H Fraser Consulting
Contaminated Land and Hydrogeology

High Barn

Phase II Site Investigation

Prepared for: Jolliff Developments Ltd
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Version History

Version	Author	Approved by	Issue date	Comment
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CONTENTS

FIGURES

TABLES

APPENDICES

1. INTRODUCTION

Jolliff Developments Ltd (Jolliff Developments) has instructed H Fraser Consulting Ltd (HFCL) to provide a detailed risk assessment report in accordance with planning conditions provided by Horsham District Council (HDC) for residential development at High Barn, Crays Lane, Goose Green RH20 2LR.

1.1 Background

Planning permission (DC/21/2144) has been granted for demolition of an agricultural building and construction of three dwellings at the above property.

Condition 3 is as follows:

Pre-Commencement Condition: No development shall commence until the following components of a scheme to deal with the risks associated with contamination, (including asbestos contamination), of the site be submitted to and approved, in writing, by the local planning authority:

a) *A preliminary risk assessment which has identified:*
   - *all previous uses*
   - *potential contaminants associated with those uses*
   - *a conceptual model of the site indicating sources, pathways and receptors*
   - *potentially unacceptable risks arising from contamination at the site.*

The following aspects (b) - (d) shall be dependent on the outcome of the above preliminary risk assessment (a) and may not necessarily be required.

b) *An intrusive site investigation scheme, based on (a) to provide information for a detailed risk assessment to the degree and nature of the risk posed by any contamination to all receptors that may be affected, including those off site.*

c) *The intrusive site investigation results following (b) and, based on these, a detailed method statement, giving full details of the remediation measures required and how they are to be undertaken.*

d) *A verification plan providing details of the data that will be collected in order to demonstrate that the works set out in (c) are complete and identifying any requirements for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action where required.*

A Phase 1 preliminary risk assessment and intrusive site investigation were undertaken by Your Environment[1]. Further information was requested by Horsham District Council following these works. Subsequently a further site investigation, designed by HFCL, was procured by Jolliff Developments and undertaken by third parties.

1.2 Objectives

The objectives of the work are to provide a detailed risk assessment report in accordance with part 3b of the planning condition. Based on former land use and soil sample results to date, it is

[1] Your Environment, April 2021. Phase 1: Desktop Study and Preliminary Risk Assessment

anticipated that no further work will be required. However, if contaminants are present and a remediation strategy (3c) and verification plan are required (3d), recommendations will be made accordingly.

1.3 Scope of works

The following works have been undertaken:

- Desk study.

The following scope is included:

- Review of existing information and new soil sample data from a recent site investigation;
- Conceptual model and risk assessment – sources, pathways and receptors identified and soils data compared with thresholds for residential land use and risks assessed; and
- Reporting.

2 BACKGROUND INFORMATION

The site is located approximately 7 km south-south-east of Billingshurst and approximately 13 km north of Worthing. Figure 2.1 shows the site location; Figure 2.2 shows the site layout, including the existing barn and proposed new dwellings.

Figure 2.1: Site location

Contains Ordnance Survey data © Crown copyright and database right 2024

Figure 2.2: Site setting

Contains Ordnance Survey data © Crown copyright and database right 2024

The following information sources have been consulted for this report:

- OS mapping
- Historical mapping
- British Geological Survey (BGS) geological and hydrogeological mapping
- DEFRAs Magic Map application
- Phase 1: Desktop Study and Preliminary Risk Assessment[2]
- Geotechnical Investigation[3]
- Horsham District Council Delegated Applicants Assessment Sheet[4]
- Various survey plans

2.1 Site setting and current use

Site information is summarised from the sources listed above and provided in Table 2.1 below.

Table 2.1: Site information

Item	Description
Site location	The site is located within the village of Goose Green to the east of Pulborough, West Sussex and lies north of Crays Lane and immediately north of Crays Barn1. The site is located approximately 1 km northeast of the village of Thakeham in the Horsham District of West Sussex. It lies approximately 7 km south-south-east of Billingshurst and approximately 13 km north of Worthing.
Site address	High Barn, Crays Lane, Goose Green RH20 2LR.
Grid reference	The site grid reference is TQ11341804 (Easting 511348, Northing 118046)[5]
Site area	The site covers approximately 0.08 ha (800 m^2)[2]
Site description	The site comprises a steel-framed agricultural barn with half-height block walls and timber slat walls above, and a corrugated steel roof. The existing building measures some 38 m x 22 m with a ridge height of c. 5.4 m[4].
Topography	The site is relatively flat and level with an elevation of approximal 30 metres above ordnance datum (m aOD)[6].
Site history	There are no records within 250 m. A further afield record of unspecified disused works was identified 309 m northeast[2]. From 1875 onwards the surrounding area is largely undeveloped and assumed agricultural use.
Current use	The site is currently in agricultural use and is occupied by a large stone-built storage barn with corrugated roofing, potentially asbestos containing materials (PACM) At the time of the Your Environment report, the barn was being used to store agricultural mechanical equipment, as well as some waste products such as old tyres and discarded wood pieces[2]. Mud and grassed

[2] Your Environment, Phase 1: Desktop Study and Preliminary Risk Assessment, April 2021

[3] Your Environment, May 2021. Geotechnical Investigation

[4] Horsham District Council Delegated Applicants Assessment Sheet, Nov 2024

[5] Magic Maps

[6] https://en-gb.topographic-map.com/

Item	Description
	areas are present to the front and rear of the barn and concrete and asphalt located at either end (north and south).
Proposed development	Three detached dwellings are proposed, the largest dwelling would be four bedroom with a double garage and plots 2 and 3 would both be three bedrooms. Parking to plot 1 would be to the rear, and parking for plot 2 and 3 would be in advance of the dwellinghouses accessed via a private access road. The dwellings are large in scale, with offwhite oak horizontal board, reclaimed brick and clay roof tiles. Rooflights would be conservation style. Site boundary treatments would be post and rail fencing and native hedgerows[4].
Surrounding land use	The barn is set adjacent to agricultural land to the east, a small wooded copse to the west, a smaller barn to the north, and converted small commercial units to the south, and a residential barn conversion, part of the original and wider farm site further north of the site, all of which share a single vehicular access into the site off Crays Lane. The building is set some 108 m back from the public highway Crays Lane[4].

2.2 Environmental information

Environmental information pertaining to the site is summarised in Table 2.2 below.

Table 2.2: Environmental information

Item	Description
Geology	There are no superficial deposits present at the site. However, superficial materials logged in May 2021 during the Geotechnical Investigation include reworked topsoil, Made Ground and Clay[3]. The bedrock geology comprises the Weald Clay Formation – Mudstone, described as *"Dark grey thinly-bedded mudstones (shales) and mudstones with subordinate siltstones, fine- to medium-grained sandstones, including calcareous sandstone (e.g. Horsham Stone Member), shelly limestones (the so called "Paludina Limestones") and clay ironstones."*[7]
Mining and quarrying	Your Environment, 2021[1] states that there is one record for surface and underground mineral workings and two records relating to a ceased surface mineral working for sand, identified 475m northeast. Three records of historical mining areas are recoded within 250 m and a sand surface mineral working was identified 293m northeast, named Peacock Lane. There are no records held by the Mining Remediation Authority within 250 m of the site. The site is located in an area with potential to have been affected by historical non-coal mining for sand/building stone. Localised small scale underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered[1].

[7] BGS Geoindex

Item	Description
	There are no records within 250 m for brine extraction or gypsum, tin or clay mining[2].
Radon	The site is located in an area with radon potential of less than 1%[8].
Hydrogeology	The Weald Clay is designated as being unproductive[2].
Groundwater Vulnerability	Groundwater vulnerability is classed as low[5].
Groundwater Source protection zone	The site is not located within a groundwater source protection zone[5] and there are no records within 250 m[2].
Groundwater abstraction	There are no groundwater abstraction licences within 1000 m[2].
Groundwater bodies	The site is not within any groundwater bodies[2].
Hydrology	A tributary to the Lancing Brook is located approximately 170 m to the southeast. A surface water body lies approximately 350 m to the northeast of the site[9]. The Water Framework Directive lists the site as being within the Adur (Hammer pond) river water body catchment[2].
Flood risk	The site lies within Flood Zone 1 which is described as having a very low probability of flooding from rivers and the sea[10].
Surface and potable water abstractions	There are no licensed surface water or potable water abstractions within 1000 m[2].
Environmentally sensitive areas	The site is within an SSSI impact risk zone. There are four records of deciduous woodland Priority Habitat Inventories, located 6m southwest, 200 m west, and 242 m and 246 m east[2].
Visual and cultural designations	There are no records of visual or cultural designations such as areas of outstanding natural beauty, scheduled ancient monuments or listed buildings within 250m of the site[2].
Unexploded Ordnance (UXO)	The site is in an area considered to be at low risk from wartime unexploded ordnance[2].

[8] https://www.ukradon.org/information/ukmaps

[9] Google maps

[10] https://flood-map-for-planning.service.gov.uk/

3 SITE INVESTIGATIONS

3.1 Previous site investigations

A Phase 1 desktop study and preliminary risk assessment[2] was undertaken by Your Environment in April 2021 for Jolliff Developments and recommended that an intrusive contaminated land investigation be undertaken to determine pollution linkages identified during the desk study and quantify the risk to receptors outlined within the conceptual site model.

A geotechnical investigation was undertaken on May 6th 2021 under the supervision of Your Environment[3]. This involved completion of three mini percussive boreholes to a maximum depth of 5.45 m bgl with associated standard penetration tests (SPTs) and laboratory testing for geotechnical parameters and potential contaminants.

The borehole locations are presented on Figure 3.1 below, it should be noted that the locations are known, but it is not clear from the available information which name was given to which location.

