REPORT ON A PHASE 2 CONTAMINATION ASSESSMENT FOR A PROPOSED RESIDENTIAL DEVELOPMENT AT BULLS BRIDGE FARM, BUMPSTEAD ROAD, HEMPSTEAD, SAFFRON WALDEN, ESSEX, CB10 2PP

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Contents

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1. INTRODUCTION AND OBJECTIVES

1.1 This report has been prepared on instructions given by BRD Tech Ltd (1A Church Street, Sawbridgeworth, Herts, CM21 9AB) on behalf of the Client Mr John Brown of Bulls Bridge Farm.

1.2 The site is located around 7.1 km to the south of Haverhill and 14.7km to the east of Saffron Walden and immediately to the north of the B1054 as shown on Figure 1, Appendix (i). As shown on Figure 2, Appendix (i), the site is irregular in shape and comprises a number of buildings and hardstanding areas. The site is at and around National Grid Reference 566240,239960 and covers an area of around 0.21ha (Reference 1).

1.3 The site has been the subject of a previous desk study as referenced below.

> Compass Geotechnical Limited Report on a Phase 1 Desk Study and Risk Assessment For a Residential Development at Bulls Bridge Farm, Bumpstead Road, Hempstead, Saffron Walden, Essex, CB10 2PP. Report No: 20-2869r dated July 2020.

1.4 Proposals are to demolish most of the existing buildings whilst retaining the barn in the south eastern corner which is to be converted and extended into a dwelling. Two further dwellings are to be built in the northern half of the site with gardens to the north and car parking, an access road and areas of landscaping to the west and south. A plan of the proposed development is included as Figure 3, Appendix (i).

1.5 This report details the findings of an investigation to assess the extent and severity of possible contamination at the site. A geotechnical investigation has also been carried out for the design of foundations for the new dwellings and the findings of this geotechnical investigation are presented in a separate report.

1.6 The aims of the contamination investigation were to:

- Investigate the near surface ground and groundwater conditions in the area of development and take samples of the ground.
- Undertake contamination testing of samples recovered from an intrusive investigation.
- Provide information for the assessment of contamination.
- Assess the nature, extent and severity of any contamination at the site.
- Undertake risk assessments.
- Appraise remedial options.
- Present an interpretative report on the findings.

1.7 The investigation, assessment and reporting has been carried out in general accordance with the following:

BS 5930:2015+A1:2020. Code of Practice for Ground Investigations.
BS EN ISO 14688-1:2018. Geotechnical investigation and testing – Identification and classification of a soil – Part 1: Identification and description.
BS EN ISO 14688-2:2018. Geotechnical investigation and testing – Identification and classification of a soil – Part 2: Principles for a classification.
BS EN ISO 22476-2:2005+A1:2011. Geotechnical investigation and testing – Field testing – Part 2: Dynamic Probing.
BS EN ISO 22476-3:2005+A1:2011. Geotechnical investigation and testing – Field testing – Part 3: Standard Penetration Test.
BS EN ISO 14689:2018. Geotechnical investigation and testing – Identification and classification of rock – Part 1: Identification and description.
BS EN ISO 22475-1:2006. Geotechnical investigation and testing – Sampling methods and groundwater measurements – Part 1: Technical principles for execution.
BS 1377-9:1990. Soils for civil engineering purposes – Part 9 In-situ tests.
BS EN 1997-1:2004+A1:2013 Eurocode 7: Geotechnical design – Part 1: General Rules.
NA to BS EN 1997-1:2004+A1:2013. UK National Annex to Eurocode 7: Geotechnical design – Part 1: General Rules.
BS EN 1997-2:2007. Eurocode 7: Geotechnical design – Part 2: Ground investigation and testing.
NA to BS EN 1997-2:2007. UK National Annex to Eurocode 7: Geotechnical design – Part 2: Ground investigation and testing.
BS 10175:2011+A2:2017. Investigation of Potentially Contaminated Sites – Code of Practice.
BS 8576:2013 Guidance on Investigations for ground gases – Permanent gases and Volatile Organic Compounds (VOCs).
BS 8485:2015 + A1:2109. Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings.
Environment Agency 2010 GPLC3 Reporting Checklists.

2. FINDINGS OF THE DESK STUDY

2.1 The following is based on information contained in the report of Section 1.3.

2.2 The desk study confirmed that a number of barns were present on site since at least 1877. The barns were extended and added to over the years and more recently included self-storage as well as a garage repair workshop and covered open storage area. A bunded steel tank was present in the centre of the site and it is understood that this was used for creosote for the treatment of wood. The existing barn in the south eastern corner, which is to be converted, was used as a glass studio and for storage.

2.3 Published geological information suggests the site is underlain by superficial deposits of the Lowestoft Formation overlying solid deposits of the Lewes Nodular Chalk Formation and Seaford Chalk Formation (undifferentiated).

2.4 The latest Environment Agency groundwater vulnerability maps class the site as of medium vulnerability but the site lies in a Total Catchment (Zone 3) Groundwater Source Protection Zone.

2.5 The desk study and walkover survey at the site had identified some potential sources of contamination associated with the previous uses of the site, parked vehicles, possible made ground and possible ACM fragments as well as the creosote tank. An intrusive investigation was recommended along with check testing for general contaminants and those associated with previous site usage.

2.6 It was assumed that prior to demolition of the buildings that an asbestos survey will be undertaken by a suitably qualified contractor and any asbestos is removed and disposed of in an appropriate and safe manner.

3. SITE RECONNAISANCE

3.1 Some of the buildings, barns and lean to structures at the site had been removed prior to the current investigation. Reference should be made to the Phase 1 Desk Study report for a full description of the site previously. The conditions at the time of the current investigation are detailed below.

The site was accessed via a pair of steel gates on the western boundary along an unmade track to the north of the B1054 Bumpstead Road. Along the northern boundary of the site was a row of storage units of wooden construction with a corrugated steel roof and a wooden barn containing a number of drums of creosote. To the south of the storage units and barn was an area of concrete hardstanding extending over the central portion of the site. At the eastern end the hardstanding sloped down to a lower section close to the eastern boundary and the lean-to which previous covered this section had been removed. To the south east was a large brick barn with double doors, facing Bumpstead Road, which it is understood is to be retained and converted to a dwelling. A second row of storage units, now removed, ran westwards from the western wall of the barn into the central area of the site on the southern side of the concrete hardstanding. A large bunded tank was originally present immediately to the north of the storage units but this had also been removed. It is understood from the site owner that this tank was used for wood treatment (creosote). Debris was noted across the surface of the site including wood, fence panels, cables, occasional small mounds of gravel, and fragments of ACM sheeting.

In the south of the site was a part concrete, part grassed and part gravelled storage area containing two large steel storage containers, a small mound of gravel, a lawn mower, window frames, and other debris including some ACM sheeting fragments.

3.2 The topography of the general area falls in a southerly direction.

3.3 Other than the presence of fragments of ACM sheeting, no evidence of significant contamination was uncovered during the site walkover.

4. SITE WORK

4.1 For this contamination assessment, eight exploratory holes (WS06 to WS13) were drilled by windowless sampling techniques to a maximum depth of 2.0m. Continuous samples were recovered from the full depth of the exploratory holes.

A further five exploratory holes (WS1 to WS5) were carried out at the site to a maximum 6.0m depth primarily for geotechnical purposes. However, where relevant and to enhance siter coverage, samples for contamination testing were recovered from these holes as well as from WS6 to WS13.

4.2 Samples for contamination testing were sealed into amber glass jars to prevent sample deterioration and placed in cool boxes for transport to the laboratory as quickly as possible. All contamination samples were taken in appropriately sized containers and where necessary headspace and storage times were minimized.

4.3 The samples from WS12 were screened using a Photoionisation Detector (PID) as faint odours were noted during examination of the samples. The results are presented in Appendix (iii).

4.4 Fragments of possible asbestos, cementaceous sheeting were noted as present on the surface of the site. Samples of the fragments were recovered in two areas of the site for laboratory assessment (Surface Sample 1 and Surface Sample 2). In addition, a small mound of possible contaminated gravelly material was present in the area of the former creosote tank and a representative sample of this material was recovered for laboratory analysis.

