		<LOD
	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]								
3		chromium in Cr(III) compounds { chromium(III) oxide (worst case) }				9.1 mg/kg	1.462	13.065 mg/kg	0.00131 %	✓	
		215-160-9	1308-38-9								
4		chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<LOD
	024-017-00-8										
5		copper { copper sulphate pentahydrate }				60 mg/kg	3.929	231.575 mg/kg	0.0232 %	✓	
	029-023-00-4	231-847-6	7758-99-8								
6		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	480 mg/kg		471.513 mg/kg	0.0472 %	✓	
	082-001-00-6										

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
7	mercury { mercury difulminate }				<2.5 mg/kg	1.419	<3.547 mg/kg	<0.000355 %			<LOD
	080-005-00-2	211-057-8	628-86-4								
8	nickel { nickel diiodide }				22 mg/kg	5.324	115.064 mg/kg	0.0115 %		✓	
	028-029-00-4	236-666-6	13462-90-3								
9	selenium { nickel selenate }				<8 mg/kg	2.554	<20.431 mg/kg	<0.00204 %			<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate) }				190 mg/kg	4.398	820.831 mg/kg	0.0821 %		✓	
	030-006-00-9	616-096-8	7446-19-7, 13986-24-8, 7446-20-0								
11	TPH (C6 to C40) petroleum group				1900 mg/kg		1866.405 mg/kg	0.187 %		✓	
			TPH								
12	confirm TPH has NOT arisen from diesel or petrol				☒						
			TPH_CONFIRM								
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
14	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
15	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
16	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
17	xylene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
	601-022-00-9	215-535-7	1330-20-7								
18	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
19	pH				8.6 pH		8.6 pH	8.6 pH			
			PH								
20	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
21	acenaphthylene				1.9 mg/kg		1.866 mg/kg	0.000187 %		✓	
		205-917-1	208-96-8								
22	acenaphthene				4.2 mg/kg		4.126 mg/kg	0.000413 %		✓	
		201-469-6	83-32-9								
23	fluorene				2.3 mg/kg		2.259 mg/kg	0.000226 %		✓	
		201-695-5	86-73-7								
24	phenanthrene				26 mg/kg		25.54 mg/kg	0.00255 %		✓	
		201-581-5	85-01-8								
25	anthracene				11 mg/kg		10.806 mg/kg	0.00108 %		✓	
		204-371-1	120-12-7								
26	fluoranthene				83 mg/kg		81.532 mg/kg	0.00815 %		✓	
		205-912-4	206-44-0								
27	pyrene				65 mg/kg		63.851 mg/kg	0.00639 %		✓	
		204-927-3	129-00-0								
28	benzo[a]anthracene				55 mg/kg		54.028 mg/kg	0.0054 %		✓	
	601-033-00-9	200-280-6	56-55-3								
29	chrysene				48 mg/kg		47.151 mg/kg	0.00472 %		✓	
	601-048-00-0	205-923-4	218-01-9								
30	benzo[b]fluoranthene				57 mg/kg		55.992 mg/kg	0.0056 %		✓	
	601-034-00-4	205-911-9	205-99-2								
31	benzo[k]fluoranthene				37 mg/kg		36.346 mg/kg	0.00363 %		✓	
	601-036-00-5	205-916-6	207-08-9								
32	benzo[a]pyrene; benzo[def]chrysene				47 mg/kg		46.169 mg/kg	0.00462 %		✓	
	601-032-00-3	200-028-5	50-32-8								
33	indeno[123-cd]pyrene				38 mg/kg		37.328 mg/kg	0.00373 %		✓	
		205-893-2	193-39-5								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
34	dibenz[a,h]anthracene				27 mg/kg		26.523 mg/kg	0.00265 %	✓	
	601-041-00-2	200-181-8	53-70-3							
35	benzo[ghi]perylene				33 mg/kg		32.417 mg/kg	0.00324 %	✓	
		205-883-8	191-24-2							
36	tetrachloroethylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-028-00-4	204-825-9	127-18-4							
37	carbon tetrachloride; tetrachloromethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-008-00-5	200-262-8	56-23-5							
38	trichloroethylene; trichloroethene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-027-00-9	201-167-4	79-01-6							
39	vinyl chloride; chloroethylene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-023-00-7	200-831-0	75-01-4							
40	cadmium (non-pyrophoric)				1.2 mg/kg		1.179 mg/kg	0.000118 %	✓	
	048-002-00-0	231-152-8	7440-43-9							
41	monohydric phenols				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
			P1186							
42	chloroethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-009-00-0	200-830-5	75-00-3							
43	bromomethane; methylbromide				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	602-002-00-2	200-813-2	74-83-9							
44	chloromethane; methyl chloride				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-001-00-7	200-817-4	74-87-3							
45	dichlorodifluoromethane				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		200-893-9	75-71-8							
46	trichlorofluoromethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		200-892-3	75-69-4							
47	1,1-dichloroethylene; vinylidene chloride				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-025-00-8	200-864-0	75-35-4							
48	dichloromethane; methylene chloride				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	602-004-00-3	200-838-9	75-09-2							
49	trans-dichloroethylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-026-00-3	205-860-2	156-60-5							
50	1,1-dichloroethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-011-00-1	200-863-5	75-34-3							
51	2,2-dichloropropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		209-832-0	594-20-7							
52	cis-dichloroethylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-026-00-3	205-859-7	156-59-2							
53	bromochloromethane				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		200-826-3	74-97-5							
54	chloroform; trichloromethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-006-00-4	200-663-8	67-66-3							
55	1,1,1-trichloroethane; methyl chloroform				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-013-00-2	200-756-3	71-55-6							
56	1,1-dichloropropene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-031-00-0	209-253-3	563-58-6							
57	1,2-dichloroethane; ethylene dichloride				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-012-00-7	203-458-1	107-06-2							
58	1,2-dichloropropane; propylene dichloride				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-020-00-0	201-152-2	78-87-5							
59	dibromomethane				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-003-00-8	200-824-2	74-95-3							
60	bromodichloromethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		200-856-7	75-27-4							
61	trans-1,3-dichloropropene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		431-460-4	10061-02-6							
62	1,1,2-trichloroethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-014-00-8	201-166-9	79-00-5							

#	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							
63	1,3-dichloropropane	205-531-3	142-28-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
64	dibromochloromethane	204-704-0	124-48-1		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
65	1,2-dibromoethane	602-010-00-6	203-444-5	106-93-4	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
66	chlorobenzene	602-033-00-1	203-628-5	108-90-7	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
67	1,1,1,2-tetrachloroethane	211-135-1	630-20-6		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
68	styrene	601-026-00-0	202-851-5	100-42-5	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
69	cumene	601-024-00-X	202-704-5	98-82-8	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
70	bromoform; tribromomethane	602-007-00-X	200-854-6	75-25-2	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
71	1,1,2,2-tetrachloroethane	602-015-00-3	201-197-8	79-34-5	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
72	1,2,3-trichloropropane	602-062-00-X	202-486-1	96-18-4	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
73	propylbenzene	601-097-00-8	203-132-9	103-65-1	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
74	bromobenzene	602-060-00-9	203-623-8	108-86-1	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
75	mesitylene; 1,3,5-trimethylbenzene	601-025-00-5	203-604-4	108-67-8	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
76	2-chlorotoluene	602-040-00-X	202-424-3	95-49-8	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
77	4-chlorotoluene	602-040-00-X	203-397-0	106-43-4	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
78	tert-butylbenzene	202-632-4	98-06-6		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
79	1,2,4-trimethylbenzene	601-043-00-3	202-436-9	95-63-6	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
80	sec-butylbenzene	205-227-0	135-98-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
81	1-isopropyl-4-methylbenzene; p-cymene	601-094-00-1	202-796-7	99-87-6	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
82	1,3-dichlorobenzene	602-067-00-7	208-792-1	541-73-1	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
83	1,4-dichlorobenzene; p-dichlorobenzene	602-035-00-2	203-400-5	106-46-7	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
84	n-butylbenzene	203-209-7	104-51-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
85	1,2-dichlorobenzene; o-dichlorobenzene	602-034-00-7	202-425-9	95-50-1	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
86	1,2-dibromo-3-chloropropane	602-021-00-6	202-479-3	96-12-8	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
87	1,2,4-trichlorobenzene	602-087-00-6	204-428-0	120-82-1	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
88	hexachlorobutadiene	201-765-5	87-68-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
89	1,2,3-trichlorobenzene	201-757-1	87-61-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
Total:								0.409 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous Property to non-hazardous for cumulative determinand results below the concentration of: 50000 mg/kg (5%) because: Not considered flammable below 50,000mg/kg. No free-phase product encountered.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.187%)

Classification of sample: ES-WS04---864075

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

Sample details

Sample name:	LoW Code:
ES-WS04---864075	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.15-0.15 m	Entry:
Moisture content:	17 05 03 * (Soil and stones containing hazardous substances)
3.5%	
(dry weight correction)	

Hazard properties

HP 7: Carcinogenic "waste which may induce cancer or increase its incidence."

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.155%)

HP 11: Mutagenic "waste which may produce heritable increases in frequency of mutations in somatic and/or germ cells of humans and/or other organisms."

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.155%)

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 determinand:

zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate) (compound conc.: 0.425%)

Determinands

Moisture content: 3.5% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex } 033-005-00-1				22 mg/kg	1.895	40.27 mg/kg	0.00403 %	✓	
2	boron { boric acid; [1] boric acid; [2] } 005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<2.5 mg/kg	5.719	<14.298 mg/kg	<0.00143 %		<LOD
3	chromium in Cr(III) compounds { chromium(III) oxide (worst case) } 215-160-9		1308-38-9		20 mg/kg	1.462	28.243 mg/kg	0.00282 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
4		chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
		024-017-00-8											
5		copper { copper sulphate pentahydrate }			1	130	mg/kg	3.929	493.504	mg/kg	0.0494 %	✓	
	029-023-00-4	231-847-6	7758-99-8										
6		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }				810	mg/kg		782.609	mg/kg	0.0783 %	✓	
		082-001-00-6											
7		mercury { mercury difulminate }				<2.5	mg/kg	1.419	<3.547	mg/kg	<0.000355 %		<LOD
	080-005-00-2	211-057-8	628-86-4										
8		nickel { nickel diiodide }				31	mg/kg	5.324	159.472	mg/kg	0.0159 %	✓	
	028-029-00-4	236-666-6	13462-90-3										
9		selenium { nickel selenate }				<8	mg/kg	2.554	<20.431	mg/kg	<0.00204 %		<LOD
	028-031-00-5	239-125-2	15060-62-5										
10		zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate) }				1000	mg/kg	4.398	4249.204	mg/kg	0.425 %	✓	
	030-006-00-9	616-096-8	7446-19-7, 13986-24-8, 7446-20-0										
11		TPH (C6 to C40) petroleum group				1600	mg/kg		1545.894	mg/kg	0.155 %	✓	
			TPH										
12		confirm TPH has NOT arisen from diesel or petrol				☒							
			TPH_CONFIRM										
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5												
14		pH				8.4	pH		8.4	pH	8.4 pH		
			PH										
15		naphthalene				0.5	mg/kg		0.483	mg/kg	0.0000483 %	✓	
	601-052-00-2	202-049-5	91-20-3										
16		acenaphthylene				0.52	mg/kg		0.502	mg/kg	0.0000502 %	✓	
		205-917-1	208-96-8										
17		acenaphthene				2.7	mg/kg		2.609	mg/kg	0.000261 %	✓	
		201-469-6	83-32-9										
18		fluorene				2.6	mg/kg		2.512	mg/kg	0.000251 %	✓	
		201-695-5	86-73-7										
19		phenanthrene				22	mg/kg		21.256	mg/kg	0.00213 %	✓	
		201-581-5	85-01-8										
20		anthracene				6	mg/kg		5.797	mg/kg	0.00058 %	✓	
		204-371-1	120-12-7										
21		fluoranthene				30	mg/kg		28.986	mg/kg	0.0029 %	✓	
		205-912-4	206-44-0										
22		pyrene				21	mg/kg		20.29	mg/kg	0.00203 %	✓	
		204-927-3	129-00-0										
23		benzo[a]anthracene				13	mg/kg		12.56	mg/kg	0.00126 %	✓	
	601-033-00-9	200-280-6	56-55-3										
24		chrysene				11	mg/kg		10.628	mg/kg	0.00106 %	✓	
	601-048-00-0	205-923-4	218-01-9										
25		benzo[b]fluoranthene				13	mg/kg		12.56	mg/kg	0.00126 %	✓	
	601-034-00-4	205-911-9	205-99-2										
26		benzo[k]fluoranthene				5.1	mg/kg		4.928	mg/kg	0.000493 %	✓	
	601-036-00-5	205-916-6	207-08-9										
27		benzo[a]pyrene; benzo[def]chrysene				11	mg/kg		10.628	mg/kg	0.00106 %	✓	
	601-032-00-3	200-028-5	50-32-8										
28		indeno[123-cd]pyrene				8.4	mg/kg		8.116	mg/kg	0.000812 %	✓	
		205-893-2	193-39-5										
29		dibenz[a,h]anthracene				2.3	mg/kg		2.222	mg/kg	0.000222 %	✓	
	601-041-00-2	200-181-8	53-70-3										

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
30	benzo[ghi]perylene	205-883-8	191-24-2		7.1 mg/kg		6.86 mg/kg	0.000686 %	✓	
31	cadmium (non-pyrophoric)	048-002-00-0	231-152-8		1.5 mg/kg		1.449 mg/kg	0.000145 %	✓	
32	monohydric phenols		P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
Total:								0.745 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous Property to non-hazardous for cumulative determinand results below the concentration of: 50000 mg/kg (5%) because: Not considered flammable below 50,000mg/kg. No free-phase product encountered.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.155%)

Classification of sample: ES-WS05---864076

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

Sample details

Sample name:	LoW Code:	
ES-WS05---864076	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1.00-1.00 m		
Moisture content:		
13%		
(dry weight correction)		

