



**PHASE 2 GEO-ENVIRONMENTAL SITE
ASSESSMENT REPORT**

**LAND ADJACENT TO
129 CROFT LANE,
BURY,
BL9 8QH**

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Report Title	Phase 2 Geo-Environmental Site Assessment Report		
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Executive Summary

EnviroSolution Ltd was commissioned to undertake a Phase 2 Geo-Environmental Site Assessment at Croft Lane in Bury.

The investigation has proven that the site is underlain by a variable thickness of Made Ground and alluvium deposits which overlie glacial diamicton which is encountered at depths of between 9.80m and 10.20m below ground level.

A total of 4 no. soil samples were taken and tested for a range of chemical parameters. Low level soil contaminants (e.g. heavy metals and SVOCs) have been detected the shallow soils beneath the site. No asbestos was detected.

The identified contaminants of concern could potentially present a long-term exposure risk to human health of future site users if they remain present in the shallow soils following redevelopment. Therefore, remedial measures will be required in areas of proposed sot landscaping in order to eliminate exposure risks (e.g. clean topsoil cover system).

Several substances have been detected in the groundwater beneath the site at concentrations in excess of the GAC for Freshwater EQS. However, quantitative risk assessment has shown that they will not pose a risk to the identified controlled water receptors.

Based on the gas monitoring results and ground gas risk assessment, the site can be classified as Characteristic Situation 1 (CS1; very low risk) in terms of ground gases and no special protective measures will be required in the new buildings.

A remediation strategy should be prepared prior to redevelopment to detail the remediation and validation requirements. This document should be submitted to planning for approval prior to commencing any groundworks on the site.

The Made Ground would not be suitable for the construction of traditional shallow spread foundations due to the risk of unacceptable total and differential settlement occurring.

Alluvial deposits are generally not recommended as suitable bearing strata. Alluvial deposits are highly variable and have generally poor load bearing properties and would not be suitable for the construction of traditional shallow spread foundations due to the risk of unacceptable total and differential settlement occurring.

The underlying glacial diamicton deposits are considered to be suitable bearing strata. These deposits would be suitable for driven or bored cast in-situ piled foundations for all plots on the proposed development plan. It is recommended that initial designs should consider the use of a suspended floor slab incorporating a ring beam.

Specialist structural engineers will be required to prepare schedules for column loads. This information, together with these geotechnical design data, should then be sent to a specialist ground improvement and/or piling contractor to enable them to derive suitable proprietary designs.

The results from the chemical laboratory sulphate and pH analysis for the site indicate a Design Sulphate Class of DS-2 and an Aggressive Chemical Environment for Concrete (ACEC) class of AC-2.

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1 Introduction

1.1 Background

EnviroSolution Ltd was commissioned to undertake a Phase 2 Geo-Environmental Site Assessment at a site located at Croft Lane in Bury. This work was required to inform development plans for residential land use at the site.

A Phase 1 Environmental Site Assessment has previously been completed for this site:

- EnviroSolution Ltd, Croft Lane, Phase 1 Geo-environmental Site Assessment, Version 2, 23rd November 2021.

The Phase 1 report should be read in conjunction with this report as this will form the basis for the conceptual understanding of the site.

1.2 Objectives

The objectives of the ground investigation were:

1. To obtain information on the ground conditions beneath the site.
2. To obtain information to inform foundation design.
3. To confirm the contamination status of the ground beneath the site.
4. To identify any environmental risks and liabilities associated with ground conditions at the site.
5. To identify the requirements for any additional works prior to site development (e.g. further ground investigation or remedial works).

1.3 Scope of Work

- An intrusive ground investigation.
- Generic quantitative risk assessments utilising the ground investigation data in line with industry approved guidelines.
- A Ground Gas Risk Assessment
- A geotechnical appraisal of the ground conditions to inform foundation design.

The scope of work was developed in accordance with the Environment Agency of England and Wales and Department for Environment Food and Rural Affairs (DEFRA) document Environment Agency (2020) Land Contamination Risk Management Report LCRM “How to assess and manage the risks from land contamination” and BS10175:2011+A2:2017 ‘Investigation of Potentially Contaminated Sites – Code of Practice’.

1.4 Site Location

The site is located at land adjacent to 129 Croft Lane, Bury, BL9 8QH. The British National Grid Reference for the approximate site centre is GR: 381267 408574.

The site location is shown on **Figure 1** in **Appendix A**.

1.5 Site Description

The site is irregular in shape and covers an approximate area of 1,820 square metres. The site is currently vacant but is used as a small rear car park to the neighbouring public house and a permit holder car park which is fenced off.

The majority of the site is covered in tarmacadam hardstanding with areas of landscaping around the perimeter.

The site is generally flat but slopes gently towards the southwest towards the River Roch from 79m aOD to 75m aOD.

Vehicle access is gained from Croft Lane to the east. A height limit of 6ft 6" applies to the permit car park.

The site is bounded by Croft Lane to the east, a chemist to the north, the River Roch to the west and residential housing to the south.

There are no active petrol filling stations located within a 250m radius of the site.

The existing site plan is shown on **Figure 2** which is included in **Appendix A**.

1.6 Development Proposals

It is understood that the development proposal includes the construction of a three-storey children's nursery. Plans include external areas of soft landscaping to be used as play areas and paved areas for vehicle parking.

The development plans are included in **Figure 3** in **Appendix A**.

2 Ground Investigation Methodology

2.1 Intrusive Field Works

The intrusive investigation works were undertaken by EnviroSolution Ltd between the 1st and 4th of March 2021. The work comprised the following:

- The drilling of 3 no. cable percussion boreholes (designated as CP1 – CP3) to depths of up to 17.0m below ground level (bgl).
- The installation of 3 no. gas and groundwater monitoring wells.
- Geotechnical logging of ground conditions at each location.
- In-situ geotechnical testing within boreholes.
- Collection of representative soil samples from boreholes for subsequent chemical and geotechnical laboratory analysis.

The exploratory hole locations are shown on **Figure 4** in **Appendix A**. The boreholes were located on an evenly spaced grid (where access allowed) to ensure full site coverage.

2.2 Soil Sampling Methodology

The exploratory holes were logged in accordance with the requirements of BS 5930: 2015 and BS EN 14688 Pts 1&2. Visual and olfactory evidence of contamination was noted if encountered. These observations were used to aid scheduling of samples for chemical laboratory analysis. Soil samples were collected at distinct changes in lithology, or on the basis of field observations.

Samples were collected with a clean trowel or by hand (using dedicated nitrile gloves for each sampling location). Samples were placed immediately into laboratory supplied sampling containers, specific to the type of analyses required. All sample containers were sealed and labelled with a unique location identity, depth and date of sampling.

2.3 Gas and Groundwater Monitoring

A total of 3 no. combined gas and groundwater monitoring standpipes were installed during the intrusive ground investigation. Three rounds of gas and groundwater monitoring have been completed between the 12th and the 26th of March 2021. At least one visit was undertaken during a period of low and falling atmospheric pressure.

The following parameters were measured during each visit:

- Methane % (v/v)
- Carbon dioxide % (v/v)
- Oxygen % (v/v),
- Hydrogen sulphide (ppm)
- Flow rate (l/hr).
- Atmospheric pressure (mbar)
- Groundwater level and borehole depth (m bgl)

During the first monitoring visit, a representative groundwater sample was collected from each borehole. The boreholes were developed and purged prior to sampling to ensure that a representative sample was collected.

2.4 Laboratory Analysis

2.4.1 Chemical Analysis

All soil samples were transported in cool boxes at the end of the day under a chain of custody regime to Chemtest, who are a UKAS accredited laboratory. Analysis was conducted to MCerts standards where applicable.

Chemical analysis was scheduled on a total of 4 no. soil samples for a range of chemical parameters including: Toxic 9 metals, pH, asbestos ID, asbestos quantification, volatile and semi-volatile organic compounds (VOCs and SVOCs) and TPH criteria working group.

Chemical analysis was scheduled on 3 no. groundwater samples for a range of chemical parameters including: Toxic 9 metals, VOCs, SVOCs, TPH CWG, sulphates, hardness and pH.

2.4.2 QA/QC

Field methods and procedures complied with accepted industry standards (BS10175:2011). These standards include the use of specified sample container types and agreed sampling decontamination procedures.

All samples were transported from the site to the analytical laboratory under a chain of custody regime within cool boxes containing ice packs. All analytical results were subjected to a QA/QC validation check to ensure they met the Laboratory's target criteria.

2.4.3 Geotechnical Analysis

A programme of laboratory testing was undertaken in accordance with BS:1377 (1990) 'Methods of Test for Soils for Civil Engineering Purposes'. The following tests being carried out:

Table 1: BS:1377 Testing

BS Test No.	Description
Part 2: 3.2.3.3	Moisture Content
Part 3: 5.2	Sulphate Content, pH Value

The following in-situ and laboratory testing outside the scope of BS:1377 was also undertaken:

Table 2: Non-BS:1377 Testing

Standard or Methodology	Test Description
BRE Special Digest 1	Total Sulphate, Aqueous Extract Sulphate, Total Sulphur, pH

3 Ground Conditions

3.1 Made Ground

Made Ground was encountered in all of the exploratory boreholes at the surface. The Made Ground has a maximum thickness of 3.60m in WS1. The breaking out of tarmacadam was required in CP2 and CP3. The Made Ground can generally be divided into two types:

Brick Fill – Dark grey granular sandy gravelly fill with brick, plastic, sandstone blocks and roots.

Reworked Clay Fill – Firm grey, brown laminated clay fill.

3.2 Alluvium

Alluvium deposits were encountered in all exploratory boreholes beneath the Made Ground. The deposits were proven to extend to a depth of between 9.50m and 10.20m in CP3 and CP2 respectively.

The alluvium deposits generally consist of soft to firm grey/ brown silty clay or clayey silt.

The uncorrected SPT N-values for the alluvium deposits range between 7 and 18.

