

Phase 2 Site Investigation

Plot 10B First Street

for

Vita Group

civil

structural

earth sciences

strategic land

special projects

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22 / 12 / 2022



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Phase 2 Site Investigation

Plot 10B First Street

Vita Group

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1.0 Introduction

1.1 Background

1.1.1 RoC Consulting has been appointed by House of Social 1 Ltd to conduct a Phase 2 Site Investigation across Plot 10B First Street (the site). It is understood that the site is to be redeveloped for PBSA use in accordance with Tim Groom architect's drawing (ref: 1172-TGA-XX-ZZ-DR-A-10029 P02) and Planit Landscape Architects drawing (ref: PL1471.3-PLA-ZZ-00-DR-L-001) provided within Appendix A.

1.1.2 The following assessment has been completed to support design and planning requirements for the site's redevelopment and follows on from a number of site investigations relating to the development site. The most recent and relevant are listed below:

- 1) Phase 1 Desktop Study completed by RoC Consulting dated September 2022 (ref: 4513-ROC-ZZ-XX-RP-ES-P1-101)
- 2) Geotechnical and Contaminated Land Interpretative Report completed by Ramboll dated February 2020 (ref: 1620002943-GCLIR-03)
- 3) Ground Investigation Report completed by TerraConsult dated January 2020 (ref:4302R001-3)

1.1.3 It is recommended reference be made to the abovementioned report (s) when reviewing the current assessment.

1.1.4 The scope of the report and its assessment has been based around the site's redevelopment proposals as outlined in the aforementioned architect's plans. It should be noted that any subsequent revision of the proposed redevelopment or site boundary away from the above-mentioned drawing may result in the full or partial re-interpretation of this report and assessment.

1.2 Terms of Reference

1.2.1 The Phase 2 Site Investigation was carried out following receipt of an instruction from the client.

1.3 Objectives

1.3.1 The scope of works has been tailored to meet both planning and design requirements to assist with the site's redevelopment. These considerations include:

- 1) Design a programme of site investigation works to establish ground conditions beneath the site and target known or suspected sources of contamination as revealed by the Phase 1 Desk Study and previous phases of site investigation.
- 2) Completion of site investigation field works including the formation of 2 rotary open hole and rotary cored boreholes to establish ground conditions, complete in-situ strength tests and facilitate the installation of groundwater monitoring wells.

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- 3) Completion of 6 window sampler boreholes to a provisional depth of 5m below ground level to support information obtained from rotary boreholes, target the investigation of potential sources of soil and groundwater contamination and facilitate the installation of ground gas monitoring wells
- 4) Completion of 7 machine excavated trial pits to further assess the quality of soils across the site, investigate potential shallow obstructions and infill information obtained from boreholes.
- 5) Provision for the works to be undertaken with UXO specialist supervision and other safety measures
- 6) Completion of geo-environmental and geotechnical laboratory analysis of soil, water and rock samples to determine physical and chemical characteristics.
- 7) Completion of a qualitative geotechnical assessment of site conditions to inform new building foundation and retaining wall design. The scope of this assessment will also include reference to the findings and result of previous site investigation works.
- 8) Completion of a ground gas risk assessment to establish site conditions and, as required, the scope of any remedial measures required to control gas ingress.
- 9) Completion of a contaminated land risk assessment utilising information provided by both the current and previous phases of site investigation works sufficient in its scope to support planning application requirements as well as identify the initial scope of any remedial works necessary to support the sites redevelopments.

2.0 Limitations of Study Assessment

- 2.0.1 The report has been produced by RoC Consulting for the client solely for the purposes of a review of information for the above-mentioned site. It may not be used by any person for any other purpose other than that specified without the express written permission of RoC Consulting. Any liability arising out of its use by a third party for purposes not wholly connected with the above shall be the responsibility of that party who shall indemnify RoC Consulting against all claims, costs, damages and losses arising out of such use.
- 2.0.2 This report is written in the context of an agreed scope of work and should not be used in a different context. The report should be read in its entirety. Furthermore, new information, improved practices and changes in legislation may require re-interpretation of this report in whole or in part after its original issue. RoC Consulting reserve the right to alter their conclusions and recommendations in the light of further information that may become available.
- 2.0.3 Ground conditions can change rapidly, especially in areas of made ground, however, it is assumed that the ground conditions observed are typical and representative of the site as a whole. The ground conditions have been determined from a limited number of exploratory holes formed across the property, therefore, only a small percentage of the total area of the property has been investigated. Interpolation between exploratory holes has enabled a general picture of the subsurface conditions to be produced.
- 2.0.4 Conclusions drawn from the ground investigation should be read in this context. RoC Consulting cannot accept responsibility for any situations resulting from locally unforeseen ground conditions occurring between exploratory holes.
- 2.0.5 RoC Consulting has exercised all reasonable due skill, care and diligence when collating the design and subsequent execution of ground investigation works. It should be noted we cannot anticipate the requirements and actions of the regulatory authorities when designing and implementing ground investigation works and, whilst thorough consideration has been given to all geo-environmental and geotechnical concerns; further additional fieldworks or assessment may be required at their request.
- 2.0.6 RoC Consulting cannot confirm that all ground conditions which may be uncovered during the works have been identified, rather this report is intended as an informative for use by experienced professionals and contractors.
- 2.0.7 Whilst the investigation and report has been scoped in accordance with our understanding of typical regulatory authority requirements, we cannot confirm that on submission regulators may require additional in situ testing or investigation.
- 2.0.8 Assessment of material stockpiled on the site during construction of the adjacent plots, is beyond the scope of this assessment. It has assessed the condition of site soils at the time of the works and therefore assumes that stored materials will be managed effectively and removed before construction commences onsite with negligible effect on the remaining onsite soils.

3.0 Background Information

- 3.0.1 The overview below outlines the most salient points and considerations, and it is recommended reference be made to the complete findings of previous site investigation reports for additional information / clarification.

3.1 Site Description

- 3.1.1 The Proposed Development is located on an approximately 0.3 ha parcel of land adjacent southwest of River Street and north of Hulme Street, Manchester (Grid Reference: 383808, 397305).
- 3.1.2 The site is currently in a vacant open area with several stockpiles of demolition waste and pile arisings sourced from plot 9a to the west. The majority of the site is underlain by a concrete slab (measured to be 12cm thick in the north of the Site where visible) or asphalt with the remainder surfaced by compacted hardcore fill. A recently constructed electrical substation and telecoms unit were observed in the south of the site. In the northwest of the site are a garage and bin area at the time of reporting being utilised by on-site contractors as an area of car parking. The site appears highest in the southeast, sloping toward the northwest. A temporary drainage channel is present in the north of the site serving on site welfare cabins running underneath the hardstanding toward the north. The northern, eastern and southern perimeters of the site are marked by a concrete base and metal sheet fencing.
- 3.1.3 The site is surrounded by residential and commercial land uses along with various ongoing construction projects and vacant land. The former Macintosh & Co Limited Rubber Works is adjacent the eastern site boundary which has been repurposed into residential apartments. To the north are several large commercial and residential buildings. To the west is a live construction site connected to plot 10b and defined as plot 9a & b and plot 10a. To the south of the site are further construction projects and the A57 (running east to west).
- 3.1.4 Olfactory evidence of contamination in the form of a hydrocarbon odour was noted within a stockpile of material originating from Plot 9a which was placed in the eastern portion of the site in the vicinity of TP105. With exception to the presence of made ground consisting of concrete hard-standing and compacted hardcore fill, there was no clear visual or olfactory evidence of any further contamination on the surface of the site itself. However, at the time of the visit, several stockpiles of material derived from elsewhere on the wider site were present. During the site walkover a number of stockpiles were also observed only 1 stockpile appeared to have been placed onto a membrane while others were placed directly onto the hard-standing and fill. In one stockpile, suspected tar was observed.
- 3.1.5 Assessment of material stockpiled on the site during construction of the adjacent plots, is beyond the scope of this assessment. It has assessed the condition of site soils at the time of the works and therefore assumes that stored materials will be managed effectively and removed before construction commences onsite with negligible effect on the remaining onsite soils.
- 3.1.6 A selection of photographs showing the site at the time of inspection are provided within Appendix A.

3.2 Geological Characteristics

- 3.2.1 Review of publicly available BGS geological map records indicate the site is underlain by the following:

Drift Geology: Glaciofluvial Sheet Deposits – Sand and Gravel

Overlying:

Devensian Till – Predominantly clay

Solid Geology: Chester Formation – Sandstone

- 3.2.2 The Envirocheck report (Appendix C) indicates that, like the remainder of Manchester City Centre, the site is located just within the edge of a former coalfield (Coal Mine Reporting Area). It is not located within the vicinity of a development high risk area, coal seam or mine entry. A Coal Authority report is not recommended.

3.3 Site History and Environmental Characteristics

- 3.3.1 Earliest available historical records indicate that the site was occupied by open, potentially agricultural land up until the mid-19th Century when residential housing was constructed on site. The residential housing present on site was cleared during the mid-20th Century when a steel truss building associated with the Dunlop Rubber works was constructed. Insurance plans depict an electrical substation in the eastern portion of the site and dust extraction plant in the northern portion of the site. The rubber works building was cleared in the early 21st Century and during the 21st Century the site has been used as a car park as well as a site compound and storage yard for the First Street development with electrical and telecoms substations being constructed in the south of the site and a garage in the north. More recently the site has been used for temporary events and is currently being utilised by the contractor on Plot 9a for earthworks stockpiles.
- 3.3.2 The site has been surrounded by a number of industrial land uses throughout its history. Most notably the Gaythorne Gas Works immediately to the north of the site with multiple gas holders in close proximity to the site's northern boundary. The Gaythorne gas works was demolished in the late 21st Century and has since been subject to extensive remediation of former gas works contamination to facilitate the First Street development. and Mackintosh rubber works to the east of the site which was later extended onto the site following acquisition by Dunlop. The rubber works on site was demolished in the early 21st Century with the remaining rubber works building to the east of the site being converted into residential apartments. From the mid to late 20th Century a tank with unknown contents was located adjacent the site western boundary and a coal yard 50m to the south of the site. In 1992 an electrical substation was denoted adjacent the northern site boundary associated with the First Street development which has since been demolished. Two print works and a timber yard were also historically located within 250m of the site.
- 3.3.3 The Envirocheck Groundwater Vulnerability Map indicates the superficial deposits are classified as a Secondary A Aquifer with the underlying Chester Sandstone bedrock designated as a Principal Aquifer. The site is located within a Zone III Environment Agency Source Protection Zone.
- 3.3.4 The site is not located in close proximity to any sensitive groundwater abstraction points (e.g. for a potable water supply well). The nearest water abstraction point is indicated 175m to the northwest relating to now defuncted Dunlop Rubber Works. Water was formerly abstracted from groundwater

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well for use in the rubber making process, although the rubber works has since closed, and the site cleared. The status of the former abstraction borehole is currently unknown. There are four active water abstractions at the site or within 500m of the site boundary relating to borehole abstraction wells 384m to the southeast operated by Manchester Metropolitan University for use in heating networks.

- 3.3.5 The nearest surface water feature is indicated 100m to the north of the site in the form of the River Medlock (culverted in this location). Water quality of this receptor indicates a GQA Grade of "E" (Poor) and a flow rate of less than 0.31 cumecs.
- 3.3.6 There are multiple discharge consents indicated within 250m of the site all of which relate to United Utilities storm water sewer overflows into the River Medlock associated with periods of high flow.
- 3.3.7 A number of historic pollution incidents have been noted in close proximity to the site relating to a range of incidents including water pollution incidents into the River Medlock to the north (all of which were Category 3 – Minor Incident).
- 3.3.8 The Envirocheck database indicates that there have been no prosecutions relating to controlled waters or industrial processes within 500m of the site.
- 3.3.9 A number of hazardous substances consents and pollution prevention control measures are known to be held within 500m of the site. However, these are not considered to represent significant potential sources of contamination with respect to the site.
- 3.3.10 There are no active BGS recorded landfill sites, local authority recorded landfill sites, registered or historic landfill sites within a 500m radius of the site. Areas of potentially infilled land are noted within 500m of the site associated with the backfilled gas holders to the north and diversion of the River Medlock (also to the north).
- 3.3.11 A Licensed Waste Management Facility (Location) is noted to the 195m to the northeast of the site associated with a mobile plant operation (dated 2002) potentially relating to now completed remediation or development works. Similar permits were also noted 370m to the north issued in 2011 also relating to now completed remediation works.
- 3.3.12 There are no permanent Licensed Waste Management Facilities, waste treatment sites or registered waste transfer stations located at the site or within 500m of the site boundary
- 3.3.13 The site northern portion of the site is located in an area at low risk of fluvial flooding, and the site is located within the maximum extent of reservoir flooding.

3.4 Historical Site Investigations

- 3.4.1 A number of previous site investigations have been undertaken at the site. These are:
 - Cundall 2016 Ground Investigation Report (ref. 1011906.RPT.GL.005) – Plots 9 and 10
 - Ramboll, 2017 Ground Investigation Report – Plots 9 and 10
 - **Terraconsult 2020 Ground Investigation Report** (ref. 302R001-3) – Plots 9 and 10

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- **Ramboll 2020 Geotechnical and Contaminated Land Interpretative Report** (ref: 1620002943-GCLIR-03)
- **Ramboll 2020 Waste Assessment Update Letter – Plots 9 and 10**

3.4.2 For brevity, only the latter three of these are detailed below. The Ramboll 2020 report itself summarises all previous reports.

3.4.3 **Plots 9 & 10 First street Ground investigation report, Terraconsult/Ramboll, January 2020 (ref: 4302R001-3) –**

3.4.4 This work was undertaken in June 2019 in collaboration with Ramboll and reported in several revisions, the last of which was in January 2020. The intrusive site works included:

- 6 no. rotary open hole boreholes;
- 5 no. dynamic sample boreholes;
- 9 no. groundwater monitoring installations followed by 4 no. monitoring rounds;
- 14 no. rising head permeability tests; and
- Chemical testing of samples.

3.4.5 These boreholes included 4 no. exploratory holes (BH05, WS03, WS03A, WS04) sunk on Plot 10b (the site). Generally, made ground was observed as a gravel of concrete, brick and bitumen to 0.60-1.70mbgl (30.38m AOD) underlain by a grey gravelly clay with bitumen, concrete, brick and sandstone to 1.20-3.80mbgl. Glaciofluvial sheet deposits were observed to 4.60mbgl underlain by Chester Sandstone to the base of the borehole at 15.00mbgl. Waste assessment criteria testing carried out in WS04 in the south of the Site found that there were elevated levels of total organic carbon (4%) and Antimony (0.067mg/kg) which would classify the waste as suitable for an inert waste landfill.

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3.4.6 Plots 9 & 10 First Street Manchester, Geotechnical and Contaminated Land Interpretative Report, Ramboll, February 2020 (ref: 1620002943-GCLIR-03) -

3.4.7 The report summarised all previous investigations of Plots 9 and 10 and provided a final set of interpretative recommendations. In the report, a summary of ground conditions beneath the combined Site of Plot 9 & 10 was produced, as detailed below.

Stratum	From (m AOD)	To (m AOD)
Hard surfacing - Concrete slab, locally reinforced or black asphalt	GL or 30.9	30.9 to 30.5
Made ground (granular) - Grey sandy gravel of brick, concrete, charcoal with inclusions of clinker, ash, clay. - Slag gravel - Crushed red brick - Sandstone / limestone gravel	GL	32.8 to 27.8
Made ground (cohesive) - Dark grey sandy gravelly silt gravel is brick, concrete, charcoal with flint and brick cobbles - Soft to firm dark brown slightly sandy gravelly clay with brick cobble content - Dark brown and black, slightly sandy peat with rare organic matter	GL or 30.8	32.5 to 28.4
Alluvium - Sandy clay - Fibrous peat - Clayey sand	31.6 to 28.4	30.7 to 26.4
Glaciofluvial deposits - Slightly gravelly sand	30.7 to 26.4	29.8 to 23.9
Glacial Till - Stiff slightly sandy slightly gravelly clay	29.8 to 25.4	28.8 To 25.3
Weathered Bedrock - Recovered as sand - Extremely weak sandstone	25.6 to 23.8	25.2 to 21.5
Intact Bedrock - Extremely weak to weak sandstone with occasional 0.01 – 0.50m laterally discontinuous layers of extremely weak mudstone.	25.2 to 21.5	8.9 to 5.9

3.4.8 Generally it can be observed that a significant thickness of Made Ground is present across the site underlain by a thick layer of natural soils before reaching weathered bedrock at depths of between 5 and 7m.

3.4.9 The report included conclusions from both geotechnical and contamination perspectives, which have been summarised below:

Geotechnical:

- Recommended deep foundation solution i.e. rock socketed CFA piles recommended founding into the sandstone.

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- Made ground was likely suitable for supporting loads from ground bearing floor slabs – localised soft material in plot 10 should be removed and replaced with compacted structural fill.
- Design CBR value of 4% was recommended as a provisional value for the design of pavement foundations and external areas except where made ground is encountered. If at formation level soft or uncharacteristic material is encountered, it should be replaced by suitably compacted granular material;
- For minor structures, a design bearing capacity of 100kPa in ULS combination 2 for the made ground was recommended;
- A design sulphate class of DS-2 and an ACEC of AC-2 was considered appropriate for the Site.
- The investigations did not encounter any evidence of voids;
- Buried concrete was encountered at depths above 1.00m on Plot 10b in 2 no. exploratory holes (RP12, WS104); and
- Suitable allowances should be made to identify potential obstructions within the upper few meters of the former site cabin area in the northwest of plot 10b.

Contamination:

3.4.10 The following pollutant linkages were identified requiring further consideration and were proposed to be addressed in a Remediation Strategy

- Asbestos in Made Ground: it was recommended that the identified risks could be controlled through unspecified risk management measures during construction
- Hydrocarbons and SVOCs in soils: No remedial measures recommended with the exception of barrier pipe
- Ground gases: Elevated methane and carbon dioxide indicated characteristic situation 2;
- Potential additional impacts: uninvestigated areas should be accounted for in remedial strategy
- Potential for mobilisation of contamination during construction – piling risk assessment recommended

3.4.11 While marginal exceedances were identified with respect to controlled waters, it was noted that the covering of the site with buildings and hardstanding would reduce the potential for infiltration and remediation with respect to this was not recommended.

3.4.12 Ramboll 2020 Waste Assessment Update Letter

3.4.13 This letter supplemented previous waste assessment in the above report following additional testing. It indicated that all the principal groups of soils at the site could be treated as non-hazardous. However, it was noted that asbestos testing in Made Ground was sufficient for some of these soils to be classed as Hazardous Waste on this basis. The conclusion was that Made Ground would require assessment and testing through the construction process, with the likelihood of <2% of this material ultimately being disposed of as hazardous waste owing to asbestos content.

4.0 Site Investigation Design

General

- 4.0.1 The RoC intrusive investigation was designed and completed to further investigate geo-environmental issues identified during the Phase 1 Desktop Study and previous site investigations as well as provide geotechnical information to facilitate new building design.
- 4.0.2 The site investigation works comprised the formation of 2 rotary open hole and rotary cored boreholes to a maximum depth of 24.50mbgl, 5 window sampler boreholes to a maximum depth of 5.00mbgl and 7 machine excavated trial pits to a maximum depth of 2.50mbgl.
- 4.0.3 Exploratory hole placement was dictated by the findings of the Phase 1 Desktop Study to zone in on areas where previous industrial activity may have impacted soil quality. In addition, boreholes and trial pits were located within the footprint of the proposed new development to establish ground conditions and support foundation design.
- 4.0.4 Samples of soil collected during the investigation works are to be analysed for a variety of determinants associated with the pattern of historic industrial activity across the site as outlined within the preliminary conceptual site model.
- 4.0.5 Table 4.0 provided below provides location justification for each exploratory hole formed during the site investigation fieldworks. The purposes of this table are to illustrate the targeting of potential sources of contamination during the Phase 2 site investigation works.

Table 4.0: Borehole Locations & Justification

BH/WS ID.	Reason for selection
RBH101	Provide geotechnical information under the northern footprint of the proposed building and assess groundwater quality within the underlying principal aquifer.
RBH102	Provide geotechnical information under the southern footprint of the proposed building and assess groundwater quality within the underlying principal aquifer.
WS101a	Establish ground conditions.
WS101b	Establish ground conditions and install ground gas monitoring well.
WS102	Establish ground conditions and install ground gas monitoring well.
WS103	Establish ground conditions.
WS104	Establish ground conditions and assess potential for contaminants originating from historic electrical substation.
WS105	Establish ground conditions and install ground gas monitoring well.
WS106	Establish ground conditions and install ground gas monitoring well.
TP101	Establish ground conditions.
TP102	Establish ground conditions.
TP103	Establish ground conditions.
TP104	Establish ground conditions.
TP105	Establish ground conditions and assess potential for contaminants originating from historic electrical substation.
TP106	Establish ground conditions.
TP107	Establish ground conditions.



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- 4.0.6 Exploratory hole locations are shown on RoC Consulting drawing 4513-ROC-ZZ-XX-DR-ES-ES101 (Current Site), 4513-ROC-ZZ-XX-DR-ES-ES102 (Prop Development) and 4513-ROC-ZZ-XX-DR-ES-ES103 (Historic Development Layout) provided within Appendix A.

5.0 Site Investigation Fieldworks

- 5.0.1 Site investigation fieldworks were completed between the 7th and 11th of November 2022 by drilling contractors MT Geoservices. Rotary boreholes were formed using a Beretta T44.
- 5.0.2 Information with respect to buried services was obtained from relevant providers prior to commencement of the investigation works. However, as a precautionary measure all exploratory hole locations were scanned with a Cable Avoidance Tool prior to the commencement of works. In addition, hand dug service pits were completed to a depth of 1.2mbgl at all borehole locations deemed to fall in close proximity to the suspected location of possible buried service runs / infrastructure.
- 5.0.3 To ensure no new sources of contamination were introduced to underlying soils / bedrock during the formation of each borehole, steel casing was used throughout as well as vegetable oil as a lubrication medium for all drilling apparatus. Sampling equipment was also cleaned between sampling to reduce cross-contamination risks. On completion boreholes were backfilled with impermeable bentonite seals to prevent the creation of potential contamination pathways, excepting monitoring well response zones.
- 5.0.4 Soil and rock core samples were collected for subsequent chemical and geotechnical laboratory analysis. Soil samples used for geotechnical analysis were collected in 1kg plastic sample tubs and polythene “bulk” bags. Samples collected for chemical testing were collected in 1kg plastic sample tubs and 258g glass jars and 60g glass jars. Samples were obtained from both made ground and natural strata to assess the overall quality of underlying soils. In situ soil strength was investigated using Standard Penetration Tests (SPT) within superficial deposits as well as to confirm rock head had been reached.
- 5.0.5 The shallow soils encountered during construction of the boreholes were described and logged by a suitably qualified engineer in accordance with BS 5930: Code of Practice for Site Investigations (the log sheets for which have been provided within Appendix B).
- 5.0.6 A total of 6 ground gas and ground water monitoring wells were installed within window sample and rotary boreholes. Installation details are provided within Table 5.0 below, copies of ground water and gas monitoring records are provided within Appendix E.

Table 5.0: Monitoring Well Installations

BH ID	Monitoring well depth	Response zone	Response zone strata
RBH101	20.00	10.00 to 20.00	Chester Formation
RBH102	20.00	10.00 to 20.00	Chester Formation
WS101B	1.00	0.50 to 1.00	Made Ground
WS102	3.00	1.00 to 3.00	Made Ground and Glaciofluvial Deposits
WS105	3.00	1.00 to 3.00	Made Ground and Devensian Till
WS106	1.40	0.50 to 1.40	Made Ground



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- 5.0.7 The site works have been undertaken with supervision from an Unexploded Ordnance specialist. No potential UXO was encountered during the works. UXO risks will also require management during the construction phase and specialist advice on this should be sought.

6.0 Encountered Ground Conditions

- 6.0.1 The following ground conditions are summarised from the exploratory holes formed during the ROC Consulting site investigation. The following represents an overview of encountered ground conditions and it is recommended reference be made to the borehole and trial pit log sheets provided within Appendix B for a detailed strata description; all depths shown are given in metres below ground level (mbgl) unless otherwise stated).

6.1 Ground Conditions Overview

Made Ground

- 6.1.1 Made ground was reported at all exploratory hole locations the details of which is provided in table 6.1 below:

Table 6.1: Made Ground Strata Description

Strata description	Made ground was found to primarily comprise a granular demolition fill type material with a high brick cobble content. Other anthropogenic inclusions noted within the made ground included concrete, metal, clinker, ceramic and coal. Cohesive made ground was encountered at RBH101, RBH102 and WS105 underlying the aforementioned granular deposits. At a large number of locations obstructions were encountered primarily in the form of a concrete slab / concrete obstructions. This included WS101A, WS101B, WS102, WS104, WS106, TP102, TP103, TP105, TP106 and TP107. Due to a number of exploratory holes having to be terminated due to these obstructions the depth of made ground deposits was not proven in a number of locations. The density of made ground deposits derived from SPT N values varies from very loose to extremely dense with 3 of the 4 SPTs undertaken in made ground ranging from 49-50. Given the make-up of the made ground this is likely due to the high cobble content of the made ground and the number of concrete obstructions present. No ground water strikes were encountered within made ground deposits.		
Max Depth	5.50	Min Depth	2.50
Mean Depth	3.63	SPT Range	N = 3 to 50

Glaciofluvial Deposits

- 6.1.2 Natural soils of the Glaciofluvial Deposits were reported at the base of made ground deposits at 2 exploratory hole locations as described in Table 6.2.

Table 6.2 Glaciofluvial Sheet Deposits

Strata description	Glaciofluvial sheet deposits were encountered underlying made ground deposits at RBH101 and WS102. Generally, these deposits were described as a gravelly sand becoming sand and gravel with depth. The depth of the glaciofluvial deposits was only proven in RBH101 where the Chester Formation was encountered at a depth of 6.80mbgl. A single SPT was undertaken within this stratum at WS102 indicating the shallower sands to be medium dense in nature. At 3.00mbgl a groundwater strike was noted in WS102. No groundwater strikes were reported in RBH101 due to the drilling methodology used to advance the hole.		
Max Depth	6.80	Min Depth	6.80mbgl
Mean Depth	6.80	SPT Range	16 (Single SPT)

Table 6.3 Devensian Till Deposits

Strata description	Devensian Till Deposits were encountered underlying made ground at RBH102 and WS105 and was found to generally comprise a generally sandy gravelly CLAY with some bed of gravel reported within the clay. The depth of Devensian Till was only proven at RBH102 at a depth of 9.00m where the Chester Formation was encountered. Two SPTs were undertaken within this stratum at WS105 giving N values from 2 to 20. No groundwater strikes were reported within Devensian Till deposits.		
Max Depth	9.00	Min Depth	9.00
Mean Depth	9.00	SPT Range	2 to 20

Weathered Bedrock

- 6.1.3 Rockhead was only encountered at RBH101 and RBH102 at 6.50mbgl (24.09mAOD) and 9.00mbgl (23.81mAOD) respectively at RBH101 sandstone was first encountered as a medium dense reddish-brown sand whereas at RBH102 sandstone was first encountered as an extremely weak reddish-brown sandstone.
- 6.1.4 A programme of geotechnical testing was completed on rock samples obtained from site investigation works copies of which are provided within Appendix D.

6.2 Groundwater & Contamination Observations

- 6.2.1 No visual evidence of contamination was noted during the site investigation works. Olfactory evidence of contamination was noted at a single location, WS104 within made ground deposits. A stockpile of material from the neighbouring construction works on Plot 9a was located next to WS104 and was noted to be giving off a hydrocarbon odour.
- 6.2.2 Only a single groundwater strike was encountered during the site investigation works at WS102 at a depth of 3.00mbgl within Glaciofluvial Sheet deposits. However, it should be noted that the method of rotary drilling adopted at the site does not allow for accurate observation of groundwater levels during drilling.
- 6.2.3 Resting groundwater monitoring results (as revealed from borehole standpipes) indicate a groundwater table within the Chester Formation Sandstone at depths ranging between 25.91 and 26.43mAOD. Full details of monitoring results have been provided within Appendix E.

Table 6.3: Groundwater Strike Information

BH ID	Water Strike Depth		Resting Water Level	
	mbgl	mAOD	mbgl	mAOD
WS102	3.00	27.95	2.90 - 3.00	27.95 – 28.05
RBH101	N/A	N/A	4.94 – 4.98	25.95 – 25.91
RBH102	N/A	N/A	6.38 – 6.59	26.43 – 26.22

6.3 Below ground obstructions

- 6.3.1 Numerous obstructions were encountered during the site investigation works. A concrete slab appears to be present below ground level across the majority of the site with numerous walls and arches most likely associated with the basement structure of the former rubber works or historic terraced housing that was located on site. The concrete slabs encountered within the exploratory hole locations, vary in depth across the site from 28.57mAOD in the eastern portion of the site TP103 and 31.18mAOD at WS106 and levels generally follow that of the surface topography.
- 6.3.2 Drawing 4513-ROC-ZZ-XX-DR-ES-ES105 in Appendix A depicts the depth at which below ground concrete structures were encountered within exploratory holes, along with photographs of the obstructions.

7.0 Laboratory Testing

- 7.0.1 To establish the physical and chemical properties of underlying soils, a programme of laboratory analysis was completed utilising samples obtained during site investigation works. This analysis comprised the testing of soil samples to assist with the estimation of risks posed by contaminated land related concerns.

Chemical Testing

- 7.0.2 RoC Consulting submitted a total of 15 soil and 2 water samples to a UKAS accredited testing facility for analysis against a range of determinands synonymous with the site's former industrial activity.

Determinands (Soil)	No. of Tests
Toxic and phytotoxic metals and metalloids	13
Total & Speciated Polycyclic Aromatic Hydrocarbons (PAH),	13
Other inorganic substances (e.g. Sulphate, Cyanide etc)	13
Asbestos ID	13
SVOC's	8
VOC's	8
Leachate Analysis (Heavy Metals, PAH, PCB and TPH etc)	2
Speciated Phenols	13
Water Soluble Sulfate & pH	13
PCB EC7	4
UKWIR	2
WAC E	2
Determinands (Water)	No. of Tests
Toxic and phytotoxic metals and metalloids	2
Total & Speciated Polycyclic Aromatic Hydrocarbons (PAH),	2
Other inorganic substances (e.g. Sulphate, Cyanide etc)	2
SVOC's	2
VOC's	2
Speciated Phenols	2
Water Soluble Sulfate & pH	2

- 7.0.3 Copies of chemical testing results have been provided within Appendix C.

Geotechnical Testing

- 7.0.4 A programme of geotechnical laboratory analysis was also completed on tub and undisturbed soil samples obtained during site investigation works.

Plasticity Index

- 7.0.5 A single soil sample was tested for the determination of the glacial clay's plasticity index. The sample was taken from WS105 and reported a plasticity index of 17%. These results indicate clays to be of a low plastic nature.

Particle Size Distribution

- 7.0.6 A total of 3 bulk samples of made ground were subject to particle size distribution testing to confirm their principal constituent parts. Results from these tests support the descriptions made of granular made ground material.

Point Load Testing

- 7.0.7 A total of 8 rock samples were underwent point load testing from depths ranging between 8.40 and 23.99mbgl. Point load testing reported $Is(50)$ values ranging from 0.13 to 0.57Mpa. Using a conversion factor of 21.45 based on Aitalesh et al (2015) to convert the point load tests to a uniaxial strength indicates the UCS of the tested rock samples to range from 2.79 to 12.23Mpa.

Uniaxial Compressive Strength

- 7.0.8 A total of 4 rock samples were tested for the determination of Uniaxial Compressive Strength. Tests were completed on rock cores obtained from rotary boreholes. UCS results were reported to range from 20.30 to 8.12 MPa.
- 7.0.9 Results from geotechnical laboratory testing have been provided within Appendix D.

8.0 Geo-Environmental Assessment

- 8.0.1 The results from the intrusive Phase 2 ground investigation have been used to complete a refined assessment of risks posed by ground contamination and ground stability issues beneath the site, building on the model and assessment outlined in the Phase 1 Desktop Study. The assessment considers these risks both in terms of the site's current arrangement and usage, as well as any potential future development (and associated construction process).
- 8.0.2 The assessment has been collated with reference to various statutory and non-statutory guidance documents relating to land contamination and ground stability. Specifically, the assessment has been conducted in accordance with the Environment Agency Land Contamination Risk Management (LCRM) guidance relating to the "Tier 2 Generic Quantitative Risk assessment" process (revised April 2021).
- 8.0.3 In accordance with this method, a Refined Conceptual Model has been collated for the site based on the results of the desktop review. This model is based around the Source / Pathway / Receptor methodology as outlined in Fig 8.0.

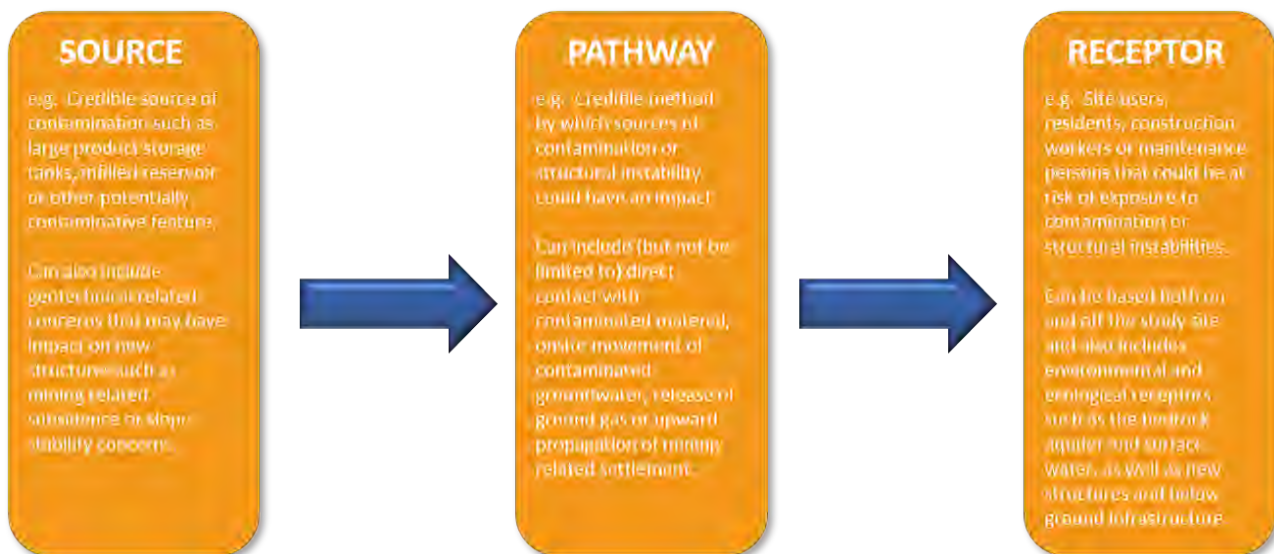


Figure 8.0 Source Pathway Receptor Diagram

- 8.0.4 Risk assessment is the process of collating known information on a hazard or set hazards in order to establish actual or potential risks to receptors. The receptor may be human health, controlled waters, a sensitive local ecosystem or even construction materials. Receptors can be connected with the hazard under consideration via one or several exposure pathways (e.g., the pathway of direct skin contact and oral exposure).
- 8.0.5 Risks are generally managed by isolating or removing the hazard, isolating the receptor, or by intercepting the exposure pathway. Without the three essential components of a source (hazard),

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pathway and receptor, there is deemed to be no risk. In other words, the mere presence of a hazard at a site does not mean that there will necessarily be risks.

- 8.0.6 Potential sources of contamination have been identified across the site, where applicable, based on observations and information obtained during the desktop review. These sources are defined based on the results from site investigation fieldworks and subsequent laboratory analysis of samples / monitoring works. As previously discussed, the design of these investigations included judgemental elements of targeting known or suspected sources of contamination, based on the results of the Tier 1 Preliminary desktop assessment; as well as obtain site wide information on soil, groundwater and ground gas quality.
- 8.0.7 The risk assessment has been completed with reference to the guidance outlined within CIRIA 552 “Contaminated land risk assessment. A good practice guide”. This risk assessment methodology considers the potential consequence / severity of risks that may be present within soils in comparison with the likelihood of exposure to or and occurrence of said risk. A range of risk classifications are provided within CIRIA 552 further details of which are provided in Table 8.0 below.

Table 8.0: Definition of risk class and consequence

Risk Class	Definition	Example
Minor	Potential for harm, although not significant, which may result in financial loss to resolve. Ground conditions where the use of PPE would readily mitigate risks posed to human health.	Low level contamination hotspots within made ground / demolition fill materials. Stunted or impeded plant growth due to poor soil quality.
Mild	Pollution of non-sensitive water resources or damage to crops, plant growth, below ground utilities or structures.	Perched groundwater contamination overlying low permeability aquifer or aggressive sulphate concentrations in soils.
Medium	Sources of contamination identified on site have the potential to cause both long and short-term health effects on site residents / users. Alternatively (or in conjunction with) sources of contamination may have the potential to impact surface or groundwater quality or impede vegetation growth.	Elevated concentrations of hydrocarbon contamination reported within topsoil tested within residential gardens as a result of inadequate or incomplete previous remediation works. Movement of contaminated groundwater from leaking below ground storage tank into adjacent surface water course.
Severe	Sources of contamination pose a credible and acute risk to human health with potential for “Significant Harm” occurring as defined by the Part IIA of the Environmental Protection Act (1990). Alternatively (or in conjunction with risks posed to human health) sources of contamination may pose an immediate risk to controlled water resources or ecosystems.	Grossly contaminated soils are encountered or disturbed during excavation works, causing an immediate release of toxic soil vapour and leachate / contaminated groundwater flow across adjacent land.