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }				29 mg/kg	1.895	48.621 mg/kg	0.00486 %	✓	
	033-005-00-1									
2	boron { boric acid; [1] boric acid; [2] }				<2.5 mg/kg	5.719	<14.298 mg/kg	<0.00143 %		<LOD
	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]							
3	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }				14 mg/kg	1.462	18.108 mg/kg	0.00181 %	✓	
		215-160-9	1308-38-9							
4	chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<LOD
	024-017-00-8									
5	copper { copper sulphate pentahydrate }				76 mg/kg	3.929	264.255 mg/kg	0.0264 %	✓	
	029-023-00-4	231-847-6	7758-99-8							
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	920 mg/kg		814.159 mg/kg	0.0814 %	✓	
	082-001-00-6									
7	mercury { mercury difulminate }				<2.5 mg/kg	1.419	<3.547 mg/kg	<0.000355 %		<LOD
	080-005-00-2	211-057-8	628-86-4							
8	nickel { nickel diiodide }				18 mg/kg	5.324	84.812 mg/kg	0.00848 %	✓	
	028-029-00-4	236-666-6	13462-90-3							
9	selenium { nickel selenate }				<8 mg/kg	2.554	<20.431 mg/kg	<0.00204 %		<LOD
	028-031-00-5	239-125-2	15060-62-5							
10	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate) }				150 mg/kg	4.398	583.795 mg/kg	0.0584 %	✓	
	030-006-00-9	616-096-8	7446-19-7, 13986-24-8, 7446-20-0							
11	TPH (C6 to C40) petroleum group				100 mg/kg		88.496 mg/kg	0.00885 %	✓	
			TPH							
12	confirm TPH has NOT arisen from diesel or petrol				☑					
			TPH_CONFIRM							
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides,				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<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							
	ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }									
	006-007-00-5									
14	pH		PH		8.3 pH		8.3 pH	8.3 pH		
15	naphthalene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
16	acenaphthylene				0.04 mg/kg		0.0354 mg/kg	0.00000354 %	✓	
		205-917-1	208-96-8							
17	acenaphthene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
		201-469-6	83-32-9							
18	fluorene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
		201-695-5	86-73-7							
19	phenanthrene				0.14 mg/kg		0.124 mg/kg	0.0000124 %	✓	
		201-581-5	85-01-8							
20	anthracene				0.05 mg/kg		0.0442 mg/kg	0.00000442 %	✓	
		204-371-1	120-12-7							
21	fluoranthene				0.32 mg/kg		0.283 mg/kg	0.0000283 %	✓	
		205-912-4	206-44-0							
22	pyrene				0.26 mg/kg		0.23 mg/kg	0.000023 %	✓	
		204-927-3	129-00-0							
23	benzo[a]anthracene				0.19 mg/kg		0.168 mg/kg	0.0000168 %	✓	
	601-033-00-9	200-280-6	56-55-3							
24	chrysene				0.17 mg/kg		0.15 mg/kg	0.000015 %	✓	
	601-048-00-0	205-923-4	218-01-9							
25	benzo[b]fluoranthene				0.27 mg/kg		0.239 mg/kg	0.0000239 %	✓	
	601-034-00-4	205-911-9	205-99-2							
26	benzo[k]fluoranthene				0.12 mg/kg		0.106 mg/kg	0.0000106 %	✓	
	601-036-00-5	205-916-6	207-08-9							
27	benzo[a]pyrene; benzo[def]chrysene				0.23 mg/kg		0.204 mg/kg	0.0000204 %	✓	
	601-032-00-3	200-028-5	50-32-8							
28	indeno[123-cd]pyrene				0.27 mg/kg		0.239 mg/kg	0.0000239 %	✓	
		205-893-2	193-39-5							
29	dibenz[a,h]anthracene				0.06 mg/kg		0.0531 mg/kg	0.00000531 %	✓	
	601-041-00-2	200-181-8	53-70-3							
30	benzo[ghi]perylene				0.25 mg/kg		0.221 mg/kg	0.0000221 %	✓	
		205-883-8	191-24-2							
31	cadmium (non-pyrophoric)				0.9 mg/kg		0.796 mg/kg	0.0000796 %	✓	
	048-002-00-0	231-152-8	7440-43-9							
32	monohydric phenols				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
			P1186							
Total:								0.191 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous Property to non-hazardous for cumulative determinand results below the concentration of: 50000 mg/kg (5%) because: Not considered flammable below 50,000mg/kg. No free-phase product encountered.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.00885%)

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 ECHACHEM; notifications <1% & outliers (H360, H413) ignored

Data source: <https://chem.echa.europa.eu/100.013.783/overview>

Data source date: 16 Mar 2026

Hazard Statements: Acute Tox. 4; H302, Skin Sens. 1; H317, Eye Irrit. 2; H319, Resp. Sens. 1; H334

■ **lead compounds with the exception of those specified elsewhere in this Annex (worst case)**

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

Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A

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 2A (Sup 7, 87) 2006; Lead REACH Consortium

www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

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

Description/Comments: Unknown Oil

Hazard statements taken from WM3 version 1.1.NI and 1.2.GB 2021

Data source: WM3 version 1.1.NI and 1.2.GB 2021

Data source date: 30 Jan 2021

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

■ **confirm TPH has NOT arisen from diesel or petrol** (CAS Number: TPH_CONFIRM)

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

Data source: WM3 version 1.1.NI and 1.2.GB 2021

Data source date: 30 Jan 2021

Hazard Statements: None.

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

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

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

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

Reason for additional Hazards Statement(s):

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

■ **pH** (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 version 1.1.NI and 1.2.GB 2021

Data source date: 30 Jan 2021

Hazard Statements: None.

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

Description/Comments: Data from ECHACHEM; CLP submissions;

SDS Sigma Aldrich v6.7 dated 25/12/2025

Data source: <https://chem.echa.europa.eu/100.005.380/overview>

<https://www.sigmaaldrich.com/GB/en/sds/aldrich/416703>

Data source date: 02 Mar 2026

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

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

Description/Comments: Data from ECHACHEM; CLP submissions;

SDS Sigma Aldrich v6.8 dated 12/12/2025

Data source: <https://chem.echa.europa.eu/100.001.336/industry/113817?searchText=83-32-9>

<https://www.sigmaaldrich.com/GB/en/sds/aldrich/215376>

Data source date: 02 Mar 2026

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

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

Description/Comments: Data from ECHACHEM; CLP submissions;
SDS Sigma Aldrich v6.6 dated 25/12/2025

Data source: <https://chem.echa.europa.eu/100.001.541/overview>
<https://www.sigmaaldrich.com/GB/en/sds/aldrich/128333>

Data source date: 02 Mar 2026

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 ECHACHEM; CLP submissions;
SDS Sigma Aldrich v7.2 dated 25/12/2025

Data source: <https://chem.echa.europa.eu/100.001.437/overview>
<https://www.sigmaaldrich.com/GB/en/sds/supelco/48569>

Data source date: 02 Mar 2026

Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , EUH441

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

Description/Comments: Data from ECHACHEM; CLP submissions
SDS Sigma Aldrich v9.3 dated 25/12/2025

Data source: <https://chem.echa.europa.eu/100.003.974/overview>
<https://www.sigmaaldrich.com/GB/en/sds/supelco/48567>

Data source date: 03 Mar 2026

Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , PBT; EUH440

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

Description/Comments: Data from ECHACHEM; CLP submissions
SDS Sigma Aldrich v7.2 dated 25/12/2025

Data source: <https://chem.echa.europa.eu/100.005.376/overview>
<https://www.sigmaaldrich.com/GB/en/sds/aldrich/f807>

Data source date: 03 Mar 2026

Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , PBT; EUH440 , EUH441

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

Description/Comments: Data from ECHACHEM; CLP submissions
SDS Sigma Aldrich v7.2 dated 25/12/2025

Data source: <https://chem.echa.europa.eu/100.004.481/overview>
<https://www.sigmaaldrich.com/GB/en/sds/aldrich/185515>

Data source date: 03 Mar 2026

Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , PBT; EUH440 , EUH441

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

Description/Comments: Data from ECHACHEM database; CLP submissions
SDS Sigma Aldrich v6.8 dated 25/12/2025

Data source: <https://chem.echa.europa.eu/100.005.359/overview>
<https://www.sigmaaldrich.com/GB/en/sds/supelco/48499>

Data source date: 03 Mar 2026

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

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

Description/Comments: Data from ECHACHEM; CLP submissions; Sigma Aldrich SDS v7.1 dated 25/12/2025

Data source: <https://chem.echa.europa.eu/100.005.350/overview>
<https://www.sigmaaldrich.com/GB/en/sds/aldrich/b9009>

Data source date: 18 May 2026

Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , vPvB; EUH441 , PBT; EUH440

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

Description/Comments: Combined hazards statements from harmonised entries in CLP.

Monohydric Phenol refers to a group of phenolic compounds that include phenol, the three methylphenol isomers (cresols) and the six dimethylphenol isomers.

(CLP Index: 604-001-00-2, 604-004-00-9, 604-006-00-X)

Data source: Group Entry combining three CLP entries

Data source date: 18 May 2026

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

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

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

Description/Comments: IARC considers ethylbenzene Group 2B; Possibly carcinogenic to humans;

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

Reason for additional Hazards Statement(s):

03 Jun 2026 - Carc. 2; H351 hazard statement sourced from:: IARC Group 2B (77) 2000

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

Description/Comments: VOC; Data from ECHACHEM; CLP submissions;

SIAD SDS v3.1 dated 06/03/2025

Data source:

<https://chem.echa.europa.eu/100.000.813/overview>https://www.siadmi.com/web/siad-poland/material-safety-data-sheet?p_p_id=com_liferay_sheet_portlet_SecuritySheetPortlet_INSTANCE_KD1oUobOQ5C2&p_p_lifecycle=2&p_p_state=normal&p_p_mode=view&p_p_cacheability=cacheLevelPage&_com_liferay_sheet_portlet_SecuritySheetPortlet_INSTANCE_KD1oUobOQ5C2_filename=00041_LIQ_EN.pdf&_com_liferay_sheet_portlet_SecuritySheetPortlet_INSTANCE_KD1oUobOQ5C2_initial=R

Data source date: 15 May 2026

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

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

Description/Comments: VOC; Data from ECHACHEM; CLP submissions;

Sigma Aldrich SDS v7.5 dated 25/12/2025

Data source: <https://chem.echa.europa.eu/100.000.812/overview>

<https://www.sigmaaldrich.com/GB/en/sds/supelco/48541>

Data source date: 15 May 2026

Hazard Statements: Acute Tox. 4; H312 , Ozone 1; H420

■ **2,2-dichloropropane** (EC Number: 209-832-0, CAS Number: 594-20-7)

Description/Comments: VOC; Data from ECHACHEM; CLP submissions;

Sigma Aldrich SDS v6.2 dated 5/11/2025

Data source: <https://chem.echa.europa.eu/100.008.940/overview>

<https://www.sigmaaldrich.com/GB/en/sds/aldrich/258571>

Data source date: 15 May 2026

Hazard Statements: Flam. Liq. 2; H225 , Acute Tox. 4; H302 , Acute Tox. 4; H312 , Eye Irrit. 2; H319 , Acute Tox. 4; H332

■ **bromochloromethane** (EC Number: 200-826-3, CAS Number: 74-97-5)

Description/Comments: VOC; Data from ECHACHEM; CLP submissions;

Sigma Aldrich SDS v8.7 dated 11/03/2025

Data source: <https://chem.echa.europa.eu/100.000.752/overview>

<https://www.sigmaaldrich.com/GB/en/sds/supelco/442498>

Data source date: 15 May 2026

Hazard Statements: Acute Tox. 4; H312 , Skin Corr. 1B; H314 , Eye Dam. 1; H318 , Acute Tox. 4; H332 , STOT SE 3; H335 , Ozone 1; H420

■ **bromodichloromethane** (EC Number: 200-856-7, CAS Number: 75-27-4)

Description/Comments: VOC; Data from ECHACHEM; CLP submissions;

Sigma Aldrich SDS v6.5 dated 09/01/2024

Data source: <https://chem.echa.europa.eu/100.000.779/overview>

<https://www.sigmaaldrich.com/GB/en/sds/aldrich/139181>

Data source date: 15 May 2026

Hazard Statements: Acute Tox. 4; H302 , Skin Irrit. 2; H315 , Eye Dam. 1; H318 , STOT SE 3; H335 , Muta. 1B; H340 , Carc. 2; H351 , Repr. 1A; H360

■ **trans-1,3-dichloropropene** (EC Number: 431-460-4, CAS Number: 10061-02-6)

Description/Comments: VOC; Data from ECHACHEM; CLP submissions;

Sigma Aldrich SDS v10.0 dated 16/03/2026

Data source: <https://chem.echa.europa.eu/100.154.864/overview>

<https://www.sigmaaldrich.com/GB/en/sds/supelco/47793>

Data source date: 15 May 2026

Hazard Statements: Flam. Liq. 3; H226 , Acute Tox. 3; H301 , Asp. Tox. 1; H304 , Acute Tox. 3; H311 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Eye Irrit. 2; H319 , Acute Tox. 4; H332 , STOT SE 3; H335 , Carc. 2; H351 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **1,3-dichloropropane** (EC Number: 205-531-3, CAS Number: 142-28-9)

Description/Comments: VOC; Data from ECHACHEM; CLP submissions;

Sigma Aldrich SDS v6.2 dated 5/11/2025

Data source: <https://chem.echa.europa.eu/100.005.029/overview>

<https://www.sigmaaldrich.com/GB/en/sds/aldrich/d72204>

Data source date: 15 May 2026

Hazard Statements: Flam. Liq. 3; H226 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Chronic 3; H412

▀ **dibromochloromethane** (EC Number: 204-704-0, CAS Number: 124-48-1)

Description/Comments: VOC; Data from ECHACHEM; CLP submissions;
Sigma Aldrich SDS v6.2 dated 05/11/2025
Data source: <https://chem.echa.europa.eu/100.004.277/overview>
<https://www.sigmaaldrich.com/GB/en/sds/aldrich/206326>
Data source date: 15 May 2026
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 4; H312 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Acute Tox. 4; H332 , STOT SE 3; H335 , STOT SE 3; H336 , Muta. 2; H341 , Aquatic Chronic 2; H411

▀ **1,1,1,2-tetrachloroethane** (EC Number: 211-135-1, CAS Number: 630-20-6)

Description/Comments: VOC; Data from ECHACHEM; CLP submissions;
Sigma Aldrich SDS v6.6 dated 3/11/23
Data source: <https://chem.echa.europa.eu/100.010.124/overview>
<https://www.sigmaaldrich.com/GB/en/sds/sigald/t7209>
Data source date: 14 May 2026
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H310 , Skin Irrit. 2; H315 , Eye Dam. 1; H318 , Acute Tox. 3; H331 , Carc. 2; H351 , Aquatic Chronic 3; H412

▀ **tert-butylbenzene** (EC Number: 202-632-4, CAS Number: 98-06-6)

Description/Comments: VOC; Data from ECHACHEM; CLP submissions;
Sigma Aldrich SDS v8.6 dated 27/10/2023
Data source: <https://chem.echa.europa.eu/100.002.394/overview>
<https://www.sigmaaldrich.com/GB/en/sds/aldrich/b90602>
Data source date: 15 May 2026
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Acute Tox. 3; H331 , STOT SE 3; H335 , Aquatic Chronic 2; H411

▀ **sec-butylbenzene** (EC Number: 205-227-0, CAS Number: 135-98-8)

Description/Comments: VOC; Data from ECHACHEM; CLP submissions;
Sigma Aldrich SDS v6.6 dated 05/11/2025
Data source: <https://chem.echa.europa.eu/100.004.752/overview>
<https://www.sigmaaldrich.com/GB/en/sds/aldrich/b90408>
Data source date: 15 May 2026
Hazard Statements: Flam. Liq. 3; H226 , Acute Tox. 4; H302 , Asp. Tox. 1; H304 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

▀ **n-butylbenzene** (EC Number: 203-209-7, CAS Number: 104-51-8)

Description/Comments: VOC; Data from ECHACHEM; CLP submissions;
Sigma Aldrich SDS v6.2 dated 05/11/2025
Data source: <https://chem.echa.europa.eu/100.002.918/overview>
<https://www.sigmaaldrich.com/GB/en/sds/aldrich/b90203>
Data source date: 15 May 2026
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

▀ **hexachlorobutadiene** (EC Number: 201-765-5, CAS Number: 87-68-3)

Description/Comments: VOC; Data from ECHACHEM; CLP submissions;
Sigma Aldrich SDS v8.0 dated 25/12/2025
Data source: <https://chem.echa.europa.eu/100.001.605/overview>
<https://www.sigmaaldrich.com/GB/en/sds/aldrich/112194>
Data source date: 15 May 2026
Hazard Statements: Acute Tox. 3; H301 , Acute Tox. 2; H310 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Eye Irrit. 2; H319 , Acute Tox. 2; H330 , Carc. 2; H351 , STOT SE 2; H371 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

Description/Comments: VOC; Data from ECHACHEM; CLP submissions;
Sigma Aldrich SDS v6.3 dated 16/10/2024
Data source: <https://chem.echa.europa.eu/100.001.598/overview>
<https://www.sigmaaldrich.com/GB/en/sds/aldrich/t54402>
Data source date: 15 May 2026
Hazard Statements: Acute Tox. 4; H302 , Skin Sens. 1B; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

Appendix B: Rationale for selection of metal species

arsenic {arsenic acid and its salts with the exception of those specified elsewhere in this Annex}

Worst case CLP species based on hazard statements/molecular weight and conversion factor for arsenic acid H₃AsO₄.

boron {boric acid; [1] boric acid; [2]}

Boron tribromide and trichloride unlikely to be in waste, next worst case.

