ERGO

ENVIRONMENTAL LTD

PHASE II GEO-ENVIRONMENTAL SITE ASSESSMENT

Land at Bretton Street,
Bretfield Court,
Savile Town,
Dewsbury,
WF12 9DB

Prepared for:

A & K Properties

Report Ref: 25-2269-r01/RevA
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QUALITY ASSURANCE

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PROJECT NUMBER	25-2269	
IMS Template Reference: QR012-3		

EXECUTIVE SUMMARY		
Site Address	Land at Bretton Street, Bretfield Court, Savile Town, Dewsbury, WF12 9DB.	
Grid Reference	E425007 N420226.	
Site Area	c.0.83 Hectares.	
Current Site Use/Description	The site is a triangular shaped parcel of undeveloped land located off Bretton Street in the south of Dewsbury Town Centre adjacent to the Calder & Hebble Navigation Canal. The site comprises unmaintained grassland understood to have recently undergone clearance with localised areas of overgrown vegetation. A scrape is noted adjacent to NGN infrastructure in the eastern site area noted to have standing water present. Significant fly-tipped/windblown wastes were noted onsite.	
Proposed Development	ERGO understand you are considering the proposed acquisition and future redevelopment of the site for a commercial end-use with associated roads, car parking/yard area and utility infrastructure.	
Environmental Setting	*Drift Geology*	Alluvium - Clay, Silt, Sand & Gravel within the eastern site area with River Terrace Deposits - Sand & Gravel within the western site area.
	Bedrock Geology	Pennine Lower Coal Measures Formation - Sandstone, Mudstone & Coal.
	Hydrogeology	Secondary A drift aquifer strata overlying a Secondary A Aquifer (Bedrock Geology).
	Hydrology	The Calder & Hebble Navigation (Canal) is recorded 3m SE with the River Calder noted 149m NE.
	Ecology	The site is noted to have recently undergone apparent vegetation clearance with residual unmaintained grassland noted centrally and dense semi-mature and mature trees on the site boundaries. No invasive species were noted, though their presence cannot be discounted.
Site History	Available historic mapping suggests the site has remained largely undeveloped to date with re-channelisation of the adjacent Calder & Hebble Navigation to the present-day eastern site boundary outwith the site c.1907. A gas pipeline is recorded within the eastern site area c.1999 to date.	
Utility Locations	A formal utility survey has not been completed. However, evidence of services was observed during the walkover with a Northern Gas Networks gas pipeline recorded adjacent to the eastern site boundary, extending across the Calder and Hebble Navigation watercourse and manhole covers noted in the northern site area. Further, unidentified services may be present and should be adequately considered as part of any proposed redevelopment.	
Landfill Sites	No active landfill or waste treatment sites are recorded within 250m of the site. Though several historic landfills, refuse heaps and waste transfer sites are noted. Areas of Made Ground are recorded to surround the site.	
ERGO Intrusive Ground Investigation		
Site Investigation Works	ERGO has completed an intrusive Ground Investigation comprising mechanically excavated trial pits, window sample boreholes with environmental monitoring installations and in-situ CBR testing.	
Ground Conditions	**Made Ground** Made Ground deposits were encountered within advanced exploratory probeholes to maximum depths of 1.50mbgl., generally comprising surficial reworked brown sandy gravelly topsoil overlying a greyish brown gravelly sand with localised anthropogenic inclusions noted. **Drift Deposits** Drift deposits were encountered within exploratory holes to maximum depths of 3.30mbgl. generally comprising interbedded firm to very stiff sandy gravelly CLAYs and medium to dense to very dense clayey SANDs and GRAVELs. With	

EXECUTIVE SUMMARY	
Ground Conditions (cont.)	localised soft sandy gravelly CLAYs encountered in the eastern site area within TP104 (0.70-1.40mbgl.) and TP105 (0.15-0.60mbgl.). **Solid Geology** Solid geology was not encountered during the site investigation. **Groundwater** Groundwater was encountered within 8no. advanced exploratory holes at depths between 1.00-2.40mbgl as damp strata, seepages and groundwater strikes with monitoring recording groundwater at depths of 0.73-1.07mbgl.
Contamination Assessment	
Human Health	The Tier 1 Human Health Risk Assessment identified no exceedances when compared to relevant threshold values. Reworked deposits and natural subsoils are considered suitable for reuse within a commercial setting.
Controlled Waters	Low risk to Controlled Waters.
Ground Gas	Characteristic Situation 1 (pending completion of gas monitoring).
Waste Characterisation	Preliminary assessment indicates Stable Non-Reactive (non-hazardous / inert).
Geotechnical Assessment	
Foundation Options	Subject to receipt of finalised finished levels and loadings, aboricultural survey and following a programme of enabling works, it is considered that pad footings should be viable for proposed plots founding within the underlying natural firm to stiff clays and medium dense to very dense granular deposits. Based on the results of in-situ testing and visual descriptions a safe bearing capacity in the order of 120kN/m^2 has been determined for pad foundations up to 1.00m wide at depths of at least 0.90mbgl.
Building Floor Slabs	A ground bearing slab should be viable for the commercial structures; however, it will need to be constructed utilising a sub-base with the thickness designed by a structural engineer to ensure that settlement tolerances are taken into consideration.
Heave Precautions	The underlying clay has been assessed as having medium volume change potential, appropriate heave precautions will be required to be incorporated in to design proposals.
Soakaway Drainage	Moderate soakage potential has been determined to date during preliminary falling head permeability tests. If soakaway drainage is to be considered, full BRE365 Testing should be completed to inform the detailed design.
Sulphate Assessment	Concrete classification will be DS1 AC1 & DS-1 AC-2z.
CBR Design %	CBR values in the order of 3.0-4.0% have been determined to date. It is considered granular soils can be re-engineered to ensure 5% whilst cohesive soils 3-5% within the sub-grade during favourable climatic conditions.
Civil Engineering Excavations	Site observations indicated that excavations should be feasible in the near surface with normal plant. Trial pits were noted to be generally stable across the site area.
Recommendations	
Based on the findings of the intrusive site investigation, the following additional works are recommended to be completed in due course: ▪ Arboricultural Survey; ▪ Detailed Cut and Fill Volumetrics and Spoil Management Plan; and, ▪ Materials Management Plan.	

Table of Contents

APPENDICES

1. INTRODUCTION

1.1 Background

ERGO has been commissioned by A&K Properties to undertake a Phase II Geo-Environmental Site Assessment of Land at Bretton Street, Dewsbury.

This report is required to determine potential contaminated land liabilities, remediation requirements and geotechnical engineering works that will be required as part of the proposed development for the proposed low rise residential development.

The scope of work the following elements:

- *Review of previous reporting;*
- *Design of intrusive ground investigation;*
- *Window sample probeholes with environmental monitoring installations;*
- *Mechanically excavated trial pits;*
- *In-situ geotechnical testing;*
- *Chemical & geotechnical laboratory analysis;*
- *Groundwater and Ground Gas monitoring;*
- *Contamination risk assessment & conceptual site model;*
- *Geotechnical assessment & interpretation; and,*
- *Factual and interpretive reporting.*

1.2 Site Details

Site Address	Land at Bretton Street, Bretfield Court, Savile Town, Dewsbury, WF12 9DB.
Grid Reference	E425007 N420226.
Site Area	c.0.83 Hectares.

A site location map is presented in Appendix III as Drawing 25-2269-001.

1.3 Proposed Development

ERGO understand you are considering the proposed acquisition and future redevelopment of the site for a commercial end-use with associated roads, car parking/yard area and utility infrastructure..

Drawing 25-2269-002 (Appendix III) identifies the proposed development layout. A snapshot of the proposed development is shown within Figure 1.1 below.

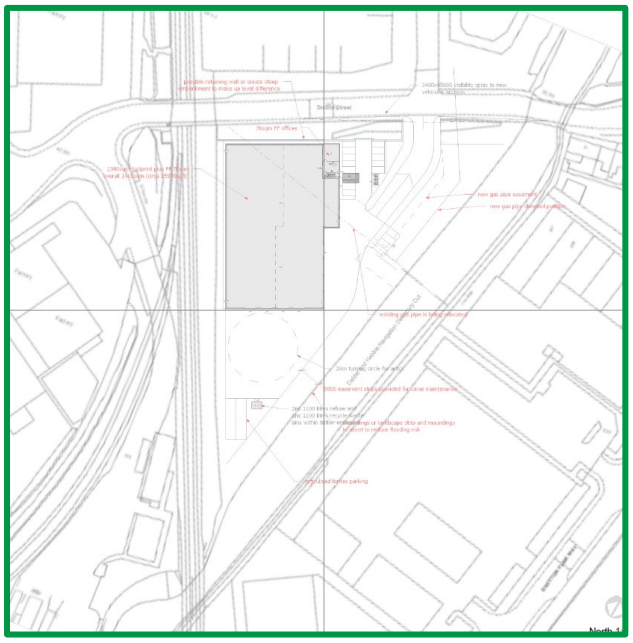

Figure 1.1 Snapshot of Proposed Development

1.4 Objectives

The objectives of the Geo-Environmental Investigation are to:

- Undertake a preliminary stage of sampling and analysis to provide an overview of environmental issues identified;
- Assess the implications of any potential environmental risks, liabilities and development constraints associated with the site in relation to future site use and off-site receptors;
- Assess the geotechnical information and provide preliminary recommendations in relation to foundations, pavement construction and floor slabs; and,
- Provide recommendations regarding future works required.

1.5 Previous Reports

The following reports have previously been completed for the site:

ERGO - *Phase I Geo-Environmental Site Assessment*. Ref: 25-2269-r01, dated March 2025.

Pertinent points of this report have been summarised within Section 2.0 of this report.

1.6 Limitations & Glossary

The limitations of this report are presented in Appendix I.

All acronyms used within this report are defined in the Glossary presented in Appendix II.

1.7 Confidentiality

ERGO has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from ERGO; a charge may be levied against such approval.

2. REVIEW OF PREVIOUS REPORTS

2.1 ERGO Phase I Geo-Environmental Assessment

ERGO previously completed a Phase I Geo-Environmental Assessment (Ref: 25-2269-r01, dated March 2025). Pertinent points of the assessment have been outlined below.

Site Description

The site is a triangular shaped parcel of undeveloped land located off Bretton Street in the south of Dewsbury Town Centre adjacent to the Calder & Hebble Navigation Canal.

The site comprises unmaintained grassland understood to have recently undergone clearance with localised areas of overgrown vegetation. A scrape is noted adjacent to NGN infrastructure in the eastern site area noted to have standing water present. Significant fly-tipped/windblown wastes were noted at the site.

Geology, Hydrogeology and Hydrology

The site is predominantly underlain by Alluvium (Clay, Silt, Sand and Gravel) within the western site area and River Terrace deposits (Sand and Gravel) within the eastern site area containing a secondary A drift aquifer. Solid geology comprises the Pennine Lower Coal Measures Formation (Sandstone, Mudstone & Coal - Secondary A Aquifer).

The Calder & Hebble Navigation (Canal) is recorded 3m SE with the River Calder noted 149m NE. The majority of the site is located within EA Flood Risk Zone 2; with the western site area located within EA Flood Risk Zone 1and the eastern site area located within EA Flood Risk Zone 3. The site is considered at high risk from river and sea flooding. The Groundsure Report states there is a low locally moderate risk for surface water flooding in the eastern site area. A low locally moderate potential for groundwater flooding in the western site area has been identified. 3no. historic flood events are noted 105m-125m NE of the site with flood defences subsequently installed 129m NE. A flood storage area is noted 118m NE of the site. Localised saturated ground was noted within the south-eastern site area.

Site History

Historic mapping suggests the site has remained largely undeveloped to date with re-channelisation of the adjacent Calder & Hebble Navigation to the present-day eastern site boundary c.1907. A gas pipeline is recorded within the eastern site area c.1999 to date.

Geotechnical Appraisal

The following geotechnical assessment has been made:

- It is considered likely there is Made Ground fill deposits and potential obstructions will be present within the subsurface. Adequate investigation and assessment are considered to be required to confirm the presence or otherwise of these features;
- The eastern site area is understood to have been reclaimed from the adjacent canal which may suggest locally significant thicknesses of Made Ground to be present. Adequate assessment should be undertaken to confirm the extent, nature and thickness of this former feature and any potential buried obstructions;
- Investigation will be required in order to assess the underlying Made Ground and natural deposits and undertake in-situ geotechnical testing to determine likely foundation solution;
- Due consideration will be required as to the effects of shrinkage and heave where any trees are to be removed or are proposed;
- A moderate risk of compressible soils has been identified which should be adequately assessed during any subsequent phase of investigation;
- Appropriate assessment of onsite services will be required with appropriate stand-offs incorporated in to designs or suitable diversion;
- The Calder & Hebble Navigation Canal is noted adjacent to the eastern site boundary, it is considered that adequate assessment should be undertaken with appropriate stand-offs incorporated to ensure no risk is posed to this feature;
- No significant risk from historic mining activities has been determined;
- The site is largely level with a steep slope present on the northern site boundary, it is likely that a programme of cut/fill enabling works will be required to create access.

Conceptual Site Model

The following contaminated land considerations have been highlighted:

- A low/moderate risk to Human Health receptors from potential onsite contaminants within subsurface deposits associated with the surrounding industrial development including an adjacent railway and diversion of the Calder and Hebble Navigation and onsite fly-tipped/windblown wastes. Risks are somewhat reduced given the proposed low sensitivity development, though the potential for contamination should be confirmed;
- A low/moderate risk to Controlled Water receptors has been identified at the site; and,
- A low/moderate risk from ground gases arising from potential onsite and adjacent Made Ground.

3. GROUND INVESTIGATION

3.1 General

A Ground Investigation has been undertaken based on the findings of the desk study with exploratory holes advanced to target specific potential contaminant sources and areas of geotechnical risk summarised in Section 2.0. The investigation has also been used to collect geotechnical information to assist in the design and construction of the proposed development.

Fieldwork was completed between 1st - 4th April 2025 and is summarised in Table 3.1 below.

Table 3.1 Summary of Fieldwork

POTENTIAL SOURCE/RATIONALE	LOCATION HOLE	TYPE	MAXIMUM DEPTH (mbgl)	MONITORING WELLS RESPONSE ZONE (mbgl)
General Ground Conditions including the presence/ nature of obstructions within the footprint of the proposed structure.	WS101	Window Sample Probehole	1.50	0.50-1.00
	WS102		1.50	0.50-1.00
	WS103		1.40	0.50-1.00
	WS104		1.60	0.50-1.00
	WS105		2.20	1.00-2.00
General Ground Conditions including the presence/ nature of obstructions within proposed hardstanding areas	TP101-TP107	Mechanically Excavated Trial Pits	3.30	N/A

Mechanically excavated trial pits were advanced to investigate ground conditions, retrieve environmental samples, spatially distributed to offer the maximum site coverage whilst also being advanced to target specific contaminant sources and historical features.

Window sample probeholes were advanced to undertake in-situ detailed geotechnical testing, obtain environmental samples and install groundwater and ground gas monitoring wells. Return visits were made to monitor installations for groundwater level and gas concentrations. In addition, selected wells were subject to falling head permeability testing.

Exploratory probehole locations are illustrated in Drawing 25-2269-003 (Appendix III). It should be noted that the locations of advanced exploratory probeholes were somewhat restricted by the presence of existing utilities and associated stand-offs, dense vegetation and localised steep slopes.

Encountered ground conditions are indicated on the logs which are provided in Appendix IV.

3.2 In-Situ Standard Penetration Testing (SPT)

In-situ geotechnical testing was conducted using the Standard Penetration Test (SPT) and where the ground is granular, a 60° cone (SPT(C)) was used instead of the sampling tube. The results are shown in the probehole logs in Appendix IV and presented in Table 4.4 and discussed in Section 6.0.

3.3 In-Situ California Bearing Ratio (CBR)

In-situ CBR tests were undertaken using a Mexi-probe at depths generally ranging between 0.05-0.95mbgl.

Testing was completed along proposed roadways at depths likely to intersect the sub-formation level (subject to confirmation of finished levels). The results are discussed within Section 4.6 and presented within ERGO Drawing 25-2269-005 enclosed within Appendix III.

3.4 Permeability Tests

Falling head permeability tests were undertaken within environmental monitoring wells (WS103) in order to assess the likely permeability of the underlying strata. The results are presented in Table 4.5 and the test certificates are included within Appendix VIII.

3.5 Laboratory Analysis

Selected samples were submitted to i2 where selected soil samples were submitted for a range of chemical analysis comprising metals, pH, total sulphate, water soluble sulphate (2:1 extract), total and speciated poly-aromatic hydrocarbons (PAHs), SVOCs, VOCs, asbestos, total and speciated petroleum hydrocarbon (TPH), WAC and Total Organic Carbon. Testing results are included in Appendix V and discussed in Section 5.0.

Selected samples were submitted to G2M Laboratory where the following geotechnical tests were undertaken:

- Moisture Content;
- Atterberg Limits Determinations; and,
- Particle Size Distribution.

Laboratory analysis sheets are included in Appendix VII, with results summarised and discussed in Section 4.0.

4. GROUND AND GROUNDWATER CONDITIONS

4.1 Ground and Groundwater Conditions

The Ground Investigation generally confirms the published geology and identifies the strata set out in Table 4.1 below:

Table 4.1 Summary of Strata

STRATA	GENERAL DESCRIPTION	TYPICAL DEPTH (mbgl):				LOCATION
		TOP:		BASE:		
		MIN:	MAX:	MIN:	MAX:	
MADE GROUND	MG: Brown sandy gravelly topsoil	0.00	-	0.10	0.40	WS101-WS105, TP101-TP107
MADE GROUND	MG: Greyish brown clayey gravelly sand	0.10	0.30	0.50	1.50	WS102-WS103, WS105, TP103-TP104, TP106-TP107
CLAY	Soft brown sandy gravelly CLAY	0.15	0.70	0.60	1.40	TP104-TP105
CLAY	Firm to very stiff brown sandy gravelly CLAY	0.40	2.00	1.40	3.20	WS103-WS105, TP104-TP106
SAND	Brown clayey gravelly SAND	0.20	1.50	0.40	3.20	WS101, WS103-WS104, TP101-TP102, TP104-TP105, TP107
SAND	Medium dense to very dense brown clayey gravelly SAND	0.60	1.20		1.50	WS101-WS102
GRAVEL	Brown sandy GRAVEL	1.20	2.40	2.80	3.30	TP101-TP103, TP106
GRAVEL	Medium dense brown silty clayey sandy GRAVEL	1.00			1.20	WS101

Made Ground

Made Ground deposits were encountered within all advanced exploratory probehole locations to maximum proven depths of 1.50mbgl., noted to be deeper within the north-eastern site area.