3.3 Diamicton

Diamicton deposits were encountered beneath the alluvium deposits. The diamicton generally consists of stiff becoming very stiff brown slightly gravelly clay.

SPT N-values for the diamicton range between 18 and in excess of 50 which indicates a high to very high strength clay with an approximate undrained shear strength range of between 90kN/m² and 250kN/m² using the general approximation of:

Undrained shear strength = $N \times 5$ (after Stroud, 1974).

Based on these results, then it is considered that a Characteristic Shear Strength of 125kN/m² can be adopted for foundation design.

3.4 Bedrock

Bedrock deposits were not encountered in during the investigation.

The recorded borehole logs are shown in **Appendix C**.

3.5 Groundwater

Groundwater was encountered during the investigation in all borehole locations at depths of between 3.0m and 5.0m bgl.

3.6 Ground Gas

Ground gases such as methane and carbon dioxide have been detected in both the Made Ground and natural ground deposits beneath the site. Monitoring records are included in **Appendix G** and the data is summarised below:

Table 3: Ground Gas Results Summary

Borehole ID	Response Zone	Highest Detected Flow Rate (l/hr)	CH4 Range (%v/v)	CO2 Range (%v/v)	O2 Range (%v/v)
CP1	Made Ground	0.3	0.4 – 0.7	0.2 – 0.4	18.3 – 20.8
CP2	Natural Ground	-0.8	0.4 – 0.7	3.2 – 3.7	18.8 – 19.4
CP3	Natural Ground	0.5	0.5 – 0.9	0.2 – 3.4	17.6 – 21

An assessment of the ground gases monitoring results is provided in Section 6.

3.7 Chemical Analysis

The results of the chemical analysis are assessed in Section 6. A copy of the laboratory test certificates is included in **Appendix E**.

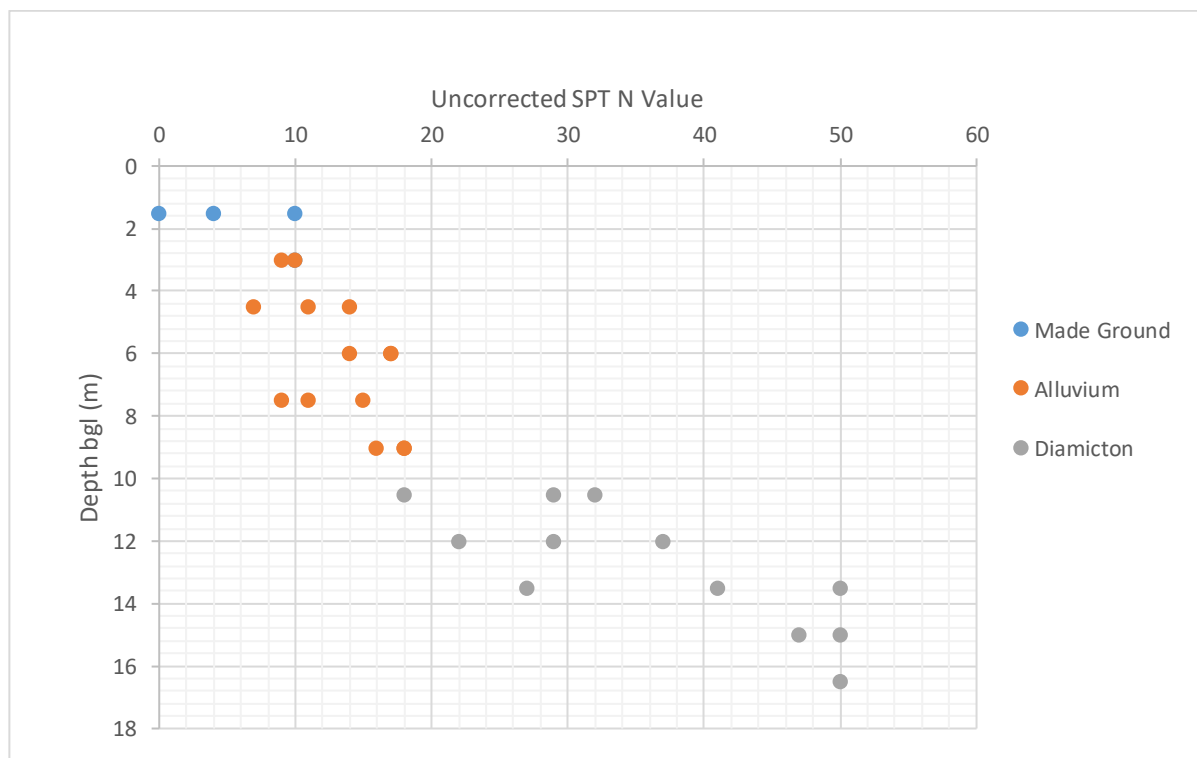
3.8 Geotechnical Model

Table 4: Geotechnical Model

Stratum	Depth to Base (m bgl)	Parameters/ Comments	
		Strength Parameters	Other Parameters/ Notes
Made Ground	2.0m – 3.60m	SPT N values 0 – 10	Granular brick fill overlying reworked clays with occasional brick fragments and gravels
Alluvium	9.50m – 10.2m	SPT N values 7 – 18	Soft to firm grey/ brown silty clay or clayey silt.
Diamicton	Not Proven	SPT N values 18 – >50	Stiff becoming very stiff brown slightly gravelly clay.

A total of 30 no. Standard Penetration Tests (SPTs) were performed during the drilling works. The results are recorded on the borehole logs at the appropriate depths and are displayed on the graph below.

SPT – Depth Plot



3.9 Geotechnical Laboratory Results

3.9.1 Sulphate Testing

The results of chemical testing carried out in accordance with BRE Special Digest 1:2005 Concrete in Aggressive Ground are summarised as follows (See **Appendix G**):

Table 5: BRE Special Digest 1:2005 Test Results

Material	Property	No. of Tests	Range of Results	Characteristic Values (BRE Special Digest 1)	Design Sulphate Class and ACEC Class
Made Ground	Sulphate (SO ₄) by 2:1 water soil extract (mg/l)	2	35 – 716	716	DS-2 AC-2
	pH	2	7.6 – 7.8	7.6	
	Total Sulphur %	2	0.06 – 0.10	0.10	
	Chloride by 2:1 water soil extract (mg/l)	2	9.7	N/a	N/a
	Nitrate by 2:1 water soil extract (mg/l)	2	<1.5	N/a	N/a
Natural Ground	Sulphate (SO ₄) by 2:1 water soil extract (mg/l)	1	31	31	DS-1 AC-1
	pH	1	7.9	7.9	
	Total Sulphur %	1	0.12	0.12	
	Chloride by 2:1 water soil extract (mg/l)	1	22.1	N/a	N/a
	Nitrate by 2:1 water soil extract (mg/l)	1	<1.5	N/a	N/a

3.9.2 Natural Moisture Content

The results of the natural moisture content testing are shown in **Appendix G**.

The results show a range in natural moisture content of between 14.4% and 23.9%.

3.9.3 Plasticity Testing

The results of the plasticity testing are summarised below. A copy of the laboratory testing results is included in **Appendix G**.

Table 6: Plasticity Results

Sample	Plasticity Index	Modified Plasticity Index	Volume Change Potential
CP1 at 6.50m	17	16.3	Low
CP2 at 1.0m	16	12.5	Low
CP3 at 12.0m	17	14.1	Low

The results show a low to intermediate plasticity clay soil with a low volume change potential.

4 Geotechnical Appraisal

4.1 Foundations

The Made Ground would not be suitable for the construction of traditional shallow spread foundations due to the risk of unacceptable total and differential settlement occurring. This is due to the variable nature of the material and the lack of controlled compaction when the material was placed.

Alluvial deposits are generally not recommended as suitable bearing strata. Alluvial deposits are highly variable and have generally poor load bearing properties and would not be suitable for the construction of traditional shallow spread foundations due to the risk of unacceptable total and differential settlement occurring.

The underlying glacial diamicton deposits are considered to be suitable bearing strata. These deposits would be suitable for driven or bored cast in-situ piled foundations for all plots on the proposed development plan. It is recommended that initial designs should consider the use of a suspended floor slab incorporating a ring beam.

Specialist structural engineers will be required to prepare schedules for column loads. This information, together with these geotechnical design data, should then be sent to a specialist ground improvement and/or piling contractor to enable them to derive suitable proprietary designs.

4.2 Excavations and Groundwater

Groundwater was recorded in all boreholes at depths of between 3.0m and 5.0m bgl during drilling. Groundwater monitoring has shown the water table to be as high as 1.18m bgl after a monitoring period of 2 weeks.

Sump pumps should be adequate for dewatering shallow service excavations if required. Advice on groundwater control in construction is given in CIRIA Report C515: Groundwater Control Design and Practice.

Shallow excavations within the Made Ground could be relied upon to stand unsupported in the short term only. Further advice on excavation support is given in CIRIA Document 97: Trenching Practice.

4.3 Concrete Design

The results from the chemical laboratory sulphate and pH analysis for the site indicate a Design Sulphate Class of DS-2 and an Aggressive Chemical Environment for Concrete (ACEC) class of AC-2.

5 Generic Quantitative Risk Assessment

5.1 Introduction

The quantitative risk assessment has been undertaken in general accordance with guidance issued by the Environment Agency and comprises a Generic Quantitative Risk Assessment (GQRA) which screens site concentrations against Generic Assessment Criteria (GAC) based on the Preliminary Risk Assessment (PRA) and associated Preliminary Conceptual Site Model. Where a concentration exceeds the GAC, the substance is confirmed as a Contaminant of Concern (CoC).

5.2 Human Health

5.2.1 Long Term Risks to Human Health

Taking into account the proposed land use at the site (nursery) GAC for residential land use with plant uptake has been adopted as the GAC for this assessment as it is considered that this is the most conservative approach and reflects the high sensitivity of future site users (children).