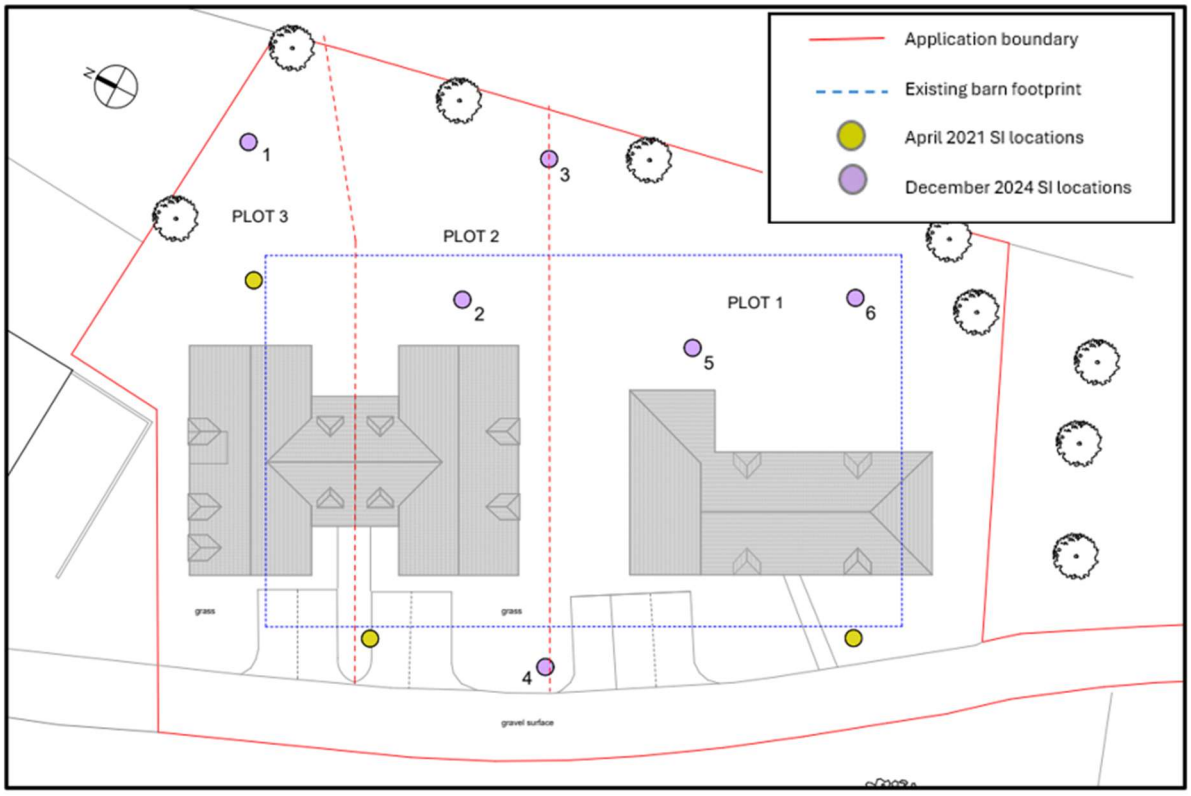

Figure 3.1: Ground testing borehole locations[11]

Ground conditions included reworked topsoil of between 300 mm and 400 mm and Made Ground, comprising either firm very sandy gravelly clay or sandy gravel with variable content of brick and concrete, present to depths of between 0.5 and 0.6 m bgl. This was underlain by soft to firm Clay, becoming firm and stiff with depth; Clay was proved to a depth of 5.45 m bgl[3].

No groundwater was noted. No visual or olfactory evidence of contamination was noted in the soil.

Eight soil samples were submitted for laboratory analysis of: metals / metalloids; total petroleum hydrocarbons (TPH); speciated Polycyclic Aromatic Hydrocarbons (PAH) including the more

[11] New Form Architecture plan

carcinogenic benzo(a)pyrene (BaP) and naphthalene; benzene, toluene, ethylbenzene and m&p xylene (BTEX); Methyl tert butyl ether (MTBE); phenols; soil organic matter (SOM) content; cyanides; pH; sulphates; and asbestos screening.

Results from the investigation were available only in the form of laboratory analysis reports; an interpretative report is not available and therefore laboratory results from this investigation have been analysed with the results from the subsequent site investigation summarised below.

3.2 Subsequent site investigation

A Delegated Applicant assessment sheet[4] issued by Horsham Distcrict Council stated that "*The submitted Phase 1 report lacks appendices and is incomplete for review. The Geotechnical Investigation is based on a previous application and doesn't target areas that will become soft landscaped or garden areas. Missing chemical testing results and a lack of investigation into potential contamination beneath hardstanding areas are concerns. Further site investigations are needed, particularly for contamination risks.*"

A site investigation was procured by Jolliff Developments and undertaken by CK Drilling on 20 December 2024.

3.2.1 Site investigation locations and analysis

Six trial holes were excavated in the locations presented in Figure 3.1; a total of 10 soil samples were taken. The sample locations were chosen to give a good coverage of proposed garden areas, where exposure to soil under the proposed land use will be greatest. This included three locations under the existing floor slab.

The samples were sent under chain of custody for analysis at Normec DETS Limited.

A summary of the sample locations, samples collected and scheduled analysis is presented in Table 3.1 below.

Table 3.1: Sample summary

BH ID	Sample depth (m bgl)	Analysis scheduled
TP01	0.00- 0.50	Metals and metalloids, pH, sulphate, phenols, Speciated PAH, asbestos screen, fraction organic carbon, TPH and VOCs.
TP02	0.00- 0.50	
	0.50-1.20	
TP03	0.00- 0.50	
TP04	0.00- 0.50	
	0.50-1.20	
TP05	0.00- 0.50	
	0.50-1.20	
TP06	0.00- 0.50	
	0.50-1.20	

4 SITE INVESTIGATION OBSERVATIONS AND RESULTS

4.1 Ground conditions

A summary of the ground conditions encountered during the investigation is presented in Table 4.1 below; the drillers geology logs for each borehole location are provided in Appendix A.

Table 4.1: Summary of ground conditions

Geological Unit	Top of layer (m bgl)	Base of layer (m bgl)	Layer thickness (m)	Description
MADE GROUND	0.00	0.10	0.10	Grass topsoil (3 locations) or reinforced concrete (3 locations).
MADE GROUND	0.10	0.30-0.58	0.20-0.48	Includes brown slightly silty clay with small roots, chalk deposits and small pieces of brick and light brown sandy gravely made ground with chalk deposits and small bits of brick
Clay	0.30-0.55	1.20	0.62-0.90	Brown mottled clay

4.2 Visual and olfactory evidence of contamination

There was no visual or olfactory evidence of contamination noted; no groundwater was intercepted.

4.3 Chemical analysis results

Chemical analysis results from the previous site investigation have been included with the results from the most recent investigation. A summary of the soil sample results which were detected above the laboratory limit of detection (LOD) is presented in Table 4.2. The average is calculated using half the LOD for any non-detects. Full results with laboratory certificates are included in Appendix B.

Table 4.2: Soil sample results summary

Analyte	Unit	No. of samples	No. detects	Min	Max	Average
General Inorganics						
pH	pH Units	20	20	5.00	8.40	7.59
Total sulphate	mg/kg	14	14	164.00	1951.00	466.93
Speciated PAHs						
Naphthalene	mg/kg	18	1	0.01	0.05	0.03
Acenaphthene	mg/kg	18	1	0.01	0.05	0.03
Fluorene	mg/kg	18	1	0.01	0.05	0.03
Phenanthrene	mg/kg	18	3	0.01	0.25	0.05
Anthracene	mg/kg	18	2	0.01	0.07	0.04

Analyte	Unit	No. of samples	No. detects	Min	Max	Average
Fluoranthene	mg/kg	18	5	0.01	0.65	0.09
Pyrene	mg/kg	18	6	0.01	0.56	0.09
Benzo(a)anthracene	mg/kg	18	6	0.01	0.42	0.07
Chrysene	mg/kg	18	4	0.02	0.45	0.08
Benzo(b)fluoranthene	mg/kg	18	6	0.01	0.56	0.10
Benzo(k)fluoranthene	mg/kg	18	3	0.01	0.23	0.06
Benzo(a)pyrene	mg/kg	18	6	0.01	0.43	0.08
Indeno(1,2,3-cd)pyrene	mg/kg	18	6	0.01	0.38	0.08
Dibenz(a,h)anthracene	mg/kg	18	5	0.01	0.08	0.04
Benzo(ghi)perylene	mg/kg	18	4	0.01	0.40	0.08

Total PAH

Total EPA-16 PAHs	mg/kg	18	4	0.08	4.48	0.57

Heavy Metals / Metalloids

Arsenic (As)	mg/kg	18	18	9.00	19.00	12.44
Barium (Ba)	mg/kg	10	10	39.00	109.00	55.40
Beryllium (Be)	mg/kg	10	10	0.60	2.30	0.96
Cadmium (Cd)	mg/kg	18	3	0.10	1.00	0.19
Chromium (Cr)	mg/kg	18	18	16.00	69.00	38.61
Copper (Cu)	mg/kg	18	18	8.60	2090.00	135.70
Lead (Pb)	mg/kg	18	18	15.00	466.00	53.94
Nickel (Ni)	mg/kg	18	18	8.00	27.00	14.34
Selenium (Se)	mg/kg	18	8	0.70	1.80	1.08
Vanadium (V)	mg/kg	10	10	27.00	56.00	39.00
Zinc (Zn)	mg/kg	18	18	33.00	350.00	72.17

Petroleum Hydrocarbons

Aliphatic >C16 - C35	mg/kg	18	6	1.50	452.00	47.50
Aromatic >C16 - C21	mg/kg	18	1	0.50	3.00	1.19
Aromatic >C21 - C35	mg/kg	18	3	0.50	17.00	4.00

5 HUMAN HEALTH RISK ASSESSMENT

The Human Health risk assessment has been undertaken in accordance with the Environment Agency's (2009) CLEA Framework, having due regard to the relevant statutory guidance regarding land affected by contamination (Defra, 2012). This approach is consistent with Defra and the Environment Agency's (2011) Model Procedures and more recent Land Contamination Risk Management guidance on gov.uk[12].

Current best practice advocates the following approach to risk assessment:

- Development of the Site conceptual model;
- Selection of appropriate generic screening criteria (GACs), taking into consideration the Site specific pollutant linkages that may be operating;
- Screening of soil (and other media, if relevant) concentrations against GACs;
- Further assessment and development of Site-specific screening levels (SSSLs) if soil concentrations exceed GACs.

The contaminants analysed are compared against Generic Assessment Criteria (GACs); soil concentrations below the GAC are considered to present an acceptable level of risk to human health. The GACs used are Land Quality Management (LQM) / Chartered Institute for Environmental Health (CIEH) 'suitable for use levels' (S4ULs) for residential land use with home grown vegetables and residential land use without home grown veg for 1% soil organic matter (SOM). An S4UL is a soil concentration that represents a minimal risk to long term human health and is derived using an iterative approach based on a modified version of the Environmental Agencies CLEA model.[13] The 1% SOM S4UL was chosen based on the fraction of organic carbon (FOC) concentrations in the soil samples.

5.1 Results

The laboratory results are compared against the GACs and the results that were detected above laboratory detection limit (LOD) are summarised in Table 5.1; laboratory certificates are presented in Appendix B. Where a concentration exceeds the GAC, this is highlighted in bold.