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

Worst-case

chromium in Cr(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

copper {copper sulphate pentahydrate}

Worst case CLP species based on hazard statements/molecular weight.

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Worst case.

mercury {mercury difulminate}

Worst-case

nickel {nickel diiodide}

Worst-case

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight

zinc {zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate)}

There isn't enough Cr(VI) to make hazardous levels of the Metal chromate. Next worst case.

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

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide] (edit as required)

Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition v1.2.GB - Oct 2021**

HazWasteOnline Classification Engine Version: 2026.258.7365.859c142 (15 Sep 2026)

HazWasteOnline Database: 2026.258.7365.859c142 (15 Sep 2026)

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

GB MCL List v5.0 - version 5.0 of 26th June 2024

GB MCL List v6.0 - version 6.0 of 15th February 2025

GB MCL List v7.0 - version 7.0 of 23rd September 2025

APPENDIX 4 – GEOTECHNICAL LABORATORY TEST RESULTS



LABORATORY REPORT



Contract Number: PSL26/6844

Report Date: 18 September 2026
Client's Reference: 2428b
Client Name: Jomas Associates Ltd
Unit 24 Sarum Complex
Salisbury Road
Uxbridge
UB8 2RZ

For the attention of: Clare Prosser

Contract Title: Tiverton Estate London, N15 6RR

Date Received: 18/8/2026
Date Commenced: 18/8/2026
Date Completed: 18/9/2026

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:

A Watkins
(Managing Director)

R Berriman
(Associate Director)



S Royle
(Laboratory Manager)

L Knight
(Assistant Laboratory Manager)

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awatkins@prosoils.co.uk

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
BH1		U100	2.00		Firm brown CLAY.
BH1		U100	6.50		Very stiff brown CLAY.
BH1		U100	12.50		Stiff brown CLAY.
BH1		U100	24.50		Very stiff brown CLAY.
BH2		U100	3.00		Firm brown CLAY.
BH2		U100	11.00		Stiff brown CLAY.
BH2		U100	17.00		Firm brown CLAY.
BH2		U100	23.00		Very stiff brown CLAY.
WS01		D	3.50		Brown CLAY.
WS01		D	2.10		Brown CLAY.
WS04		D	4.00	6.00	Brown slightly sandy slightly gravelly CLAY.
WS05		D	2.30		Brown clayey silty very sandy GRAVEL.



Tiverton Estate London, N15 6RR

Contract No:

PSL26/6844

Client Ref:

2428b

SUMMARY OF SOIL CLASSIFICATION TESTS

BS 1377 - Part 2 : 2022 in accordance with BS EN ISO 17892 (as below)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Water Content %	Linear Shrinkage	Particle Density Mg/m ³	Liquid Limit %	Plastic Limit %	Plasticity Index %	Passing 0.425mm %	Remarks
BH1		U100	2.00		33.7			71	29	42	100	Very High Plasticity CIV
BH1		U100	6.50		25.6			74	30	44	100	Very High Plasticity CIV
BH1		U100	12.50		28.1			73	30	43	100	Very High Plasticity CIV
BH1		U100	24.50		28.8			79	31	48	100	Very High Plasticity CIV
BH2		U100	3.00		33.6			72	29	43	100	Very High Plasticity CIV
BH2		U100	11.00		30.3			77	32	45	100	Very High Plasticity CIV
BH2		U100	17.00		35.4			75	30	45	100	Very High Plasticity CIV
WS01		D	3.50		39.4			76	31	45	100	Very High Plasticity CIV
WS01		D	2.10		31.6			76	32	44	98	Very High Plasticity CIV

Water Content - BS 1377 - Part 2 : 2022 : Clause 4 in accordance with BS EN ISO 17892 - 1 : 2014 + A1 : 2022

Linear Shrinkage - BS 1377 - Part 2 : 2022 : Clause 7

Particle Density (Gas Jar method) - BS 1377 - Part 2 : 2022 : Clause 9

Liquid, Plastic Limit & Plasticity Index - BS 1377 - Part 2 : 2022 : Clause 5 & 6 in accordance with BS EN ISO 17892 - 12 : 2018 + A2 : 2022

SYMBOLS : NP = Non Plastic



Tiverton Estate London, N15 6RR

Contract No:

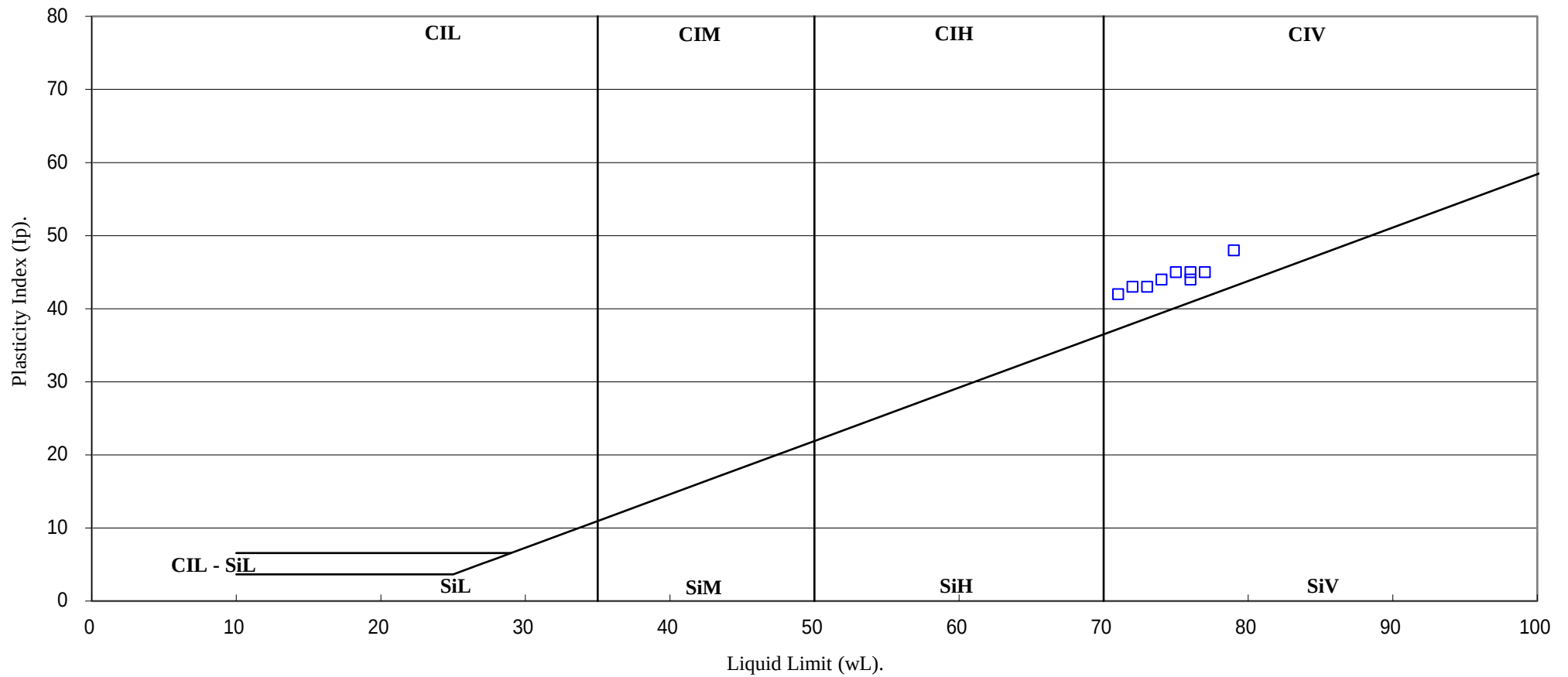
PSL26/6844

Client Ref:

2428b

PLASTICITY CHART

BS EN ISO 14688-2:2017 Clause 4.4



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PARTICLE SIZE DISTRIBUTION TEST

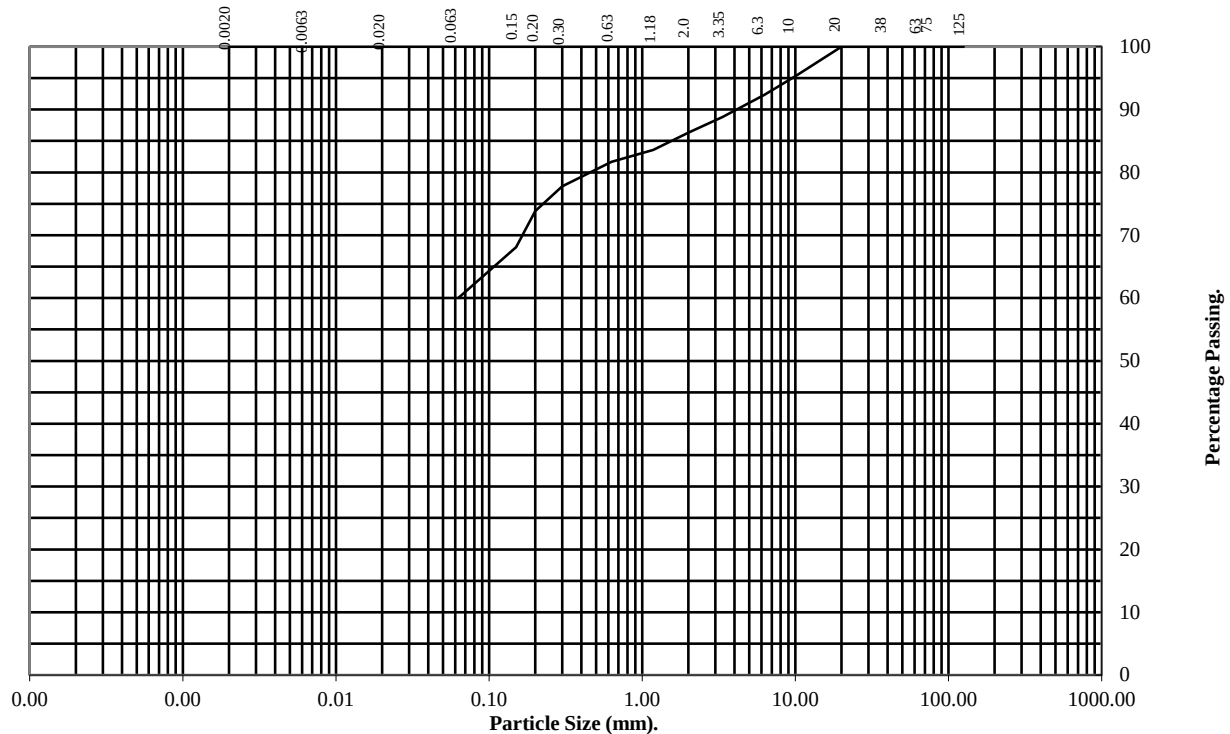
BS 1377 - Part 2 : 2022 : Clause 10 in accordance with BS EN ISO 17892 - 4 : 2016

Sieve Method, Clause 5.2

Hole Number: WS04 Top Depth (m): 4.00

Sample Number: Base Depth (m): 6.00

Sample Type: D



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	95
6.3	92
3.35	89
2	86
1.18	84
0.63	82
0.3	78
0.2	74
0.15	68
0.063	60

Soil Fraction	Total Percentage
Cobbles	0
Gravel	14
Sand	26
Silt/Clay	60

Remarks:

See Summary of Soil Descriptions



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Contract No:
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PARTICLE SIZE DISTRIBUTION TEST

BS 1377 - Part 2 : 2022 : Clause 10 in accordance with BS EN ISO 17892 - 4 : 2016