4.5 The site work was undertaken on 5th and 10th January 2022.

4.6 The investigation and sampling strategies were to obtain representative samples of any fill, natural deposits and groundwater, where encountered, and to recover materials for contamination analysis and appraisal. Laboratory testing was undertaken to determine levels and distribution of contaminants. The investigation was in general accordance with the documents of Section 1.7.

4.7 All of the samples were transported to the laboratory for detailed examination and selected samples were programmed for testing.

4.8 Details of the strata encountered in the exploratory holes are given on the windowless sample hole logs presented in Appendix (ii) and the positions of the holes are shown on Figure 2, Appendix (i).

5. LABORATORY WORK

5.1 The following testing was undertaken on samples of the made ground and natural soils encountered to determine possible contamination at the site:

Table 5.1 Summary of Laboratory Contamination Tests

Contamination Test	Number of Tests Surface Samples	Number of Tests Made Ground	Number of Tests Natural Soils
Suite of Heavy Metals		3	3
pH Value		3	3
Speciated PAH		4	2
TPH Banded (C8-C40)		3	3
Semi Volatile Organic Compounds	1	1	2
Phenol	1	1	2
Asbestos Screen		10	
Asbestos Identification	2		

5.2 The contamination test results are presented in Appendix (iii).

5.3 The laboratory testing was undertaken during the period 6th to 21st January 2022.

5.4 The testing was undertaken at a UKAS and MCERTS accredited laboratory.

6. GROUND AND GROUNDWATER CONDITIONS

6.1 Soil Profile

The following discussion takes account of information from both the contamination and geotechnical investigations.

Surface construction comprising concrete was present over much of the central, northern and eastern sections of the site (WS03, WS04 and WS10 to WS13) where the yard and buildings were present. The concrete was up to 0.2m thick.

Beneath the concrete and from ground surface across the remainder of the site, variable made ground was present comprising crushed brick and concrete, clays with various inclusions, chalk and gravel infilled with clay. Reference should be made to the individual exploratory hole logs for a full description of the materials present. The

made ground extended to depths between 0.18 and 1.07m below ground level, but was generally around 0.4 to 0.6m deep. The thickest made ground was present towards the east and north east of the site.

Beneath the made ground natural soils thought to represent the Lowestoft Formation were present. These deposits generally comprised clays and slightly gravelly clays, with occasional thin horizons of sands, which extended to the full depth of the investigation (6.0m bgl).

6.2 Ground Contamination Observations

No visual or olfactory evidence of significant contamination was noted during the investigation. However, some made ground and evidence of possible minor contamination was present at the site and ACM fragments were noted at surface. In particular, some minor odours and slight staining were noted at the base of the made ground in WS12 in the east of the site, and a suspect mound of gravel was sampled near the former creosote tank.

6.3 Groundwater Conditions

Other than in WS02 at 3.0m depth no groundwater seepages were encountered during the investigation.

It should be borne in mind that groundwater conditions can vary with seasonal and other effects and thus at times may be at variance with the conditions noted at the time of the site work.

7. CONTAMINATION ASSESSMENT

7.1 Assessing Contamination

The processes for assessing contamination should be based on the protection of human health, building materials and the environment using the SOURCE-PATHWAY-RECEPTOR concept. The sources, pathways and receptors relevant to the site are identified using a conceptual site model as outlined in Guidance for the Safe Development of Housing on Land Affected by Contamination (Reference 5). Reference is also made to the procedures in the Environment Agency Land Contamination Risk Management (Reference 6), BS 10175:2011+A2:2017 (Reference 4), the Essex Contaminated Land Consortium Document (Reference 39) and the DEFRA Contaminated Land Statutory Guidance (Reference 37). Reference should be made to the original desk study report for full details of the conceptual model.

7.2 Discussion of Results

The results of the contamination testing are discussed in the following sections. Laboratory contamination testing has been carried out on samples of the made ground and natural soils encountered in the investigation as a check on conditions. The soils have been tested for a variety of contaminants and comments are made on the spatial distribution of the contaminants along with an indication of whether the

results are elevated in relation to guideline values. In this instance, as an initial appraisal, the guideline values used are the critical concentrations for a residential end use with consumption of home grown vegetables. Reference should be made to Section 7.3 for a detailed explanation of critical concentrations.

7.2.1 Surface Samples

Fragments of cement sheeting found at surface were screened for asbestos and were found to contain chrysotile.

7.2.2 Made Ground

Made ground was present across the site and some elevated levels of lead and PAHs were reported as indicated in Table 7.1 below.

Table 7.1 Elevated Results Made Ground

Determinand	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Critical Concentration (mg/kg)	Number of Samples Exceeding Critical Concentration
Lead	19	270	200	1/3
Benzo[b]fluoranthene	<0.10	5.5	2.6	2/4
Benzo[a]pyrene	<0.10	4.7	2.2	2
Dibenzo(ah)Anthracene	<0.10	0.85	0.24	2

The full test results for the made ground are discussed and presented in section 7.3.2.

7.2.3 Natural Soils

No elevated levels of contaminants were identified in the natural soils encountered at the site in the samples tested.

The full test results for the natural soils are discussed and presented in section 7.3.3.

7.3 Risk Estimation

Part IIa of the Environmental Protection Act 1990 provides the main regulatory regime for the identification and remediation of contaminated land. However, there is no single methodology covering all aspects of the assessment of potentially contaminated land and groundwater. Therefore, the approach adopted for this investigation is made up of a number of procedures designed to protect human health, building materials and the environment. All of the procedures are based on a risk assessment methodology centred on the identification and analysis of source-pathway-receptor linkages and take account of the procedures outlined in Guidance for the Safe Development of Housing on Land Affected by Contamination (Reference 5). Reference is also made to the procedures in the Environment Agency Land Contamination Risk Management (Reference 6), the Essex Contaminated Land Consortium Document (Reference 39) and the DEFRA Contaminated Land Statutory Guidance (Reference 37).

The sources-pathways and receptors relevant to the site were identified in the desk study along with details of the initial conceptual site model.

To assess potential risks, samples from the site have been analysed for a range of general contaminants based on assessed recent and previous uses. Consideration has also been given to the requirements of Reference 36 for the selection of water supply pipes. However, it should be noted that the desk study and assessments have not highlighted potential sources for some of the contaminants contained in Reference 36. Testing has been carried out on samples from the made ground and natural soils. In accordance with current practice (Reference 5) where sufficient results are available they have been statistically analysed. Where only a few results are available or targeted sampling has been undertaken the results have been compared directly with published critical concentrations. The approach is based on the methodology set out in the CL:AIRE document Profession Guidance: Comparing Soil Contamination Data with a Critical Concentration (Reference 7). The guidance allows examination of the robustness of the data set, the identification of statistical outliers and the use of appropriate statistical techniques based on the distribution of the data set (whether normal or non-normal). The guidance can be used to determine:

Whether land is suitable for a new use under the land use planning system (Planning Scenario).

Or

Whether land falls within the scope of Part 2A of the Environment Protection Act 1990 (Part 2A Scenario).

In this case the Planning Scenario is appropriate as the site is to be developed.

The selection of appropriate critical concentrations of contaminants for the assessment of risks to human health is based on the CLEA guidance (References 8 to 10). This was updated in autumn 2008 and replaces all previous guidance. This most recent guidance allows derivation of Soil Guideline Values (SGVs) based on: generic assumptions about the fate and transport of chemicals in the environment; a generic conceptual model for site conditions and human behaviour to estimate exposure to soil contaminants for those living, working and/or playing on contaminated sites over a long period of time; and Health Criteria Values that represent a tolerable or minimal risk to health from chronic exposure.

The Environment Agency published SGVs for eleven contaminants (References 11 to 32), including mercury and nickel which have now been withdrawn, and was proposing to publish further SGVs during 2010 but has not done so to date. The former guidelines (Reference 33), the recent DEFRA Category 4 Screening Levels (Reference 34) and the recent LQM/CIEH S4ULs (Reference 35) have been used as initial screening values in the following assessments where no new SGVs have been published. The LQM/CIEH Suitable for Use Levels (S4ULs) also include criteria for the eleven contaminants covered by the SGVs but take into account more recent research on

contamination. Site Specific Assessment Criteria (SSAC) and Generic Assessment Criteria (GACs) for individual contaminants can be derived using CLEA v1.07.