[12] https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm

[13] https://www.envchemgroup.com/human-health-exposure-from-contaminated-land-a-lqmcieh-report.html

Table 5.1: Summary of contaminants of concern against screening values

Analyte	Unit	No. of samples	No. detects	Min	Max	Average	Residential land use with home grown veg 1%SOM	Residential land use without home grown veg 1% SOM
General Inorganics								
pH	pH Units	20	20	5.00	8.40	7.59	N/A	N/A
Total sulphate	mg/kg	14	14	164.0	1951.0	466.93	N/A	N/A
Speciated PAHs								
Naphthalene	mg/kg	18	1	0.01	0.05	0.03	2.3	2.3
Acenaphthene	mg/kg	18	1	0.01	0.05	0.03	210	2900
Fluorene	mg/kg	18	1	0.01	0.05	0.03	170	2800
Phenanthrene	mg/kg	18	3	0.01	0.25	0.05	95	13000
Anthracene	mg/kg	18	2	0.01	0.07	0.04	2400	31000
Fluoranthene	mg/kg	18	5	0.01	0.65	0.09	280	15000
Pyrene	mg/kg	18	6	0.01	0.56	0.09	620	3700
Benzo(a)anthracene	mg/kg	18	6	0.01	0.42	0.07	7.2	11
Chrysene	mg/kg	18	4	0.02	0.45	0.08	15	30
Benzo(b)fluoranthene	mg/kg	18	6	0.01	0.56	0.10	2.6	3.9
Benzo(k)fluoranthene	mg/kg	18	3	0.01	0.23	0.06	77	110
Benzo(a)pyrene	mg/kg	18	6	0.01	0.43	0.08	2.2	3.2
Indeno(1,2,3-cd)pyrene	mg/kg	18	6	0.01	0.38	0.08	27	45
Dibenz(a,h)anthracene	mg/kg	18	5	0.01	0.08	0.04	0.24	0.31
Benzo(ghi)perylene	mg/kg	18	4	0.01	0.40	0.08	320	360
Total PAH								
Total EPA-16 PAHs	mg/kg	18	4	0.08	4.48	0.57	N/A	N/A

Analyte	Unit	No. of samples	No. detects	Min	Max	Average	Residential land use with home grown veg 1%SOM	Residential land use without home grown veg 1% SOM
Heavy Metals / Metalloids								
Arsenic (As)	mg/kg	18	18	9.00	19.00	12.44	37	40
Barium (Ba)	mg/kg	10	10	39.00	109.00	55.40	N/A	1300
Beryllium (Be)	mg/kg	10	10	0.60	**2.30**	0.96	1.7	1.7
Cadmium (Cd)	mg/kg	18	3	0.10	1.00	0.19	11	85
Chromium (Cr)	mg/kg	18	18	16.00	69.00	38.61	910	910
Copper (Cu)	mg/kg	18	18	8.60	2090.00	135.70	2400	7100
Lead (Pb)	mg/kg	18	18	15.00	**466.00**	53.94	200	310
Nickel (Ni)	mg/kg	18	18	8.00	27.00	14.34	130	180
Selenium (Se)	mg/kg	18	8	0.70	1.80	1.08	250	430
Vanadium (V)	mg/kg	10	10	27.00	56.00	39.00	410	1200
Zinc (Zn)	mg/kg	18	18	33.00	350.00	72.17	3700	40000
Petroleum Hydrocarbons								
Aliphatic >C16 - C35	mg/kg	18	6	1.50	452.00	47.50	65000.00	650000
Aromatic >C16 - C21	mg/kg	18	1	0.50	3.00	1.19	260.00	1900
Aromatic >C21 - C35	mg/kg	18	3	0.50	17.00	4.00	1100.00	1900

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5.1.1 pH

The soil pH ranged from 5.0 to 8.4.

5.1.2 Asbestos

No asbestos was detected in any of the soil samples.

5.1.3 Speciated polycyclic aromatic hydrocarbons (PAHs)

All concentrations of speciated PAHs were below the LOD in all the samples taken during December 2024. Concentrations of various PAHs with the exception of Acenaphthylene were detected in all soil samples taken during April 2021 with the exception of WS02 0.4 m and WS03 0.5 m. All concentrations were below GACs.

5.1.4 Metals and metalloids

Concentrations of all metals and metalloids with the exception of boron, hexavalent chromium and mercury were detected in most locations. All concentrations were below the GACs with the exception of beryllium and lead. Beryllium was reported above the GAC in one location, TP04 (0.5-1.2 m) with a concentration of 2.3 mg/kg which is above the S4UL of 1.7 mg/kg. However, the average concentration is 0.96 mg/kg which is below the GAC. Lead was also reported in one location, WS02 (0.4 m) with a concentration of 466 mg/kg which is above the GAC of 200 mg/kg and 310 mg/kg for residential with and without vegetables respectively; the average however was 53.94 mg/kg which is both GACs.

5.1.5 Phenols

All concentrations of total phenols were below the LOD of 2.0 mg/kg in all soil samples.

5.1.6 Total petroleum hydrocarbons (TPH)

All concentrations of TPH were below the LOD with the exception of Aliphatic C16-35 in six of the eight soil samples taken in April 2021 with a maximum concentration of 452 mg/kg. Aromatic TPH fraction C16-C21 was detected in WS03 (0.7 m) at a concentration of 3 mg/kg, and Aromatic TPH fraction >C21 - C35 was detected in WS03 (0.2 m and 0.7 m) and TP01 (0.0-0.5 m) at a maximum concentration of 17 mg/kg. All concentrations were substantially lower than the relevant GACs.

All concentrations of benzene, toluene, ethylbenzene and p&m xylenes (BTEX) and methyl tert-butyl ether (MTBE) were below the LOD of 2 µg/l in all locations.

5.1.7 Volatile organic compounds (VOCs)

All concentrations of VOCs were below the relevant LOD in all locations.

6 CONCEPTUAL MODEL AND RISK ASSESSMENT

For a risk to exist due to land contamination, there needs to be one or more contaminant-pathway-receptor linkages – "contaminant linkage" – by which a relevant receptor might be affected by the contaminants in question. In other words, there must be contaminants present in, on or under the land in a form and quantity that pose a hazard and one or more pathways by which they might impact as receptors. Defra (2012)[14] provides the following definitions:

(a) A contaminant is "*a substance that is in, on or under the land and has the potential to cause harm or to cause pollution of controlled waters*";

(b) A receptor is "*something that could be adversely affected by a contaminant, such as people, an ecological system, property, or a water body*"; and

(c) A pathway is "*a route or means by which a receptor can be exposed to, or affected by, a contaminant*".

The term "contaminant linkage" means the relationship between a contaminant, a pathway, and a receptor. All three elements of a contaminant linkage must exist for there to be a risk to the identified receptor.

The results of the most recent site investigation have been used with the initial conceptual model provided by Your Environment to inform a Generic Quantitative Risk Assessment (GQRA) to include:

- a review of soil data against CIEH/S4UL levels (human health risk assessment),

The results of the risk assessments are summarised within the Source-Pathway- receptor site conceptual model, in Table 6.1 below.

6.1 Potential contaminant linkages

A number of potentially polluting substances, possible exposure routes and potential receptors were initially identified in the Your Environment Phase 1 report. These have been updated in light of the new site investigation information and revised conceptual site model Table 6.1 presents the potential pollutant linkages, the qualitative risk assessment presented by Your Environment, and an updated qualitative risk assessment based on the revised conceptual site model.

6.1.1 Potentially polluting substances

Following the preliminary risk assessment, potential contaminant sources have been redefined and assessed using the findings of the site investigation combined with the laboratory chemical results. The following contaminant sources are considered:

<u>On site</u>

- Made Ground soils on site possibly containing elevated metals, other organics such as TPH, PAH, phenols, VOC and SVOCs.
- Asbestos at/near ground surface in Made Ground soils.
- Ground Gases (CH4, CO2) from on site Made Ground.

[14] Defra and Environment Agency, 2008. Model Procedures for the Management of Land Contamination. CLR11.

Off site

- Historical land uses and activities, Made Ground/infilled material possibly containing elevated metals, other inorganics, TPH, PAH, phenols, VOC and SVOCs.
- Ground Gases (CH4, CO2, H2S) from off site historical landfilling activities.

6.1.2 Possible exposure routes

The following potential pathways for transport of pollutants are identified::

- Ingestion, dermal contact, inhalation of dusts/vapours
- Permeation of water pipes
- Uptake by plants
- Inhalation of fibres in airborne dust
- Gas migration and build up within buildings (explosion/ asphyxiation risk)
- Leaching through soils and migration via groundwater or soil pore moisture

6.1.3 Potential receptors

In the context of the current use and proposed residential land use, the following potential receptors are identified:

- Future end users and site visitors
- Construction Workers
- Controlled Waters (there are no aquifers present; the closest surface water is a tributary of the Lancing Brook, 170 m distant)
- Construction materials and building structures

Note that there are no designated nature sites or habitats close to the site and plants and wildlife are not considered as a receptor.

Table 6.1: Updated CSM and risk assessment

Source	Pathway	Receptor	Initial Assessment	Updated Assessment
On Site: Made Ground soils on site possibly containing elevated metals, other organics such as TPH, PAH, phenols, VOC and SVOCs.	Ingestion, dermal contact, inhalation of dusts/vapours	Future end users and site visitors	Moderate / low	The majority of contaminants were reported to be below LOD. Contaminants above LOD (metals, metalloids, PAHs and TPH) were all below human health screening values with the exception of beryllium and lead in two locations; the averages are below the screening values. **The risk is considered to be low**.
		Construction Workers	Moderate	Suitable measures should be undertaken to protect workers from exposure to potentially contaminated soils during development. **The risk is considered to be low.**
	Leaching through soils and migration via groundwater or soil pore moisture	Controlled Waters (tributary of the Lancing Brook)	Low	The Weald Clay is designated as being unproductive, the groundwater vulnerability is low and the site does not lie within an SPZ. The nearest surface water body is Lancing Brook, located approximately 170 m to the southeast, which is sufficiently distant to be unaffected by the development. **The risk is considered to be low.**

Source	Pathway	Receptor	Initial Assessment	Updated Assessment
	Permeation of water pipes	Construction materials, future end users and site visitors	Moderate / low	The majority of contaminants were reported to be below LOD. Contaminants above LOD (metals, metalloids, PAHs and TPH) were all below human health screening values with the exception of beryllium and lead in two locations; the averages are below the screening values. **The risk is considered to be low.**
On Site: Asbestos at/near ground surface in Made Ground soils.	Inhalation of fibres in airborne dust	Future end users and site visitors	Moderate / low	No asbestos fibres were detected in any of the soil samples. **The risk is considered to be low.**
		Construction Workers	Moderate / low	
On Site: Ground Gases (CH_4, CO_2) from on site Made Ground.	Gas migration and build up within buildings (explosion/ asphyxiation risk)	Future end users and building structures.	Moderate / low	Made Ground at the site was reported to be between 0.1 m and 0.58 m and soil organic matter content to be less that 1%. **The risk is considered to be low.**
Off Site: Historical land uses and activities, Made Ground/infilled material possibly containing elevated metals, other inorganics, TPH, PAH, phenols, VOC and SVOCs.	Leaching through soils and migration via groundwater or soil pore moisture	Future end users and site visitors	Low	No further assessment was undertaken. **The risk is considered to be low.**
	Ingestion, dermal contact, inhalation of dusts/vapours	Future end users and site visitors	Low	No further assessment was undertaken. **The risk is considered to be low.**
Off Site: Ground Gases (CH4, CO_2, H_2S) from off site historical landfilling activities.	Gas migration and build up within buildings (explosion/ asphyxiation risk)	Future end users and building structures.	Low	No further assessment was undertaken. **The risk is considered to be low.**

7 CONCLUSIONS AND RECOMMENDATIONS

Jolliff Developments instructed HFCL to provide a detailed risk assessment report in accordance with planning conditions provided by HDC for the demolition of an agricultural building and construction of three residential dwellings at High Barn, Crays Lane, Goose Green RH20 2LR.

A Phase 1 preliminary risk assessment and intrusive site investigation were undertaken by Your Environment in (2021). Further information was requested by HDC following these works; this included provision of a detailed risk assessment report in accordance with part 3b of the planning conditions. Subsequently a further site investigation, designed by HFCL, was procured by Jolliff Developments and undertaken by third parties.

Six additional sample locations and ten soil samples were taken during December 2024 and assessed alongside the previous three sample locations in the April 2021 SI of which ten soil samples were taken. Contaminants of concern included metals and metalloids, pH, sulphate, phenols, speciated PAH, asbestos screen, fraction of organic carbon, TPH and VOCs.