- 8.0.8 As previously discussed the contaminated land risk assessment model evaluates the severity of risks that may be present within soils / groundwaters in the context of threats posed to identified receptors before deriving the actual risk rating based on the probability of occurrence. Table 8.1 (provided overleaf) outlines the range likelihood of risk.

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Table 8.1: Probability Assessment

Classification	Definition
High likelihood	A credible pollutant linkage has been identified and it is very likely contaminants will impact identified receptors in both the short or long term (or is already actively doing so). The potential for harm to be caused is thus highly likely.
Likely	Pollutant linkages between the sources of contamination and identified receptors are present and it is considered likely they will become active given the right set of circumstances (e.g. contaminants currently buried below ground that are likely to be exposed or disturbed during construction / excavation works. The circumstances are such that an event is not inevitable, however it is possible in the short term and likely over the longer term.
Low likelihood	A theoretical pollutant linkage has been identified that has the potential to exposure receptors to contaminants under the correct circumstances. However, the likelihood of such an event occurring is not a certainty, even in the long term
Unlikely	There is no / minimal likelihood a pollutant linkage would occur, even over the long term.

- 8.0.9 The risk assessment process is a combination of probability and consequence, recognising that it may be possible to have a significant source of contamination beneath a site (such as a large below ground chemical storage tank) that may only present a relatively moderate to low risk (owing to the fact it may be contained within a secure concrete bund). Table 8.2 indicates how the actual nature of risk is established with Table 8.3 illustrating how the risk is interpreted in the context of contaminated land risk assessment.

Table 8.2: Risk Definition

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

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Table 8.3: Description of risks posed

Risk Definition	Description
Very High	Active pollutant linkages between a significant source of contamination and identified receptors have been established and there is a high likelihood of severe harm occurring to said receptors unless immediate investigation and remediation action is not taken.
High Risk	Harm is likely to arise to receptors from an identified hazard in the short and long term. Urgent investigation of the contaminant issue will be required, and remedial treatment is likely.
Moderate Risk	The possibility of harm has been identified toward receptors under the right circumstances, although the severity of harm would be relatively mild. Further investigation of identified issues would be prudent and possible need for remedial measures in the long term.
Low Risk	It is possible harm could arise to a designated receptor from identified hazard, but it is likely (if realised) any harm would be (at worst) mild.
Very Low Risk	No significant pollutant linkages have been identified and the possibility of harm occurring to receptors is low.

- 8.0.10 A Preliminary desk-based risk assessment has been completed for the site utilising the current and historical environmental information available (refer to RoC Consulting report ref: ROC-ZZ-XX-RP-ES-P1-101). This report formed the basis from which the current program of ground investigations was designed and undertaken.
- 8.0.11 The Tier 2 risk assessment process can be divided based on the receptor group in question between:
- 1) Risks posed to human health by soil contamination (both construction persons and future site users).
 - 2) Risks posed to human health by hazardous ground gas ingress (both construction persons and future site users).
 - 3) Risks posed to controlled waters by soil or groundwater contamination (both surface water features and bedrock aquifers).
 - 4) Risks posed to new building construction by aggressive ground conditions (namely elevated sulphate concentrations).
- 8.0.12 It is noted the site is being redeveloped as a multi-storey PBSA development. There are limited potential pathways for future site users to be exposed to any contaminated site soils as only limited areas of soft landscaping are proposed. Given a new building is being constructed on the site the potential for ground gas and vapour ingress exists.
- 8.0.13 Appropriate assessment have been completed for each of the above utilising the latest statutory and non-statutory guidance documents; for details of risks posed to human health refer to Section 8.1 (soils) and Section 8.2 (ground gas), for details of risks posed to controlled waters refer to Section 8.3 and risks posed to new structures refer to Section 8.4.

8.1 Assessment of Soil Contamination

- 8.1.1 In order to estimate the risks posed to human health from soil contamination, a quantitative risk assessment has been completed utilising the latest Environment Agency CLEA methodology. The assessment utilises the chemical testing results obtained during the site investigation fieldworks to characterise site conditions and facilitate the completion of the risk assessment process.
- 8.1.2 Assessment of material stockpiled on the site during construction of the adjacent plots, is beyond the scope of this assessment. It has assessed the condition of site soils at the time of the works and therefore assumes that stored materials will be managed effectively and removed before construction commences onsite with negligible effect on the remaining onsite soils.
- 8.1.3 The assessment is based on the comparison of soil chemical testing results with published Environment Agency Category Four Screening Levels (C4SL's) under the proposed end use scenario to determine the sites suitability for use. C4SL values represent the highest acceptable values for contaminants within site soils under the proposed end use and are derived using the Environment Agency CLEA risk assessment methodology. A result in exceedance of a C4SL level may indicate the presence of contaminants within site soils and require further assessment.
- 8.1.4 It is noted only a limited number of C4SL values have been derived by the Environment Agency for use and reference has been made to LQM/CIEH Suitable For Use Values (S4UL's) for a wider range of other contaminants (Heavy Metals, Poly Aromatic Hydrocarbons, TPH, SVOC and VOC's) to increase the depth and robustness of our assessment.
- 8.1.5 Chemical testing results are compared against C4SL and S4UL values for each determinant with any results reported in exceedance of screening criteria identified and their significance reviewed. When determining the significance of any exceedances within the dataset the magnitude and frequency of the exceedance need to be taken into account, for example, a single exceedance of a screening value may be considered a localised hotspot whereas consistently elevated levels of a substance at multiple locations across the site may indicate a more prevalent contamination issue.
- 8.1.6 In addition to this assessment, an Asbestos Identification test (via the visual inspection method) has been completed on all samples of made ground obtained during the investigation to determine risks posed. Any positive occurrences of Asbestos will be subject to quantification analysis to further assess the extent and significance of risks posed.
- 8.1.7 As required, for each exceedance reference will be made to the Conceptual Site Model to establish the most likely source of contaminants and initial commentary given as to the likely scope of remedial measures. In addition, reference will also be made to the assumptions used to derive generic assessment criteria (C4SL and S4UL values) to determine their comparability with the proposed end use.
- 8.1.8 For the purposes of this assessment we have assumed a "Residential without Gardens" end use scenario when reviewing chemical testing data against C4SL / S4UL values; a "worst case" Soil Organic Matter content value of 1% has been assumed for the initial assessment.

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Summary and Assessment of Risks Posed by Soil Contamination

- 8.1.9 Results from chemical testing analysis indicate the following sources of contamination within site soils when screened against generic residential without home ground produce screening criteria.

Table 8.4: Summary of Soil Contamination

BH ID	Depth (m)	Determinant/s Exceeded
Red indicates exceedances of established GACs		
Orange indicates elevated concentrations of contaminants with no established GACs		
TP101	0.30	Asbestos – Chrysotile loose fibres (0.014%) PAHs – Benzo(b)fluoranthene (4.32mg/kg) and Dibenzo(ah)anthracene (0.46mg/kg) SVOCs – 2-Methylnaphthalene (0.384mg/kg), Bis(2ethylhexyl)phthalate 1.33(mg/kg), Carbazole (0.427mg/kg), Dibenzofuran (0.547mg/kg), n-Dibutylphthalate (0.279mg/kg) and Perylene (1.18mg/kg)
TP102	0.40	Metals – Lead (473mg/kg) Asbestos – Chrysotile loose fibres (<0.001%) SVOCs – Bis(2ethylhexyl)phthalate (1.28mg/kg), Dibutylphthalate (0.326mg/kg) and Perylene (0.321mg/kg)
TP103	0.80	PAHs – Dibenzo(ah)anthracene (0.32mg/kg)
	2.00	Metals – Lead (373mg/kg) Asbestos – Chrysotile loose fibres (<0.001%)
TP105	1.00	Metals – Lead (514mg/kg) Asbestos – Chrysotile loose fibres (0.107%) TPH – Aromatic C21-35 (2920mg/kg) PAHs – Benzo(a)anthracene (15mg/kg), Benzo(a)pyrene (9.67mg/kg), Benzo(b)fluoranthene (9.22mg/kg) and Dibenzo(ah)anthracene (0.96mg/kg) SVOCs – 2-Methylnaphthalene (14mg/kg), Carbazole (21.1mg/kg), Dibenzofuran (27.4mg/kg) and Perylene (30.5mg/kg)
TP107	1.00	Metals – Arsenic (42mg/kg) Asbestos – Amosite loose fibres (<0.001%)
WS101A	0.80	SVOCs – n-Dibutylphthalate (0.304mg/kg) and Perylene (0.266mg/kg)
WS102	0.30	PAHs – Benzo(a)pyrene (8.24mg/kg), Benzo(b)fluoranthene (7.93mg/kg), Dibenzo(ah)anthracene (1.01mg/kg)
WS104	0.50	Asbestos – Chrysotile loose fibres (0.006%)
	1.30	PAHs – Benzo(b)fluoranthene (4.14mg/kg), Dibenzo(ah)anthracene (0.41mg/kg)
WS106	0.40	Asbestos – Chrysotile loose fibres (<0.001%)

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- 8.1.10 Exceedances of human health criteria have been observed in shallow Made Ground across the site. Primarily these comprise metals including lead and arsenic and PAHs. A single TPH exceedance was also encountered at TP105. All of the aforementioned contaminants are likely associated with the sites historic use as a rubber works and subsequent demolition and infilling of basement structures.
- 8.1.11 It is additionally worth noting that elevated levels of SVOCs were also reported within made ground deposits however no generic assessment criteria have been established for these compounds. These contaminants may be associated with the former rubber works or neighbouring gas works.
- 8.1.12 Asbestos fibres have been identified in 7 locations. All of these were subsequently quantified, with 3 recording concentrations of fibres above trace levels. In one location this comprised Chrysotile loose fibres representing 0.107% of the sample by weight. Asbestos is not regulated through Generic Assessment Criteria like many other contaminants and requires bespoke risk assessment. It is relevant that for waste assessment purposes soil is considered hazardous if it contains pieces of asbestos Containing Materials identifiable by eye, or if the waste as a whole contains 0.1% or more asbestos. While visible pieces of asbestos containing materials have not been identified during the site investigation, the testing is sufficient to indicate that asbestos in the site soils may comprise a meaningful risk to human health and may support the case for remedial measures. These observations are consistent with those of the previous site investigation and are somewhat elevated in comparison to other previously developed sites. The asbestos observed is likely attributable to demolition of former site buildings.
- 8.1.13 Concentrations of Polychlorinated Biphenyls (PCBs) above detection limits have not been noted in any of the four test locations. Similarly, there have been no exceedances of generic assessment criteria for Phenols, with detectable concentrations only measured in one test location. A risk of these compounds had been identified associated with the electrical substation and former gas works.
- 8.1.14 Findings of previous investigations generally support the findings contained within this report. During the previous phases of site investigation asbestos was encountered throughout on site made ground deposits with an area in the northernmost portion of the site identified as being particularly high risk. Elevated levels of metal, PAHs and SVOCs were also identified.
- 8.1.15 Drawing 4513-ROC-ZZ-XX-DR-ES-ES104 in Appendix A depicts the distribution of contamination exceedances across the site.
- 8.1.16 The findings of the above have been used to update the Refined Conceptual Site Model (provided within Section 9.0) as well as inform the scope of any further investigation or remedial works deemed necessary to support the sites development.

8.2 Ground Gas Risk Assessment

- 8.2.1 The Preliminary Conceptual Site model identified made ground deposits as being a potential source of ground gas generation. The site is not said to be located within in an area at risk from Radon gas ingress.
- 8.2.2 It is considered the most probable exposure pathways are likely to be limited to construction workers during the sites redevelopment and future site users occupying buildings across the site.
- 8.2.3 To estimate the risks posed by ground gas generation a total of four monitoring wells were installed within WS101, WS102, WS105, WS106, RBH101 and RBH102. The purpose of these standpipes is to investigate ground gas generation potential of shallow and deep soils and the associated implications this may have for new building design. All four of the wells installed in window sample locations have response zones sealed into the made ground deposits with the deeper rotary installs sealed into the Chester Formation sandstone.
- 8.2.4 At the time of writing, five ground gas monitoring visits had been completed on site (refer to Appendix E for further information). The results from these monitoring works recorded maximum Methane and Carbon Dioxide concentrations of 0.0% and 2.2% with gas flow rates ranging between 0 and 1.3l/hr. Slightly elevated Carbon Dioxide concentrations were encountered in WS105 and RBH102, which also recorded somewhat depleted oxygen concentrations.
- 8.2.5 With reference to guidance provided in CIRIA C665 “*Assessing risks posed by hazardous ground gases to buildings*” and assuming the development comprises Situation A the above-mentioned worst case gas levels and borehole flow rates equate to a Gas Screening Value (GSV) of 0.00286l/hr which corresponds to an anticipated Characteristic Situation of CS-1.
- 8.2.6 At the time of writing ground gas monitoring is still ongoing and in a subsequent addendum final recommendation will be made following a full risk assessment in accordance with CIRIA C665 “*Assessing risks posed by hazardous ground gases to buildings*” will be completed when monitoring results are finalised.

8.3 Controlled Waters

- 8.3.1 It is understood the site is underlain by a Principal Aquifer and is located within an Environment Agency Zone source protection Zone III (Total Catchment). The nearest surface water feature is indicated 100m to the north in the form of the culverted River Medlock.
- 8.3.2 Made ground is present across the site which is largely permeable becoming impermeable with depth due to the presence of concrete slabs and more cohesive made ground deposits. No groundwater was encountered within made ground. Devensian Till appears to be present in the southern portion of the site and Glaciofluvial deposits in the north. No groundwater was encountered within the Devensian Till, however groundwater was encountered within the Glaciofluvial deposits at 3.00mbgl in the north of the site. Subsequent monitoring visits following completion of the site investigation works have revealed a groundwater table at depths between 4.94 and 6.59mbgl within the Principal Aquifer that appears to be flowing from the south of the site to the north following local topography and flowing towards the River Medlock.
- 8.3.3 No evidence of non-aqueous phase liquid was encountered through the use of an interface meter during the groundwater monitoring programme.

Sampling and Testing

- 8.3.4 Prior to sampling and testing all wells were subject to purging of at least three well volumes to ensure representative levels of contaminants. In addition, leachate testing was also undertaken on some of the soil samples obtained.
- 8.3.5 Chemical testing of groundwater samples obtained from the Principal Aquifer at both RBH101 and RBH102 has been undertaken and screened against Drinking Water Standards criteria. The only exceedance reported was for Sulphate at RBH101. Based on our experience of local groundwater, such concentrations are not uncommon within local groundwater. It is noted that risks relating to aggressive ground conditions from sulphate are assessed separately in Section 8.4 of this report.
- 8.3.6 Leachate testing was also undertaken within made ground deposits on site to assess the likelihood of any contaminants within site soils migrating vertically into the principal aquifer. A total of two leachate tests were undertaken at WS104 and TP101 with exceedances of Drinking Water Standards screening criteria for arsenic, lead and benzo(a)pyrene at WS104 and Benzo(a)pyrene at TP101. A summary of the testing data for groundwater is contained below in table 8.5 below.

Table 8.3: Summary of Groundwater and Soil Leachate Contamination

BH ID	Depth (m)	Determinant/s Exceeded
WS104	1.30	Metals (Leachate) – Arsenic (26µg/l), Lead (368µg/l) PAHs (Leachable) – Benzo(a)pyrene (0.08µg/l)
TP101	0.30	PAHs (Leachable) - Benzo(a)pyrene (0.02µg/l)
RBH101	6.00	Sulphate (527,000µg/l)

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- 8.3.7 However, given the lack of any evidence of these contaminants being present at harmful levels within the principal aquifer it is deemed unlikely that any vertical leaching migration of contaminants from site soils into the underlying principal aquifer is occurring.

Summary and Assessment of Risks Posed by Groundwater Contamination

- 8.3.8 Results from chemical testing analysis an exceedance of sulphate testing at RBH101 which is insignificant and exceedances of PAHs and arsenic in leachate testing undertaken within made ground deposits suggesting PAHs are leachable. This has however not been borne out within chemical testing of groundwater from the Principal Aquifer.
- 8.3.9 The results of chemical testing indicate that groundwater within the principal aquifer has not been impacted by contaminants present within shallower soils on site. It is however possible that the Glaciofluvial deposits present on site may have been impacted by leachable contaminants within the made ground. However, no testing is available for any groundwater present in this stratum.

8.4 Below Ground Utilities and Service Runs

- 8.4.1 United Utilities pipework risk assessment testing was undertaken on two composite samples taken within made ground deposits from the site. The results of testing indicate it is likely that metal / barrier pipes will be necessary due to the presence of elevated SVOC's and hydrocarbons within site soils. High pH was also noted within site soils with a maximum reported pH of 11.59.

9.0 Refined Conceptual Site Model

9.0.1 The Environmental Protection Act Part IIA: 1990, defines contamination as land containing levels of contamination which form a risk to human health, controlled waters or other ecosystems. Therefore, contamination in exceedance of the relevant screening values is considered a source. Table 9.0 assesses and summarises the sources, pathways and receptors that may exist at the site;

Table 9.0: Refined Conceptual Site Model

Table 9.0		Refined Conceptual Site Model					
Source		Pathway	Receptor	Severity	Probability	Risk definition	Comments
On Site	Current Ground Conditions, including Made Ground	Dermal contact and / or ingestion; inhalation of vapours / dusts	Current Site Users	Medium	Low Likelihood	Moderate to Low	Metal, TPH and PAH contaminants have been identified as being spread throughout site soils. Given the site is currently largely disused and currently only being used for storage of pile arisings and excavated materials from Plot 9a there is deemed to be limited potential receptors. Furthermore, the vast majority of the site surface is hardstanding in the form of concrete or asphalt, although there are some breaks in the hard landscaping present on site this further serves to limit exposure to any contaminants contained within site soils.
			Construction workers	Medium	Likely	Moderate	Sources of contamination have been identified within site soils and construction workers will likely be at the greatest risk of exposure of all identified receptors from soil contamination particularly during any excavation works. However it is considered the risks posed to construction personnel, be sources of contamination, can be adequately mitigated against via the use of full PPE and the adoption of good hygiene and site practices. *
			Future Site Users	Medium	Unlikely	Low	The site is to be developed to comprise a block of student apartments with limited areas of soft

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Table 9.0		Refined Conceptual Site Model					
Source		Pathway	Receptor	Severity	Probability	Risk definition	Comments
							landscaping with the building itself taking up much of the site footprint and surroundings being largely hardstanding and it is considered future site users at low risk of exposure to sources of contamination as outlined above due to the limited potential exposure pathways to site soils. However, as some areas of soft landscaping are proposed in the east and south of the site it is recommended that remedial measures are put in place in these areas.
			Ecological	Mild	Likely	Moderate to Low	Phytotoxic contaminants have been identified on site including arsenic and lead. Remediation measures are proposed for areas of soft landscaping which are considered to mitigate this risk.
	Asbestos in Soils	Inhalation of dusts	Current Site Users	Medium	Low Likelihood	Moderate to Low	Asbestos fibres were identified in seven locations, with three above trace levels and one exceeding the 0.1% threshold used for hazardous waste assessment. These are comparable to the previous site investigation and somewhat elevated in comparison to typical brownfield sites.
			Construction workers	Medium	Likely	Moderate	Asbestos risks have been identified as above. We anticipate these risks remain controllable through the application of a high standard of asbestos training, dust control and hygiene measures during the construction phase. *
			Future Site Users	Medium	Likely	Moderate	Asbestos risks have been identified as above. The provision of buildings and hardstanding across the majority site will limit potential pathways to areas of proposed soft landscaping. Risks in areas of soft landscaping should be controlled by remedial measures detailed below.
On site	Current Ground Conditions	Leaching of contaminated	Controlled Waters: Aquifer	Medium	Unlikely	Low	The site is underlain by a Principal Aquifer and is located in a Source Protection Zone 3. Soil above the aquifer is largely permeable sands and

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Table 9.0		Refined Conceptual Site Model					
Source	Pathway	Receptor	Severity	Probability	Risk definition	Comments	
	soil & impact beneath site					gravels in the north of the site with largely permeable made ground deposits whereas relatively impermeable clay deposits were encountered in the north of the site. Contaminants were identified within site soils however and exceedances of drinking water standards criteria were reported in leachate testing of samples taken from made ground deposits at two locations on site. Groundwater samples were taken from two boreholes on site one in the north and on in the south (the northern borehole located down gradient of the southern borehole), and no exceedances of drinking water criteria were noted in samples tested against a robust testing suite based on the historic industry that was located on site and its surroundings. It is noted that the covering of the site with buildings and hardstanding will further reduce the potential for leaching with respect to the current land use. Therefore there is deemed to be low risk to the Principal Aquifer.	
		Controlled Waters: River Medlock	Medium	Unlikely	Low	River Medlock located in culvert 100m north of site. Potential contamination has been identified which is potentially leachable. The distance to the receptor and the construction of the culvert will limit the feasibility of this pathway and considering the extensive development of other sites surrounding the river, the impact of this site on the River Medlock is anticipated to be marginal.	

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Table 9.0		Refined Conceptual Site Model					
Source	Pathway	Receptor	Severity	Probability	Risk definition	Comments	
		Below ground service runs	Below ground infrastructure & construction	Medium	Likely	Moderate	<i>Below ground water pipework RA</i> All below ground concrete structures to be designed in accordance with a Class DS-1 AC-1s requirements as specified in BRE Digest Special Digest 1:2005 Concrete in aggressive ground: Version 3.
	Ground Gas Generation	Migration / Accumulation	Current Site Users	Severe	Unlikely	Low - Moderate	Relatively low levels of ground gas have been encountered on site leading to a CS1 classification with no remedial measures envisaged in term of ground gas. This assessment is provisional pending completion of monitoring and will be revised in a future addendum to this report.
			Construction workers	Severe	Unlikely	Low - Moderate	
			Future Site Users	Severe	Unlikely	Low - Moderate	
Off site	Potentially Contaminative Sources; Controlled waters and ground gas generation	Leaching of contaminated soil onto site	Controlled Waters: Aquifer	Medium	Unlikely	Low	The Gaythorne Gas Works was located to the north of the site where the bulk of the First Street Development now lies. This area was heavily contaminated and has been extensively remediated to facilitate the present development of the First Street area. Furthermore, no evidence of on-site migration of any contaminants associated with the historic gas works has been identified within the principal aquifer or site soils.
			Controlled Waters: Surface Water	Minor	Unlikely	Very Low	No surface water receptors are located on site.
		Ground gas Migration / Accumulation	Construction workers	Severe	Unlikely	Low - Moderate	It is unlikely further significant sources of ground gas exist off site with the potential to impact the current site. However, appropriate personal ground gas detection equipment should be deployed by all site operatives when working in below ground or confined spaces.
			Future Site Users	Severe	Unlikely	Low - Moderate	
			Proposed development	Severe	Unlikely	Low - Moderate	

*Any sources of contamination uncovered during site development works should be brought to the immediate attention of RoC Consulting for consideration and comment.

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Soil Contamination Remedial Requirements

- 9.0.2 Re-appraisal and reassessment of the conceptual site model (following completion of investigation works) has identified the following sources of contamination:
- Site wide metal, PAH and TPH contamination;
 - Asbestos in soils
 - Elevated levels of SVOCs scattered across the site
 - Exceedances of PAH and metals within made ground leachate testing.
- 9.0.3 Under the current proposals while the majority of the site will be covered by the proposed building footprint with some limited areas of soft landscaping proposed in the south and east of the site. Areas of soft landscaping will have the potential to expose future site users to contaminants. In addition, construction workers will be exposed to these contaminants during excavation works.
- 9.0.4 A detailed remediation design should be undertaken as part of a remediation strategy for the site and is likely to include the provision of a clean soil capping system in any areas of proposed soft landscaping with a minimum thickness of 600mm of which 150mm should be topsoil. This system should be subject to validation including chemical testing, and validation excavations.
- 9.0.3 It is recommended all construction contractors take reasonable precautions to control environmental impacts that may occur as a result of redevelopment works with respect of soil and groundwater quality. These measures should include (and not be limited to):
- 1) Any sources of contamination uncovered during site development works should be brought to the immediate attention of RoC Consulting for consideration and comment. As required, the findings and recommendations of the current assessment may require amendment to reflect changes in site condition.
 - 2) The operation of plant, refuelling facilities and general basement excavation works should include appropriate provision to reduce the risk of leakage / spillage, particularly into the site's groundwater table or exposed natural soils.
 - 3) Appropriate dust mitigation measures should be deployed during basement excavation works, particularly when handling and excavating made ground deposits.
 - 4) All excavated materials stockpiled should be periodically dampened down to control dust release. Similarly, the disposal of any material from site should be completed using covered wagons.
 - 5) Construction workers should have appropriate asbestos awareness training with Asbestos Management Plans in place to manage the observation of suspected Asbestos Containing Materials.

Ground Water Remedial Requirements

- 9.0.4 No remedial requirements are envisaged in regard to groundwater.



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Ground Gas Protection Measures

- 9.0.5 Ground gas protection measures have not been identified as a requirement in new buildings in accordance with a CIRA C665 Characteristic Situation 1 scenario. The assessment is provisional and will be confirmed in a forthcoming addendum on completion of the ground gas monitoring.

10.0 Preliminary Waste Assessment

10.0.1 Site soils may be considered to comprise waste depending on the circumstances. The Waste Framework Directive (WFD) defines materials as waste if 'they are discarded, intended to be discarded or required to be discarded, by the holder'. Naturally occurring soils are not typically considered waste if reused on the site of origin for the purposes of development. Excavation arisings from the development may therefore be classified as waste if surplus to requirements or unsuitable for reuse. A large volume of laws, permitting and regulations govern the management of waste on construction sites, including Environmental Permits, Materials Management Plans and Construction Environmental Management Plans. The below assessment only provides some useful information which may inform future planning.

10.1 Hazardous Waste Assessment

Chemical Assessment

- 10.1.1 A methodology for the classification of waste, and requirement for sampling, is specified in Technical Guidance WM3 (EA, 2021). The level of sampling should be proportionate to the volume of waste and its heterogeneity. The preliminary assessment provided below is indicative based only upon the available sample results and may not be sufficient to adequately classify the waste.
- 10.1.2 Envirolab, an RSK company, has developed a waste soils characterisation assessment tool (HASWASTE), which follows the guidance within Technical Guidance WM3. The analytical results have been assessed using this tool to assess the hazardous properties to support potential off-site disposal of materials in the future. Note that it is ultimately for landfills to confirm what wastes they are able to accept within the constraints of their permit.
- 10.1.3 One sample was found to have hazardous properties based on this assessment. The results are summarised in the table below and presented in full in Appendix G.

Table 10.0: Hazardous Waste Assessment

Sample	Strata	Hazardous properties (if present)
TP101 @ 0.30m	Made Ground	None
TP102 @ 0.40m	Made Ground	None
TP103 @ 0.80m	Made Ground	None
TP105 @ 1.00m	Made Ground	Asbestos
TP107 @ 1.00m	Made Ground	None
WS101 @ 0.80m	Made Ground	None
WS102 @ 0.30m	Made Ground	None
WS102 @ 3.00m	Made Ground	None
WS104 @ 0.50m	Made Ground	None
WS105 @ 0.60m	Made Ground	None
WS106 @ 0.60m	Made Ground	None
Composite 1	Made Ground	None
Composite 2	Made Ground	Ph Corrosive HP8 pH (soil or leachate) >11.5

- 10.1.4 In the context of the volume of data available, the single elevated pH in one sample is not considered to be generally representative of the site soils and is not basis for hazardous waste classification in isolation.

Asbestos Assessment

- 10.1.5 The Environment Agency publication '*Guidance on the classification and assessment of waste – WM3 (2018)*', requires that within a mixed waste the separately identifiable wastes be assessed separately. For instance, where waste soil contains identifiable pieces of asbestos (visible to the naked eye) the asbestos should, where feasible, be separated from the soil and classified separately. This should be disposed of within a hazardous, stable non-reactive hazardous waste landfill or a special cell in a non-hazardous waste landfill.
- 10.1.6 With reference to WM3 (2018), wastes containing greater than 0.1% free and dispersed asbestos fibres are classified as **hazardous waste** with the code 17 05 03* (soils and stones containing hazardous substances). Where a waste contains identifiable pieces of ACM, then these pieces must be assessed separately.
- 10.1.7 While visible pieces of asbestos have not been identified during the site investigations, this does not comprise a specialist assessment and only a small portion of the site soils have been observed. The feasibility of removing visible pieces of ACM (and thus managing the hazardous potential of the soils) should be assessed by contractor. It may be possible, through additional sampling and analysis, to zone areas of asbestos containing soils, although, due to the density of sampling points required to provide confidence in this approach, this is likely to be a costly exercise with no guaranteed benefit.
- 10.1.8 Laboratory testing has encountered positive identification of asbestos fibres within soils in seven locations. All but 3 of these were quantified as being below trace concentrations. In one location, TP105 at 1.00m depth, this exceeded the 0.1% threshold.

10.2 WAC Assessment

- 10.2.1 Additionally, a testing regime has been established in '*Waste Sampling and Testing for Disposal to Landfill*' (2013) to determine the suitability of soils for disposal. This regime does not supersede the hazardous properties assessment presented above. We have scheduled testing of two samples on this basis, the results of which are presented in Appendix G. The samples are composites of Made Ground from across the site.
- 10.2.2 Comparison of test data with landfill waste acceptance criteria indicates that Made Ground soils are not suitable for disposal within an inert landfill on account of elevated concentrations of antimony but should be disposed of at a landfill or treatment facility which is permitted to take non-hazardous waste.

10.3 Conclusions

- 10.3.1 Made Ground soils are not suitable for disposal within an inert landfill on account of elevated concentrations of antimony but should be disposed of at a landfill or treatment facility which is permitted to take non-hazardous waste.
- 10.3.2 On the basis of asbestos quantification in this and the previous site investigation, it is likely that some of the Made Ground soils will be considered to comprise Hazardous Waste with the code 17 05 03* (soils and stones containing hazardous substances). The feasibility of removing visible pieces of ACM (and thus managing the hazardous potential of the soils) should be assessed by the contractor. This conclusion corroborates that of the previous Ramboll 2020 Phase 2 Report and subsequent 2020 Waste Assessment Update Letter, although we do not think it prudent to quantify what proportion may comprise hazardous waste. It is potentially feasible that the proportion of hazardous waste could be identified through a programme of laboratory testing prior to disposal.
- 10.3.3 With reference to the Environment Agency's *publications Waste Sampling and Testing for Disposal to Landfill (2013)* and *Waste acceptance at landfills (2010)*, naturally occurring soils not likely to be affected by contamination can be classified as inert waste, with a EWC code of 17 05 04. Should any of the naturally deposited soils be suspected to contain contamination (by virtue of visual or olfactory evidence) upon excavation, then such soils should be stockpiled appropriately, and additional testing carried out as considered necessary. Based on evidence obtained during our investigations, we are of the opinion that the soils of the Devensian Till and Glaciofluvial deposits at the site are not likely to be affected by chemical contamination and thus can be classified as inert waste.
- 10.3.4 The assessment of this report in regard to waste are indicative only and provide useful information to support future management of waste on site, which should be comprehensive and address all other legal and regulatory requirements. Earthworks are anticipated at the site which may require Environmental Permits and Materials Management Plans. Further environmental testing of soils and subsequent treatment and processing may also be required. It may be necessary to consult with the Environment Agency before works commence to verify the proposed works and establish that material can be declassified as waste and re used on site in accordance with the most current guidance and Article 6(1) of the Waste Directive. These applications are the responsibility of the contractor. We can consult on these matters on request.
- 10.3.5 We recommend this report is provided to the selected contractors and landfill facilities to confirm (or otherwise) that waste can be managed and disposed of as above. Please be aware that landfill sites are obligated to undertake in house quality assurance tests and thus may require further WAC testing for any soils encountered as part of this investigation. There is no obligation on any landfill operator to accept waste if they choose not to and waste operators may require additional testing of untested waste soils prior to acceptance at landfill in accordance with the landfill regulations.

11.0 Geotechnical & Foundation Design Assessment

Background Information

- 11.0.1 The site is to be redeveloped as a medium-rise purpose-built student accommodation (PBSA) scheme to 14 storeys high with limited associated soft landscaping areas in the south and east of the site.
- 11.0.2 Site investigations indicated made ground to be present across the site predominantly comprising a concrete / asphalt surfacing underlain by a subbase material and granular becoming cohesive with depth demolition fill material. A number of obstructions were encountered within made ground deposits including concrete slabs, relic brick walls and concrete / masonry cobbles and boulders. The made ground deposits were underlain by Glaciofluvial sands and gravels in the north and Devensian Till clays in the south of the site. The Chester Formation sandstone was encountered underlying drift deposits at a depth ranging from 6.80 to 9.00mbgl initially an extremely weak sandstone / reddish brown sand becoming very weak to weak reddish-brown sandstone with depth.

11.1 New Building Foundation Design

- 11.1.1 Site investigations have identified a variable thickness of made ground deposits beneath the site. It is not recommended new building foundations be constructed on top of made ground deposits. The variable composition and in situ strength of these materials is such that unacceptable levels of total and differential settlement will occur as a result. There is a 3.00 to 4.50m thickness of natural drift deposits located beneath the made ground deposits comprising cohesive Devensian Till deposits in the south and Glaciofluvial deposits in the north underlain by the Chester Formation sandstone.
- 11.1.2 Given the anticipated building loadings coupled with the presence of contaminated soils the adoption of conventional shallow foundations is not considered appropriate in this instance. The use of a piled foundation solution will be required with piles taken to depth within the Chester Formation.
- 11.1.3 A summary of ground conditions, rock depth and quality across the site is presented in Tables 11.0 and 11.1 overleaf. The shallow rock shows signs of weathering and is relatively weak generally becoming less weathered and stronger with depth.
- 11.1.4 Discussion should be held with a piling specialist to confirm design parameters and copies of the current site investigation provided to support this process. These discussions are required to confirm that the bedrock is sufficient to support the required column loads.
- 11.1.5 Given the presence of contamination within site soils the consideration will need to be given to choosing a method that limits the potential for contaminant pathways to be created through site soils and into the underlying aquifer. It is also likely that a comprehensive enabling works package to break out and remove the existing below ground structures. A piling risk assessment will be required (regardless of the chosen method).

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Table 11.0: Summary of Strata

Strata	Depth top of strata (m BGL) *	Depth top of strata (m AOD) **	Typical Description	RQD		Representative UCS of sampled material (MPa)**
				Range	Mean	
Made Ground	0	31.25	Gravelly SAND / sandy GRAVEL containing brick, concrete, clinker and coal. High brick and concrete cobble content [Granular]. Soft gravelly CLAY containing brick, concrete, sandstone, coal and clinker [Cohesive].	N/A	N/A	N/A
Glaciofluvial Sheet Deposits	3.15	28.1	Slightly clayey slightly gravelly SAND. Gravel is sandstone, siltstone and quartzite / SAND and GRAVEL, gravel is quartz and sandstone.	N/A	N/A	N/A
Devensian Till	4.1	27.15	Firm to stiff slightly sandy slightly gravelly CLAY. Gravel is sandstone.	N/A	N/A	N/A
Shallow Chester Formation	7.75	23.5	Extremely weak to very weak reddish brown fine to coarse grained SANDSTONE / reddish brown SAND	0 - 60	29.10	6.01
Deep Chester Formation	14.66	16.59	Very weak to weak reddish brown fine to coarse grained SANDSTONE. Locally extremely weak.	17 - 93	60.55	9.12
* Depths and levels are based on average depths and levels recorded on site. ** Lowest of Mean and Median. These values refer to tested material only and do not reflect weaker material that could not be recovered.						

Table 11.1: Summary of UCS Values and RQD

Geological Unit	UCS tests (MPa)	Point Load Tests	Conversion Factor*	Equivalent UCS Values (MPa)	Mean UCS (MPa)	Median UCS (MPa)	Representative UCS of sampled material (MPa) **
Upper Chester Formation	8.12	0.14	21.45	3.00	6.72	6.01	6.01
	12.6	0.28		6.01			
		0.18		3.86			
Lower Chester Formation	20.30	0.21	21.45	4.50	9.69	9.12	9.12
	9.12	0.13		2.79			
		0.54		11.58			
		0.57		12.23			
		0.34		7.29			
* Conversion factors of mudstone as per average of values given for shale and sedimentary rocks in Aitalesh et al (2015). Conversion factors of sandstone and siltstone as per average of values given for sandstone In Aitalesh et al (2015). ** Lowest of Mean and Median. These values refer to tested material only and do not reflect weaker material that could not be recovered.							

11.2 Ground Floor Construction

- 11.2.1 While it is anticipated that the ground floor will be constructed beneath existing site levels in the southern part of the site, owing to changes in elevation onsite, significant basements are not anticipated. The site is underlain by a significant depth of Made Ground. Made Ground soils are not typically suitable to support ground bearing slabs due to variable density and the potential for differential settlement.
- 11.2.2 Consequently, the use of ground bearing slab will require ground improvement, or an alternative slab will be required. The construction and installation of a piling platform may comprise sufficient ground improvement. The designers should satisfy themselves that construction and loading of the platform will cause sufficient consolidation of the underlying Made Ground soils.

11.3 Below Ground Drainage

- 11.3.1 Buried services constructed in unimproved made ground may be subject to settlement and this should be considered during design. In particular storm water and sewage pipes should not utilise shallow gradients that render them vulnerable to settlement.

11.4 General Comments

- 11.4.1 No entry should be permitted into excavations exceeding 1.2m depth without appropriate risk assessments, shoring and support. Whilst groundwater was not encountered in significant volumes during site investigation works the presence of a perched water table cannot be precluded. Appropriate provisions should be made to dewater excavations as and when required.
- 11.4.2 Similarly it is not recommended foundation excavations to underlying clay be left open and exposed to the elements as rainwater ingress will damage and reduce its strength (and subsequent bearing capacity). Similarly, no vehicular movements should be permitted within exposed foundation locations.
- 11.4.3 The geotechnical assessment has been collated based on the proposed development type, layout and likely loadings at the time of report publication. It should be noted that future alterations to these proposals or loadings (including alterations in the site layout or new building scale) will require the re-interpretation of the current assessment. In such an instance updated design information should be provided to RoC Consulting and the current assessment updated accordingly.