The published criteria relate to standard land uses for residential end use (both with and without uptake of vegetables), allotments, commercial/industrial use, and public open space including amenity areas within residential developments and public parks. The residential end use criteria are protective of the health of young children (0 to 6 years) and assume daily exposure to contaminants over a six year period. The commercial/industrial use relates to adults and is for exposure durations based on a standard working week. The proposed development is for a residential end use with private gardens and the relevant guideline values have been used in the following assessments.

7.3.1 Human Health Risk Assessment – Surface Samples

Laboratory testing has confirmed that fragments of asbestos, cementaceous sheeting is present at surface. The presence of asbestos containing materials can pose risks to construction workers and end users. No contamination (SVOC and phenol) was identified in the mound of gravel adjacent to the former creosote tank.

7.3.2 Human Health Risk Assessment – Made Ground

The assessment of possible risks to human health from the soils at the site is based on the 'suitability for use' as described in Section 7.3. Table 7.2 below summarises the outcome of the comparison of the results for heavy metals from the made ground soils. As three samples have been analysed the results have been compared directly with the critical concentrations. The critical concentrations relate to a residential end use with uptake of homegrown produce.

Table 7.2 Comparison of Data for Metals – Made Ground

Determinand	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Critical Concentration (mg/kg)
Arsenic	11	15	37
Cadmium	0.16	0.45	11
Chromium VI	<0.50	<0.50	6
Copper	13	53	2400
Mercury	<0.10	0.22	1.2
Nickel	20	33	180
Lead	19	270	200
Selenium	<0.20	0.36	250
Zinc	37	210	3700
pH	8.3	8.6	

The results indicate elevated concentrations of lead in the made ground in WS13 which may pose risks to end users.

Four samples of the made ground were screened for PAHs and the results are summarised in Table 7.3 below.

Table 7.3 Comparison of Data for PAHs – Made Ground

Determinand	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Critical Concentration (mg/kg)
Naphthalene	<0.10	0.22	2.3
Acenaphthylene	<0.10	0.35	170
Acenaphthene	<0.10	<0.10	210
Fluorene	<0.10	<0.10	170
Phenanthrene	<0.10	19	95
Anthracene	<0.10	3.7	2400
Fluoranthene	<0.10	19	280
Pyrene	<0.10	13	620
Benzo[a]anthracene	<0.10	7.0	7.2
Chrysene	<0.10	5.8	15
Benzo[b]fluoranthene	<0.10	5.5	2.6
Benzo[k]fluoranthene	<0.10	2.5	77
Benzo[a]pyrene	<0.10	4.7	2.2
Indeno(1,2,3-c,d)Pyrene	<0.10	2.5	27
Dibenz(a,h)Anthracene	<0.10	0.85	0.24
Benzo[g,h,i]perylene	<0.10	2	320

The results for the PAHs indicate some elevated levels of a number of the individual congeners in the made ground in WS3 and WS13 which may pose risks to end users.

Three samples of the made ground were screened for TPHs using banded analysis. The results are detailed in Table 7.4 below along with the relevant critical concentrations assuming worst case conditions of a soil organic matter content of 1%.

Table 7.4 Comparison of Data for TPHs – Made Ground

Determinand	WS7 0.0-0.5m mg/kg	WS9 0.3-0.5m mg/kg	WS13 0.2-0.4m mg/kg	Critical Concentration (mg/kg)
TPH >C8-C10	< 1.0	< 1.0	< 1.0	27
TPH >C10-C12	< 1.0	< 1.0	< 1.0	74
TPH >C12-C16	< 1.0	< 1.0	< 1.0	140
TPH >C16-C21	< 1.0	< 1.0	9.2	260
TPH >C21-C35	< 1.0	< 1.0	13	1100
TPH >C35-C40	< 1.0	< 1.0	< 1.0	1100
Hazard Index (HI)	-	-	0.05	

The results from the made ground indicate the presence of some very low concentrations of hydrocarbons in the sample from WS13. None of the results for the individual carbon bands exceed the critical concentrations. In line with good practice, consideration has been given to possible cumulative effects with calculation of the Hazard Index (HI) (Reference 38). As the HI is less than one there are no potential cumulative effects.

A sample from WS3, in the area where it is thought that creosote had been used, was screened for SVOCs and phenol however other than the results for PAHs discussed above no SVOCs or phenols were detected.

Ten samples of made ground were screened for asbestos however, none was found to be present in the ground despite being found on the surface.

7.3.3 Human Health Risk Assessment – Natural Soils

The assessment of possible risks to human health from the soils at the site is based on the 'suitability for use' as described in Section 7.3. Table 7.5 below summarises the outcome of the comparison of the results for heavy metals from the natural ground. As three samples have analysed the results have been compared directly with the critical concentrations.

Table 7.5 Comparison of Data for Metals – Natural Soils

Determinand	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Critical Concentration (mg/kg)
Arsenic	7.8	13	37
Cadmium	<0.10	0.15	11
Chromium VI	<0.50	<0.50	6
Copper	7.4	11	2400
Mercury	<0.10	<0.10	200
Nickel	14	20	1.2
Lead	9.1	21	180
Selenium	<0.20	<0.20	250
Zinc	41	73	3700
pH	8.3	8.5	

None of the individual results for the heavy metals are above the critical concentrations and no risks to end users have been highlighted.

Two samples of the natural soils have been screened for PAHs but only very low concentrations were reported as summarized in Table 7.6 below.

Table 7.6 Comparison of Data for PAHs – Natural Soils

Determinand	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Critical Concentration (mg/kg)
Naphthalene	<0.05	<0.10	2.3
Acenaphthylene	<0.1	<0.10	170
Acenaphthene	<0.1	<0.10	210
Fluorene	<0.1	<0.10	170
Phenanthrene	<0.1	<0.10	95
Anthracene	<0.1	<0.10	2400
Fluoranthene	<0.1	0.18	280
Pyrene	<0.1	0.21	620
Benzo(a)Anthracene	<0.1	<0.10	7.2
Chrysene	<0.1	<0.10	15
Benzo(b)fluoranthene	<0.1	<0.10	2.6
Benzo(k)fluoranthene	<0.1	<0.10	77
Benzo(a)Pyrene	<0.1	<0.10	2.2
Indeno(123-cd)Pyrene	<0.1	<0.10	27
Dibenzo(ah)Anthracene	<0.1	<0.10	0.24
Benzo(ghi)Perylene	<0.1	<0.10	320

The results for the individual PAH congeners do not exceed the critical concentrations and no risks to end users have been identified.

Three samples of the natural soils were screened for TPHs using banded analysis (C8-C40) but none were detected.

Two samples from WS12, where slightly odourous and stained materials were noted, were screened for SVOCs and phenol but none were detected.

7.4 Risk Evaluation

The purpose of the risk evaluation is to assess whether there are any unacceptable risks to potential receptors from contamination at the site. The risk evaluation considers individually the receptors and pathways identified in the original conceptual model and represents a further refinement of the model. The updated conceptual model is discussed in Section 7.5. The contamination testing has not indicated any elevated levels of contamination in the natural soils, but some lead and PAHs are present in the made ground along with a fragment of asbestos cement sheeting at surface.