Sieve Method, Clause 5.2

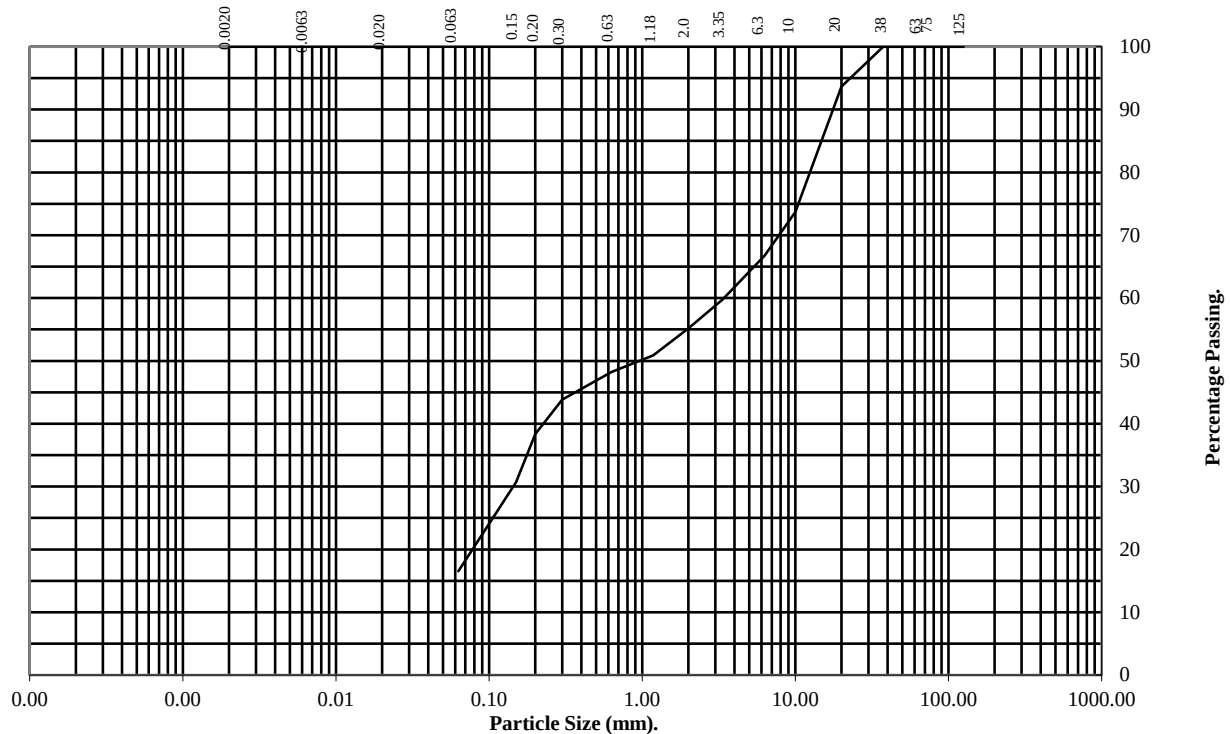
Hole Number: WS05

Top Depth (m): 2.30

Sample Number:

Base Depth (m):

Sample Type: D



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	94
10	74
6.3	67
3.35	60
2	55
1.18	51
0.63	48
0.3	44
0.2	38
0.15	31
0.063	17

Soil Fraction	Total Percentage
Cobbles	0
Gravel	45
Sand	38
Silt/Clay	17

Remarks:

See Summary of Soil Descriptions



Tiverton Estate London, N15 6RR

Contract No:
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Client Ref:
2428b

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

BS 1377 - Part 2 : 2022 : Clause 28 in accordance with BS EN ISO 17892 - 8 : 2018

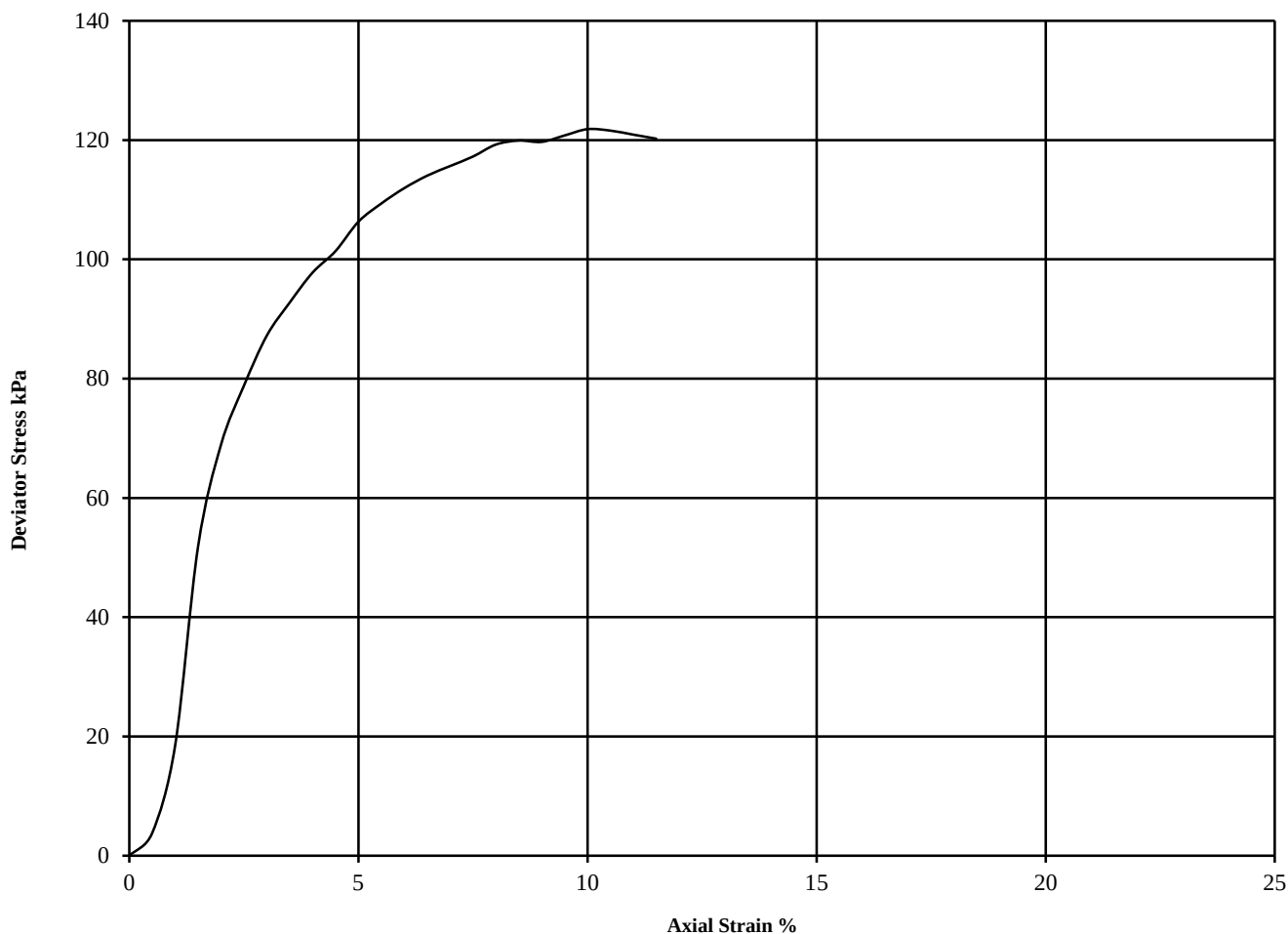
Hole Number: BH1

Top Depth (m): 2.00

Sample Number

Base Depth (m):

Sample Type U100



Diameter (mm):		102		Height (mm):		204	Test:	UU Single Stage		Remarks:
Specimen	Water Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)		Plastic	Undisturbed Sample Sample taken from top of tube Rate of strain = 0.9 %/min See summary of soil descriptions
1	33.7	1.85	1.38	40	122	61	9.5			



Tiverton Estate London, N15 6RR

Contract No:

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Client Ref:

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UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

BS 1377 - Part 2 : 2022 : Clause 28 in accordance with BS EN ISO 17892 - 8 : 2018

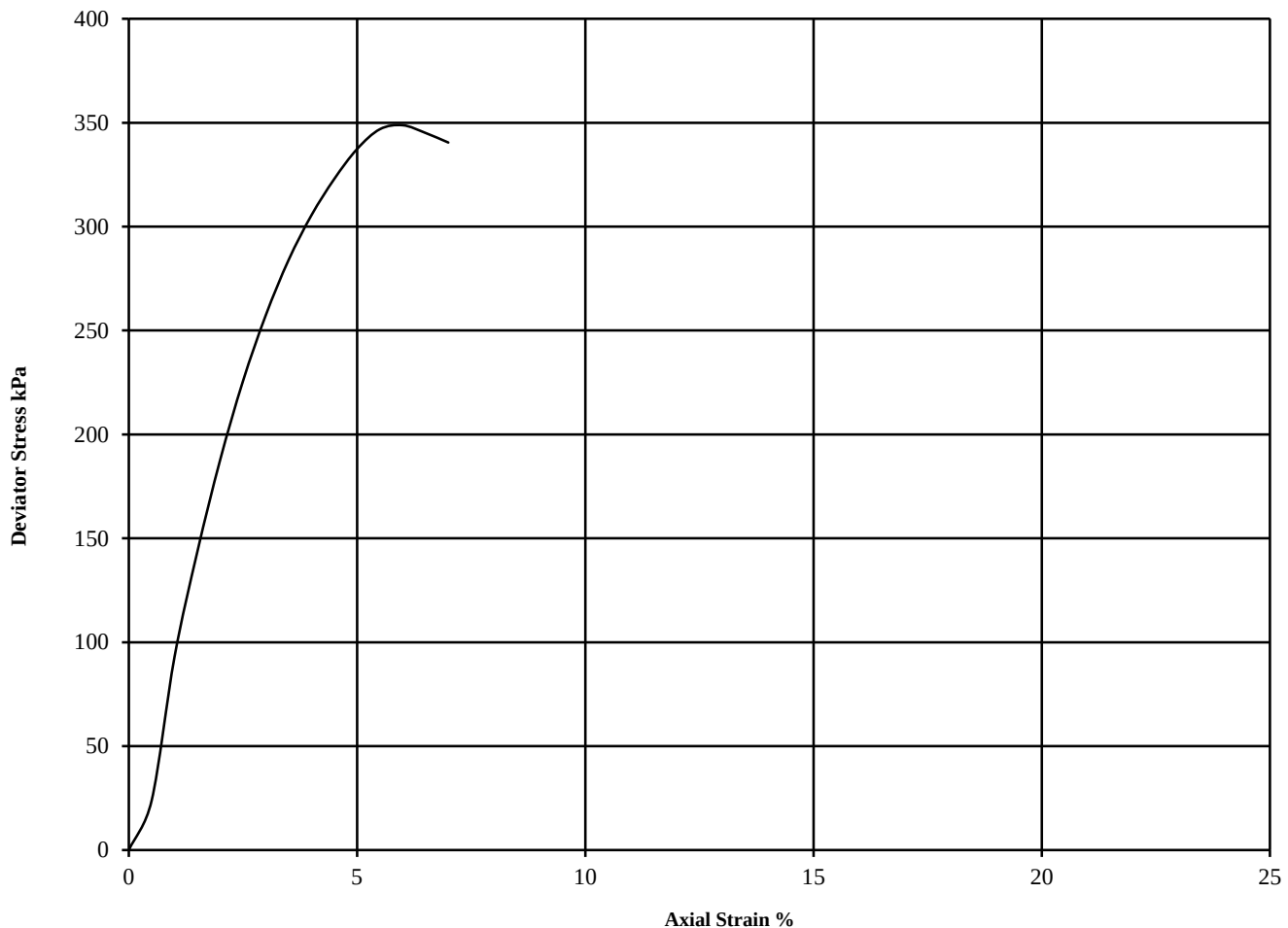
Hole Number: BH1

Top Depth (m): 6.50

Sample Number

Base Depth (m):

Sample Type U100



Diameter (mm):		102	Height (mm):		204	Test:	UU Single Stage		Remarks:
Specimen	Water Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)		Undisturbed Sample Sample taken from top of tube Rate of strain = 0.9 %/min See summary of soil descriptions
1	25.6	1.95	1.55	130	349	174	5.5	Brittle	



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Client Ref:

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UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

BS 1377 - Part 2 : 2022 : Clause 28 in accordance with BS EN ISO 17892 - 8 : 2018

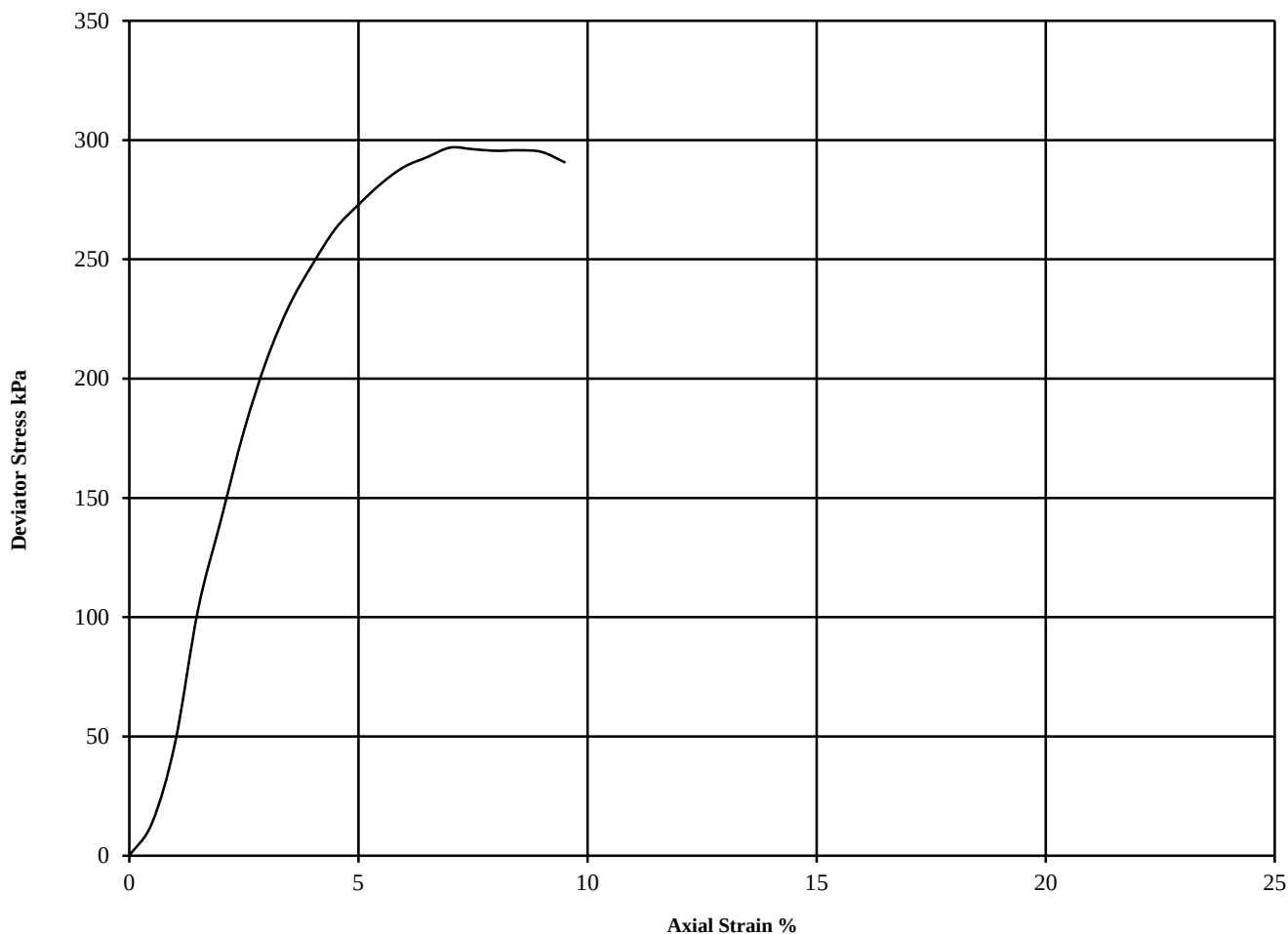
Hole Number: BH1

Top Depth (m): 12.50

Sample Number

Base Depth (m):