12.0 Aggressive Ground Conditions

- 12.0.1 The hazard of sulphide attack is addressed by reference to procedures described in Building Research Establishment (BRE) Special Digest 1: 2005 '*Concrete in Aggressive Ground*' to establish a design sulphate class (DS) and the '*aggressive Chemical Environment for Concrete*' (ACEC).
- 12.0.2 By the definitions provided the site is considered to comprise a brownfield site and the groundwater mobility is considered to be mobile.
- 12.0.3 The site may be considered to be in an area of elevated sulphate and sulphide bearing strata (as detailed in mapping in SD1 2005). Oxidisable Sulphides in site soils have been determined from laboratory testing of Total Sulphur and Total Sulphate, a single sample taken from WS105 at 3.80mbgl exceeds the 0.3% threshold (0.357%). We do not consider this single marginal concentration to be sufficient to demonstrate that pyrite is potentially present.
- 12.0.4 Peak potential sulphate concentrations range between 0.13 and 0.26g/l with soil pH values ranging between 7.1 and 11.1. Based on these results, it is considered that well compacted buried concrete should be designed in accordance with Class DS-1 AC1s requirements as specified in BRE Digest Special Digest 1:2005 *Concrete in aggressive ground: Version 3*.

Table 12.0: Summary Aggressive Ground Conditions

Geological Unit	Characteristic pH	Characteristic Sulphate (mg/l)	DS Class	ACEC Class
Site soils	7.1	260mg/l	DS-1	AC-1s

13.0 Conclusions & Recommendations

13.1 General

- 13.1.1 The site is to be redeveloped as a medium-rise purpose-built student accommodation (PBSA) scheme high with limited associated soft landscaping areas in the south and east of the site.

13.2 Geotechnical

- 13.2.1 Site investigations have revealed variable but significant depths of made ground deposits across the site which significant below ground obstructions primarily in the form of concrete slabs and masonry walls with frequent masonry and concrete cobbles and boulders. Made Ground is believed to generally be associated with infilled basement structures from the sites historic use as a rubber works and potentially prior to that as terraced housing. Underlying the made ground deposits sands and gravels of Glaciofluvial origin and Devensian Till in the form of a predominantly slightly sandy slightly gravelly clay. The Chester Formation sandstone was encountered underlying drift deposits at a depth of 6.80 to 9.00mbgl initially weathered to an extremely weak reddish-brown sandstone / reddish brown sand and becoming very weak to weak reddish-brown sandstone with depth.
- 13.2.2 Groundwater monitoring identified a groundwater body to be present within the Chester Formation a Principal Aquifer). A water strike was also recorded at 3.00mbgl in the Glaciofluvial Deposits in the northern portion of the site. Data obtained from subsequent groundwater monitoring visits indicate groundwater to be flowing to the north of the site towards the River Medlock.
- 13.2.3 Given the anticipated building loadings and the presence of contamination beneath the site the adoption of a piled foundation solution is recommended for the development. Piles should be founded in the competent rock of the Chester Formation and discussions should be held with piling contractors to establish design parameters. A piling risk assessment in accordance with published Environment Agency Guidance "Piling into Contaminated Sites" will be required prior to development. A number of buried obstructions were encountered on site and removal will be required prior to construction.
- 13.2.4 Laboratory testing for aggressive ground conditions indicates that a DS class DS-1 and ACEC Class of AC-1 should be adopted for the site.

13.3 Environmental

- 13.3.1 Evidence of contamination has been recorded across the site within made ground deposits, including metals, TPH, PAHs, elevated SVOCs and a hotspot of hydrocarbon contamination in the eastern portion of the site. This contamination poses a risk to future site users, in terms of remedial requirements a capping system will need to be employed in any areas of soft landscaping in order to inhibit any potential pathways. The extent and nature of any remediation works should be detailed by a future remediation strategy.

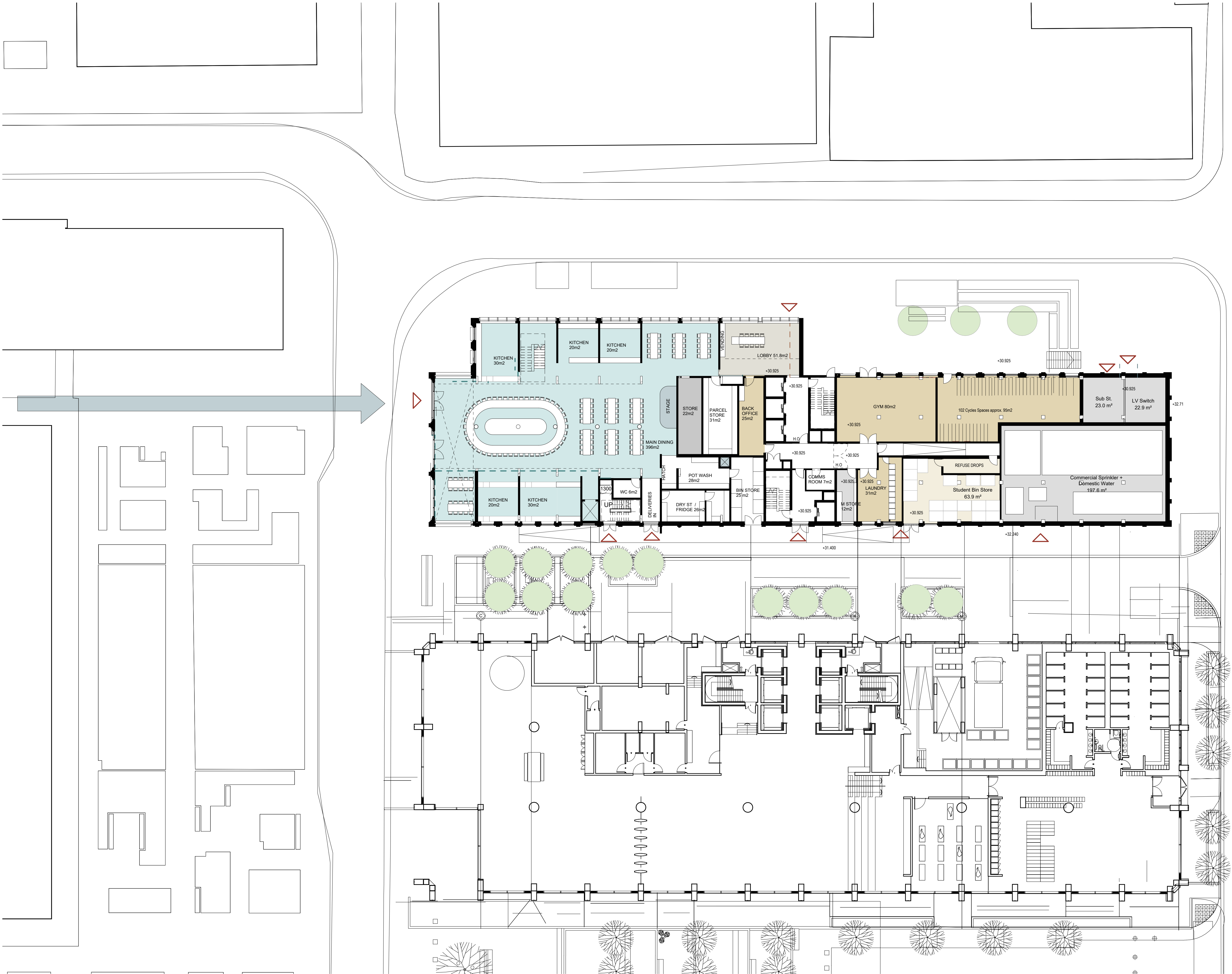
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- 13.3.2 A risk from asbestos fibres has been identified. These are comparable to the previous site investigation and somewhat elevated in comparison to typical brownfield sites. We anticipate that risks to construction workers remain controllable through the application of a high standard of asbestos training, dust control and hygiene measures during the construction phase. Risks to human health in areas of soft landscaping will be controlled through the implementation of the above remedial measures.
- 13.3.3 Assessment of material stockpiled on the site during construction of the adjacent plots, is beyond the scope of this assessment. It has assessed the condition of site soils at the time of the works and therefore assumes that stored materials will be managed effectively and removed before construction commences onsite with negligible effect on the remaining onsite soils.
- 13.3.4 United Utilities pipework risk assessment testing was undertaken samples taken from made ground deposits. The results of testing indicate it is likely that metal / barrier pipes will be necessary due to the presence of elevated SVOC's and hydrocarbons within site soils. High pH was also noted within site soils with a maximum reported pH of 11.59.
- 13.3.5 Ground gas monitoring has revealed only slightly elevated levels of carbon dioxide within site soils and the site has therefore been classified as Characteristic Situation 1 with no envisaged remedial measures in regard to ground gas. This assessment is provisional and will be revised on completion of the monitoring programme through a subsequent addendum to this report.
- 13.3.6 Our assessment indicates that the majority of Made Ground soils at the site are suitable for disposal as non-hazardous waste while natural soils are suitable for disposal as inert waste. It is feasible that a minority of Made Ground soils may comprise hazardous waste on the basis of asbestos content and methodology for managing and segregating this should be devised by the contractor. There is no obligation on any landfill operator to accept waste if they choose not to and waste operators may require additional testing of untested waste soils prior to acceptance at landfill in accordance with the landfill regulations. A large volume of law and regulation governs management of waste on site, and this report provides only indicative information to inform future management arrangements. Regulators may also amend these recommendations or establish further requirements.
- 13.3.7 Earthworks at the site may require Environmental Permits and Materials Management Plans. Environmental testing of soils and subsequent treatment and processing may also be required. It may be necessary to consult with the Environment Agency before works commence to verify the proposed works and establish that the material can be declassified as waste and re used on site in accordance with the most current guidance and Article 6(1) of the Waste Directive. These applications are the responsibility of the contractor. We can consult on these matters on request.
- 13.3.8 As required, any suspected sources of contamination discovered during the site development (outside those discussed in this report) should be brought to the attention of RoC Consulting and their implications assessed. Depending on the extent and severity, the findings and assessment of the current study may require re-interpretation and a remediation strategy proposed to support the sites development.

13.4 Additional

- 13.4.1 Copies of the current report, along with the Phase 1 Desktop Study, should be submitted to the local planning authority for consideration and comment. As required, any feedback received from the local authority should be passed back to RoC Consulting for review.

APPENDIX A – Site Drawings



General Notes

Use figured dimensions only. Do not scale off this drawing. All dimensions must be set out and checked by the contractor on site prior to commencement of construction. Any variations between drawings and site must be reported to TGA before work proceeds.

Drawings to be read in conjunction with Architectural Specification, Structural Engineer's Drawings and Specifications, Mechanical & Electrical Engineer's Drawings and Specifications, all Supplemental Information, including but not limited to, Detailed Fire Strategy, Acoustic Report, Thermal Report & Overheating Report.

No portion of the Works to commence without acceptance of the required submittals by the Employer.

Main Contractor to submit relevant documents to building regulation and legislation approval authorities as required to comply with the Specification.

Key Plan

Rev	Description	Date	By
P01	WIP Internal Layout Change to Grd -Mez	11.11.22	GB
P02	Internal Food Hall Layout	21.11.22	GB

Title
General Arrangement Ground Floor Plan

Drawing No.
1172-TGA-XX-ZZ-DR-A-10029

Revision
P02

Status
INFORMATION

Scale
1 : 200@A1

Project
1172 - First Street

Client
VITA

TIM GROOM ARCHITECTS

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KEY	
	Application Boundary
	Plot Demise Line (Plot 10a & 10b)
LEVELS & CONSTRAINTS	
31.21±	SPOT LEVEL - Existing Levels as per Topographic Survey
31.21±	SPOT LEVEL - Proposed
	SLOT DRAIN - Proposed

HARDWORKS	
	YORKSTONE FLAG PAVING - Sandstone paving to match specification of existing First Street surfacing
	LINEAR CONCRETE BLOCK - Option to use permeable system
	PERMEABLE CEDEC SURFACING - Option bound gravel finish
	LINEAR CONCRETE BLOCK WITH GRASS INFILL - Permeable system
	INSITU CONCRETE SURFACING
	GRANITE SETTS
	COMPOSITE DECKING - Wood effect
	TACTILE CORDUROY PAVING
	TACTILE BLISTER PAVING
	GRANITE KERB - UPSTAND
	GRANITE KERB - FLUSH

SOFTWORKS	
	PROPOSED SEMI-MATURE TREE
	PROPOSED MULTI-STEM TREE
	SHRUB/PERENNIAL PLANTING
	RAINGARDEN PLANTING
	HEDGE Instantin trough grown, 1.2m high, 1m trough
	PROPOSED CONTOURS

FURNITURE	
	PROPOSED FIXED BOLLARD
	PROPOSED FIXED BOLLARD
	ARTWORK / SEATING DISCS - To be developed with artist - Metal deck 150" used as seating, floating over a pebbles
	TREE PLANTER 2m x 1.2m - To Hulme Street site entrance
	WAY FINDING TOTEM
	RAISED BRICK PLANTER
	CYCLE STANDS
	TIMBER BENCH To be installed on top of brick planter
	PROPOSED STEPS/ HANDRAILS

LIGHTING	
	BUILDING MOUNTED LIGHTING
	LIGHTING COLUMN
	PLANTING UPLIGHTER - In ground
	PLANTING UPLIGHTER - In soft

S1-P01	11-17-22	Layout update	YH	RM
Revision	Date	Description	Drawn	Apprvd.

Client	Ask		
Project	First Street Plot 10a/10b		
Drg Title	Landscape GA		
Created on	02-09-22	Created by	YH
Approved by	RM	Workstage	For comment
Scale	1:200	Size	A1
Drg No.	PL1471.3-PLA-ZZ-00-DR-L-001		
Suitability	S1	Revision	P01

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LIVERPOOL Tempest 5.3, 12 Tithebarn Street, Liverpool, L2 2DT T: 0151 363 1230	
LONDON Unit 6 Waterside, 44-48 Wharf Road, London, N1 7UX T: 0207 253 5678	
STANDISH Standish Gatehouse, Stonehouse, Gloucestershire, GL10 3BZ T: 0145 360 7080	
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NOTES: 1. Do not scale from this drawing. 2. Always work to noted dimensions. 3. All dimensions are in millimetres unless otherwise stated. 4. All setting out, levels and dimensions to be agreed on site. 5. The dimensions of all materials must be checked on site before being laid out. 6. This drawing must be read with the relevant specification clauses and detail drawings. 7. Order of construction and setting out to be agreed on site.	

H. Pictures

17 records

Select Feature	Description	Direction Taken	
OTHER	View from north	N	
OTHER	Evidence of tar on stockpile	N	
OTHER	View from north	N	

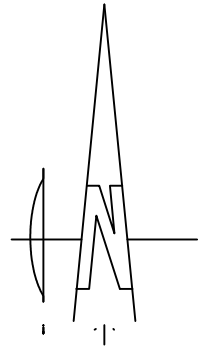
OTHER	View across northern boundary	N	
OTHER	View of stockpile	N	
OTHER	View of stockpile	N	

OTHER	View of North of site	N	
OTHER	Stockpile	N	
OTHER	Temporary service	N	

OTHER	Telecoms and electricity substation	N	
OTHER	Inside electrical substation	N	
OTHER	View from south	N	

OTHER	View from south	N	
OTHER	general compacted hard-core fill	N	
OTHER	Concrete slab around edge of site	N	

OTHER	View from East of centre	N	
OTHER	Substation and related service point	N	



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02	23.11.2022	UPDATED WITH AS DUG LOCATIONS	RM	LR
01	03.11.2022	FIRST ISSUE	RM	LR
REV	DATE	DETAILS		DRN, CHK

DRAWING STATUS

INFORMATION

RIBA STAGE

DRAWN RM	DATE 03.11.22	SCALES 1:200
CHECKED LR	DATE 03.11.22	THE ABOVE SCALES APPLY WHEN PLOTTED AT 1 SIZE -DO NOT SCALE-
APPRVD. LR	DATE 03.11.22	EMAIL FOR DRAWINGS info@roconsulting.com

CLIENT

HOUSE OF SOCIAL ONE LTD

PROJECT TITLE

PLOT 10B FIRST STREET MANCHESTER

DRAWING TITLE

EXPLORATORY HOLE LOCATION PLAN PROPOSED SITE

DRAWING No. 4513-ROC-ZZ-XX-DR-ES-ES102	REV. 02
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01	03.11.2022	FIRST ISSUE	RM	LR
REV	DATE	DETAILS	DRN	CHK

DRAWING STATUS

INFORMATION

RIBA STAGE

DRAWN	DATE	SCALES
RM	03.11.22	1:200
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LR	03.11.22	
APPRVD.	DATE	EMAIL FOR DRAWINGS
LR	03.11.22	info@roccoconsulting.com

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PROJECT TITLE

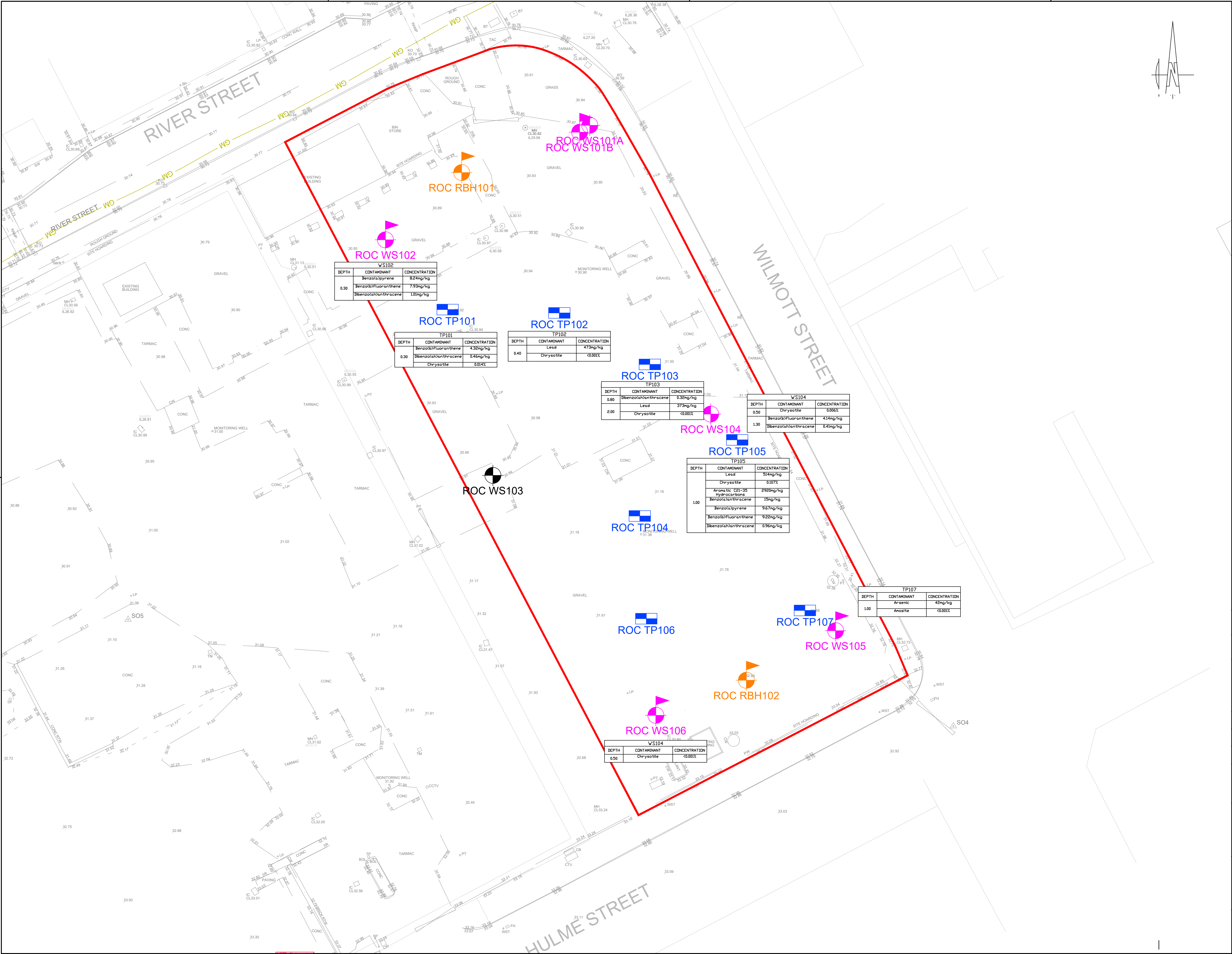
PLOT 10B FIRST STREET MANCHESTER

DRAWING TITLE

EXPLORATORY HOLE LOCATION PLAN HISTORIC OVERLAY

DRAWING No.	REV.
4513-ROC-ZZ-XX-DR-ES-ES103	02

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DRAWING STATUS

INFORMATION

RIBA STAGE

DRAWN RM	DATE 12.12.22	SCALES 1:200
CHECKED LR	DATE 12.12.22	THE ABOVE SCALES APPLY WHEN PLOTTED AT 1 SIZE -DO NOT SCALE-
APPRVD. LR	DATE 12.12.22	EMAIL FOR DRAWINGS info@roccoconsulting.com

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PROJECT TITLE

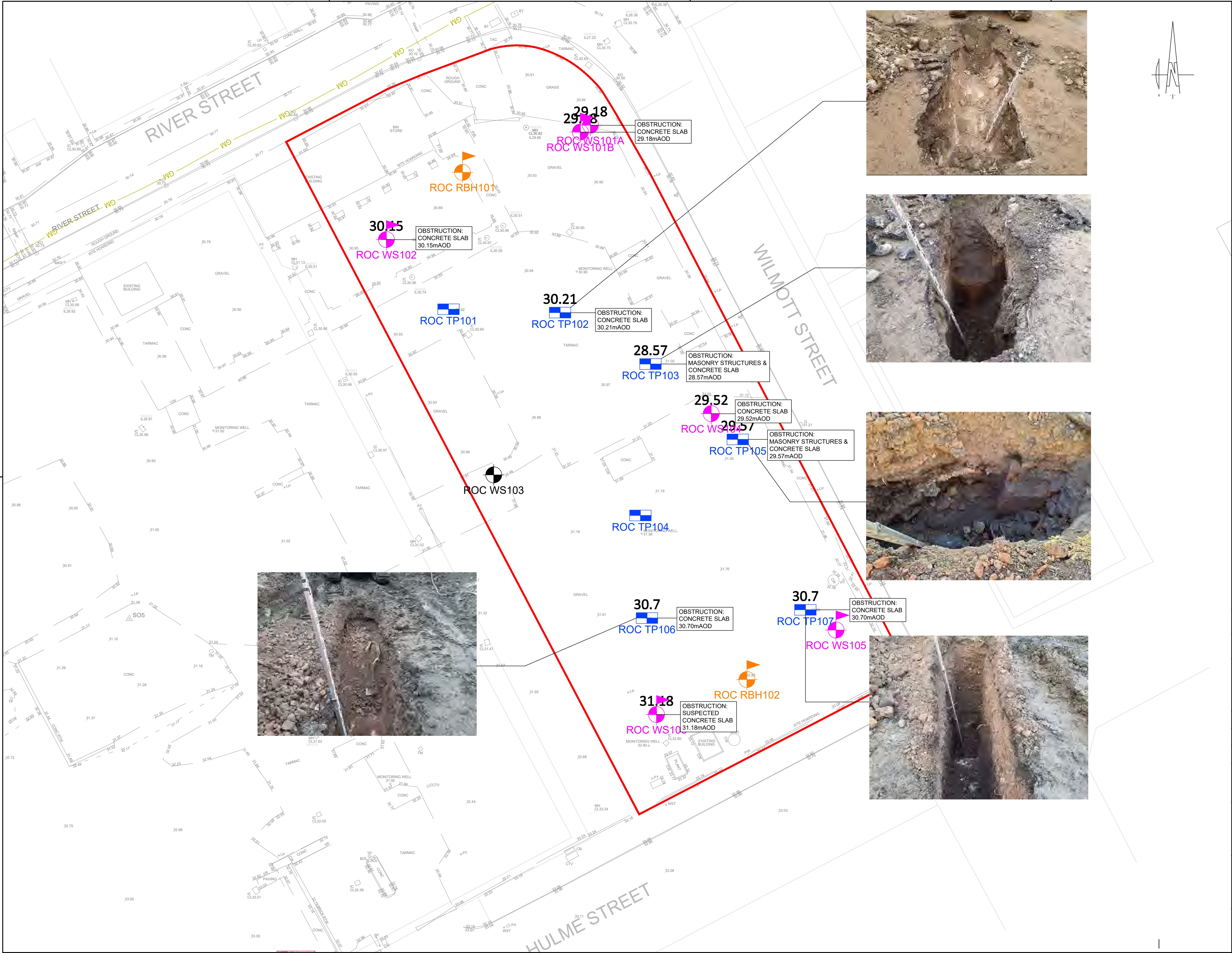
PLOT 10B FIRST STREET MANCHESTER

DRAWING TITLE

SOIL CONTAMINANT EXCEEDANCES LOCATION PLAN

DRAWING No.	REV.
4513-ROC-ZZ-XX-DR-ES-ES104	01

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INFORMATION

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DRAWN	DATE	SCALES
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CHECKED	DATE	THE ABOVE SCALES APPLY WHEN PLOTTED AT 1:200 SCALE--
LR	12.12.22	
APPRVD.	DATE	EMAIL FOR DRAWINGS
LR	12.12.22	info@roccoconsulting.com

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PROJECT TITLE

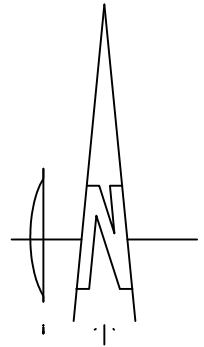
PLOT 10B FIRST STREET MANCHESTER

DRAWING TITLE

OBSTRUCTION LOCATION PLAN

DRAWING No.	REV.
4513-ROC-ZZ-XX-DR-ES-ES105	01

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APPENDIX B – Exploratory Hole Logsheets

**COMPLEX CHALLENGES...
MADE SIMPLE**



RBH101 – Core Runs 1, 2 and 3 (6.50 to 11.00mbgl)



RBH101 – Core Runs 4, 5 and 6 (11.00mbgl to 14.50mbgl)

**COMPLEX CHALLENGES...
MADE SIMPLE**



RBH101 – Core Runs 6 & 7 14.50 to 17.00mbgl



RBH101 – Core Runs 8, 9 & 10 17.00 to 21.00mbgl

**COMPLEX CHALLENGES...
MADE SIMPLE**

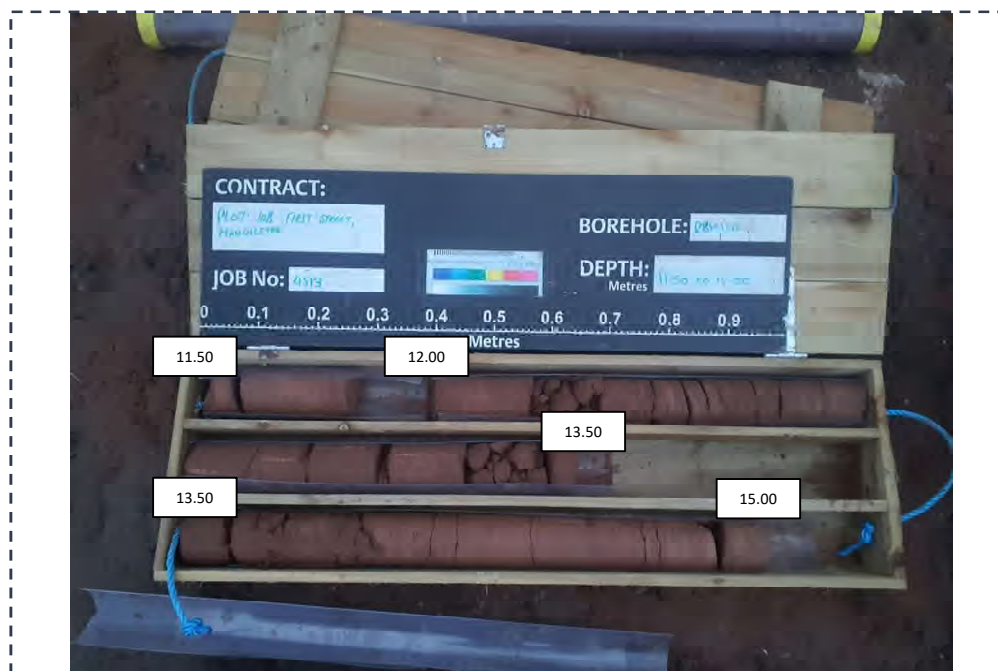


RBH101 – Core Runs 10 and 11 (21.00 to 23.00mbgl)



RBH102 – Core Runs 1, 2 & 3 (7.50 to 11.50mbgl)

**COMPLEX CHALLENGES...
MADE SIMPLE**



RBH102 – Core Runs 3, 4 & 5 (11.50 to 15.00mbgl)



RBH102 – Core Runs 6 & 7 (15.00 to 18.00mbgl) Openhole from 18.00 to 20.00mbgl)

**COMPLEX CHALLENGES...
MADE SIMPLE**



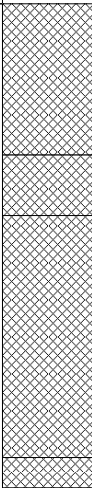
RBH102 – Core Runs 8 & 9 (20.00 to 23.00mbgl)



RBH102 – Core Run 10 (23.00 to 24.50mbgl)

Percussion Drilling Log

Project Name: Plot 10b, First Street		Client: House of Social One		Date: 07/11/2022	
Location: Manchester		Contractor: MT Geotechnical		Co-ords: E383804.64 N397326.70	
Project No. : 4513		Crew Name: M.E, M.,G		Drilling Equipment: Competitor 150	
Borehole Number WS101A	Hole Type WS	Level 30.68m AoD	Logged By RM	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		1.20	SPT	N=50 (3,3/50 for 243mm)	0.50	30.18		Dark brown gravelly fine to coarse SAND. Gravel is fine to coarse subangular to angular of brick, concrete, sandstone and ceramic. (MADE GROUND)	1
					0.70	29.98		Reddish brown fine to medium SAND (MADE GROUND)	
								...at 0.60mbgl telecommunications duct presumed abandoned	
								Dark brown gravelly fine to coarse SAND. Gravel is fine to coarse subangular to angular of brick, concrete, sandstone and ceramic (MADE GROUND)	
								Concrete slab (MADE GROUND)	
End of Borehole at 1.600m									2
									3
									4
									5

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
								0.00	1.60	90	

Remarks

1. Location CAT scanned before breaking ground 2. Groundwater was not observed 3. Terminated at 1.60mbgl due to concrete obstruction. Excavator used to attempt to break out obstruction and encountered abandoned telecommunications duct at 0.60mbgl 4. On completion, borehole backfilled with arisings.

Percussion Drilling Log

Project Name: Plot 10b, First Street		Client: House of Social One		Date: 07/11/2022	
Location: Manchester		Contractor: MT Geotechnical		Co-ords: E383803.46 N397325.90	
Project No. : 4513		Crew Name: M.E, M.,G		Drilling Equipment: Competitor 150	
Borehole Number WS101B	Hole Type WS	Level 30.68m AoD	Logged By RM	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.50	30.18		Dark brown gravelly fine to coarse SAND. Gravel is fine to coarse of concrete, brick, sandstone and ceramic (MADE GROUND)	
					0.70	29.98		Reddish brown fine to medium SAND (MADE GROUND)	
								Dark brown gravelly fine to coarse SAND. Gravel is fine to coarse of concrete, brick, sandstone and ceramic (MADE GROUND)	1
					1.50	29.18		Concrete slab (MADE GROUND)	
					1.80	28.88		End of Borehole at 1.800m	2
									3
									4
									5

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
								0.00	1.80	90	

Remarks 1. Location CAT scanned before breaking ground 2. Groundwater was not observed 3. Terminated at 1.80mbgl due to encountering concrete obstruction 4. 50mm diameter gas/groundwater monitoring well complete with Flush protective cover installed to 1.00m depth on completion. Response zone 0.50m to 1.00m depth.										
---	--	--	--	--	--	--	--	--	--	---

Percussion Drilling Log

Project Name: Plot 10b, First Street		Client: House of Social One		Date: 08/11/2022	
Location: Manchester		Contractor: MT Geotechnical		Co-ords: E383780.86 N397313.38	
Project No. : 4513		Crew Name: M.E, M.,G		Drilling Equipment: Competitor 150	
Borehole Number WS102	Hole Type WS	Level 30.95m AoD	Logged By RM	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40	ES		0.80	30.15		Dark brown very gravelly fine to coarse SAND. Gravel is fine to coarse sub angular to angular of brick and concrete (MADE GROUND)	
					1.00	29.95		Grey concrete slab. (MADE GROUND)	1
								Medium dense dark brown very gravelly fine to coarse SAND. Gravel is fine to coarse sub angular to angular of brick, limestone and concrete (MADE GROUND)	2
					2.50	28.45		Light brown with rare black spotting slightly clayey slightly gravelly SAND. Gravel is fine to medium sub rounded of sandstone and siltstone. (GLACIOFLUVIAL DEPOSITS)	
		3.00 3.00	ES SPT	N=16 (2,2/3,3,5,5)				...at 3.00mbgl becoming wet	3
								... at 3.50 to 4.00mbgl containing fine to coarse subrounded to rounded gravel of sandstone and siltstone	
					4.00	26.95		End of Borehole at 4.000m	4
									5

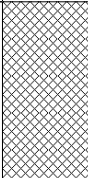
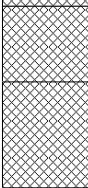
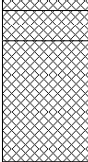
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
								0.00	4.00	90	

Remarks

1. Location CAT scanned before breaking ground 2. Groundwater was not observed 3. 50mm diameter gas/groundwater monitoring well complete with Flush protective cover installed to 3.00m depth on completion. Response zone 1.00m to 3.00m depth.

Percussion Drilling Log

Project Name: Plot 10b, First Street		Client: House of Social One		Date: 07/11/2022	
Location: Manchester		Contractor: MT Geotechnical		Co-ords: E383818.71 N397293.10	
Project No. : 4513		Crew Name: M.E, M.,G		Drilling Equipment: Competitor 150	
Borehole Number WS104	Hole Type WS	Level 31.02m AoD	Logged By RM	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description					
		Depth (m)	Type	Results									
		0.50	ES	50 (2,2/50 for 155mm)	0.60	30.42		Brown Very gravelly fine to coarse SAND. Gravel is fine to coarse subangular to angular of brick, concrete, coal and clinker (MADE GROUND)	1				
		0.60	ES					...at 0.50 to 0.60mbgl possible brick floor					
		1.20	SPT		0.85	30.17		Soft brown slightly gravelly CLAY. Gravel is fine to coarse subangular to angular of brick, concrete, coal and clinker (MADE GROUND)					
					1.20	29.82				Brown clayey gravelly fine to coarse SAND. Gravel is fine to coarse subangular to angular of brick, concrete, coal and clinker (MADE GROUND)			
										Dark brown sandy clayey GRAVEL. Gravel is fine to coarse subangular to angular of brick and concrete slight tarry odour (MADE GROUND)			
					1.30	ES		1.50 1.60		29.52 29.42		Concrete slab. (MADE GROUND)	
		2.00	29.02			Dark brown sandy clayey GRAVEL. Gravel is fine to coarse subangular to angular of brick and concrete (MADE GROUND)							
						End of Borehole at 2.000m							
												2	
							3						

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
								0.00	2.00	90	

Remarks

1. Location CAT scanned before breaking ground 2. Groundwater was not observed 3. On completion, borehole backfilled with arisings.

Percussion Drilling Log

Project Name: Plot 10b, First Street		Client: House of Social One		Date: 07/11/2022	
Location: Manchester		Contractor: MT Geotechnical		Co-ords: E383833.25 N397267.90	
Project No. : 4513		Crew Name: M.E, M.,G		Drilling Equipment: Competitor 150	
Borehole Number WS105	Hole Type WS	Level 32.70m AoD	Logged By RM	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.60	ES		0.15	32.55		Black sandy fine to medium subangular to angular GRAVEL of brick, concrete and limestone (MADE GROUND) Very dense reddish brown sandy fine to coarse subangular to angular GRAVEL of brick and concrete (MADE GROUND)	1
		1.20	SPT	N=49 (13,11/10,11,10,18)	1.65	31.05		Soft brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse sub angular of brick and sandstone (MADE GROUND)	2
		2.00	SPT	N=3 (2,3/1,1,0,1)	2.70	30.00		Firm to stiff dark brown slightly sandy slightly gravelly CLAY. Gravel is fine to medium rounded of sandstone (DEVENSIAN TILL)	3
		3.80	D						
		4.00	SPT	N=20 (2,3/4,4,5,7)				...at 4.00 to 5.00mbgl becoming stiff	4
					5.00	27.70		End of Borehole at 5.000m	5

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
								0.00	5.00	90	

Remarks

1. Location CAT scanned before breaking ground 2. Groundwater was not observed 3. 50mm diameter gas/groundwater monitoring well complete with Flush protective cover installed to 3.00m depth on completion. Response zone 1.00m to 3.00m depth.

Percussion Drilling Log

Project Name: Plot 10b, First Street		Client: House of Social One		Date: 11/11/2022	
Location: Manchester		Contractor: MT Geotechnical		Co-ords: E383812.33 N397258.05	
Project No. : 4513		Crew Name: M.E, M.,G		Drilling Equipment: Competitor 150	
Borehole Number WS106	Hole Type WS	Level 32.58m AoD	Logged By RM	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40	ES		1.40	31.18		Brown sandy fine to coarse subangular to angular brick and concrete GRAVEL. High whole and half brick cobble content (MADE GROUND)	1
								End of Borehole at 1.400m	2
									3
									4
									5

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
								0.00	1.40	90	

Remarks

1. Location CAT scanned before breaking ground 2. Groundwater was not observed 3. Terminated at 1.40mbgl due to encountering concrete obstruction 4. 50mm diameter gas/groundwater monitoring well complete with Flush protective cover installed to 1.40m depth on completion. Response zone 0.5m to 1.4m depth.