Made Ground generally comprised a surficial reworked brown sandy gravelly topsoil overlying a greyish brown gravelly sand with localised anthropogenic inclusions noted.

Drift Deposits

Drift deposits were encountered within all exploratory holes to maximum proven depths of 3.30mbgl. generally comprising interbedded firm to very stiff sandy gravelly CLAYs and medium to dense to very dense clayey SANDs and GRAVELs.

Soft sandy gravelly CLAYs were locally encountered in the eastern site area within TP104 between 0.70-1.40mbgl. and TP105 between 0.15-0.60mbgl.

Solid Geology

Solid geology was not encountered during the site investigation.

Groundwater

Groundwater was encountered within 8no. advanced exploratory holes at depths between 1.00-2.40mbgl as damp strata, seepages and groundwater strikes.

Subsequent groundwater monitoring recorded limited groundwater within the environmental monitoring installations at depths between 0.77-1.07mbgl.

4.2 Obstructions, Stability, Ease of Excavation & Anomalies

Natural strata were generally excavated with relative ease. The sides of the exploratory trial pit excavations appeared to be generally stable during excavation.

No evidence of buried features was encountered within the advanced exploratory probeholes.

No visual/olfactory evidence of contamination was identified within the advanced probeholes.

4.3 Soil Consistency

Undrained shear strength values of encountered natural cohesive soils were measured using field hand shear vane tests. Results are presented in Table 4.2, which indicate the clay soils to vary between soft and very stiff. Strength test data is generally consistent with the field descriptions of the soils given above.

Table 4.2 Summary of Hand Shear Vane Tests

DEPTH (mbgl.)	SHEAR STRENGTH (kPA)
0.00-0.99	30-50
1.00-1.99	70-90
2.00+	130

Results of the Standard Penetration Tests, including inferred undrained shear strengths derived from SPTs are included within Table 4.3 (overleaf).

4.4 Soil Plasticity

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

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

PI results are compared against guidance given in the NHBC Standards, Chapter 4.2 (revised January 2014), which advocates the use of modified Plasticity Index (I’p), defined as:
I’p = Ip * (%< 425µm/100)
ie if PI is 30%, but the soil contains 80% < 425µm, then: I’p = 30 * 80/100 = 24%.
It should be noted that in accordance with the requirements of BS 1377, the % passing the 425µm sieve is routinely reported by testing labs.

The Atterberg Limits determinations, summarised in Table 4.4 below, show the clay to be generally of low to intermediate plasticity.

Table 4.4 Summary of Plasticity Index Test Results

LOCATION	DEPTH (m)	NATURAL MOISTURE CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	PASSING 425µm SIEVE (%)	MODIFIED PLASTICITY INDEX	NHBC VOLUME CHANGE POTENTIAL
WS103	1.20	12.8	14	25	11	92	10.12	Low
WS104	1.50	12.7	16	34	18	92	16.56	Low
WS105	0.70	27.8	20	46	26	91	23.66	Medium
WS105	1.80	8.6	13	25	13	91	11.83	Low
TP104	1.00	31.7	24	48	24	92	22.08	Medium
TP104	2.50	10.6	12	23	11	92	10.12	Low

Atterberg Limits testing indicate soils would be deemed to be Medium Volume Change Potential in accordance with the classification system utilised by the LABC / NHBC guidance.

4.5 Particle Size Distribution

Representative samples were sent for Particle Size Distribution analysis; the results are presented within Appendix VII.

Results indicate analysed materials to comprise brown silty gravelly SAND & brown silty sandy GRAVEL which is in line with the field descriptions.

Table 4.3 Standard/Cone Penetration Test Results

BOREHOLES	DEPTH (mbgl)	MATERIAL FIELD DESCRIPTION	CPT/SPT "N" VALUE	CORRECTED "N" VALUE $(N_1)_{60}$	TERZAGHI & PECK RELATIVE DENSITY (SANDS)	EUROCODE SOIL STRENGTH	CONSISTENCY (BS5930)	TERZAGHI & PECK APPROXIMATE UNDRAINED SHEAR STRENGTH (kN/m^2)
WS101	1.00	Clayey gravelly SAND	29	29.24	Medium Dense	N/A	N/A	N/A
WS101	1.50	Gravelly SAND	50	47.51	Dense	N/A	N/A	N/A
WS102	1.00	Clayey gravelly SAND	29	29.24	Medium Dense	N/A	N/A	N/A
WS102	1.50	Gravelly SAND	50	47.51	Dense	N/A	N/A	N/A
WS103	1.00	Sandy gravelly CLAY	32	32.26	N/A	Very high strength	Very Stiff	161.30
WS103	1.40	Sandy gravelly CLAY	50	47.98	N/A	Very high strength	Very Stiff	239.89
WS104	1.00	Sandy gravelly CLAY	30	30.24	N/A	Very high strength	Very Stiff	151.22
WS104	1.60	Sandy gravelly CLAY	50	47.08	N/A	Very high strength	Very Stiff	235.40
WS105	1.00	Sandy gravelly CLAY	23	23.19	N/A	High strength	Very Stiff	115.94
WS105	2.00	Silty sandy gravelly CLAY	50	45.68	N/A	Very high strength	Very Stiff	228.38

4.6 California Bearing Ratio

The California Bearing Ratio (CBR) for soils were measured using an in-situ Mexiprobe within proposed hardstanding. Results indicate values in the order of 3.0-4.0% at depths of c.0.05-0.95mbgl. Testing locations are shown on ERGO drawing 25-2269-005.

It should be noted that the CBR's reported herein were obtained from soils in a highly undisturbed state, however if the topsoil and surface cover is removed during periods of wetter climatic condition, the formation may soften reducing the CBR.

4.7 pH and Sulphate

Chemical analyses, shown in Table 4.5, indicate soils generally meet Class DS-1, Aggressive Chemical Environment for Concrete Classification (ACEC), AC-1 in accordance with BRE Special Digest 1 (2005) though locally acidic conditions meeting DS-1 AC-2z were noted.

Table 4.5 Summary of pH and Sulphate Data

LOCATION	DEPTH (m)	SO_4 IN 2:1 WATER / SOIL (mg/l)	pH VALUE	CLASSIFICATION
WS105	1.60	33	7.9	DS-1 AC-1
WS101	1.10	37.8	7.5	DS-1 AC-1
WS102	1.30	17.8	8.2	DS-1 AC-1
WS103	1.35	25.6	7.3	DS-1 AC-1
WS104	0.90	17.3	8.0	DS-1 AC-1
TP101	0.20	21.9	7.4	DS-1 AC-1
TP104	0.50	21.7	4.6	DS-1 AC-2Z
TP106	0.20	32.4	7.1	DS-1 AC-1
TP107	0.50	23.3	6.2	DS-1 AC-1
WS101	0.10	37.5	5.1	DS-1 AC-2Z
WS102	0.20	21.4	7.6	DS-1 AC-1

4.8 Soil Infiltration

In-situ variable (falling) head permeability tests were undertaken within WS103. Results are shown in Table 4.6 and test certificates included in Appendix VIII.

Table 4.6 Soil Infiltration Results

LOCATION	DEPTH (m)	MATERIAL	SOIL INFILTRATION RATE (m/s)
WS103	0.50-1.00	Sandy gravelly CLAY	2.21×10^{-5}

Soil infiltration was taken over the wetted area from between 75% and 25% of the effective depth. Testing showed drift deposits to have poor soakage potential, failing to soakaway within tested locations with an inferred infiltration of 2.21×10^{-5} determined.

It is therefore considered soakaway drainage may be unsuitable for the proposed development, due to the encountered clay strata. Though the application of soakaway drainage will ultimately be dependent on the specific requirements of the development and full soakaway testing in accordance with BRE365 guidance. Soakaways should be designed in accordance with BRE Special Digest 365 - *Soakaway Design*

4.9 Utilities Assessment

A formal utility survey has not been completed. However, evidence of services were observed during the site walkover with a Northern Gas Networks gas pipeline recorded adjacent to the eastern site boundary, extending across the Calder and Hebble Navigation watercourse and manhole covers noted in the northern site area.

A review of statutory services indicates the presence of BT, NGN, NPG and Yorkshire Water utilities onsite and adjacent to the site. Further, unidentified services may be present and should be adequately considered as part of any redevelopment. It is understood that the bisecting gas pipeline is to be diverted as part of the proposed redevelopment. Suitable management of all services will be required as part of any phase of redevelopment.

4.10 Ground Gas

A ground gas assessment has been completed in accordance with guidance provided within CIRIA 665 *Assessing risk posed by hazardous ground gases to buildings*.

Investigation Rationale

The ICSM and subsequent Ground Investigation identified limited onsite and adjacent Made Ground as potential sources of ground gas generation. Based the identification of these sources and ground investigation findings, ERGO has determined that the site represents a low/moderate ground gas source generation potential.

The location rationale is presented within Table 4.7.

Table 4.7 Ground Gas Monitoring Location Rationale

LOCATION	GROUND GAS SOURCE	MONITORING WELL DEPTH (m)
WS101	General ground conditions within the footprint of the proposed structure and associated with adjacent developments.	0.50-1.00
WS102		0.50-1.00
WS103		0.50-1.00
WS104		0.50-1.00
WS105		1.00-2.00

Monitoring Methodology

Concentrations of methane (CH_4), carbon dioxide (CO_2) and Oxygen (O_2) were measured using an infra-red gas analyser (GFM435) calibrated to a reference standard (before and after each survey) and gas flow rates were measured using an attached flow pod.

Gas measurements were recorded for a minimum of 60s at each location, at which point the maximum concentration of CH_4 and CO_2 together with the lowest concentration of O_2 were recorded. The results of the ground gas monitoring are presented in Table 4.8 (overleaf).

Table 4.8 Summary of Ground Gas Monitoring Results

WELL	DATE	CH_4 %V/V	CH_4 GSV	CO_2 %V/V	CO_2 GSV	O_2 %V/V	ATMOS.		FLOW (L/HR)	BASE DEPTH (MBGL)	WATER DEPTH (MBGL)
							(mb)	Dynamic			
WS101	02/05/25	0.00	<0.01	0.90	<0.01	20.90	995	Falling	0.00	1.00	0.89
	16/05/25	0.00	<0.01	0.80	<0.01	20.30	1024	Falling	0.00	1.00	0.90
	21/05/25	0.00	<0.01	0.90	<0.01	20.10	1013	Falling	0.00	1.00	0.96
	25/06/25	0.00	<0.01	1.40	<0.01	20.20	999	Falling	0.00	1.00	Dry
	15/07/25	0.00	<0.01	1.20	<0.01	20.20	1005	Rising	0.00	1.00	Dry
	20/08/25	0.00	<0.01	0.90	<0.01	20.40	1015	Rising	0.00	1.02	1.02
WS102	02/05/25	0.00	<0.01	0.50	<0.01	20.80	995	Falling	0.00	1.00	0.93
	16/05/25	0.00	<0.01	0.80	<0.01	20.50	1024	Falling	0.00	1.00	0.93
	21/05/25	0.00	<0.01	0.90	<0.01	20.10	1013	Falling	0.00	1.00	0.95
	25/06/25	0.00	<0.01	0.90	<0.01	20.60	999	Falling	0.00	1.00	Dry
	15/07/25	0.00	<0.01	0.90	<0.01	20.40	1005	Rising	0.00	1.00	0.93
	20/08/25	0.00	<0.01	0.70	<0.01	20.00	1015	Rising	0.00	1.00	0.98
WS103	02/05/25	0.00	<0.01	1.40	<0.01	20.20	995	Falling	0.00	1.00	0.77
	16/05/25	0.00	<0.01	1.10	<0.01	20.30	1024	Falling	0.00	1.00	Dry
	21/05/25	0.00	<0.01	1.10	<0.01	20.10	1013	Falling	0.00	1.00	Dry
	25/06/25	0.00	<0.01	1.20	<0.01	20.40	999	Falling	0.00	1.00	Dry
	15/07/25	0.00	<0.01	0.90	<0.01	20.40	1005	Rising	0.00	1.00	Dry
	20/08/25	0.00	<0.01	0.90	<0.01	20.40	1015	Rising	0.00	1.00	Dry
WS104	02/05/25	0.00	<0.01	1.00	<0.01	20.50	995	Falling	0.00	1.00	0.97
	16/05/25	0.00	<0.01	1.00	<0.01	20.10	1024	Falling	0.00	1.03	1.03
	21/05/25	0.00	<0.01	0.90	<0.01	20.30	1013	Falling	0.00	1.00	0.97
	25/06/25	0.00	<0.01	1.20	<0.01	20.40	999	Falling	0.00	1.00	0.82
	15/07/25	0.00	<0.01	1.00	<0.01	20.90	1005	Rising	0.00	1.00	0.97
	20/08/25	0.00	<0.01	1.10	<0.01	20.20	1015	Rising	0.00	1.02	1.02
WS105	02/05/25	0.00	<0.01	0.70	<0.01	20.70	995	Falling	0.00	1.90	1.07
	16/05/25	0.00	<0.01	0.90	<0.01	20.20	1024	Falling	0.00	1.85	1.45
	21/05/25	0.00	<0.01	1.20	<0.01	20.10	1013	Falling	0.00	1.45	1.2
	25/06/25	0.00	<0.01	1.20	<0.01	20.40	999	Falling	0.00	1.85	1.23
	15/07/25	0.00	<0.01	1.40	<0.01	20.00	1005	Rising	0.00	1.85	1.45
	20/08/25	0.00	<0.01	0.20	<0.01	20.20	1015	Rising	0.00	1.86	1.55

5. TIER I QUALITATIVE CONTAMINATED LAND RISK ASSESSMENT

ERGO has undertaken a Tier 1 qualitative risk assessment to determine if any potential contaminants within the underlying soils and groundwater pose an unacceptable level of risk to the identified receptors.

5.1 Human Health Risk Assessment

At Tier 1 stage the long term (chronic) human health toxicity of the soil has been assessed by comparing concentrations of organic and inorganic compounds to reference values published in LQM/CIEH S4UL (S4UL3747). Results of this comparison are summarised within Table 5.1.

Table 5.1 Summary of Toxicity Assessment for a Commercial End Use

DETERMINANT	UNIT	GAC	N	MC	LOC. OF EX	PATHWAY	ASSESSMENT
Arsenic	mg/kg	640	7	42	N/A	1	No Further Action
Cadmium	mg/kg	190	7	0.4	N/A	1	No Further Action
Chromium (VI)	mg/kg	33	7	<1.2	N/A	1	No Further Action
Lead	mg/kg	1100	7	120	N/A	1	No Further Action
Mercury	mg/kg	58	7	<0.3	N/A	2	No Further Action
Nickel	mg/kg	980	7	22	N/A	1	No Further Action
Selenium	mg/kg	12000	7	1.7	N/A	1	No Further Action
Copper	mg/kg	68000	7	75	N/A	1	No Further Action
Zinc	mg/kg	730000	7	130	N/A	1	No Further Action
Asbestos	Fibres	NFD	7	NFD	N/A	4	No Further Action
Naphthalene	mg/kg	190	4	1.6	N/A	2	No Further Action
Acenaphthylene	mg/kg	83000	4	0.12	N/A	3	No Further Action
Acenaphthene	mg/kg	84000	4	1.2	N/A	1	No Further Action
Fluorene	mg/kg	63000	4	0.86	N/A	1	No Further Action
Phenanthrene	mg/kg	22000	4	7.2	N/A	3	No Further Action
Anthracene	mg/kg	520000	4	1.4	N/A	3	No Further Action
Fluoranthene	mg/kg	23000	4	8.7	N/A	3	No Further Action
Pyrene	mg/kg	54000	4	7.9	N/A	3	No Further Action
Benz'(a)Anthracen'	mg/kg	170	4	4.4	N/A	3	No Further Action
Chrysene	mg/kg	350	4	4.9	N/A	3	No Further Action
Benz'(b)Fluoranthe'	mg/kg	44	4	5.3	N/A	3	No Further Action
Benz'(k)Fluoranthe'	mg/kg	1200	4	2.7	N/A	3	No Further Action
Benzo(a)Pyrene	mg/kg	35	4	4.5	N/A	3	No Further Action
Inden'(123-cd)Pyre'	mg/kg	500	4	2.5	N/A	3	No Further Action
Dibenz'(a,h)Anthra'	mg/kg	3.5	4	0.68	N/A	3	No Further Action
Benzo(ghi)Perylene	mg/kg	3900	4	2.7	N/A	3	No Further Action
TPH C5-C6 (aliph)	mg/kg	3200	4	<0.01	N/A	2	No Further Action
TPH C6-C8 (aliph)	mg/kg	7800	4	<0.01	N/A	2	No Further Action
TPH C8-C10 (aliph)	mg/kg	2000	4	<0.01	N/A	2	No Further Action
TPH C10-C12 (aro)	mg/kg	16000	4	3.1	N/A	2	No Further Action
TPH C12-C16 (aro)	mg/kg	36000	4	14	N/A	2	No Further Action
TPH C16-C21 (aro)	mg/kg	28000	4	30	N/A	1	No Further Action
TPH C21-C35 (aro)	mg/kg	28000	4	84	N/A	1	No Further Action

Notes
Main Exposure Pathways: 1 = Soil Ingestion, 2 = Vapour Inhalation (indoor), 3 = Dermal Contact & Ingestion, 4 = Dust Inhalation.
Abbreviations: GAC = General Assessment Criteria, n = number of samples, MC = Maximum Concentration; Loc of Ex = Location of Exceedance; NFD = No Fibres Detected
The Tier 1 GAC for the hydrocarbon fraction is derived from the CIEH assessment for petroleum hydrocarbons Criteria Working Group (CWG) for both aliphatic and aromatic compounds. ERGO has utilised the Tier 1 values for aliphatic compounds for the volatile and semi volatile fractions (C_5-C_{12}) and the Tier 1 values for aromatic compound for the non-volatile fractions (C_{12}-C_{35}).

Referring to Table 5.1, the results of this direct comparison indicates that no samples exceed the screening criteria for a residential end use.

No significant concentrations of SVOCs or VOCs were identified in the soils submitted for chemical analysis.