Sample Type U100



Diameter (mm):		102	Height (mm):		204	Test:	UU Single Stage		Remarks:
Specimen	Water Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)		Undisturbed Sample Sample taken from top of tube Rate of strain = 0.9 %/min See summary of soil descriptions
1	28.1	1.93	1.50	250	297	148	6.5	Brittle	



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UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

BS 1377 - Part 2 : 2022 : Clause 28 in accordance with BS EN ISO 17892 - 8 : 2018

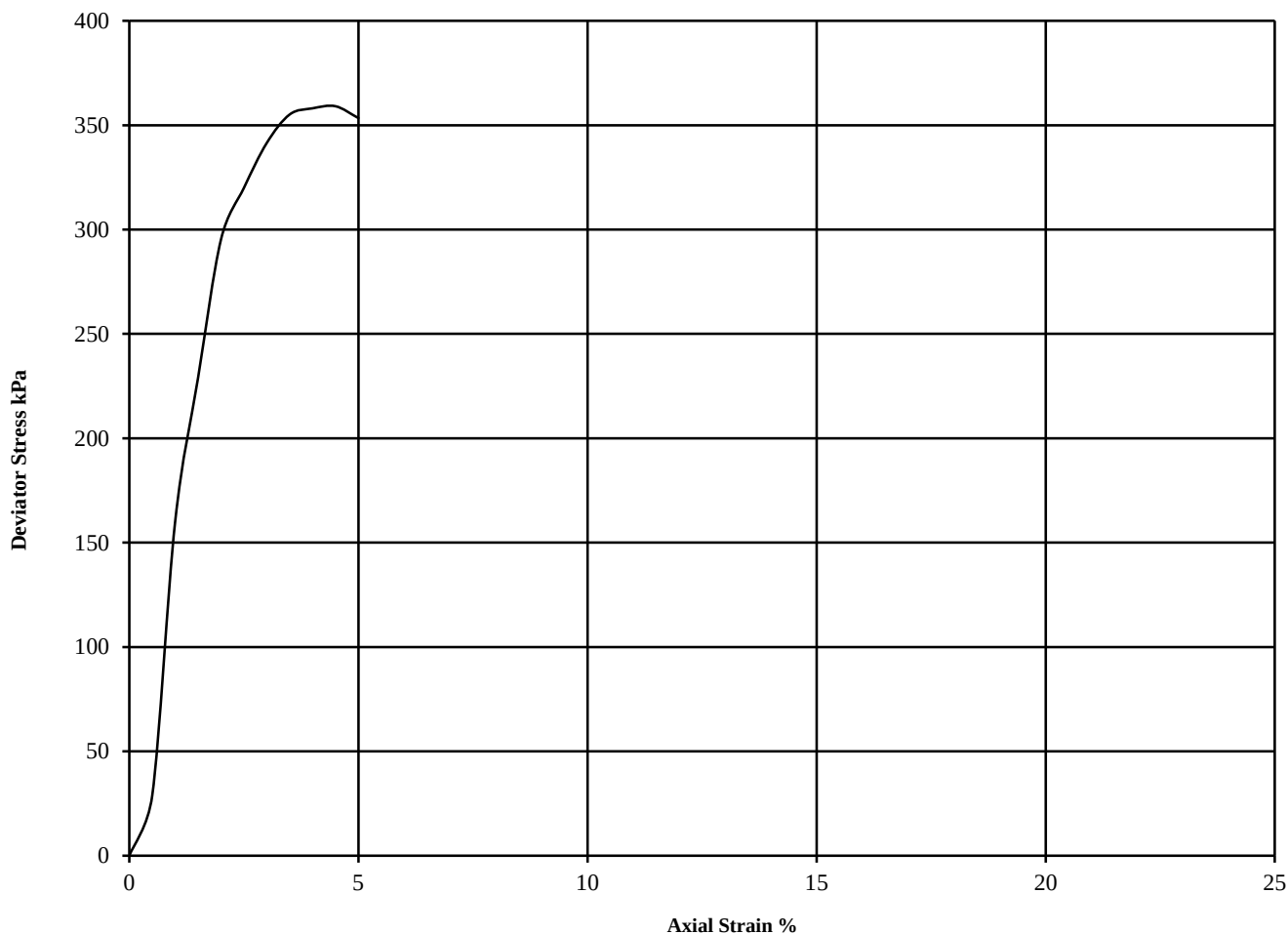
Hole Number: BH1

Top Depth (m): 24.50

Sample Number

Base Depth (m):

Sample Type U100



Diameter (mm):		102	Height (mm):		204	Test:	UU Single Stage		Remarks:
Specimen	Water Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)		Undisturbed Sample Sample taken from top of tube Rate of strain = 0.9 %/min See summary of soil descriptions
1	27.7	1.89	1.48	490	359	180	4.0	Brittle	



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UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

BS 1377 - Part 2 : 2022 : Clause 28 in accordance with BS EN ISO 17892 - 8 : 2018

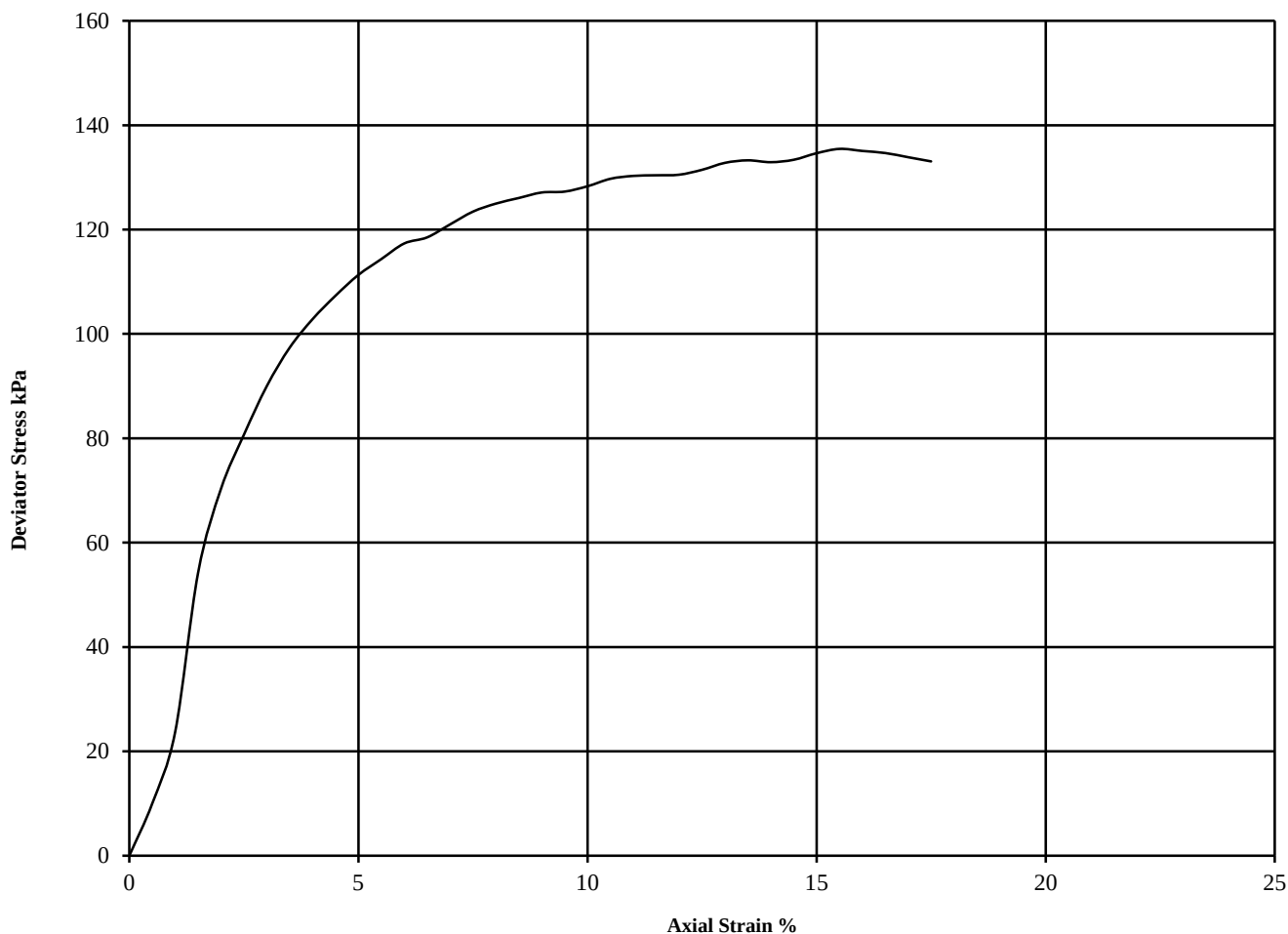
Hole Number: BH2

Top Depth (m): 3.00

Sample Number

Base Depth (m):

Sample Type U100



Diameter (mm):		102	Height (mm):		204	Test:	UU Single Stage		Remarks:
Specimen	Water Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)		Undisturbed Sample Sample taken from top of tube Rate of strain = 0.9 %/min See summary of soil descriptions
1	33.6	1.84	1.37	60	135	68	15.0	Plastic	



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UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

BS 1377 - Part 2 : 2022 : Clause 28 in accordance with BS EN ISO 17892 - 8 : 2018

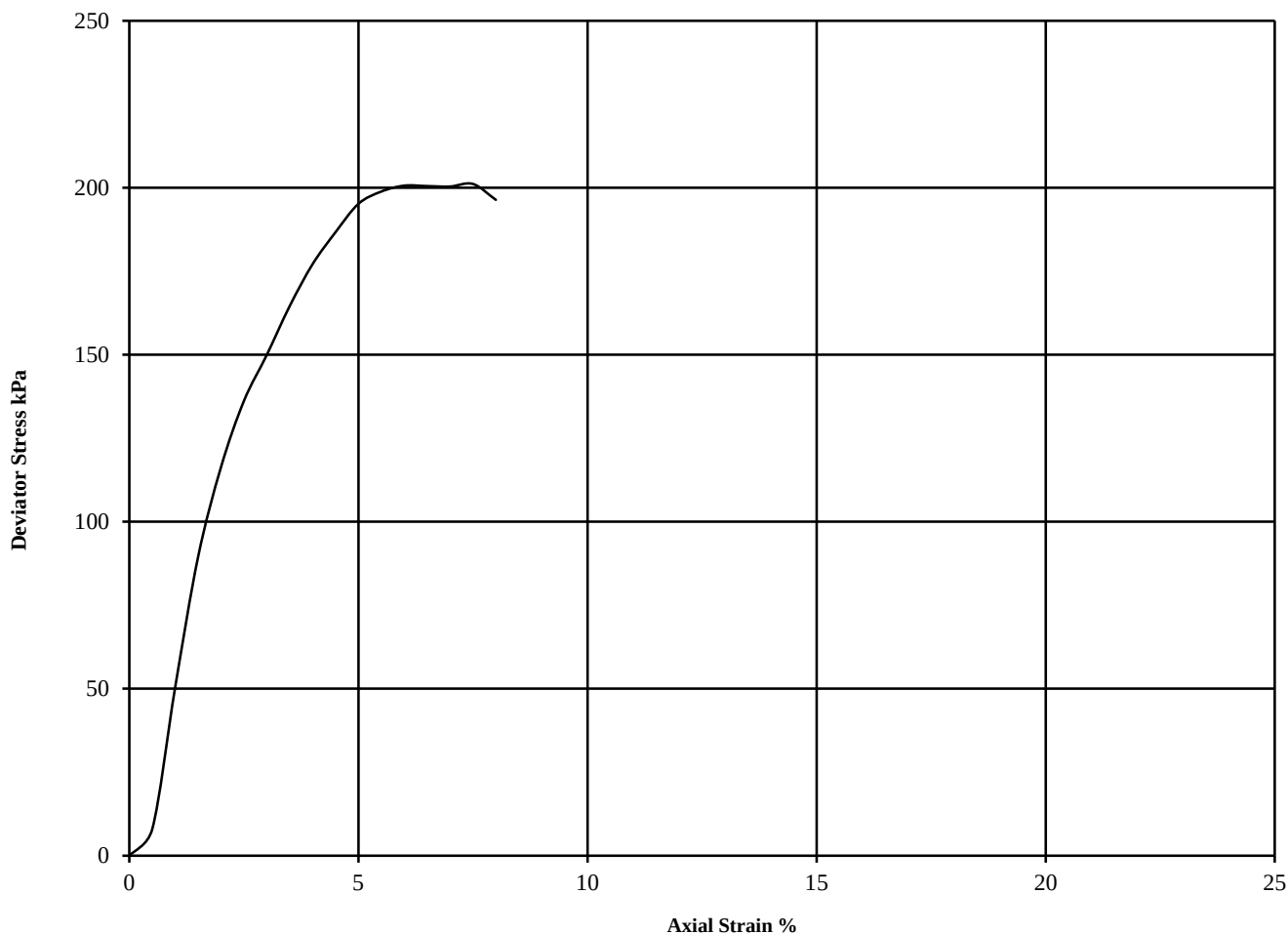
Hole Number: BH2

Top Depth (m): 11.00

Sample Number

Base Depth (m):

Sample Type U100



Diameter (mm):		102		Height (mm):		204	Test:	UU Single Stage		Remarks:
Specimen	Water Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)		Plastic	Undisturbed Sample Sample taken from top of tube Rate of strain = 0.9 %/min See summary of soil descriptions
1	30.3	1.85	1.42	220	201	101	7.0			



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UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

BS 1377 - Part 2 : 2022 : Clause 28 in accordance with BS EN ISO 17892 - 8 : 2018