The source of the GAC utilised for this assessment comprise the LQM 'Suitable 4 Use Levels' and Category 4 Screening Levels'.

A number of substances have been detected in the Made Ground beneath the site at concentrations in excess of the GAC (see **Appendix E**). Such substances include:

- Lead (CP3 at 0.30m)
- Benzo(a)anthracene (CP3 at 0.30m)
- Chrysene (CP3 at 0.30m)
- Benzo(b)fluoranthene (CP3 at 0.30m)
- Benzo(a)pyrene (CP1 and CP3 at 0.30m)

The identified contaminants of concern could potentially present a long-term exposure risk to human health of future site users if they remain present in the shallow soils following redevelopment. Therefore, remedial measures will be required in areas of proposed soft landscaping in order to eliminate exposure risks (e.g. a clean topsoil cover system).

Asbestos was not detected in any of the exploratory borehole locations, thus indicating a low risk to future site users from asbestos in the shallow soils beneath the site.

5.2.2 Short Term Risks

During the redevelopment of the site, it will be necessary to implement measures to protect construction workers, and adjacent site users from the soil contaminants identified at the site. In addition, to ensure that they do not come into contact with contaminated soils and / or groundwater, construction workers and site visitors should wear appropriate personal protective equipment (PPE). Health and safety procedures would ensure that ingestion of

contaminated soils and / or groundwater is avoided (e.g. by washing hands prior to eating, drinking and smoking).

5.3 Controlled Waters

In order to provide some significance on the groundwater laboratory test results, the data has been compared with GAC comprising UK Drinking Water Standards (DWS) and Environmental Quality Standards for freshwater bodies (EQS). These GAC have been chosen based on the conceptual site model which has identified a Secondary A Aquifer and the River Roch as potential controlled water receptors.

The results of this assessment are presented in **Appendix F**. A copy of the full laboratory test certificates is included in **Appendix G**.

A number of substances have been detected in the shallow groundwater at concentrations in excess of the GAC for Freshwater EQS. Such substances include:

- Copper (CP1, CP2 and CP3)
- Nickel (CP1 and CP2)
- Zinc (CP1 and CP2)

A single exceedance of the UK Drinking Water Standards was recorded for nickel in CP2.

Although some GAC exceedances have been detected, the overall risk to controlled waters receptors from the substances present in the groundwater is considered to be low. This is because the EQS for freshwater is extremely conservative. Additionally, the ground investigation has shown the alluvial material to consist of generally low permeability clays and silts which will limit the migration of contaminants to the controlled surface waters and bedrock aquifer

The site does not lie within a Source Protection Zone and there are no groundwater abstraction licenses held nearby.

5.4 Buildings and Buried Services

It is considered that the foundations for the proposed development could be at risk of attack from any aggressive chemicals contained within the ground. In line with the recommendations with BRE Special Digest 1 (2005) "Concrete in Aggressive Ground", the Design Sulphate Class for the site is DS-2 and AC-2 as previously detailed in Section 3.9.1.

Plastic pipe materials are potentially vulnerable to attack from elevated levels of hydrocarbons, which can potentially lead to contamination of potable water supplies. At the time of writing this report, we are aware that the client has contacted the water supply company and has confirmed the use of MDPE barrier pipe which should mitigate the risk of low-level soil and groundwater contaminants.

6 Ground Gas Risk Assessment

6.1 Introduction

Any material having an organic or biodegradable content e.g. organic clays, peat, coal mine workings and domestic refuse, will have a potential for the generation of the gases methane, carbon dioxide and hydrogen sulphide (H₂S) and for the depletion of oxygen, with associated hazards of explosion or asphyxiation.

The principal hazardous gas associated with the degradation of organic materials is methane. As methane is biochemically reactive it is readily oxidised to carbon dioxide under aerobic conditions, the presence of carbon dioxide is therefore often associated with elevated methane.

The conceptual site model has identified the potential for both Made Ground and the potential for peat deposits in the natural soils. During the investigation, the Made Ground was shown to contain no significant amount of putrescible material and no peat deposits were encountered in the alluvium.

6.2 Assessment Guidelines

The gas risk assessment presented below has been undertaken in general accordance with accordance with the British Standard BS8485:2015, *“Code of Practice for the Characterisation and Remediation from Ground Gas in Affected Developments”*. The guidance is written specifically for use by designers of gas protection measures relating to the development of a site. Reference has also been made to the CIRIA document C665:2007: *“Assessing Risks Posed by Hazardous Ground Gases to Buildings”*.

A semi-quantitative assessment method is proposed to include general classifications of risk obtained from a qualitative assessment undertaken for the site in question.

Gas concentrations and borehole flow rates are used to define a characteristic situation for a site based on the Gas Screening Value. The Gas Screening Value (in litres of gas per hour) for both methane and carbon dioxide is calculated as:

$$\text{Gas Screening Value (l/hr)} = \frac{\text{Gas Concentration (\%)} \times \text{Borehole Flow Rate (l/hr)}}{100}$$

These calculations are carried out on the worst-case gas concentrations and flow rates encountered on the site.

The characteristic situation is then determined from Table 8.5 of the CIRIA C665 report. This Characteristic Situation is then used to define the general scope of gas protection measures required. Guidance is given on the number of protective measures required and the scope of the measures for each situation.

6.3 Semi-Quantitative Risk Assessment

The gas screening value has been calculated for the site using the highest detected carbon dioxide concentration for the site of 3.7% in CP2 and highest gas flow reading of 0.5 l/hr in CP3. The gas screening value for the site has been calculated as 0.0185 l/hr. This classifies the site as Characteristic Situation 1 (very low risk), as would be expected with ground conditions comprising generally cohesive deposits and a maximum carbon dioxide concentration of less than 5%. Therefore, no gas protection measures are required.

The monitoring results are included in **Appendix D**.

7 Conclusions and Recommendations

7.1 Contaminated Land

The investigation has proven that the site is underlain by a variable thickness of Made Ground and alluvium deposits which overlie glacial diamicton which is encountered at depths of between 9.80m and 10.20m below ground level.

A total of 4 no. soil samples were taken and tested for a range of chemical parameters. Low level soil contaminants (e.g. heavy metals and SVOCs) have been detected the shallow soils beneath the site. No asbestos was detected.

The identified contaminants of concern could potentially present a long-term exposure risk to human health of future site users if they remain present in the shallow soils following redevelopment. Therefore, remedial measures will be required in areas of proposed soft landscaping in order to eliminate exposure risks (e.g. clean topsoil cover system).

Several substances have been detected in the groundwater beneath the site at concentrations in excess of the GAC for Freshwater EQS. However, quantitative risk assessment has shown that they will not pose a risk to the identified controlled water receptors.

Based on the gas monitoring results and ground gas risk assessment, the site can be classified as Characteristic Situation 1 (CS1; very low risk) in terms of ground gases and no special protective measures will be required in the new buildings.

A remediation strategy should be prepared prior to redevelopment to detail the remediation and validation requirements. This document should be submitted to planning for approval prior to commencing any groundworks on the site.

7.2 Geotechnical

The Made Ground would not be suitable for the construction of traditional shallow spread foundations due to the risk of unacceptable total and differential settlement occurring.

Alluvial deposits are generally not recommended as suitable bearing strata. Alluvial deposits are highly variable and have generally poor load bearing properties and would not be suitable for the construction of traditional shallow spread foundations due to the risk of unacceptable total and differential settlement occurring.

The underlying glacial diamicton deposits are considered to be suitable bearing strata. These deposits would be suitable for driven or bored cast in-situ piled foundations for all plots on the proposed development plan. It is recommended that initial designs should consider the use of a suspended floor slab incorporating a ring beam.