Based on the above there is no potential unacceptable level of risk to human health for future commercial end users and construction workers.

Reworked topsoil materials would generally be considered suitable for reuse though suitable screening may be locally required where texturally unsuitable inclusions are noted prior to reuse. Underlying natural subsoils are suitable for re-use within proposed landscaped areas.

At this time a Remediation Strategy is not considered to be required.

Should unexpected contamination be encountered during the works, the works in the area should stop immediately and ERGO should be notified. Where required, an appropriate sampling and management plan detailing assessment and subsequent management would then be agreed prior to works resuming.

5.2 Controlled Waters Risk Assessment

The site sensitivity with respect to controlled waters was previously determined to be low/moderate within the ERGO Phase I Geo-Environmental Assessment.

To further refine the ICSM, ERGO has undertaken an initial qualitative assessment of the soil data analysis to assess the potential for a source of separate phase or dissolved phase contamination originating from either a defined onsite source or from impacted soils. This assessment is summarised in Table 5.2.

Table 5.2 Qualitative Risk to Controlled Waters from Soil Analytical Results

BTEX ->1mg/kg	All concentrations are below the laboratory LOD.
Total VOC -> 1mg/kg	Concentrations are below the laboratory LOD.
Total SVOC -> 1 mg/kg	Concentrations are below the laboratory LOD.
C5-C10 -> 5mg/kg	Concentrations are below the laboratory LOD.
C10-C12 -> 10mg/kg	Concentrations are below the laboratory LOD.
C12-C16 -> 50mg/kg	Concentrations are below 50mg/kg.
Naphthalene -> 2mg/kg	Concentrations are below2mg/kg.
Total PAH -> 10mg/kg	Total PAH concentrations >10mg/kg have been recorded TP104 0.50 (12.4mg/kg), TP106 0.20 (56.6mg/kg) and WS102 0.20 (12.5mg/kg)
Heavy metals -> 500mg/kg	Concentrations of heavy metals are all below 500mg/kg.

In due consideration of the ICSM which has identified a potential pollutant linkage associated with the migration towards the underlying Secondary A Aquifer and adjacent surface water receptors ERGO has undertaken a Tier I controlled waters risk assessment comprising comparison of leachate analysis from samples of the Made Ground to Drinking Water Standards and Environmental Quality Standards (EQS). These are presented in Table 5.3.

Table 5.3 Comparison of Groundwater Analysis with Tier 1 Screening Levels

DETERMINAND	UNITS	EQS SCREENING VALUE [1, 2, 3]		DWS [3,4,5]	N	MC	LOC OF EX	ASSESSMENT
		AA	MAC					
Arsenic	µg/l	50	-	10	2	<1.0	N/A	No Further Action
Cadmium	µg/l	0.08	0.45	5	2	<0.08	N/A	No Further Action
Chromium (III)	µg/l	4.7	-	50	2	1.4	N/A	No Further Action
Copper (hardness)	µg/l	1-28		2000	2	7.9	N/A	No Further Action
Lead	µg/l	1.2	14	10	2	1.3	N/A	No Further Action
Mercury	µg/l	-	0.07	1.0	2	<0.5	N/A	No Further Action
Nickel	µg/l	4	34	20	2	1.1	N/A	No Further Action
Selenium	µg/l		-	10	2	<4.0	N/A	No Further Action
Zinc (hardness)	µg/l	8-125	-	-	2	6.9	N/A	No Further Action
pH	6-9				2	6.4	N/A	No Further Action

Notes
AA - Annual Average
MAC- Maximum Admissible Concentration

1. The Water Environment (Water Framework Directive) (England and Wales) (Amendment) Regulations (2015)
2. Directive establishing a framework for Community action in the field of water policy (Water Framework Directive)
3. Council Directive on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community (Dangerous Substances Directive) - List II substances
4. Council Directive on the quality of water intended for human consumption (Drinking Water Directive)
5. WHO Guidelines for Drinking Water Quality. Third edition (2004)

For the purposes of the Tier 1 assessment, ERGO has compared the laboratory test data directly to the DWS and EQS values, which are for the protection of drinking water quality and aquifer status. This assessment is considered to be conservative due to presence of significant thicknesses of likely low permeability drift deposits underlying the site reducing the likelihood of infiltration to the underlying receptor and therefore source-receptor pathways.

This comparison did not identify any contaminants at concentrations in excess of the screening values. No visual/olfactory evidence of contamination has been identified.

Therefore a negligible risk to controlled waters and the wider environment has been determined. No further assessment is considered necessary.

5.3 Ground Gas

The potential impact on the development from ground gases has been assessed with reference to standards and guidelines published in CIRIA Report 665 (*Assessing risks posed by hazardous ground gases to buildings*, 2007).

The Phase I report and subsequent Ground Investigation has identified the following potential sources of ground gas:

- Onsite and adjacent Made Ground.

Groundwater
Within the monitoring visits undertaken, groundwater has been recorded between 0.77-1.55mbgl. though noted to be locally absent.

Gas Flow
During the monitoring undertaken to date, significant flows have not been recorded within any environmental monitoring installation.

Gas Concentrations
Negligible methane concentrations have been recorded within monitoring well installations during the visits undertaken.

Limited carbon dioxide concentrations were recorded within all monitoring wells at concentrations ranging from 0.50-1.40%v/v.

Gas Assessment

In accordance with the methodology outlined with the CIRIA publication C665, ERGO have utilised the results of the ground gas monitoring surveys to calculate Gas Screening Values (GSV). The GSVs for the monitoring positions are summarised in Table 5.4.

Table 5.4 Gas Risk Profile & Location

LOCATION	Max CO_2	GSV	Max CH_4	GSV	Classification
WS101	1.40	<0.01	0.00	<0.01	CS1
WS102	0.90	<0.01	0.00	<0.01	CS1
WS103	1.40	<0.01	0.00	<0.01	CS1
WS104	1.20	<0.01	0.00	<0.01	CS1
WS105	1.40	<0.01	0.00	<0.01	CS1

The GSVs have been compared to the criteria outlined with CIRIA C665 to determine the level of risk to the proposed development and to ensure the appropriate remedial options are incorporated into any future building design in this area.

Ground gas monitoring indicates the site will be classed as CS1 and it is considered that gas protection measures will not be required within proposed structures. It is recommended that Regulatory confirmation of this assessment is sought.

5.4 Preliminary Waste Characterisation Assessment

The procedures to be followed in carrying out the assessment of potentially hazardous waste are set out in the following document:

- *Waste Classification: Guidance on the classification and assessment of waste (1st Edition 2015). Technical Guidance WM3, Environment Agency, 2015.*

One touch data, Haz Waste assessment tool has been utilised for the first step of the waste classification, the output from the assessment is enclosed and has been summarised below and shown within Appendix V.

Asbestos was not identified in the samples tested.

In view of the above assessment, the samples tested have been preliminarily classified as non-hazardous.

It should be noted that the above conclusions relate to specific samples tested during the previous investigation, and therefore material excavated during redevelopment will not necessarily have the same classification. It is recommended that waste materials varying from the samples tested and intended to be removed from site are tested individually to determine the classification of the waste. It is additionally noted that topsoil materials are generally considered to be non-hazardous due to elevated organic content in excess of the inert threshold, therefore it is unlikely that topsoil would be accepted at an inert landfill.

The waste classification should be confirmed with the individual landfill accepting the waste prior to disposal. These test results should not be regarded as being representative of materials on site for landfill export purposes since preparatory and excavation works often result in mixing of different types of materials.

5.5 Revised Conceptual Site Model

Following completion of the intrusive site investigation, chemical analysis and risk assessment the conceptual model shown in Table 5.5 (overleaf) has been prepared for the site.

For the avoidance of doubt, ERGO should be contacted should evidence of unforeseen contamination be encountered.

Table 5.5 Revised Conceptual Site Model

PATHWAY	RECEPTOR	CONTAMINANT (SOURCE)	PROBABILITY	RISK	ASSESSMENT AND RECOMMENDATIONS
Inhalation of soil, fibres and dust.	Future site users and offsite receptors.	Potential ACM in Made Ground onsite	Very low likelihood	High	No ACM was noted within samples tested on site. Therefore, the risk from ACM is considered to be very low. ***Recommendation***: No further action.
Ingestion of soils and direct contact with contaminated soils	Future site users and offsite receptors.	Potential PAH compounds in Made Ground onsite	Low likelihood	Moderate	Unlikely, no significant contamination was recorded within the samples tested. ***Recommendation***: No further action.
Inhalation of gas. Migration through permeable strata and preferential pathways. Explosion in confined spaces.	Future site users. Buildings. Offsite land users.	Methane, carbon dioxide. (Limited Made Ground on site, adjacent coal seam).	Low likelihood	Low	Initial ground gas monitoring demonstrates the site will likely be classified as CS-1. ***Recommendation***: Confirmation of ground gas assessment with Regulators.
Surface Run-off. Vertical Migration.	Groundwater (aquifers) Surface water (adjacent pond).	Potentially mobile contaminants in Made Ground.	Unlikely	Low	Unlikely, no significant mobile contamination was recorded within samples tested. ***Recommendation***: No further action.
Sulphate attack on concrete.	Building structure.	Sulphate (potential ash within made ground).	Unlikely	Low	Unlikely probability given the concrete classification for the site has been determined to be DS-1 AC-1 & DS-1 AZ2z. ***Recommendation:*** Use concrete of appropriate specification.

6. GEOTECHNICAL ASSESSMENT

6.1 Proposed Development

ERGO understands that you are considering the proposed acquisition and future redevelopment of the site for a commercial end-use with associated roads, car parking/yard area and utility infrastructure.

Drawing 25-2269-002 (Appendix III) identifies the proposed development layout.

6.2 Summary of Ground Conditions

Made Ground
Made Ground deposits were encountered within all advanced exploratory probehole locations to maximum proven depths of 1.50mbgl., noted to be deeper within the north-eastern site area.

Made Ground generally comprised a surficial reworked brown sandy gravelly topsoil overlying a greyish brown gravelly sand with localised anthropogenic inclusions noted.

Drift Deposits
Drift deposits were encountered within all exploratory holes to maximum proven depths of 3.30mbgl. generally comprising interbedded firm to very stiff sandy gravelly CLAYs and medium to dense to very dense clayey SANDs and GRAVELs.

Soft sandy gravelly CLAYs were locally encountered in the eastern site area within TP104 between 0.70-1.40mbgl. and TP105 between 0.15-0.60mbgl.

Solid Geology
Solid geology was not encountered during the site investigation.

Groundwater
Groundwater was encountered within 8no. advanced exploratory holes at depths between 1.00-2.40mbgl as damp strata, seepages and groundwater strikes. Subsequent monitoring has recorded groundwater at depths of 0.73-1.07mbgl.

6.3 Site Preparation

The site should be cleared and any vegetation below areas of proposed development stripped in accordance with Series 200 of the Specification for Highway Works. This should include:

- Roots present below the footprint of proposed structures and infrastructure should be grubbed out and the resulting void infilled with suitable compacted engineered fill;
- Redundant services impacting the proposed development should be sealed off and grubbed out and replaced with suitable compacted engineered fill or alternatively appropriate stand-offs incorporated in to designs; and,
- Whilst not encountered, buried obstructions and relict foundations may be present in areas not investigated. Where encountered, these should be excavated from below the proposed development footprint with the resulting void backfilled.

6.4 Foundation Conditions & Assessment of Potential Bearing Capacities

In due consideration of the identified ground conditions, in-situ and laboratory geotechnical testing, ERGO has undertaken an assessment of the net safe Allowable Bearing Pressure (ABP) within the underlying natural stratum to assist in the detailed design of foundations and infrastructure and determine the target founding stratum.

Subject to receipt of finished floor levels (FFLs) and aboricultural survey it is considered that for the majority of the site underlain by firm to stiff clays and medium dense to very dense granular soils, subject to confirmation of proposed loadings conventional pad footings will likely be appropriate founding within this material.

Based on in-situ testing results and visual descriptions, a safe bearing capacity in the order of 120kN/m^2 has been determined for pad footings foundations up to 1.00m wide founding on natural firm to stiff clays and medium dense granular deposits at depths of at least 0.90mbgl. At this width of foundation and bearing pressure settlements should be within tolerable limits.

If the founding stratum is found to be variable, and particularly if it is found to comprise both clay and sand, or should rockhead be encountered at founding depth, foundations should either be suitably reinforced, or foundations should be entirely placed within a single material type in order to limit differential settlement.

Foundation depths within areas of cohesive strata should take account of the presence of existing and proposed trees with foundations deepened locally, to mitigate the potential for volumetric instability attributed to fluctuations in moisture content, in accordance with the requirements of NHBC standards.

It is recommended that at working drawing stage a foundation schedule is prepared for the development taking account of the physical change of natural clay soils and the current / proposed locations of trees.

Recorded groundwater depths should be taken in to account when planning excavation works. Care should be taken when extending footing trenches not to penetrate weaker soil, or soil that may be detrimentally impacted by groundwater.

Clay soils can deteriorate rapidly on exposure, particularly in periods of wet weather and frost. It would be prudent to protect exposed soils in foundation excavations with a concrete blinding layer, particularly if they remain open for an extended period.

ERGO should be contacted for advice should unexpected ground conditions be encountered.

6.5 Floor Slabs/Yard

At this time no loadings have been provided however, a ground bearing slab should be viable for internal and external slabs; however, these will need to be constructed utilising a sub-base with the thickness designed by a structural engineer to ensure settlement tolerances are taken into consideration along within proposed loadings, including dynamic loadings (where appropriate). Where a ground bearing floor slab is to be constructed within the conjectured zone of tree influence, the clay will need to be removed to ensure that any desiccated soil cannot swell and induce heave to the structure.

6.6 Heave Precautions

The site has been proven to be underlain by clay soils susceptible to volumetric instability due to fluctuations in moisture content, particularly within influencing distance of trees as per the NHBC / LABC conjectured zones of influence.

As the clay is identified to be Medium Volume Change Potential appropriate heave precautions are required to be incorporated in to designs and should be confirmed by the appointed structural engineer. A summary of heave precautions is present in Table 6.1.

Table 6.1 Summary of Heave Precautions

		MINIMUM VOID DIMENSION FOR FOUNDATIONS, GROUND BEAMS AND SUSPENDED IN-SITU CONCRETE GROUND FLOORS		MINIMUM VOID DIMENSIONS UNDER PRE-CAST CONCRETE AND SUSPENDED TIMBER FLOORS
Volume Change Potential	**Foundation Depth (m)**	**Thickness of Void Former Against Side of Foundation or Ground Beam (mm)**	**Thickness of Void Underside of Edge Beam and Floor Slab (mm)**	**Void Dimension (mm)**
High (>40)	>2.50	Engineer Design		Engineer Design
	2.00-2.50	35	150	300
	1.50-2.00	25	75	
Medium (20-40)	>2.50	Engineer Design		Engineer Design
	2.00-2.50	25	100	250
	1.50-2.00	25	50	
Low (<20)	2.00-2.50	-	50	200
	>2.00	No Special Precautions		

*The thickness of compressible material required should be established from the manufacturer's recommendations, but generally will be approximately twice the void dimension shown.

6.7 Pavement Construction

A programme of remediation and enabling works will be required to remediate the proposed road sub-grade in accordance with the requirements of the highways design manual (series 600) for a Method Compaction.

It is considered that granular soils can be re-engineered to ensure 5% within the sub-grade during favourable climatic conditions. Natural clay soils will provide a CBR in the order of 3-5% during drier climatic periods, however if water is allowed to shed onto the formation or works take place during inclement weather periods, the CBR will reduce to <2% which will require specialist engineering of the sub-grade.

CBR values of 3.0-4.0% have been obtained to date at depths between 0.05-0.95mbgl.

6.8 Drainage

Preliminary falling head soakaway data undertaken within the monitoring installation noted moderate soakaway potential.

Exploratory holes recorded variable drift deposits across the site and within areas of extended cohesive deposits and high groundwater levels infiltration rates are anticipated to be variable. Therefore, it is considered that the use of soakaway drainage may be unsuitable for this site.

If soakaway drainage is to be considered, full BRE365 Testing will be required to inform the detailed design.

6.9 Concrete Durability

Chemical analyses, shown in Table 4.6, indicates subsurface concrete can be designed in accordance with Design Sulphate Class DS-1, AC-1 and DS-1 AC-2z in accordance with the recommendations provided in BRE Special Digest 1 (2005).

6.10 Civil Engineering

Site observations indicate excavations should be feasible in the near surface with normal plant. Whilst unencountered to date, obstructions encountered within the footprint of proposed structures shall be grubbed out during demolition and/or reduced level dig for sub-structures.

Trial pits were noted to be generally stable across the site area. However, due to the depth and variability of superficial deposits and potential for trench collapse, it is considered that all excavations are supported or are battered back in accordance with CIRIA R97 guidance.

Groundwater was encountered at depths of 1.00-2.40mbgl. as seepages and strikes during the site works with subsequent monitoring recording groundwater at depths of c.0.73-1.07mbgl. However, the rapid rate of advancement of the exploratory holes may mask minor seepages and it should be borne in mind that water levels fluctuate with a number of influences including season, rainfall, dewatering and pumping activities. Therefore, water levels higher than those found during this investigation may be encountered.

Table 6.2 discusses the Civil Engineering Excavation Risk Matrix.

Table 6.2 Civil Engineering Excavation Risk Matrix

Risk Item	Present	Comment
Running Sands	No	Running sands have not been encountered within the advanced probeholes.
Minor Water ingress	Yes	Minor water ingress will require localised dewatering / sump pumping during the construction of site drainage infrastructure, particularly in the south of the site. Ingress of water into foundation excavation will potentially flood foundation excavations limiting the viability of spread foundations to be constructed.
Shallow Bedrock	No	Shallow bedrock has not been encountered within the advanced probeholes.

6.11 Construction Activity and Inspection

The following activities and inspections should be incorporated in to the site works:

- Excavations where access is required should be subject to a risk assessment from a competent person and where appropriate mitigation measures such as benching back the sides or use of support systems in accordance with CIRIA R97 utilised;
- Assessment of the onsite utilities should be undertaken with adequate stand-off zones agreed;
- Where access to confined spaces is required appropriate mitigation measures should be addressed within the Construction Stage Health and Safety Plan. Particular account should be taken of the gas results; and,
- The presence of potential contamination and mitigation measures should be addressed as part of the Construction Stage Health and Safety Plan and should include measures to design out the risks, reduce their impact and finally the use of PPE.