Table 7.7 Risk Evaluation

Receptor	Risk Evaluation
Site Workers	Risks to site workers are considered to come through direct and indirect contact with contaminated soils either by direct skin contact, inhalation of dust/vapour or ingestion by hand to mouth transfer. In order to minimize risks and in accordance with good practice gloves, boots and overalls should be worn to reduce the risks of skin contact. A high standard of personal hygiene should be maintained on site to reduce risks of hand to mouth transfer.
End Users	Risks to end users usually come from direct contact with the ground, ingestion or inhalation of soil particles/vapour or indirect contact such as ingestion of plants or vegetables grown in contaminated soils. Where the site is to be covered by proposed buildings and other hard cover there is not deemed to be a viable pathway by which end users could come into contact with the underlying soils. However, in garden and soft landscaping areas there is the potential for end users to come into contact with soils. Potential risks to end users have been identified in the made ground at the site and remedial measures are considered necessary (see Section 7.5).
Building Materials	Guidance provided by Anglian Water (Reference 36) based on UKWIR 10/WM/03/21 Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites suggests extensive testing for a wide range of contaminants however, the desk study has not indicated sources for all of the contaminants. The soil testing has found only low concentrations of organic contaminants (PAH and TPH) in the made ground and the results should be forwarded to the water supply company for their comment.
Local Environment	Groundwater resources and surface water can be affected by the migration of contaminants. The Environment Agency web site indicates that the site is in a medium vulnerability area and in a Zone 3 total catchment groundwater source protection zone. Some contamination has been identified in the near surface made ground; there is no evidence of significant migration of contaminants into the underlying natural soils and thus risks to the Local Environment are considered minimal.

7.5 Updated Conceptual Site Model

The investigation carried out has identified the presence of limited contamination, including lead and PAH, in the near surface made ground at the site in WS03 and WS13. No risks were identified in the natural soils at the site, however ACM fragments are present at surface. The updated conceptual model of pollution linkages is detailed in Table 7.8 below.

Table 7.8 Updated Conceptual Model of Pollution Linkages

Sources Potentially Present	Receptors	Pathways	Qualitative Assessment of Risk
Lead and PAH in made ground locally in WS3 and WS13	End Users – On site	Contact with soils, ingestion, dust inhalation in garden and landscape areas. No vapour inhalation	Low to moderate risk in garden/landscaped areas
	Controlled Waters	Migration	Low to Negligible risk
	Buildings/services	Ingress into water supply pipes	Negligible with appropriate selection of water supply pipes
	Construction workers	Contact with soils	Negligible with appropriate PPE and suppression of dust
	End Users – Off Site	Migration	Negligible Risk
Asbestos at surface	End Users – On site	Contact and inhalation	Negligible if removed prior to construction
	Construction workers	Contact, inhalation if disturbed	Negligible with appropriate PPE, safe working practices and asbestos discovery strategy

7.6 Discussion and Remedial Works

Fragments of ACM are present at surface across parts of the site. Prior to any development work the fragments should be identified, removed and disposed of in an appropriate manner by an experienced contractor taking appropriate safety precautions. Checks for any asbestos present in the remaining buildings should also be undertaken prior to demolition.

The presence of locally elevated levels of lead and PAHs in the made ground will require some remedial action to safeguard the health of end users where present in the proposed garden/landscaping areas. It is thought that the area of WS03 is beneath the proposed new dwelling however WS13 lies within an amenity area. It would be considered appropriate to either remove the made ground locally or provide a minimum cover of 0.60m depth of clean inert soil to contaminated soils in the area of WS13. In order to provide an adequate thickness of clean cover it may be necessary to remove volumes of made ground depending on proposed finished ground levels.

Where the made ground is to be covered by buildings or other hard standing no remedial action is deemed necessary.

Once the remaining buildings have been demolished and removed from site and the concrete hard standing and other surface materials removed a further inspection should be undertaken by an experienced geo-environmental engineer to identify any other potential sources of contamination so they may be dealt with in an appropriate manner. As a precaution some further proof testing may be deemed necessary particularly in garden areas in order to justify the existing made ground remaining on site.

Prior to any remedial operations being undertaken a Remediation Method Statement should be drawn up. Any remedial measures undertaken will need to be independently checked and validated to the satisfaction of the Local Authority, NHBC and other statutory bodies. Any remedial works should be independently checked and verified by a suitably experienced Engineer and a validation report drawn up on completion of the work. The remedial works should be inspected and a photographic record made of the work. Any materials imported to site for use as clean cover should be checked and validated prior to use. Records should be kept of materials removed from site for disposal and details included in the validation report. The above investigation constitutes a sport check on conditions only and more severe or unexpected contamination may be present. If further contamination is uncovered during development works this should be reported immediately so appropriate action may be taken.

R. Foord BSc, MSc, MCSM, CGeol, FGS

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GENERAL NOTES

The copyright of this report and other plans and documents prepared by Compass Geotechnical Limited are owned by them. The copyright in the written materials shall remain the property of Compass Geotechnical Limited but with a royalty-free perpetual license to the client deemed to be granted on payment in full to Compass Geotechnical Limited by the client of the outstanding monies.

The report is provided for the sole use of the client and is confidential to them, their professional advisors, no responsibility whatsoever for the contents of the report will be accepted to any person other than the client.

New information, improved practices, changes in legislation, or changes in guidelines from Statutory Bodies may necessitate a re-interpretation of the report in whole or part after its original submission.

The report and/or opinion will be prepared and written for the specific purposes and/or development stated in the document and in relation to the nature and extent of proposals made available to us at the time of writing. The recommendations should not be used for other schemes on or adjacent to the site.

The report is based on the ground conditions encountered in the exploratory holes together with the results of field and laboratory testing in the context of the proposed development. Conditions between exploratory holes have been interpolated, however soil conditions are highly variable and may differ from the interpolation. There may be conditions, appertaining to the site, which may not be revealed by the investigation, and which may not be taken into account in the report.

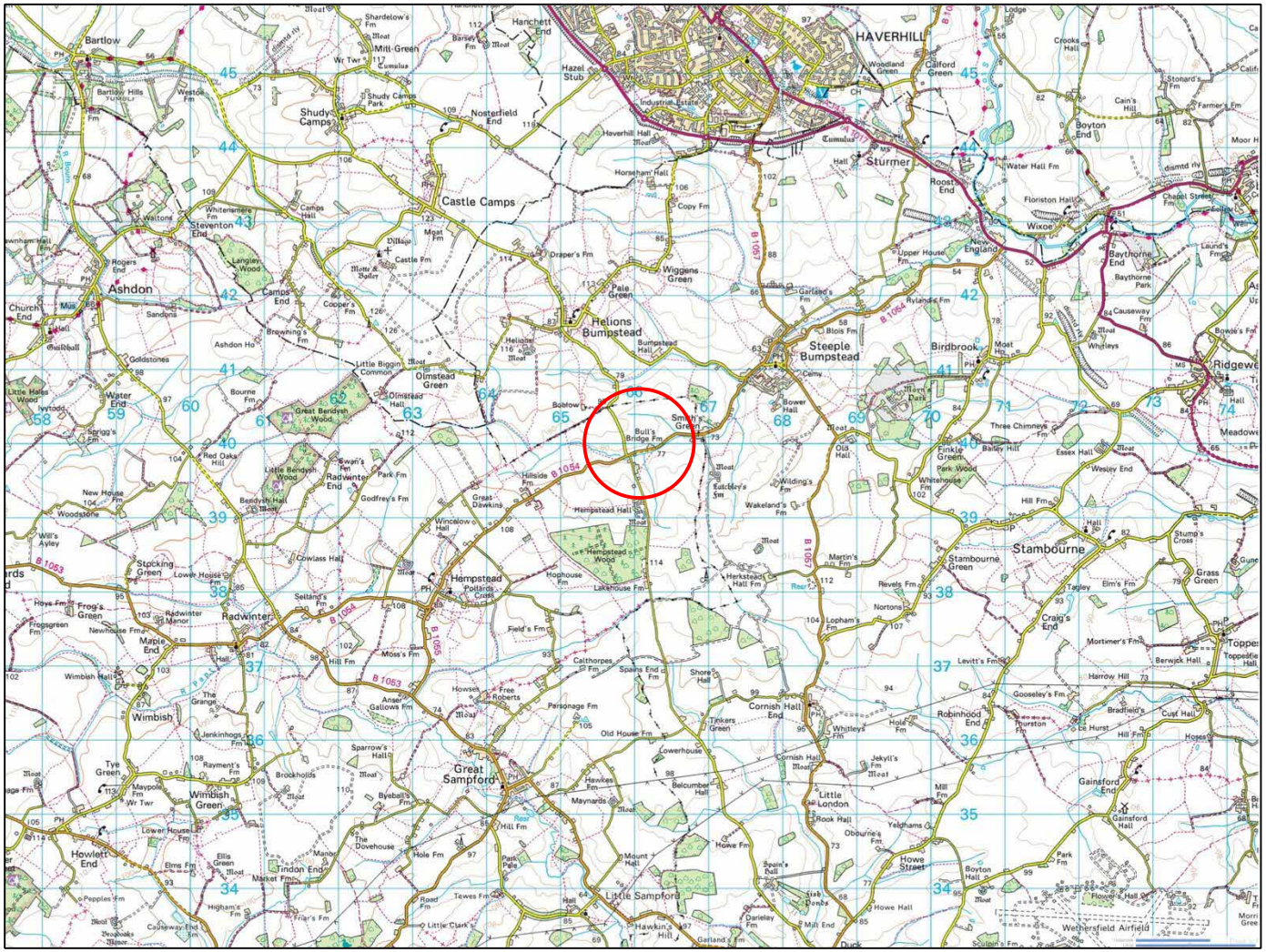
The accuracy of the results reported will depend on the technique of measurement, investigation and test used and these values should not be regarded necessarily as characteristic of the strata as a whole. Where such measurements are critical, the technique of the investigation will need to be reviewed and supplementary investigation undertaken in accordance with the advice of the company where necessary.