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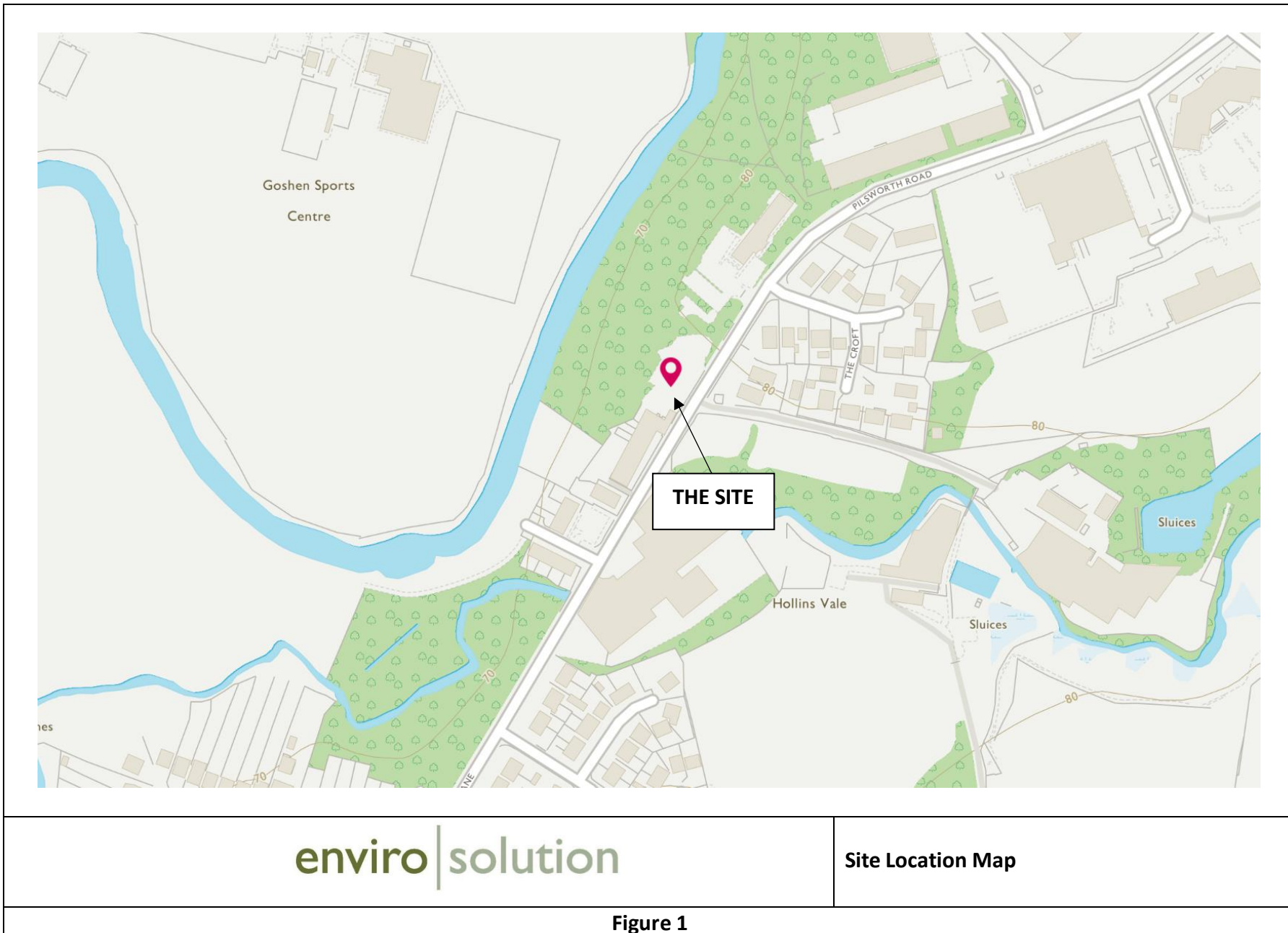
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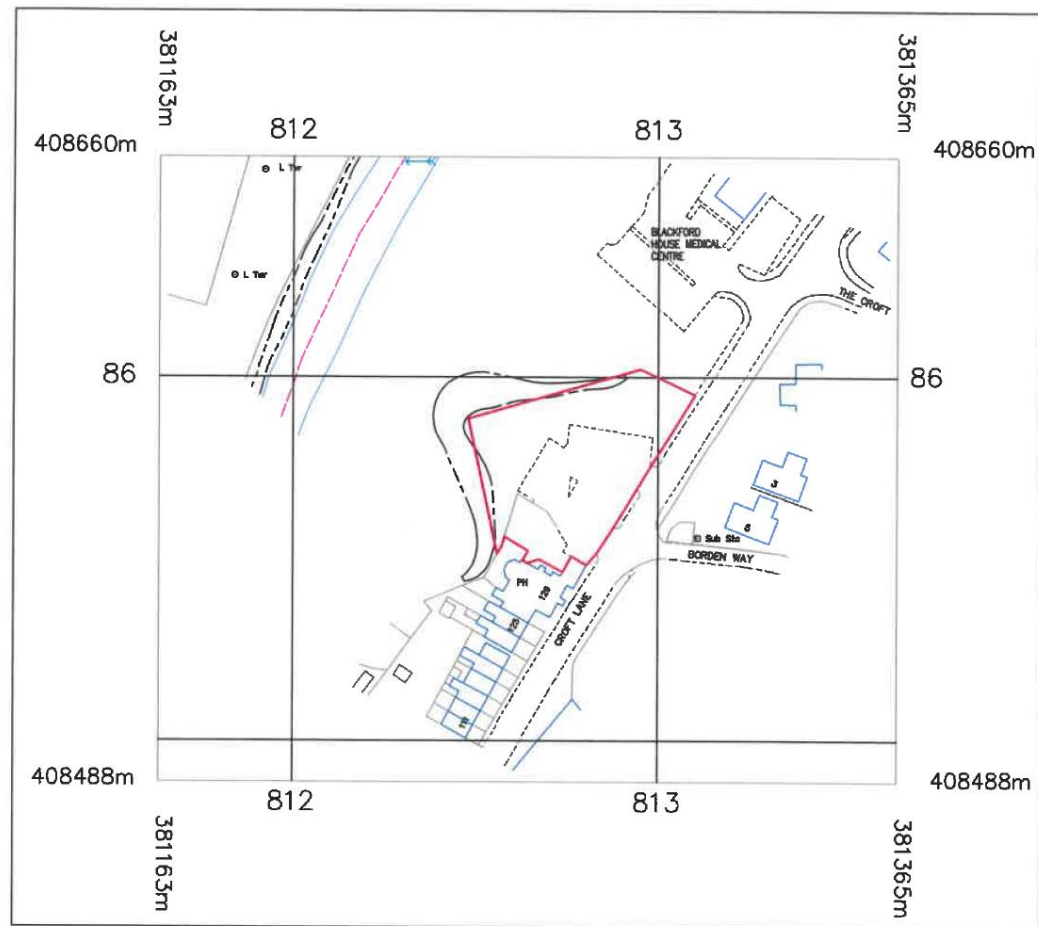
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APPENDICES