7. FURTHER WORKS

Based on the findings of the intrusive site investigation, the following additional works are recommended to be completed in due course:

- Arboricultural Survey;
- Detailed cut and fill assessment; and,
- Materials Management Plan.

ERGO should be contacted for advice should unforeseen ground conditions be encountered.

END OF REPORT

APPENDIX I
LIMITATIONS

1. This report and its findings should be considered in relation to the terms of reference and objectives agreed between ERGO and the Client as indicated in Section 1.2.
2. For the work, reliance has been placed on publicly available data obtained from the sources identified. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. When using the information it has been assumed it is correct. No attempt has been made to verify the information.
3. This report has been produced in accordance with current UK policy and legislative requirements for land and groundwater contamination which are enforced by the local authority and the Environment Agency. Liabilities associated with land contamination are complex and requires advice from legal professionals.
4. Access considerations, the presence of services and the activities being carried out on the site limited the locations where sampling locations could be installed and the techniques that could be used.
5. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.
6. Where mention has been made to the identification of Japanese Knotweed and other invasive plant species and asbestos or asbestos-containing materials this is for indicative purposes only and do not constitute or replace full and proper surveys.
7. The executive summary, conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the report in full.
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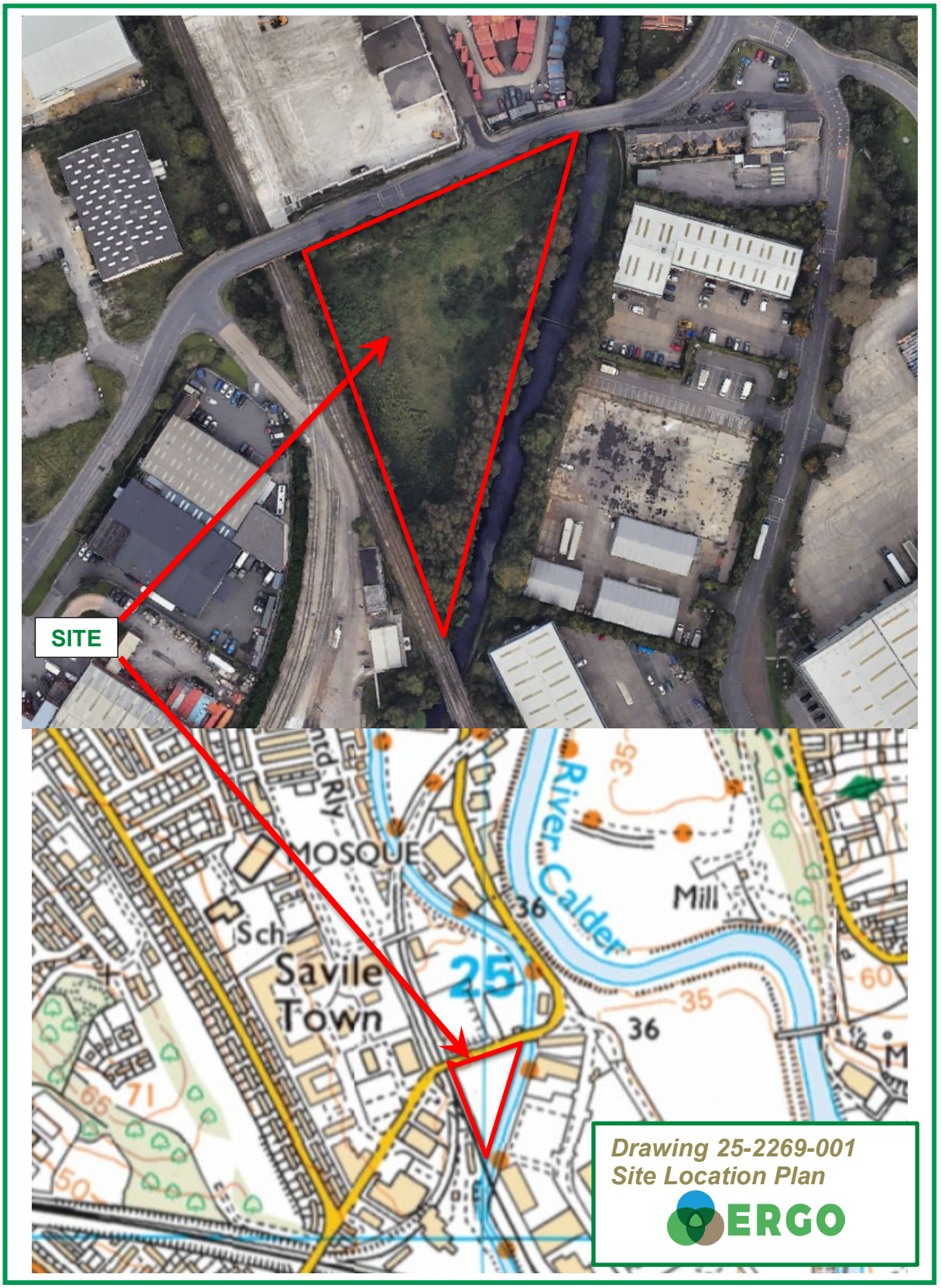
9. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.

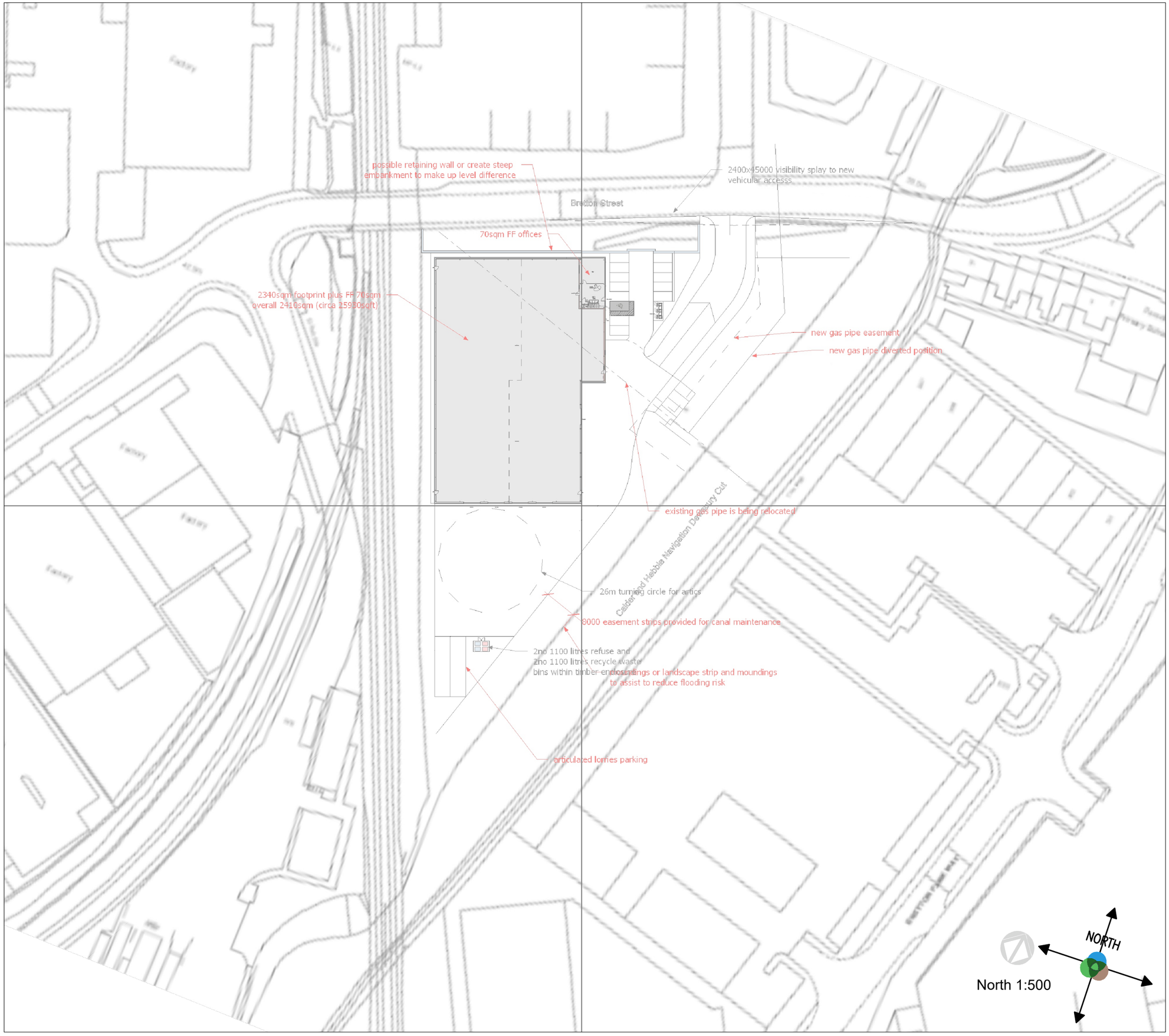
APPENDIX II
GLOSSARY

TERMS

AST	Above Ground Storage Tank	**SGV**	Soil Guideline Value
BGS	British Geological Survey	**SPH**	Separate Phase Hydrocarbon
BSI	British Standards Institute	**TPH CWG**	Total Petroleum Hydrocarbon (Criteria Working Group)
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes	**SPT**	Standard Penetration Test
CIEH	Chartered Institute of Environmental Health	**SVOC**	Semi Volatile Organic Compound
CIRIA	Construction Industry Research Association	**UST**	Underground Storage Tank
CLEA	Contaminated Land Exposure Assessment	**VCCs**	Vibro Concrete Columns
CSM	Conceptual Site Model	**VOC**	Volatile Organic Compound
DNAPL	Dense Non-Aqueous Phase Liquid (chlorinated solvents, PCB)	**WTE**	Water Table Elevation
DWS	Drinking Water Standard	**m**	Metres
EA	Environment Agency	**km**	Kilometres
EQS	Environmental Quality Standard	**%**	Percent
GAC	General Assessment Criteria	**%v/v**	Percent volume in air
GL	Ground Level	**mb**	Milli Bars (atmospheric pressure)
GSV	Gas Screening Value	**l/hr**	Litres per hour
HCV	Health Criteria Value	**µg/l**	Micrograms per Litre (parts per billion)
ICSM	Initial Conceptual Site Model	**ppb**	Parts Per Billion
LNAPL	Light Non-Aqueous Phase Liquid (petrol, diesel, kerosene)	**mg/kg**	Milligrams per kilogram (parts per million)
ND	Not Detected	**ppm**	Parts Per Million
LMRL	Lower Method Reporting Limit	**mg/m^3**	Milligram per metre cubed
NR	Not Recorded	**m bgl**	Metres Below Ground Level
PAH	Polycyclic Aromatic Hydrocarbon	**m bcl**	Metre Below Cover Level
PCB	Poly-Chlorinated Biphenyl	**mAOD**	Metres Above Ordnance Datum (sea level)
PID	Photo Ionisation Detector	**kN/m^2**	Kilo Newtons per metre squared
QA	Quality Assurance	**µm**	Micro metre
SGV	Soil Guideline Value	**CMC**	Controlled Modulus Column
VSC	Vibro Stone Column		

APPENDIX III
Drawings


SITE
MOSQUE
Sch
Savile
Town
River Calder
Mill
25
36
35
60
71
65
50
Drawing 25-2269-001
Site Location Plan
ERGO



Key:

Notes:

P1	-	25.02.2025	DRAFT	RB	JN
Phase	Revision	Date	Issue	Drawn	Authorised

Client: Saghir Hussain

Job No: 25-2269

Date: 25.02.2025

Drawing No: 002

Scale: NTS

Job Title: Bretton St, Dewbury WF12 9DB

Drawing Title: Proposed Development Plan

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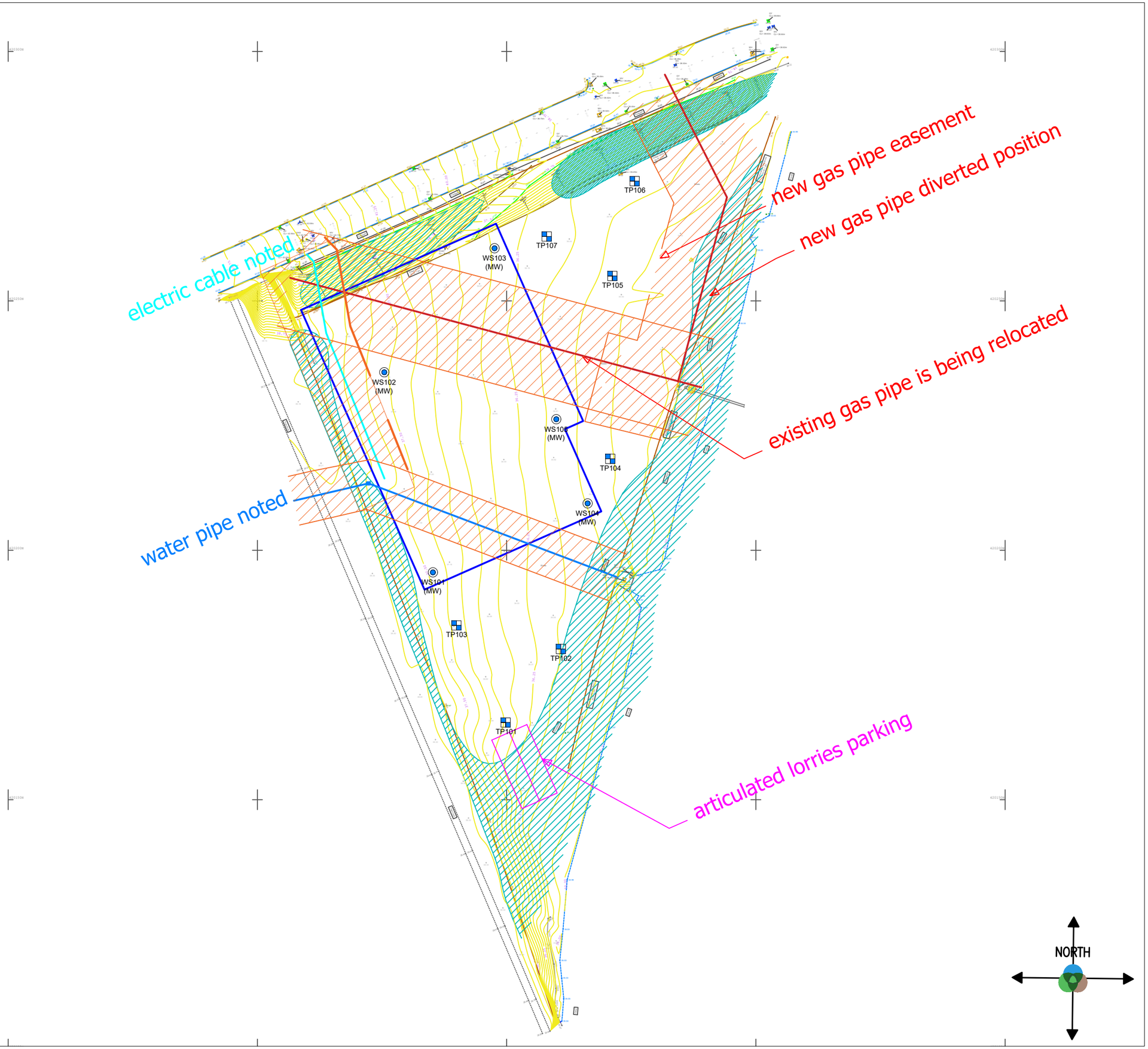
Email: info@ergoenvironmental.com



Key:

WS — Approximate Window Sample Location

TP — Approximate Trial Pit Location

Existing Easements for Services (No Excavations)

Notes:

Phase	Revision	Date	Issue	Drawn	Authorised
P1	-	07.04.2025	DRAFT	JH	JN

Client: A+K Properties

Job No: 25-2269

Date: 07.04.2025

Drawing No: 003

Scale: NTS

Job Title: Bretton St, Dewbury WF12 9DB

Drawing Title: Exploratory Hole Location Plan

NORTH

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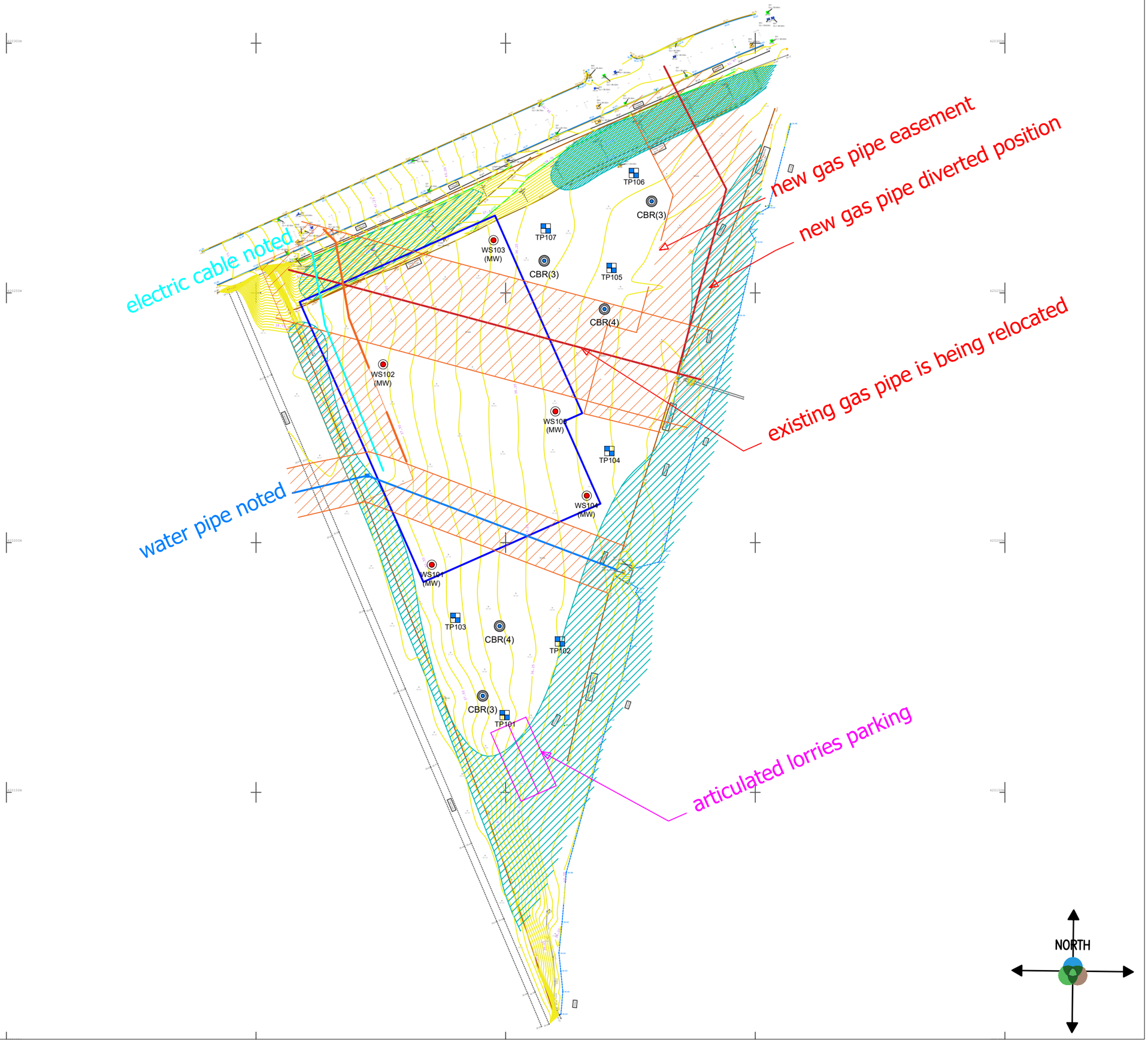
Email: info@ergoenvironmental.com