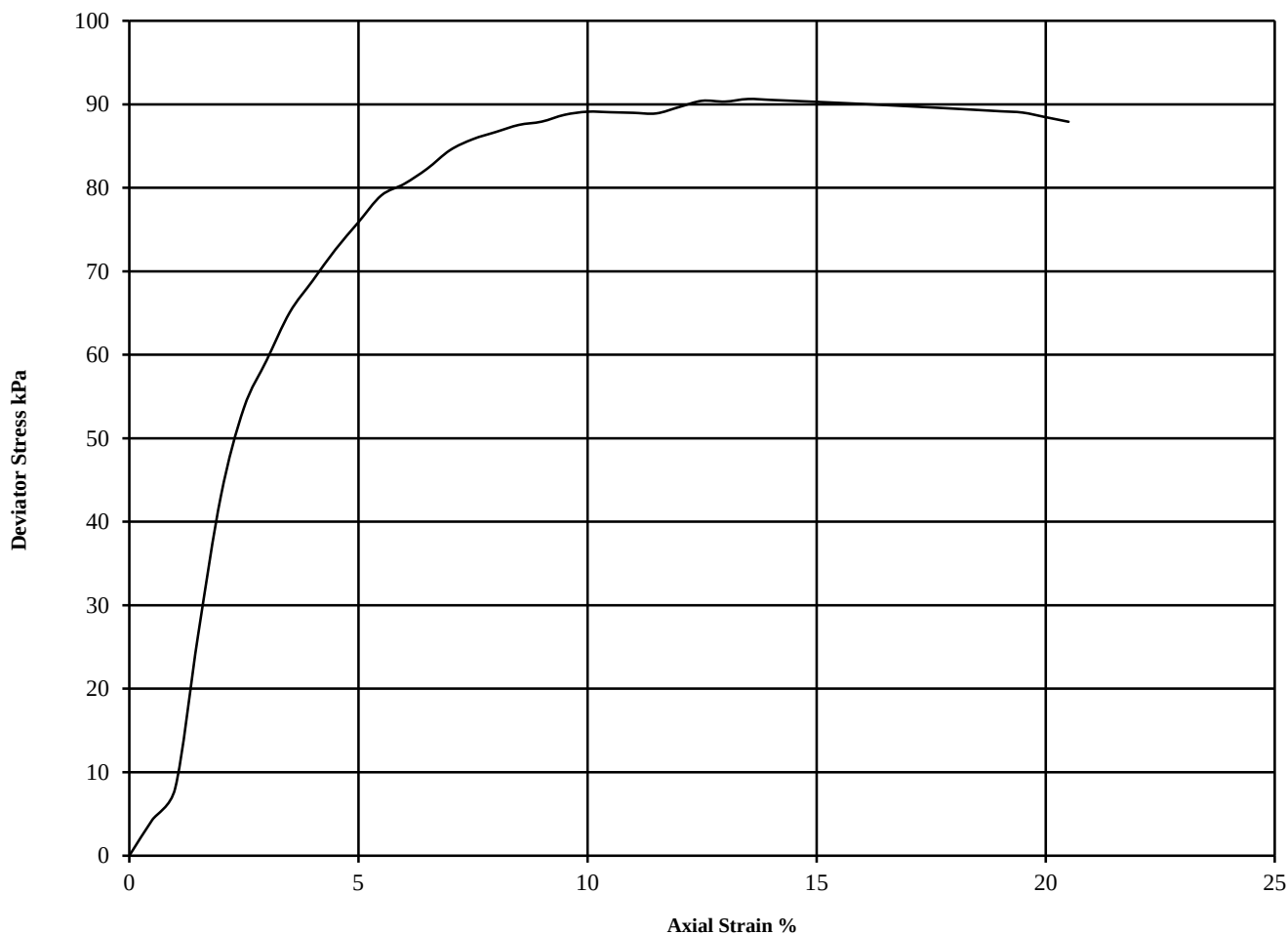
Hole Number: BH2

Top Depth (m): 17.00

Sample Number

Base Depth (m):

Sample Type U100



Diameter (mm):		102	Height (mm):		204	Test:	UU Single Stage		Remarks:
Specimen	Water Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)		Undisturbed Sample Sample taken from top of tube Rate of strain = 0.9 %/min See summary of soil descriptions
1	35.4	1.80	1.33	340	91	45	13.0	Plastic	



Tiverton Estate London, N15 6RR

Contract No:

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Client Ref:

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UNCONSOLIDATED UNDRAINED TRIAXIAL TEST

BS 1377 - Part 2 : 2022 : Clause 28 in accordance with BS EN ISO 17892 - 8 : 2018

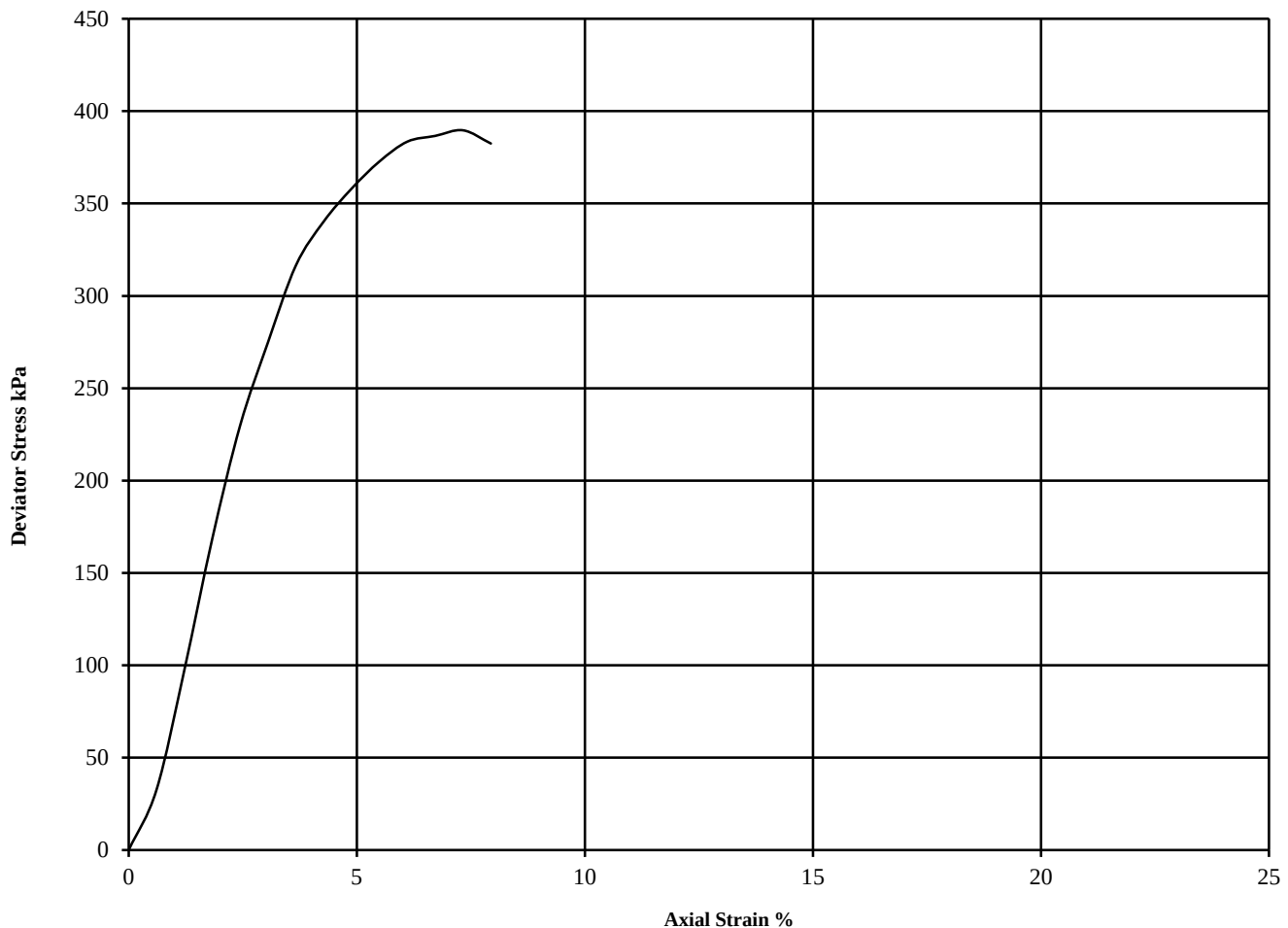
Hole Number: BH2

Top Depth (m): 23.00

Sample Number

Base Depth (m):

Sample Type U100



Diameter (mm):		102	Height (mm):		167	Test:	UU Single Stage		Remarks:
Specimen	Water Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)		Undisturbed Sample Sample taken from top of tube Rate of strain = 1.1 %/min See summary of soil descriptions
1	28.4	1.89	1.47	460	390	195	6.7	Brittle	



Tiverton Estate London, N15 6RR

Contract No:

PSL26/6844

Client Ref:

2428b

APPENDIX 5 – CBR TESTING RESULTS

CBR Calculation

Jomas Job: Tiverton Estate
Jomas Job No.: P4219J2428b

Test Location: WS1
Date of Test: 12/08/2026

Depth (mm)	Nr Blow	Cumulative blows
0	0	0
100	5	5
200	4	9
300	7	16
400	8	24
500	5	29
600	3	32
700	3	35
800	4	39
900	3	42
1000	3	45

Calculating Engineer: SLN
Approved by: SC

Date: 18/08/2026
Date: 22/09/2026

Test	Initial Depth (mm)	Final Depth (mm)	mm / blow	CBR (%)		E (MPa)
				IAN 73/06	TRL 587	
WS1-Test 1	0	200	22.2	11.4	11.8	83.55
WS1-Test 2	200	400	13.3	19.5	19.5	117.8
WS1-Test 3	400	500	20.0	12.7	13.1	89.53
WS1-Test 4	500	1000	31.3	7.9	8.5	66.07

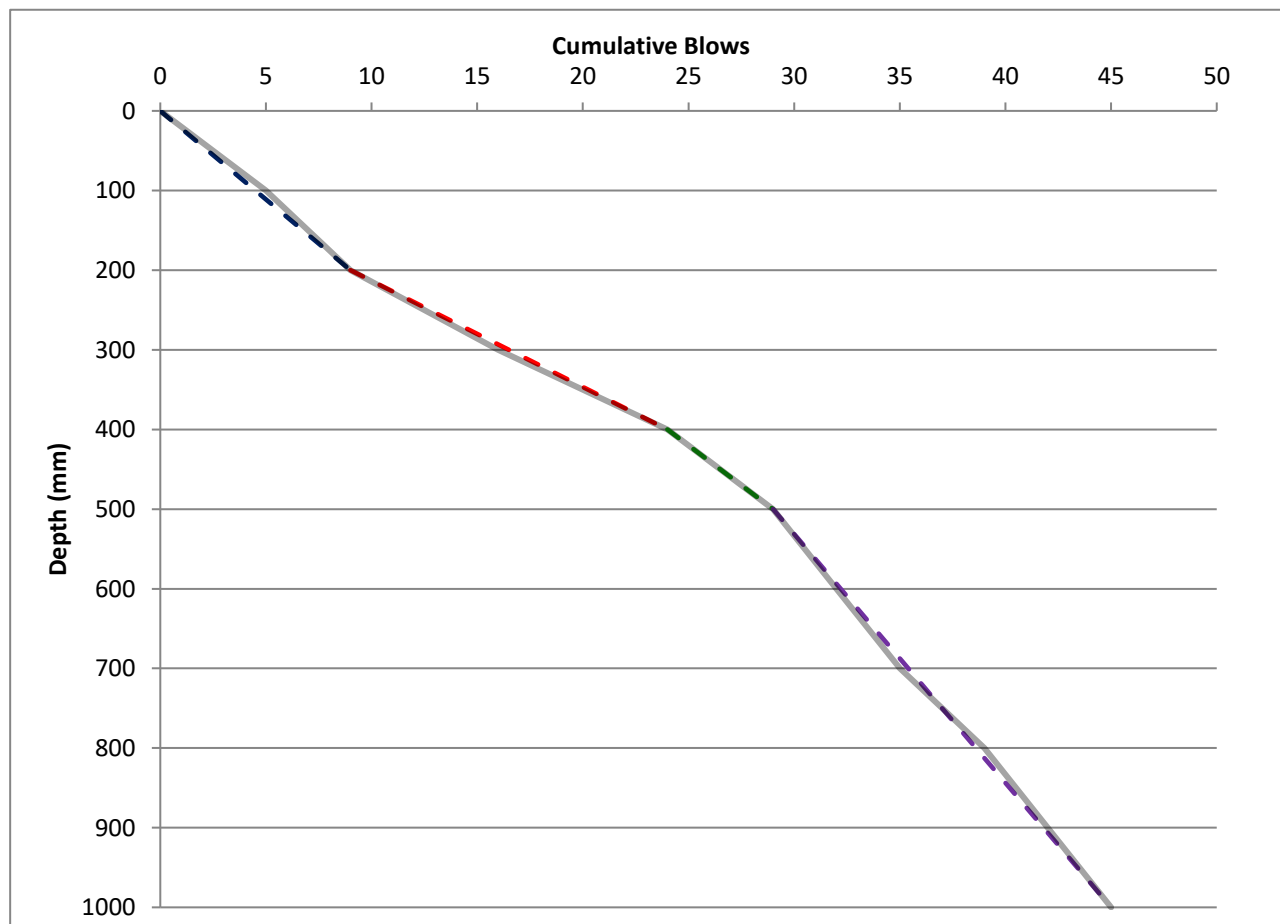
Test Notes:

Test carried out using a TRL Dynamic Cone Penetrometer consisting of a 8 kg free fall hammer lifted and dropped through a height of 575mm.

Colour of text refers to the modelled gradient on graph below.

CBR's calculated using methodologies outlined in IAN 73/06 and in TRL 587.