Appendix A – Site Location and Site Plan



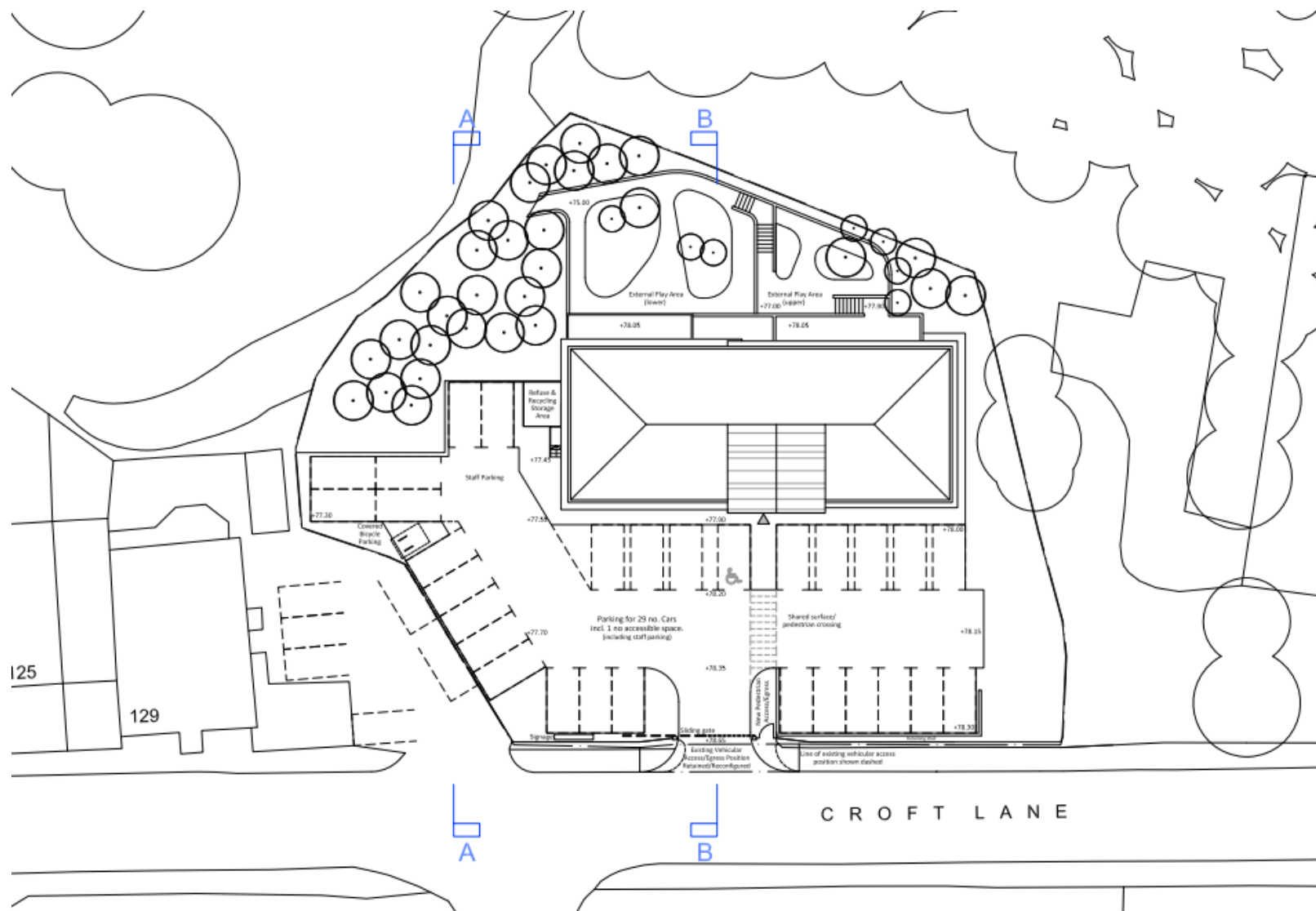


LOCATION PLAN 1:1250

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Existing Site Plan

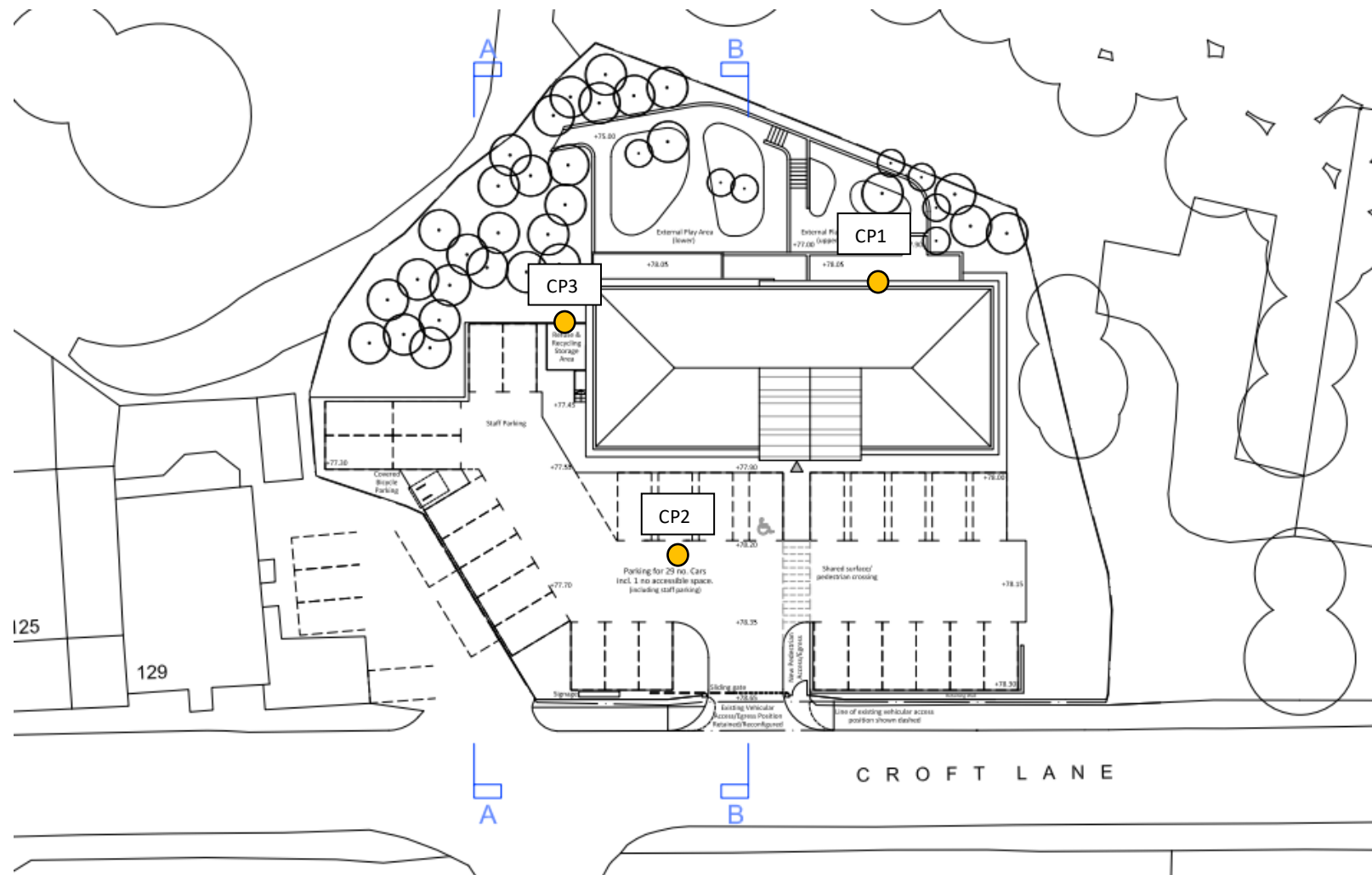
Figure 2



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Proposed Development Plan

Figure 3



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Borehole Location Plan

Figure 4

Appendix B – Site Photographs



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View of site looking west



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Site entrance



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View of site looking southwest



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Raised grass verge along northern site boundary



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View of site looking west



enviro|solution

View of site looking southwest

Appendix C – Borehole Logs

Job Title: Croft Lane						Client: Ashley Mihell				Borehole No: CP1				
Location: Croft Lane, Bury										Page 1 of 3				
Borehole Construction	Sample		Soil Vapour (ppm)	Groundwater	Depth (m)	SPT	Drilling Dates: 01.03.21				Drilling Method: Cable Percussion			
							Drilling Contractor: EnviroSolution Ltd				Borehole Diameter: 100mm			
	Number	Type					Logged by: Tom Craig				Screen Type & Diameter: n/a			
							Checked by: Gemma Lucas				Screen Slot Size: n/a			
						0	Description						Comments	0
							Made Ground: Dark grey sandy gravelly loamy FILL with brick, plastic, sandstone block and roots							
						1	Made Ground: Firm dark grey finely laminated slightly gravelly CLAY FILL							
						2	Made Ground: Firm grey brown sandy laminated slightly gravelly CLAY FILL							
						3	Made Ground: Black gravelly CLAY with pieces of brick Grey/ brown SILT						Groundwater struck at 3.0m	
						4	Dark grey clayey gravelly SILT (Continued)							
						5	Surrounded by bentonite seal, capped with flush cover and gas valve							
Non-slotted Install							Surrounded by 10mm gravel and installed with end cap							
Slotted Install														

Legend:
 Disturbed Sample † Down Borehole Analysis
 Undisturbed Sample ∇ Groundwater Table
 Headspace Analysis Δ Perched Water Table

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Job Title: Croft Lane						Client: Ashley Mihell						Borehole No: CP2														
Location: Croft Lane, Bury												Page 4 of 4														
Borehole Construction		Sample		Soil Vapour (ppm)	Groundwater	Depth (m)	SPT	Drilling Dates: 02.03.21						Drilling Method: Cable Percussion												
								Drilling Contractor: EnviroSolution Ltd						Borehole Diameter: 100mm												
		Number	Type					Logged by: Tom Craig						Screen Type & Diameter: n/a												
								Checked by: Gemma Lucas						Screen Slot Size: n/a												
						15		Description												Comments						0
								(Continued)																		
								End of borehole at 15.50m																		

[illegible]

Job Title: Croft Lane										Client: Ashley Mihell										Borehole No: CP3									
Location: Croft Lane, Bury																				Page 2 of 4									
Borehole Construction	Sample		Soil Vapour (ppm)	Groundwater	Depth (m)	SPT	Drilling Dates: 04.03.21										Drilling Method: Cable Percussion												
							Drilling Contractor: EnviroSolution Ltd										Borehole Diameter: 100mm												
	Number	Type					Logged by: Tom Craig										Screen Type & Diameter: n/a												
							Checked by: Gemma Lucas										Screen Slot Size: n/a												
					5		Description															Comments					0		
							(Continued)																						
					6	17																							
					7																								
					8	15																							
					9	18																							
					10																								
Non-slotted Install							Surrounded by bentonite seal, capped with flush cover and gas valve																						
Slotted Install							Surrounded by 10mm gravel and installed with end cap																						
Legend: ♦ Disturbed Sample † Down Borehole Analysis ∪ Undisturbed Sample ∇ Groundwater Table ∅ Headspace Analysis Δ Perched Water Table																													

[illegible]

[illegible]

Appendix D – Monitoring Results



Project:	Bury			Weather:	WET
Project Number:	C0105	Date:	12/03/2021	Engineer:	IP

Monitoring Point Reference	Date / Time	Atmos. Pressure (mbar)	Temp. (°C)	Flow Rate (l/h)	Time (sec)	CH ₄ (% v/v)	LEL (%)	CO ₂ (% v/v)	O ₂ (% v/v)	H ₂ S (ppm)	CO (ppm)	VOC (ppm)	Depth to Water (m bgl)	Depth to base (m bgl)	Comments
CP01	12/03/2021 09:15:00	986 +0.07	5	Peak:	Initial	0.6	0	0.4	18.3	0	13		1.18	6.80	
				0.3	30	0.6	0	0.4	19.2	0	3				
					60	0.6	0	0.3	19.6	0	2				
					90	0.6	0	0.3	19.6	0	2				
				Steady:	120	0.6	0	0.3	19.6	0	2				
				0.1	150	0.6	0	0.3	19.7	0	2				
					180	0.6	0	0.3	19.8	0	2				
CP02	12/03/2021 09:40	986 +8.94	5	Peak:	Initial	0.5	0.0	0.3	19.8	0	0		1.82	7.50	
				-0.80	30	0.7	0.0	3.5	19.0	0	7				
					60	0.7	0.0	3.6	18.8	0	63				
					90	0.7	0.0	3.6	18.8	1	6				
				Steady:	120	0.7	0.0	3.6	18.8	1	5				
				-0.4	150	0.7	0.0	3.6	18.8	1	4				
					180	0.7	0.0	3.6	18.8	2	4				
CP03	12/03/2021 10:05	986 -0.05	5	Peak:	Initial	0.6	0	2.4	20.4	0	0		3.22	9.40	
				0.5	30	0.9	0	2.5	18.3	0	3				
					60	0.9	0	2.5	17.8	0	4				
					90	0.9	0	2.6	17.6	0	4				
				Steady:	120	0.8	0	2.6	17.6	0	3				
				0.2	150	0.8	0	2.6	17.6	0	3				
					180	0.8	0	2.6	17.6	0	3				

Notes:

QA Checklist:			
QA Checklist:		Instrument Details:	Serial No.
Gas monitor calibrated	y	Landfill Gas Analyser	G507192
All filters in place	y	PID	
Flow reading stable and zeroed	y	Dip meter/ interface probe	



Project:	Bury			Weather:	Dry
Project Number:	C0105	Date:	19/03/2021	Engineer:	IP

Monitoring Point Reference	Date / Time	Atmos. Pressure (mbar)	Temp. (°C)	Flow Rate (l/h)	Time (sec)	CH ₄ (% v/v)	LEL (%)	CO ₂ (% v/v)	O ₂ (% v/v)	H ₂ S (ppm)	CO (ppm)	VOC (ppm)	Depth to Water (m bgl)	Depth to base (m bgl)	Comments
CP01	19/03/2021 08:10:00	1020 +0.12	7	Peak:	Initial	0.6	0	0.4	18.9	0	4		1.22	6.80	
				0.3	30	0.5	0	0.3	19.5	0	0				
					60	0.4	0	0.2	20.4	0	0				
					90	0.4	0	0.2	20.7	0	0				
				Steady:	120	0.4	0	0.2	20.7	0	0				
				0.1	150	0.4	0	0.2	20.8	0	0				
					180	0.4	0	0.2	20.8	0	0				
CP02	19/03/2021 08:30:00	1020 +24.83	7	Peak:	Initial	0.5	0.0	3.2	19.2	0	2		1.79	7.50	
				-1.2	30	0.6	0.0	3.5	19.4	0	3				
					60	0.7	0.0	3.6	19.4	0	3				
					90	0.7	0.0	3.6	19.4	0	3				
				Steady:	120	0.7	0.0	3.6	19.4	0	3				
				-0.7	150	0.6	0.0	3.7	19.4	0	3				
					180	0.6	0.0	3.7	19.4	0	2				
CP03	19/03/2021 08:50:00	1020 +0.65	7	Peak:	Initial	0.5	0	0.2	21.0	0	0		2.97	9.40	
				0.5	30	0.5	0	3.3	19.3	0	1				
					60	0.5	0	3.3	19.0	0	1				
					90	0.5	0	3.3	18.9	0	1				
				Steady:	120	0.5	0	3.4	18.9	0	1				
				0.2	150	0.5	0	3.4	18.9	0	1				
					180	0.5	0	3.4	18.9	0	1				