Key:

- WS — Approximate Window Sample Location with Install and Falling Head
- TP — Approximate Trial Pit Location
- Existing Easements for Services (No Excavations)
- CBR — Approximate California Bearing Ratio Test Location (Result)

Notes:

Phase	Revision	Date	Issue	Drawn	Authorised
P1	-	08.05.2025	DRAFT	JH	JN

Client: A+K Properties

Job No: 25-2269

Date: 08.05.2025

Drawing No: 003

Scale: NTS

Job Title: Bretton St, Dewbury WF12 9DB

Drawing Title: Exploratory Hole Location Plan

NORTH

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APPENDIX IV
ERGO EXPLORATORY HOLE LOGS

Trial Pit

TP101

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP				1:25

Project Name	Project No.	Start Date	End Date
Bretton Street	25-2269	2025-04-01	2025-04-01

Client	Contractor	Consultant
Krypton Structure Ltd	PM Sampling	Phil Craigie

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Samples and Tests: Type/ Ref	Samples and Tests: Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Strata: Description
		0.20	ES			(0.30) 0.30		MADE GROUND: Dark brown sandy gravelly topsoil. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, brick and glass. Frequent roots noted.
		0.80	D			(1.20)		Light brown very clayey gravelly SAND. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone. Rare sandstone and mudstone cobbles noted.
		1.00 1.00 - 1.50	ES B			1.50		
		2.00	D			(0.90)		Light brown silty very gravelly SAND. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone. Frequent sandstone cobbles and rare sandstone boulders noted.
	▽					2.40		
		3.00	D			(0.60)		Brown and grey sandy GRAVEL. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of of sandstone and mudstone. Frequent sandstone cobbles and boulders noted.
						3.00		*End of Trial Pit at 3.00m*

Remarks

1. Completed at 3.00mbgl. 2. Groundwater encountered at 2.40mbgl as as strike. 3. Stable.

Method, Plant, Stability, Dimensions — **Logger**

0.00 - 3.00m

Trial Pit

TP102

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP				1:25

Project Name	Project No.	Start Date	End Date
Bretton Street	25-2269	2025-04-01	2025-04-01

Client
Krypton Structure Ltd

Contractor
PM Sampling

Consultant
Phil Craigie

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Samples and Tests: Type/ Ref	Samples and Tests: Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Strata: Description
		0.00 - 0.40	B			(0.40)		MADE GROUND: Dark brown clayey sandy gravelly topsoil. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone and mudstone.
		0.20	ES			0.40		Brown very clayey very gravelly SAND. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone.
		0.60	ES			(0.60)		
		0.70	D			1.00		Brown slightly silty very gravelly SAND. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone. Frequent sandstone cobbles and rare sandstone boulders noted.
		1.50	D			(1.10)		
	▽					2.10		Brown and grey sandy GRAVEL. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of of sandstone and mudstone. Frequent sandstone cobbles and boulders noted.
		2.50	D			(0.70)		
						2.80		*End of Trial Pit at 2.80m*

Remarks
1. Completed at 2.80mbgl. 2. Groundwater encountered at 2.10mbgl as as strike. 3. Stable.

Method, Plant, Stability, Dimensions
0.00 - 2.80m

Logger

Trial Pit

TP103

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP				1:25

Project Name	Project No.	Start Date	End Date
Bretton Street	25-2269	2025-04-01	2025-04-01

Client
Krypton Structure Ltd

Contractor
PM Sampling

Consultant
Phil Craigie

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Samples and Tests: Type/ Ref	Samples and Tests: Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Strata: Description
		0.10	ES			(0.15) 0.15		MADE GROUND: Dark brown sandy gravelly topsoil. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, brick and ceramic. Rare plastic fragments noted.
		0.50	ES			(1.05)		MADE GROUND: Brown very clayey slightly gravelly sand. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone and ceramic. Field drain noted.
	▽					1.20		Light brown slightly clayey silty sandy GRAVEL. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone. Frequent sandstone and rare sandstone boulders noted.
		1.50 1.50 - 2.00	D B			(2.00)		
		2.50	D			3.20		*End of Trial Pit at 3.20m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0

Remarks
1. Completed at 3.20mbgl. 2. Groundwater encountered at 1.20mbgl as as strike. 3. Stable.

Method, Plant, Stability, Dimensions
0.00 - 3.20m

Logger

Trial Pit

TP104

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP				1:25

Project Name	Project No.	Start Date	End Date
Bretton Street	25-2269	2025-04-01	2025-04-01

Client	Contractor	Consultant
Krypton Structure Ltd	PM Sampling	Phil Craigie

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10	ES			(0.15) 0.15		MADE GROUND: Dark brown clayey sandy slightly gravelly topsoil. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, brick and ceramic.
						(0.55)		MADE GROUND: Greyish brown clayey slightly gravelly sand. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone (re-worked).
		0.50	ES			0.70		Soft light brown very sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone. Rare sandstone cobbles noted.
		0.90	HV	30 (kPa)				
		1.00 1.00 - 1.40	D B			(0.70)		
	▽					1.40		Greyish brown clayey gravelly SAND. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone. Rare sandstone cobbles and boulders noted.
		1.60	D			(0.50)		
						1.90		Very stiff dark grey slightly sandy very gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone and mudstone. Rare sandstone and mudstone cobbles noted.
		2.50 2.50	HV D	130 (kPa)		(0.90)		
						2.80		*End of Trial Pit at 2.80m*

Remarks

1. Completed at 2.80mbgl. 2. Groundwater encountered at 1.20mbgl as as seepage. 3. Stable.

Method, Plant, Stability, Dimensions

0.00 - 2.80m

Logger

Trial Pit

TP105

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP				1:25

Project Name	Project No.	Start Date	End Date
Bretton Street	25-2269	2025-04-01	2025-04-01

Client	Contractor	Consultant
Krypton Structure Ltd	PM Sampling	Phil Craigie

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10	ES			(0.15) 0.15		MADE GROUND: Brown clayey sandy slightly gravelly topsoil. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone and brick.
		0.40 0.40 0.50	HV ES D	35 (kPa)		(0.45) 0.60		Soft light brown silty very sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone.
	▽	1.00	D			(1.40) 2.00		Greyish brown slightly clayey slightly gravelly SAND. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone. Rare sandstone cobbles noted.
		2.50 2.50	HV D	130 (kPa)		(1.20) 3.20		Very stiff dark grey slightly sandy very gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone and mudstone. Frequent sandstone and mudstone cobbles and rare sandstone boulders noted.
								End of Trial Pit at 3.20m

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0

Remarks

1. Completed at 3.20mbgl. 2. Groundwater encountered at 1.00mbgl as as seepage. 3. Stable.

Method, Plant, Stability, Dimensions

0.00 - 3.20m

Logger

Trial Pit

TP106

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP				1:25

Project Name	Project No.	Start Date	End Date
Bretton Street	25-2269	2025-04-01	2025-04-01

Client	Contractor	Consultant
Krypton Structure Ltd	PM Sampling	Phil Craigie

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.20	ES			(0.30) 0.30		MADE GROUND: Dark brown slightly clayey sandy slightly gravelly topsoil. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone and brick.
		1.00	ES			(0.90) 1.20		MADE GROUND: Greyish brown slightly clayey slightly gravelly sand. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone and ceramic.
		1.40	D			(0.40) 1.60		Firm brown mottled grey silty slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone, mudstone and coal. Rare sandstone cobbles noted.
		1.80	D			(0.50) 2.10		Stiff brown mottled grey silty slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone, mudstone and coal. Rare sandstone cobbles noted.
	▽	2.50 2.50 - 3.00	D B			(1.20) 3.30		Brown slightly clayey sandy GRAVEL. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone. Frequent sandstone and mudstone cobbles and sandstone boulders noted.
								End of Trial Pit at 3.30m

Remarks

1. Completed at 3.30mbgl. 2. Groundwater encountered at 2.10mbgl as as strike. 3. Stable.

Method, Plant, Stability, Dimensions — **Logger**

0.00 - 3.30m

Trial Pit

TP107

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP				1:25

Project Name	Project No.	Start Date	End Date
Bretton Street	25-2269	2025-04-01	2025-04-01

Client	Contractor	Consultant
Krypton Structure Ltd	PM Sampling	Phil Craigie

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Samples and Tests: Type/ Ref	Samples and Tests: Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Strata: Description
		0.20	ES			(0.30) 0.30		MADE GROUND: Dark brown sandy gravelly topsoil. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, brick and glass. Frequent roots noted.
		0.50	ES			(1.20)		MADE GROUND: Greyish brown slightly clayey slightly gravelly sand. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone and ceramic.
		1.50 - 2.00	B			1.50		Greyish brown slightly clayey slightly gravelly SAND. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone. Rare sandstone cobbles noted.
		1.70	ES					
		2.00	D			(1.70)		
		3.00	D			3.20		*End of Trial Pit at 3.20m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0

Remarks

1. Completed at 3.30mbgl. 2. No groundwater encountered. 3. Stable.

Method, Plant, Stability, Dimensions

0.00 - 3.20m

Logger

Window Sampler

WS101

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS				1:25

Project Name	Project No.	Start Date	End Date
Bretton Street	25-2269	2025-04-04	2025-04-04

Client	Contractor	Consultant
Krypton Structure Ltd	PM Sampling	Phil Craigie

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.10	ES			(0.20) 0.20		MADE GROUND: Dark brown sandy gravelly topsoil. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone and brick. Rootlets noted.
		0.60	ES			(0.60) 0.80		Light brown very clayey gravelly SAND. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone.
		0.90	D			(0.20) 1.00		Light brown very gravelly SAND. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone.
		1.00	SPT	N=29 (6,7/6,7,8,8)		(0.20) 1.20		Medium dense light brown silty clayey sandy GRAVEL. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone.
		1.10	D			(0.30) 1.50		Very dense light brown slightly clayey very gravelly SAND. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone. Rare sandstone cobbles noted.
		1.30	D					
		1.50	SPT	N>50 (10,13/14,14,16,6/10mm for 235mm)				*End of Borehole at 1.50m*

Remarks

1. Terminated at 1.50mbgl due to SPT refusal. 2. Groundwater encountered at 1.00mbgl as a strike.

Method, Plant, Stability, Dimensions

0.00 - 1.50m

Logger

Window Sampler

WS102

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS				1:25

Project Name	Project No.	Start Date	End Date
Bretton Street	25-2269	2025-04-04	2025-04-04

Client	Contractor	Consultant
Krypton Structure Ltd	PM Sampling	Phil Craigie

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.20	ES			(0.30)		MADE GROUND: Dark brown sandy gravelly topsoil. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, brick and ceramic. Rootlets noted.
						0.30		MADE GROUND: Light brown slightly clayey gravelly sand. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone and brick.
		0.50	ES			(0.30)		
		0.80	D			0.60		Medium dense light brown slightly clayey gravelly SAND. Sand Is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone and brick.
		1.00	SPT	N=29 (3,5/7,7,7,8)		(0.60)		
		1.10	D			1.20		Medium dense brown clayey gravelly SAND. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone. Rare sandstone and mudstone cobbles noted.
		1.30	D			(0.25)		
		1.45	D			1.45		Very dense brown clayey very gravelly SAND. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone.
		1.50	SPT	N>50 (11,12/15,15,16,4/5mm for 230mm)		(0.05) 1.50		*End of Borehole at 1.50m*

Remarks

1. Terminated at 1.50mbgl due to SPT refusal. 2. No Groundwater encountered.

Method, Plant, Stability, Dimensions

0.00 - 1.50m

Logger

Window Sampler

WS103

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS				1:25

Project Name	Project No.	Start Date	End Date
Bretton Street	25-2269	2025-04-04	2025-04-04

Client
Krypton Structure Ltd

Contractor
PM Sampling

Consultant
Phil Craigie

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.15	ES			(0.30)		MADE GROUND: Dark brown sandy gravelly topsoil. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, brick and ceramic. Rootlets noted.
		0.40	ES			0.30 (0.20)		MADE GROUND: Light brown slightly clayey gravelly sand. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone and brick.
		0.60	ES			0.50 (0.20)		Light brown clayey slightly gravelly SAND. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone.
		0.80	D			0.70 (0.20)		Firm yellowish brown very sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone.
		1.00	SPT	N=32 (5,5/7,8,8,9)		0.90 (0.40)		Very stiff brown sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone. Rare mudstone cobbles noted.
		1.20	D					
		1.35	D			1.30 (0.10)		Very stiff brown sandy very gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone. Rare mudstone cobbles noted.
		1.40	SPT(C)	N>50 (10,14/16,18,16/20mm for 170mm)		1.40		*End of Borehole at 1.40m*

Remarks
1. Terminated at 1.40mbgl due to SPT refusal. 2. No Groundwater encountered.

Method, Plant, Stability, Dimensions
0.00 - 1.40m

Logger

Window Sampler

WS104

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS				1:25

Project Name	Project No.	Start Date	End Date
Bretton Street	25-2269	2025-04-04	2025-04-04

Client
Krypton Structure Ltd

Contractor
PM Sampling

Consultant
Phil Craigie

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.05	ES			(0.20)		MADE GROUND: Dark brown sandy gravelly topsoil. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, brick and ceramic. Rootlets noted.
						0.20		
		0.30	ES			(0.20)		Light brown clayey gravelly SAND. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone.
						0.40		
		0.60	D			(0.40)		Firm yellowish brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone.
						0.80		
		0.90	D			(0.20)		Stiff brown mottled grey silty sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone.
		1.00	SPT	N=30 (3,6/6,8,8,8)		1.00		Very stiff brown mottled grey very sandy very gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone. Rare sandstone cobbles noted.
						(0.60)		
		1.50	D					
		1.60	SPT(C)	N>50 (12,13/16,16,18/30mm for 180mm)		1.60		*End of Borehole at 1.60m*

Remarks
1. Terminated at 1.60mbgl due to SPT refusal. 2. No Groundwater encountered.

Method, Plant, Stability, Dimensions
0.00 - 1.60m

Logger

Window Sampler

WS105

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS				1:25

Project Name	Project No.	Start Date	End Date
Bretton Street	25-2269	2025-04-04	2025-04-04

Client	Contractor	Consultant
Krypton Structure Ltd	PM Sampling	Phil Craigie

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.05	ES			(0.10) 0.10		MADE GROUND: Dark brown sandy gravelly topsoil. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, brick and ceramic. Rootlets noted.
		0.40	ES			(0.40)		MADE GROUND: Light brown slightly clayey gravelly sand. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone and brick.
		0.70	D			0.50		Firm light brown very sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone.
		1.00	SPT	N=23 (2,4/4,6,6,7)		(0.60)		
		1.60	D			1.10		Firm damp light brown very sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone.
		1.80	D			(0.60)		
		2.00	SPT	N>50 (6,10/10,14,14,12/30mm for 255mm)		1.70		Very stiff silty sandy gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and mudstone.
						(0.50)		
						2.20		*End of Borehole at 2.20m*

Remarks

1. Terminated at 2.20mbgl due to SPT refusal. 2. Groundwater encountered at 1.20mbgl as a seepage.

Method, Plant, Stability, Dimensions — **Logger**

0.00 - 2.20m

APPENDIX V
CHEMICAL TESTING RESULTS

Ergo Environmental Ltd
Maling Exchange
Hoults Yard
Walker Rd
Newcastle upon Tyne
NE6 2HL

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t: 01923 225404
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Analytical Report Number : 25-018080

Project / Site name:	Bretton Street Dewsbury	**Samples received on:**	09/04/2025
Your job number:	25-2269	**Samples instructed on/ Analysis started on:**	09/04/2025
Your order number:	2878-AB-25-2269	**Analysis completed by:**	15/04/2025
Report Issue Number:	1	**Report issued on:**	15/04/2025
Samples Analysed:	11 soil samples - 2 leachate samples		

Signed:

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

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

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

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

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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

Analytical Report Number: 25-018080
Project / Site name: Bretton Street Dewsbury
Your Order No: 2878-AB-25-2269

Lab Sample Number				508569	508570	508571	508572	508573
Sample Reference				WS105	WS101	WS102	WS103	WS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				1.60	1.10	1.30	1.35	0.90
Date Sampled				04/04/2025	04/04/2025	04/04/2025	04/04/2025	04/04/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	38.6	47.9	44.8	< 0.1
Moisture Content	%	0.01	NONE	18	15	10	5.4	15
Total mass of sample received	kg	0.1	NONE	0.5	0.5	0.5	0.5	0.5
Asbestos								
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	-	-	-	-	-
Analysis completed	N/A	N/A	N/A	-	-	-	-	-
General Inorganics								
pH (L099)	pH Units	N/A	MCERTS	7.9	7.5	8.2	7.3	8
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	66	76	36	51	35
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	-
Water Soluble SO_4 16hr extraction (2:1)	mg/l	1.25	MCERTS	33	37.8	17.8	25.6	17.3
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	-	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-	-	-
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	-
Chromium (hexavalent) Low Level	mg/kg	1.2	NONE	-	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-