The economic viability of the proposal referred to in the report, or of the solutions put forward to any problems encountered, will depend on very many factors in addition to the geotechnical considerations hence its evaluation will be outside the scope of the report.

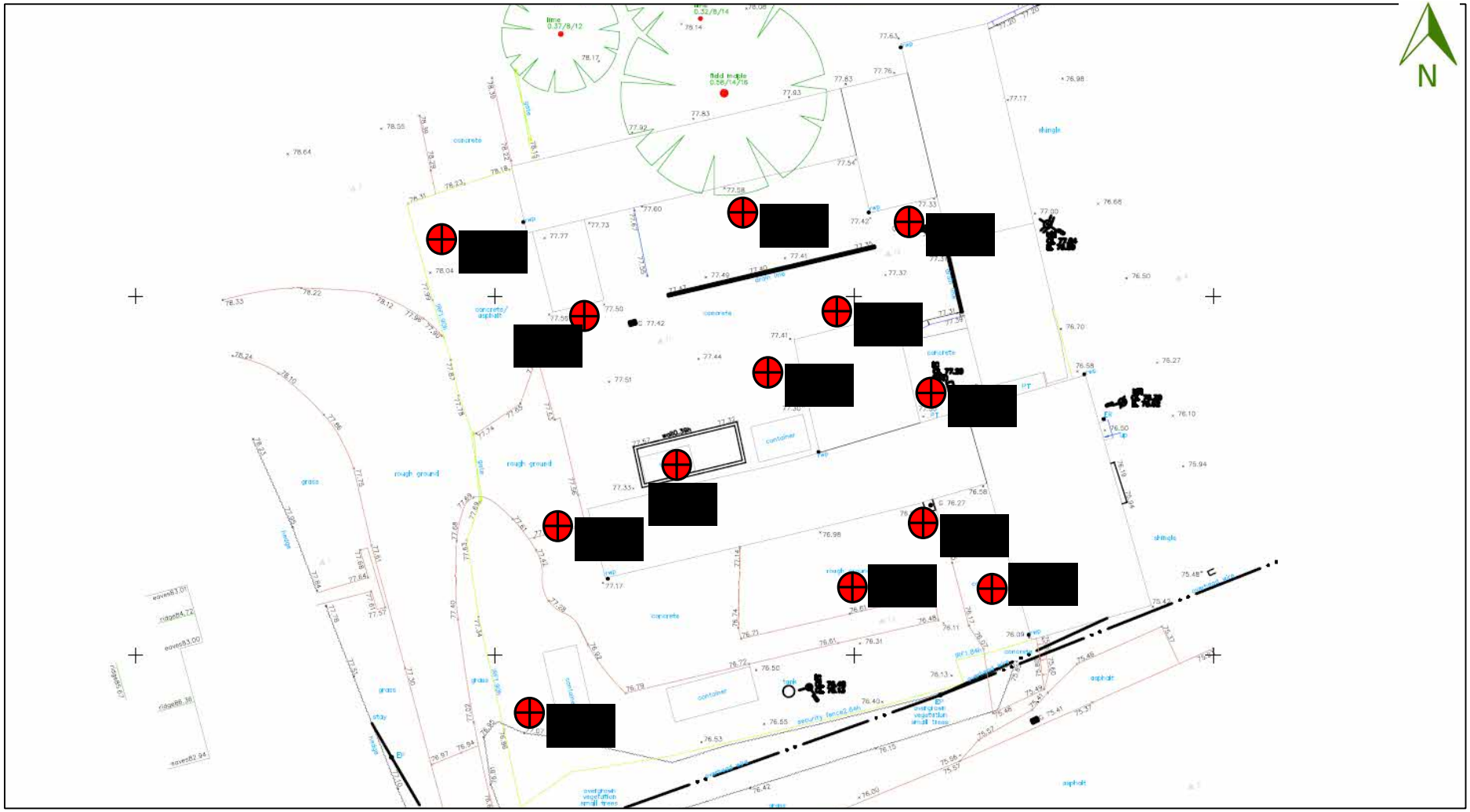
Where any data supplied by the Client or from other sources, including previous site investigations, have been used it has been assumed that the information is correct. No responsibility can be accepted by Compass Geotechnical Limited for inaccuracies in the data supplied by any other party.

The investigation does not include the identification of Japanese Knotweed. Any such survey should be undertaken by a specialist.

Appendix (i)
Figures



Reproduced with the permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office, © Crown Copyright Licence No: AL100034022.	Figure 1	Site Location Plan
	Date	January 2022
	Not to Scale	



Extract from BRD Drawing No: BRD/19/068/001-Existing Site Survey Dated November 2019	Figure 2	Exploratory Hole Plan
	Date	January 2022
	Not to Scale	

Extract from BRD Proposed Site and Location Plan. Drawing No: BRD/19/068/003-A Dated December 2019	Figure 3	Proposed Development Plan
	Date	January 2022
	Not to Scale	

Appendix (ii)
Windowless Sample Hole Logs

Introduction

All sampling and in-situ test methods are carried out in accordance with the relevant British and European standards as referenced below.

Abbreviations Used

Exploratory hole records are presented in graphical format with the use of standard abbreviations as outlined below.

Sampling Method

BH	Borehole
TP	Trial Pit
WS	Windowless Sample Hole
CC	Concrete Cored Hole

Sample Types

D	Disturbed Sample
B	Bulk Sample
ES	Environmental Sample
PID	Sample for total VOC screen
L	Liner Tube Sample
U	Undisturbed Sample
UT	Thin Wall Undisturbed Sample
NR	No Recovery
W	Water Sample
C	Rotary Core

In-Situ Tests

DP	Dynamic Probe Test
CPT	Cone Penetrometer Test
SPT	Standard Penetrometer Test
V	Hand Shear Vane Strength Determination (kPa) – manufacturer's calibration of 1.491 applied to direct reading
V*	Hand Shear Vane Strength Determination (kPa) on excavated block of material

References

BS 5930:2015 + A1:2020 Code of Practice for Ground Investigations

BS 10175:2011+A2:2017 Investigation of Potentially Contaminated Sites – Code of Practice

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BS EN ISO 14688-2:2018 Geotechnical Investigation and Testing – Identification and Classification of Soil: Part 2 Principles of Classification.

BS EN ISO 22475-1:2006 Geotechnical Investigation and Testing – Sampling Methods and Groundwater measurements: Part 1 Technical Principles for Execution.

BS EN ISO 22476-2:2005+A1:2011 Field Testing Part 2: Dynamic Probing.

BS EN ISO 22476-3:2005 + A1:2011 Geotechnical Investigation and Testing – Field Testing: Part 3: Standard Penetration Test.

EUR 26227 EN, 2013 Eurocode 7 Chapter 5 Ground Investigation and Testing.