Rotary Core Log

Project Name: Plot 10b, First Street			Client: House of Social One			Date: 08/11/2022		
Location: Manchester			Contractor: MT Geotechnical			Co-ords: E383789.73 N397321.20		
Project No. : 4513			Crew Name: M.E, M.,G			Drilling Equipment: Beretta T44		
Borehole Number RBH101		Hole Type RC		Level 30.89m AoD		Logged By RM		Page Number Sheet 1 of 3

Well	Water	Depth (m)	Type /FI	Coring			Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description	
				TCR	SCR	RQD						
								1.30	29.59		Dark brown very gravelly fine to coarse SAND with low cobble content of whole and half bricks. Gravel is fine to coarse subangular to angular of brick (MADE GROUND)	1
								2.00	28.89		Dark brown clayey very gravelly fine to coarse SAND. Gravel is fine to coarse sub angular to angular of brick and concrete (MADE GROUND)	2
								3.80	27.09		Dark brown sandy gravelly CLAY. Gravel is fine to coarse sub angular to angular of brick and concrete (MADE GROUND)	3
								5.50	25.39		Brown clayey gravelly fine to coarse SAND. Gravel is fine to coarse subrounded to rounded of quartz and sandstone (GLACIOFLUVIAL SHEET DEPOSITS)	4
								6.50	24.39		Brown fine to coarse sub rounded to rounded SAND and GRAVEL of sandstone and quartzite (GLACIOFLUVIAL SHEET DEPOSITS)	5
		6.50 - 7.00		38	26	0	(18)				Extremely weak reddish brown with localised orangish brown staining fine to coarse grained SANDSTONE. Joints horizontal closely spaced planar smooth [FI = 2.86] (CHESTER FORMATION)	6
		7.00 - 8.00		0	0	0	(50)				...from 6.50 to 6.54mbgl recovered as sand	7
		8.00 - 9.50		43	34	16						8
											...from 9.80 to 9.85mbgl recovered as sand	9
												10

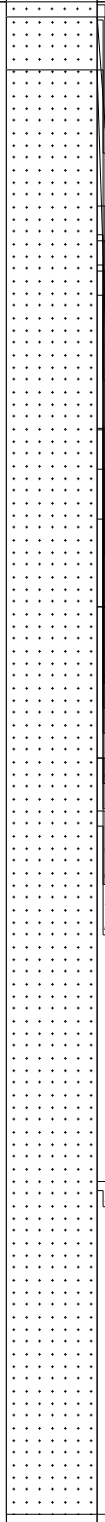
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)
								0.00	23.00	90	0						

Remarks

1. Location CAT scanned before breaking ground. 2. Due to the drilling method water strikes were not recorded 3. A 50mm diameter gas/groundwater monitoring well complete with Flush protective cover installed to 20.00m depth on completion. Response zone 10.00m to 20.00m depth.

Rotary Core Log

Project Name: Plot 10b, First Street			Client: House of Social One			Date: 08/11/2022		
Location: Manchester			Contractor: MT Geotechnical			Co-ords: E383789.73 N397321.20		
Project No. : 4513			Crew Name: M.E, M.,G			Drilling Equipment: Beretta T44		
Borehole Number RBH101		Hole Type RC		Level 30.89m AoD		Logged By RM		Page Number Sheet 2 of 3

Well	Water	Depth (m)	Type /FI	Coring			Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description	
				TCR	SCR	RQD						
		9.50 - 11.00		95	74	47		10.10 10.45	20.79 20.44		Extremely weak reddish brown with localised orangish brown staining fine to coarse grained SANDSTONE. Joints horizontal closely spaced planar smooth [FI = 2.86] (CHESTER FORMATION) ...from 10.02 to 10.12mbgl recovered as sand	11
		11.00 - 12.50		73	63	17					Extremely weak reddish brown with localised orange staining fine to coarse grained SANDSTONE. Joints are very close to closely spaced 45 degrees to horizontal planar rough [FI = 17.14] (CHESTER FORMATION) ...from 10.10 to 10.45mbgl joints are very closely to closely spaced dipping horizontal to 45 degrees planar smooth	12
		12.50 - 14.00		100	96	60					Very weak locally extremely weak reddish brown with localised orangish brown staining fine to coarse grained SANDTONE. Joints are close to mediumly spaced horizontal to 20 degrees planar smooth [FI = 7.52] (CHESTER FORMATION) ...from 11.35 to 11.54mbgl area of near vertical fractures in core with orangish brown staining ...from 11.58 to 11.74mbgl near vertical fracture through core with with orangish brown to black iron oxide staining	13
		14.00 - 15.50		100	97	72					...from 11.78 to 11.94mbgl recovered as sand ...from 12.82 to 12.83mbgl mudstone band ...from 13.09 to 13.42mbgl joints are medium spaced horizontal planar smooth ...from 14.00mbgl becoming very weak ...from 15.00mbgl becoming slightly conglomeratic with fine to medium mudstone and quartzite clasts	14
		15.50 - 17.00		100	100	93					...from 15.35 to 15.45mbgl interbedded with mudstone	15
		17.00 - 18.50		100	89	66						16
		18.50 - 20.00		34	34	23					...from 17.80 to 17.86mbgl recovered as sand	17
												18
												19
												20

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)
								0.00	23.00	90	0						

Remarks

1. Location CAT scanned before breaking ground. 2. Due to the drilling method water strikes were not recorded 3. A 50mm diameter gas/groundwater monitoring well complete with Flush protective cover installed to 20.00m depth on completion. Response zone 10.00m to 20.00m depth.

Rotary Core Log

Project Name: Plot 10b, First Street			Client: House of Social One			Date: 08/11/2022		
Location: Manchester			Contractor: MT Geotechnical			Co-ords: E383789.73 N397321.20		
Project No. : 4513			Crew Name: M.E, M.,G			Drilling Equipment: Beretta T44		
Borehole Number RBH101		Hole Type RC		Level 30.89m AoD		Logged By RM		Page Number Sheet 3 of 3

Well	Water	Depth (m)	Type /FI	Coring			Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description	
				TCR	SCR	RQD						
		20.00 - 21.50		100	91	77		20.29	10.60		Very weak locally extremely weak reddish brown with localised orangish brown staining fine to coarse grained SANDTONE. Joints are close to mediumly spaced horizontal to 20 degrees planar smooth [FI = 7.52] (CHESTER FORMATION) ...from 20.20 to 20.28mbgl recovered as gravelly sand	21
		21.50 - 23.00		81	71	17		21.59	9.30		Weak reddish brown fine to medium grained SANDSTONE. Joints are mediumly spaced horizontal to 20 degrees planar smooth [FI = 4.6] (CHESTER FORMATION)	22
								22.27	8.62		...from 20.82 to 20.84mbgl sand infill	
								23.00	7.89		Extremely weak to very weak reddish brown fine to medium grained SANDSTONE. Joints are very close to closely spaced horizontal undulating rough [FI = 26.47] (CHESTER FORMATION) ...from 21.82 to 21.89mbgl destructured mudstone	23
											Very weak reddish brown fine to medium grained SANDSTONE. Joints are closely spaced horizontal planar smooth [FI = 6.85] (CHESTER FORMATION) ...from 22.33 to 22.71mbgl black staining at joints	24
											End of Borehole at 23.000m	25
												26
												27
												28
												29
												30

Remarks														
1. Location CAT scanned before breaking ground. 2. Due to the drilling method water strikes were not recorded 3. A 50mm diameter gas/groundwater monitoring well complete with Flush protective cover installed to 20.00m depth on completion. Response zone 10.00m to 20.00m depth.														

Rotary Core Log

Project Name: Plot 10b, First Street			Client: House of Social One			Date: 10/11/2022		
Location: Manchester			Contractor: MT Geotechnical			Co-ords: E383822.86 N397262.13		
Project No. : 4513			Crew Name: M.E, M.,G			Drilling Equipment: Beretta T44		
Borehole Number RBH102		Hole Type RC		Level 32.81m AoD		Logged By RM		Page Number Sheet 1 of 3

Well	Water	Depth (m)	Type /FI	Coring			Depth (m)	Level (m)	Legend	Stratum Description	
				TCR	SCR	RQD					
							1.50	31.31		Dark brown very gravelly fine to coarse SAND Gravel is fine to coarse sub angular to angular of brick and concrete high cobble content of whole and half bricks, concrete and sandstone flags (MADE GROUND)	1
										Dark brown sandy gravelly CLAY. Gravel is fine to coarse sub angular to angular of brick (MADE GROUND)	2
											3
											4
											5
							5.50	27.31		Grayish brown slightly silty slightly sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded of various lithologies (DEVENSIAN TILL)	6
											7
		7.50 - 8.00		100			7.60 7.70	25.21 25.11		Grey medium to coarse subangular to rounded GRAVEL of various lithologies (DEVENSIAN TILL)	8
		8.00 - 9.00		40			8.30	24.51		Brown very sandy gravelly CLAY. Gravel is fine to coarse subrounded to well Rounded of various lithologies (DEVENSIAN TILL) Reddish brown slightly clayey SAND (DEVENSIAN TILL)	9
		9.00 - 10.50		75	74	55	9.00	23.81		Extremely weak reddish brown fine to coarse grained SANDSTONE. Joints are mediumly spaced horizontal planar smooth [FI = 5.88](CHESTER FORMATION)	10
							9.85	22.96			

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)
								0.00	25.00	90	0						

Remarks

1. Location CAT scanned before breaking ground. 2. Due to the drilling method water strikes were not recorded 3. 50mm diameter gas/groundwater monitoring well complete with Flush protective cover installed to 20m depth on completion. Response zone 10m to 20m depth.

Rotary Core Log

Project Name: Plot 10b, First Street			Client: House of Social One			Date: 10/11/2022		
Location: Manchester			Contractor: MT Geotechnical			Co-ords: E383822.86 N397262.13		
Project No. : 4513			Crew Name: M.E, M.,G			Drilling Equipment: Beretta T44		
Borehole Number RBH102		Hole Type RC		Level 32.81m AoD		Logged By RM		Page Number Sheet 2 of 3

Well	Water	Depth (m)	Type /FI	Coring			Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description	
				TCR	SCR	RQD						
		10.50 - 12.00		88	70	27					Extremely weak to very weak reddish brown fine to coarse grained SANDSTONE. Joints are very close to closely spaced horizontal planar rough [FI = 9.14] (CHESTER FORMATION) ...from 9.94 to 9.95mbgl clay infill	11
		12.00 - 13.50		93	71	34						12
		13.50 - 15.00		64	64	35						13
		15.00 - 16.50		83	83	51		15.32	17.49		Very weak to weak reddish brown fine to coarse SANDSTONE. Joints are close to mediumly spaced horizontal [FI = 5.97] (CHESTER FORMATION) ...at 15.50mbgl becoming weak	14
		16.50 - 18.00		95	88	67					...from 17.14 to 17.22mbgl vertical fracture	15
								18.00	14.81		Reddish brown SANDSTONE (CHESTER FORMATION)	16
												17
								20.00	12.81			18
												19
												20

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)
								0.00	25.00	90	0						

Remarks 1. Location CAT scanned before breaking ground. 2. Due to the drilling method water strikes were not recorded 3. 50mm diameter gas/groundwater monitoring well complete with Flush protective cover installed to 20m depth on completion. Response zone 10m to 20m depth.																	
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Rotary Core Log

Project Name: Plot 10b, First Street			Client: House of Social One			Date: 10/11/2022		
Location: Manchester			Contractor: MT Geotechnical			Co-ords: E383822.86 N397262.13		
Project No. : 4513			Crew Name: M.E, M.,G			Drilling Equipment: Beretta T44		
Borehole Number RBH102		Hole Type RC		Level 32.81m AoD		Logged By RM		Page Number Sheet 3 of 3

Well	Water	Depth (m)	Type /FI	Coring			Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description	
				TCR	SCR	RQD						
		20.00 - 21.50		92	90	73					Very weak to weak reddish brown fine to medium grained SANDSTONE. Joints are close to mediumly spaced horizontal to 20 degrees planar smooth [FI = 6.44] (CHESTER FORMAITON)	21
		21.50 - 23.00		77	72	63					...from 21.16 to 22.00mbgl becoming conglomeratic with fine to medium class of quartz and mudstone	22
		23.00 - 24.50		100	95	64					...from 24.03 to 24.31mbgl vertical fracture	24
								24.50	8.31		End of Borehole at 24.500m	25
												26
												27
												28
												29
												30

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)
								0.00	25.00	90	0						

Remarks

1. Location CAT scanned before breaking ground. 2. Due to the drilling method water strikes were not recorded 3. 50mm diameter gas/groundwater monitoring well complete with Flush protective cover installed to 20m depth on completion. Response zone 10m to 20m depth.

Trial Pit Log

Project Name: Plot 10b, First Street		Client: House of Social One		Date: 08/11/2022	
Location: Manchester		Contractor: MT Geotechnical		Co-ords: E383788.10 N397305.26	
Project No. : 4513		Crew Name:		Equipment: 8 Tonne Excavator	
Location Number TP101	Location Type TP	Level 30.94m AoD	Logged By RM	Scale 1:25	Page Number Sheet 1 of 1

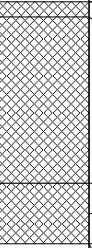
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00 - 0.30	ES		0.05	30.89		Asphalt (MADE GROUND)	1
					0.20	30.74		Yellowish brown gravelly medium to coarse SAND. Gravel is fine to medium subangular to angular of limestone (MADE GROUND)	
					0.50	30.44		Dark brown sandy GRAVEL. Gravel is fine to coarse subangular to angular of brick high whole and half brick cobble content (MADE GROUND)	
					0.70	30.24		Yellowish brown sandy fine to coarse subangular to angular limestone GRAVEL (MADE GROUND)	
					0.90	30.04		Grey sandy fine to medium GRAVEL of sandstone (MADE GROUND)	
								End of Borehole at 0.900m	5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
3.20	0.60			1. Trial pit backfilled with arisings in reverse order upon completion.			

Remarks 1. Location CAT scanned before breaking ground 2. Groundwater was not observed 3. Terminated at 0.90mbgl due to strong electrical signal on CAT 4. Trial pit backfilled with arisings in reverse order upon completion.							
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Trial Pit Log

Project Name: Plot 10b, First Street		Client: House of Social One		Date: 08/11/2022	
Location: Manchester		Contractor: MT Geotechnical		Co-ords: E383801.10 N397304.87	
Project No. : 4513		Crew Name:		Equipment: 8 Tonne Excavator	
Location Number TP102	Location Type TP	Level 31.01m AoD	Logged By RM	Scale 1:25	Page Number Sheet 1 of 1

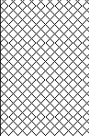
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40	ES		0.05	30.96		Asphalt (MADE GROUND) Brown sandy fine to coarse subrounded to angular brick, concrete clinker and coal GRAVEL. Occasional concrete boulders and whole and half brick cobbles. Frequent metal fragments and pipe work (MADE GROUND)	1
					0.60	30.41		Concrete slab (MADE GROUND)	
					0.80	30.21		...at 0.70 to 0.80mbgl half inch diameter vertical rebar End of Borehole at 0.800m	
									2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
3.80	0.60			1. Trial pit backfilled with arisings in reverse order upon completion.			

Remarks 1. Location CAT scanned before breaking ground 2. Groundwater was not observed 3. Terminated due to concrete obstruction at 0.80mbgl 4. Trial pit backfilled with arisings in reverse order upon completion.							
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Trial Pit Log

Project Name: Plot 10b, First Street		Client: House of Social One		Date: 08/11/2022	
Location: Manchester		Contractor: MT Geotechnical		Co-ords: E383811.64 N397298.89	
Project No. : 4513		Crew Name:		Equipment: 8 Tonne Excavator	
Location Number TP103	Location Type TP	Level 31.07m AoD	Logged By RM	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.80	ES		0.05	31.02		Asphalt (MADE GROUND)	1
					0.15	30.92		Black gravelly SAND. Gravel is fine to medium brick clinker asphalt. (MADE GROUND)	
					0.30	30.77		Yellowish brown sandy GRAVEL. Gravel is fine to medium subangular to angular of sandstone. (MADE GROUND)	
		2.00	ES		2.50	28.57		Dark brown sandy GRAVEL. Gravel is fine to coarse of brick and concrete. High whole and half brick cobble content and occasional concrete cobbles and boulders (MADE GROUND) ...intact masonry walls north and south face with archway in northern face at 0.70 to 2.50mbgl ...large chunks of masonry wall at 0.90mbgl ...cast iron pipe in southern face at 1.10mbgl.	
								End of Borehole at 2.500m	
									2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
2.50	0.80			1. Trial pit backfilled with arisings in reverse order upon completion.			

Remarks 1. Location CAT scanned before breaking ground 2. Groundwater was not observed 3. Terminated at 2.50mbgl due to concrete obstruction 4. Trial pit backfilled with arisings in reverse order upon completion.						
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Trial Pit Log

Project Name: Plot 10b, First Street		Client: House of Social One		Date: 08/11/2022	
Location: Manchester		Contractor: MT Geotechnical		Co-ords: E383810.46 N397281.25	
Project No. : 4513		Crew Name:		Equipment: 8 Tonne Excavator	
Location Number TP104	Location Type TP	Level 31.22m AoD	Logged By RM	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		1.00	ES		0.10	31.12		Black sandy fine to medium subangular to angular GRAVEL of brick, sandstone coal and clinker (MADE GROUND) Brown sandy fine to coarse subangular to angular GRAVEL of brick and concrete. High whole and half brick cobble content various anthropogenic inclusions including metal, glass and stone lintels. (MADE GROUND)	1
					2.40	28.82		End of Borehole at 2.400m	2
									3
									4
									5

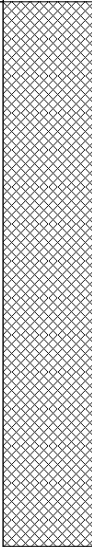
Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
3.60	0.80			1. Trial pit backfilled with arisings in reverse order upon completion.			

Remarks

1. Location CAT scanned before breaking ground 2. Groundwater was not observed 3. Terminated at 2.40mbgl due to hydraulic malfunction on excavator 4. Trial pit backfilled with arisings in reverse order upon completion.

Trial Pit Log

Project Name: Plot 10b, First Street		Client: House of Social One		Date: 08/11/2022	
Location: Manchester		Contractor: MT Geotechnical		Co-ords: E383821.81 N397290.11	
Project No. : 4513		Crew Name:		Equipment: 8 Tonne Excavator	
Location Number TP105	Location Type TP	Level 31.37m AoD	Logged By RM	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		1.00	ES					Brown very sandy fine to coarse subangular to angular brick and concrete GRAVEL. High whole and half brick cobble content and occasional timber and brick and masonry boulders. Rare black slag gravel. (MADE GROUND) ...from 0.40 to 1.80mbgl masonry wall in western face of pit and corner of masonry wall in south eastern face of pit	1
					1.80	29.57		End of Borehole at 1.800m	2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
2.70	0.80			1. Trial pit backfilled with arisings in reverse order upon completion.			

Remarks 1. Location CAT scanned before breaking ground 2. Groundwater was not observed 3. Terminated at 1.80mbgl due to encountered concrete obstruction 4. Trial pit backfilled with arisings in reverse order upon completion.							
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Trial Pit Log

Project Name: Plot 10b, First Street		Client: House of Social One		Date: 08/11/2022	
Location: Manchester		Contractor: MT Geotechnical		Co-ords: E383811.23 N397269.30	
Project No. : 4513		Crew Name:		Equipment: 8 Tonne Excavator	
Location Number TP106	Location Type TP	Level 31.80m AoD	Logged By RM	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		1.00	B		1.10	30.70		Brown sandy fine to coarse sub angular to angular GRAVEL of brick and concrete (MADE GROUND) ... at 1.00mbgl two metal joists End of Borehole at 1.100m	1
									2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
3.40	0.70			1. Trial pit backfilled with arisings in reverse order upon completion.			

Remarks 1. Location CAT scanned before breaking ground 2. Groundwater was not observed 3. Terminated at 1.10mbgl due to encountering concrete obstruction 4. Trial pit backfilled with arisings in reverse order upon completion.							
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Trial Pit Log

Project Name: Plot 10b, First Street		Client: House of Social One		Date: 08/11/2022	
Location: Manchester		Contractor: MT Geotechnical		Co-ords: E383829.69 N397270.26	
Project No. : 4513		Crew Name:		Equipment: 8 Tonne Excavator	
Location Number TP107	Location Type TP	Level 32.40m AoD	Logged By RM	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		1.00 1.00	D ES					Reddish brown sandy fine to coarse sub angular to angular GRAVEL of brick and concrete. (MADE GROUND)	1
					2.20	30.20		...at 1.70mbgl concrete slab in the northern half of trial pit masonry and wall in southern face at 1.70mbgl.	2
								End of Borehole at 2.200m	3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
3.20	0.70			1. Trial pit backfilled with arisings in reverse order upon completion.			

Remarks
 1. Location CAT scanned before breaking ground 2. Groundwater was not observed 3. Terminated at 2.20mbgl due to concrete obstruction in northern portion of pit limiting mobility of excavating arm for further excavation 4. Trial pit backfilled with arisings in reverse order upon completion.

**COMPLEX CHALLENGES...
MADE SIMPLE**



TP101 – East Facing View



TP101 – North Facing View

**COMPLEX CHALLENGES...
MADE SIMPLE**



TP101 - Arisings



TP102 – East Facing View

**COMPLEX CHALLENGES...
MADE SIMPLE**



TP102 – North Facing View



TP102 – Arisings

**COMPLEX CHALLENGES...
MADE SIMPLE**



TP103 – North Facing View



TP103 – South Facing View

**COMPLEX CHALLENGES...
MADE SIMPLE**



TP103 – West Facing View



TP103 – Arisings



**COMPLEX CHALLENGES...
MADE SIMPLE**



TP104 – West Facing View



TP104 – East Facing View

**COMPLEX CHALLENGES...
MADE SIMPLE**



TP104 – Arisings



TP105 – West Facing View

**COMPLEX CHALLENGES...
MADE SIMPLE**



TP105 – East Facing View



TP105 – Arisings

**COMPLEX CHALLENGES...
MADE SIMPLE**



TP106 – South Facing View



TP106 – West Facing View

**COMPLEX CHALLENGES...
MADE SIMPLE**



TP106 – East Facing View



TP107 – East Facing View

**COMPLEX CHALLENGES...
MADE SIMPLE**



TP107 – West Facing View



TP107 – North Facing View

**COMPLEX CHALLENGES...
MADE SIMPLE**



TP107 – Arisings

APPENDIX C – Chemical Testing Results

FINAL ANALYTICAL TEST REPORT

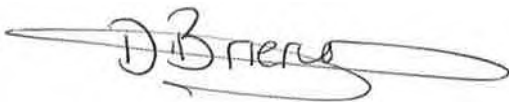
Envirolab Job Number: 22/11222
Issue Number: 1

Date: 25 November, 2022

Client: ROCP LIMITED
Commercial Wharf 6 Commercial Street
Castlefield
Manchester
M15 4PZ

Project Manager: Linden Richardson/Reece McGuinness
Project Name: Plot 10b, First Street
Project Ref: 4513
Order No: 1814
Date Samples Received: 11/11/22
Date Instructions Received: 15/11/22
Date Analysis Completed: 25/11/22

Approved by:



Danielle Brierley
Deputy Client Services Supervisor

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/1	22/11222/2	22/11222/3	22/11222/4	22/11222/5	22/11222/6	22/11222/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP101	TP102	TP103	TP103	TP105	TP107	WS101			
Depth to Top	0.30	0.40	0.80	2.00	1.00	1.00	0.80			
Depth To Bottom										
Date Sampled	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	07-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AE	4AE	4A	4AB	4AB	4AE			
% Stones >10mm _A	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	% w/w	0.1	A-T-044
pH _D ^{M#}	10.64	9.37	9.40	8.82	8.70	10.65	10.29	pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1) _D ^{M#}	65	85	53	45	61	34	32	mg/l	10	A-T-026s
Cyanide (total) _A ^{M#}	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Fraction of organic carbon _D [#]	0.0211	0.0140	0.0163	0.0257	0.2019	0.0087	0.0152	N/A	0.0003	A-T-032 FOC
Antimony _D	<5	20	9	29	7	13	5	mg/kg	5	A-T-024s
Arsenic _D ^{M#}	4	9	3	7	10	42	7	mg/kg	1	A-T-024s
Barium _D	303	454	220	1140	372	487	216	mg/kg	1	A-T-024s
Beryllium _D	0.9	<0.5	<0.5	1.0	1.2	0.6	0.7	mg/kg	0.5	A-T-024s
Boron (water soluble) _D	2.5	2.9	1.7	<1.0	<1.0	2.2	<1.0	mg/kg	1	A-T-027s
Cadmium _D ^{M#}	5.8	2.3	1.0	1.9	2.8	7.5	1.3	mg/kg	0.5	A-T-024s
Copper _D ^{M#}	26	34	17	66	156	85	41	mg/kg	1	A-T-024s
Chromium _D ^{M#}	21	17	16	19	16	95	18	mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-040s
Chromium (trivalent)	21	17	16	19	16	95	18	mg/kg	1	Calc
Lead _D ^{M#}	83	473	121	373	514	229	171	mg/kg	1	A-T-024s
Mercury _D	1.91	2.07	2.46	2.06	8.11	0.86	0.75	mg/kg	0.17	A-T-024s
Molybdenum _D ^{M#}	<1	<1	<1	2	3	2	<1	mg/kg	1	A-T-024s
Nickel _D ^{M#}	15	14	12	22	24	75	16	mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	6	<1	<1	<1	<1	<1	mg/kg	1	A-T-024s
Vanadium _D ^{M#}	25	18	20	27	29	118	21	mg/kg	1	A-T-024s
Zinc _D ^{M#}	148	411	138	518	367	433	196	mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (3 no) _A	*	-	-	-	-	-	-			A-T-001
pH (leachable) _A [#]	9.93	-	-	-	-	-	-	pH	0.01	A-T-031w
Sulphate (leachable) _A [#]	65.50	-	-	-	-	-	-	mg/l	1	A-T-026w
DOC (leachable) _A [#]	4.3	-	-	-	-	-	-	mg/l	2	A-T-032w
Antimony (leachable) _A	16	-	-	-	-	-	-	µg/l	1	A-T-025w
Arsenic (leachable) _A	7	-	-	-	-	-	-	µg/l	1	A-T-025w
Boron (leachable) _A	67	-	-	-	-	-	-	µg/l	10	A-T-025w
Barium (leachable) _A	17	-	-	-	-	-	-	µg/l	1	A-T-025w
Beryllium (leachable) _A	<1	-	-	-	-	-	-	µg/l	1	A-T-025w
Cadmium (leachable) _A	<1	-	-	-	-	-	-	µg/l	1	A-T-025w

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/1	22/11222/2	22/11222/3	22/11222/4	22/11222/5	22/11222/6	22/11222/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP101	TP102	TP103	TP103	TP105	TP107	WS101			
Depth to Top	0.30	0.40	0.80	2.00	1.00	1.00	0.80			
Depth To Bottom										
Date Sampled	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	07-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AE	4AE	4A	4AB	4AB	4AE			
Copper (leachable) _A	8	-	-	-	-	-	-	µg/l	4	A-T-025w
Chromium (leachable) _A	12	-	-	-	-	-	-	µg/l	1	A-T-025w
Chromium (hexavalent) (leachable) _A	<0.05	-	-	-	-	-	-	mg/l	0.05	A-T-040w
Chromium (trivalent)	<0.05	-	-	-	-	-	-	mg/l	0.05	Calc
Lead (leachable) _A	6	-	-	-	-	-	-	µg/l	1	A-T-025w
Mercury (leachable) _A	<0.1	-	-	-	-	-	-	µg/l	0.1	A-T-025w
Molybdenum (leachable) _A	3	-	-	-	-	-	-	µg/l	1	A-T-025w
Nickel (leachable) _A	<2	-	-	-	-	-	-	µg/l	2	A-T-025w
Selenium (leachable) _A	<1	-	-	-	-	-	-	µg/l	1	A-T-025w
Vanadium (leachable) _A	50	-	-	-	-	-	-	µg/l	1	A-T-025w
Zinc (leachable) _A	42	-	-	-	-	-	-	µg/l	2	A-T-025w
Carbon Disulphide (leachable) _A	<1	-	-	-	-	-	-	µg/l	1	A-T-006w
Hexachlorobutadiene (leachable) _A	<1	-	-	-	-	-	-	µg/l	1	A-T-006w
1,2,4-Trimethylbenzene (leachable) _A	<1	-	-	-	-	-	-	µg/l	1	A-T-006w
Isopropylbenzene (leachable) _A	<1	-	-	-	-	-	-	µg/l	1	A-T-006w
n-propylbenzene (leachable) _A	<1	-	-	-	-	-	-	µg/l	1	A-T-006w
Styrene (leachable) _A	<1	-	-	-	-	-	-	µg/l	1	A-T-006w

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/1	22/11222/2	22/11222/3	22/11222/4	22/11222/5	22/11222/6	22/11222/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP101	TP102	TP103	TP103	TP105	TP107	WS101			
Depth to Top	0.30	0.40	0.80	2.00	1.00	1.00	0.80			
Depth To Bottom										
Date Sampled	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	07-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AE	4AE	4A	4AB	4AB	4AE			
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	Chrysotile	Chrysotile	NAD	Chrysotile & Amosite	Chrysotile	Amosite	NAD			A-T-045
Asbestos Matrix (visual) ₀	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope) ₀	Loose Fibres	Loose Fibres	-	Loose Fibres	Loose Fibres	Loose Fibres	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test? ₀	N/A	N/A	N/A	N/A	N/A	N/A	N/A			A-T-045
Asbestos in Soil Quantification % (Hand Picking & Weighing)										
Asbestos in soil % composition (hand picking and weighing) ₀	0.014	<0.001	-	<0.001	0.107	<0.001	-	% w/w	0.001	A-T-054

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/1	22/11222/2	22/11222/3	22/11222/4	22/11222/5	22/11222/6	22/11222/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP101	TP102	TP103	TP103	TP105	TP107	WS101			
Depth to Top	0.30	0.40	0.80	2.00	1.00	1.00	0.80			
Depth To Bottom										
Date Sampled	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	07-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AE	4AE	4A	4AB	4AB	4AE			
PAH-16MS										
Acenaphthene _A ^{M#}	0.89	0.06	0.34	0.11	4.00	0.02	0.14	mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.20	0.05	0.17	0.10	0.97	0.02	0.08	mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	1.67	0.13	0.64	0.38	7.33	0.08	0.33	mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	4.72	0.68	2.66	2.02	15	0.47	1.12	mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	4.30	0.68	2.39	1.96	9.67	0.57	0.97	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	4.32	0.74	2.38	2.02	9.22	0.62	1.00	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	2.00	0.48	1.35	1.37	3.69	0.42	0.53	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	1.45	0.25	0.75	0.66	3.23	0.18	0.31	mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	4.58	0.76	2.66	2.04	13.3	0.54	1.19	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.46	0.09	0.32	0.27	0.96	0.08	0.12	mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	11.1	1.21	5.01	3.48	33	0.83	2.46	mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.82	0.05	0.28	0.08	3.41	0.02	0.13	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	2.22	0.47	1.41	1.39	4.44	0.43	0.53	mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.43	<0.03	0.10	0.03	1.54	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	5.54	0.53	2.65	1.29	27.4	0.29	1.59	mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	10.6	1.27	4.89	3.54	30.3	0.89	2.43	mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	55.3	7.45	28	20.7	167	5.46	12.9	mg/kg	0.01	A-T-019s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/1	22/11222/2	22/11222/3	22/11222/4	22/11222/5	22/11222/6	22/11222/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP101	TP102	TP103	TP103	TP105	TP107	WS101			
Depth to Top	0.30	0.40	0.80	2.00	1.00	1.00	0.80			
Depth To Bottom										
Date Sampled	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	07-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AE	4AE	4A	4AB	4AB	4AE			
PAH 16MS (leachable)										
Acenaphthene (leachable) _A	0.33	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Acenaphthylene (leachable) _A	0.03	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Anthracene (leachable) _A	0.07	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable) _A	0.04	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) _A	0.02	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable) _A	0.03	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable) _A	<0.02	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable) _A	<0.02	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Chrysene (leachable) _A	0.05	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable) _A	<0.02	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Fluoranthene (leachable) _A	0.16	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Fluorene (leachable) _A	0.19	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable) _A	<0.02	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Naphthalene (leachable) _A	0.29	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Phenanthrene (leachable) _A	0.34	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Pyrene (leachable) _A	0.15	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Total PAH 16MS (leachable) _A	1.70	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Phenols (speciated HPLC)										
Phenol _A	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Cresols _A	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Xylenols _A	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Resorcinol _A	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/1	22/11222/2	22/11222/3	22/11222/4	22/11222/5	22/11222/6	22/11222/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP101	TP102	TP103	TP103	TP105	TP107	WS101			
Depth to Top	0.30	0.40	0.80	2.00	1.00	1.00	0.80			
Depth To Bottom										
Date Sampled	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	07-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AE	4AE	4A	4AB	4AB	4AE			
Speciated PCB-EC7 & WHO12 (leachable)										
PCB BZ 28 (leachable) _A	<0.002	-	-	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 52 (leachable) _A	<0.002	-	-	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 101 (leachable) _A	<0.002	-	-	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 118 (leachable) _A	<0.002	-	-	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 138 (leachable) _A	<0.002	-	-	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 153 (leachable) _A	<0.002	-	-	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 180 (leachable) _A	<0.002	-	-	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 77 (leachable) _A	<0.002	-	-	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 81 (leachable) _A	<0.002	-	-	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 105 (leachable) _A	<0.002	-	-	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 114 (leachable) _A	<0.002	-	-	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 123 (leachable) _A	<0.002	-	-	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 126 (leachable) _A	<0.002	-	-	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 156 (leachable) _A	<0.002	-	-	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 157 (leachable) _A	<0.002	-	-	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 167 (leachable) _A	<0.002	-	-	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 169 (leachable) _A	<0.002	-	-	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 189 (leachable) _A	<0.002	-	-	-	-	-	-	µg/l	0.002	A-T-004w
Total Speciated PCB-EC7 & WHO12 (leachable) _A	<0.002	-	-	-	-	-	-	µg/l	0.002	A-T-004w