Analytical Report Number: 25-018080
Project / Site name: Bretton Street Dewsbury
Your Order No: 2878-AB-25-2269

Lab Sample Number				508569	508570	508571	508572	508573
Sample Reference				WS105	WS101	WS102	WS103	WS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				1.60	1.10	1.30	1.35	0.90
Date Sampled				04/04/2025	04/04/2025	04/04/2025	04/04/2025	04/04/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
Petroleum Hydrocarbons								
TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC35 - EC44 EH_CU_1D_AL	mg/kg	8.4	NONE	-	-	-	-	-
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	-	-	-	-	-
TPHCWG - Aliphatic >EC5 - EC44 EH_CU+HS_1D_AL	mg/kg	10	NONE	-	-	-	-	-
TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC35 - EC44 EH_CU_1D_AR	mg/kg	8.4	NONE	-	-	-	-	-
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	-	-	-	-	-
TPHCWG - Aromatic >EC5 - EC44 EH_CU+HS_1D_AR	mg/kg	10	NONE	-	-	-	-	-
VOCs								
Chloromethane	µg/kg	5	MCERTS	-	-	-	-	-
Chloroethane	µg/kg	5	MCERTS	-	-	-	-	-
Bromomethane	µg/kg	5	MCERTS	-	-	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	5	MCERTS	-	-	-	-	-
1,1-Dichloroethene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	MCERTS	-	-	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	5	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	-	-
Chloroform	µg/kg	5	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	7	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	5	MCERTS	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	MCERTS	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	-	-	-	-	-
Carbontetrachloride	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	6	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	10	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	5	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	5	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	MCERTS	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	10	MCERTS	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	6	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	5	MCERTS	-	-	-	-	-
Dibromochloromethane	µg/kg	5	MCERTS	-	-	-	-	-

Analytical Report Number: 25-018080
Project / Site name: Bretton Street Dewsbury
Your Order No: 2878-AB-25-2269

Lab Sample Number				508569	508570	508571	508572	508573
Sample Reference				WS105	WS101	WS102	WS103	WS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				1.60	1.10	1.30	1.35	0.90
Date Sampled				04/04/2025	04/04/2025	04/04/2025	04/04/2025	04/04/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
Tetrachloroethene	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dibromoethane	µg/kg	5	MCERTS	-	-	-	-	-
Chlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	8	MCERTS	-	-	-	-	-
Styrene	µg/kg	5	MCERTS	-	-	-	-	-
Bromoform	µg/kg	5	MCERTS	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromobenzene	µg/kg	5	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
2-Chlorotoluene	µg/kg	5	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	5	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
tert-Butylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
sec-Butylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
p-Isopropyltoluene	µg/kg	5	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	8	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	5	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	NONE	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	NONE	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	-	-	-

Analytical Report Number: 25-018080
Project / Site name: Bretton Street Dewsbury
Your Order No: 2878-AB-25-2269

Lab Sample Number				508569	508570	508571	508572	508573
Sample Reference				WS105	WS101	WS102	WS103	WS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				1.60	1.10	1.30	1.35	0.90
Date Sampled				04/04/2025	04/04/2025	04/04/2025	04/04/2025	04/04/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	NONE	-	-	-	-	-
Azobenzene	mg/kg	0.3	NONE	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	-	-	-
Anthraquinone	mg/kg	0.3	NONE	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 25-018080
Project / Site name: Bretton Street Dewsbury
Your Order No: 2878-AB-25-2269

Lab Sample Number				508574	508575	508576	508577	508578
Sample Reference				TP101	TP104	TP106	TP107	WS101
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.20	0.50	0.20	0.50	0.10
Date Sampled				01/04/2025	01/04/2025	01/04/2025	01/04/2025	04/04/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	18	21	28	15	36
Total mass of sample received	kg	0.1	NONE	0.6	0.6	0.6	0.7	0.7
Asbestos								
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	DSA	DSA	DSA	DSA	DSA
Analysis completed	N/A	N/A	N/A	14/04/2025	14/04/2025	14/04/2025	14/04/2025	14/04/2025
General Inorganics								
pH (L099)	pH Units	N/A	MCERTS	7.4	4.6	7.1	6.2	5.1
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	44	43	65	47	75
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	21.9	21.7	32.4	23.3	37.5
Water Soluble SO_4 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	1.2	3.7	11	-	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.87	1.6	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.12	-	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.48	1.2	-	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.33	0.86	-	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	2.6	7.2	-	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.39	1.4	-	-
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	2	8.7	-	-
Pyrene	mg/kg	0.05	MCERTS	< 0.05	1.7	7.9	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.71	4.4	-	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.9	4.9	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.75	5.3	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.3	2.7	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.67	4.5	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.28	2.5	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.07	0.68	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.25	2.7	-	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	12.3	56.6	-	-
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.2	11	42	8.4	42
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.4	< 0.2
Chromium (hexavalent) Low Level	mg/kg	1.2	NONE	< 1.2	< 1.2	< 1.2	< 1.2	U/S *U/S f
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	19	24	29	18	19
Copper (aqua regia extractable)	mg/kg	1	MCERTS	14	24	75	22	75
Lead (aqua regia extractable)	mg/kg	1	MCERTS	14	45	120	21	80
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	12	14	22	21	16
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.7	< 1.0	1.3	1.1	1.5
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	57	58	130	66	64

Analytical Report Number: 25-018080
Project / Site name: Bretton Street Dewsbury
Your Order No: 2878-AB-25-2269

Lab Sample Number				508574	508575	508576	508577	508578
Sample Reference				TP101	TP104	TP106	TP107	WS101
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.20	0.50	0.20	0.50	0.10
Date Sampled				01/04/2025	01/04/2025	01/04/2025	01/04/2025	04/04/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
Petroleum Hydrocarbons								
TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-	-
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-	-
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-	-
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	-	-
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	-	-
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0	< 8.0	59	-	-
TPHCWG - Aliphatic >EC35 - EC44 EH_CU_1D_AL	mg/kg	8.4	NONE	< 8.4	< 8.4	28	-	-
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	< 10	< 10	59	-	-
TPHCWG - Aliphatic >EC5 - EC44 EH_CU+HS_1D_AL	mg/kg	10	NONE	< 10	< 10	87	-	-
TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-	-
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-	-
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	-	-
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	< 1.0	2.2	3.1	-	-
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	< 2.0	9.1	14	-	-
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10	< 10	30	-	-
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10	< 10	84	-	-
TPHCWG - Aromatic >EC35 - EC44 EH_CU_1D_AR	mg/kg	8.4	NONE	< 8.4	< 8.4	28	-	-
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	< 10	11	130	-	-
TPHCWG - Aromatic >EC5 - EC44 EH_CU+HS_1D_AR	mg/kg	10	NONE	< 10	11	160	-	-
VOCs								
Chloromethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Chloroethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Bromomethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Vinyl Chloride	µg/kg	5	NONE	< 5.0	-	-	-	-
Trichlorofluoromethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,1-Dichloroethene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
1,1-Dichloroethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	< 5.0	-	-	-	-
Chloroform	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,2-Dichloroethane	µg/kg	7	MCERTS	< 7.0	-	-	-	-
1,1-Dichloropropene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
Carbontetrachloride	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,2-Dichloropropane	µg/kg	6	MCERTS	< 6.0	-	-	-	-
Trichloroethene	µg/kg	10	MCERTS	< 10	-	-	-	-
Dibromomethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Bromodichloromethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	10	MCERTS	< 10	-	-	-	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
1,1,2-Trichloroethane	µg/kg	6	MCERTS	< 6.0	-	-	-	-
1,3-Dichloropropane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Dibromochloromethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-

Analytical Report Number: 25-018080
Project / Site name: Bretton Street Dewsbury
Your Order No: 2878-AB-25-2269

Lab Sample Number				508574	508575	508576	508577	508578
Sample Reference				TP101	TP104	TP106	TP107	WS101
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.20	0.50	0.20	0.50	0.10
Date Sampled				01/04/2025	01/04/2025	01/04/2025	01/04/2025	04/04/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
Tetrachloroethene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,2-Dibromoethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Chlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	-	-
Styrene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Bromoform	µg/kg	5	MCERTS	< 5.0	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
Isopropylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	< 5.0	-	-	-	-
Bromobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
n-Propylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
2-Chlorotoluene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
4-Chlorotoluene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
tert-Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
sec-Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
p-Isopropyltoluene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	8	MCERTS	< 8.0	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Hexachlorobutadiene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-

SVOCs

Aniline	mg/kg	0.1	NONE	< 0.1	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	< 0.2	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Hexachloroethane	mg/kg	0.05	ISO 17025	< 0.05	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	-	-	-	-

Analytical Report Number: 25-018080
Project / Site name: Bretton Street Dewsbury
Your Order No: 2878-AB-25-2269

Lab Sample Number				508574	508575	508576	508577	508578
Sample Reference				TP101	TP104	TP106	TP107	WS101
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.20	0.50	0.20	0.50	0.10
Date Sampled				01/04/2025	01/04/2025	01/04/2025	01/04/2025	04/04/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**					
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	-	-	-	-
Azobenzene	mg/kg	0.3	NONE	< 0.3	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.30	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	-	-	-	-
Anthraquinone	mg/kg	0.3	NONE	< 0.3	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 25-018080
Project / Site name: Bretton Street Dewsbury
Your Order No: 2878-AB-25-2269

Lab Sample Number				508579
Sample Reference				WS102
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				0.20
Date Sampled				04/04/2025
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	18
Total mass of sample received	kg	0.1	NONE	0.6

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	DSA
Analysis completed	N/A	N/A	N/A	14/04/2025

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	7.6
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	43
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	21.4
Water Soluble SO_4 16hr extraction (2:1)	mg/l	1.25	MCERTS	-
Organic Matter (automated)	%	0.1	MCERTS	4.4

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.31
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.37
Fluorene	mg/kg	0.05	MCERTS	0.22
Phenanthrene	mg/kg	0.05	MCERTS	1.9
Anthracene	mg/kg	0.05	MCERTS	0.23
Fluoranthene	mg/kg	0.05	MCERTS	2
Pyrene	mg/kg	0.05	MCERTS	1.8
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.91
Chrysene	mg/kg	0.05	MCERTS	1.1
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	1.2
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.36
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.87
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.51
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.14
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.56

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	12.5

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	20
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (hexavalent) Low Level	mg/kg	1.2	NONE	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	39
Lead (aqua regia extractable)	mg/kg	1	MCERTS	45
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	16
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	2.5
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	77

Analytical Report Number: 25-018080
Project / Site name: Bretton Street Dewsbury
Your Order No: 2878-AB-25-2269

Lab Sample Number				508579
Sample Reference				WS102
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				0.20
Date Sampled				04/04/2025
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**	
Petroleum Hydrocarbons				
TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0
TPHCWG - Aliphatic >EC35 - EC44 EH_CU_1D_AL	mg/kg	8.4	NONE	< 8.4
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	< 10
TPHCWG - Aliphatic >EC5 - EC44 EH_CU+HS_1D_AL	mg/kg	10	NONE	< 10
TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	< 0.020
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	< 1.0
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	2.7
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10
TPHCWG - Aromatic >EC35 - EC44 EH_CU_1D_AR	mg/kg	8.4	NONE	< 8.4
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	< 10
TPHCWG - Aromatic >EC5 - EC44 EH_CU+HS_1D_AR	mg/kg	10	NONE	< 10
VOCs				
Chloromethane	µg/kg	5	MCERTS	< 5.0
Chloroethane	µg/kg	5	MCERTS	< 5.0
Bromomethane	µg/kg	5	MCERTS	< 5.0
Vinyl Chloride	µg/kg	5	NONE	< 5.0
Trichlorofluoromethane	µg/kg	5	MCERTS	< 5.0
1,1-Dichloroethene	µg/kg	5	MCERTS	< 5.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	MCERTS	< 5.0
Trans 1,2-dichloroethylene	µg/kg	5	MCERTS	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0
1,1-Dichloroethane	µg/kg	5	MCERTS	< 5.0
2,2-Dichloropropane	µg/kg	5	NONE	< 5.0
Chloroform	µg/kg	5	MCERTS	< 5.0
1,1,1-Trichloroethane	µg/kg	5	MCERTS	< 5.0
1,2-Dichloroethane	µg/kg	7	MCERTS	< 7.0
1,1-Dichloropropene	µg/kg	5	MCERTS	< 5.0
Cis-1,2-dichloroethene	µg/kg	5	MCERTS	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0
Carbontetrachloride	µg/kg	5	MCERTS	< 5.0
1,2-Dichloropropane	µg/kg	6	MCERTS	< 6.0
Trichloroethene	µg/kg	10	MCERTS	< 10
Dibromomethane	µg/kg	5	MCERTS	< 5.0
Bromodichloromethane	µg/kg	5	MCERTS	< 5.0
Cis-1,3-dichloropropene	µg/kg	5	MCERTS	< 5.0
Trans-1,3-dichloropropene	µg/kg	10	MCERTS	< 10
Toluene	µg/kg	5	MCERTS	< 5.0
1,1,2-Trichloroethane	µg/kg	6	MCERTS	< 6.0
1,3-Dichloropropane	µg/kg	5	MCERTS	< 5.0
Dibromochloromethane	µg/kg	5	MCERTS	< 5.0

Analytical Report Number: 25-018080
Project / Site name: Bretton Street Dewsbury
Your Order No: 2878-AB-25-2269

Lab Sample Number				508579
Sample Reference				WS102
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				0.20
Date Sampled				04/04/2025
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**	
Tetrachloroethene	µg/kg	5	MCERTS	< 5.0
1,2-Dibromoethane	µg/kg	5	MCERTS	< 5.0
Chlorobenzene	µg/kg	5	MCERTS	< 5.0
1,1,1,2-Tetrachloroethane	µg/kg	5	MCERTS	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0
Styrene	µg/kg	5	MCERTS	< 5.0
Bromoform	µg/kg	5	MCERTS	< 5.0
o-Xylene	µg/kg	5	MCERTS	< 5.0
Isopropylbenzene	µg/kg	5	MCERTS	< 5.0
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	< 5.0
Bromobenzene	µg/kg	5	MCERTS	< 5.0
n-Propylbenzene	µg/kg	5	MCERTS	< 5.0
2-Chlorotoluene	µg/kg	5	MCERTS	< 5.0
4-Chlorotoluene	µg/kg	5	MCERTS	< 5.0
1,3,5-Trimethylbenzene	µg/kg	5	MCERTS	< 5.0
tert-Butylbenzene	µg/kg	5	MCERTS	< 5.0
1,2,4-Trimethylbenzene	µg/kg	5	MCERTS	< 5.0
sec-Butylbenzene	µg/kg	5	MCERTS	< 5.0
1,3-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0
p-Isopropyltoluene	µg/kg	5	MCERTS	< 5.0
1,4-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0
1,2-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0
Butylbenzene	µg/kg	5	MCERTS	< 5.0
1,2-Dibromo-3-chloropropane	µg/kg	8	MCERTS	< 8.0
1,2,4-Trichlorobenzene	µg/kg	5	MCERTS	< 5.0
Hexachlorobutadiene	µg/kg	5	MCERTS	< 5.0
1,2,3-Trichlorobenzene	µg/kg	5	MCERTS	< 5.0

SVOCs

Aniline	mg/kg	0.1	NONE	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3
Hexachloroethane	mg/kg	0.05	ISO 17025	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1

Analytical Report Number: 25-018080
Project / Site name: Bretton Street Dewsbury
Your Order No: 2878-AB-25-2269

Lab Sample Number				508579
Sample Reference				WS102
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				0.20
Date Sampled				04/04/2025
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**	
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	0.2
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2
Azobenzene	mg/kg	0.3	NONE	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.30
Carbazole	mg/kg	0.3	MCERTS	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2
Anthraquinone	mg/kg	0.3	NONE	< 0.3
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 25-018080
Project / Site name: Bretton Street Dewsbury

Your Order No: 2878-AB-25-2269

Lab Sample Number				508575	508580
Sample Reference				TP104	WS105
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				0.50	0.40
Date Sampled				01/04/2025	04/04/2025
Time Taken				None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**		
General Inorganics					
pH (automated)	pH Units	N/A	ISO 17025	6.3	6.4
Sulphate as SO_4	mg/l	0.045	ISO 17025	5.65	5.19
Heavy Metals / Metalloids					
Arsenic (dissolved)	µg/l	1	ISO 17025	< 1.0	< 1.0
Boron (dissolved)	µg/l	10	ISO 17025	22	20
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.4	0.7
Copper (dissolved)	µg/l	0.7	ISO 17025	7.9	1.9
Lead (dissolved)	µg/l	1	ISO 17025	1.3	< 1.0
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.1	< 0.3
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	5.5	6.9

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 25-018080
Project / Site name: Bretton Street Dewsbury

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
508569	WS105	None Supplied	1.6	Brown clay and loam with gravel and vegetation
508570	WS101	None Supplied	1.1	Brown clay and sand with vegetation and stones
508571	WS102	None Supplied	1.3	Brown loam and clay with vegetation and stones
508572	WS103	None Supplied	1.35	Brown loam and clay with vegetation and stones
508573	WS04	None Supplied	0.9	Brown clay and loam with gravel and vegetation
508574	TP101	None Supplied	0.2	Brown clay and loam with gravel and vegetation
508575	TP104	None Supplied	0.5	Brown loam and clay with gravel and vegetation
508576	TP106	None Supplied	0.2	Brown loam and clay with gravel and vegetation
508577	TP107	None Supplied	0.5	Brown loam and clay with gravel and vegetation
508578	WS101	None Supplied	0.1	Brown loam and clay with gravel and vegetation
508579	WS102	None Supplied	0.2	Brown loam and clay with gravel and vegetation

Analytical Report Number : 25-018080
Project / Site name: Bretton Street Dewsbury

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088-PL	D/W	MCERTS
Hexavalent chromium in soil (low level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS
pH at 20°C in leachate (automated)	Determination of pH in leachate by electrometric measurement	In-house method	L099-PL	W	ISO 17025

Analytical Report Number : 25-018080
Project / Site name: Bretton Street Dewsbury

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

*U/S f - Unsuitable for analysis due to sample matrix (Sample is very dark. After adding activated carbon, filtration is impossible.)

Waste Classification Report

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

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

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

EBHX1-I4ARN-D4O5F

Report is invalid if pages are removed.