Notes:

QA Checklist:			
QA Checklist:		Instrument Details:	Serial No.
Gas monitor calibrated	y	Landfill Gas Analyser	G507192
All filters in place	y	PID	
Flow reading stable and zeroed	y	Dip meter/ interface probe	

Project:	Bury			Weather:	Dry, fine
Project Number:	C0105	Date:	26/03/2021	Engineer:	IP

Monitoring Point Reference	Date / Time	Atmos. Pressure (mbar)	Temp. (°C)	Flow Rate (l/h)	Time (sec)	CH ₄ (% v/v)	LEL (%)	CO ₂ (% v/v)	O ₂ (% v/v)	H ₂ S (ppm)	CO (ppm)	VOC (ppm)	Depth to Water (m bgl)	Depth to base (m bgl)	Comments
CP01	26/03/2021 11:15:00	1012 +0.10	11	Peak:	Initial	0.7	0	0.4	18.9	0	2		1.20	6.80	
				0.2	30	0.6	0	0.3	19.5	0	0				
					60	0.5	0	0.2	20.3	0	0				
					90	0.5	0	0.2	20.5	0	0				
				Steady:	120	0.4	0	0.2	20.7	0	0				
					150	0.4	0	0.2	20.8	0	0				
					180	0.4	0	0.2	20.8	0	0				
				0.1											
CP02	26/03/2021 11:40:00	1012 +23.25	11	Peak:	Initial	0.4	0.0	3.3	19.2	0	3		1.82	7.50	
				-1.1	30	0.6	0.0	3.5	19.4	0	2				
					60	0.6	0.0	3.6	19.4	0	2				
					90	0.7	0.0	3.6	19.4	0	2				
				Steady:	120	0.7	0.0	3.6	19.4	0	2				
					150	0.7	0.0	3.7	19.4	0	2				
					180	0.6	0.0	3.7	19.4	0	2				
				-0.5											
CP03	26/03/2021 11:55:00	1012 +0.70	11	Peak:	Initial	0.5	0	0.6	21.0	0	0		2.91	9.40	
				0.4	30	0.5	0	3.4	19.1	0	1				
					60	0.5	0	3.4	18.9	0	0				
					90	0.5	0	3.4	18.9	0	1				
				Steady:	120	0.5	0	3.4	18.9	0	0				
					150	0.5	0	3.4	18.9	0	1				
					180	0.5	0	3.4	18.9	0	1				
				0.2											

Notes:

QA Checklist:			
QA Checklist:		Instrument Details:	Serial No.
Gas monitor calibrated	Y	Landfill Gas Analyser	G507192
All filters in place	Y	PID	
Flow reading stable and zeroed	Y	Dip meter/ interface probe	

Appendix E – Laboratory Certificates



2183

Final Report

Report No.: 21-08245-1
Initial Date of Issue: 18-Mar-2021
Client EnviroSolution
Client Address: Suite 5, The Quay
No 12 Princes Dock
Liverpool Waters
Liverpool
L3 1DL

Contact(s): Tom Craig
William Chambers

Project Croft Lane

Quotation No.: **Date Received:** 16-Mar-2021

Order No.: ES170321 **Date Instructed:** 16-Mar-2021

No. of Samples: 3

Turnaround (Wkdays): 5 **Results Due:** 22-Mar-2021

Date Approved: 18-Mar-2021

Approved By:



Details: Glynn Harvey, Technical Manager

Results - Water

Project: Croft Lane

Client: EnviroSolution	Chemtest Job No.:				21-08245	21-08245	21-08245
Quotation No.:	Chemtest Sample ID.:				1160624	1160625	1160626
	Sample Location:				CP1	CP2	CP3
	Sample Type:				WATER	WATER	WATER
	Top Depth (m):				4	2	2
	Date Sampled:				12-Mar-2021	12-Mar-2021	12-Mar-2021
Determinand	Accred.	SOP	Units	LOD			
pH	U	1010		N/A	7.8	7.9	8.0
Total Hardness as CaCO3	U	1270	mg/l	15	500	390	120
Arsenic (Dissolved)	U	1455	µg/l	0.20	1.8	1.9	0.77
Cadmium (Dissolved)	U	1455	µg/l	0.12	1.5	0.75	0.15
Chromium (Dissolved)	U	1455	µg/l	0.50	< 0.50	1.4	< 0.50
Copper (Dissolved)	U	1455	µg/l	0.50	1.1	3.6	2.5
Mercury (Dissolved)	U	1455	µg/l	0.05	< 0.05	< 0.05	< 0.05
Nickel (Dissolved)	U	1455	µg/l	0.50	6.6	22	1.9
Lead (Dissolved)	U	1455	µg/l	0.50	1.0	1.4	< 0.50
Selenium (Dissolved)	U	1455	µg/l	0.50	0.63	< 0.50	< 0.50
Zinc (Dissolved)	U	1455	µg/l	3.0	200	55	3.9
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10	< 10	< 10
Dichlorodifluoromethane	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	1760	µg/l	5	< 5	< 5	< 5
Chloroethane	U	1760	µg/l	2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0

Results - Water

Project: Croft Lane

Client: EnviroSolution	Chemtest Job No.:				21-08245	21-08245	21-08245
Quotation No.:	Chemtest Sample ID.:				1160624	1160625	1160626
	Sample Location:				CP1	CP2	CP3
	Sample Type:				WATER	WATER	WATER
	Top Depth (m):				4	2	2
	Date Sampled:				12-Mar-2021	12-Mar-2021	12-Mar-2021
Determinand	Accred.	SOP	Units	LOD			
Bromochloromethane	U	1760	µg/l	5	< 5	< 5	< 5
Trichloromethane	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
Benzene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	1760	µg/l	2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	1760	µg/l	10	< 10	< 10	< 10
Bromodichloromethane	U	1760	µg/l	5	< 5	< 5	< 5
cis-1,3-Dichloropropene	N	1760	µg/l	10	< 10	< 10	< 10
Toluene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	1760	µg/l	10	< 10	< 10	< 10
1,1,2-Trichloroethane	U	1760	µg/l	10	< 10	< 10	< 10
Tetrachloroethene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	1760	µg/l	2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	U	1760	µg/l	10	< 10	< 10	< 10
1,2-Dibromoethane	U	1760	µg/l	5	< 5	< 5	< 5
Chlorobenzene	N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	1760	µg/l	2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
Styrene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	1760	µg/l	50	< 50	< 50	< 50
N-Propylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0

Results - Water

Project: Croft Lane

Client: EnviroSolution	Chemtest Job No.:				21-08245	21-08245	21-08245
Quotation No.:	Chemtest Sample ID.:				1160624	1160625	1160626
	Sample Location:				CP1	CP2	CP3
	Sample Type:				WATER	WATER	WATER
	Top Depth (m):				4	2	2
	Date Sampled:				12-Mar-2021	12-Mar-2021	12-Mar-2021
Determinand	Accred.	SOP	Units	LOD			
1,2-Dichlorobenzene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	1760	µg/l	50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	1760	µg/l	2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50

Results - Water

Project: Croft Lane

Client: EnviroSolution	Chemtest Job No.:				21-08245	21-08245	21-08245
Quotation No.:	Chemtest Sample ID.:				1160624	1160625	1160626
	Sample Location:				CP1	CP2	CP3
	Sample Type:				WATER	WATER	WATER
	Top Depth (m):				4	2	2
	Date Sampled:				12-Mar-2021	12-Mar-2021	12-Mar-2021
Determinand	Accred.	SOP	Units	LOD			
Dibenzofuran	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



2183

Final Report

Report No.:	21-07844-1		
Initial Date of Issue:	18-Mar-2021		
Client	EnviroSolution		
Client Address:	Suite 5, The Quay No 12 Princes Dock Liverpool Waters Liverpool L3 1DL		
Contact(s):	Tom Craig		
Project	Croft Lane		
Quotation No.:		Date Received:	12-Mar-2021
Order No.:	ES100321	Date Instructed:	12-Mar-2021
No. of Samples:	4		
Turnaround (Wkdays):	5	Results Due:	18-Mar-2021
Date Approved:	18-Mar-2021		
Approved By:			
Details:	Glynn Harvey, Technical Manager		

Results - Soil

Project: Croft Lane

Client: EnviroSolution	Chemtest Job No.:				21-07844	21-07844	21-07844	21-07844
Quotation No.:	Chemtest Sample ID.:				1158644	1158645	1158646	1158647
	Client Sample ID.:				CP1	CP2	CP2	CP3
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.30	0.30	0.80	0.30
	Date Sampled:				01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021
	Asbestos Lab:				COVENTRY	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	-	-		-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected		No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-	-		-
Moisture	N	2030	%	0.020	12	8.5	19	11
Arsenic	U	2450	mg/kg	1.0	12	26	12	19
Cadmium	U	2450	mg/kg	0.10	0.25	0.31	0.24	0.49
Chromium	U	2450	mg/kg	1.0	17	15	29	21
Copper	U	2450	mg/kg	0.50	32	73	45	77
Mercury	U	2450	mg/kg	0.10	0.17	0.39	< 0.10	0.14
Nickel	U	2450	mg/kg	0.50	16	29	43	28
Lead	U	2450	mg/kg	0.50	88	110	33	410
Selenium	U	2450	mg/kg	0.20	0.28	< 0.20	0.47	0.28
Zinc	U	2450	mg/kg	0.50	78	46	74	120
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	12	12	< 1.0	10
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	17	16	< 1.0	13
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	160	130	< 1.0	75
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	20	17	< 1.0	8.4
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	210	170	< 5.0	110
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	21	23	< 1.0	21
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	31	30	< 1.0	39
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	73	90	< 1.0	130
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	900	900	< 1.0	570
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	1000	1000	< 5.0	760
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	1200	1200	< 10	870
Dichlorodifluoromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	2760	µg/kg	20	< 20	< 20	< 20	< 20
Chloroethane	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: Croft Lane