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/1	22/11222/2	22/11222/3	22/11222/4	22/11222/5	22/11222/6	22/11222/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP101	TP102	TP103	TP103	TP105	TP107	WS101			
Depth to Top	0.30	0.40	0.80	2.00	1.00	1.00	0.80			
Depth To Bottom										
Date Sampled	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	07-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AE	4AE	4A	4AB	4AB	4AE			
Speciated PCB-EC7										
PCB BZ 28 _A ^{M#}	-	-	<0.003	-	<0.003	-	-	mg/kg	0.003	A-T-004s
PCB BZ 52 _A ^{M#}	-	-	<0.002	-	<0.002	-	-	mg/kg	0.002	A-T-004s
PCB BZ 101 _A ^{M#}	-	-	<0.004	-	<0.004	-	-	mg/kg	0.004	A-T-004s
PCB BZ 118 _A ^{M#}	-	-	<0.007	-	<0.007	-	-	mg/kg	0.007	A-T-004s
PCB BZ 138 _A ^{M#}	-	-	<0.006	-	<0.006	-	-	mg/kg	0.006	A-T-004s
PCB BZ 153 _A ^{M#}	-	-	<0.004	-	<0.004	-	-	mg/kg	0.004	A-T-004s
PCB BZ 180 _A ^{M#}	-	-	<0.004	-	<0.004	-	-	mg/kg	0.004	A-T-004s
Total Speciated PCB-EC7 _A ^{M#}	-	-	<0.007	-	<0.007	-	-	mg/kg	0.003	A-T-004s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/1	22/11222/2	22/11222/3	22/11222/4	22/11222/5	22/11222/6	22/11222/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP101	TP102	TP103	TP103	TP105	TP107	WS101			
Depth to Top	0.30	0.40	0.80	2.00	1.00	1.00	0.80			
Depth To Bottom										
Date Sampled	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	07-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AE	4AE	4A	4AB	4AB	4AE			
SVOC excluding PAH-16										
4-Bromophenyl phenyl ether _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
Hexachlorobenzene _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
Diethyl phthalate _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
Dimethyl phthalate _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
Dibenzofuran _A	547	<100	-	-	27400	-	<100	µg/kg	100	A-T-052s
Carbazole _A	427	<100	-	-	21100	-	<100	µg/kg	100	A-T-052s
Butylbenzyl phthalate _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate _A	1330	1280	-	-	<50000	-	<500	µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
4-Nitrophenol _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
3+4-Methylphenol _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
4-Chloro-3-methylphenol _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
2-Nitrophenol _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
2-Methylphenol _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
1,2,4-Trichlorobenzene _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
2-Chlorophenol _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
2,6-Dinitrotoluene _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
2,4-Dinitrotoluene _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
2,4-Dimethylphenol _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
2,4-Dichlorophenol _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
2,4,6-Trichlorophenol _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
2,4,5-Trichlorophenol _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
1,4-Dichlorobenzene _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
1,3-Dichlorobenzene _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
1,2-Dichlorobenzene _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
2-Chloronaphthalene _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
2-Methylnaphthalene _A	384	<100	-	-	14000	-	<100	µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
Phenol _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
Pentachlorophenol _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/1	22/11222/2	22/11222/3	22/11222/4	22/11222/5	22/11222/6	22/11222/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP101	TP102	TP103	TP103	TP105	TP107	WS101			
Depth to Top	0.30	0.40	0.80	2.00	1.00	1.00	0.80			
Depth To Bottom										
Date Sampled	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	07-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AE	4AE	4A	4AB	4AB	4AE			
n-Dioctylphthalate _A	<500	<500	-	-	<50000	-	<500	µg/kg	500	A-T-052s
n-Dibutylphthalate _A	279	326	-	-	<10000	-	304	µg/kg	100	A-T-052s
Nitrobenzene _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
Isophorone _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
Hexachloroethane _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
Hexachlorocyclopentadiene _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
Hexachlorobutadiene _A	<100	<100	-	-	<10000	-	<100	µg/kg	100	A-T-052s
Perylene _A	1180	321	-	-	30500	-	266	µg/kg	100	A-T-052s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/1	22/11222/2	22/11222/3	22/11222/4	22/11222/5	22/11222/6	22/11222/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP101	TP102	TP103	TP103	TP105	TP107	WS101			
Depth to Top	0.30	0.40	0.80	2.00	1.00	1.00	0.80			
Depth To Bottom										
Date Sampled	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	07-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AE	4AE	4A	4AB	4AB	4AE			
VOC										
Dichlorodifluoromethane _A	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
Chloromethane _A	<10	<10	-	-	<10	-	<10	µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene) _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
Bromomethane _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
Chloroethane _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
Trichlorofluoromethane _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
1,1-Dichloroethene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
Carbon Disulphide _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
Dichloromethane _A	<5	<5	-	-	<5	-	<5	µg/kg	5	A-T-006s
trans 1,2-Dichloroethene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
1,1-Dichloroethane _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
cis 1,2-Dichloroethene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
2,2-Dichloropropane _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
Bromochloromethane _A [#]	<5	<5	-	-	<5	-	<5	µg/kg	5	A-T-006s
Chloroform _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
1,1,1-Trichloroethane _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
1,1-Dichloropropene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
Carbon Tetrachloride _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
1,2-Dichloroethane _A [#]	<2	<2	-	-	<2	-	<2	µg/kg	2	A-T-006s
Benzene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
Trichloroethene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
1,2-Dichloropropane _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
Dibromomethane _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
Bromodichloromethane _A [#]	<10	<10	-	-	<10	-	<10	µg/kg	10	A-T-006s
cis 1,3-Dichloropropene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
Toluene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
trans 1,3-Dichloropropene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
1,1,2-Trichloroethane _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
1,3-Dichloropropane _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
Tetrachloroethene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
Dibromochloromethane _A [#]	<3	<3	-	-	<3	-	<3	µg/kg	3	A-T-006s
1,2-Dibromoethane _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/1	22/11222/2	22/11222/3	22/11222/4	22/11222/5	22/11222/6	22/11222/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP101	TP102	TP103	TP103	TP105	TP107	WS101			
Depth to Top	0.30	0.40	0.80	2.00	1.00	1.00	0.80			
Depth To Bottom										
Date Sampled	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	07-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AE	4AE	4A	4AB	4AB	4AE			
Chlorobenzene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
1,1,1,2-Tetrachloroethane _A	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
Ethylbenzene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
m & p Xylene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
o-Xylene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
Styrene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
Bromoform _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
Isopropylbenzene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane _A	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
1,2,3-Trichloropropane _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
Bromobenzene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
n-Propylbenzene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
2-Chlorotoluene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
4-Chlorotoluene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
tert-Butylbenzene _A [#]	<2	<2	-	-	<2	-	<2	µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
sec-Butylbenzene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
4-Isopropyltoluene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
1,3-Dichlorobenzene _A	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
1,4-Dichlorobenzene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
n-Butylbenzene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
1,2-Dichlorobenzene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP) _A	<2	<2	-	-	<2	-	<2	µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene _A	<3	<3	-	-	<3	-	<3	µg/kg	3	A-T-006s
Hexachlorobutadiene _A [#]	<1	<1	-	-	<1	-	<1	µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene _A	<3	<3	-	-	<3	-	<3	µg/kg	3	A-T-006s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/1	22/11222/2	22/11222/3	22/11222/4	22/11222/5	22/11222/6	22/11222/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP101	TP102	TP103	TP103	TP105	TP107	WS101			
Depth to Top	0.30	0.40	0.80	2.00	1.00	1.00	0.80			
Depth To Bottom										
Date Sampled	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	07-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AE	4AE	4A	4AB	4AB	4AE			
TPH CWG (UKWIR) with Clean Up										
Ali >C5-C6 _A [#]	<0.01	<0.01	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01	<0.01	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<10	-	<10	-	<1	mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	1	<1	<10	-	<10	-	<1	mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	10	2	<10	-	14	-	1	mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	43	9	<10	-	18	-	2	mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	223	118	664	-	94	-	25	mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	2	2	<10	-	<10	-	1	mg/kg	1	A-T-055s
Aro >C10-C12 _A	3	1	<10	-	44	-	1	mg/kg	1	A-T-055s
Aro >C12-C16 _A	24	5	20	-	401	-	11	mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	87	19	59	-	1320	-	27	mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	212	64	339	-	2920	-	88	mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01	-	<0.01	-	<0.01	mg/kg	0.01	A-T-022s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/1	22/11222/2	22/11222/3	22/11222/4	22/11222/5	22/11222/6	22/11222/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP101	TP102	TP103	TP103	TP105	TP107	WS101			
Depth to Top	0.30	0.40	0.80	2.00	1.00	1.00	0.80			
Depth To Bottom										
Date Sampled	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	07-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AE	4AE	4A	4AB	4AB	4AE			
TPH UKCWG (leachable) with Clean Up										
Ali >C5-C6 (leachable) _A	2	-	-	-	-	-	-	µg/l	1	A-T-022w
Ali >C6-C8 (leachable) _A	1	-	-	-	-	-	-	µg/l	1	A-T-022w
Ali >C8-C10 (leachable) _A	<10	-	-	-	-	-	-	µg/l	10	A-T-055w
Ali >C10-C12 (leachable) _A	<10	-	-	-	-	-	-	µg/l	10	A-T-055w
Ali >C12-C16 (leachable) _A	<10	-	-	-	-	-	-	µg/l	10	A-T-055w
Ali >C16-C21 (leachable) _A	<10	-	-	-	-	-	-	µg/l	10	A-T-055w
Ali >C21-C35 (leachable) _A	<20	-	-	-	-	-	-	µg/l	20	A-T-055w
Ali >C35-C44 (leachable) _A	<10	-	-	-	-	-	-	µg/l	10	A-T-055w
Total Aliphatics (leachable) _A	<20	-	-	-	-	-	-	µg/l	10	Calc-As Recd
Aro >C5-C7 (leachable) _A	<1	-	-	-	-	-	-	µg/l	1	A-T-022w
Aro >C7-C8 (leachable) _A	<1	-	-	-	-	-	-	µg/l	1	A-T-022w
Aro >C8-C10 (leachable) _A	<10	-	-	-	-	-	-	µg/l	10	A-T-055w
Aro >C10-C12 (leachable) _A	<10	-	-	-	-	-	-	µg/l	10	A-T-055w
Aro >C12-C16 (leachable) _A	<10	-	-	-	-	-	-	µg/l	10	A-T-055w
Aro >C16-C21 (leachable) _A	<10	-	-	-	-	-	-	µg/l	10	A-T-055w
Aro >C35-C44 (leachable) _A	<10	-	-	-	-	-	-	µg/l	10	A-T-055w
Total Aromatics (leachable) GCxGC _A	<20	-	-	-	-	-	-	µg/l	20	Calc-As Recd
TPH (Ali & Aro >C5-C44) (leachable) _A	<20	-	-	-	-	-	-	µg/l	20	Calc-As Recd
BTEX - Benzene (leachable) _A	<1	-	-	-	-	-	-	µg/l	1	A-T-022w
BTEX - Toluene (leachable) _A	<1	-	-	-	-	-	-	µg/l	1	A-T-022w
BTEX - Ethyl Benzene (leachable) _A	<1	-	-	-	-	-	-	µg/l	1	A-T-022w
BTEX - o Xylene (leachable) _A	<1	-	-	-	-	-	-	µg/l	1	A-T-022w
BTEX - m & p Xylene (leachable) _A	<1	-	-	-	-	-	-	µg/l	1	A-T-022w
MTBE (leachable) _A	1	-	-	-	-	-	-	µg/l	1	A-T-022w
Aro >C21-C35 (leachable) _A	<20	-	-	-	-	-	-	µg/l	20	A-T-055w

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/1	22/11222/2	22/11222/3	22/11222/4	22/11222/5	22/11222/6	22/11222/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP101	TP102	TP103	TP103	TP105	TP107	WS101			
Depth to Top	0.30	0.40	0.80	2.00	1.00	1.00	0.80			
Depth To Bottom										
Date Sampled	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	07-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AE	4AE	4A	4AB	4AB	4AE			
TPH UKCWG with Clean Up										
Ali >C35-C44 _A	152	205	536	-	117	-	13	mg/kg	1	A-T-055s
Total Aliphatics _A	429	335	1200	-	243	-	41	mg/kg	1	Calc-As Recd
Aro >C35-C44 _A	73	97	451	-	101	-	8	mg/kg	1	A-T-055s
Total Aromatics _A	401	189	868	-	4790	-	137	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C44) _A	830	524	2070	-	5030	-	178	mg/kg	1	Calc-As Recd

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/8	22/11222/9	22/11222/11	22/11222/12	22/11222/13	22/11222/14	22/11222/15	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102	WS104	WS104	WS105	WS106	Composite 1	Composite 2			
Depth to Top	0.30	0.50	1.30	0.60	0.40					
Depth To Bottom										
Date Sampled	07-Nov-22	07-Nov-22	07-Nov-22	09-Nov-22	11-Nov-22	09-Nov-22	11-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AB	4AB	4AB	4AB	4AB	4AB			
% Stones >10mm _A	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	% w/w	0.1	A-T-044
pH _D ^{M#}	9.71	9.67	9.89	9.22	9.43	11.08	11.59	pH	0.01	A-T-031s
Electrical conductivity @ 20degC _D	-	-	-	-	-	624	1000	µs/cm	10	A-T-037s
Sulphate BRE (water sol 2:1) _D ^{M#}	248	32	18	40	24	-	-	mg/l	10	A-T-026s
Cyanide (total) _A ^{M#}	1	<1	<1	<1	<1	-	-	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	mg/kg	0.2	A-T-050s
Fraction of organic carbon _D [#]	0.0294	0.0211	0.0709	0.0495	0.0275	-	-	N/A	0.0003	A-T-032 FOC
Antimony _D	<5	<5	<5	<5	<5	-	-	mg/kg	5	A-T-024s
Arsenic _D ^{M#}	6	5	12	11	5	-	-	mg/kg	1	A-T-024s
Barium _D	157	368	199	164	401	-	-	mg/kg	1	A-T-024s
Beryllium _D	0.7	<0.5	1.3	1.6	0.6	-	-	mg/kg	0.5	A-T-024s
Boron (water soluble) _D	2.0	<1.0	2.0	1.5	<1.0	-	-	mg/kg	1	A-T-027s
Cadmium _D ^{M#}	1.4	0.9	2.7	2.5	1.3	-	-	mg/kg	0.5	A-T-024s
Copper _D ^{M#}	33	23	72	107	23	-	-	mg/kg	1	A-T-024s
Chromium _D ^{M#}	19	12	19	20	17	-	-	mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1	<1	-	-	mg/kg	1	A-T-040s
Chromium (trivalent)	19	12	19	20	17	-	-	mg/kg	1	Calc
Lead _D ^{M#}	92	163	157	229	204	-	-	mg/kg	1	A-T-024s
Mercury _D	1.88	1.24	0.91	0.44	1.37	-	-	mg/kg	0.17	A-T-024s
Molybdenum _D ^{M#}	<1	<1	4	2	<1	-	-	mg/kg	1	A-T-024s
Nickel _D ^{M#}	18	11	29	32	13	-	-	mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1	<1	<1	-	-	mg/kg	1	A-T-024s
Vanadium _D ^{M#}	22	27	36	36	26	-	-	mg/kg	1	A-T-024s
Zinc _D ^{M#}	101	252	276	138	293	-	-	mg/kg	5	A-T-024s
Redox Potential (water soluble) _D	-	-	-	-	-	-27	-29	mV		Probe
TAME _A	-	-	-	-	-	<0.1	<0.1	mg/kg	0.1	A-T-022s
Leachate Prep BS EN 12457-1 (2:1) (3 no) _A	-	-	*	-	-	-	-			A-T-001
pH (leachable) _A [#]	-	-	8.77	-	-	-	-	pH	0.01	A-T-031w
Sulphate (leachable) _A [#]	-	-	18.32	-	-	-	-	mg/l	1	A-T-026w
DOC (leachable) _A [#]	-	-	8.5	-	-	-	-	mg/l	2	A-T-032w
Antimony (leachable) _A	-	-	5	-	-	-	-	µg/l	1	A-T-025w
Arsenic (leachable) _A	-	-	26	-	-	-	-	µg/l	1	A-T-025w
Boron (leachable) _A	-	-	94	-	-	-	-	µg/l	10	A-T-025w

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/8	22/11222/9	22/11222/11	22/11222/12	22/11222/13	22/11222/14	22/11222/15	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102	WS104	WS104	WS105	WS106	Composite 1	Composite 2			
Depth to Top	0.30	0.50	1.30	0.60	0.40					
Depth To Bottom										
Date Sampled	07-Nov-22	07-Nov-22	07-Nov-22	09-Nov-22	11-Nov-22	09-Nov-22	11-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AB	4AB	4AB	4AB	4AB	4AB			
Barium (leachable) _A	-	-	166	-	-	-	-	µg/l	1	A-T-025w
Beryllium (leachable) _A	-	-	2	-	-	-	-	µg/l	1	A-T-025w
Cadmium (leachable) _A	-	-	<1	-	-	-	-	µg/l	1	A-T-025w
Copper (leachable) _A	-	-	105	-	-	-	-	µg/l	4	A-T-025w
Chromium (leachable) _A	-	-	5	-	-	-	-	µg/l	1	A-T-025w
Chromium (hexavalent) (leachable) _A	-	-	<0.05	-	-	-	-	mg/l	0.05	A-T-040w
Chromium (trivalent)	-	-	<0.05	-	-	-	-	mg/l	0.05	Calc
Lead (leachable) _A	-	-	368	-	-	-	-	µg/l	1	A-T-025w
Mercury (leachable) _A	-	-	0.5	-	-	-	-	µg/l	0.1	A-T-025w
Molybdenum (leachable) _A	-	-	19	-	-	-	-	µg/l	1	A-T-025w
Nickel (leachable) _A	-	-	12	-	-	-	-	µg/l	2	A-T-025w
Selenium (leachable) _A	-	-	2	-	-	-	-	µg/l	1	A-T-025w
Vanadium (leachable) _A	-	-	27	-	-	-	-	µg/l	1	A-T-025w
Zinc (leachable) _A	-	-	104	-	-	-	-	µg/l	2	A-T-025w
Carbon Disulphide (leachable) _A	-	-	<1	-	-	-	-	µg/l	1	A-T-006w
Hexachlorobutadiene (leachable) _A	-	-	<1	-	-	-	-	µg/l	1	A-T-006w
1,2,4-Trimethylbenzene (leachable) _A	-	-	<1	-	-	-	-	µg/l	1	A-T-006w
Isopropylbenzene (leachable) _A	-	-	<1	-	-	-	-	µg/l	1	A-T-006w
n-propylbenzene (leachable) _A	-	-	<1	-	-	-	-	µg/l	1	A-T-006w
Styrene (leachable) _A	-	-	<1	-	-	-	-	µg/l	1	A-T-006w

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/8	22/11222/9	22/11222/11	22/11222/12	22/11222/13	22/11222/14	22/11222/15	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102	WS104	WS104	WS105	WS106	Composite 1	Composite 2			
Depth to Top	0.30	0.50	1.30	0.60	0.40					
Depth To Bottom										
Date Sampled	07-Nov-22	07-Nov-22	07-Nov-22	09-Nov-22	11-Nov-22	09-Nov-22	11-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AB	4AB	4AB	4AB	4AB	4AB			
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	Chrysotile	NAD	NAD	Chrysotile	-	-			A-T-045
Asbestos Matrix (visual) ₀	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope) ₀	-	Loose Fibres	-	-	Loose Fibres	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test? ₀	N/A	N/A	N/A	N/A	N/A	-	-			A-T-045
Asbestos in Soil Quantification % (Hand Picking & Weighing)										
Asbestos in soil % composition (hand picking and weighing) ₀	-	0.006	-	-	<0.001	-	-	% w/w	0.001	A-T-054

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/8	22/11222/9	22/11222/11	22/11222/12	22/11222/13	22/11222/14	22/11222/15	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102	WS104	WS104	WS105	WS106	Composite 1	Composite 2			
Depth to Top	0.30	0.50	1.30	0.60	0.40					
Depth To Bottom										
Date Sampled	07-Nov-22	07-Nov-22	07-Nov-22	09-Nov-22	11-Nov-22	09-Nov-22	11-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AB	4AB	4AB	4AB	4AB	4AB			
PAH-16MS										
Acenaphthene _A ^{M#}	1.04	0.07	1.22	0.01	0.13	-	-	mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.74	0.02	0.21	0.01	0.09	-	-	mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	3.50	0.12	2.17	0.05	0.46	-	-	mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	10.9	0.47	5.48	0.25	1.31	-	-	mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	8.24	0.76	3.98	0.22	1.17	-	-	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	7.93	0.69	4.14	0.29	1.16	-	-	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	3.77	0.75	1.71	0.15	0.71	-	-	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	2.89	0.21	1.36	0.09	0.37	-	-	mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	9.61	0.54	5.19	0.30	1.28	-	-	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	1.01	0.14	0.41	<0.04	0.17	-	-	mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	21.1	0.86	12.6	0.44	2.72	-	-	mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	1.18	0.05	1.05	0.01	0.18	-	-	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	4.52	0.71	1.98	0.15	0.76	-	-	mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.37	<0.03	2.64	<0.03	0.04	-	-	mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	10.9	0.47	9.96	0.18	1.80	-	-	mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	21.2	0.83	11.3	0.53	2.41	-	-	mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	109	6.69	65.4	2.68	14.8	-	-	mg/kg	0.01	A-T-019s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/8	22/11222/9	22/11222/11	22/11222/12	22/11222/13	22/11222/14	22/11222/15	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102	WS104	WS104	WS105	WS106	Composite 1	Composite 2			
Depth to Top	0.30	0.50	1.30	0.60	0.40					
Depth To Bottom										
Date Sampled	07-Nov-22	07-Nov-22	07-Nov-22	09-Nov-22	11-Nov-22	09-Nov-22	11-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AB	4AB	4AB	4AB	4AB	4AB			
PAH 16MS (leachable)										
Acenaphthene (leachable) _A	-	-	0.90	-	-	-	-	µg/l	0.02	A-T-019w
Acenaphthylene (leachable) _A	-	-	0.16	-	-	-	-	µg/l	0.02	A-T-019w
Anthracene (leachable) _A	-	-	0.89	-	-	-	-	µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable) _A	-	-	0.25	-	-	-	-	µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) _A	-	-	0.08	-	-	-	-	µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable) _A	-	-	0.09	-	-	-	-	µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable) _A	-	-	0.04	-	-	-	-	µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable) _A	-	-	0.05	-	-	-	-	µg/l	0.02	A-T-019w
Chrysene (leachable) _A	-	-	0.31	-	-	-	-	µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable) _A	-	-	<0.02	-	-	-	-	µg/l	0.02	A-T-019w
Fluoranthene (leachable) _A	-	-	2.36	-	-	-	-	µg/l	0.02	A-T-019w
Fluorene (leachable) _A	-	-	1.17	-	-	-	-	µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable) _A	-	-	0.04	-	-	-	-	µg/l	0.02	A-T-019w
Naphthalene (leachable) _A	-	-	0.11	-	-	-	-	µg/l	0.02	A-T-019w
Phenanthrene (leachable) _A	-	-	4.36	-	-	-	-	µg/l	0.02	A-T-019w
Pyrene (leachable) _A	-	-	1.86	-	-	-	-	µg/l	0.02	A-T-019w
Total PAH 16MS (leachable) _A	-	-	12.7	-	-	-	-	µg/l	0.02	A-T-019w
Phenols (speciated HPLC)										
Phenol _A	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	mg/kg	0.2	A-T-050s
Cresols _A	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	mg/kg	0.2	A-T-050s
Xylenols _A	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	mg/kg	0.2	A-T-050s
Resorcinol _A	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	mg/kg	0.2	A-T-050s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/8	22/11222/9	22/11222/11	22/11222/12	22/11222/13	22/11222/14	22/11222/15	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102	WS104	WS104	WS105	WS106	Composite 1	Composite 2			
Depth to Top	0.30	0.50	1.30	0.60	0.40					
Depth To Bottom										
Date Sampled	07-Nov-22	07-Nov-22	07-Nov-22	09-Nov-22	11-Nov-22	09-Nov-22	11-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AB	4AB	4AB	4AB	4AB	4AB			
Speciated PCB-EC7 & WHO12 (leachable)										
PCB BZ 28 (leachable) _A	-	-	<0.002	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 52 (leachable) _A	-	-	<0.002	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 101 (leachable) _A	-	-	<0.002	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 118 (leachable) _A	-	-	<0.002	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 138 (leachable) _A	-	-	<0.002	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 153 (leachable) _A	-	-	<0.002	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 180 (leachable) _A	-	-	<0.002	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 77 (leachable) _A	-	-	<0.002	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 81 (leachable) _A	-	-	<0.002	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 105 (leachable) _A	-	-	<0.002	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 114 (leachable) _A	-	-	<0.002	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 123 (leachable) _A	-	-	<0.002	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 126 (leachable) _A	-	-	<0.002	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 156 (leachable) _A	-	-	<0.002	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 157 (leachable) _A	-	-	<0.002	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 167 (leachable) _A	-	-	<0.002	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 169 (leachable) _A	-	-	<0.002	-	-	-	-	µg/l	0.002	A-T-004w
PCB BZ 189 (leachable) _A	-	-	<0.002	-	-	-	-	µg/l	0.002	A-T-004w
Total Speciated PCB-EC7 & WHO12 (leachable) _A	-	-	<0.002	-	-	-	-	µg/l	0.002	A-T-004w

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/8	22/11222/9	22/11222/11	22/11222/12	22/11222/13	22/11222/14	22/11222/15	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102	WS104	WS104	WS105	WS106	Composite 1	Composite 2			
Depth to Top	0.30	0.50	1.30	0.60	0.40					
Depth To Bottom										
Date Sampled	07-Nov-22	07-Nov-22	07-Nov-22	09-Nov-22	11-Nov-22	09-Nov-22	11-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AB	4AB	4AB	4AB	4AB	4AB			
Speciated PCB-EC7										
PCB BZ 28 _A ^{M#}	-	-	<0.003	-	-	-	-	mg/kg	0.003	A-T-004s
PCB BZ 52 _A ^{M#}	-	-	<0.002	-	-	-	-	mg/kg	0.002	A-T-004s
PCB BZ 101 _A ^{M#}	-	-	<0.004	-	-	-	-	mg/kg	0.004	A-T-004s
PCB BZ 118 _A ^{M#}	-	-	<0.007	-	-	-	-	mg/kg	0.007	A-T-004s
PCB BZ 138 _A ^{M#}	-	-	<0.006	-	-	-	-	mg/kg	0.006	A-T-004s
PCB BZ 153 _A ^{M#}	-	-	<0.004	-	-	-	-	mg/kg	0.004	A-T-004s
PCB BZ 180 _A ^{M#}	-	-	<0.004	-	-	-	-	mg/kg	0.004	A-T-004s
Total Speciated PCB-EC7 _A ^{M#}	-	-	<0.007	-	-	-	-	mg/kg	0.003	A-T-004s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/8	22/11222/9	22/11222/11	22/11222/12	22/11222/13	22/11222/14	22/11222/15	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102	WS104	WS104	WS105	WS106	Composite 1	Composite 2			
Depth to Top	0.30	0.50	1.30	0.60	0.40					
Depth To Bottom										
Date Sampled	07-Nov-22	07-Nov-22	07-Nov-22	09-Nov-22	11-Nov-22	09-Nov-22	11-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AB	4AB	4AB	4AB	4AB	4AB			
SVOC excluding PAH-16										
4-Bromophenyl phenyl ether _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
Hexachlorobenzene _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
Diethyl phthalate _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
Dimethyl phthalate _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
Dibenzofuran _A	-	<100	3770	-	<100	978	151	µg/kg	100	A-T-052s
Carbazole _A	-	<100	3250	-	<100	901	<100	µg/kg	100	A-T-052s
Butylbenzyl phthalate _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate _A	-	<500	<500	-	976	594	<500	µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
4-Nitrophenol _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
3+4-Methylphenol _A	-	<100	128	-	11100	140	<100	µg/kg	100	A-T-052s
4-Chloro-3-methylphenol _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
2-Nitrophenol _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
2-Methylphenol _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
1,2,4-Trichlorobenzene _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
2-Chlorophenol _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
2,6-Dinitrotoluene _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
2,4-Dinitrotoluene _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
2,4-Dimethylphenol _A	-	<100	120	-	1380	<100	<100	µg/kg	100	A-T-052s
2,4-Dichlorophenol _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
2,4,6-Trichlorophenol _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
2,4,5-Trichlorophenol _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
1,4-Dichlorobenzene _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
1,3-Dichlorobenzene _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
1,2-Dichlorobenzene _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
2-Chloronaphthalene _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
2-Methylnaphthalene _A	-	<100	3990	-	<100	1010	<100	µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
Phenol _A	-	<100	<100	-	298	<100	<100	µg/kg	100	A-T-052s
Pentachlorophenol _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/8	22/11222/9	22/11222/11	22/11222/12	22/11222/13	22/11222/14	22/11222/15	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102	WS104	WS104	WS105	WS106	Composite 1	Composite 2			
Depth to Top	0.30	0.50	1.30	0.60	0.40					
Depth To Bottom										
Date Sampled	07-Nov-22	07-Nov-22	07-Nov-22	09-Nov-22	11-Nov-22	09-Nov-22	11-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AB	4AB	4AB	4AB	4AB	4AB			
n-Dioctylphthalate _A	-	<500	<500	-	<500	<500	<500	µg/kg	500	A-T-052s
n-Dibutylphthalate _A	-	308	335	-	342	321	252	µg/kg	100	A-T-052s
Nitrobenzene _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
Isophorone _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
Hexachloroethane _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
Hexachlorocyclopentadiene _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
Hexachlorobutadiene _A	-	<100	<100	-	<100	<100	<100	µg/kg	100	A-T-052s
Perylene _A	-	241	3190	-	347	1030	137	µg/kg	100	A-T-052s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/8	22/11222/9	22/11222/11	22/11222/12	22/11222/13	22/11222/14	22/11222/15	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102	WS104	WS104	WS105	WS106	Composite 1	Composite 2			
Depth to Top	0.30	0.50	1.30	0.60	0.40					
Depth To Bottom										
Date Sampled	07-Nov-22	07-Nov-22	07-Nov-22	09-Nov-22	11-Nov-22	09-Nov-22	11-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AB	4AB	4AB	4AB	4AB	4AB			
SVOC+TICS (UKWIR)										
SVOC TICS (Tentatively Identified Compounds) _A	-	-	-	-	-	Appended	Appended			A-T-052s
Acenaphthylene _A	-	-	-	-	-	915	<100	µg/kg	100	A-T-052s
Acenaphthene _A	-	-	-	-	-	596	130	µg/kg	100	A-T-052s
Anthracene _A	-	-	-	-	-	2470	315	µg/kg	100	A-T-052s
Benzo(a)anthracene _A	-	-	-	-	-	5500	591	µg/kg	100	A-T-052s
Benzo(b)fluoranthene _A	-	-	-	-	-	3990	488	µg/kg	100	A-T-052s
Benzo(k)fluoranthene _A	-	-	-	-	-	2020	321	µg/kg	100	A-T-052s
Benzo(a)pyrene _A	-	-	-	-	-	4160	546	µg/kg	100	A-T-052s
Benzo(ghi)perylene _A	-	-	-	-	-	2390	281	µg/kg	100	A-T-052s
Chrysene _A	-	-	-	-	-	4750	521	µg/kg	100	A-T-052s
Fluoranthene _A	-	-	-	-	-	> 8880	1630	µg/kg	100	A-T-052s
Fluorene _A	-	-	-	-	-	1940	<100	µg/kg	100	A-T-052s
Indeno(1,2,3-cd)pyrene _A	-	-	-	-	-	2730	310	µg/kg	100	A-T-052s
Phenanthrene _A	-	-	-	-	-	>8400	1690	µg/kg	100	A-T-052s
Pyrene _A	-	-	-	-	-	>8180	1340	µg/kg	100	A-T-052s
Naphthalene _A	-	-	-	-	-	1760	<100	µg/kg	100	A-T-052s
Dibenzo(ah)anthracene _A	-	-	-	-	-	682	<100	µg/kg	100	A-T-052s
Cresol & Chlorinated Phenol Total _A	-	-	-	-	-	307	<100	µg/kg	100	A-T-052s
Phenols Total (from SVOC) _A	-	-	-	-	-	<100	<100	µg/kg	100	A-T-052s
SVOC Total (excl. PAH/Phenols/Cresols and Chlorophenols) _A	-	-	-	-	-	3800	402	µg/kg	100	A-T-052s
SVOC Total (excl. PAH/Phenols/Cresols/Chlorophenols/Ethers/Nitrobenzene) _A	-	-	-	-	-	3800	402	µg/kg	100	A-T-052s
Ethers Total (from SVOC) _A	-	-	-	-	-	<100	<100	µg/kg	100	A-T-052s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/8	22/11222/9	22/11222/11	22/11222/12	22/11222/13	22/11222/14	22/11222/15	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102	WS104	WS104	WS105	WS106	Composite 1	Composite 2			
Depth to Top	0.30	0.50	1.30	0.60	0.40					
Depth To Bottom										
Date Sampled	07-Nov-22	07-Nov-22	07-Nov-22	09-Nov-22	11-Nov-22	09-Nov-22	11-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AB	4AB	4AB	4AB	4AB	4AB			
VOC										
Dichlorodifluoromethane _A	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
Chloromethane _A	-	<10	<10	-	<10	<10	<10	µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene) _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
Bromomethane _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
Chloroethane _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
Trichlorofluoromethane _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
1,1-Dichloroethene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
Carbon Disulphide _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
Dichloromethane _A	-	<5	<5	-	<5	<5	<5	µg/kg	5	A-T-006s
trans 1,2-Dichloroethene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
1,1-Dichloroethane _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
cis 1,2-Dichloroethene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
2,2-Dichloropropane _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
Bromochloromethane _A [#]	-	<5	<5	-	<5	<5	<5	µg/kg	5	A-T-006s
Chloroform _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
1,1,1-Trichloroethane _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
1,1-Dichloropropene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
Carbon Tetrachloride _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
1,2-Dichloroethane _A [#]	-	<2	<2	-	<2	<2	<2	µg/kg	2	A-T-006s
Benzene _A [#]	-	<1	2	-	<1	<1	<1	µg/kg	1	A-T-006s
Trichloroethene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
1,2-Dichloropropane _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
Dibromomethane _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
Bromodichloromethane _A [#]	-	<10	<10	-	<10	<10	<10	µg/kg	10	A-T-006s
cis 1,3-Dichloropropene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
Toluene _A [#]	-	<1	2	-	<1	<1	<1	µg/kg	1	A-T-006s
trans 1,3-Dichloropropene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
1,1,2-Trichloroethane _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
1,3-Dichloropropane _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
Tetrachloroethene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
Dibromochloromethane _A [#]	-	<3	<3	-	<3	<3	<3	µg/kg	3	A-T-006s
1,2-Dibromoethane _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/8	22/11222/9	22/11222/11	22/11222/12	22/11222/13	22/11222/14	22/11222/15	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102	WS104	WS104	WS105	WS106	Composite 1	Composite 2			
Depth to Top	0.30	0.50	1.30	0.60	0.40					
Depth To Bottom										
Date Sampled	07-Nov-22	07-Nov-22	07-Nov-22	09-Nov-22	11-Nov-22	09-Nov-22	11-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AB	4AB	4AB	4AB	4AB	4AB			
Chlorobenzene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
1,1,1,2-Tetrachloroethane _A	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
Ethylbenzene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
m & p Xylene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
o-Xylene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
Styrene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
Bromoform _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
Isopropylbenzene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane _A	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
1,2,3-Trichloropropane _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
Bromobenzene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
n-Propylbenzene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
2-Chlorotoluene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
4-Chlorotoluene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
tert-Butylbenzene _A [#]	-	<2	<2	-	<2	<2	<2	µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
sec-Butylbenzene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
4-Isopropyltoluene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
1,3-Dichlorobenzene _A	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
1,4-Dichlorobenzene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
n-Butylbenzene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
1,2-Dichlorobenzene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP) _A	-	<2	<2	-	<2	<2	<2	µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene _A	-	<3	<3	-	<3	<3	<3	µg/kg	3	A-T-006s
Hexachlorobutadiene _A [#]	-	<1	<1	-	<1	<1	<1	µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene _A	-	<3	<3	-	<3	<3	<3	µg/kg	3	A-T-006s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/8	22/11222/9	22/11222/11	22/11222/12	22/11222/13	22/11222/14	22/11222/15	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102	WS104	WS104	WS105	WS106	Composite 1	Composite 2			
Depth to Top	0.30	0.50	1.30	0.60	0.40					
Depth To Bottom										
Date Sampled	07-Nov-22	07-Nov-22	07-Nov-22	09-Nov-22	11-Nov-22	09-Nov-22	11-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AB	4AB	4AB	4AB	4AB	4AB			
VOC+TICS (UKWIR)										
VOC Total (excl. BTEX) _A	-	-	-	-	-	<10	<10	µg/kg	10	A-T-006s
BTEX Total (from VOC) _A	-	-	-	-	-	<1	<1	µg/kg	1	A-T-006s
VOC TICs _A	-	-	-	-	-	None detected	None detected			A-T-006s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/8	22/11222/9	22/11222/11	22/11222/12	22/11222/13	22/11222/14	22/11222/15	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102	WS104	WS104	WS105	WS106	Composite 1	Composite 2			
Depth to Top	0.30	0.50	1.30	0.60	0.40					
Depth To Bottom										
Date Sampled	07-Nov-22	07-Nov-22	07-Nov-22	09-Nov-22	11-Nov-22	09-Nov-22	11-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AB	4AB	4AB	4AB	4AB	4AB			
TPH CWG (UKWIR) with Clean Up										
Ali >C5-C6 _A [#]	-	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	-	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	-	<1	1	-	<5	<1	<5	mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	-	<1	<1	-	<5	<1	<5	mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	-	<1	6	-	<5	1	<5	mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	-	6	18	-	9	13	8	mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	-	162	209	-	411	153	345	mg/kg	1	A-T-055s
Total Aliphatics _A	-	-	-	-	-	166	353	mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	-	<0.01	0.02	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	-	<0.01	0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	-	3	2	-	<5	1	20	mg/kg	1	A-T-055s
Aro >C10-C12 _A	-	2	5	-	19	6	7	mg/kg	1	A-T-055s
Aro >C12-C16 _A	-	3	24	-	12	21	27	mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	-	10	96	-	28	79	81	mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	-	97	328	-	257	261	254	mg/kg	1	A-T-055s
EPH Total Ali & Aro (>C10-C16) _A [#]	-	-	-	-	-	28	34	mg/kg	1	A-T-055s
EPH Total Ali & Aro (>C8-C10) _A [#]	-	-	-	-	-	1	20	mg/kg	1	A-T-055s
EPH Total Ali & Aro (>C16-C35) _A [#]	-	-	-	-	-	505	687	mg/kg	1	A-T-055s
Total Aromatics _A	-	-	-	-	-	368	389	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	-	-	-	-	-	534	742	mg/kg	1	Calc-As Recd
BTEX and MTBE Total _A	-	-	-	-	-	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Benzene _A [#]	-	<0.01	0.02	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	-	<0.01	0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	-	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	-	<0.01	0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	-	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE _A [#]	-	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
VPH total (>C5-C8) _A [#]	-	-	-	-	-	<0.01	<0.01	mg/kg	0.01	A-T-022s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/8	22/11222/9	22/11222/11	22/11222/12	22/11222/13	22/11222/14	22/11222/15	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102	WS104	WS104	WS105	WS106	Composite 1	Composite 2			
Depth to Top	0.30	0.50	1.30	0.60	0.40					
Depth To Bottom										
Date Sampled	07-Nov-22	07-Nov-22	07-Nov-22	09-Nov-22	11-Nov-22	09-Nov-22	11-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AB	4AB	4AB	4AB	4AB	4AB			
TPH UKCWG (leachable) with Clean Up										
Ali >C5-C6 (leachable) _A	-	-	2	-	-	-	-	µg/l	1	A-T-022w
Ali >C6-C8 (leachable) _A	-	-	<1	-	-	-	-	µg/l	1	A-T-022w
Ali >C8-C10 (leachable) _A	-	-	<10	-	-	-	-	µg/l	10	A-T-055w
Ali >C10-C12 (leachable) _A	-	-	<10	-	-	-	-	µg/l	10	A-T-055w
Ali >C12-C16 (leachable) _A	-	-	<10	-	-	-	-	µg/l	10	A-T-055w
Ali >C16-C21 (leachable) _A	-	-	<10	-	-	-	-	µg/l	10	A-T-055w
Ali >C21-C35 (leachable) _A	-	-	<20	-	-	-	-	µg/l	20	A-T-055w
Ali >C35-C44 (leachable) _A	-	-	<10	-	-	-	-	µg/l	10	A-T-055w
Total Aliphatics (leachable) _A	-	-	<20	-	-	-	-	µg/l	10	Calc-As Recd
Aro >C5-C7 (leachable) _A	-	-	<1	-	-	-	-	µg/l	1	A-T-022w
Aro >C7-C8 (leachable) _A	-	-	<1	-	-	-	-	µg/l	1	A-T-022w
Aro >C8-C10 (leachable) _A	-	-	25	-	-	-	-	µg/l	10	A-T-055w
Aro >C10-C12 (leachable) _A	-	-	<10	-	-	-	-	µg/l	10	A-T-055w
Aro >C12-C16 (leachable) _A	-	-	14	-	-	-	-	µg/l	10	A-T-055w
Aro >C16-C21 (leachable) _A	-	-	20	-	-	-	-	µg/l	10	A-T-055w
Aro >C35-C44 (leachable) _A	-	-	<10	-	-	-	-	µg/l	10	A-T-055w
Total Aromatics (leachable) GCxGC _A	-	-	70	-	-	-	-	µg/l	20	Calc-As Recd
TPH (Ali & Aro >C5-C44) (leachable) _A	-	-	72	-	-	-	-	µg/l	20	Calc-As Recd
BTEX - Benzene (leachable) _A	-	-	<1	-	-	-	-	µg/l	1	A-T-022w
BTEX - Toluene (leachable) _A	-	-	<1	-	-	-	-	µg/l	1	A-T-022w
BTEX - Ethyl Benzene (leachable) _A	-	-	<1	-	-	-	-	µg/l	1	A-T-022w
BTEX - o Xylene (leachable) _A	-	-	<1	-	-	-	-	µg/l	1	A-T-022w
BTEX - m & p Xylene (leachable) _A	-	-	<1	-	-	-	-	µg/l	1	A-T-022w
MTBE (leachable) _A	-	-	<1	-	-	-	-	µg/l	1	A-T-022w
Aro >C21-C35 (leachable) _A	-	-	<20	-	-	-	-	µg/l	20	A-T-055w