Job name

Bretton Street

Description/Comments

Project

25-2269

Site

Bretton Street

Classified by

Name:
Jonathan Malley
Date:
30 Apr 2025 11:03 GMT
Telephone:
0191 3896200

Company:
ERGO Environmental
Unit 38B, North Tyne Industrial Estate, Benton
Newcastle upon Tyne
NE12 9SZ

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: CERTIFIED

Course	Date
Hazardous Waste Classification	04 Jun 2020
Most recent 3 year Refresher	04 Apr 2023

Next 3 year Refresher due by Apr 2026

Purpose of classification

2 - Material Characterisation

Address of the waste

Land at Bretton Street, Bretfield Court, Savile Town, Dewsbury **Post Code** WF12 9DB

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Characterisation of existing stockpiled materials to inform potential site redevelopment assessment

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

Characterisation of existing insitu deposits to inform potential site redevelopment assessment

Description of the waste

Made Ground and natural drift deposits.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	TP101 0.20	0.20	Non Hazardous		3
2	TP104 0.50	0.50	Non Hazardous		5
3	TP106 0.20	0.20	Non Hazardous		7
4	TP107 0.50	0.50	Non Hazardous		9
5	WS101 0.40	0.40	Non Hazardous		11
6	WS102 0.20	0.20	Non Hazardous		12

Related documents

#	Name	Description
1	Ergo i2 Waste Template	waste stream template used to create this Job

Report

Created by: Jonathan Malley

Created date: 30 Apr 2025 11:03 GMT

Classification of sample: TP101 0.20

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

Sample details

Sample name:
TP101 0.20
Sample Depth:
0.20 m
Moisture content:
18%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 18% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.2	mg/kg	1.32	8.878	mg/kg	0.000888 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<**LOD**
3	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		19	mg/kg	1.462	22.771	mg/kg	0.00228 %	✓	
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		14	mg/kg	1.126	12.925	mg/kg	0.00129 %	✓	
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	14	mg/kg		11.48	mg/kg	0.00115 %	✓	
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		12	mg/kg	2.637	25.945	mg/kg	0.00259 %	✓	
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		1.7	mg/kg	2.554	3.56	mg/kg	0.000356 %	✓	
10	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2] }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		57	mg/kg	4.398	205.559	mg/kg	0.0206 %	✓	
11	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
12	pH			PH		7.4	pH		7.4	pH	7.4 pH		
13	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
14	acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
16		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
17		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-581-5	85-01-8									
18		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-371-1	120-12-7									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-912-4	206-44-0									
20		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-927-3	129-00-0									
21		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
										Total:	0.0291 %		

Key

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

Classification of sample: TP104 0.50

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

Sample details

Sample name:
TP104 0.50
Sample Depth:
0.50 m
Moisture content:
21%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 21% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		11	mg/kg	1.32	11.474	mg/kg	0.00115 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<**LOD**
3	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		24	mg/kg	1.462	27.711	mg/kg	0.00277 %	✓	
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		24	mg/kg	1.126	21.347	mg/kg	0.00213 %	✓	
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	45	mg/kg		35.55	mg/kg	0.00355 %	✓	
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		14	mg/kg	2.637	29.162	mg/kg	0.00292 %	✓	
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
10	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2] }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		58	mg/kg	4.398	201.513	mg/kg	0.0202 %	✓	
11	TPH (C6 to C40) petroleum group			TPH		11	mg/kg		8.69	mg/kg	0.000869 %	✓	
12	confirm TPH has NOT arisen from diesel or petrol					☑							
13	pH			PH		4.6	pH		4.6	pH	4.6 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		0.87	mg/kg		0.687	mg/kg	0.0000687 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-917-1	208-96-8									
16		acenaphthene				0.48	mg/kg		0.379	mg/kg	0.0000379 %	✓	
			201-469-6	83-32-9									
17		fluorene				0.33	mg/kg		0.261	mg/kg	0.0000261 %	✓	
			201-695-5	86-73-7									
18		phenanthrene				2.6	mg/kg		2.054	mg/kg	0.000205 %	✓	
			201-581-5	85-01-8									
19		anthracene				0.39	mg/kg		0.308	mg/kg	0.0000308 %	✓	
			204-371-1	120-12-7									
20		fluoranthene				2	mg/kg		1.58	mg/kg	0.000158 %	✓	
			205-912-4	206-44-0									
21		pyrene				1.7	mg/kg		1.343	mg/kg	0.000134 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.71	mg/kg		0.561	mg/kg	0.0000561 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.9	mg/kg		0.711	mg/kg	0.0000711 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				0.75	mg/kg		0.593	mg/kg	0.0000593 %	✓	
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.3	mg/kg		0.237	mg/kg	0.0000237 %	✓	
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.67	mg/kg		0.529	mg/kg	0.0000529 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.28	mg/kg		0.221	mg/kg	0.0000221 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.07	mg/kg		0.0553	mg/kg	0.00000553 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.25	mg/kg		0.198	mg/kg	0.0000198 %	✓	
			205-883-8	191-24-2									
										Total:	0.0345 %		

Key

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

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 12500 mg/kg (1.25%) because: Based on guidance within WM3

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.00086%)

Classification of sample: TP106 0.20

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

Sample details

Sample name:
TP106 0.20
Sample Depth:
0.20 m
Moisture content:
28%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 28% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		42	mg/kg	1.32	39.927	mg/kg	0.00399 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<**LOD**
3	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		29	mg/kg	1.462	30.517	mg/kg	0.00305 %	✓	
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		75	mg/kg	1.126	60.798	mg/kg	0.00608 %	✓	
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	120	mg/kg		86.4	mg/kg	0.00864 %	✓	
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		22	mg/kg	2.637	41.765	mg/kg	0.00418 %	✓	
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		1.3	mg/kg	2.554	2.39	mg/kg	0.000239 %	✓	
10	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2] }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		130	mg/kg	4.398	411.646	mg/kg	0.0412 %	✓	
11	TPH (C6 to C40) petroleum group			TPH		247	mg/kg		177.84	mg/kg	0.0178 %	✓	
12	confirm TPH has NOT arisen from diesel or petrol					☑							
13	pH			PH		7.1	pH		7.1	pH	7.1 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		1.6	mg/kg		1.152	mg/kg	0.000115 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthylene				0.12	mg/kg		0.0864	mg/kg	0.00000864 %	✓	
			205-917-1	208-96-8									
16		acenaphthene				1.2	mg/kg		0.864	mg/kg	0.0000864 %	✓	
			201-469-6	83-32-9									
17		fluorene				0.86	mg/kg		0.619	mg/kg	0.0000619 %	✓	
			201-695-5	86-73-7									
18		phenanthrene				7.2	mg/kg		5.184	mg/kg	0.000518 %	✓	
			201-581-5	85-01-8									
19		anthracene				1.4	mg/kg		1.008	mg/kg	0.000101 %	✓	
			204-371-1	120-12-7									
20		fluoranthene				8.7	mg/kg		6.264	mg/kg	0.000626 %	✓	
			205-912-4	206-44-0									
21		pyrene				7.9	mg/kg		5.688	mg/kg	0.000569 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				4.4	mg/kg		3.168	mg/kg	0.000317 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				4.9	mg/kg		3.528	mg/kg	0.000353 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				5.3	mg/kg		3.816	mg/kg	0.000382 %	✓	
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				2.7	mg/kg		1.944	mg/kg	0.000194 %	✓	
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				4.5	mg/kg		3.24	mg/kg	0.000324 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				2.5	mg/kg		1.8	mg/kg	0.00018 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.68	mg/kg		0.49	mg/kg	0.000049 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				2.7	mg/kg		1.944	mg/kg	0.000194 %	✓	
			205-883-8	191-24-2									
										Total:	0.0892 %		

Key

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

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 12500 mg/kg (1.25%) because: Based on guidance within WM3

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.0178%)

Classification of sample: TP107 0.50

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

Sample details

Sample name:
TP107 0.50
Sample Depth:
0.50 m
Moisture content:
15%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 15% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.4	mg/kg	1.32	9.427	mg/kg	0.000943 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.4	mg/kg	1.142	0.388	mg/kg	0.0000388 %	✓	
3	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		**<LOD**
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		18	mg/kg	1.462	22.362	mg/kg	0.00224 %	✓	
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		22	mg/kg	1.126	21.054	mg/kg	0.00211 %	✓	
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	21	mg/kg		17.85	mg/kg	0.00179 %	✓	
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		21	mg/kg	2.637	47.065	mg/kg	0.00471 %	✓	
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		1.1	mg/kg	2.554	2.388	mg/kg	0.000239 %	✓	
10	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2] }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		66	mg/kg	4.398	246.724	mg/kg	0.0247 %	✓	
11	pH			PH		6.2	pH		6.2	pH	6.2 pH		
										Total:	0.0367 %		

Key

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

Classification of sample: WS101 0.40

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

Sample details

Sample name:
WS101 0.40
Sample Depth:
0.40 m
Moisture content:
36%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 36% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		42	mg/kg	1.32	35.49	mg/kg	0.00355 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		19	mg/kg	1.462	17.773	mg/kg	0.00178 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		75	mg/kg	1.126	54.043	mg/kg	0.0054 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	80	mg/kg		51.2	mg/kg	0.00512 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		16	mg/kg	2.637	27	mg/kg	0.0027 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		1.5	mg/kg	2.554	2.452	mg/kg	0.000245 %	✓	
9	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2] }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		64	mg/kg	4.398	180.139	mg/kg	0.018 %	✓	
10	pH			PH		5.1	pH		5.1	pH	5.1 pH		
										Total:	0.0368 %		

Key

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

Classification of sample: WS102 0.20

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

Sample details

Sample name:
WS102 0.20
Sample Depth:
0.20 m
Moisture content:
18%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 18% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		20 mg/kg	1.32	21.653 mg/kg	0.00217 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
3	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<**LOD**
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		24 mg/kg	1.462	28.763 mg/kg	0.00288 %	✓	
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		39 mg/kg	1.126	36.006 mg/kg	0.0036 %	✓	
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	45 mg/kg		36.9 mg/kg	0.00369 %	✓	
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<**LOD**
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		16 mg/kg	2.637	34.593 mg/kg	0.00346 %	✓	
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		2.5 mg/kg	2.554	5.235 mg/kg	0.000524 %	✓	
10	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2] }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		77 mg/kg	4.398	277.685 mg/kg	0.0278 %	✓	
11	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<**LOD**
12	confirm TPH has NOT arisen from diesel or petrol					☑					
13	pH			PH		7.6 pH		7.6 pH	7.6 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		0.31 mg/kg		0.254 mg/kg	0.0000254 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
16		acenaphthene				0.37	mg/kg		0.303	mg/kg	0.0000303 %	✓	
			201-469-6	83-32-9									
17		fluorene				0.22	mg/kg		0.18	mg/kg	0.000018 %	✓	
			201-695-5	86-73-7									
18		phenanthrene				1.9	mg/kg		1.558	mg/kg	0.000156 %	✓	
			201-581-5	85-01-8									
19		anthracene				0.23	mg/kg		0.189	mg/kg	0.0000189 %	✓	
			204-371-1	120-12-7									
20		fluoranthene				2	mg/kg		1.64	mg/kg	0.000164 %	✓	
			205-912-4	206-44-0									
21		pyrene				1.8	mg/kg		1.476	mg/kg	0.000148 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.91	mg/kg		0.746	mg/kg	0.0000746 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				1.1	mg/kg		0.902	mg/kg	0.0000902 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				1.2	mg/kg		0.984	mg/kg	0.0000984 %	✓	
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.36	mg/kg		0.295	mg/kg	0.0000295 %	✓	
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.87	mg/kg		0.713	mg/kg	0.0000713 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.51	mg/kg		0.418	mg/kg	0.0000418 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.14	mg/kg		0.115	mg/kg	0.0000115 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.56	mg/kg		0.459	mg/kg	0.0000459 %	✓	
			205-883-8	191-24-2									
										Total:	0.0451 %		

Key

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

Appendix A: Classifier defined and non GB MCL determinands

chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

lead compounds with the exception of those specified elsewhere in this Annex (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: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

pH (CAS Number: PH)

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

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

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

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

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

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

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

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

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

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

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

confirm TPH has NOT arisen from diesel or petrol

Description/Comments: Chapter 3, section 4b requires a positive confirmation for benzo[a]pyrene to be used as a marker in evaluating Carc. 1B; H350 (HP 7) and Muta. 1B; H340 (HP 11)
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history

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

Worst case species based on hazard statements/molecular weight.

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

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

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

Worst case species based on hazard statements/molecular weight.

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight

nickel {nickel sulfate}

Worst case species based on hazard statements/molecular weight.

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight

zinc {zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2]}

Worst case species based on hazard statements/molecular weight.

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2025.119.6590.11983 (29 Apr 2025)
HazWasteOnline Database: 2025.119.6590.11983 (29 Apr 2025)

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

APPENDIX VI
ORIGIN OF TIER I GENERIC ASSESSMENT CRITERIA

CONSTITUENT	ORIGIN OF RISK ASSESSMENT VALUE
Arsenic	PC4SL - DEFRA
Cadmium	P4CSL - DEFRA
Chromium	P4CSL - DEFRA
Lead	P4CSL - DEFRA
Mercury	2014 LQM/CIEH S4ULs - Inorganic mercury
Nickel	2014 LQM/CIEH S4ULs
Selenium	2014 LQM/CIEH S4ULs
Copper	2014 LQM/CIEH S4ULs
Zinc	2014 LQM/CIEH S4ULs
Cyanide - Total	2014 LQM/CIEH S4ULs
Phenols - Total.	2014 LQM/CIEH S4ULs
Naphthalene	General Assessment Criteria (GAC) developed by CIEH / LQM Suitable 4 Use Levels with supporting data from SR3, SR7 and existing Tox report where applicable. 1% SOM
Acenaphthylene	
Acenaphthene	
Fluorene	
Phenanthrene	
Anthracene	
Fluoranthene	
Pyrene	
Benzo(a)Anthracene	
Chrysene	
Benzo(b/k)Fluoranthene	
Benzo(a)Pyrene	
Indeno(123-cd)Pyrene	
Dibenzo(a,h)Anthracene	
Benzo(ghi)Perylene	
TPH C5-C6 (aliphatic)	
TPH C6-C8 (aliphatic)	
TPH C8-C10 (aliphatic)	
TPH C10-C12 (aliphatic)	
TPH C12-C16 (aromatic)	
TPH C16-C21 (aromatic)	
TPH C21-C35 (aromatic)	

APPENDIX VII
GEOTECHNICAL TESTING RESULTS

Unit 5-6, Innovation Court, Meadowfield Industrial Estate, Meadowfield, Durham, DH7 8FA

Test Report:	**Determination of Liquid Limit, Plastic Limit & Plasticity Index** BS EN ISO 17892-12:2018	**Report Date:**	08.05.2025
Client:	Ergo Environmental Unit 38B North Tyne Ind Estate, Benton Newcastle NE12 9SZ	**Lab ref:**	MT1882 25-2570
		Client ref:	25-2269
		Date sampled:	08.04.2025
		Sampled by:	Client
Site:	Bretton Street Dewsbury	**Date received:**	14.04.2025
Sample location:	Various as below	**Date test completed:**	07.05.2025
Material:	Clay	**Test conducted by:**	DB/ BJ
Source of material:	Site Arisings	**Variation from Standard Method:**	None.
Test Method:	Clause 4.2	**Cone Type:**	80g/30◦
Method of sample preparation:	Cl 5.26 (0.4mm removed by hand) ~~5.2.7 (0.425um washed)~~	**Test Type:**	1-Point/~~4 Point~~

Test Results: **Determination of water content of soil** in accordance with BS EN 17892:2014 Water Content

Test Ref/ Location	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Water Content (%)	Plasticity Class	Material Passing 425µm (%)
WS103 1.2m	25	14	11	12.8	Cl	92
WS104 1.5m	34	16	18	12.7	Cl	92
WS105 0.7m	46	20	26	27.8	Cl	91
WS105 1.9m	25	13	13	8.6	CL	91
TP104 1.0m	48	24	24	31.7	Cl	92
TP104 2.5m	23	12	11	10.6	CL	92

Comments

Signed:

Authorised Signatories:

[✓] M. Aiston (Director)
[ ] G. Batley (Laboratory Supervisor)

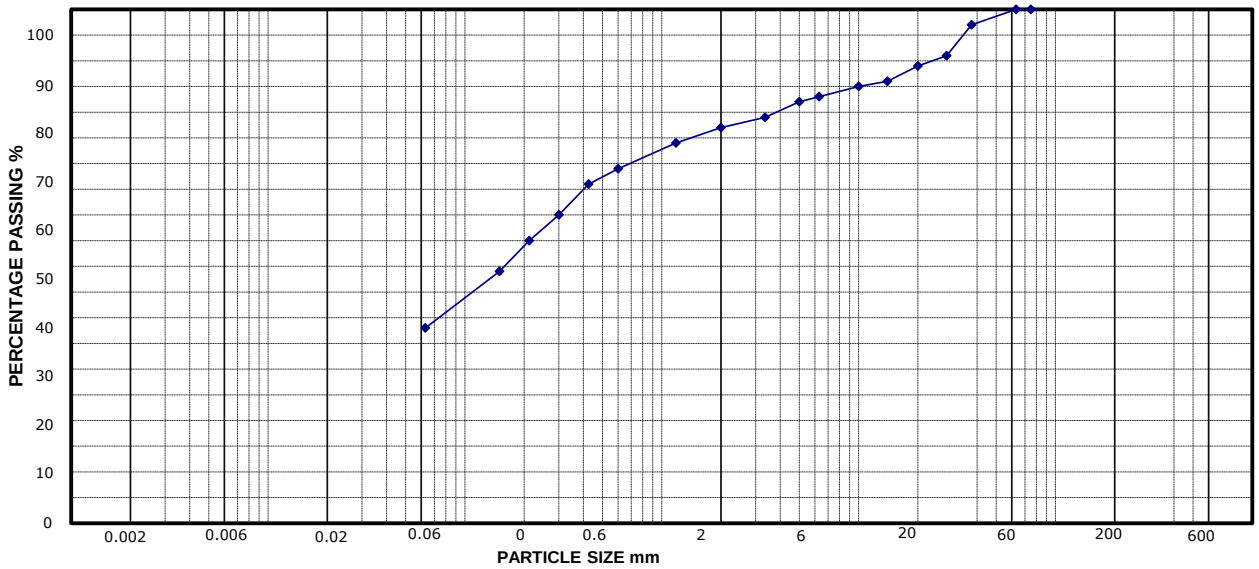
For & on behalf of
G2M Testing Ltd

APPENDIX VIII
FALLING HEAD PERMEABILITY TEST CERTIFICATES

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

g2mtesting
Unit 5-6, Innovation Court, Meadowfield Industrial Estate, Meadowfield, Durham, DH7 8FA