Client: EnviroSolution	Chemtest Job No.:				21-07844	21-07844	21-07844	21-07844
Quotation No.:	Chemtest Sample ID.:				1158644	1158645	1158646	1158647
	Client Sample ID.:				CP1	CP2	CP2	CP3
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.30	0.30	0.80	0.30
	Date Sampled:				01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021
	Asbestos Lab:				COVENTRY	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD				
1,1-Dichloroethene	U	2760	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	U	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	N	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	µg/kg	10	< 10	< 10	< 10	< 10
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	µg/kg	10	< 10	< 10	< 10	< 10
1,1,2-Trichloroethane	U	2760	µg/kg	10	< 10	< 10	< 10	< 10
Tetrachloroethene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	µg/kg	10	< 10	< 10	< 10	< 10
1,2-Dibromoethane	U	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	µg/kg	50	< 50	< 50	< 50	< 50
N-Propylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: Croft Lane

Client: EnviroSolution	Chemtest Job No.:				21-07844	21-07844	21-07844	21-07844
Quotation No.:	Chemtest Sample ID.:				1158644	1158645	1158646	1158647
	Client Sample ID.:				CP1	CP2	CP2	CP3
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.30	0.30	0.80	0.30
	Date Sampled:				01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021
	Asbestos Lab:				COVENTRY	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Sec-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	< 50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	2.0	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50

Results - Soil

Project: Croft Lane

Client: EnviroSolution	Chemtest Job No.:				21-07844	21-07844	21-07844	21-07844
Quotation No.:	Chemtest Sample ID.:				1158644	1158645	1158646	1158647
	Client Sample ID.:				CP1	CP2	CP2	CP3
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.30	0.30	0.80	0.30
	Date Sampled:				01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021
	Asbestos Lab:				COVENTRY	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD				
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	1.9
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	1.0
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	12	< 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	3.5	1.5	< 0.50	38
Anthracene	U	2790	mg/kg	0.50	0.82	< 0.50	< 0.50	9.9
Carbazole	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	1.8
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	5.6	2.1	< 0.50	55
Pyrene	U	2790	mg/kg	0.50	4.9	1.9	< 0.50	43
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	2.6	1.4	< 0.50	31
Chrysene	U	2790	mg/kg	0.50	2.6	1.4	< 0.50	31
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	1.1	< 0.50	< 0.50	10
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	1.1	< 0.50	< 0.50	9.7
Benzo[a]pyrene	U	2790	mg/kg	0.50	2.7	0.98	< 0.50	27
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	1.4	< 0.50	< 0.50	11

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com

Laboratory:
Unit 4
Rose Lane Industrial Estate
Lenham Heath
Kent ME17 2JN
01622 851176



TEST REPORT

Report No:
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XTE 54377

TEST REPORT OF PLASTICITY INDEX

Method: BS 1377-2:1990 Method 4.4 Liquid Limit One Point
Method: BS 1377-2:1990 Method 5.3 Plastic Limit
Method: BS 1377-2:1990 Method 5.4 Plasticity Index

XTRATEC SAMPLE REF | XTE 54377
CUSTOMER/SITE SAMPLE REF | 531289

CLIENT	DETS Ltd
SITE	Croft Lane
SOIL DESCRIPTION	Grey Clay
SUPPLIER/SOURCE	Insitu
SAMPLING LOCATION	CP1 @ 6.5m
SAMPLING METHOD	Unknown
SAMPLED BY	Client
TYPE OF SAMPLE	Disturbed
DATE SAMPLED	Unknown
DATE RECEIVED	12 March 2021
DATE TESTED	15 March 2021
PREPARATION METHOD	Tested by Wet Sieving

TEST RESULTS	
Percentage Retained 425um (%)	6
Liquid Limit	37
Plastic Limit	20
Plasticity Index	17

REMARKS:

ISSUE TO: DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane, Lenham Heath
Maidstone
ME17 2JN

DATE: 19 March 2021

AUTHORISED BY: A Schofield Quality
Manager

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TEST REPORT

Report No:
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XTE 54377

TEST REPORT OF MOISTURE CONTENT OF SOILS

Method: BS 1377-2:1990, Method 3.2.3.3. Oven Drying

XTRATEC SAMPLE REF | XTE 54377
CUSTOMER/SITE SAMPLE REF | 531289

CLIENT	DETS Ltd
SITE	Croft Lane
TYPE OF MATERIAL	For Classification
SOIL DESCRIPTION	Grey Clay
SPECIFICATION	For Classification
SUPPLIER/SOURCE	Insitu
SAMPLING LOCATION	CP1 @ 6.5m
SAMPLING METHOD	Unknown
SAMPLED BY	Client
TYPE OF SAMPLE	Disturbed
DATE SAMPLED	Unknown
DATE RECEIVED	12 March 2021
DATE TESTED	15 March 2021
PREPARATION METHOD	BS 1377-1. 7.3.5.2 (Sub dividing)

TEST RESULTS	
Moisture Content (%)	23.9

REMARKS:

ISSUE TO: DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane, Lenham Heath
Maidstone
ME17 2JN

DATE: 19 March 2021


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TEST REPORT

Report No:
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XTE 54378

TEST REPORT OF MOISTURE CONTENT OF SOILS

Method: BS 1377-2:1990, Method 3.2.3.3. Oven Drying

XTRATEC SAMPLE REF | XTE 54378
CUSTOMER/SITE SAMPLE REF | 531290

CLIENT	DETS Ltd
SITE	Croft Lane
TYPE OF MATERIAL	For Classification
SOIL DESCRIPTION	Brown, grey Clay
SPECIFICATION	For Classification
SUPPLIER/SOURCE	Insitu
SAMPLING LOCATION	CP1 @ 10m
SAMPLING METHOD	Unknown
SAMPLED BY	Client
TYPE OF SAMPLE	Disturbed
DATE SAMPLED	Unknown
DATE RECEIVED	12 March 2021
DATE TESTED	15 March 2021
PREPARATION METHOD	BS 1377-1. 7.3.5.2 (Sub dividing)

TEST RESULTS	
Moisture Content (%)	14.5

REMARKS:

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Unit 1, Rose Lane Industrial Estate
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Maidstone
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TEST REPORT

Report No:
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XTE 54379

TEST REPORT OF PLASTICITY INDEX

Method: BS 1377-2:1990 Method 4.4 Liquid Limit One Point
Method: BS 1377-2:1990 Method 5.3 Plastic Limit
Method: BS 1377-2:1990 Method 5.4 Plasticity Index

XTRATEC SAMPLE REF | XTE 54379
CUSTOMER/SITE SAMPLE REF | 531291

CLIENT | DETS Ltd
SITE | Croft Lane
SOIL DESCRIPTION | Firm brown stoney Clay
SUPPLIER/SOURCE | Insitu
SAMPLING LOCATION | CP2 @ 2m

SAMPLING METHOD | Unknown
SAMPLED BY | Client
TYPE OF SAMPLE | Disturbed
DATE SAMPLED | Unknown
DATE RECEIVED | 12 March 2021
DATE TESTED | 15 March 2021
PREPARATION METHOD | Tested by Wet Sieving

TEST RESULTS	
Percentage Retained 425um (%)	22
Liquid Limit	31
Plastic Limit	15
Plasticity Index	16

REMARKS:

ISSUE TO: DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane, Lenham Heath
Maidstone
ME17 2JN

DATE: 19 March 2021


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TEST REPORT

Report No:
Page 1 of 1

XTE 54380

TEST REPORT OF MOISTURE CONTENT OF SOILS

Method: BS 1377-2:1990, Method 3.2.3.3. Oven Drying

XTRATEC SAMPLE REF | XTE 54380
CUSTOMER/SITE SAMPLE REF | 531292

CLIENT	DETS Ltd
SITE	Croft Lane
TYPE OF MATERIAL	For Classification
SOIL DESCRIPTION	Wet grey Clay
SPECIFICATION	For Classification
SUPPLIER/SOURCE	Insitu
SAMPLING LOCATION	CP2 @ 6.00m
SAMPLING METHOD	Unknown
SAMPLED BY	Client
TYPE OF SAMPLE	Disturbed
DATE SAMPLED	Unknown
DATE RECEIVED	12 March 2021
DATE TESTED	15 March 2021
PREPARATION METHOD	BS 1377-1. 7.3.5.2 (Sub dividing)

TEST RESULTS	
Moisture Content (%)	26.8

REMARKS:

ISSUE TO: DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane, Lenham Heath
Maidstone
ME17 2JN

DATE: 19 March 2021

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TEST REPORT

Report No:
Page 1 of 1

XTE 54381

TEST REPORT OF MOISTURE CONTENT OF SOILS

Method: BS 1377-2:1990, Method 3.2.3.3. Oven Drying

XTRATEC SAMPLE REF | XTE 54381
CUSTOMER/SITE SAMPLE REF | 531293

CLIENT	DETS Ltd
SITE	Croft Lane
TYPE OF MATERIAL	For Classification
SOIL DESCRIPTION	Wet grey Clay
SPECIFICATION	For Classification
SUPPLIER/SOURCE	Insitu
SAMPLING LOCATION	CP3 @ 6.00m
SAMPLING METHOD	Unknown
SAMPLED BY	Client
TYPE OF SAMPLE	Disturbed
DATE SAMPLED	Unknown
DATE RECEIVED	12 March 2021
DATE TESTED	15 March 2021
PREPARATION METHOD	BS 1377-1. 7.3.5.2 (Sub dividing)