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/8	22/11222/9	22/11222/11	22/11222/12	22/11222/13	22/11222/14	22/11222/15	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102	WS104	WS104	WS105	WS106	Composite 1	Composite 2			
Depth to Top	0.30	0.50	1.30	0.60	0.40					
Depth To Bottom										
Date Sampled	07-Nov-22	07-Nov-22	07-Nov-22	09-Nov-22	11-Nov-22	09-Nov-22	11-Nov-22			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	4AB	4AB	4AB	4AB	4AB	4AB	4AB			
TPH UKCWG with Clean Up										
Ali >C35-C44 _A	-	153	44	-	447	-	-	mg/kg	1	A-T-055s
Total Aliphatics _A	-	321	277	-	867	-	-	mg/kg	1	Calc-As Recd
Aro >C35-C44 _A	-	181	47	-	389	-	-	mg/kg	1	A-T-055s
Total Aromatics _A	-	297	502	-	704	-	-	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C44) _A	-	618	779	-	1570	-	-	mg/kg	1	Calc-As Recd

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/16							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102									
Depth to Top	3.00									
Depth To Bottom										
Date Sampled	08-Nov-22									
Sample Type	Soil - ES									
Sample Matrix Code	4A									
% Stones >10mm _A	<0.1							% w/w	0.1	A-T-044
pH _D ^{M#}	8.48							pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1) _D ^{M#}	29							mg/l	10	A-T-026s
Cyanide (total) _A ^{M#}	<1							mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2							mg/kg	0.2	A-T-050s
Fraction of organic carbon _D [#]	0.0029							N/A	0.0003	A-T-032 FOC
Antimony _D	<5							mg/kg	5	A-T-024s
Arsenic _D ^{M#}	2							mg/kg	1	A-T-024s
Barium _D	40							mg/kg	1	A-T-024s
Beryllium _D	<0.5							mg/kg	0.5	A-T-024s
Boron (water soluble) _D	<1.0							mg/kg	1	A-T-027s
Cadmium _D ^{M#}	<0.5							mg/kg	0.5	A-T-024s
Copper _D ^{M#}	8							mg/kg	1	A-T-024s
Chromium _D ^{M#}	9							mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1							mg/kg	1	A-T-040s
Chromium (trivalent)	9							mg/kg	1	Calc
Lead _D ^{M#}	7							mg/kg	1	A-T-024s
Mercury _D	<0.17							mg/kg	0.17	A-T-024s
Molybdenum _D ^{M#}	<1							mg/kg	1	A-T-024s
Nickel _D ^{M#}	9							mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1							mg/kg	1	A-T-024s
Vanadium _D ^{M#}	9							mg/kg	1	A-T-024s
Zinc _D ^{M#}	23							mg/kg	5	A-T-024s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/16							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102									
Depth to Top	3.00									
Depth To Bottom										
Date Sampled	08-Nov-22									
Sample Type	Soil - ES									
Sample Matrix Code	4A									
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD									A-T-045
Asbestos Matrix (visual) _D	-									A-T-045
Asbestos Matrix (microscope) _D	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A									A-T-045

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/16							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102									
Depth to Top	3.00									
Depth To Bottom										
Date Sampled	08-Nov-22									
Sample Type	Soil - ES									
Sample Matrix Code	4A									
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01							mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04							mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07							mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.12							mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.02							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03							mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.14							mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.10							mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	0.40							mg/kg	0.01	A-T-019s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/16							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102									
Depth to Top	3.00									
Depth To Bottom										
Date Sampled	08-Nov-22									
Sample Type	Soil - ES									
Sample Matrix Code	4A									
Phenols (speciated HPLC)										
Phenol _A	<0.2							mg/kg	0.2	A-T-050s
Cresols _A	<0.2							mg/kg	0.2	A-T-050s
Xylenols _A	<0.2							mg/kg	0.2	A-T-050s
Resorcinol _A	<0.2							mg/kg	0.2	A-T-050s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/16							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102									
Depth to Top	3.00									
Depth To Bottom										
Date Sampled	08-Nov-22									
Sample Type	Soil - ES									
Sample Matrix Code	4A									
Speciated PCB-EC7										
PCB BZ 28 _A ^{M#}	<0.003							mg/kg	0.003	A-T-004s
PCB BZ 52 _A ^{M#}	<0.002							mg/kg	0.002	A-T-004s
PCB BZ 101 _A ^{M#}	<0.004							mg/kg	0.004	A-T-004s
PCB BZ 118 _A ^{M#}	<0.007							mg/kg	0.007	A-T-004s
PCB BZ 138 _A ^{M#}	<0.006							mg/kg	0.006	A-T-004s
PCB BZ 153 _A ^{M#}	<0.004							mg/kg	0.004	A-T-004s
PCB BZ 180 _A ^{M#}	<0.004							mg/kg	0.004	A-T-004s
Total Speciated PCB-EC7 _A ^{M#}	<0.007							mg/kg	0.003	A-T-004s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/16									
Client Sample No										
Client Sample ID	WS102									
Depth to Top	3.00									
Depth To Bottom										
Date Sampled	08-Nov-22									
Sample Type	Soil - ES									
Sample Matrix Code	4A									
SVOC excluding PAH-16										
4-Bromophenyl phenyl ether _A	<100							µg/kg	100	A-T-052s
Hexachlorobenzene _A	<100							µg/kg	100	A-T-052s
Diethyl phthalate _A	<100							µg/kg	100	A-T-052s
Dimethyl phthalate _A	<100							µg/kg	100	A-T-052s
Dibenzofuran _A	<100							µg/kg	100	A-T-052s
Carbazole _A	<100							µg/kg	100	A-T-052s
Butylbenzyl phthalate _A	<100							µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate _A	<500							µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane _A	<100							µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether _A	<100							µg/kg	100	A-T-052s
4-Nitrophenol _A	<100							µg/kg	100	A-T-052s
3+4-Methylphenol _A	<100							µg/kg	100	A-T-052s
4-Chloro-3-methylphenol _A	<100							µg/kg	100	A-T-052s
2-Nitrophenol _A	<100							µg/kg	100	A-T-052s
2-Methylphenol _A	<100							µg/kg	100	A-T-052s
1,2,4-Trichlorobenzene _A	<100							µg/kg	100	A-T-052s
2-Chlorophenol _A	<100							µg/kg	100	A-T-052s
2,6-Dinitrotoluene _A	<100							µg/kg	100	A-T-052s
2,4-Dinitrotoluene _A	<100							µg/kg	100	A-T-052s
2,4-Dimethylphenol _A	<100							µg/kg	100	A-T-052s
2,4-Dichlorophenol _A	<100							µg/kg	100	A-T-052s
2,4,6-Trichlorophenol _A	<100							µg/kg	100	A-T-052s
2,4,5-Trichlorophenol _A	<100							µg/kg	100	A-T-052s
1,4-Dichlorobenzene _A	<100							µg/kg	100	A-T-052s
1,3-Dichlorobenzene _A	<100							µg/kg	100	A-T-052s
1,2-Dichlorobenzene _A	<100							µg/kg	100	A-T-052s
2-Chloronaphthalene _A	<100							µg/kg	100	A-T-052s
2-Methylnaphthalene _A	<100							µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether _A	<100							µg/kg	100	A-T-052s
Phenol _A	<100							µg/kg	100	A-T-052s
Pentachlorophenol _A	<100							µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine _A	<100							µg/kg	100	A-T-052s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/16							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102									
Depth to Top	3.00									
Depth To Bottom										
Date Sampled	08-Nov-22									
Sample Type	Soil - ES									
Sample Matrix Code	4A									
n-Diethylphthalate _A	<500							µg/kg	500	A-T-052s
n-Dibutylphthalate _A	<200							µg/kg	100	A-T-052s
Nitrobenzene _A	<100							µg/kg	100	A-T-052s
Isophorone _A	<100							µg/kg	100	A-T-052s
Hexachloroethane _A	<100							µg/kg	100	A-T-052s
Hexachlorocyclopentadiene _A	<100							µg/kg	100	A-T-052s
Hexachlorobutadiene _A	<100							µg/kg	100	A-T-052s
Perylene _A	<100							µg/kg	100	A-T-052s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/16									
Client Sample No										
Client Sample ID	WS102									
Depth to Top	3.00									
Depth To Bottom										
Date Sampled	08-Nov-22									
Sample Type	Soil - ES									
Sample Matrix Code	4A									
VOC										
Dichlorodifluoromethane _A	<1							µg/kg	1	A-T-006s
Chloromethane _A	<10							µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene) _A [#]	<1							µg/kg	1	A-T-006s
Bromomethane _A [#]	<1							µg/kg	1	A-T-006s
Chloroethane _A [#]	<1							µg/kg	1	A-T-006s
Trichlorofluoromethane _A [#]	<1							µg/kg	1	A-T-006s
1,1-Dichloroethene _A [#]	<1							µg/kg	1	A-T-006s
Carbon Disulphide _A [#]	<1							µg/kg	1	A-T-006s
Dichloromethane _A	<5							µg/kg	5	A-T-006s
trans 1,2-Dichloroethene _A [#]	<1							µg/kg	1	A-T-006s
1,1-Dichloroethane _A [#]	<1							µg/kg	1	A-T-006s
cis 1,2-Dichloroethene _A [#]	<1							µg/kg	1	A-T-006s
2,2-Dichloropropane _A [#]	<1							µg/kg	1	A-T-006s
Bromochloromethane _A [#]	<5							µg/kg	5	A-T-006s
Chloroform _A [#]	<1							µg/kg	1	A-T-006s
1,1,1-Trichloroethane _A [#]	<1							µg/kg	1	A-T-006s
1,1-Dichloropropene _A [#]	<1							µg/kg	1	A-T-006s
Carbon Tetrachloride _A [#]	<1							µg/kg	1	A-T-006s
1,2-Dichloroethane _A [#]	<2							µg/kg	2	A-T-006s
Benzene _A [#]	<1							µg/kg	1	A-T-006s
Trichloroethene _A [#]	<1							µg/kg	1	A-T-006s
1,2-Dichloropropane _A [#]	<1							µg/kg	1	A-T-006s
Dibromomethane _A [#]	<1							µg/kg	1	A-T-006s
Bromodichloromethane _A [#]	<10							µg/kg	10	A-T-006s
cis 1,3-Dichloropropene _A [#]	<1							µg/kg	1	A-T-006s
Toluene _A [#]	<1							µg/kg	1	A-T-006s
trans 1,3-Dichloropropene _A [#]	<1							µg/kg	1	A-T-006s
1,1,2-Trichloroethane _A [#]	<1							µg/kg	1	A-T-006s
1,3-Dichloropropane _A [#]	<1							µg/kg	1	A-T-006s
Tetrachloroethene _A [#]	<1							µg/kg	1	A-T-006s
Dibromochloromethane _A [#]	<3							µg/kg	3	A-T-006s
1,2-Dibromoethane _A [#]	<1							µg/kg	1	A-T-006s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/16									
Client Sample No										
Client Sample ID	WS102									
Depth to Top	3.00									
Depth To Bottom										
Date Sampled	08-Nov-22									
Sample Type	Soil - ES									
Sample Matrix Code	4A									
								Units	Limit of Detection	Method ref
Chlorobenzene _A [#]	<1							µg/kg	1	A-T-006s
1,1,1,2-Tetrachloroethane _A	<1							µg/kg	1	A-T-006s
Ethylbenzene _A [#]	<1							µg/kg	1	A-T-006s
m & p Xylene _A [#]	<1							µg/kg	1	A-T-006s
o-Xylene _A [#]	<1							µg/kg	1	A-T-006s
Styrene _A [#]	<1							µg/kg	1	A-T-006s
Bromoform _A [#]	<1							µg/kg	1	A-T-006s
Isopropylbenzene _A [#]	<1							µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane _A	<1							µg/kg	1	A-T-006s
1,2,3-Trichloropropane _A [#]	<1							µg/kg	1	A-T-006s
Bromobenzene _A [#]	<1							µg/kg	1	A-T-006s
n-Propylbenzene _A [#]	<1							µg/kg	1	A-T-006s
2-Chlorotoluene _A [#]	<1							µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene _A [#]	<1							µg/kg	1	A-T-006s
4-Chlorotoluene _A [#]	<1							µg/kg	1	A-T-006s
tert-Butylbenzene _A [#]	<2							µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene _A [#]	<1							µg/kg	1	A-T-006s
sec-Butylbenzene _A [#]	<1							µg/kg	1	A-T-006s
4-Isopropyltoluene _A [#]	<1							µg/kg	1	A-T-006s
1,3-Dichlorobenzene _A	<1							µg/kg	1	A-T-006s
1,4-Dichlorobenzene _A [#]	<1							µg/kg	1	A-T-006s
n-Butylbenzene _A [#]	<1							µg/kg	1	A-T-006s
1,2-Dichlorobenzene _A [#]	<1							µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP) _A	<2							µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene _A	<3							µg/kg	3	A-T-006s
Hexachlorobutadiene _A [#]	<1							µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene _A	<3							µg/kg	3	A-T-006s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/16							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102									
Depth to Top	3.00									
Depth To Bottom										
Date Sampled	08-Nov-22									
Sample Type	Soil - ES									
Sample Matrix Code	4A									
TPH CWG (UKWIR) with Clean Up										
Ali >C5-C6 _A [#]	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1							mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1							mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1							mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	<1							mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	2							mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<1							mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1							mg/kg	1	A-T-055s
Aro >C12-C16 _A	<1							mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	1							mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	2							mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01							mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01							mg/kg	0.01	A-T-022s

Envirolab Job Number: 22/11222

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11222/16							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS102									
Depth to Top	3.00									
Depth To Bottom										
Date Sampled	08-Nov-22									
Sample Type	Soil - ES									
Sample Matrix Code	4A									
TPH UKCWG with Clean Up										
Ali >C35-C44 _A	<1							mg/kg	1	A-T-055s
Total Aliphatics _A	2							mg/kg	1	Calc-As Recd
Aro >C35-C44 _A	<1							mg/kg	1	A-T-055s
Total Aromatics _A	3							mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C44) _A	6							mg/kg	1	Calc-As Recd

REPORT NOTES

General

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

The results reported herein relate only to the material supplied to the laboratory.

The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.

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

The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

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

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

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

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Subscript "A" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.

EPH CWG results have humics mathematically subtracted through instrument calculation

TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

Envirolab Deviating Samples Report

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

Client: ROCP LIMITED, Commercial Wharf 6 Commercial Street, Castlefield,
Manchester, M15 4PZ

Project: Plot 10b, First Street

Clients Project No: 4513

Project No: 22/11222

Date Received: 15/11/2022 (am)

Cool Box Temperatures (°C): 9.5 & 10.0

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples $5 \pm 3^{\circ}\text{C}$), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	22/11222/1	22/11222/2	22/11222/3	22/11222/4	22/11222/5	22/11222/6	22/11222/7	22/11222/8	22/11222/9	22/11222/11	22/11222/12	22/11222/13
Client Sample No												
Client Sample ID/Depth	TP101 0.30m	TP102 0.40m	TP103 0.80m	TP103 2.00m	TP105 1.00m	TP107 1.00m	WS101 0.80m	WS102 0.30m	WS104 0.50m	WS104 1.30m	WS105 0.60m	WS106 0.40m
Date Sampled	08/11/22	08/11/22	08/11/22	08/11/22	08/11/22	08/11/22	07/11/22	07/11/22	07/11/22	07/11/22	09/11/22	11/11/22
A-T-004s			21/11/2022		21/11/2022					21/11/2022		
A-T-004w	21/11/2022									21/11/2022		
A-T-006s	18/11/2022	18/11/2022			18/11/2022		18/11/2022		18/11/2022	18/11/2022		18/11/2022
A-T-006w	21/11/2022									21/11/2022		
A-T-007s												
A-T-019s	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022
A-T-019w	21/11/2022									21/11/2022		
A-T-022s	18/11/2022	18/11/2022	18/11/2022		18/11/2022		18/11/2022		18/11/2022	18/11/2022		18/11/2022
A-T-022w	22/11/2022									22/11/2022		
A-T-024s	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022
A-T-025w	23/11/2022									24/11/2022		
A-T-026s	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022
A-T-026w	21/11/2022									21/11/2022		
A-T-027s	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022
A-T-030s												
A-T-031s	23/11/2022	23/11/2022	23/11/2022	23/11/2022	23/11/2022	23/11/2022	23/11/2022	23/11/2022	23/11/2022	23/11/2022	23/11/2022	23/11/2022
A-T-031w	18/11/2022									18/11/2022		
A-T-032 FOC	23/11/2022	23/11/2022	22/11/2022	23/11/2022	23/11/2022	23/11/2022	22/11/2022	22/11/2022	23/11/2022	22/11/2022	22/11/2022	23/11/2022
A-T-032s												
A-T-032w	21/11/2022									21/11/2022		
A-T-037s												
A-T-037w												
A-T-040s	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022
A-T-040w	21/11/2022									21/11/2022		
A-T-042sTCN	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022
A-T-044	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022
A-T-045	16/11/2022	16/11/2022	16/11/2022	16/11/2022	16/11/2022	16/11/2022	16/11/2022	16/11/2022	16/11/2022	16/11/2022	16/11/2022	16/11/2022
A-T-050s	17/11/2022	17/11/2022	17/11/2022	17/11/2022	18/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022
A-T-050w												
A-T-052s	18/11/2022	18/11/2022			22/11/2022		18/11/2022		18/11/2022	18/11/2022		18/11/2022
A-T-054	21/11/2022	21/11/2022		21/11/2022	21/11/2022	21/11/2022			21/11/2022			21/11/2022
A-T-055s	18/11/2022	18/11/2022	18/11/2022		18/11/2022		18/11/2022		18/11/2022	18/11/2022		18/11/2022

Lab Sample ID	22/11222/1	22/11222/2	22/11222/3	22/11222/4	22/11222/5	22/11222/6	22/11222/7	22/11222/8	22/11222/9	22/11222/11	22/11222/12	22/11222/13
Client Sample No												
Client Sample ID/Depth	TP101 0.30m	TP102 0.40m	TP103 0.80m	TP103 2.00m	TP105 1.00m	TP107 1.00m	WS101 0.80m	WS102 0.30m	WS104 0.50m	WS104 1.30m	WS105 0.60m	WS106 0.40m
Date Sampled	08/11/22	08/11/22	08/11/22	08/11/22	08/11/22	08/11/22	07/11/22	07/11/22	07/11/22	07/11/22	09/11/22	11/11/22
A-T-055w	21/11/2022									21/11/2022		
A-T-ANCs												
Calc	23/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	23/11/2022	21/11/2022	21/11/2022
Calc-As Recd	22/11/2022	18/11/2022	18/11/2022		18/11/2022		18/11/2022		18/11/2022	22/11/2022		18/11/2022
Calc-no stones												
Probe												
Probe (w)												

Lab Sample ID	22/11222/14	22/11222/15	22/11222/16
Client Sample No			
Client Sample ID/Depth	Composite 1	Composite 2	WS102 3.00m
Date Sampled	09/11/22	11/11/22	08/11/22
A-T-004s	21/11/2022	21/11/2022	23/11/2022
A-T-004w			
A-T-006s	18/11/2022	18/11/2022	21/11/2022
A-T-006w			
A-T-007s	18/11/2022	18/11/2022	
A-T-019s	18/11/2022	18/11/2022	21/11/2022
A-T-019w			
A-T-022s	21/11/2022	21/11/2022	21/11/2022
A-T-022w			
A-T-024s			21/11/2022
A-T-025w	23/11/2022	23/11/2022	
A-T-026s			21/11/2022
A-T-026w	23/11/2022	23/11/2022	
A-T-027s			21/11/2022
A-T-030s	18/11/2022	18/11/2022	
A-T-031s	23/11/2022	23/11/2022	23/11/2022
A-T-031w	23/11/2022	23/11/2022	
A-T-032 FOC			22/11/2022
A-T-032s	22/11/2022	22/11/2022	
A-T-032w	23/11/2022	23/11/2022	
A-T-037s	23/11/2022	23/11/2022	
A-T-037w	23/11/2022	23/11/2022	
A-T-040s			21/11/2022
A-T-040w			
A-T-042sTCN			21/11/2022
A-T-044	18/11/2022	18/11/2022	18/11/2022
A-T-045			16/11/2022
A-T-050s			21/11/2022
A-T-050w	23/11/2022	23/11/2022	
A-T-052s	25/11/2022	25/11/2022	21/11/2022
A-T-054			
A-T-055s	18/11/2022	18/11/2022	21/11/2022
A-T-055w			
A-T-ANCs	23/11/2022	23/11/2022	

Lab Sample ID	22/11222/14	22/11222/15	22/11222/16
Client Sample No			
Client Sample ID/Depth	Composite 1	Composite 2	WS102 3.00m
Date Sampled	09/11/22	11/11/22	08/11/22
Calc			21/11/2022
Calc-As Recd	18/11/2022	18/11/2022	21/11/2022
Calc-no stones	23/11/2022	23/11/2022	
Probe	23/11/2022	23/11/2022	
Probe (w)	23/11/2022	23/11/2022	

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

End of Report

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 22/11602
Issue Number: 1

Date: 02 December, 2022

Client: ROCP LIMITED
Commercial Wharf 6 Commercial Street
Castlefield
Manchester
M15 4PZ

Project Manager: Reece McGuinness
Project Name: Plot 10b, First Street
Project Ref: 4513
Order No: 1814
Date Samples Received: 23/11/22
Date Instructions Received: 25/11/22
Date Analysis Completed: 02/12/22

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 22/11602

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11602/1	22/11602/2						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RBH101	RBH102								
Depth to Top	6.00	7.60								
Depth To Bottom										
Date Sampled	23-Nov-22	23-Nov-22								
Sample Type	Water - EW	Water - EW								
Sample Matrix Code	N/A	N/A								
pH (w) _A [#]	7.33	7.59						pH	0.01	A-T-031w
Sulphate (w) _A [#]	527	219						mg/l	1	A-T-026w
DOC - Dissolved Organic Carbon (w) _A [#]	3.9	3.7						mg/l	2	A-T-032w
Arsenic (dissolved) _A [#]	1	1						µg/l	1	A-T-025w
Cadmium (dissolved) _A [#]	<0.2	<0.2						µg/l	0.2	A-T-025w
Calcium (dissolved) _A [#]	258	246						mg/l	1	A-T-049w
Copper (dissolved) _A	<4	<4						µg/l	4	A-T-025w
Chromium (dissolved) _A [#]	<1	<1						µg/l	1	A-T-025w
Lead (dissolved) _A [#]	<1	2						µg/l	1	A-T-025w
Mercury (dissolved) _A [#]	<0.1	<0.1						µg/l	0.1	A-T-025w
Nickel (dissolved) _A [#]	3	4						µg/l	2	A-T-025w
Selenium (dissolved) _A [#]	<1	3						µg/l	1	A-T-025w
Zinc (dissolved) _A [#]	6	10						µg/l	2	A-T-025w

Envirolab Job Number: 22/11602

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11602/1	22/11602/2						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RBH101	RBH102								
Depth to Top	6.00	7.60								
Depth To Bottom										
Date Sampled	23-Nov-22	23-Nov-22								
Sample Type	Water - EW	Water - EW								
Sample Matrix Code	N/A	N/A								
PAH 16MS (w)										
Acenaphthene (w) _A [#]	0.02	<0.01						µg/l	0.01	A-T-019w
Acenaphthylene (w) _A [#]	<0.01	<0.01						µg/l	0.01	A-T-019w
Anthracene (w) _A [#]	0.01	<0.01						µg/l	0.01	A-T-019w
Benzo(a)anthracene (w) _A [#]	<0.01	<0.01						µg/l	0.01	A-T-019w
Benzo(a)pyrene (w) _A [#]	<0.01	<0.01						µg/l	0.01	A-T-019w
Benzo(b)fluoranthene (w) _A [#]	<0.01	<0.01						µg/l	0.01	A-T-019w
Benzo(ghi)perylene (w) _A [#]	<0.01	<0.01						µg/l	0.01	A-T-019w
Benzo(k)fluoranthene (w) _A [#]	<0.01	<0.01						µg/l	0.01	A-T-019w
Chrysene (w) _A [#]	<0.01	<0.01						µg/l	0.01	A-T-019w
Dibenzo(ah)anthracene (w) _A [#]	<0.01	<0.01						µg/l	0.01	A-T-019w
Fluoranthene (w) _A [#]	0.03	<0.01						µg/l	0.01	A-T-019w
Fluorene (w) _A [#]	0.03	<0.01						µg/l	0.01	A-T-019w
Indeno(123-cd)pyrene (w) _A [#]	<0.01	<0.01						µg/l	0.01	A-T-019w
Naphthalene (w) _A [#]	0.02	<0.01						µg/l	0.01	A-T-019w
Phenanthrene (w) _A [#]	0.02	<0.01						µg/l	0.01	A-T-019w
Pyrene (w) _A [#]	0.03	<0.01						µg/l	0.01	A-T-019w
Total PAH 16MS (w) _A [#]	0.16	<0.01						µg/l	0.01	A-T-019w
Phenols (speciated HPLC) (w)										
Phenol (w) _A	<0.01	<0.01						mg/l	0.01	A-T-050w
Cresols (w) _A	<0.01	<0.01						mg/l	0.01	A-T-050w
Xylenols (w) _A	<0.01	<0.01						mg/l	0.01	A-T-050w
Resorcinol (w) _A	<0.01	<0.01						mg/l	0.01	A-T-050w
Phenols - Total by HPLC (w) _A	0.01	0.01						mg/l	0.01	A-T-050w

Envirolab Job Number: 22/11602

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11602/1	22/11602/2							
Client Sample No									
Client Sample ID	RBH101	RBH102							
Depth to Top	6.00	7.60							
Depth To Bottom									
Date Sampled	23-Nov-22	23-Nov-22							
Sample Type	Water - EW	Water - EW							
Sample Matrix Code	N/A	N/A							
SVOC (excluding PAH-16) (w)									
1,2,4-Trichlorobenzene _A	<1	<1					µg/l	1	A-T-052w
1,2-Dichlorobenzene _A	<1	<1					µg/l	1	A-T-052w
1,3-Dichlorobenzene _A	<1	<1					µg/l	1	A-T-052w
1,4-Dichlorobenzene _A	<1	<1					µg/l	1	A-T-052w
2,4,5-Trichlorophenol _A	<1	<1					µg/l	1	A-T-052w
2,4,6-Trichlorophenol _A	<1	<1					µg/l	1	A-T-052w
2,4-Dichlorophenol _A	<1	<1					µg/l	1	A-T-052w
2,4-Dimethylphenol _A	<1	<1					µg/l	1	A-T-052w
2,4-Dinitrotoluene _A	<1	<1					µg/l	1	A-T-052w
2,6-Dinitrotoluene _A	<1	<1					µg/l	1	A-T-052w
2-Chloronaphthalene _A	<1	<1					µg/l	1	A-T-052w
2-Chlorophenol _A	<1	<1					µg/l	1	A-T-052w
2-Methylnaphthalene _A	<1	<1					µg/l	1	A-T-052w
2-Methylphenol _A	<1	<1					µg/l	1	A-T-052w
2-Nitrophenol _A	<1	<1					µg/l	1	A-T-052w
4-Bromophenyl phenyl ether _A	<1	<1					µg/l	1	A-T-052w
4-Chloro-3-methylphenol _A	<1	<1					µg/l	1	A-T-052w
Bis(2-chloroisopropyl)ether _A	<1	<1					µg/l	1	A-T-052w
3+4-Methylphenol _A	<1	<1					µg/l	1	A-T-052w
4-Nitrophenol _A	<1	<1					µg/l	1	A-T-052w
Bis(2-chloroethyl)ether _A	<1	<1					µg/l	1	A-T-052w
Bis(2-chloroethoxy)methane _A	<1	<1					µg/l	1	A-T-052w
Bis(2-ethylhexyl)phthalate _A	<10	<10					µg/l	10	A-T-052w
Butylbenzyl phthalate _A	<1	<1					µg/l	1	A-T-052w
Carbazole _A	<1	<1					µg/l	1	A-T-052w
Dibenzofuran _A	<1	<1					µg/l	1	A-T-052w
n-Dibutylphthalate _A	<7	<7					µg/l	1	A-T-052w
n-Dioctylphthalate _A	<10	<10					µg/l	10	A-T-052w
n-Nitroso-n-dipropylamine _A	<1	<1					µg/l	1	A-T-052w
Diethyl phthalate _A	<1	<1					µg/l	1	A-T-052w
Dimethyl phthalate _A	<1	<1					µg/l	1	A-T-052w
Hexachlorobutadiene _A	<1	<1					µg/l	1	A-T-052w

Envirolab Job Number: 22/11602

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11602/1	22/11602/2						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RBH101	RBH102								
Depth to Top	6.00	7.60								
Depth To Bottom										
Date Sampled	23-Nov-22	23-Nov-22								
Sample Type	Water - EW	Water - EW								
Sample Matrix Code	N/A	N/A								
Hexachlorobenzene SVOC _A	<1	<1						µg/l	1	A-T-052w
Pentachlorophenol SVOC _A	<1	<1						µg/l	1	A-T-052w
Phenol _A	<1	<1						µg/l	1	A-T-052w
Hexachloroethane _A	<1	<1						µg/l	1	A-T-052w
Nitrobenzene _A	<1	<1						µg/l	1	A-T-052w
Isophorone _A	<1	<1						µg/l	1	A-T-052w
Hexachlorocyclopentadiene _A	<1	<1						µg/l	1	A-T-052w
Perylene _A	<1	<1						µg/l	1	A-T-052w

Envirolab Job Number: 22/11602

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11602/1	22/11602/2						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RBH101	RBH102								
Depth to Top	6.00	7.60								
Depth To Bottom										
Date Sampled	23-Nov-22	23-Nov-22								
Sample Type	Water - EW	Water - EW								
Sample Matrix Code	N/A	N/A								
VOC (w)										
Dichlorodifluoromethane _A	<1	<1						µg/l	1	A-T-006w
Chloromethane _A	<10	<10						µg/l	10	A-T-006w
Vinyl Chloride _A [#]	<1	<1						µg/l	1	A-T-006w
Bromomethane _A [#]	<1	<1						µg/l	1	A-T-006w
Chloroethane _A [#]	<1	<1						µg/l	1	A-T-006w
Trichlorofluoromethane _A [#]	<1	<1						µg/l	1	A-T-006w
trans 1,2-Dichloroethene _A [#]	<1	<1						µg/l	1	A-T-006w
Dichloromethane _A	<5	<5						µg/l	5	A-T-006w
Carbon Disulphide _A [#]	<1	<1						µg/l	1	A-T-006w
1,1-Dichloroethene _A [#]	<1	<1						µg/l	1	A-T-006w
1,1-Dichloroethane _A [#]	<1	<1						µg/l	1	A-T-006w
cis 1,2-Dichloroethene _A [#]	<1	<1						µg/l	1	A-T-006w
Bromochloromethane _A [#]	<5	<5						µg/l	5	A-T-006w
Chloroform _A [#]	2	<1						µg/l	1	A-T-006w
2,2-Dichloropropane _A [#]	<1	<1						µg/l	1	A-T-006w
1,2-Dichloroethane _A [#]	<2	<2						µg/l	2	A-T-006w
1,1,1-Trichloroethane _A [#]	<1	<1						µg/l	1	A-T-006w
1,1-Dichloropropene _A [#]	<1	<1						µg/l	1	A-T-006w
Benzene _A [#]	<1	<1						µg/l	1	A-T-006w
Carbon Tetrachloride _A [#]	<1	<1						µg/l	1	A-T-006w
Dibromomethane _A [#]	<1	<1						µg/l	1	A-T-006w
1,2-Dichloropropane _A [#]	<1	<1						µg/l	1	A-T-006w
Bromodichloromethane _A [#]	<10	<10						µg/l	10	A-T-006w
Trichloroethene _A [#]	<1	<1						µg/l	1	A-T-006w
cis 1,3-Dichloropropene _A [#]	<1	<1						µg/l	1	A-T-006w
trans 1,3-Dichloropropene _A [#]	<1	<1						µg/l	1	A-T-006w
1,1,2-Trichloroethane _A [#]	<1	<1						µg/l	1	A-T-006w
Toluene _A [#]	<1	<1						µg/l	1	A-T-006w
1,3-Dichloropropane _A [#]	<1	<1						µg/l	1	A-T-006w
Dibromochloromethane _A [#]	<3	<3						µg/l	3	A-T-006w
1,2-Dibromoethane _A [#]	<1	<1						µg/l	1	A-T-006w
Tetrachloroethene _A	<1	<1						µg/l	1	A-T-006w

Envirolab Job Number: 22/11602

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11602/1	22/11602/2						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RBH101	RBH102								
Depth to Top	6.00	7.60								
Depth To Bottom										
Date Sampled	23-Nov-22	23-Nov-22								
Sample Type	Water - EW	Water - EW								
Sample Matrix Code	N/A	N/A								
1,1,1,2-Tetrachloroethane _A	<1	<1						µg/l	1	A-T-006w
Chlorobenzene _A [#]	<1	<1						µg/l	1	A-T-006w
Ethylbenzene _A [#]	<1	<1						µg/l	1	A-T-006w
m & p Xylene _A [#]	<1	<1						µg/l	1	A-T-006w
Bromoform _A [#]	<1	<1						µg/l	1	A-T-006w
Styrene _A [#]	<1	<1						µg/l	1	A-T-006w
1,1,1,2-Tetrachloroethane _A	<1	<1						µg/l	1	A-T-006w
o-Xylene _A [#]	<1	<1						µg/l	1	A-T-006w
1,2,3-Trichloropropane _A [#]	<1	<1						µg/l	1	A-T-006w
Isopropylbenzene _A [#]	<1	<1						µg/l	1	A-T-006w
Bromobenzene _A [#]	<1	<1						µg/l	1	A-T-006w
2-Chlorotoluene _A [#]	<1	<1						µg/l	1	A-T-006w
n-propylbenzene _A [#]	<1	<1						µg/l	1	A-T-006w
4-Chlorotoluene _A [#]	<1	<1						µg/l	1	A-T-006w
1,2,4-Trimethylbenzene _A [#]	<1	<1						µg/l	1	A-T-006w
4-Isopropyltoluene _A [#]	<1	<1						µg/l	1	A-T-006w
1,3,5-Trimethylbenzene _A [#]	<1	<1						µg/l	1	A-T-006w
1,2-Dichlorobenzene _A [#]	<1	<1						µg/l	1	A-T-006w
1,4-Dichlorobenzene _A [#]	<1	<1						µg/l	1	A-T-006w
sec-Butylbenzene _A [#]	<1	<1						µg/l	1	A-T-006w
tert-Butylbenzene _A [#]	<2	<2						µg/l	2	A-T-006w
1,3-Dichlorobenzene _A [#]	<1	<1						µg/l	1	A-T-006w
n-butylbenzene _A [#]	<1	<1						µg/l	1	A-T-006w
1,2-Dibromo-3-chloropropane _A [#]	<2	<2						µg/l	2	A-T-006w
1,2,4-Trichlorobenzene _A [#]	<3	<3						µg/l	3	A-T-006w
1,2,3-Trichlorobenzene _A [#]	<3	<3						µg/l	3	A-T-006w
Hexachlorobutadiene _A [#]	<1	<1						µg/l	1	A-T-006w

Envirolab Job Number: 22/11602

Client Project Name: Plot 10b, First Street

Client Project Ref: 4513

Lab Sample ID	22/11602/1	22/11602/2								
Client Sample No										
Client Sample ID	RBH101	RBH102								
Depth to Top	6.00	7.60								
Depth To Bottom										
Date Sampled	23-Nov-22	23-Nov-22								
Sample Type	Water - EW	Water - EW								
Sample Matrix Code	N/A	N/A								
TPH CWG (w) with Clean Up										
Ali >C5-C6 (w) _A [#]	<1	<1						µg/l	1	A-T-022w
Ali >C6-C8 (w) _A [#]	<1	<1						µg/l	1	A-T-022w
Ali >C8-C10 (w) _A [#]	<5	<5						µg/l	5	A-T-055w
Ali >C10-C12 (w) _A [#]	<5	<5						µg/l	5	A-T-055w
Ali >C12-C16 (w) _A [#]	<5	<5						µg/l	5	A-T-055w
Ali >C16-C21 (w) _A [#]	<5	<5						µg/l	5	A-T-055w
Ali >C21-C35 (w) _A [#]	<5	<5						µg/l	5	A-T-055w
Total Aliphatics (w) _A [#]	<5	<5						µg/l	5	Calc-As Recd
Aro >C5-C7 (w) _A [#]	<1	<1						µg/l	1	A-T-022w
Aro >C7-C8 (w) _A [#]	<1	<1						µg/l	1	A-T-022w
Aro >C8-C10 (w) _A	7	<5						µg/l	5	A-T-055w
Aro >C10-C12 (w) _A [#]	<5	<5						µg/l	5	A-T-055w
Aro >C12-C16 (w) _A [#]	29	<5						µg/l	5	A-T-055w
Aro >C16-C21 (w) _A [#]	31	<5						µg/l	5	A-T-055w
Aro >C21-C35 (w) _A	<10	<10						µg/l	10	A-T-055w
Total Aromatics (w) _A	67	<10						µg/l	10	Calc-As Recd
TPH (Ali & Aro >C5-C35) (w) _A	67	<10						µg/l	10	Calc-As Recd
BTEX - Benzene (w) _A [#]	<1	<1						µg/l	1	A-T-022w
BTEX - Toluene (w) _A [#]	<1	<1						µg/l	1	A-T-022w
BTEX - Ethyl Benzene (w) _A [#]	<1	<1						µg/l	1	A-T-022w
BTEX - m & p Xylene (w) _A [#]	<1	<1						µg/l	1	A-T-022w
BTEX - o Xylene (w) _A [#]	<1	<1						µg/l	1	A-T-022w
MTBE (w) _A [#]	<1	<1						µg/l	1	A-T-022w

REPORT NOTES

General

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

The results reported herein relate only to the material supplied to the laboratory.