Potential receptors included future end users and site visitors, construction workers, controlled waters (surface water tributary 170 m distant), and construction materials/building structures.

Topsoil, asphalt or concrete were encountered at the site surface, underlain by Made Ground with a maximum thickness of 0.48 m, underlain by Clay (the Weald Formation). The bedrock geology comprises the Weald Clay Formation which is classed as being unproductive in terms of aquifer status and does not lie within an SPZ; no groundwater was encountered during site investigations and there was no visual or olfactory evidence of contamination.

Concentrations of contaminants in the majority of samples were below laboratory detection limits across the site. Where concentrations of metals, metalloids, PAHs and TPH were reported, these were all below screening levels for residential land use (with and without home grown vegetables), with the exception of beryllium and lead in two locations. Average concentrations were below the screening values, Given the number of samples taken, there is good evidence that average concentrations across the exposure areas are low and that risks to human health are acceptable.

Given the relatively benign historic land use and the results of the previous and recent site investigations, risks to human health and the environment arising from soil contaminants at the site are considered low.

Appropriate health and safety measures should be implemented to protect construction workers during demolition and construction.

No remediation works are deemed necessary with regards to contamination; the site is considered suitable for the proposed future use.

8 REFERENCES

- Your Environment, April 2021. Phase 1: Desktop Study and Preliminary Risk Assessment Report.
- Your Environment, May 2021. Geotechnical Investigation
- Horsham District Council Delegated Applicants Assessment Sheet. Reference DC/24/1268. Dated 11.11.2024
- DEFRA. https://magic.defra.gov.uk/MagicMap.aspx
- https://en-gb.topographic-map.com/
- British Geological Survey. https://www.bgs.ac.uk/map-viewers/geoindex-onshore/
- https://www.ukradon.org/information/ukmaps
- https://Google.com
- https://flood-map-for-planning.service.gov.uk/
- New Form Architecture. Ground Testing Borehole Location Plan. Dated 28.11.24
- https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm
- https://www.envchemgroup.com/human-health-exposure-from-contaminated-land-a-lqmcieh-report.html
- Defra and Environment Agency, 2008. Model Procedures for the Management of Land Contamination. CLR11.

APPENDIX A

Drillers Geology Logs

Job Number:	NFA-037	Borehole No:	TP01	Sheet No	1	Date:	20.12.2024	Rig Number		Hand dug	
Site:	high barn crays lane	SPT Hammer No:	.	Drilling Method	TP	Inspection Pit					
						0.4	m	X	0.4	m to	1.2	m	(depth)
Start of Shift Hole Depth	.	Water Level Depth		Casing Depth (m)		End of shift Hole depth (m)			0		End of shift Water level (m)		

Hole Diameter				Moving		
mm	to (m)	mm	to	From:	To:	Hrs
102		75.00				
87		65.00				
			Borehole Status	Complete		

Strata Information

From Depth m	To Depth m	Soft /stiff /loose /dense, colour, sandy, gravelly etc.Soil Type/ Rock Description
0	0.1	Grass top soil
0.1	0.55	brown slightly silty clay with small roots, chalk deposits and small peices of brick
0.55	1.2	brown motled clay

Samples

Depth from (m)	Depth to (m)	Type	Blows	Rec %	Sample Nr (6 digit)

Insitu tests/SPT blows

Top Depth (mbgl)	Water Level (mbgl)	Casing Depth (mbgl)	SPT Self Weight Pen* mm	Seating drive: Blows (and last penetration if 25 reached)			Main Drive: Blows (and last penetration if 50 blows reached)					
				Blows for 75mm	Blows for 75mm	Last pen mm	Blows for 75mm	Blows for 75mm	Blows for 75mm	Blows for 75mm	Last pen mm	S/C

Daily Groundwater Levels		
Start of shift		0
Strikes	1st	2nd
Struck at		
5 mins		
10 mins		
15 mins		
20 mins		
sealed		

For backfill/install fill out install sheet

CK DRILLING LTD

Chiselling

From	To	Hrs	Reason

Standing / hourly chargeable time

From	To	Hrs	Reason

Remarks (inseret below)

Drillers Signature

EK

Installation Record Sheet

CK DRILLING LTD	**Contract:**	**high barn crays lane**				**Borehole No:**				**TP01**
	Client:	**peter baxters**				**Contract No:**				**NFA-037**
Installation Type:	Install 1					Install 2				
Diameter of installation:										
Installation equipment: (Pie/Inc/VW=tip depth only, standpipes=no tip depth)	**slotted:**	from		to		from		to		
	tip depth:	at				at				
	plain:	from		to		from		to		
Backfill details:	**Cement:**	from		to		from		to		
	Grout:	from		to		from		to		
	Bentonite:	from		to		from		to		
	Sand:	from		to		from		to		
	Gravel:	from		to		from		to		
	Spoil:	from	0	to	1.2	from		to		
Additional equipment	**Type of cover:**									
	Gas tap installed:									
	End cap installed:									
	Geosock Used:									

Installation Date:

20.12.2024

Elevation of pipe above GL:

Water level before installation:

Water level after installation:

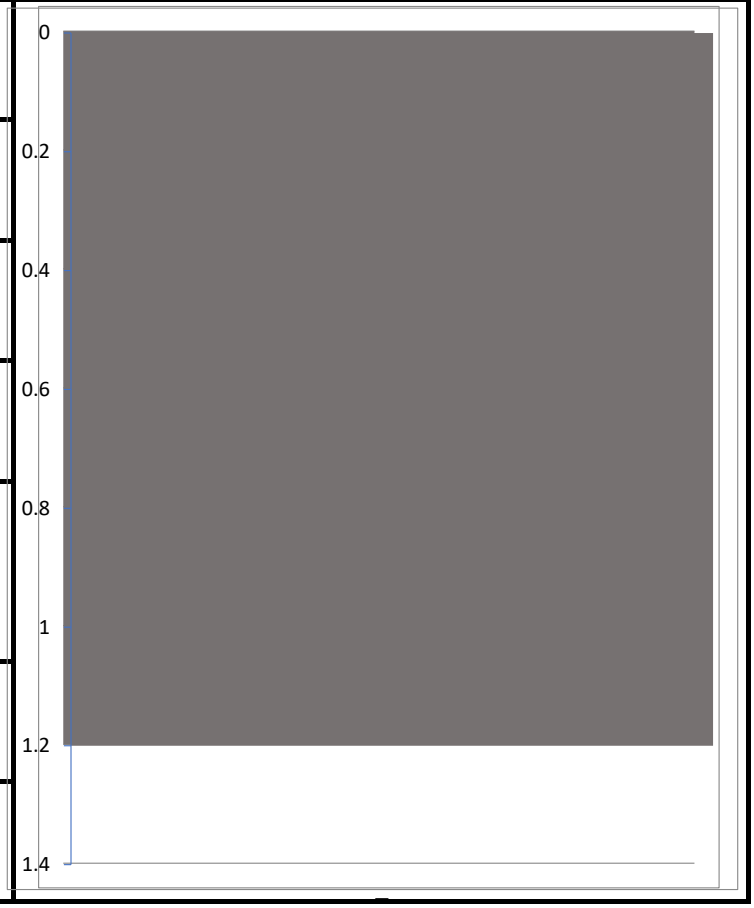
Remarks:

Drillers Name:

Ellis King

Drillers Signature:

EK



Job Number:	NFA-037	Borehole No:	TP02	Sheet No	1	Date:	20.12.2024	Rig Number		Hand dug	
Site:	high barn crays lane	SPT Hammer No:	.	Drilling Method	TP	Inspection Pit					
						0.4	m	X	0.4	m to	1.2	m	(depth)
Start of Shift Hole Depth	.	Water Level Depth		Casing Depth (m)		End of shift Hole depth (m)			0		End of shift Water level (m)		

Hole Diameter				Moving		
mm	to (m)	mm	to	From:	To:	Hrs
102		75.00				
87		65.00				
			Borehole Status	Complete		

Strata Information

From Depth m	To Depth m	Soft /stiff /loose /dense, colour, sandy, gravelly etc.Soil Type/ Rock Description
0	0.1	reinforced concrete
0.1	0.3	light brown sandy gravely made ground with chalf deposits and small bits of brick
0.3	1.2	brown motled clay

Samples

Depth from (m)	Depth to (m)	Type	Blows	Rec %	Sample Nr (6 digit)

Insitu tests/SPT blows

Top Depth (mbgl)	Water Level (mbgl)	Casing Depth (mbgl)	SPT Self Weight Pen* mm	Seating drive: Blows (and last penetration if 25 reached)			Main Drive: Blows (and last penetration if 50 blows reached)					
				Blows for 75mm	Blows for 75mm	Last pen mm	Blows for 75mm	Blows for 75mm	Blows for 75mm	Blows for 75mm	Last pen mm	S/C

Daily Groundwater Levels		
Start of shift		0
Strikes	1st	2nd
Struck at		
5 mins		
10 mins		
15 mins		
20 mins		
sealed		

For backfill/install fill out install sheet

CK DRILLING LTD

Chiselling

From	To	Hrs	Reason

Standing / hourly chargeable time

From	To	Hrs	Reason

Remarks (inseret below)

Drillers Signature

EK

Installation Record Sheet

CK DRILLING LTD	**Contract:**	**high barn crays lane**				**Borehole No:**				**TP02**
	Client:	**peter baxters**				**Contract No:**				**NFA-037**
Installation Type:	Install 1					Install 2				
Diameter of installation:										
Installation equipment: (Pie/Inc/VW=tip depth only, standpipes=no tip depth)	**slotted:**	from		to		from		to		
	tip depth:	at				at				
	plain:	from		to		from		to		
Backfill details:	**Cement:**	from		to		from		to		
	Grout:	from		to		from		to		
	Bentonite:	from		to		from		to		
	Sand:	from		to		from		to		
	Gravel:	from		to		from		to		
	Spoil:	from	0	to	1.2	from		to		
Additional equipment	**Type of cover:**									
	Gas tap installed:									
	End cap installed:									
	Geosock Used:									

Installation Date:

20.12.2024

Elevation of pipe above GL:

Water level before installation:

Water level after installation:

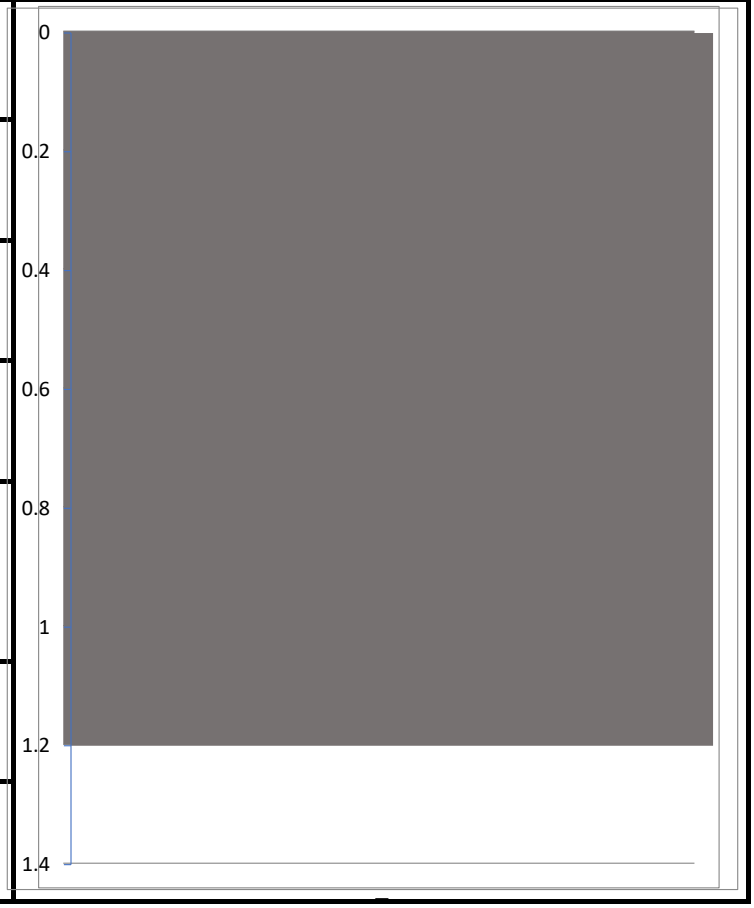
Remarks:

Drillers Name:

Ellis King

Drillers Signature:

EK



Job Number:	NFA-037	Borehole No:	TP03	Sheet No	1	Date:	20.12.2024	Rig Number		Hand dug	
Site:	high barn crays lane	SPT Hammer No:	.	Drilling Method	TP	Inspection Pit					
						0.4	m	X	0.4	m to	1.2	m	(depth)
Start of Shift Hole Depth	.	Water Level Depth		Casing Depth (m)		End of shift Hole depth (m)			0		End of shift Water level (m)		

Hole Diameter				Moving		
mm	to (m)	mm	to	From:	To:	Hrs
102		75.00				
87		65.00				
			Borehole Status	Complete		

Strata Information

From Depth m	To Depth m	Soft /stiff /loose /dense, colour, sandy, gravelly etc.Soil Type/ Rock Description
0	0.1	Grass top soil
0.1	0.58	brown slightly silty clay with small roots, chalk deposits and small peices of brick
0.58	1.2	brown motled clay

Samples

Depth from (m)	Depth to (m)	Type	Blows	Rec %	Sample Nr (6 digit)

Insitu tests/SPT blows

Top Depth (mbgl)	Water Level (mbgl)	Casing Depth (mbgl)	SPT Self Weight Pen* mm	Seating drive: Blows (and last penetration if 25 reached)			Main Drive: Blows (and last penetration if 50 blows reached)					
				Blows for 75mm	Blows for 75mm	Last pen mm	Blows for 75mm	Blows for 75mm	Blows for 75mm	Blows for 75mm	Last pen mm	S/C

Daily Groundwater Levels		
Start of shift		0
Strikes	1st	2nd
Struck at		
5 mins		
10 mins		
15 mins		
20 mins		
sealed		

For backfill/install fill out install sheet

CK DRILLING LTD

Chiselling

From	To	Hrs	Reason

Standing / hourly chargeable time

From	To	Hrs	Reason

Remarks (inseret below)

Drillers Signature

EK

Installation Record Sheet

CK DRILLING LTD	**Contract:**	**high barn crays lane**				**Borehole No:**				**TP03**
	Client:	**peter baxters**				**Contract No:**				**NFA-037**
Installation Type:	Install 1					Install 2				
Diameter of installation:										
Installation equipment: (Pie/Inc/VW=tip depth only, standpipes=no tip depth)	**slotted:**	from		to		from		to		
	tip depth:	at				at				
	plain:	from		to		from		to		
Backfill details:	**Cement:**	from		to		from		to		
	Grout:	from		to		from		to		
	Bentonite:	from		to		from		to		
	Sand:	from		to		from		to		
	Gravel:	from		to		from		to		
	Spoil:	from	0	to	1.2	from		to		
Additional equipment	**Type of cover:**									
	Gas tap installed:									
	End cap installed:									
	Geosock Used:									

Installation Date:

20.12.2024

Elevation of pipe above GL:

Water level before installation:

Water level after installation:

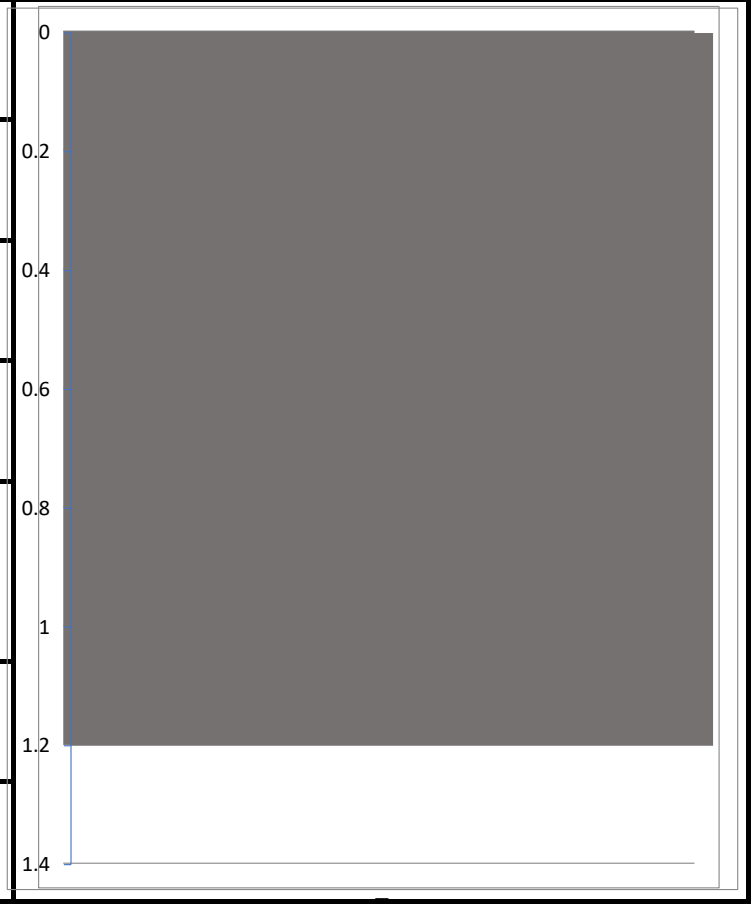
Remarks:

Drillers Name:

Ellis King

Drillers Signature:

EK



Job Number:	NFA-037	Borehole No:	TP04	Sheet No	1	Date:	20.12.2024	Rig Number		Hand dug	
Site:	high barn crays lane	SPT Hammer No:	.	Drilling Method	TP	Inspection Pit					
						0.4	m	X	0.4	m to	1.2	m	(depth)
Start of Shift Hole Depth	.	Water Level Depth		Casing Depth (m)		End of shift Hole depth (m)			0		End of shift Water level (m)		

Hole Diameter				Moving		
mm`	to (m)	mm	to	From:	To:	Hrs
102		75.00				
87		65.00				
			Borehole Status	Complete		

Strata Information

From Depth m	To Depth m	Soft /stiff /loose /dense, colour, sandy, gravelly etc.Soil Type/ Rock Description
0	0.1	grass top soil
0.1	0.4	light brown sandy gravely made ground with chalf deposits small bits of brick
0.4	1.2	brown motled clay with roots

Samples

Depth from (m)	Depth to (m)	Type	Blows	Rec %	Sample Nr (6 digit)

Insitu tests/SPT blows

Top Depth (mbgl)	Water Level (mbgl)	Casing Depth (mbgl)	SPT Self Weight Pen* mm	Seating drive: Blows (and last penetration if 25 reached)			Main Drive: Blows (and last penetration if 50 blows reached)					
				Blows for 75mm	Blows for 75mm	Last pen mm	Blows for 75mm	Blows for 75mm	Blows for 75mm	Blows for 75mm	Last pen mm	S/C

Daily Groundwater Levels		
Start of shift		0
Strikes	1st	2nd
Struck at		
5 mins		
10 mins		
15 mins		
20 mins		
sealed		

For backfill/install fill out install sheet

CK DRILLING LTD

Chiselling

From	To	Hrs	Reason

Standing / hourly chargeable time

From	To	Hrs	Reason

Remarks (inseret below)

Drillers Signature

EK

Installation Record Sheet

CK DRILLING LTD	**Contract:**	**high barn crays lane**				**Borehole No:**				**TP04**
	Client:	**peter baxters**				**Contract No:**				**NFA-037**
Installation Type:	Install 1					Install 2				
Diameter of installation:										
Installation equipment: (Pie/Inc/VW=tip depth only, standpipes=no tip depth)	**slotted:**	from		to		from		to		
	tip depth:	at				at				
	plain:	from		to		from		to		
Backfill details:	**Cement:**	from		to		from		to		
	Grout:	from		to		from		to		
	Bentonite:	from		to		from		to		
	Sand:	from		to		from		to		
	Gravel:	from		to		from		to		
	Spoil:	from	0	to	1.2	from		to		
Additional equipment	**Type of cover:**									
	Gas tap installed:									
	End cap installed:									
	Geosock Used:									

Installation Date:

20.12.2024

Elevation of pipe above GL:

Water level before installation:

Water level after installation:

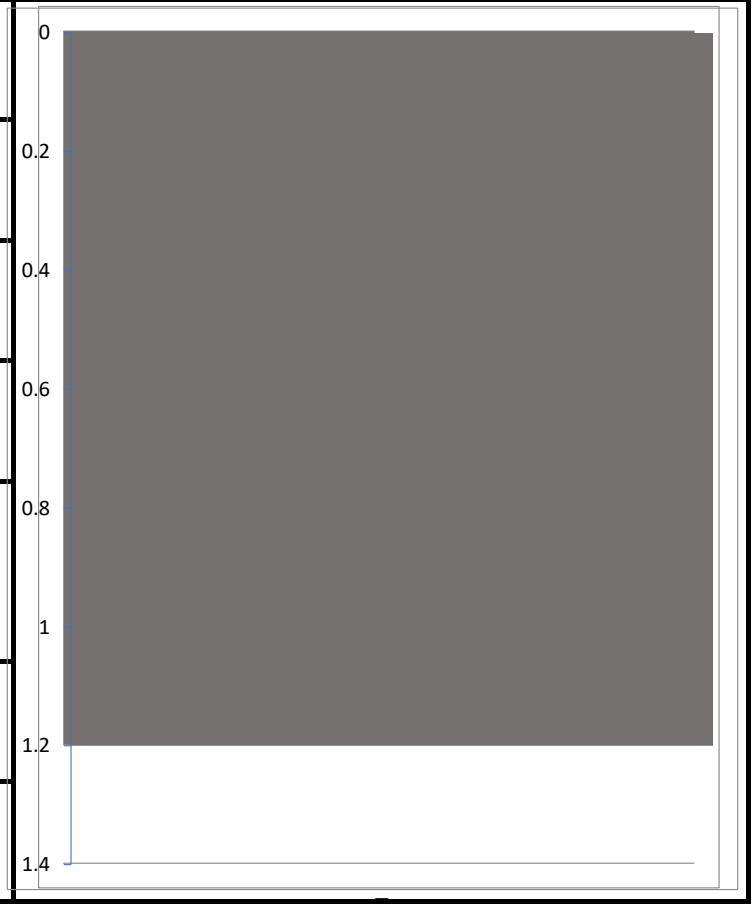
Remarks:

Drillers Name:

Ellis King

Drillers Signature:

EK



Job Number:	NFA-037	Borehole No:	TP05	Sheet No	1	Date:	20.12.2024	Rig Number		Hand dug	
Site:	high barn crays lane	SPT Hammer No:	.	Drilling Method	TP	Inspection Pit					
						0.4	m	X	0.4	m to	1.2 m (depth)
Start of Shift Hole Depth	.	Water Level Depth		Casing Depth (m)		End of shift Hole depth (m)			0		End of shift Water level (m)

Hole Diameter				Moving		
mm	to (m)	mm	to	From:	To:	Hrs
102		75.00				
87		65.00				
			Borehole Status	Complete		

Strata Information

From Depth m	To Depth m	Soft /stiff /loose /dense, colour, sandy, gravelly etc.Soil Type/ Rock Description
0	0.1	reinforced concrete compacted sandy gravels
0.1	0.32	light brown sandy gravely made ground with chalf deposits small bits of brick
0.32	1.2	brown motled clay

Samples

Depth from (m)	Depth to (m)	Type	Blows	Rec %	Sample Nr (6 digit)

Insitu tests/SPT blows

Top Depth (mbgl)	Water Level (mbgl)	Casing Depth (mbgl)	SPT Self Weight Pen* mm	Seating drive: Blows (and last penetration if 25 reached)			Main Drive: Blows (and last penetration if 50 blows reached)					
				Blows for 75mm	Blows for 75mm	Last pen mm	Blows for 75mm	Blows for 75mm	Blows for 75mm	Blows for 75mm	Last pen mm	S/C

Daily Groundwater Levels		
Start of shift		0
Strikes	1st	2nd
Struck at		
5 mins		
10 mins		
15 mins		
20 mins		
sealed		

For backfill/install fill out install sheet

CK DRILLING LTD

Chiselling

From	To	Hrs	Reason

Standing / hourly chargeable time

From	To	Hrs	Reason

Remarks (inseret below)

Drillers Signature

EK

Installation Record Sheet

CK DRILLING LTD	**Contract:**	**high barn crays lane**				**Borehole No:**				**TP05**
	Client:	**peter baxters**				**Contract No:**				**NFA-037**
Installation Type:	Install 1					Install 2				
Diameter of installation:										
Installation equipment: (Pie/Inc/VW=tip depth only, standpipes=no tip depth)	**slotted:**	from		to		from		to		
	tip depth:	at				at				
	plain:	from		to		from		to		
Backfill details:	**Cement:**	from		to		from		to		
	Grout:	from		to		from		to		
	Bentonite:	from		to		from		to		
	Sand:	from		to		from		to		
	Gravel:	from		to		from		to		
	Spoil:	from	0	to	1.2	from		to		
Additional equipment	**Type of cover:**									
	Gas tap installed:									
	End cap installed:									
	Geosock Used:									

Installation Date:

20.12.2024

Elevation of pipe above GL:

Water level before installation:

Water level after installation:

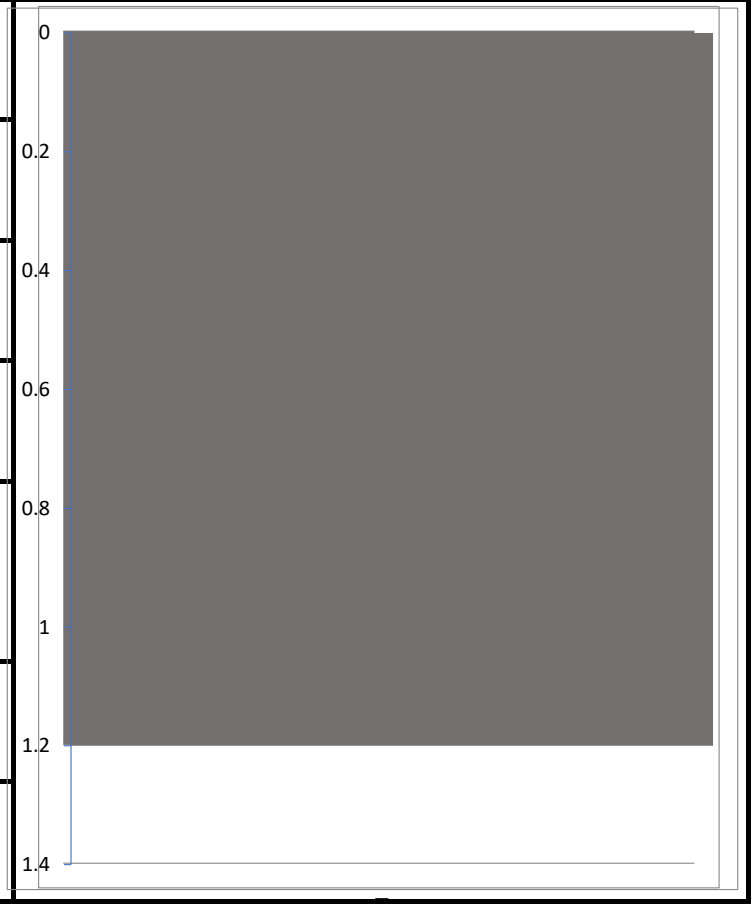
Remarks:

Drillers Name:

Ellis King

Drillers Signature:

EK



Job Number:	NFA-037	Borehole No:	TP06	Sheet No	1	Date:	20.12.2024	Rig Number		Hand dug	
Site:	high barn crays lane	SPT Hammer No:	.	Drilling Method	TP	Inspection Pit					
						0.4	m	X	0.4	m to	1.2	m	(depth)
Start of Shift Hole Depth	.	Water Level Depth		Casing Depth (m)		End of shift Hole depth (m)			0		End of shift Water level (m)		

Hole Diameter				Moving		
mm	to (m)	mm	to	From:	To:	Hrs
102		75.00				
87		65.00				
			Borehole Status	Complete		

Strata Information

From Depth m	To Depth m	Soft /stiff /loose /dense, colour, sandy, gravelly etc.Soil Type/ Rock Description
0	0.1	reinforced concrete
0.1	0.3	light brown sandy gravely made ground with chalf deposits small bits of brick
0.3	1.2	brown motled clay

Samples

Depth from (m)	Depth to (m)	Type	Blows	Rec %	Sample Nr (6 digit)

Insitu tests/SPT blows

Top Depth (mbgl)	Water Level (mbgl)	Casing Depth (mbgl)	SPT Self Weight Pen* mm	Seating drive: Blows (and last penetration if 25 reached)			Main Drive: Blows (and last penetration if 50 blows reached)					
				Blows for 75mm	Blows for 75mm	Last pen mm	Blows for 75mm	Blows for 75mm	Blows for 75mm	Blows for 75mm	Last pen mm	S/C

Daily Groundwater Levels		
Start of shift		0
Strikes	1st	2nd
Struck at		
5 mins		
10 mins		
15 mins		
20 mins		
sealed		

For backfill/install fill out install sheet

CK DRILLING LTD

Chiselling

From	To	Hrs	Reason

Standing / hourly chargeable time

From	To	Hrs	Reason

Remarks (inseret below)

Drillers Signature

EK

Installation Record Sheet

CK DRILLING LTD	**Contract:**	**high barn crays lane**				**Borehole No:**				**TP06**
	Client:	**peter baxters**				**Contract No:**				**NFA-037**
Installation Type:	Install 1					Install 2				
Diameter of installation:										
Installation equipment: (Pie/Inc/VW=tip depth only, standpipes=no tip depth)	**slotted:**	from		to		from		to		
	tip depth:	at				at				
	plain:	from		to		from		to		
Backfill details:	**Cement:**	from		to		from		to		
	Grout:	from		to		from		to		
	Bentonite:	from		to		from		to		
	Sand:	from		to		from		to		
	Gravel:	from		to		from		to		
	Spoil:	from	0	to	1.2	from		to		
Additional equipment	**Type of cover:**									
	Gas tap installed:									
	End cap installed:									
	Geosock Used:									

Installation Date:

20.12.2024

Elevation of pipe above GL:

Water level before installation:

Water level after installation:

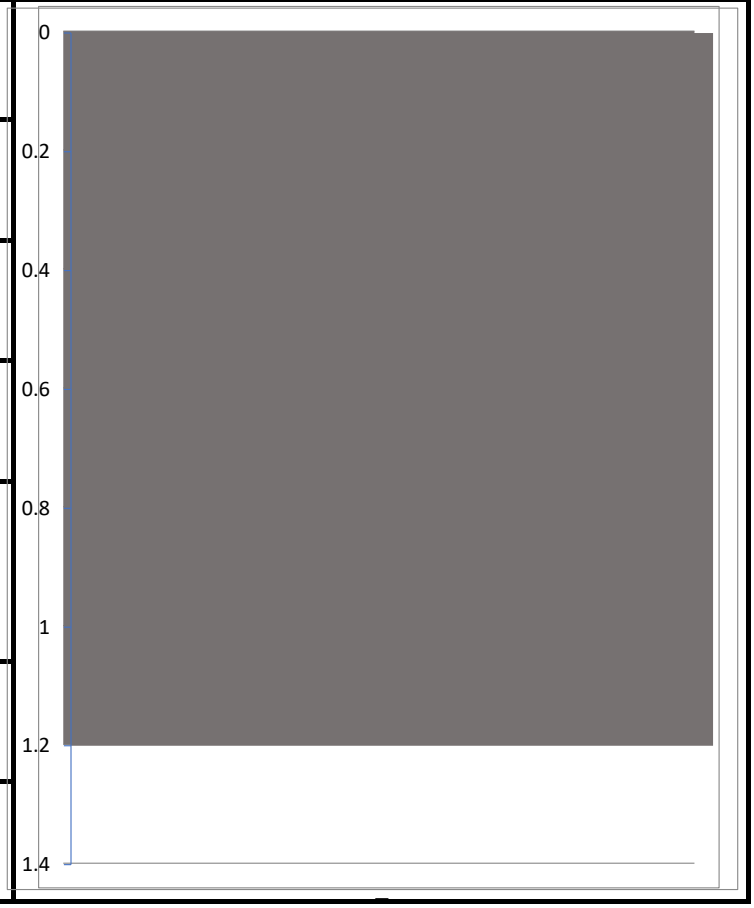
Remarks:

Drillers Name:

Ellis King

Drillers Signature:

EK



APPENDIX B

Laboratory Certificates

ANALYTICAL TEST REPORT

Contract no: 96629

Contract name: High Barn

Client reference: YEX2150

Clients name: YourEnvironment

Clients address: Unit 2 Woodhorn Business Centre
Chichester
West Sussex
PO20 2BX

Samples received: 26 May 2021

Analysis started: 26 May 2021

Analysis completed: 03 June 2021

Report issued: 03 June 2021

Notes:

Opinions and interpretations expressed herein are outside the UKAS accreditation scope.
Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.
All testing carried out at Unit 6 Parkhead, Stanley, DH9 7YB, except for subcontracted testing.
Methods, procedures and performance data are available on request.
Results reported herein relate only to the material supplied to the laboratory.
This report shall not be reproduced except in full, without prior written approval.
Samples will be disposed of 6 weeks from initial receipt unless otherwise instructed.
BTEX compounds are identified by retention time only and may include interference from co-eluting compounds.