Client	Ergo Environmental Ltd	Lab Reference	25-2570	Test Report	ISO 17892-4:2016
Client Address	Unit 38B North Tyne Ind Estate, Benton Newcastle NE12 9SZ	Material Description	Brown silty gravelly SAND	Test Method	Washing and Sieving
Site	Bretton Street Dewsbury 25-2269			Variation from Standard Method	None
Job Reference	MT1882				
Sample Location	TP101 1.0m			Method of Preparation	Cl 5.3.2
Source of Material	Site arisings	Specification		Pre-treatment Method	None



CLAY	Fine	Medium	Coarse	Fin	Medium	Coarse	Fine	Medium	Coarse	COBBLE	BOULDERS
	SILT			SAN			GRAVEL				

Sieve (mm)	% Passing	Specification
500	100	
300	100	
125	100	
90	100	
75	100	
63	100	
50	100	
37.5	97	
28	92	
20	89	
14	86	
10	85	
6.3	83	
5	82	
3.35	79	
2	77	
1.18	74	
0.600	69	
0.425	66	
0.300	61	
0.212	55	
0.150	49	
0.063	38	

Dry Mass of Sample (g)		7932
BS EN 17892:2014 Water Content (%)		16.2
Particle Density	**Assumed**	2.65

Sample Proportions	**% Dry mass**
Very Coarse	0.00
Gravel	23.00
Sand	39.00
Fines <0.063mm	38.00

Grading Analysis	
D_{100}	50.000
D_{60}	0.3088
D_{30}	#N/A
D_{10}	#N/A
Uniformity Coefficient	#N/A
Curvature Coefficient	#N/A

Sampled By	Client
Date Sampled	08/04/2025
Date Received	14/04/2025
Date Completed	07/05/2025
Date Reported	07/05/2025

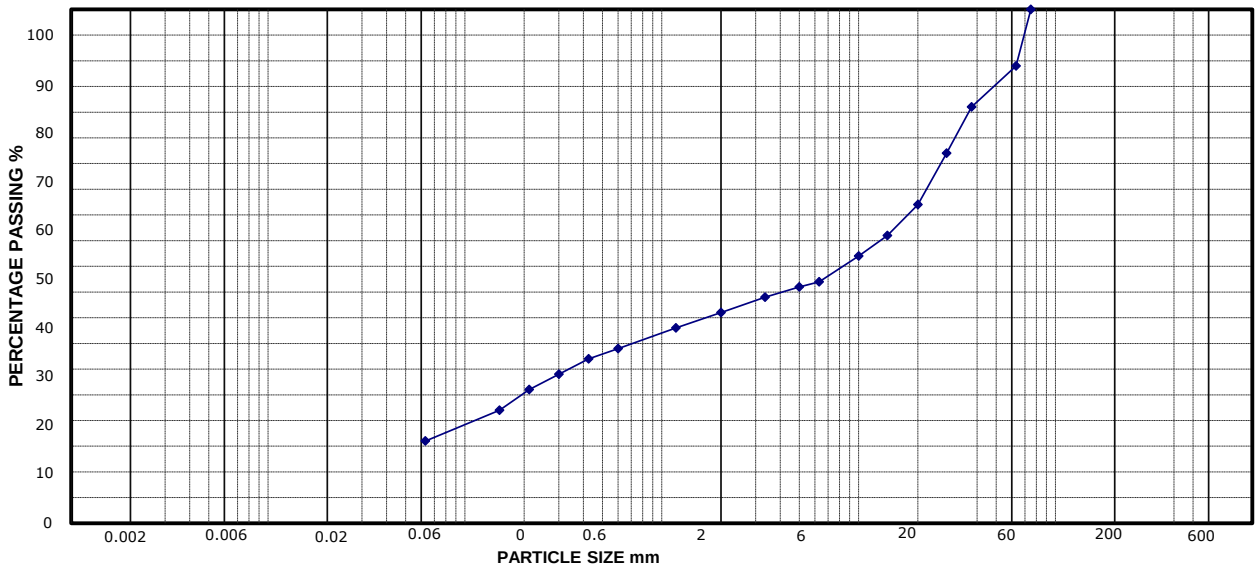
UKAS TESTING 10258

Remarks	Signed:
	M. Aiston (Director)

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

g2mtesting
Unit 5-6, Innovation Court, Meadowfield Industrial Estate, Meadowfield, Durham, DH7 8FA

Client	Ergo Environmental Ltd	Lab Reference	25-2570	Test Report	ISO 17892-4:2016
Client Address	Unit 38B North Tyne Ind Estate, Benton Newcastle NE12 9SZ	Material Description	Brown silty sandy GRAVEL	Test Method	Washing and Sieving
Site	Bretton Street Dewsbury 25-2269			Variation from Standard Method	None
Job Reference	MT1882				
Sample Location	TP103 1.50			Method of Preparation	Cl 5.3.2
Source of Material	Site arisings	Specification		Pre-treatment Method	None



CLAY	Fine	Medium	Coarse	Fin	Medium	Coarse	Fine	Medium	Coarse	COBBLE	BOULDERS
	SILT			SAN			GRAVEL				

Sieve (mm)	% Passing	Specification
500	100	
300	100	
125	100	
90	100	
75	100	
63	98	
50	89	
37.5	81	
28	72	
20	62	
14	56	
10	52	
6.3	47	
5	46	
3.35	44	
2	41	
1.18	38	
0.600	34	
0.425	32	
0.300	29	
0.212	26	
0.150	22	
0.063	16	

Dry Mass of Sample (g)		14267
BS EN 17892:2014 Water Content (%)		14.8
Particle Density	**Assumed**	2.65

Sample Proportions	**% Dry mass**
Very Coarse	2.00
Gravel	57.00
Sand	25.00
Fines <0.063mm	16.00

Grading Analysis	
D_{100}	75.000
D_{60}	18.0000
D_{30}	0.3417
D_{10}	#N/A
Uniformity Coefficient	#N/A
Curvature Coefficient	#N/A

Sampled By	Client
Date Sampled	08/04/2025
Date Received	14/04/2025
Date Completed	07/05/2025
Date Reported	07/05/2025

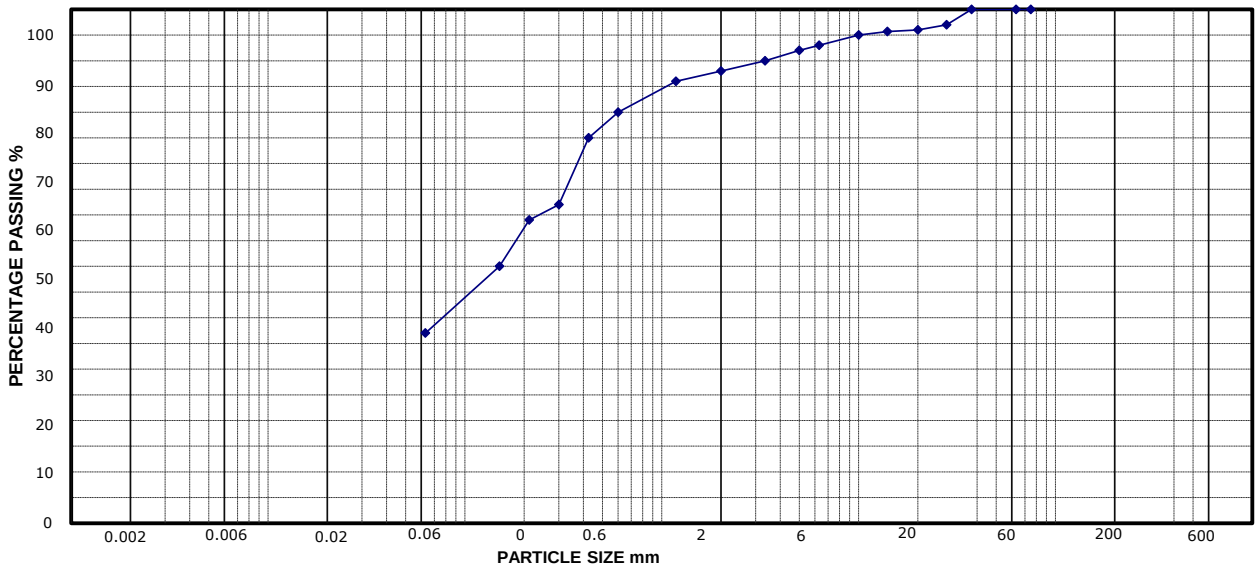
UKAS TESTING
10258

Remarks	Signed:
	M. Aiston (Director)

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

g2mtesting
Unit 5-6, Innovation Court, Meadowfield Industrial Estate, Meadowfield, Durham, DH7 8FA

Client	Ergo Environmental Ltd	Lab Reference	25-2570	Test Report	ISO 17892-4:2016
Client Address	Unit 38B North Tyne Ind Estate, Benton Newcastle NE12 9SZ	Material Description	Brown silty sandy GRAVEL	Test Method	Washing and Sieving
Site	Bretton Street Dewsbury 25-2269			Variation from Standard Method	None
Job Reference	MT1882				
Sample Location	TP104 1.00			Method of Preparation	Cl 5.3.2
Source of Material	Site arisings	Specification		Pre-treatment Method	None



CLAY	Fine	Medium	Coarse	Fin	Medium	Coarse	Fine	Medium	Coarse	COBBLE	BOULDERS
	SILT			SAN			GRAVEL				

Sieve (mm)	% Passing	Specification
500	100	
300	100	
125	100	
90	100	
75	100	
63	100	
50	100	
37.5	100	
28	97	
20	96	
14	96	
10	95	
6.3	93	
5	92	
3.35	90	
2	88	
1.18	86	
0.600	80	
0.425	75	
0.300	62	
0.212	59	
0.150	50	
0.063	37	

Dry Mass of Sample (g)		2457
BS EN 17892:2014 Water Content (%)		22.5
Particle Density	**Assumed**	2.65

Sample Proportions	% Dry mass
Very Coarse	0.00
Gravel	12.00
Sand	51.00
Fines <0.063mm	37.00

Grading Analysis	
D_{100}	37.500
D_{60}	0.2413
D_{30}	#N/A
D_{10}	#N/A
Uniformity Coefficient	#N/A
Curvature Coefficient	#N/A

Sampled By	Client
Date Sampled	08/04/2025
Date Received	14/04/2025
Date Completed	07/05/2025
Date Reported	07/05/2025

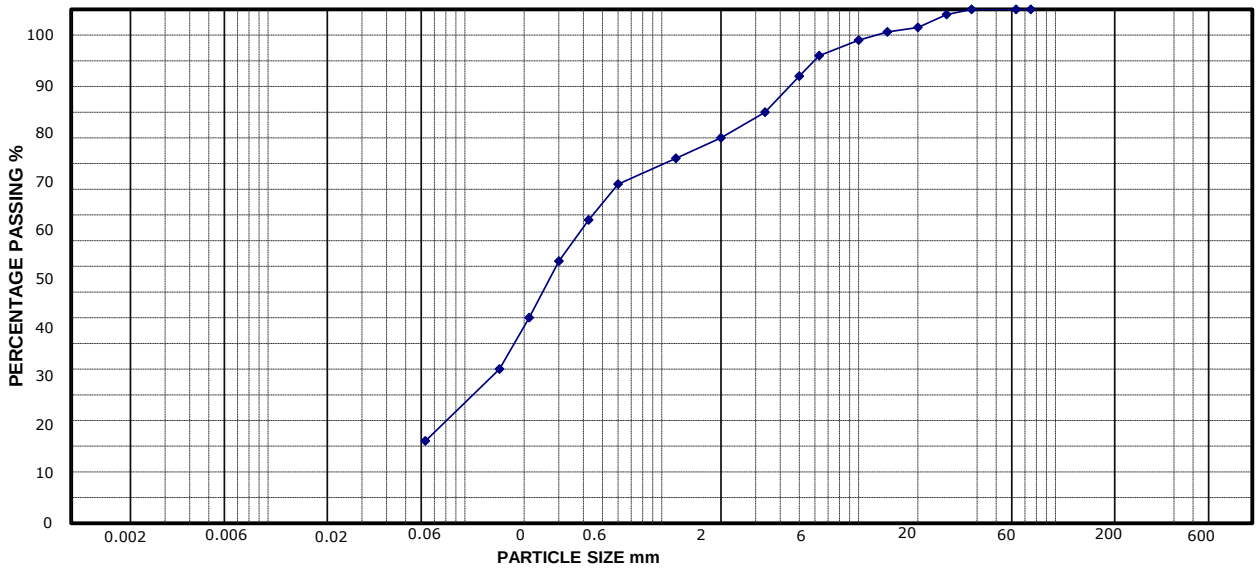
UKAS TESTING 10258

Remarks	Signed:
	M. Aiston (Director)

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

g2mtesting
Unit 5-6, Innovation Court, Meadowfield Industrial Estate, Meadowfield, Durham, DH7 8FA

Client	Ergo Environmental Ltd	Lab Reference	25-2570	Test Report	ISO 17892-4:2016
Client Address	Unit 38B North Tyne Ind Estate, Benton Newcastle NE12 9SZ	Material Description	Brown silty gravelly SAND	Test Method	Washing and Sieving
Site	Bretton Street Dewsbury 25-2269			Variation from Standard Method	None
Job Reference	MT1882				
Sample Location	TP107 2.50			Method of Preparation	Cl 5.3.2
Source of Material	Site arisings	Specification		Pre-treatment Method	None



CLAY	Fine	Medium	Coarse	Fin	Medium	Coarse	Fine	Medium	Coarse	COBBLE	BOULDERS
	SILT			SAN			GRAVEL				

Sieve (mm)	% Passing	Specification
500	100	
300	100	
125	100	
90	100	
75	100	
63	100	
50	100	
37.5	100	
28	99	
20	97	
14	96	
10	94	
6.3	91	
5	87	
3.35	80	
2	75	
1.18	71	
0.600	66	
0.425	59	
0.300	51	
0.212	40	
0.150	30	
0.063	16	

Dry Mass of Sample (g)		3142
BS EN 17892:2014 Water Content (%)		16.9
Particle Density	**Assumed**	2.65

Sample Proportions	**% Dry mass**
Very Coarse	0.00
Gravel	25.00
Sand	59.00
Fines <0.063mm	16.00

Grading Analysis	
D_{100}	37.500
D_{60}	0.4500
D_{30}	0.1499
D_{10}	#N/A
Uniformity Coefficient	#N/A
Curvature Coefficient	#N/A

Sampled By	Client
Date Sampled	08/04/2025
Date Received	14/04/2025
Date Completed	07/05/2025
Date Reported	07/05/2025

UKAS TESTING 10258

Remarks	Signed:
	M. Aiston (Director)

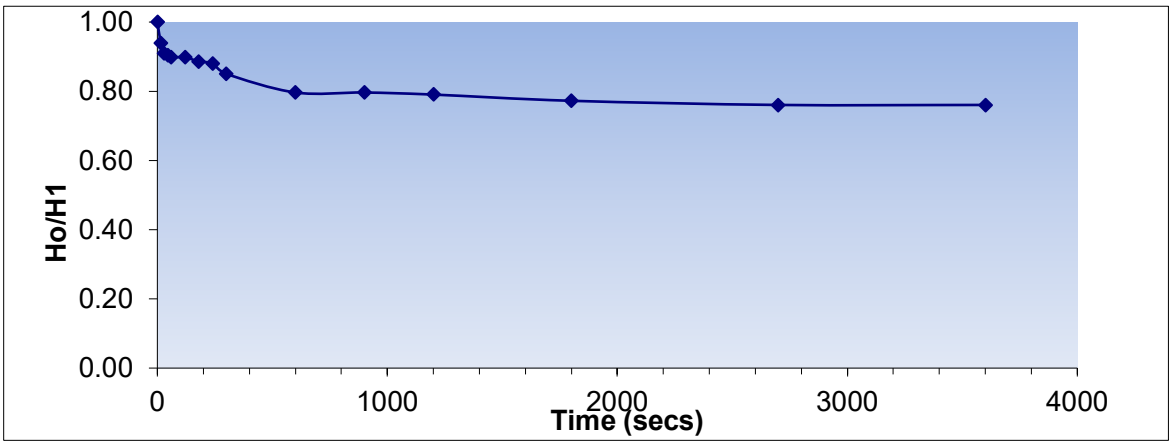
APPENDIX VIII
FALLING HEAD PERMEABILITY TEST CERTIFICATES

Falling Head Test

Borehole: WS103 **Test No: 1**

Contract No:	25.2269	Casing Diameter: (m)	0.05
Contract Title:	Bretton Street	Depth of Water: (mbgl)	0.77
Date of Test:	02/05/2025	Depth of Borehole: (m)	1.67

Recorded Time			Total Time			H/Ho
Hours	Minutes	Seconds	(secs)	Depth (m)		
0	0	0	0	0		1.0000
0	0	15	15	0.1		0.9401
0	0	30	30	0.15		0.9102
0	0	45	45	0.16		0.9042
0	1	0	60	0.17		0.8982
0	2	0	120	0.17		0.8982
0	3	0	180	0.19		0.8862
0	4	0	240	0.20		0.8802
0	5	0	300	0.25		0.8503
0	10	0	600	0.34		0.7964
0	15	0	900	0.34		0.7964
0	20	0	1200	0.35		0.7904
0	30	0	1800	0.38		0.7725
0	45	0	2700	0.40		0.7605
1	0	0	3600	0.40		0.7605



General Approach

$$k = \frac{A}{F(t_2 - t_1)} \log_e \frac{H_1}{H_2}$$

k = permeability of soil

F = Intake Factor (figures 6 &7, BS5930:1999)

H_1 = variable head measured at time t_1 after commencement of test

H_2 = variable head measured at time t_2 after commencement of test

A = Cross sectional area of borehole casing or standpipe as appropiate.

H_1 =	0.1	t_1 =	15
H_2 =	0.3	t_2 =	600
		F=	0.1375

A = 0.00196349 m^2

Coefficient of Permeability, k = **2.21E-05** m/s