The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.

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

The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

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

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

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

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Subscript ""^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.

EPH CWG results have humics mathematically subtracted through instrument calculation

TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these

humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

Envirolab Deviating Samples Report

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

Client: ROCP LIMITED, Commercial Wharf 6 Commercial Street, Castlefield,
Manchester, M15 4PZ

Project: Plot 10b, First Street

Clients Project No: 4513

Project No: 22/11602

Date Received: 25/11/2022 (am)

Cool Box Temperatures (°C): 10.0

NO DEVIATIONS IDENTIFIED

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

Envirolab Analysis Dates

Lab Sample ID	22/11602/1	22/11602/2
Client Sample No		
Client Sample ID/Depth	RBH101 6.00m	RBH102 7.60m
Date Sampled	23/11/22	23/11/22
A-T-006w	28/11/2022	28/11/2022
A-T-019w	29/11/2022	29/11/2022
A-T-022w	29/11/2022	29/11/2022
A-T-025w	01/12/2022	01/12/2022
A-T-026w	29/11/2022	29/11/2022
A-T-031w	30/11/2022	30/11/2022
A-T-032w	29/11/2022	29/11/2022
A-T-049w	01/12/2022	01/12/2022
A-T-050w	02/12/2022	02/12/2022
A-T-052w	30/11/2022	30/11/2022
A-T-055w	29/11/2022	29/11/2022
Calc-As Recd	29/11/2022	29/11/2022

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

End of Report

APPENDIX D – Geotechnical Testing Results



4041

TEST CERTIFICATE**DETERMINATION OF LIQUID AND PLASTIC LIMITS**

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client: ROC Consulting Ltd
Client Address: Commercial Wharf, 6 Commercial Street,
Castlefield, Manchester,
M15 4PZ
Contact: Linden Richardson
Site Address: First street

Client Reference: 4513
Job Number: 22-96970
Date Sampled: Not Given
Date Received: 16/11/2022
Date Tested: 24/11/2022
Sampled By: Client - RM

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

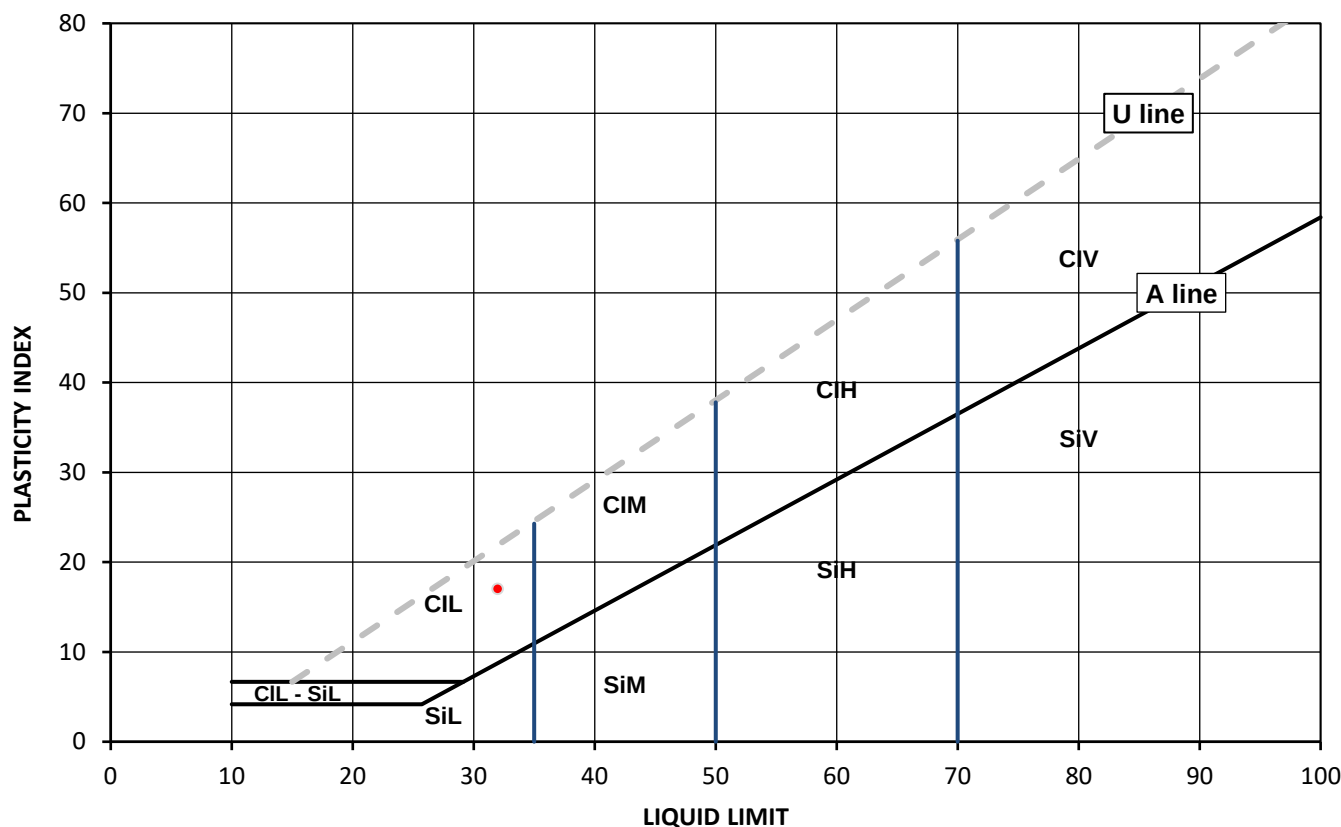
Test Results:

Laboratory Reference: 2501152
Hole No.: WS105
Sample Reference: Not Given
Sample Description: Brown slightly gravelly very sandy CLAY

Depth Top [m]: 3.80
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
14	32	15	17	89



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl Clay	L Low	below 35
Si Silt	M Medium	35 to 50
	H High	50 to 70
	V Very high	exceeding 70
	O Organic	append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks: Replaces Analytical Report Number 22-96970, issue no. 1;

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.



4041

Client: ROC Consulting Ltd
Client Address: Commercial Wharf, 6 Commercial Street,
Castlefield, Manchester,
M15 4PZ
Contact: Linden Richardson
Site Address: First street
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

SUMMARY REPORT

DETERMINATION OF WATER CONTENT

Tested in Accordance with: BS 1377-2: 1990: Clause 3.2

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

Client Reference: 4513
Job Number: 22-96970
Date Sampled: Not Given
Date Received: 16/11/2022
Date Tested: 24/11/2022
Sampled By: Client - RM

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	WC	Sample preparation / Oven temperature at the time of testing			
		Reference	Depth Top m	Depth Base m	Type							
2501152	WS105	Not Given	3.80	Not Given	D	Brown slightly gravelly very sandy CLAY		14	Sample was quartered, oven dried at 108.1 °C			

Comments: Replaces Analytical Report Number 22-96970, issue no. 1

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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Client: ROC Consulting Ltd
Client Address: Commercial Wharf, 6 Commercial Street,
Castlefield, Manchester,
M15 4PZ
Contact: Linden Richardson
Site Address: First street

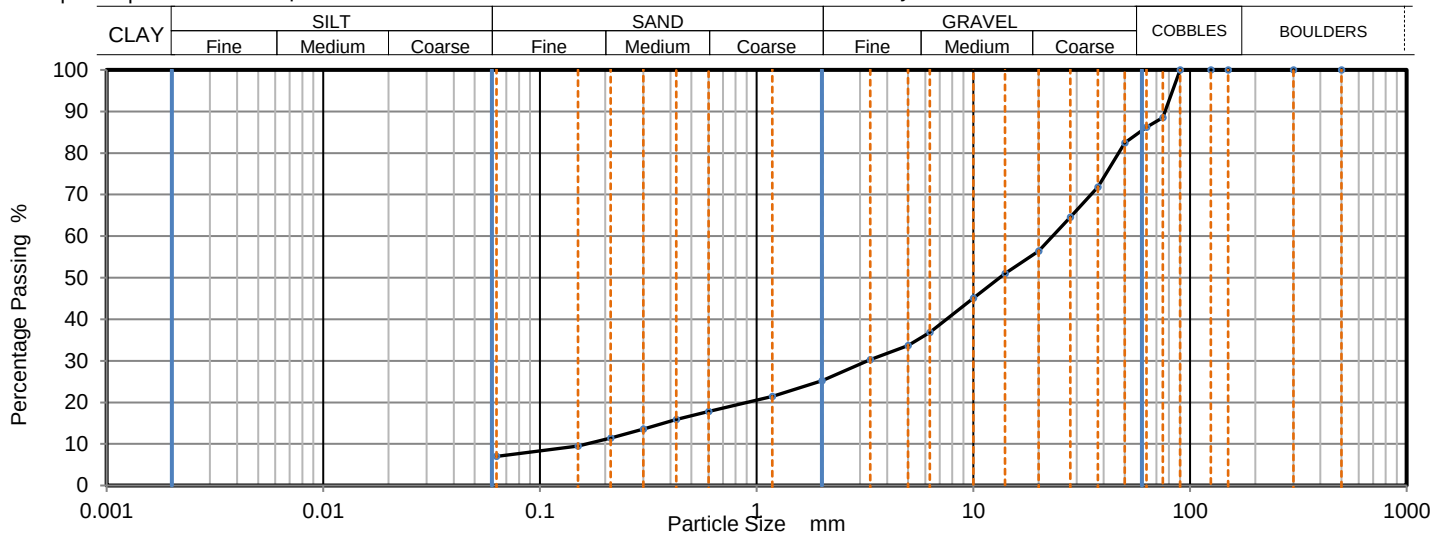
Client Reference: 4513
Job Number: 22-96970
Date Sampled: Not Given
Date Received: 16/11/2022
Date Tested: 23/11/2022
Sampled By: Client - RM

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2501153
Hole No.: TP106
Sample Reference: Not Given
Sample Description: CRUSHED CONCRETE and BRICKS
Sample Preparation: Sample was whole tested, oven dried at 106.0 °C and broken down by hand.

Depth Top [m]: 0.00
Depth Base [m]: 1.00
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	89		
63	86		
50	82		
37.5	72		
28	65		
20	56		
14	51		
10	45		
6.3	37		
5	34		
3.35	30		
2	25		
1.18	21		
0.6	18		
0.425	16		
0.3	14		
0.212	11		
0.15	10		
0.063	7		

Sample Proportions	% dry mass
Very coarse	14
Gravel	61
Sand	18
Fines <0.063mm	7

Grading Analysis	
D100	mm 90
D60	mm 23.2
D30	mm 3.25
D10	mm 0.164
Uniformity Coefficient	140
Curvature Coefficient	2.8

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Replaces Analytical Report Number 22-96970, issue no. 1

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE**DETERMINATION OF PARTICLE SIZE DISTRIBUTION**

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client: ROC Consulting Ltd
Client Address: Commercial Wharf, 6 Commercial Street,
Castlefield, Manchester,
M15 4PZ
Contact: Linden Richardson
Site Address: First street

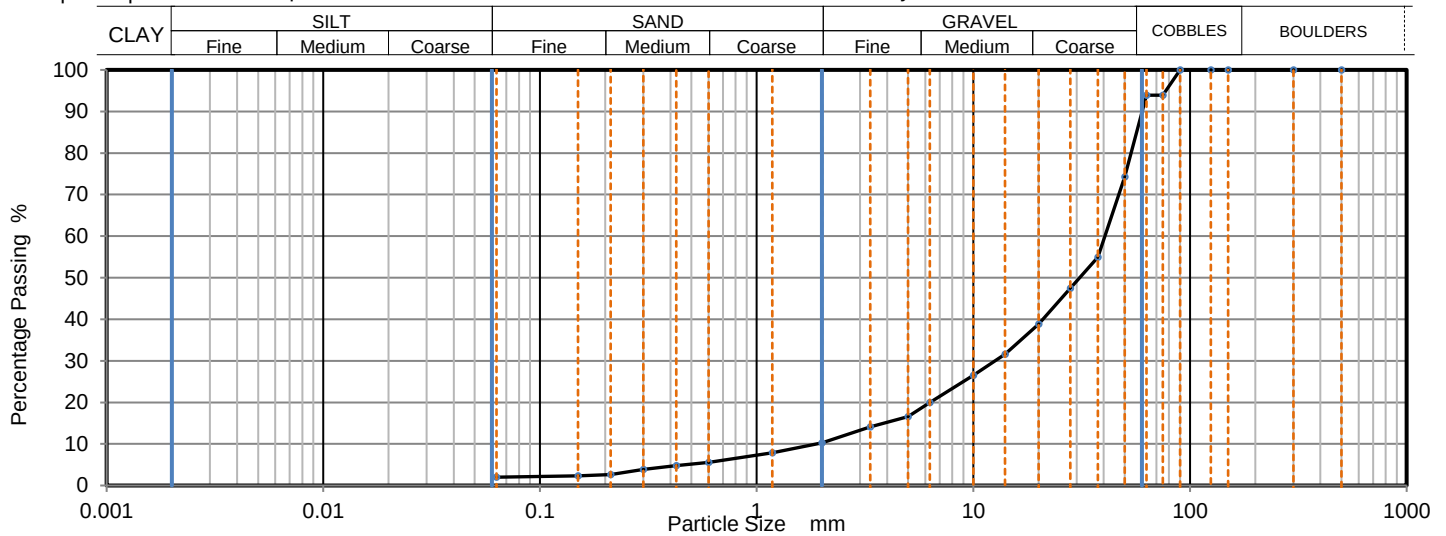
Client Reference: 4513
Job Number: 22-96970
Date Sampled: Not Given
Date Received: 16/11/2022
Date Tested: 23/11/2022
Sampled By: Client - RM

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2501154
Hole No.: TP107
Sample Reference: Not Given
Sample Description: CRUSHED CONCRETE and BRICKS
Sample Preparation: Sample was whole tested, oven dried at 108.9 °C and broken down by hand.

Depth Top [m]: 1.00
Depth Base [m]: Not Given
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	94		
63	94		
50	74		
37.5	55		
28	48		
20	39		
14	32		
10	27		
6.3	20		
5	17		
3.35	14		
2	10		
1.18	8		
0.6	6		
0.425	5		
0.3	4		
0.212	3		
0.15	2		
0.063	2		

Sample Proportions	% dry mass
Very coarse	6
Gravel	84
Sand	8
Fines <0.063mm	2

Grading Analysis	
D100	mm 90
D60	mm 40.4
D30	mm 12.6
D10	mm 1.86
Uniformity Coefficient	22
Curvature Coefficient	2.1

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Replaces Analytical Report Number 22-96970, issue no. 1

Signed:

Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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Client: ROC Consulting Ltd
Client Address: Commercial Wharf, 6 Commercial Street,
Castlefield, Manchester,
M15 4PZ
Contact: Linden Richardson
Site Address: First street

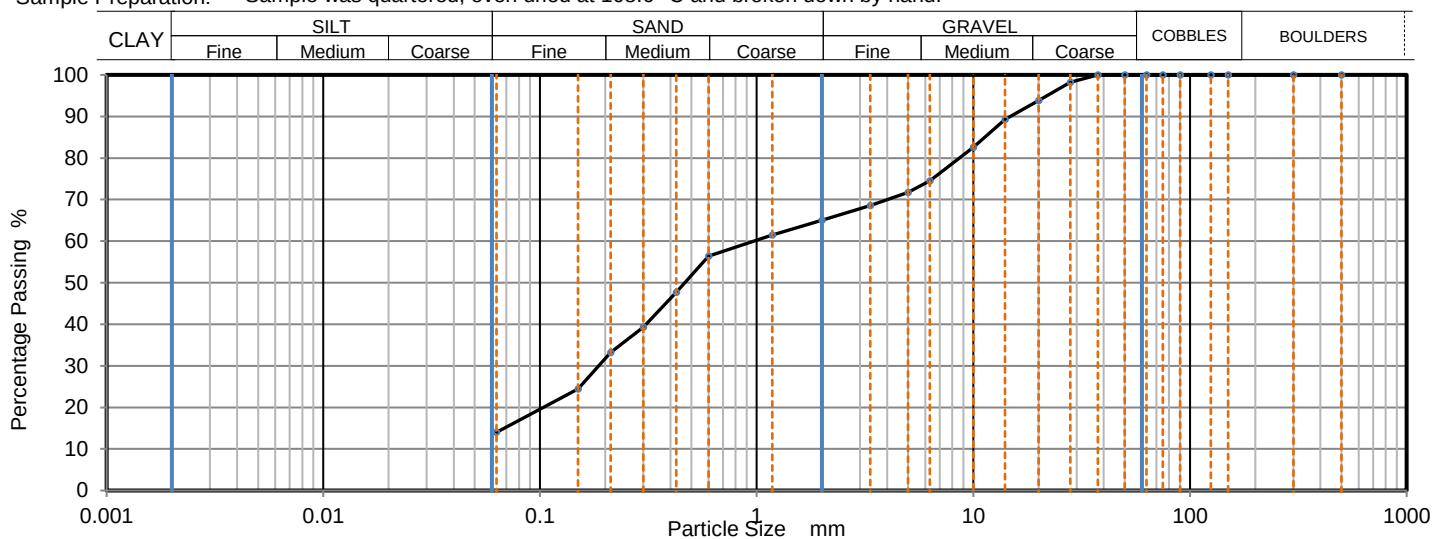
Client Reference: 4513
Job Number: 22-96970
Date Sampled: Not Given
Date Received: 16/11/2022
Date Tested: 24/11/2022
Sampled By: Client - RM

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2501155
Hole No.: TP109
Sample Reference: Not Given
Sample Description: Brownish grey clayey very gravelly SAND
Sample Preparation: Sample was quartered, oven dried at 108.6 °C and broken down by hand.

Depth Top [m]: 0.00
Depth Base [m]: 0.20
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	98		
20	94		
14	89		
10	83		
6.3	75		
5	72		
3.35	69		
2	65		
1.18	62		
0.6	56		
0.425	48		
0.3	39		
0.212	33		
0.15	24		
0.063	14		

Sample Proportions	% dry mass
Very coarse	0
Gravel	35
Sand	51
Fines <0.063mm	14

Grading Analysis	
D100	mm 37.5
D60	mm 0.967
D30	mm 0.187
D10	mm
Uniformity Coefficient	> 15
Curvature Coefficient	

Uniformity Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: Replaces Analytical Report Number 22-96970, issue no. 1

Signed:

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4041

Client: ROC Consulting Ltd
 Client Address: Commercial Wharf, 6 Commercial Street,
 Castlefield, Manchester,
 M15 4PZ
 Contact: Linden Richardson
 Site Address: First street

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

SUMMARY REPORT

DETERMINATION OF POINT LOAD STRENGTH

Tested in Accordance with: ISRM: 2007, pages 125-132

i2 Analytical Ltd
 Unit 8 Harrowden Road
 Brackmills Industrial Estate
 Northampton NN4 7EB



Environmental Science

Client Reference: 4513
 Job Number: 22-96970
 Date Sampled: Not Given
 Date Received: 16/11/2022
 Date Tested: 13/12/2022
 Sampled By: Client - RM

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks # (including water content if measured)	Specimen Reference	Test Type see ISRM		Failure Valid (Y/N)	Dimensions				Force P kN	Equivalent diameter, De mm	Point Load Strength Index	
		Reference	Depth Top m	Depth Base m	Type				Type (D, A, I, B)	Direction (L, P or U)		Lne mm	W mm	Dps mm	Dps' mm			Is MPa	Is(50) MPa
2507552	BH101	Not Given	8.40	8.47	C	Brown SANDSTONE	WC = 8.2%	1	A	U	YES	-	89.0	61.0	57.0	0.8	80.4	0.12	0.14
2501161	BH101	Not Given	10.47	10.59	U	Brown SANDSTONE	WC = 8.1%	1	A	U	YES	-	88.5	68.0	61.0	1.4	82.9	0.20	0.26
2501160	BH101	Not Given	18.50	18.65	U	Brown SANDSTONE	WC = 10.7%	1	A	U	YES	-	87.2	71.0	67.0	1.2	86.2	0.16	0.21
2507553	BH101	Not Given	20.22	20.30	C	Brown SANDSTONE	WC = 8.0%	1	A	U	YES	-	88.6	56.0	52.0	0.7	76.6	0.11	0.13
2501164	BH102	Not Given	12.00	12.16	U	Brown SANDSTONE	WC = 5.0%	1	A	U	YES	-	86.5	72.0	66.0	1.1	85.3	0.14	0.18
2501165	BH102	Not Given	16.50	16.75	U	Brown SANDSTONE	WC = 6.5%	1	A	U	YES	-	89.1	63.0	49.0	2.5	74.6	0.45	0.54
2507554	BH102	Not Given	22.17	22.22	C	Brown SANDSTONE	WC = 1.4%	1	A	U	YES	-	88.8	55.0	52.0	2.8	76.7	0.47	0.57
2501167	BH102	Not Given	23.77	23.99	U	Brown SANDSTONE	WC = 8.3%	1	A	U	YES	-	86.6	73.0	69.0	2.0	87.2	0.26	0.34

Note: # non accredited; Test Type: D - Diametral, A - Axial, I - Irregular Lump, B - Block; Direction: L - parallel to planes of weakness, P - perpendicular to planes of weakness, U - unknown or random;
 Dimensions: Dps - Distance between platens (platen separation), Dps' - at failure (see ISRM note 6), Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P;
 Detailed legend for test and dimensions, based on ISRM, is shown above; Size factor, F = (De/50)0.45 for all tests

Comments: Replaces Analytical Report Number 22-96970, issue no. 1

Signed:

Katarzyna Koziel

Katarzyna Koziel
 Reporting Specialist
 for and on behalf of i2 Analytical Ltd

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4041

Client: ROC Consulting Ltd
 Client Address: Commercial Wharf, 6 Commercial Street,
 Castlefield, Manchester,
 M15 4PZ
 Contact: Linden Richardson
 Site Address: First street

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

SUMMARY REPORT

DETERMINATION OF UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Tested in Accordance with: ISRM, 2007, p153, part 1

i2 Analytical Ltd
 Unit 8 Harrowden Road
 Brackmills Industrial Estate
 Northampton NN4 7EB



Environmental Science

Client Reference: 4513
 Job Number: 22-96970
 Date Sampled: Not Given
 Date Received: 16/11/2022
 Date Tested: 13/12 - 16/12/2022
 Sampled By: Client - RM

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Specimen Dimensions (2)				Bulk density (2) Mg/m3	Water Content (1) %	Uniaxial Compression (3)			
		Reference	Depth Top	Depth Base	Type			Diameter	Length	H/D	Orientation of sample			Condition	Stress Rate	Mode of failure	UCS
			m	m													
2501156	BH101	Not Given	10.59	10.83	U	Brown SANDSTONE	Sample is below recommended length to diameter ratio.	89.1	107.4	1.2	Vertical	2.16	12.1	as received	0.0160	MS + AC	8.12
2501157	BH101	Not Given	15.04	15.34	U	Brown SANDSTONE	Sample is below recommended length to diameter ratio.	88.3	159.1	1.8	Vertical	2.14	10.2	as received	0.0163	S + AC	9.12
2501162	BH102	Not Given	9.24	9.53	U	Brown SANDSTONE	Sample is below recommended length to diameter ratio.	89.4	72.4	0.8	Vertical	2.06	10.1	as received	0.0318	MS + AC	12.6
2501163	BH102	Not Given	20.48	20.90	U	Brown SANDSTONE		89.4	261.7	2.9	Vertical	2.15	5.1	as received	0.0478	S + AC	20.3

Note: 1 - ISRM p87 test 1, water content at 105 ± 3 °C, specimen as tested for UCS, 2 - ISRM p86 clause (vii), Caliper method used for determination of bulk volume and derivation of bulk density, 3 - ISRM p153 part 1, determination of Uniaxial Compressive Strength (UCS) of Rock Materials, above notes apply unless annotated otherwise in the remarks. Compaction machine: VJ Tech AUTOCON - VJT 51-3011; Mode of failure legend: S - Single shear, MS - multiple shear, AC - Axial cleavage, F - Fragmented

Comments: Replaces Analytical Report Number 22-96970, issue no. 1; Additional results of UCS of Rock (samples 2501156, 2501157, 2501162)

Signed:

Katarzyna Koziel

Katarzyna Koziel
 Reporting Specialist
 for and on behalf of i2 Analytical Ltd

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**Linden Richardson**

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e: reception@i2analytical.com

Analytical Report Number : 22-96971

Project / Site name:	First street	Samples received on:	16/11/2022
Your job number:	4513	Samples instructed on/ Analysis started on:	16/11/2022
Your order number:	1815	Analysis completed by:	30/11/2022
Report Issue Number:	1	Report issued on:	30/11/2022
Samples Analysed:	6 soil samples		

Signed:

Izabela Wójcik

Izabela Wójcik
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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



Analytical Report Number: 22-96971
 Project / Site name: First street
 Your Order No: 1815

Lab Sample Number				2501168	2501169	2501170	2501171	2508063
Sample Reference				WS105	TP106	TP107	TP104	BH101
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				3.80	0.00-1.00	1.00	0.00-0.20	6.64-6.69
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	19	41	44	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	9.1	12	11	18	13
Total mass of sample received	kg	0.001	NONE	0.9	0.5	0.5	0.5	0.5

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.9	11.1	10.7	8.8	7.1
Total Sulphate as SO ₄	mg/kg	50	MCERTS	330	4300	3200	1900	58
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.13	0.25	0.26	0.2	0.015
Total Sulphur	mg/kg	50	MCERTS	1300	2100	1800	830	< 50

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



Analytical Report Number: 22-96971
 Project / Site name: First street
 Your Order No: 1815

Lab Sample Number				2508064
Sample Reference				BH102
Sample Number				None Supplied
Depth (m)				10.76-10.82
Date Sampled				Deviating
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	12
Total mass of sample received	kg	0.001	NONE	0.5

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.9
Total Sulphate as SO4	mg/kg	50	MCERTS	53
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.017
Total Sulphur	mg/kg	50	MCERTS	< 50

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



Analytical Report Number : 22-96971
Project / Site name: First street

* 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 *
2501168	WS105	None Supplied	3.8	Grey clay with stones.
2501169	TP106	None Supplied	0.00-1.00	Brown sand with gravel and stones.
2501170	TP107	None Supplied	1	Brown sand with gravel and stones.
2501171	TP104	None Supplied	0.00-0.20	Brown loam and sand with gravel and brick.
2508063	BH101	None Supplied	6.64-6.69	Brown sand.
2508064	BH102	None Supplied	10.76-10.82	Brown sand.



Analytical Report Number : 22-96971

Project / Site name: First street

Water matrix abbreviations:

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/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
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS

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

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

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

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

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

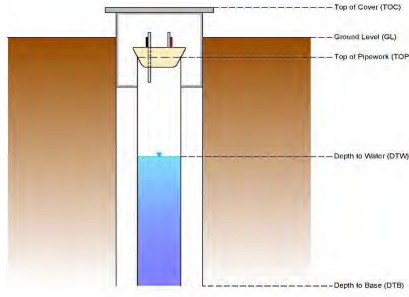
Analytical Report Number : 22-96971
Project / Site name: First street

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH101	None Supplied	S	2501172	a	None Supplied	None Supplied	None Supplied
BH101	None Supplied	S	2501173	a	None Supplied	None Supplied	None Supplied
BH101	None Supplied	S	2508063	a	None Supplied	None Supplied	None Supplied
BH102	None Supplied	S	2508064	a	None Supplied	None Supplied	None Supplied
TP104	None Supplied	S	2501171	a	None Supplied	None Supplied	None Supplied
TP106	None Supplied	S	2501169	a	None Supplied	None Supplied	None Supplied
TP107	None Supplied	S	2501170	a	None Supplied	None Supplied	None Supplied
WS105	None Supplied	S	2501168	a	None Supplied	None Supplied	None Supplied

APPENDIX E – Ground Gas / Water Monitoring Results

		Groundwater Sampling Data Form			
		This form is also available for RSK Mobile Data Capture.			
Project Information	Project Name:		First Street Manchester		
	Project Number:		4513		
	Sampling Date:	16.11.22	Sampled by:	James Verity	
	Weather:		12°C cloudy, dry		
	Well Notes -				
Monitoring Information	Water Quality Meter Used:		SmartTrollIMP 359475		
	Water Quality Meter Last Calibrated:		16.11.22		
	Dissolved oxygen probe last calibrated:		16.11.22		
	Water Level Meter Used (X that applicable):				
	Interface probe	X	Dip Meter		
	Typical Parameter Stabilisation Criteria for Low-Flow Sampling		Dissolved Oxygen (D.O.)		0.3 mg/l
			Specific Conductivity (Sp.Cond)		3%
			p.H		0.1 unit
		Oxygen Reduction Potential (ORP)		10mV	
* For REDOX correction, see separate guidance					



BH ID	RBH101											
Measurement Datum Notes:	Top Of Cover (TOC), Ground Level (GL), Top Of Pipework (TOP). If 'Ground Level', the offset from datum to GL will be 0m. Record a positive offset if the datum is higher than GL or a negative offset if the datum is below GL. See figure above for definitions.											
Measurement Datum:	TOP								Offset from datum to GL (m):		-0.19	
Start Time:	10:56	Time (HH:MM)	Temp (oC)	Sp.Cond (µS/cm)	D.O. (mg/l)	pH (units)	ORP (mV)	Depth to Water (m)	Turbidity (NTU)	Corr. REDOX (mV)	Notes / Flow (ml/min)	
Well Diameter (mm)	50									SmartTroll	<Select Probe	
Well Material	HDPE	10:56	12.9	1813.5	3.45	6.85	173	4.940				
Initial Water Level (m)	4.940											
LNAPL Present? (Y/N)	N											
Initial LNAPL Level (m)												
Well Headspace Reading (PID/FID)	0.2											
Purge Method (Give details in Notes section)	Other											
Sampling Method (Give details in Notes section.)	Other											
Pump Intake Depth (m)	18.500											
Depth to Base (m)	18.860	Sampling Notes (e.g. oil/colour/odour), reasons if not monitored, include purge / sampling method if "Other" selected.					Borehole Developed using SubPump - 86litres of water removed, water colour slightly brown, transparent					
DNAPL Present? (Y/N)	N	Sample Containers Obtained					N/A					
Initial DNAPL Level (m)		Sample Collection Time										

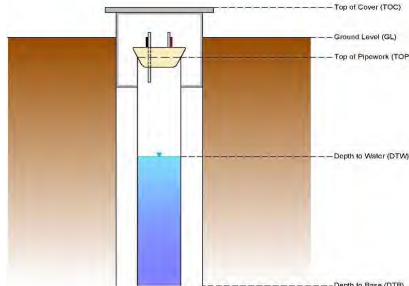
BH ID	RBH102										
Measurement Datum Notes:	Top Of Cover (TOC), Ground Level (GL), Top Of Pipework (TOP). If 'Ground Level', the offset from datum to GL will be 0m. Record a positive offset if the datum is higher than GL or a negative offset if the datum is below GL. See figure above for definitions.										
Measurement Datum:	TOP							Offset from datum to GL (m):		-0.11	
Start Time:	12:07	Time (HH:MM)	Temp (oC)	Sp.Cond (µS/cm)	D.O. (mg/l)	pH (units)	ORP (mV)	Depth to Water (m)	Turbidity (NTU)	Corr. REDOX (mV)	Notes / Flow (ml/min)
Well Diameter (mm)	50									SmarTroll	<Select Probe
Well Material	HDPE	12:07	12.7	1191	4.33	6.92	223.6	6.380			
Initial Water Level (m)	6.380										
LNAPL Present? (Y/N)	N										
Initial LNAPL Level (m)											
Well Headspace Reading (PID/FID)	0.6										
Purge Method (Give details in Notes section)	Other										
Sampling Method (Give details in Notes section.)	Other										
Pump Intake Depth (m)	11.000										
Depth to Base (m)	11.340	Sampling Notes (e.g. oil/colour/odour), reasons if not monitored, include purge / sampling method if "Other" selected.					Borehole Developed using SubPump - 25litres of water removed, water colour brown, opaque				
DNAPL Present? (Y/N)	N	Sample Containers Obtained					N/A				
Initial DNAPL Level (m)		Sample Collection Time									

TPF209 Issue 6 - June 2021

BH ID											
Measurement Datum Notes:	Top Of Cover (TOC), Ground Level (GL), Top Of Pipework (TOP). If 'Ground Level', the offset from datum to GL will be 0m. Record a positive offset if the datum is higher than GL or a negative offset if the datum is below GL. See figure above for definitions.										
Measurement Datum:	TOP							Offset from datum to GL (m):			
Start Time:		Time (HH:MM)	Temp (oC)	Sp.Cond (µS/cm)	D.O. (mg/l)	pH (units)	ORP (mV)	Depth to Water (m)	Turbidity (NTU)	Corr. REDOX (mV)	Notes / Flow (ml/min)
Well Diameter (mm)										SmarTroll	<Select Probe
Well Material											
Initial Water Level (m)											
LNAPL Present? (Y/N)											
Initial LNAPL Level (m)											
Well Headspace Reading (PID/FID)											
Purge Method (Give details in Notes section)											
Sampling Method (Give details in Notes section.)											
Pump Intake Depth (m)											
Depth to Base (m)		Sampling Notes (e.g. oil/colour/odour), reasons if not monitored, include purge / sampling method if "Other" selected.									
DNAPL Present? (Y/N)		Sample Containers Obtained									
Initial DNAPL Level (m)		Sample Collection Time									

TPF209 Issue 6 - June 2021

		Groundwater Sampling Data Form			
		This form is also available for RSK Mobile Data Capture.			
Project Information	Project Name:		First Street Manchester		
	Project Number:		4513		
	Sampling Date:	23.11.22	Sampled by:	James Verity	
	Weather:		12°C cloudy, dry		
	Well Notes - e.g. Condition, access, safety:				
Monitoring Information	Water Quality Meter Used:		SmartTrollIMP 359475		
	Water Quality Meter Last Calibrated:		23.11.22		
	Dissolved oxygen probe last calibrated:		23.11.22		
	Water Level Meter Used (X that applicable):				
	Interface probe	X	Dip Meter		
	Typical Parameter Stabilisation Criteria for Low-Flow Sampling		Dissolved Oxygen (D.O.)		0.3 mg/l
			Specific Conductivity (Sp.Cond)		3%
			p.H		0.1 unit
			Oxygen Reduction Potential (ORP)		10mV
			* For REDOX correction, see separate guidance		



BH ID	RBH101											
Measurement Datum Notes:	Top Of Cover (TOC), Ground Level (GL), Top Of Pipework (TOP). If 'Ground Level', the offset from datum to GL will be 0m. Record a positive offset if the datum is higher than GL or a negative offset if the datum is below GL. See figure above for definitions.											
Measurement Datum:	TOP							Offset from datum to GL (m):		-0.19		
Start Time:	11:14	Time (HH:MM)	Temp (oC)	Sp.Cond (µS/cm)	D.O. (mg/l)	pH (units)	ORP (mV)	Depth to Water (m)	Turbidity (NTU)	Corr. REDOX (mV)	Notes / Flow (ml/min)	
Well Diameter (mm)	50										SmartTroll	<Select Probe
Well Material	HDPE	11:14	13.5	745.07	0.82	6.81	239.8	4.980		#REF!		
Initial Water Level (m)	4.980	11:17	13.7	768.6	0.70	6.75	320.7	4.980		#REF!		
		11:20	14.1	806.7	0.71	6.84	228.3	4.980		#REF!		
LNAPL Present? (Y/N)	N	11:23	13.4	885.08	0.46	6.83	224.8	4.980		#REF!		
Initial LNAPL Level (m)		11:26	14.6	990.62	0.25	6.82	208.1	4.980		#REF!		
Well Headspace Reading (PID/FID)	0.4	11:29	14.7	1073.7	0.14	6.80	202.5	4.980		#REF!		
		11:32	14.8	1118.6	0.08	6.78	199.8	4.980		#REF!		
Purge Method (Give details in Notes section)	Low flow	11:35	14.8	1202.1	0.03	6.76	197.4	4.980		#REF!		
		11:38	14.8	1225.0	0.02	6.75	191.2	4.980		#REF!		
Sampling Method (Give details in Notes section)	Persitalitc	11:41	14.9	1236.8	0.01	6.75	190.9	4.980		#REF!		
Pump Intake Depth (m)	6.000											
Depth to Base (m)	18.850	Sampling Notes (e.g. oil/colour/odour), reasons if not monitored, include purge / sampling method if "Other" selected.					Water colour slightly brown, transparent					
DNAPL Present? (Y/N)	N	Sample Containers Obtained					3x1L Glass, 1x0.5L Plastic, 1xRed cap, 1xYellow cap, 1xBlue cap, 2xVial (one spare vial)					
Initial DNAPL Level (m)		Sample Collection Time										