Key:

U UKAS accredited test
M MCERTS & UKAS accredited test
$ Test carried out by an approved subcontractor
I/S Insufficient sample to carry out test
N/S Sample not suitable for testing
NAD No Asbestos Detected

Approved by:

Rachael Burton
Customer Support Squad Leader

Chemtech Environmental Limited

SAMPLE INFORMATION

MCERTS (Soils):

Soil descriptions are only intended to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions. MCERTS accreditation applies for sand, clay and loam/topsoil, or combinations of these whether these are derived from naturally occurring soils or from made ground, as long as these materials constitute the major part of the sample. Other materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

All results are reported on a dry basis. Samples dried at no more than 30°C in a drying cabinet.
Analytical results are inclusive of stones.

Lab ref	Sample id	Depth (m)	Sample description	Material removed	% Removed	% Moisture
96629-1	WS01	0.20	Loam with Gravel	-	-	16.7
96629-2	WS01	0.50	Loamy Clay with Gravel	-	-	23.5
96629-3	WS01	0.80	Sandy Clay	-	-	19.3
96629-4	WS01	2.10	Sandy Clay	-	-	15.2
96629-5	WS02	0.40	Sand with Gravel	-	-	4.9
96629-6	WS02	0.60	Sandy Clay with Gravel	-	-	17.0
96629-7	WS03	0.20	Sandy Clay with Roots & Gravel	-	-	13.0
96629-8	WS03	0.50	Sandy Clay with Gravel	-	-	21.8
96629-9	WS03	0.70	Sandy Clay with Gravel	-	-	15.2
96629-10	WS03	1.50	Sandy Clay	-	-	14.9

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SOILS

Lab number			96629-1	96629-2	96629-3	96629-4	96629-5	96629-6
Sample id			WS01	WS01	WS01	WS01	WS02	WS02
Depth (m)			0.20	0.50	0.80	2.10	0.40	0.60
Date sampled			24/05/2021	24/05/2021	24/05/2021	24/05/2021	24/05/2021	24/05/2021
Test	**Method**	**Units**						
Arsenic (total)	CE127 [M]	mg/kg As	16	17	13	-	15	13
Cadmium (total)	CE127 [M]	mg/kg Cd	0.3	1.0	<0.2	-	0.6	<0.2
Chromium (total)	CE127 [M]	mg/kg Cr	45	49	56	-	64	69
Chromium (VI)	CE146	mg/kg CrVI	<1	<1	<1	-	<1	<1
Copper (total)	CE127 [M]	mg/kg Cu	64	2090	24	-	8.6	15
Lead (total)	CE127 [M]	mg/kg Pb	38	150	18	-	466	25
Mercury (total)	CE127 [M]	mg/kg Hg	<0.5	<0.5	<0.5	-	<0.5	<0.5
Nickel (total)	CE127 [M]	mg/kg Ni	15	23	18	-	9.2	16
Selenium (total)	CE127 [M]	mg/kg Se	1.1	0.8	1.3	-	0.7	1.0
Zinc (total)	CE127 [M]	mg/kg Zn	90	350	50	-	90	55
pH	CE004 [M]	units	8.3	8.1	8.0	6.2	8.4	8.0
Sulphate (2:1 water soluble)	CE061	mg/l SO_4	25	56	28	80	128	42
Sulphate (2:1 water soluble)	CE061	g/l SO_4	-	-	0.03	0.08	-	-
Sulphate (total)	CE062	mg/kg SO_4	-	-	164	256	-	-
Sulphate (total)	CE062	% w/w SO_4	-	-	0.02	0.03	-	-
Sulphur (total)	CE119	% w/w S	-	-	0.01	<0.01	-	-
Cyanide (total)	CE077	mg/kg CN	<1	<1	<1	-	<1	<1
Phenols (total)	CE078	mg/kg PhOH	<0.5	<0.5	<0.5	-	<0.5	<0.5
Total Organic Carbon (TOC)	CE197	% w/w C	3.0	4.7	0.5	-	0.7	1.0
Estimate of OMC (calculated from TOC)	CE197	% w/w	5.1	8.1	0.8	-	1.2	1.8
PAH								
Naphthalene	CE087 [M]	mg/kg	<0.02	<0.02	<0.02	-	<0.02	<0.02
Acenaphthylene	CE087 [M]	mg/kg	<0.02	<0.02	<0.02	-	<0.02	<0.02
Acenaphthene	CE087 [M]	mg/kg	<0.02	<0.02	<0.02	-	<0.02	<0.02
Fluorene	CE087 [U]	mg/kg	<0.02	<0.02	<0.02	-	<0.02	<0.02
Phenanthrene	CE087 [M]	mg/kg	0.03	<0.02	<0.02	-	<0.02	<0.02
Anthracene	CE087 [U]	mg/kg	<0.02	<0.02	<0.02	-	<0.02	<0.02
Fluoranthene	CE087 [M]	mg/kg	0.10	0.03	<0.02	-	<0.02	0.03
Pyrene	CE087 [M]	mg/kg	0.09	0.04	0.06	-	<0.02	0.03
Benzo(a)anthracene	CE087 [U]	mg/kg	0.07	0.04	0.03	-	<0.02	0.03
Chrysene	CE087 [M]	mg/kg	0.08	0.03	<0.03	-	<0.03	<0.03
Benzo(b)fluoranthene	CE087 [M]	mg/kg	0.11	0.05	0.03	-	<0.02	0.03
Benzo(k)fluoranthene	CE087 [M]	mg/kg	0.05	<0.03	<0.03	-	<0.03	<0.03
Benzo(a)pyrene	CE087 [U]	mg/kg	0.09	0.05	0.03	-	<0.02	0.02
Indeno(123cd)pyrene	CE087 [M]	mg/kg	0.07	0.08	0.03	-	<0.02	0.02
Dibenz(ah)anthracene	CE087 [M]	mg/kg	<0.02	<0.02	<0.02	-	<0.02	<0.02
Benzo(ghi)perylene	CE087 [M]	mg/kg	0.07	0.12	0.04	-	<0.02	0.02
PAH (total of USEPA 16)	CE087	mg/kg	0.77	0.45	<0.34	-	<0.34	<0.34
BTEX & TPH								
MTBE	CE192 [U]	mg/kg	<0.02	<0.02	<0.02	-	<0.02	<0.02
Benzene	CE192 [U]	mg/kg	<0.01	<0.01	<0.01	-	<0.01	<0.01

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SOILS

Lab number			96629-1	96629-2	96629-3	96629-4	96629-5	96629-6
Sample id			WS01	WS01	WS01	WS01	WS02	WS02
Depth (m)			0.20	0.50	0.80	2.10	0.40	0.60
Date sampled			24/05/2021	24/05/2021	24/05/2021	24/05/2021	24/05/2021	24/05/2021
Test	**Method**	**Units**						
Toluene	CE192 [U]	mg/kg	<0.01	<0.01	<0.01	-	<0.01	<0.01
Ethylbenzene	CE192 [U]	mg/kg	<0.01	<0.01	<0.01	-	<0.01	<0.01
m & p-Xylene	CE192 [U]	mg/kg	<0.02	<0.02	<0.02	-	<0.02	<0.02
o-Xylene	CE192 [U]	mg/kg	<0.01	<0.01	<0.01	-	<0.01	<0.01
VPH Aromatic (>EC5-EC7)	CE067	mg/kg	<0.01	<0.01	<0.01	-	<0.01	<0.01
VPH Aromatic (>EC7-EC8)	CE067	mg/kg	<0.01	<0.01	<0.01	-	<0.01	<0.01
VPH Aromatic (>EC8-EC10)	CE067	mg/kg	<0.01	<0.01	<0.01	-	<0.01	<0.01
EPH Aromatic (>EC10-EC12)	CE068	mg/kg	<1	<1	<1	-	<1	<1
EPH Aromatic (>EC12-EC16)	CE068	mg/kg	<1	<1	<1	-	<1	<1
EPH Aromatic (>EC16-EC21)	CE068	mg/kg	<1	<1	<1	-	<1	<1
EPH Aromatic (>EC21-EC35)	CE068	mg/kg	<1	<1	<1	-	<1	<1
EPH Aromatic (>EC35-EC44)	CE068	mg/kg	<1	<1	<1	-	<1	<1
VPH Aliphatic (>C5-C6)	CE067	mg/kg	<0.1	<0.1	<0.1	-	<0.1	<0.1
VPH Aliphatic (>C6-C8)	CE067	mg/kg	<0.1	<0.1	<0.1	-	<0.1	<0.1
VPH Aliphatic (>C8-C10)	CE067	mg/kg	<0.1	<0.1	<0.1	-	<0.1	<0.1
EPH Aliphatic (>C10-C12)	CE068	mg/kg	<4	<4	<4	-	<4	<4
EPH Aliphatic (>C12-C16)	CE068	mg/kg	<4	<4	<4	-	<4	<4
EPH Aliphatic (>C16-C35)	CE068	mg/kg	10	293	452	-	9	<4
EPH Aliphatic (>C35-C44)	CE068	mg/kg	<10	46	92	-	<10	<10
Subcontracted analysis								
Asbestos (qualitative)	$	-	NAD	NAD	NAD	-	NAD	NAD

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SOILS

Lab number			96629-7	96629-8	96629-9	96629-10
Sample id			WS03	WS03	WS03	WS03
Depth (m)			0.20	0.50	0.70	1.50
Date sampled			24/05/2021	24/05/2021	24/05/2021	24/05/2021
Test	**Method**	**Units**				
Arsenic (total)	CE127 [M]	mg/kg As	10	11	12	-
Cadmium (total)	CE127 [M]	mg/kg Cd	<0.2	<0.2	0.2	-
Chromium (total)	CE127 [M]	mg/kg Cr	54	57	57	-
Chromium (VI)	CE146	mg/kg CrVI	<1	<1	<1	-
Copper (total)	CE127 [M]	mg/kg Cu	24	28	16	-
Lead (total)	CE127 [M]	mg/kg Pb	25	27	23	-
Mercury (total)	CE127 [M]	mg/kg Hg	<0.5	<0.5	<0.5	-
Nickel (total)	CE127 [M]	mg/kg Ni	27	26	17	-
Selenium (total)	CE127 [M]	mg/kg Se	1.4	1.3	1.8	-
Zinc (total)	CE127 [M]	mg/kg Zn	87	61	66	-
pH	CE004 [M]	units	8.1	7.8	8.0	5.0
Sulphate (2:1 water soluble)	CE061	mg/l SO_4	241	48	266	93
Sulphate (2:1 water soluble)	CE061	g/l SO_4	-	-	0.27	0.09
Sulphate (total)	CE062	mg/kg SO_4	-	-	1951	645
Sulphate (total)	CE062	% w/w SO_4	-	-	0.20	0.06
Sulphur (total)	CE119	% w/w S	-	-	0.10	0.02
Cyanide (total)	CE077	mg/kg CN	<1	<1	<1	-
Phenols (total)	CE078	mg/kg PhOH	<0.5	<0.5	<0.5	-
Total Organic Carbon (TOC)	CE197	% w/w C	1.6	0.6	1.9	-
Estimate of OMC (calculated from TOC)	CE197	% w/w	2.8	1.1	3.2	-
PAH						
Naphthalene	CE087 [M]	mg/kg	<0.02	<0.02	0.03	-
Acenaphthylene	CE087 [M]	mg/kg	<0.02	<0.02	<0.02	-
Acenaphthene	CE087 [M]	mg/kg	<0.02	<0.02	0.05	-
Fluorene	CE087 [U]	mg/kg	<0.02	<0.02	0.04	-
Phenanthrene	CE087 [M]	mg/kg	0.13	<0.02	0.25	-
Anthracene	CE087 [U]	mg/kg	0.07	<0.02	0.07	-
Fluoranthene	CE087 [M]	mg/kg	0.32	<0.02	0.65	-
Pyrene	CE087 [M]	mg/kg	0.30	<0.02	0.56	-
Benzo(a)anthracene	CE087 [U]	mg/kg	0.21	<0.02	0.42	-
Chrysene	CE087 [M]	mg/kg	0.25	<0.03	0.45	-
Benzo(b)fluoranthene	CE087 [M]	mg/kg	0.47	<0.02	0.56	-
Benzo(k)fluoranthene	CE087 [M]	mg/kg	0.16	<0.03	0.23	-
Benzo(a)pyrene	CE087 [U]	mg/kg	0.32	<0.02	0.43	-
Indeno(123cd)pyrene	CE087 [M]	mg/kg	0.38	<0.02	0.34	-
Dibenz(ah)anthracene	CE087 [M]	mg/kg	0.08	<0.02	0.08	-
Benzo(ghi)perylene	CE087 [M]	mg/kg	0.40	<0.02	0.32	-
PAH (total of USEPA 16)	CE087	mg/kg	3.11	<0.34	4.48	-
BTEX & TPH						
MTBE	CE192 [U]	mg/kg	<0.02	<0.02	<0.02	-
Benzene	CE192 [U]	mg/kg	<0.01	<0.01	<0.01	-