Samples & In Situ Testing			Strata Details		
Depth (mBGL)	Sample / Test ID	Test Result	Level (mAOD)	Depth (mBGL)	Legend
				0.05	
				0.18	
				1.47	
				2.00	

Samples & In Situ Testing			Strata Details		
Depth (mBGL)	Sample / Test ID	Test Result	Level (mAOD)	Depth (mBGL)	Legend
				0.55	
				0.80	
				1.63	
				2.00	

Samples & In Situ Testing			Strata Details		
Depth (mBGL)	Sample / Test ID	Test Result	Level (mAOD)	Depth (mBGL)	Legend
				0.55	
				1.42	
				2.00	

Samples & In Situ Testing			Strata Details		
Depth (mBGL)	Sample / Test ID	Test Result	Level (mAOD)	Depth (mBGL)	Legend
				0.29	
				0.57	
				1.17	
				2.00	

Samples & In Situ Testing			Strata Details		
Depth (mBGL)	Sample / Test ID	Test Result	Level (mAOD)	Depth (mBGL)	Legend
				0.37	
				1.09	
				2.00	

Samples & In Situ Testing			Strata Details		
Depth (mBGL)	Sample / Test ID	Test Result	Level (mAOD)	Depth (mBGL)	Legend
				0.18	
				0.63	
				1.04	
				1.33	
				2.00	

Samples & In Situ Testing			Strata Details		
Depth (mBGL)	Sample / Test ID	Test Result	Level (mAOD)	Depth (mBGL)	Legend
				0.67	
				2.00	

Samples & In Situ Testing			Strata Details		
Depth (mBGL)	Sample / Test ID	Test Result	Level (mAOD)	Depth (mBGL)	Legend
				0.20	
				0.69	
				1.07	
				2.00	

Appendix (iii)
PID Results

PHOTO IONISATION DETECTION RESULTS

Site	Bulls Bridge Farm			
Date	12th January 2022		Operative	RF
Location	Depth (m)	Peak Reading (ppm)	Residual Reading (ppm)	Comment
WS12	0.5	3.7	3.5	
	0.7-0.8	4.4	4.4	
	1.0-1.2	10.1	9.3	

Figures in bold >100ppm

Appendix (iv)
Laboratory Test Results – Contamination

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
[redacted]

Final Report

Report No.:	22-00514-1
Initial Date of Issue:	14-Jan-2022
Client	Compass Geotechnical Limited
Client Address:	13 Willow Park, Upton Lane Stoke Golding Warwickshire CV13 6EU
Contact(s):	[redacted]
Project	Bulls Bridge Farm
Quotation No.:	Q19-18078
Date Received:	11-Jan-2022
Order No.:	212869
Date Instructed:	11-Jan-2022
No. of Samples:	6
Turnaround (Wkdays):	5
Results Due:	17-Jan-2022
Date Approved:	14-Jan-2022
Approved By:	[redacted]
Details:	Stuart Henderson, Technical Manager

Bulk Identification Certificate

Client: Compass Geotechnical Limited
Site Address:
Date Sampled: 05-Jan-2022
Date Received: 11-Jan-2022

Your Ref.:
Project: Bulls Bridge Farm
Job Number: 22-00514
No Samples:
Date Reported: 14-Jan-2022

Sample No.	Sample ID	Sample Ref.	Description	Top (m)	Bottom (m)	SOP	Accred.	Laboratory	Material	Result
1349402	ES		Surface Sample 1			2185	U	NEW-ASB	Cement	Chrysotile
1349403	ES		Surface Sample 2			2185	U	NEW-ASB	Cement	Chrysotile

The in-house procedure SOP2185 is in accordance with the requirements of Appendix 2 of the Analyst Guide (HSG 248).
The results relate only to items tested as supplied by the client.
Comments and interpretations are beyond the scope of UKAS accreditation.
Samples associated with asbestos in building surveys are retained for six months (HSG 264 refers)

Results - Soil

Project: Bulls Bridge Farm

Client: Compass Geotechnical Limited			**Chemtest Job No.:**		22-00514	22-00514	22-00514	22-00514
Quotation No.: Q19-18078			**Chemtest Sample ID.:**		1349404	1349405	1349406	1349407
			Client Sample ID.:		ES	ES	ES	ES
			Sample Location:		Oil Tank Heap	WS1	WS2	WS3
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):			0.0	0.0	0.2
			Bottom Depth (m):			0.4	0.3	0.25
			Date Sampled:		05-Jan-2022	06-Jan-2022	06-Jan-2022	06-Jan-2022
			Time Sampled:		12:00	12:00	12:00	12:00
			Asbestos Lab:			NEW-ASB	NEW-ASB	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
ACM Type	U	2192		N/A		-	-	
Asbestos Identification	U	2192		N/A		No Asbestos Detected	No Asbestos Detected	
Moisture	N	2030	%	0.020	3.4			4.1
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50			< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50			< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50			< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50			< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50			< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50			< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50			< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50			< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50			< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50			< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50			< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50			< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50			< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50			< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50			< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50			< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50			< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50			< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50			< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50			< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50			< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50			< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50			< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50			< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50			< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50			< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50			< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50			< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50			< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50			< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50			< 0.50

Results - Soil

Project: Bulls Bridge Farm

Client: Compass Geotechnical Limited			**Chemtest Job No.:**		22-00514	22-00514	22-00514	22-00514
Quotation No.: Q19-18078			**Chemtest Sample ID.:**		1349404	1349405	1349406	1349407
			Client Sample ID.:		ES	ES	ES	ES
			Sample Location:		Oil Tank Heap	WS1	WS2	WS3
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):			0.0	0.0	0.2
			Bottom Depth (m):			0.4	0.3	0.25
			Date Sampled:		05-Jan-2022	06-Jan-2022	06-Jan-2022	06-Jan-2022
			Time Sampled:		12:00	12:00	12:00	12:00
			Asbestos Lab:			NEW-ASB	NEW-ASB	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50			< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50			< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50			< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50			< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50			< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50			< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50			< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50			< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50			< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50			< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50			< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50			< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50			< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50			< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50			< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50			19
Anthracene	U	2790	mg/kg	0.50	< 0.50			3.7
Carbazole	U	2790	mg/kg	0.50	< 0.50			2.1
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50			< 0.50
Fluoranthene	U	2790	mg/kg	0.50	1.0			19
Pyrene	U	2790	mg/kg	0.50	0.94			13
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50			< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50			7.0
Chrysene	U	2790	mg/kg	0.50	0.59			5.8
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50			< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50			< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50			5.5
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50			2.1
Benzo[a]pyrene	U	2790	mg/kg	0.50	0.59			4.7
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50			1.7
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50			0.56
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50			1.9
Total Phenols	U	2920	mg/kg	0.10	< 0.10			< 0.10

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
2185	Asbestos	Asbestos	Polarised light microscopy
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical 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 30 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:

[redacted]

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
[redacted]

Final Report

Report No.:	22-01297-1
Initial Date of Issue:	21-Jan-2022
Client	Compass Geotechnical Limited
Client Address:	13 Willow Park, Upton Lane Stoke Golding Warwickshire CV13 6EU
Contact(s):	[redacted]
Project	Bulls Bridge Farm
Quotation No.:	Q19-18078
Date Received:	17-Jan-2022
Order No.:	212869D
Date Instructed:	17-Jan-2022
No. of Samples:	16
Turnaround (Wkdays):	5
Results Due:	21-Jan-2022
Date Approved:	21-Jan-2022
Approved By:	[redacted]
Details:	Stuart Henderson, Technical Manager