Characteristic MC% ? N



CBR Calculation

Jomas Job: Tiverton Estate
Jomas Job No.: P4219J2428b

Test Location: WS2
Date of Test: 12/08/2026

Depth (mm)	Nr Blow	Cumulative blows
0	0	0
100	7	7
200	10	17
300	19	36
400	16	52
500	15	67
600	7	74
700	7	81
800	14	95
900	13	108
1000	14	122

Calculating Engineer: SLN
Approved by: SC

Date: 18/08/2026
Date: 22/09/2026

Test	Initial Depth (mm)	Final Depth (mm)	mm / blow	CBR (%)		E (MPa)
				IAN 73/06	TRL 587	
WS2-Test 1	0	200	11.8	22.3	22.1	128.36
WS2-Test 2	200	500	6.0	45.4	42.7	202.32
WS2-Test 3	500	700	14.3	18.2	18.2	112.71
WS2-Test 4	700	1000	7.3	36.8	35.1	176.87

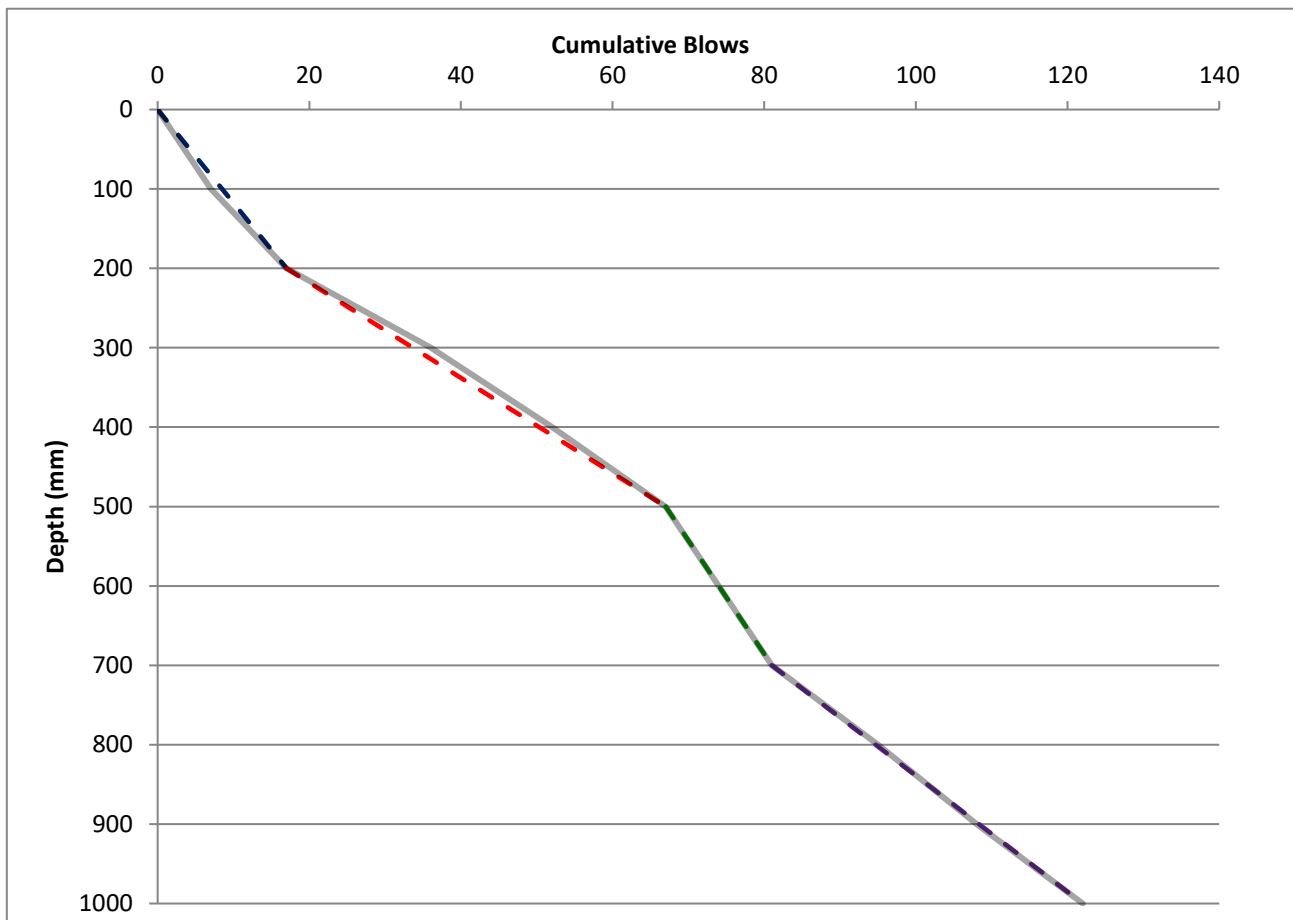
Test Notes:

Test carried out using a TRL Dynamic Cone Penetrometer consisting of a 8 kg free fall hammer lifted and dropped through a height of 575mm.

Colour of text refers to the modelled gradient on graph below.

CBR's calculated using methodologies outlined in IAN 73/06 and in TRL 587.

Characteristic MC% ? N



CBR Calculation

Jomas Job: Tiverton Estate
Jomas Job No.: P4219J2428b

Test Location: WS3
Date of Test: 12/08/2026

Depth (mm)	Nr Blow	Cumulative blows
0	0	0
100	5	5
200	8	13
300	10	23
400	25	48
500	25	73
600	40	113
700	50	163

Calculating Engineer: SLN
Approved by: SC

Date: 18/08/2026
Date: 22/09/2026

Test	Initial Depth (mm)	Final Depth (mm)	mm / blow	CBR (%)		E (MPa)
				IAN 73/06	TRL 587	
WS3-Test 1	0	300	13.0	20	19.9	119.72
WS3-Test 2	300	500	4.0	69.8	63.5	266.43
WS3-Test 3	500	700	2.2	129.9	112.9	396.48

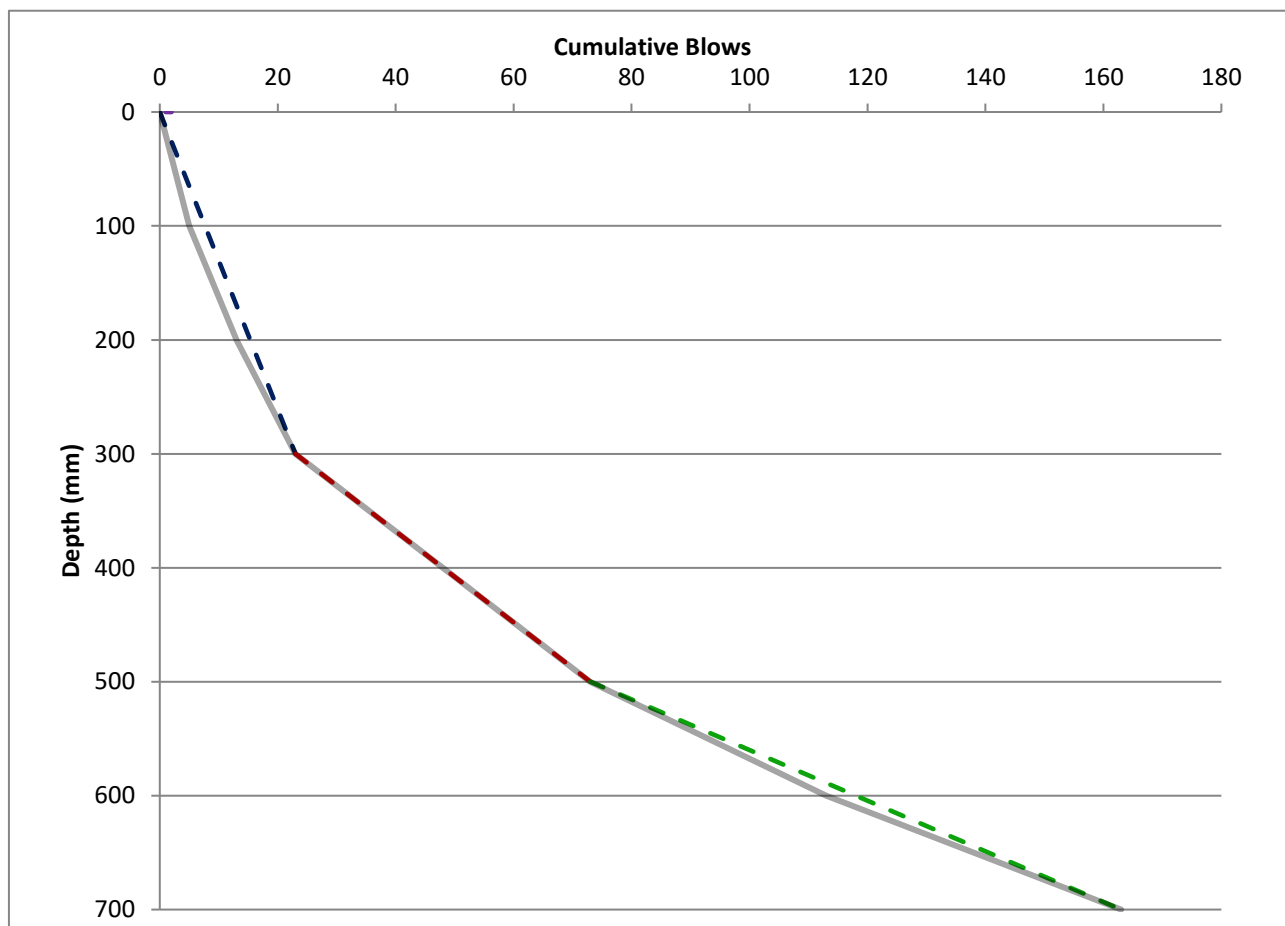
Test Notes:

Test carried out using a TRL Dynamic Cone Penetrometer consisting of a 8 kg free fall hammer lifted and dropped through a height of 575mm.

Colour of text refers to the modelled gradient on graph below.

CBR's calculated using methodologies outlined in IAN 73/06 and in TRL 587.

Characteristic MC% ? N



CBR Calculation

Jomas Job: Tiverton Estate
Jomas Job No.: P4219J2428b

Test Location: WS4
Date of Test: 12/08/2026

Depth (mm)	Nr Blow	Cumulative blows
0	0	0
100	4	4
200	6	10
300	8	18
400	8	26
500	7	33
600	5	38
700	4	42
800	5	47
900	4	51
1000	5	56

Calculating Engineer: SLN
Approved by: SC

Date: 18/08/2026
Date: 22/09/2026

Test	Initial Depth (mm)	Final Depth (mm)	mm / blow	CBR (%)		E (MPa)
				IAN 73/06	TRL 587	
WS4-Test 1	0	200	20.0	12.7	13.1	89.53
WS4-Test 2	200	500	13.0	20	19.9	119.72
WS4-Test 3	500	1000	21.7	11.7	12.1	84.95

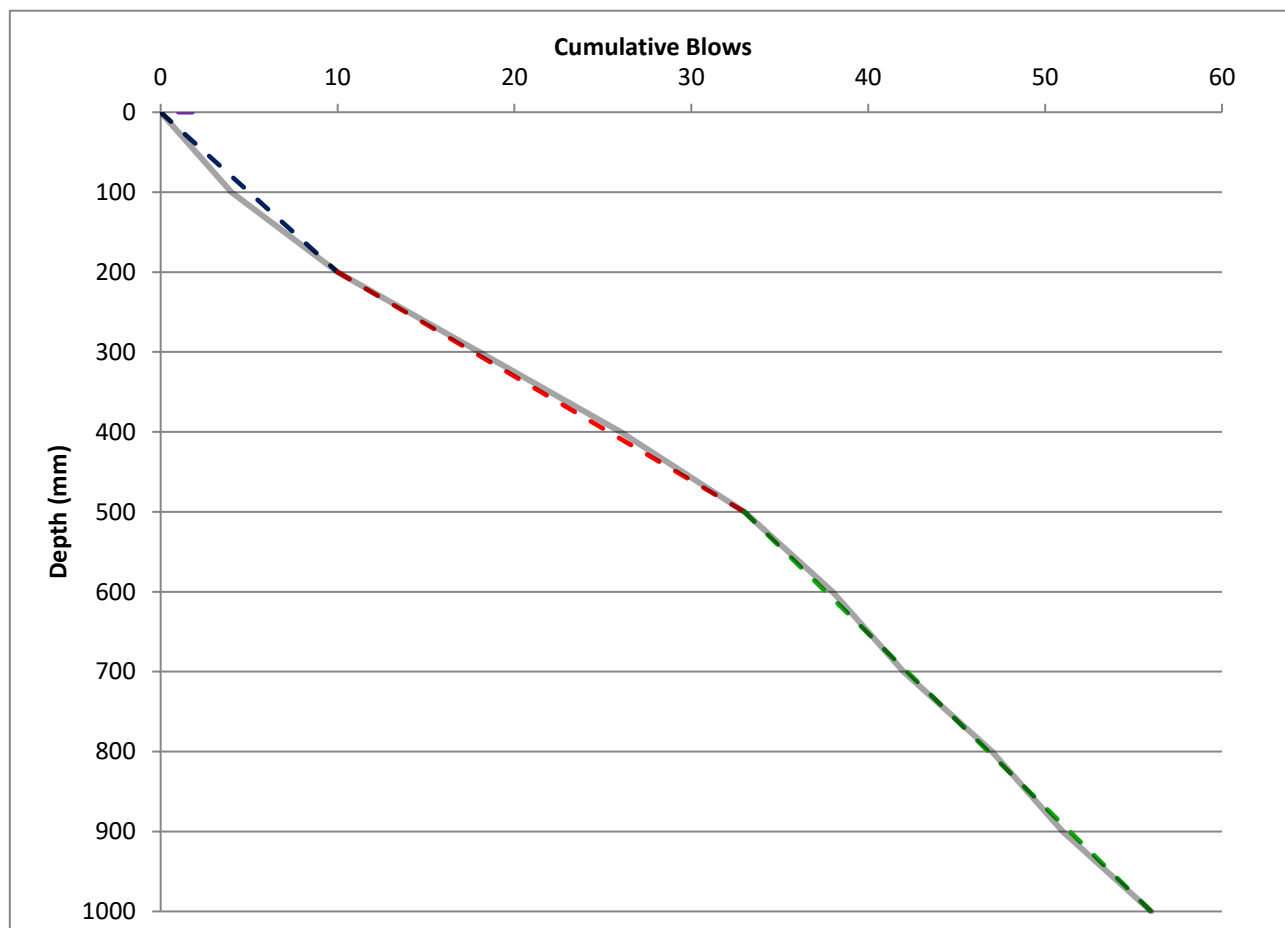
Test Notes:

Test carried out using a TRL Dynamic Cone Penetrometer consisting of a 8 kg free fall hammer lifted and dropped through a height of 575mm.

Colour of text refers to the modelled gradient on graph below.

CBR's calculated using methodologies outlined in IAN 73/06 and in TRL 587.