TEST RESULTS	
Moisture Content (%)	22.3

REMARKS:

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Maidstone
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DATE: 19 March 2021

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TEST REPORT

Report No:
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XTE 54382

TEST REPORT OF PLASTICITY INDEX

Method: BS 1377-2:1990 Method 4.4 Liquid Limit One Point
Method: BS 1377-2:1990 Method 5.3 Plastic Limit
Method: BS 1377-2:1990 Method 5.4 Plasticity Index

XTRATEC SAMPLE REF | XTE 54382
CUSTOMER/SITE SAMPLE REF | 531294

CLIENT | DETS Ltd
SITE | Croft Lane
SOIL DESCRIPTION | Grey Clay
SUPPLIER/SOURCE | Insitu
SAMPLING LOCATION | CP3 @ 12.00m

SAMPLING METHOD | Unknown
SAMPLED BY | Client
TYPE OF SAMPLE | Disturbed
DATE SAMPLED | Unknown
DATE RECEIVED | 12 March 2021
DATE TESTED | 15 March 2021
PREPARATION METHOD | Tested by Wet Sieving

TEST RESULTS	
Percentage Retained 425um (%)	17
Liquid Limit	31
Plastic Limit	14
Plasticity Index	17

REMARKS:

ISSUE TO: DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane, Lenham Heath
Maidstone
ME17 2JN

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Tom Craig
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Liverpool Waters
Liverpool
L3 1DL

DETS Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 21-03150

Site Reference: Croft Lane

Project / Job Ref: Croft Lane

Order No: ES100321

Sample Receipt Date: 10/03/2021

Sample Scheduled Date: 12/03/2021

Report Issue Number: 1

Reporting Date: 18/03/2021

Authorised by:

Dave Ashworth
Technical Manager

Dates of laboratory activities for each tested analyte are available upon request.

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



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Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate						
DETS Report No: 21-03150	Date Sampled	None Supplied	None Supplied	None Supplied		
Envirosolution Ltd	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: Croft Lane	TP / BH No	CP1	CP2	CP3		
Project / Job Ref: Croft Lane	Additional Refs	None Supplied	None Supplied	None Supplied		
Order No: ES100321	Depth (m)	2.60	6.00	2.00		
Reporting Date: 18/03/2021	DETS Sample No	531286	531287	531288		

Determinand	Unit	RL	Accreditation				
pH	pH Units	N/a	MCERTS	7.8	7.9	7.6	
Total Sulphate as SO ₄	mg/kg	< 200	MCERTS	243	278	2153	
Total Sulphate as SO ₄	%	< 0.02	MCERTS	0.02	0.03	0.22	
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	35	31	716	
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.04	0.03	0.72	
Total Sulphur	%	< 0.02	NONE	0.06	0.12	0.10	
Ammonium as NH ₄	mg/kg	< 0.5	NONE	2.7	2.5	1.7	
Ammonium as NH ₄	mg/l	< 0.05	NONE	0.27	0.25	0.17	
W/S Chloride (2:1)	mg/kg	< 1	MCERTS	19	44	19	
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS	9.7	22.1	9.7	
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	< 3	MCERTS	< 3	< 3	< 3	
Water Soluble Nitrate (2:1) as NO ₃	mg/l	< 1.5	MCERTS	< 1.5	< 1.5	< 1.5	
W/S Magnesium	mg/l	< 0.1	NONE	1.8	1.6	16	

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 21-03150	
Envirosolution Ltd	
Site Reference: Croft Lane	
Project / Job Ref: Croft Lane	
Order No: ES100321	
Reporting Date: 18/03/2021	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
^ 531286	CP1	None Supplied	2.60	14.4	Brown sandy clay
^ 531287	CP2	None Supplied	6.00	19.7	Brown sandy clay
^ 531288	CP3	None Supplied	2.00	14.9	Brown clay with stones

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{1/5}

Unsuitable Sample ^{U/S}

^ no sampling date provided; unable to confirm if samples are within acceptable holding times



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 21-03150

Envirosolution Ltd

Site Reference: Croft Lane

Project / Job Ref: Croft Lane

Order No: ES100321

Reporting Date: 18/03/2021

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received

Appendix F – Tier 1 Human Health Risk Assessment

Client Sample ID.:				CP1	CP2	CP2	CP3
Sample Type:				SOIL	SOIL	SOIL	SOIL
Top Depth (m):				0.30m	0.30m	0.80m	0.30m
Date Sampled:				01-Mar-2021	01-Mar-2021	01-Mar-2021	01-Mar-2021
Determinand	Units	LOD	GAC				
Moisture	%	0.020		12	8.5	19	11
Heavy Metals							
Arsenic	mg/kg	1.0	37	12	26	12	19
Cadmium	mg/kg	0.10	11	0.25	0.31	0.24	0.49
Chromium	mg/kg	1.0	910	17	15	29	21
Copper	mg/kg	0.50	2400	32	73	45	77
Mercury	mg/kg	0.10	1.2	0.17	0.39	< 0.10	0.14
Nickel	mg/kg	0.50	130	16	29	43	28
Lead	mg/kg	0.50	200	88	110	33	410
Selenium	mg/kg	0.20	250	0.28	< 0.20	0.47	0.28
Zinc	mg/kg	0.50	3700	78	46	74	120
TPH CWG							
Aliphatic TPH >C12-C16	mg/kg	1.0	1100	12	12	< 1.0	10
Aliphatic TPH >C16-C21	mg/kg	1.0	65000	17	16	< 1.0	13
Aliphatic TPH >C21-C35	mg/kg	1.0	65000	160	130	< 1.0	75
Aliphatic TPH >C35-C44	mg/kg	1.0	65000	20	17	< 1.0	8.4
Total Aliphatic Hydrocarbons	mg/kg	5.0		210	170	< 5.0	110
Aromatic TPH >C12-C16	mg/kg	1.0	140	21	23	< 1.0	21
Aromatic TPH >C16-C21	mg/kg	1.0	260	31	30	< 1.0	39
Aromatic TPH >C21-C35	mg/kg	1.0	1100	73	90	< 1.0	130
Aromatic TPH >C35-C44	mg/kg	1.0	1100	900	900	< 1.0	570
Total Aromatic Hydrocarbons	mg/kg	5.0		1000	1000	< 5.0	760
Total Petroleum Hydrocarbons	mg/kg	10.0		1200	1200	< 10	870
SVOCs							
Hexachlorocyclopentadiene	mg/kg	0.50		< 0.50	< 0.50	2.0	< 0.50
Acenaphthene	mg/kg	0.50	210	< 0.50	< 0.50	< 0.50	1.9
Dibenzofuran	mg/kg	0.50		< 0.50	< 0.50	< 0.50	1.0
2-Methyl-4,6-Dinitrophenol	mg/kg	0.50		< 0.50	12	< 0.50	< 0.50
Phenanthrene	mg/kg	0.50	95	3.5	1.5	< 0.50	38
Anthracene	mg/kg	0.50	2400	0.82	< 0.50	< 0.50	9.9
Carbazole	mg/kg	0.50		< 0.50	< 0.50	< 0.50	1.8
Fluoranthene	mg/kg	0.50	280	5.6	2.1	< 0.50	55
Pyrene	mg/kg	0.50	620	4.9	1.9	< 0.50	43
Benzo[a]anthracene	mg/kg	0.50	7.2	2.6	1.4	< 0.50	31
Chrysene	mg/kg	0.50	15	2.6	1.4	< 0.50	31
Benzo[b]fluoranthene	mg/kg	0.50	2.6	1.1	< 0.50	< 0.50	10
Benzo[k]fluoranthene	mg/kg	0.50	77	1.1	< 0.50	< 0.50	9.7
Benzo[a]pyrene	mg/kg	0.50	2.2	2.7	0.98	< 0.50	27
Benzo[g,h,i]perylene	mg/kg	0.50	320	1.4	< 0.50	< 0.50	11
Notes:							
Only those determinands that have been detected at concentrations in excess of LoD have been included in the table							
GAC = Human health generic assessment criteria for residential land use with plant uptake							
	GAC Exceedance						

Appendix G – Controlled Waters Risk Assessment

Sample Location:					CP1	CP2	CP3
Sample Type:					WATER	WATER	WATER
Date Sampled:					12-Mar-2021	12-Mar-2021	12-Mar-2021
Determinand	Units	LOD	UK Drinking Water Standard	Freshwater Long Term			
pH		N/A			7.8	7.9	8.0
Total Hardness as CaCO3	mg/l	15			500	390	120
Heavy Metals							
Arsenic (Dissolved)	µg/l	0.20	10	50	1.8	1.9	0.77
Cadmium (Dissolved)	µg/l	0.12			1.5	0.75	0.15
Chromium (Dissolved)	µg/l	0.50	50		< 0.50	1.4	< 0.50
Copper (Dissolved)	µg/l	0.50	2000	1	1.1	3.6	2.5
Nickel (Dissolved)	µg/l	0.50	20	4	6.6	22	1.9
Lead (Dissolved)	µg/l	0.50	10		1.0	1.4	< 0.50
Selenium (Dissolved)	µg/l	0.50	10		0.63	< 0.50	< 0.50
Zinc (Dissolved)	µg/l	3.0	5000	10.9	200	55	3.9
Notes:							
Only those determinands that have been detected at concentrations in excess of LoD have been included in the table							
	GAC Exceedance (Freshwater EQS)						
	GAC Exceedance (Drinking Water)						
	GAC Exceedance for Drinking Water and Freshwater						