Results - Soil

Project: Bulls Bridge Farm

Client: Compass Geotechnical Limited					**Chemtest Job No.:**	22-01297	22-01297	22-01297	22-01297	22-01297	22-01297	22-01297	22-01297
Quotation No.: Q19-18078					**Chemtest Sample ID.:**	1352434	1352435	1352436	1352437	1352438	1352439	1352440	1352441	1352442
					Client Sample ID.:	ES	ES	ES	ES	ES	ES	ES	ES	ES
					Sample Location:	WS4	WS5	WS5	WS6	WS7	WS8	WS8	WS9	WS10
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.25	0.1	0.4	0.2	0.0	0.0	0.6	0.3	0.05
					Bottom Depth (m):	0.4	0.25	0.5	0.3	0.5	0.5	0.7	0.5	0.2
					Date Sampled:	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022
					Time Sampled:	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
					Asbestos Lab:		COVENTRY			COVENTRY	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		No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	16		13	15	14	8.2	17	13		
pH	U	2010		4.0	8.6		8.4							
Arsenic	U	2450	mg/kg	1.0	11		13							
Cadmium	U	2450	mg/kg	0.10	0.19		0.15							
Copper	U	2450	mg/kg	0.50	42		11							
Mercury	U	2450	mg/kg	0.10	0.22		< 0.10							
Nickel	U	2450	mg/kg	0.50	32		20							
Lead	U	2450	mg/kg	0.50	96		21							
Selenium	U	2450	mg/kg	0.20	0.29		< 0.20							
Zinc	U	2450	mg/kg	0.50	80		42							
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		< 0.50							
TPH >C8-C10	N	2670	mg/kg	1.0				< 1.0	< 1.0		< 1.0	< 1.0		
TPH >C10-C12	N	2670	mg/kg	1.0				< 1.0	< 1.0		< 1.0	< 1.0		
TPH >C12-C16	N	2670	mg/kg	1.0				< 1.0	< 1.0		< 1.0	< 1.0		
TPH >C16-C21	N	2670	mg/kg	1.0				< 1.0	< 1.0		< 1.0	< 1.0		
TPH >C21-C35	N	2670	mg/kg	1.0				< 1.0	< 1.0		< 1.0	< 1.0		
TPH >C35-C40	N	2670	mg/kg	1.0				< 1.0	< 1.0		< 1.0	< 1.0		
Total TPH >C8-C40	N	2670	mg/kg	10				< 10	< 10		< 10	< 10		
Naphthalene	U	2700	mg/kg	0.10						< 0.10	< 0.10			
Acenaphthylene	U	2700	mg/kg	0.10						< 0.10	< 0.10			
Acenaphthene	U	2700	mg/kg	0.10						< 0.10	< 0.10			
Fluorene	U	2700	mg/kg	0.10						< 0.10	< 0.10			
Phenanthrene	U	2700	mg/kg	0.10						< 0.10	< 0.10			
Anthracene	U	2700	mg/kg	0.10						< 0.10	< 0.10			
Fluoranthene	U	2700	mg/kg	0.10						0.25	< 0.10			
Pyrene	U	2700	mg/kg	0.10						0.32	< 0.10			
Benzo[a]anthracene	U	2700	mg/kg	0.10						0.16	< 0.10			
Chrysene	U	2700	mg/kg	0.10						0.36	< 0.10			
Benzo[b]fluoranthene	U	2700	mg/kg	0.10						< 0.10	< 0.10			
Benzo[k]fluoranthene	U	2700	mg/kg	0.10						< 0.10	< 0.10			
Benzo[a]pyrene	U	2700	mg/kg	0.10						< 0.10	< 0.10			
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10						< 0.10	< 0.10			

Results - Soil

Project: Bulls Bridge Farm

Client: Compass Geotechnical Limited			**Chemtest Job No.:**		22-01297	22-01297	22-01297	22-01297	22-01297	22-01297	22-01297	22-01297	22-01297
Quotation No.: Q19-18078			**Chemtest Sample ID.:**		1352434	1352435	1352436	1352437	1352438	1352439	1352440	1352441	1352442
			Client Sample ID.:		ES	ES	ES	ES	ES	ES	ES	ES	ES
			Sample Location:		WS4	WS5	WS5	WS6	WS7	WS8	WS8	WS9	WS10
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.25	0.1	0.4	0.2	0.0	0.0	0.6	0.3	0.05
			Bottom Depth (m):		0.4	0.25	0.5	0.3	0.5	0.5	0.7	0.5	0.2
			Date Sampled:		12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022
			Time Sampled:		0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
			Asbestos Lab:			COVENTRY			COVENTRY	COVENTRY		COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10						< 0.10	< 0.10		
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10						< 0.10	< 0.10		
Total Of 16 PAH's	U	2700	mg/kg	2.0						< 2.0	< 2.0		
N-Nitrosodimethylamine	U	2790	mg/kg	0.50									
Phenol	U	2790	mg/kg	0.50									
2-Chlorophenol	U	2790	mg/kg	0.50									
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50									
1,3-Dichlorobenzene	U	2790	mg/kg	0.50									
1,4-Dichlorobenzene	N	2790	mg/kg	0.50									
1,2-Dichlorobenzene	U	2790	mg/kg	0.50									
2-Methylphenol	U	2790	mg/kg	0.50									
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50									
Hexachloroethane	N	2790	mg/kg	0.50									
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50									
4-Methylphenol	U	2790	mg/kg	0.50									
Nitrobenzene	U	2790	mg/kg	0.50									
Isophorone	U	2790	mg/kg	0.50									
2-Nitrophenol	N	2790	mg/kg	0.50									
2,4-Dimethylphenol	N	2790	mg/kg	0.50									
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50									
2,4-Dichlorophenol	U	2790	mg/kg	0.50									
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50									
Naphthalene	U	2790	mg/kg	0.50									
4-Chloroaniline	N	2790	mg/kg	0.50									
Hexachlorobutadiene	U	2790	mg/kg	0.50									
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50									
2-Methylnaphthalene	U	2790	mg/kg	0.50									
4-Nitrophenol	N	2790	mg/kg	0.50									
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50									
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50									
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50									
2-Chloronaphthalene	U	2790	mg/kg	0.50									
2-Nitroaniline	U	2790	mg/kg	0.50									
Acenaphthylene	U	2790	mg/kg	0.50									
Dimethylphthalate	U	2790	mg/kg	0.50									

Results - Soil

Project: Bulls Bridge Farm

Client: Compass Geotechnical Limited					**Chemtest Job No.:**	22-01297	22-01297	22-01297	22-01297	22-01297	22-01297	22-01297	22-01297	22-01297
Quotation No.: Q19-18078					**Chemtest Sample ID.:**	1352434	1352435	1352436	1352437	1352438	1352439	1352440	1352441	1352442
					Client Sample ID.:	ES	ES	ES	ES	ES	ES	ES	ES	ES
					Sample Location:	WS4	WS5	WS5	WS6	WS7	WS8	WS8	WS9	WS10
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.25	0.1	0.4	0.2	0.0	0.0	0.6	0.3	0.05
					Bottom Depth (m):	0.4	0.25	0.5	0.3	0.5	0.5	0.7	0.5	0.2
					Date Sampled:	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022
					Time Sampled:	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
					Asbestos Lab:		COVENTRY			COVENTRY	COVENTRY		COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
2,6-Dinitrotoluene	U	2790	mg/kg	0.50										
Acenaphthene	U	2790	mg/kg	0.50										
3-Nitroaniline	N	2790	mg/kg	0.50										
Dibenzofuran	U	2790	mg/kg	0.50										
4-Chlorophenylphenylether	U	2790	mg/kg	0.50										
2,4-Dinitrotoluene	U	2790	mg/kg	0.50										
Fluorene	U	2790	mg/kg	0.50										
Diethyl Phthalate	U	2790	mg/kg	0.50										
4-Nitroaniline	U	2790	mg/kg	0.50										
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50										
Azobenzene	U	2790	mg/kg	0.50										
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50										
Hexachlorobenzene	U	2790	mg/kg	0.50										
Pentachlorophenol	N	2790	mg/kg	0.50										
Phenanthrene	U	2790	mg/kg	0.50										
Anthracene	U	2790	mg/kg	0.50										
Carbazole	U	2790	mg/kg	0.50										
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50										
Fluoranthene	U	2790	mg/kg	0.50										
Pyrene	U	2790	mg/kg	0.50										
Butylbenzyl Phthalate	U	2790	mg/kg	0.50										
Benzo[a]anthracene	U	2790	mg/kg	0.50										
Chrysene	U	2790	mg/kg	0.50										
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50										
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50										
Benzo[b]fluoranthene	U	2790	mg/kg	0.50										
Benzo[k]fluoranthene	U	2790	mg/kg	0.50										
Benzo[a]pyrene	U	2790	mg/kg	0.50										
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50										
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50										
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50										
Total Phenols	U	2920	mg/kg	0.10										