Characteristic MC% ? N



CBR Calculation

Jomas Job: Tiverton Estate
Jomas Job No.: P4219J2428b

Test Location: WS5
Date of Test: 12/08/2026

Depth (mm) Nr Cumulative
Blow blows

Calculating Engineer: SLN
Approved by: SC

Date: 18/08/2026
Date: 22/09/2026

0 0 0
100 3 3
200 2 5
300 2 7
400 1 8
500 1 9
600 1 10
700 2 12
800 2 14
900 1 15
1000 2 17

Test	Initial Depth (mm)	Final Depth (mm)	mm / blow	CBR (%)		E (MPa)
				IAN 73/06	TRL 587	
WS5-Test 1	0	300	42.9	5.7	6.2	53.61
WS5-Test 2	300	600	100.0	2.3	2.7	29.99
WS5-Test 3	600	800	50.0	4.8	5.3	48.03
WS5-Test 4	800	1000	66.7	3.6	4	39.95

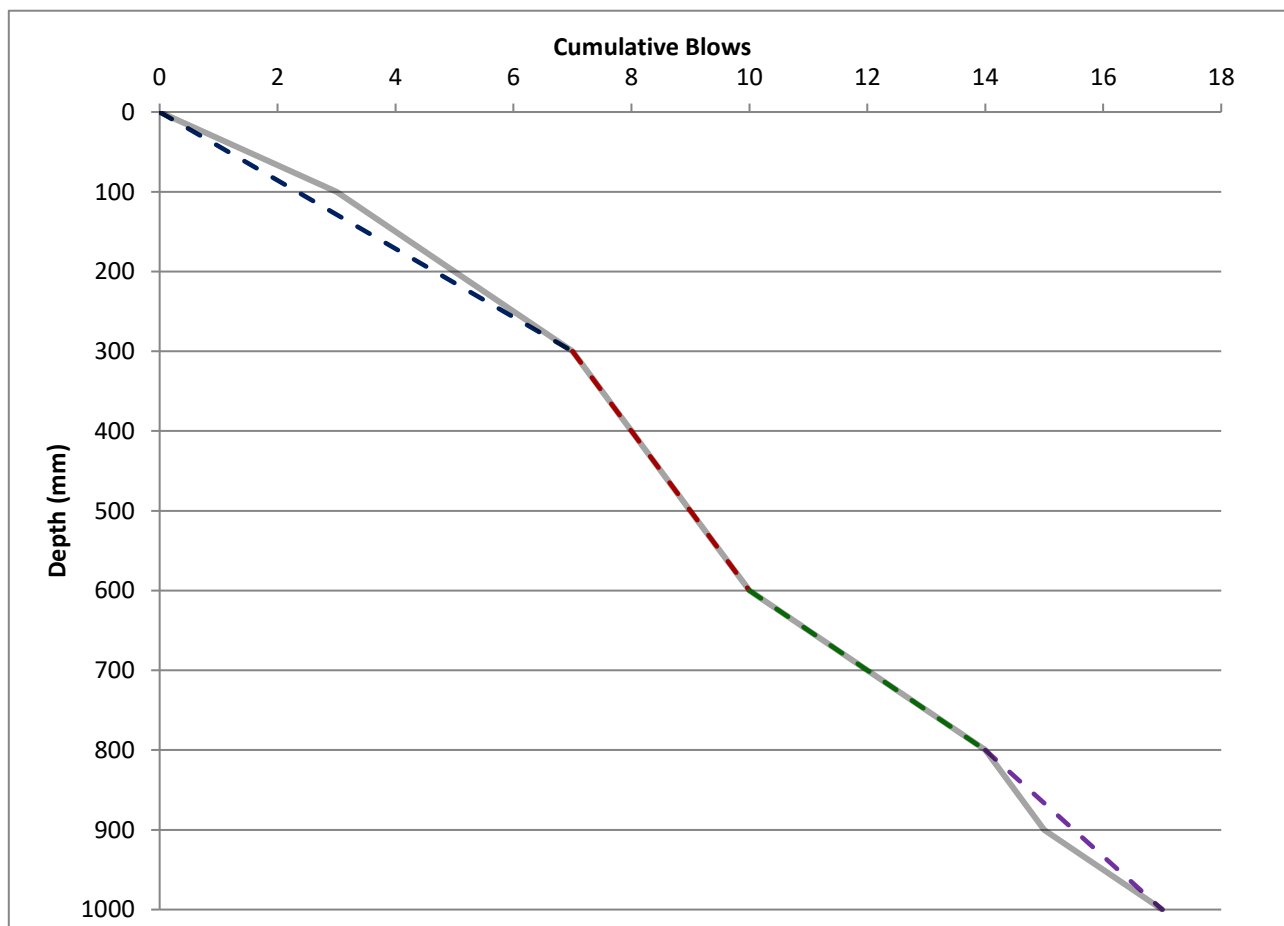
Test Notes:

Test carried out using a TRL Dynamic Cone Penetrometer consisting of a 8 kg free fall hammer lifted and dropped through a height of 575mm.

Colour of text refers to the modelled gradient on graph below.

CBR's calculated using methodologies outlined in IAN 73/06 and in TRL 587.

Characteristic MC% ? N



APPENDIX 6 – FALLING HEAD PERMEABILITY TESTING RESULTS

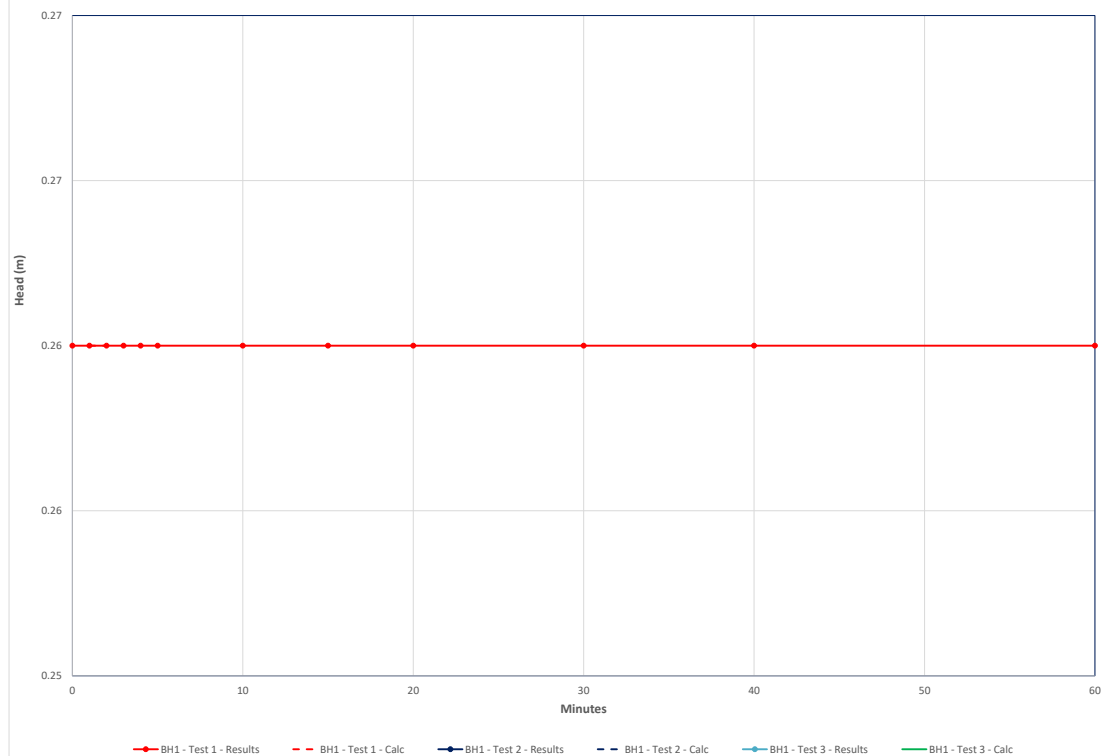
JOMAS | ENGINEERING
ENVIRONMENTAL
LAND REMEDIATION

DATE: 18 August 2026

DATE: 22 September 2026

	BH1 - Test 1	BH1 - Test 2	BH1 - Test 3
t1 (min):	0		
t2 (min):	60		
t2-t1 (min):	60		
t2-t1 (sec):	3600		
h1 (m):	0.26		
h2 (m):	0.26		
Permeability (m/sec):	0.00E+00		
Permeability Description:	#DIV/0!		
Drainage Conditions:	#DIV/0!		

Test Type?	D
Well point or hole extended into uniform soil	
Borehole diameter (D)	0.2 m
Cross-sectional Area (A)	0.03 m ²
Length into uniform material or slotted pipe (L)	1 m
Intake Factor (F)	3.64751906
Depth of borehole	2 m bgl
Groundwater encountered?	N

[illegible]

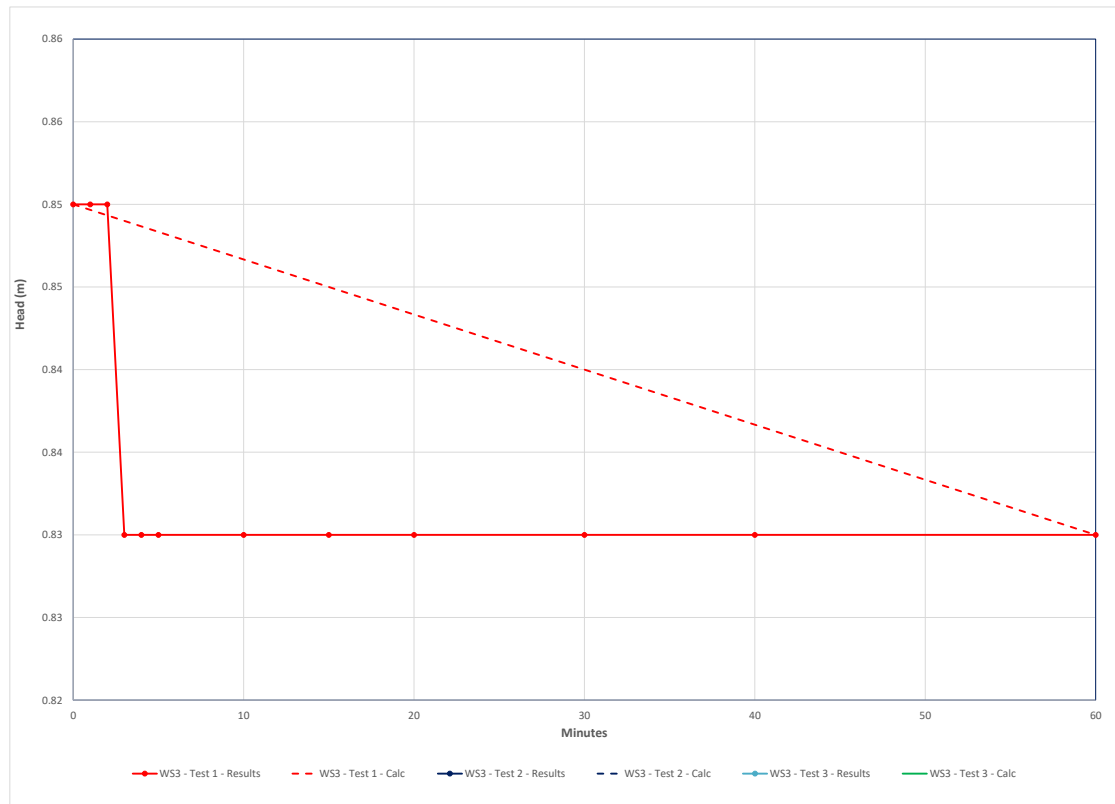
DATE: 18 August 2026

DATE: 22 September 2026

	WS3 - Test 1	WS3 - Test 2	WS3 - Test 3
t1 (min):	0		
t2 (min):	60		
t2-t1 (min):	60		
t2-t1 (sec):	3600		
h1 (m):	0.85		
h2 (m):	0.83		
Permeability (m/sec):	2.48E-08		
Permeability Description:	Very Low		
Drainage Conditions:	Pract. Imp.		

Test Type?	D
Well point or hole extended into uniform soil	
Borehole diameter (D)	0.15 m
Cross-sectional Area (A)	0.02 m ²
Length into uniform material or slotted pipe (L)	2 m
Intake Factor (F)	4.71498747
Depth of borehole	2 m bgl
Groundwater encountered?	N

t1 (min):	0
t2 (min):	60
t2-t1 (min):	60
t2-t1 (sec):	3600
h1 (m):	0.85
h2 (m):	0.83
Permeability (m/sec):	2.48E-08
Permeability Description:	Very Low
Drainage Conditions:	Pract. Imp.

[illegible]

ENGINEERING ENVIRONMENTAL LAND REMEDIATION

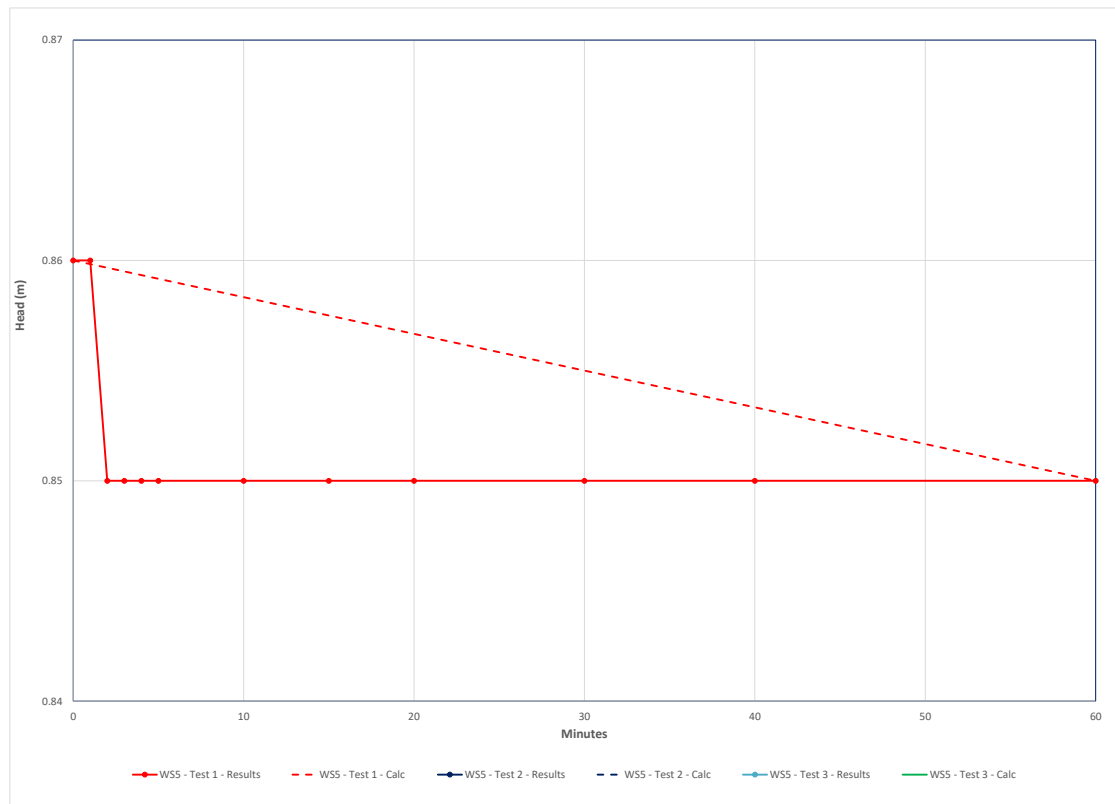
DATE: 18 August 2026

DATE: 22 September 2026

	WS5 - Test 1	WS5 - Test 2	WS5 - Test 3
t1 (min):	0		
t2 (min):	60		
t2-t1 (min):	60		
t2-t1 (sec):	3600		
h1 (m):	0.86		
h2 (m):	0.85		
Permeability (m/sec):	1.22E-08		
Permeability Description:	Very Low		
Drainage Conditions:	Pract. Imp.		

Test Type?	D
Well point or hole extended into uniform soil	
Borehole diameter (D)	0.15 m
Cross-sectional Area (A)	0.02 m ²
Length into uniform material or slotted pipe (L)	2 m
Intake Factor (F)	4.71498747
Depth of borehole	2 m bgl
Groundwater encountered?	N

t1 (min):	0
t2 (min):	60
t2-t1 (min):	60
t2-t1 (sec):	3600
h1 (m):	0.86
h2 (m):	0.85
Permeability (m/sec):	1.22E-08
Permeability Description:	Very Low
Drainage Conditions:	Pract. Imp.

[illegible]

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