BH ID	RBH102										
Measurement Datum Notes:	Top Of Cover (TOC), Ground Level (GL), Top Of Pipework (TOP). If 'Ground Level', the offset from datum to GL will be 0m. Record a positive offset if the datum is higher than GL or a negative offset if the datum is below GL. See figure above for definitions.										
Measurement Datum:	TOP							Offset from datum to GL (m):		-0.09	
Start Time:	12:49	Time (HH:MM)	Temp (oC)	Sp.Cond (µS/cm)	D.O. (mg/l)	pH (units)	ORP (mV)	Depth to Water (m)	Turbidity (NTU)	Corr. REDOX (mV)	Notes / Flow (ml/min)
Well Diameter (mm)	50										
Well Material	HDPE	12:49	13.4	1188.2	1.96	6.81	204.7	6.590		#REF!	
Initial Water Level (m)	6.590	12:52	13.6	1183.9	1.84	6.80	203.3	6.590		#REF!	
LNAPL Present? (Y/N)	N	12:55	13.7	1183.3	1.80	6.83	192.1	6.590		#REF!	
Initial LNAPL Level (m)		12:58	13.7	1183.7	1.82	6.84	189.7	6.590		#REF!	40ml/20s
Well Headspace Reading (PID/FID)	0	13:01	13.7	1181.6	1.80	6.84	189.2	6.590		#REF!	
Purge Method (Give details in Notes section)	Low flow										
Sampling Method (Give details in Notes section)	Persitalitc										
Pump Intake Depth (m)	7.600										
Depth to Base (m)	11.320	Sampling Notes (e.g. oil/colour/odour), reasons if not monitored, include purge / sampling method if "Other" selected.					Borehole Developed using SubPump - 25litres of water removed, water colour brown, opaque				
DNAPL Present? (Y/N)	N	Sample Containers Obtained					N/A				
Initial DNAPL Level (m)		Sample Collection Time									

 Civil, Structural & Environmental Engineers Commercial Wharf, 6 Commercial St, MCR, M15 4PZ	Job No:	4513	Site:	Plot 10b First Street
	Date:	16/11/2022	Client:	Vita
	Engineer:	JV	Equipment:	GA5000

	2 Days Prior	1 Day Prior	On day of Monitoring
Weather Conditions:	Overcast	Raining	Overcast
Barometric Pressure Trend:	Falling	Falling	Falling
Surface Ground Conditions:	Dry		

VISIT ONE	Start	Finish
Time:	0940	1206
Barometric Pressure:	987	
Background Oxygen:	20.9	20.9

Monitoring Point	Flow Rate (l/h)	Gas Concentration											Groundwater			Remarks
		Peak						Flow Rate (l/h)	Steady					Depth to Water	Depth to Base	
BH N°	CH ₄ %	CO ₂ %	O ₂ %	LEL %	H2S/C O (ppm)	CH ₄ %	CO ₂ %		O ₂ %	LEL %	H2S/C O (ppm)	Depth to Water	Depth to Base			Head of water
WSI01	0	0	0.1	20.7	0	0/0	0	0	0.1	20.7	0	0/0	1.13	1.18	0.05	
WSI02	0.1	0	0.1	17.7	0	0/0	0	0	0	18	0	0/0	3.00	3.20	0.20	
WSI05	0	0	2.2	16.9	0	0/0	0	0	2.2	16.9	0	0/0	Dry	2.89	N/A	
WSI06	0	0	0.1	20.8	0	0/0	0	0	0.1	20.8	0	0/0	Dry	1.28		
RBH101	0	0	0.1	21.6	0	8/0	0	0	0.1	21.6	0	8/0	4.94	18.86	13.92	
RBH102	0.1	0	0.2	16.3	0	76/0	0.1	0	0.2	16.3	0	45/0	6.38	11.34	4.96	

Comments:

 Civil, Structural & Environmental Engineers Commercial Wharf, 6 Commercial St, MCR, M15 4PZ	Job No:	4513	Site:	Plot 10b First Street
	Date:	23/11/2022	Client:	Vita
	Engineer:	JV	Equipment:	GA5000

	2 Days Prior	1 Day Prior	On day of Monitoring
Weather Conditions:	Rain	Cloudy	Rain
Barometric Pressure Trend:	Falling	Rising	Fluctuating
Surface Ground Conditions:	Wet		

VISIT TWO	Start	Finish
Time:	1038	1528
Barometric Pressure:	981	983
Background Oxygen:	21.1	21.1

Monitoring Point	Flow Rate (l/h)	Gas Concentration											Groundwater			Remarks
		Peak						Steady					Depth to Water	Depth to Base	Head of water	
BH N°		CH ₄ %	CO ₂ %	O ₂ %	LEL %	H2S/C O (ppm)	Flow Rate (l/h)	CH ₄ %	CO ₂ %	O ₂ %	LEL %	H2S/C O (ppm)				
WSI01	0.1	0	0.1	21.4	0	0/0	0	0	0.1	21.4	0	0/0	0.96	1.2	0.24	
WSI02	0.1	0	0.1	12.6	0	0/0	0	0	0.1	12.6	0	0/0	2.9	3.2	0.3	
WSI05	0	0	0.2	19.6	0	0/0	0	0	0.1	19.6	0	0/0	Dry	2.89	N/A	
WSI06	0	0	0.1	17.3	0	0/0	0	0	0.1	17.3	0	0/0	N/A	N/A	N/A	Install damaged bung not removable.
RBH101	1.3	0	0.2	20.6	0	10/0	1.3	0	0.2	20.6	0	7/0	4.98	18.85	13.87	
RBH102	0	0	1.7	14.4	0	6/0	0	0	0.6	14.4	0	0/0	6.59	11.32	4.73	

Comments:

 Civil, Structural & Environmental Engineers Commercial Wharf, 6 Commercial St, MCR, M15 4PZ	Job No:	4513	Site:	Plot 10b First Street
	Date:	02/12/2022	Client:	Vita
	Engineer:	RM	Equipment:	GFM435

	2 Days Prior	1 Day Prior	On day of Monitoring
Weather Conditions:	Rising	Steady	Steady
Barometric Pressure Trend:	Cloudy	Cloudy	Cloudy
Surface Ground Conditions:	Dry		

VISIT THREE	Start	Finish
Time:	0900	1030
Barometric Pressure:	1025	1025
Background Oxygen:	20.9	20.9

Monitoring Point	Flow Rate (l/h)	Gas Concentration											Groundwater			Remarks
		Peak						Steady					Depth to Water	Depth to Base	Head of water	
BH N°		CH ₄ %	CO ₂ %	O ₂ %	LEL %	H ₂ S/C O (ppm)	Flow Rate (l/h)	CH ₄ %	CO ₂ %	O ₂ %	LEL %	H ₂ S/C O (ppm)				
WSI01	0	0	0	21	0	0/0	0	0	0	21	0	0/0	Dry	1.2	N/A	
WSI02	0	0	0	18	0	0/0	0	0	0	18	0	0/0	Dry	3.2	N/A	
WSI05	0	0	0.2	20	0	0/0	0	0	0.1	20	0	0/0	Dry	2.89	N/A	
WSI06	0	0	0.1	17.3	0	0/0	0	0	0.1	17.3	0	0/0	N/A	N/A	N/A	Install damaged bung not removable.
RBH101	0	0	0	20.2	0	0/0	0	0	0	20.2	0	0/0	5.57	18.85	13.28	
RBH102	0	0	0.3	16	0	0/0	0	0	0.3	16	0	0/0	6.7	11.32	4.62	

Comments:

 Civil, Structural & Environmental Engineers Commercial Wharf, 6 Commercial St, MCR, M15 4PZ	Job No:	4513	Site:	Plot 10b First Street
	Date:	14/12/2022	Client:	Vita
	Engineer:	RM	Equipment:	GFM435

	2 Days Prior	1 Day Prior	On day of Monitoring
Weather Conditions:	Cloudy	Cloudy	Cloudy
Barometric Pressure Trend:	Steady	Falling	Rising
Surface Ground Conditions:	Frozen		

VISIT FOUR	Start	Finish
Time:	1500	1545
Barometric Pressure:	1000	1001
Background Oxygen:	20.6	20.6

Monitoring Point	Flow Rate (l/h)	Gas Concentration											Groundwater			Remarks
		Peak						Steady					Depth to Water	Depth to Base	Head of water	
BH N°		CH ₄ %	CO ₂ %	O ₂ %	LEL %	H ₂ S/C O (ppm)	Flow Rate (l/h)	CH ₄ %	CO ₂ %	O ₂ %	LEL %	H ₂ S/C O (ppm)				
WSI01	0	0	0	11.1	0	0/0	0	0	0	11.1	0	0/0	Dry	1.2	N/A	
WSI02	0	0	0	20.5	0	0/0	0	0	0	20.5	0	0/0	WAB	3.2	N/A	
WSI05	Could Not Access / Monitor															Could not located assumed buried beneath stockpile
WSI06																Could not access (Bung missing)
RBH101	-16.4	0	0	20.2	0	0/0	0	0	0	20.2	0	0/0	5.57	18.96	13.39	
RBH102	Could Not Access															Could not access (Well full of frozen soil)

Comments:	WAB = Wet at bottom
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 Civil, Structural & Environmental Engineers Commercial Wharf, 6 Commercial St, MCR, M15 4PZ	Job No:	4513	Site:	Plot 10b First Street
	Date:	19/12/2022	Client:	Vita Group
	Engineer:	RM	Equipment:	GFM435

	2 Days Prior	1 Day Prior	On day of Monitoring
Weather Conditions:	Raining	Raining	Overcast
Barometric Pressure Trend:	Rising	Falling	Fluctuating
Surface Ground Conditions:	Wet		

VISIT FIVE	Start	Finish
Time:	1300	1400
Barometric Pressure:	995	996
Background Oxygen:	20.9	20.9

Monitoring Point	Flow Rate (l/h)	Gas Concentration											Groundwater			Remarks
		Peak						Steady					Depth to Water	Depth to Base	Head of water	
BH N°		CH ₄ %	CO ₂ %	O ₂ %	LEL %	H ₂ S/C O (ppm)	Flow Rate (l/h)	CH ₄ %	CO ₂ %	O ₂ %	LEL %	H ₂ S/C O (ppm)				
WSI01	0	0	0	18.5	0	0/0	0	0	0	18.5	0	0/0	Dry	3.22	N/A	
WSI02	0	0	0	20.4	0	0	0	0	0	20.4	0	0/0	1.15	1.2	0.05	
WSI05	Unable to Monitor												Dry	2.9	N/A	Bung missing
WSI06													Unable to Monitor			Bung tap missing & bung inaccessible
RBH101													5.52	18.85	13.33	Well flooded
RBH102													7.1	11.32	4.22	Bung missing

Comments:

APPENDIX F – Equipment Calibration Certificates

TEST DATE AND CONDITIONS			
Date		08/07/2022	
Atmospheric Pressure Ambient Temperature Envionics Serial No.		1015	mB
		21.4	°C
		5089	

**GFM436 Final Inspection & Calibration
Check Certificate**

GAS DATA LTD

Unit 4, Fairfield Court

Seven Stars Estate

Wheler Rd

Coventry

CV3 4LJ

Tel 02476303311



Fax 02476307711

Customer	ROC Consulting
Certificate Number	123330
Order Number	331480

Serial Number	12229
Software Version	G436-00.0027/0009

Recalibration DUE Date
08/07/23

Instrument Checks					
Keyboard	✓		Display Contrast	✓	
Pump Flow In	500	Accept > 200 cc/min	Pump Flow @ -200mB	250	Accept > 200 cc/min
Clock Set / Running	✓		Labels Fitted	✓	

Gas Checks						
Sensor	CH ₄		CO ₂		O ₂	
	Instrument Gas	True Gas Value %	Instrument Gas	True Gas Value %	Instrument Gas	True Gas Value %
	Readings %		Readings %		Readings %	
	59.7	60	40.0	40	20.9	20.9
	Accept ±3.0		Accept ±3.0		Accept ±0.5	
	4.9	5	4.9	5	6.0	6
	Accept ±0.3		Accept ±0.3		Accept ±0.3	
Zero Reading 100% N2	0.0	0	0.0	0	0.0	0
	Accept ±0.0		Accept ±0.0		Accept ±0.1	

Optional Gas Checks						
Applied Gas & Range		Concentration Tested @ (ppm)	Instrument Readings (ppm)			
Gas Type	Range (ppm)		Zero Reading		Instrument Gas Reading	
H2S	5000	1500	0	Accept ±0.0	1500	Accept ±5.0
CO	2000	1000	0	Accept ±0.0	995	Accept ±5.0
Hexane	2.0%	2.0%	0	Accept ±0.0	1.99	Accept ±10.0

Cross Gas Effects									
Applied Gas (ppm)		Instrument Readings (ppm)							
Gas Type	Concentration	Toxic 1:	H2S	Toxic 2:	CO	Toxic 3:	HEX		
H2S	1500	1500		0		0			
CO	1000	50		995		0			
Hexane	2.0%	0		0		1.99			

Pressure Checks			
Atmospheric Pressure [AP] (mB)			
Current Atmospheric Pressure (mB)		Instrument Atmospheric Pressure Reading (mB)	
AP Open Ports		1015	Accept ± 2.0
AP Port (Internal)	+800 mB	800	Accept ± 5.0
	+1200mb	1200	Accept ± 5.0

Flow Checks					
Borehole Flow			Differential Pressure		
Applied Reading (l/h)	Instrument Reading (l/h)		Applied Pressure (Pa)	Instrument Reading (Pa)	
-30	-30.4	Accept ± 3.0	-377	-383	Accept ± 50
-3	-3.0	Accept ± 1.0	-17	-17	Accept ± 6.0
0	0.0	Accept ± 0.0	0	0	Accept ± 0.5
3	3.0	Accept ± 0.5	15	14	Accept ± 3.0
30	30.0	Accept ± 3.0	295	294	Accept ± 50
60	60.0	Accept ± 6.0	880	876	Accept ± 130
90	89.8	Accept ± 9.0	1690	1703	Accept ± 250

Temperature Checks		
Calibration Temperature	Instrument Temperature Reading $^{\circ}\text{C}$	
Applied Temperature $^{\circ}\text{C}$		
-10	-10.0	Accept ± 2.0
0	0.0	Accept ± 1.0
30	30.0	Accept ± 1.0
60	60.0	Accept ± 1.0
100	100.0	Accept ± 1.0

Technician:
<i>Jack Rutland</i>

Date Tested:
<i>08/07/2022</i>

The instrument identified by the serial number stated above has been tested by Gas Data personnel for calibration accuracy on the date and under the ambient conditions stated. Gas Data Ltd internal BS EN ISO9001:2015, BS EN ISO14001:2015, BS EN ISO45001:2018 compliant workshop procedures were followed to apply known calibration test gases, gas flow rates, pressures and temperatures of the values stated. The results displayed on the instrument at each stage are recorded above.

Gas Data Ltd is certified to BS EN ISO9001:2015, BS EN ISO14001:2015, BS EN ISO45001:2018.

APPENDIX G – Waste Assessment

Final Test Report

Envirolab Job Number: 22/11222
Issue Number: 1

Date: 25-Nov-22

Client: ROCP LIMITED
Commercial Wharf 6 Commercial Street
Castlefield
Manchester
M15 4PZ

Project Manager: Linden Richardson/Reece McGuinness
Project Name: Plot 10b, First Street
Project Ref: 4513
Order No: 1814

Date Samples Received: 11-Nov-22
Date Instructions Received: 15-Nov-22
Date Analysis Completed: 25-Nov-22

Notes - Soil analysis

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

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

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

Notes - General

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

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

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

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

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

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

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

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

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

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

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

Please contact us if you need any further information.

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

Approved by:



Danielle Brierley
Deputy Client Services Supervisor

Sample Details					Landfill Waste Acceptance Criteria Limits			
Lab Sample ID	Method	ISO17025	MCERTS	22/11222/14				
Client Sample Number					Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill	
Client Sample ID				Composite 1				
Depth to Top								
Depth to Bottom								
Date Sampled				09/11/2022				
Sample Type				Soil - ES				
Sample Matrix Code				4AB				
Solid Waste Analysis								
pH (pH Units) _D	A-T-031	N	N	11.08	-	>6	-	
ANC to pH 4 (mol/kg) _D	A-T-ANC	N	N	0.56	-	to be evaluated	to be evaluated	
ANC to pH 6 (mol/kg) _D	A-T-ANC	N	N	0.26	-	to be evaluated	to be evaluated	
Loss on Ignition (%) _D	A-T-030	N	N	4.1	-	-	10	
Total Organic Carbon (%) _D	A-T-032	N	N	0.96	3	5	6	
PAH Sum of 17 (mg/kg) _A	A-T-019	N	N	42.4	100	-	-	
Mineral Oil (mg/kg) _{A EH, CU, ID, AL}	A-T-007	N	N	147	500	-	-	
Sum of 7 PCBs (mg/kg) _A	A-T-004	N	N	<0.007	1	-	-	
Sum of BTEX (mg/kg) _A	A-T-022	N	N	<0.01	6	-	-	
Eluate Analysis				10:1 mg/l	10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic	A-T-025	N	N	0.011	0.110	0.5	25	
Barium	A-T-025	N	N	0.012	0.120	20	300	
Cadmium	A-T-025	N	N	<0.001	<0.01	0.04	5	
Chromium	A-T-025	N	N	0.007	0.070	0.5	70	
Copper	A-T-025	N	N	0.005	0.050	2	100	
Mercury	A-T-025	N	N	<0.0005	<0.005	0.01	2	
Molybdenum	A-T-025	N	N	0.002	0.020	0.5	30	
Nickel	A-T-025	N	N	<0.002	<0.02	0.4	40	
Lead	A-T-025	N	N	0.002	0.020	0.5	50	
Antimony	A-T-025	N	N	0.007	0.070	0.06	5	
Selenium	A-T-025	N	N	<0.001	<0.01	0.1	7	
Zinc	A-T-025	N	N	0.004	0.040	4	200	
Chloride	A-T-026	N	N	1	14	800	15000	
Fluoride	A-T-026	N	N	0.2	2.0	10	500	
Sulphate as SO ₄	A-T-026	N	N	40	401	1000	50000	
Total Dissolved Solids	A-T-035	N	N	103	1030	4000	100000	
Phenol Index	A-T-050	N	N	<0.01	<0.1	1	-	
Dissolved Organic Carbon	A-T-032	N	N	<2.0	<200	500	1000	
Leach Test Information								
pH (pH Units)	A-T-031	N	N	10.4				
Conductivity (µS/cm)	A-T-037	N	N	207				
Mass Sample (kg)				0.203				
Dry Matter (%)	A-T-044	N	N	86				
Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation								

Sample Details					Landfill Waste Acceptance Criteria Limits			
Lab Sample ID	Method	ISO17025	MCERTS	22/11222/15				
Client Sample Number					Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill	
Client Sample ID				Composite 2				
Depth to Top								
Depth to Bottom								
Date Sampled				11/11/2022				
Sample Type				Soil - ES				
Sample Matrix Code				4AB				
Solid Waste Analysis								
pH (pH Units) _D	A-T-031	N	N	11.59	-	>6	-	
ANC to pH 4 (mol/kg) _D	A-T-ANC	N	N	0.9	-	to be evaluated	to be evaluated	
ANC to pH 6 (mol/kg) _D	A-T-ANC	N	N	0.41	-	to be evaluated	to be evaluated	
Loss on Ignition (%) _D	A-T-030	N	N	5	-	-	10	
Total Organic Carbon (%) _D	A-T-032	N	N	1.35	3	5	6	
PAH Sum of 17 (mg/kg) _A	A-T-019	N	N	17.3	100	-	-	
Mineral Oil (mg/kg) _{A EH_CU_1D_AL}	A-T-007	N	N	310	500	-	-	
Sum of 7 PCBs (mg/kg) _A	A-T-004	N	N	<0.007	1	-	-	
Sum of BTEX (mg/kg) _A	A-T-022	N	N	<0.01	6	-	-	
Eluate Analysis				10:1 mg/l	10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic	A-T-025	N	N	0.004	0.040	0.5	2	25
Barium	A-T-025	N	N	0.016	0.160	20	100	300
Cadmium	A-T-025	N	N	<0.001	<0.01	0.04	1	5
Chromium	A-T-025	N	N	0.009	0.090	0.5	10	70
Copper	A-T-025	N	N	0.006	0.060	2	50	100
Mercury	A-T-025	N	N	<0.0005	<0.005	0.01	0.2	2
Molybdenum	A-T-025	N	N	0.002	0.020	0.5	10	30
Nickel	A-T-025	N	N	<0.002	<0.02	0.4	10	40
Lead	A-T-025	N	N	<0.001	<0.01	0.5	10	50
Antimony	A-T-025	N	N	0.007	0.070	0.06	0.7	5
Selenium	A-T-025	N	N	<0.001	<0.01	0.1	0.5	7
Zinc	A-T-025	N	N	<0.002	<0.02	4	50	200
Chloride	A-T-026	N	N	1	13	800	15000	25000
Fluoride	A-T-026	N	N	0.3	3.0	10	150	500
Sulphate as SO ₄	A-T-026	N	N	8	82	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	160	1600	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<2.0	<200	500	800	1000
Leach Test Information								
pH (pH Units)	A-T-031	N	N	11.2				
Conductivity (µS/cm)	A-T-037	N	N	321				
Mass Sample (kg)				0.201				
Dry Matter (%)	A-T-044	N	N	87.1				
Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation								



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Haswaste, developed by Dr. Iain Haslock.

4513: First Street, Manchester	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones			
Ref. 1	TP101	TP102	TP103	TP103	TP105	TP107	WS101	WS102	WS104	WS104	WS105	WS106	Composite 1	Composite 2	WS102			
Ref. 2	0.30	0.40	0.80	2.00	1.00	1.00	0.80	0.30	0.50	1.30	0.60	0.40			3.00			
Date	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	07-Nov-22	07-Nov-22	07-Nov-22	07-Nov-22	09-Nov-22	11-Nov-22	09-Nov-22	11-Nov-22	08-Nov-22			

POPs Dioxins and Furans Input Total Dioxins and Furans
OR individual Dioxin and Furan results.

2,3,7,8-TeCDD	mg/kg																	
1,2,3,7,8-PeCDD	mg/kg																	
1,2,3,4,7,8-HxCDD	mg/kg																	
1,2,3,6,7,8-HxCDD	mg/kg																	
1,2,3,7,8,9-HxCDD	mg/kg																	
1,2,3,4,6,7,8-HpCDD	mg/kg																	
OCDD	mg/kg																	
2,3,7,8-TeCDF	mg/kg																	
1,2,3,7,8-PeCDF	mg/kg																	
2,3,4,7,8-PeCDF	mg/kg																	
1,2,3,4,7,8-HxCDF	mg/kg																	
1,2,3,6,7,8-HxCDF	mg/kg																	
2,3,4,6,7,8-HxCDF	mg/kg																	
1,2,3,7,8,9-HxCDF	mg/kg																	
1,2,3,4,6,7,8-HpCDF	mg/kg																	
1,2,3,4,7,8,9-HpCDF	mg/kg																	
OCDF	mg/kg																	
Total Dioxins and Furans	mg/kg																	

Some Pesticides (POPs unless otherwise stated)

Aldrin	mg/kg																	
α Hexachlorocyclohexane (alpha-HCH) <i>(leave empty if total HCH results used)</i>	mg/kg																	
β Hexachlorocyclohexane (beta-HCH) <i>(leave empty if total HCH results used)</i>	mg/kg																	
α Cis-Chlordane (alpha) OR Total Chlordane	mg/kg																	
δ Hexachlorocyclohexane (delta-HCH) <i>(leave empty if total HCH results used)</i>	mg/kg																	
Dieldrin	mg/kg																	
Endrin	mg/kg																	
γ Hexachlorocyclohexane (gamma-HCH) (lindane) OR Total HCH	mg/kg																	
Heptachlor	mg/kg																	
Hexachlorobenzene	mg/kg																	
o,p'-DDT <i>(leave empty if total DDT results used)</i>	mg/kg																	
p,p'-DDT OR Total DDT	mg/kg																	
γ Trans-Chlordane (gamma) <i>(leave empty if total Chlordane results used)</i>	mg/kg																	
Chlordecone (kepone)	mg/kg																	
Pentachlorobenzene	mg/kg																	
Mirex	mg/kg																	
Toxaphene (camphechlor)	mg/kg																	
Tin																		
Tin <i>(leave empty if Organotin and Tin excl Organotin results used)</i>	mg/kg																	
Organotin																		
Dibutyltin; DiBT	mg/kg																	
Tributyltin; TriBT	mg/kg																	
Triphenyltin; TriPT	mg/kg																	
Tetrabutyltin; TeBT	mg/kg																	
Tin excluding Organotin																		
Tin excl Organotin	mg/kg																	



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4513: First Street, Manchester	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones	soil & stones			
Ref. 1	TP101	TP102	TP103	TP103	TP105	TP107	WS101	WS102	WS104	WS104	WS105	WS106	Composite 1	Composite 2	WS102			
Ref. 2	0.30	0.40	0.80	2.00	1.00	1.00	0.80	0.30	0.50	1.30	0.60	0.40			3.00			
Date	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	07-Nov-22	07-Nov-22	07-Nov-22	07-Nov-22	09-Nov-22	11-Nov-22	09-Nov-22	11-Nov-22	08-Nov-22			

Asbestos in Soil	Thresholds
Asbestos detected in Soil (enter Y or N)	Y

Asbestos % Composition in Soil (Matrix Loose Fibres or Microscopic Identifiable Pieces only)	see "Carc HP7 % Asbestos in Soil (Fibres)" below	%
Carcinogenic HP7 % Asbestos in Soil (fibres or micro pieces)		≥0.1%
Please be advised, if the calculation cell is "0.00000" DOES NOT MEAN asbestos testing has been undertaken and the result is zero.		

Asbestos Identifiable Pieces visible with the naked eye detected in the Soil (enter Y or N)	Y
---	---

Y	Y		Y	Y	Y				Y			Y						
If Asbestos in Soil above is "Y", the soil is Hazardous Waste HP5 and HP7									If Asbestos in Soil above is "Y", the soil is Hazardous Waste HP5 and HP7									
0.01400	0.00100		0.00100	0.10700	0.00100				0.00600			0.00100						
0.01400	0.00100	0.00000	0.00100	0.10700	0.00100	0.00000	0.00000	0.00000	0.00600	0.00000	0.00000	0.00100	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
If Asbestos in Soil above is "Y", but Asbestos % above is "<0.1%", the soil is Non Hazardous Waste. You can only use Asbestos % results where loose fibres or micro pieces are only present. You cannot use Asbestos % results when visual identifiable pieces are present.									If Asbestos in Soil above is "Y", but Asbestos % above is "<0.1%", the soil is Non Hazardous Waste. You can only use Asbestos % results where loose fibres or micro pieces are only present. You cannot use Asbestos % results when visual identifiable pieces are present.									

If visual identifiable pieces of asbestos are present, you cannot use Asbestos % results and the whole soil sample is Hazardous Waste HP5 and HP7 Construction material containing Asbestos 17 06 05. Therefore, if Asbestos in Soil above is "Y", the Asbestos % above is "<0.1%", but the Asbestos Identifiable Pieces visible with the naked eye is "Y", the soil is Hazardous Waste.

Identifiable Pieces are Cement, Fragments, Board, Rope etc. ie anything ACM that is not Loose Fibres.

All visual asbestos pieces need to be removed leaving only fibres (or micro pieces) with an Asbestos % Composition in Soil result of <0.1% for the soil to become non-hazardous waste.

If visual identifiable pieces of asbestos are present, you cannot use Asbestos % results and the whole soil sample is Hazardous Waste HP5 and HP7 Construction material containing Asbestos 17 06 05. Therefore, if Asbestos in Soil above is "Y", the Asbestos % above is "<0.1%", but the Asbestos Identifiable Pieces visible with the naked eye is "Y", the soil is Hazardous Waste.

Identifiable Pieces are Cement, Fragments, Board, Rope etc. ie anything ACM that is not Loose Fibres.

All visual asbestos pieces need to be removed leaving only fibres (or micro pieces) with an Asbestos % Composition in Soil result of <0.1% for the soil to become non-hazardous waste.

Hazardous Property	Thresholds	Cut Off Value	If cells below turn yellow and the text turns red, the samples should be classified as Hazardous Waste.															
Corrosive HP8	≥5%	<1%	0.03494	0.04993	0.02555	0.11865	0.04167	0.07256	0.02606	0.02022	0.03984	0.02521	0.02177	0.04410	0.00000	0.00000	0.00607	0.00000
Irritant HP4	≥10%	<1%	0.00802	0.00833	0.00598	0.01329	0.02421	0.03625	0.00940	0.00854	0.00817	0.01623	0.02005	0.00799	0.00203	0.00124	0.00468	0.00000
Irritant HP4	≥20%	<1%	0.01384	0.00789	0.00829	0.01501	0.04677	0.02574	0.00997	0.02236	0.00591	0.02366	0.01967	0.00751	0.00204	0.00125	#VALUE!	0.00000
Specific Target Organ Toxicity HP5	≥1%		0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00000	0.00000	0.00019	0.00000
Specifc Target Organ Toxicity HP5	≥20%		0.00553	0.00320	0.00356	0.00481	0.01670	0.02100	0.00374	0.01090	0.00481	0.00654	0.00641	0.00463	0.00000	0.00000	0.00160	0.00000
Specific Target Organ Toxicity HP5	≥1%		0.01400	0.00326	0.00356	0.00481	0.10700	0.02100	0.00374	0.00392	0.00600	0.00641	0.00646	0.00463	0.00005	0.00009	0.00182	0.00000
Specific Target Organ Toxicity HP5	≥10%		0.00830	0.04730	0.01210	0.03730	0.05140	0.02290	0.01710	0.00920	0.01630	0.01570	0.02290	0.02040	0.00000	0.00000	0.00070	0.00000
Aspiration Toxicity HP5	≥10%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.1%	<0.1%	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00000	0.00000	0.00019	0.00000
Acute Toxicity HP6	≥0.25%	<0.1%	0.00072	0.00140	0.00064	0.00113	0.00213	0.00563	0.00100	0.00098	0.00078	0.00168	0.00150	0.00080	0.00000	0.00000	0.00028	0.00000
Acute Toxicity HP6	≥5%	<0.1%	0.03496	0.04982	0.02552	0.11833	0.04104	0.06743	0.01989	0.03955	0.02436	0.02119	0.04386	0.00000	0.00000	0.00604	0.00000	0.00000
Acute Toxicity HP6	≥25%	<1%	0.02720	0.06077	0.02482	0.06028	0.10319	0.07167	0.03118	0.03547	0.02746	0.04609	0.04909	0.03297	0.00208	0.00133	0.00760	0.00000
Acute Toxicity HP6	≥0.25%	<0.1%	0.00038	0.00040	0.00043	0.00039	0.00100	0.00027	0.00026	0.00038	0.00031	0.00028	0.00023	0.00033	0.00000	0.00000	0.00021	0.00000
Acute Toxicity HP6	≥2.5%	<0.1%	0.00403	0.00326	0.00307	0.00365	0.00307	0.01824	0.00346	0.00365	0.00230	0.00365	0.00384	0.00326	0.00000	0.00000	0.00173	0.00000
Acute Toxicity HP6	≥15%	<0.1%	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00000	0.00000	0.00008	0.00000
Acute Toxicity HP6	≥55%	<1%	0.00118	0.00263	0.00118	0.00367	0.00112	0.00231	0.00073	0.00074	0.00069	0.00087	0.00085	0.00073	0.00005	0.00009	0.00066	0.00000
Acute Toxicity HP6	≥0.1%	<0.1%	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00019	0.00000	0.00000	0.00019	0.00000
Acute Toxicity HP6	≥0.5%	<0.1%	0.00521	0.00393	0.00365	0.00450	0.00471	0.01935	0.00398	0.00430	0.00275	0.00460	0.00486	0.00390	0.00005	0.00009	0.00203	0.00000
Acute Toxicity HP6	≥3.5%	<0.1%	0.00018	0.00089	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00018	0.00000	0.00000	0.00004	0.00000
Acute Toxicity HP6	≥22.5%	<1%	0.04902	0.10258	0.04201	0.16801	0.11624	0.11736	0.05031	0.03618	0.06273	0.05600	0.06426	0.07036	0.00204	0.00125	0.01083	0.00000
Carcinogenic HP7	≥0.1%		0.00830	0.04730	0.01210	0.03730	0.05140	0.02290	0.01710	0.01090	0.01630	0.01570	0.02290	0.02040	0.00005	0.00009	0.00182	0.00000
Carcinogenic HP7	≥1%		0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
Carcinogenic HP7	≥1%		0.00553	0.00320	0.00356	0.00481	0.01670	0.02100	0.00374	0.01090	0.00481	0.00654	0.00641	0.00463	0.00000	0.00000	0.00160	0.00000
Carcinogenic HP7 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carcinogenic HP7 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
pH Corrosive HP8 pH (soil or leachate)	H8 ≥11.5		10.64	9.37	9.40	8.82	8.70	10.65	10.29	9.71	9.67	9.89	9.22	9.43	11.08	11.59	8.48	0.00
pH Corrosive HP8 pH (soil or leachate)	H8 ≤2		9.93	9.37	9.40	8.82	8.70	10.65	10.29	9.71	9.67	8.77	9.22	9.43	11.08	11.59	8.48	0.00
Toxic for Reproduction HP10	≥0.3%		0.00830	0.04730	0.01210	0.03730	0.05140	0.02290	0.01710	0.01090	0.01630	0.01570	0.02290	0.02040	0.00000	0.00000	0.00182	0.00000
Toxic for Reproduction HP10	≥3%		0.00445	0.00326	0.00356	0.00481	0.00516	0.02100	0.00374	0.00392	0.00481	0.00641	0.00641	0.00463	0.00005	0.00009	0.00173	0.00000
Mutagenic HP11	≥0.1%		0.00553	0.00326	0.00307	0.00365	0.01670	0.01824	0.00346	0.01090	0.00230	0.00654	0.00384	0.00326	0.00005	0.00009	0.00173	0.00000
Mutagenic HP11 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mutagenic HP11 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Mutagenic HP11	≥1%		0.00553	0.00320	0.00356	0.00481	0.01670	0.02100	0.00374	0.01090	0.00481	0.00654	0.00646	0.00463	0.00000	0.00000	0.00182	0.00000
Produces Toxic Gases HP12 Sulphide	≥1,400mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Cyanide	≥1,200mg/kg		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Produces Toxic Gases HP12 Thiocyanate	≥2,600mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HP13 Sensitising	≥10%		0.00553	0.00326	0.00307	0.00444	0.01670	0.01824	0.00346	0.01090	0.00230	0.00654	0.00646	0.00326	0.00000	0.00000	0.00182	0.00000



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	TP101	TP102	TP103	TP103	TP105	TP107	WS101	WS102	WS104	WS104	WS105	WS106	Composite 1	Composite 2	WS102				
Ref. 1	0.30	0.40	0.80	2.00	1.00	1.00	0.80	0.30	0.50	1.30	0.60	0.40			3.00				
Ref. 2	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	08-Nov-22	07-Nov-22	07-Nov-22	07-Nov-22	07-Nov-22	09-Nov-22	11-Nov-22	09-Nov-22	11-Nov-22	08-Nov-22				
Date																			

Ecotoxic HP14 amended v6	≥25%	<0.1%	0.04929	0.11275	0.04332	0.12328	0.15851	0.12782	0.05694	0.05559	0.05744	0.08302	#VALUE!	0.06968	0.00208	0.00133	#VALUE!	0.00000	0.00000	0.00000
Ecotoxic HP14 amended v6	≥25%	<0.1% (except Be, V, Te, Tl, Petrol, Diesel, Crude Oil, Kerosene, White Spirit, Crosote, TPH, TPHCWG, Phenol, Cresols, Xylenols, T-Phenols, CompCN, Thiocyanate, Toluene, Ethylbenzene, Xylene + BTEX 1%).	0.05419	0.11622	0.04715	0.12859	0.16426	0.14914	0.06104	0.05987	0.06251	0.09006	#VALUE!	0.07463	0.00209	0.00134	#VALUE!	0.00000	0.00000	0.00000
Ecotoxic HP14 amended v6	≥25%	<0.1% (except Be, V, Te, Tl, Petrol, Diesel, Crude Oil, Kerosene, White Spirit, Crosote, TPH, TPHCWG, Phenol, Cresols, Xylenols, T-Phenols, CompCN, Thiocyanate, Toluene, Ethylbenzene, Xylene + BTEX 1%).	4.97401	11.30602	4.36668	12.37782	15.90470	12.99148	5.73178	5.59825	5.79074	8.36851	#VALUE!	7.01392	0.20840	0.13330	#VALUE!	0.00000	0.00000	0.00000
Persistent Organic Pollutant (PCB, PBB or POP Pesticides)	>0.005%		0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Persistent Organic Pollutant (Total Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000
Persistent Organic Pollutant (Individual Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000

If other contaminants need adding to Haswaste, please contact Envirolab.



An award-winning practice
serving the property and
construction industry for
more than 25 years



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