Results - Soil

Project: Bulls Bridge Farm

Client: Compass Geotechnical Limited			**Chemtest Job No.:**		22-01297	22-01297	22-01297	22-01297	22-01297	22-01297	22-01297
Quotation No.: Q19-18078			**Chemtest Sample ID.:**		1352443	1352444	1352445	1352446	1352447	1352448	1352449
			Client Sample ID.:		ES	ES	ES	ES	ES	ES	ES
			Sample Location:		WS10	WS11	WS11	WS12	WS12	WS12	WS13
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.4	0.12	0.8	0.0	0.7	1.0	0.2
			Bottom Depth (m):		0.45	0.4	0.85	0.60	0.8	1.2	0.4
			Date Sampled:		12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022
			Time Sampled:		0:00	0:00	0:00	0:00	0:00	0:00	0:00
			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
Moisture	N	2030	%	0.020	16		19		17	14	17
pH	U	2010		4.0	8.5		8.3		8.3		8.3
Arsenic	U	2450	mg/kg	1.0	9.7		15		7.8		13
Cadmium	U	2450	mg/kg	0.10	0.12		0.16		< 0.10		0.45
Copper	U	2450	mg/kg	0.50	8.9		13		7.4		53
Mercury	U	2450	mg/kg	0.10	< 0.10		< 0.10		< 0.10		< 0.10
Nickel	U	2450	mg/kg	0.50	19		20		14		33
Lead	U	2450	mg/kg	0.50	14		19		9.1		270
Selenium	U	2450	mg/kg	0.20	< 0.20		< 0.20		< 0.20		0.36
Zinc	U	2450	mg/kg	0.50	41		37		73		210
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		< 0.50		< 0.50		< 0.50
TPH >C8-C10	N	2670	mg/kg	1.0	< 1.0						< 1.0
TPH >C10-C12	N	2670	mg/kg	1.0	< 1.0						< 1.0
TPH >C12-C16	N	2670	mg/kg	1.0	< 1.0						< 1.0
TPH >C16-C21	N	2670	mg/kg	1.0	< 1.0						9.2
TPH >C21-C35	N	2670	mg/kg	1.0	< 1.0						13
TPH >C35-C40	N	2670	mg/kg	1.0	< 1.0						< 1.0
Total TPH >C8-C40	N	2670	mg/kg	10	< 10						23
Naphthalene	U	2700	mg/kg	0.10	< 0.10		< 0.10				0.22
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10		< 0.10				0.35
Acenaphthene	U	2700	mg/kg	0.10	< 0.10		< 0.10				< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10		< 0.10				< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10		< 0.10				0.94
Anthracene	U	2700	mg/kg	0.10	< 0.10		< 0.10				0.30
Fluoranthene	U	2700	mg/kg	0.10	0.18		< 0.10				4.1
Pyrene	U	2700	mg/kg	0.10	0.21		< 0.10				4.2
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10		< 0.10				2.6
Chrysene	U	2700	mg/kg	0.10	< 0.10		< 0.10				3.6
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10		< 0.10				3.8
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10		< 0.10				2.5
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10		< 0.10				3.1
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10		< 0.10				2.5

Results - Soil

Project: Bulls Bridge Farm

Client: Compass Geotechnical Limited			**Chemtest Job No.:**		22-01297	22-01297	22-01297	22-01297	22-01297	22-01297	22-01297
Quotation No.: Q19-18078			**Chemtest Sample ID.:**		1352443	1352444	1352445	1352446	1352447	1352448	1352449
			Client Sample ID.:		ES	ES	ES	ES	ES	ES	ES
			Sample Location:		WS10	WS11	WS11	WS12	WS12	WS12	WS13
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.4	0.12	0.8	0.0	0.7	1.0	0.2
			Bottom Depth (m):		0.45	0.4	0.85	0.60	0.8	1.2	0.4
			Date Sampled:		12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022
			Time Sampled:		0:00	0:00	0:00	0:00	0:00	0:00	0:00
			Asbestos Lab:			COVENTRY		COVENTRY			COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10		< 0.10				0.85
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10		< 0.10				2.0
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0		< 2.0				31
N-Nitrosodimethylamine	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Phenol	U	2790	mg/kg	0.50					< 0.50	< 0.50	
2-Chlorophenol	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50					< 0.50	< 0.50	
1,3-Dichlorobenzene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
1,4-Dichlorobenzene	N	2790	mg/kg	0.50					< 0.50	< 0.50	
1,2-Dichlorobenzene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
2-Methylphenol	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Hexachloroethane	N	2790	mg/kg	0.50					< 0.50	< 0.50	
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50					< 0.50	< 0.50	
4-Methylphenol	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Nitrobenzene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Isophorone	U	2790	mg/kg	0.50					< 0.50	< 0.50	
2-Nitrophenol	N	2790	mg/kg	0.50					< 0.50	< 0.50	
2,4-Dimethylphenol	N	2790	mg/kg	0.50					< 0.50	< 0.50	
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50					< 0.50	< 0.50	
2,4-Dichlorophenol	U	2790	mg/kg	0.50					< 0.50	< 0.50	
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Naphthalene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
4-Chloroaniline	N	2790	mg/kg	0.50					< 0.50	< 0.50	
Hexachlorobutadiene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50					< 0.50	< 0.50	
2-Methylnaphthalene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
4-Nitrophenol	N	2790	mg/kg	0.50					< 0.50	< 0.50	
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50					< 0.50	< 0.50	
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50					< 0.50	< 0.50	
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50					< 0.50	< 0.50	
2-Chloronaphthalene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
2-Nitroaniline	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Acenaphthylene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Dimethylphthalate	U	2790	mg/kg	0.50					< 0.50	< 0.50	

Results - Soil

Project: Bulls Bridge Farm

Client: Compass Geotechnical Limited			**Chemtest Job No.:**		22-01297	22-01297	22-01297	22-01297	22-01297	22-01297	22-01297
Quotation No.: Q19-18078			**Chemtest Sample ID.:**		1352443	1352444	1352445	1352446	1352447	1352448	1352449
			Client Sample ID.:		ES	ES	ES	ES	ES	ES	ES
			Sample Location:		WS10	WS11	WS11	WS12	WS12	WS12	WS13
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.4	0.12	0.8	0.0	0.7	1.0	0.2
			Bottom Depth (m):		0.45	0.4	0.85	0.60	0.8	1.2	0.4
			Date Sampled:		12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022	12-Jan-2022
			Time Sampled:		0:00	0:00	0:00	0:00	0:00	0:00	0:00
			Asbestos Lab:			COVENTRY		COVENTRY			COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
2,6-Dinitrotoluene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Acenaphthene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
3-Nitroaniline	N	2790	mg/kg	0.50					< 0.50	< 0.50	
Dibenzofuran	U	2790	mg/kg	0.50					< 0.50	< 0.50	
4-Chlorophenylphenylether	U	2790	mg/kg	0.50					< 0.50	< 0.50	
2,4-Dinitrotoluene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Fluorene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Diethyl Phthalate	U	2790	mg/kg	0.50					< 0.50	< 0.50	
4-Nitroaniline	U	2790	mg/kg	0.50					< 0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50					< 0.50	< 0.50	
Azobenzene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Hexachlorobenzene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Pentachlorophenol	N	2790	mg/kg	0.50					< 0.50	< 0.50	
Phenanthrene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Anthracene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Carbazole	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Fluoranthene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Pyrene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Butylbenzyl Phthalate	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Benzo[a]anthracene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Chrysene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50					< 0.50	< 0.50	
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Benzo[b]fluoranthene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Benzo[k]fluoranthene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Benzo[a]pyrene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50					< 0.50	< 0.50	
Total Phenols	U	2920	mg/kg	0.10					< 0.10		

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
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
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
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.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting 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
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical 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 30 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:

[redacted]

Compass Geotechnical
Geotechnical, Geoenvironmental and Civil Engineering Consultants
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www.compassgeotechnical.co.uk