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SOILS

Lab number			96629-7	96629-8	96629-9	96629-10
Sample id			WS03	WS03	WS03	WS03
Depth (m)			0.20	0.50	0.70	1.50
Date sampled			24/05/2021	24/05/2021	24/05/2021	24/05/2021
Test	**Method**	**Units**				
Toluene	CE192 [U]	mg/kg	<0.01	<0.01	<0.01	-
Ethylbenzene	CE192 [U]	mg/kg	<0.01	<0.01	<0.01	-
m & p-Xylene	CE192 [U]	mg/kg	<0.02	<0.02	<0.02	-
o-Xylene	CE192 [U]	mg/kg	<0.01	<0.01	<0.01	-
VPH Aromatic (>EC5-EC7)	CE067	mg/kg	<0.01	<0.01	<0.01	-
VPH Aromatic (>EC7-EC8)	CE067	mg/kg	<0.01	<0.01	<0.01	-
VPH Aromatic (>EC8-EC10)	CE067	mg/kg	<0.01	<0.01	<0.01	-
EPH Aromatic (>EC10-EC12)	CE068	mg/kg	<1	<1	<1	-
EPH Aromatic (>EC12-EC16)	CE068	mg/kg	<1	<1	<1	-
EPH Aromatic (>EC16-EC21)	CE068	mg/kg	<1	<1	3	-
EPH Aromatic (>EC21-EC35)	CE068	mg/kg	3	<1	4	-
EPH Aromatic (>EC35-EC44)	CE068	mg/kg	<1	<1	<1	-
VPH Aliphatic (>C5-C6)	CE067	mg/kg	<0.1	<0.1	<0.1	-
VPH Aliphatic (>C6-C8)	CE067	mg/kg	<0.1	<0.1	<0.1	-
VPH Aliphatic (>C8-C10)	CE067	mg/kg	<0.1	<0.1	<0.1	-
EPH Aliphatic (>C10-C12)	CE068	mg/kg	<4	<4	<4	-
EPH Aliphatic (>C12-C16)	CE068	mg/kg	<4	<4	<4	-
EPH Aliphatic (>C16-C35)	CE068	mg/kg	52	<4	20	-
EPH Aliphatic (>C35-C44)	CE068	mg/kg	43	<10	37	-
Subcontracted analysis						
Asbestos (qualitative)	$	-	NAD	NAD	NAD	-

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METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE127	Arsenic (total)	Aqua regia digest, ICP-MS	Dry	M	1	mg/kg As
CE127	Cadmium (total)	Aqua regia digest, ICP-MS	Dry	M	0.2	mg/kg Cd
CE127	Chromium (total)	Aqua regia digest, ICP-MS	Dry	M	1	mg/kg Cr
CE146	Chromium (VI)	Acid extraction, Colorimetry	Dry		1	mg/kg CrVI
CE127	Copper (total)	Aqua regia digest, ICP-MS	Dry	M	1	mg/kg Cu
CE127	Lead (total)	Aqua regia digest, ICP-MS	Dry	M	1	mg/kg Pb
CE127	Mercury (total)	Aqua regia digest, ICP-MS	Dry	M	0.5	mg/kg Hg
CE127	Nickel (total)	Aqua regia digest, ICP-MS	Dry	M	1	mg/kg Ni
CE127	Selenium (total)	Aqua regia digest, ICP-MS	Dry	M	0.3	mg/kg Se
CE127	Zinc (total)	Aqua regia digest, ICP-MS	Dry	M	5	mg/kg Zn
CE004	pH	Based on BS 1377, pH Meter	As received	M	-	units
CE061	Sulphate (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry		10	mg/l SO_4
CE061	Sulphate (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry		0.01	g/l SO_4
CE062	Sulphate (total)	Acid extraction, ICP-OES	Dry		100	mg/kg SO_4
CE119	Sulphur (total)	Acid extraction, ICP-OES	Dry		0.01	% w/w S
CE077	Cyanide (total)	Extraction, Continuous Flow Colorimetry	As received		1	mg/kg CN
CE078	Phenols (total)	Extraction, Continuous Flow Colorimetry	As received		0.5	mg/kg PhOH
CE197	Total Organic Carbon (TOC)	Carbon Analyser	Dry		0.1	% w/w C
CE197	Estimate of OMC (calculated from TOC)	Calculation from Total Organic Carbon	Dry		0.1	% w/w
CE087	Naphthalene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Acenaphthylene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Acenaphthene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Fluorene	Solvent extraction, GC-MS	As received	U	0.02	mg/kg
CE087	Phenanthrene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Anthracene	Solvent extraction, GC-MS	As received	U	0.02	mg/kg
CE087	Fluoranthene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Pyrene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Benzo(a)anthracene	Solvent extraction, GC-MS	As received	U	0.02	mg/kg
CE087	Chrysene	Solvent extraction, GC-MS	As received	M	0.03	mg/kg
CE087	Benzo(b)fluoranthene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Benzo(k)fluoranthene	Solvent extraction, GC-MS	As received	M	0.03	mg/kg
CE087	Benzo(a)pyrene	Solvent extraction, GC-MS	As received	U	0.02	mg/kg
CE087	Indeno(123cd)pyrene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Dibenz(ah)anthracene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Benzo(ghi)perylene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	PAH (total of USEPA 16)	Solvent extraction, GC-MS	As received		0.34	mg/kg
CE192	MTBE	Headspace GC-FID	As received	U	0.02	mg/kg
CE192	Benzene	Headspace GC-FID	As received	U	0.01	mg/kg
CE192	Toluene	Headspace GC-FID	As received	U	0.01	mg/kg
CE192	Ethylbenzene	Headspace GC-FID	As received	U	0.01	mg/kg
CE192	m & p-Xylene	Headspace GC-FID	As received	U	0.02	mg/kg
CE192	o-Xylene	Headspace GC-FID	As received	U	0.01	mg/kg
CE067	VPH Aromatic (>EC5-EC7)	Headspace GC-FID	As received		0.01	mg/kg
CE067	VPH Aromatic (>EC7-EC8)	Headspace GC-FID	As received		0.01	mg/kg

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METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE067	VPH Aromatic (>EC8-EC10)	Headspace GC-FID	As received		0.01	mg/kg
CE068	EPH Aromatic (>EC10-EC12)	Solvent extraction, GC-FID	As received		1	mg/kg
CE068	EPH Aromatic (>EC12-EC16)	Solvent extraction, GC-FID	As received		1	mg/kg
CE068	EPH Aromatic (>EC16-EC21)	Solvent extraction, GC-FID	As received		1	mg/kg
CE068	EPH Aromatic (>EC21-EC35)	Solvent extraction, GC-FID	As received		1	mg/kg
CE068	EPH Aromatic (>EC35-EC44)	Solvent extraction, GC-FID	As received		1	mg/kg
CE067	VPH Aliphatic (>C5-C6)	Headspace GC-FID	As received		0.1	mg/kg
CE067	VPH Aliphatic (>C6-C8)	Headspace GC-FID	As received		0.1	mg/kg
CE067	VPH Aliphatic (>C8-C10)	Headspace GC-FID	As received		0.1	mg/kg
CE068	EPH Aliphatic (>C10-C12)	Solvent extraction, GC-FID	As received		4	mg/kg
CE068	EPH Aliphatic (>C12-C16)	Solvent extraction, GC-FID	As received		4	mg/kg
CE068	EPH Aliphatic (>C16-C35)	Solvent extraction, GC-FID	As received		4	mg/kg
CE068	EPH Aliphatic (>C35-C44)	Solvent extraction, GC-FID	As received		10	mg/kg
$	Asbestos (qualitative)	HSG 248, Microscopy	Dry	U	-	-

Chemtech Environmental Limited

DEVIATING SAMPLE INFORMATION

Comments
Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.
For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.
Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

Key

N	No (not deviating sample)
Y	Yes (deviating sample)
NSD	Sampling date not provided
NST	Sampling time not provided (waters only)
EHT	Sample exceeded holding time(s)
IC	Sample not received in appropriate containers
HP	Headspace present in sample container
NCF	Sample not chemically fixed (where appropriate)
OR	Other (specify)

Lab ref	Sample id	Depth (m)	Deviating	Tests (Reason for deviation)
96629-1	WS01	0.20	N	
96629-2	WS01	0.50	N	
96629-3	WS01	0.80	N	
96629-4	WS01	2.10	N	
96629-5	WS02	0.40	N	
96629-6	WS02	0.60	N	
96629-7	WS03	0.20	N	
96629-8	WS03	0.50	N	
96629-9	WS03	0.70	N	
96629-10	WS03	1.50	N	

Peter Baxter
Peter Baxter Associates Ltd
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ME8 6PL

Normec DETS Limited
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Lenham Heath
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ME17 2JN
t: 01622 850410

DETS Report No: 24-15530

Site Reference:	High Barn, Crays Lane, Goose Green, Kent
Project / Job Ref:	1724
Order No:	1724
Sample Receipt Date:	23/12/2024
Sample Scheduled Date:	24/12/2024
Report Issue Number:	1
Reporting Date:	09/01/2025

Authorised by:

Steve Knight
Customer Support 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.

For Topsoil and WAC analysis the expanded uncertainty measurement should be considered while evaluating results against compliance values.

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Soil Analysis Certificate						
DETS Report No: 24-15530	**~Date Sampled**	20/12/24	20/12/24	20/12/24	20/12/24	20/12/24
Peter Baxter Associates Ltd	**~Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: High Barn, Crays Lane, Goose Green, Kent	**~TP / BH No**	TP01	TP02	TP02	TP03	TP04
~Project / Job Ref: 1724	**~Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: 1724	**~Depth (m)**	0.00 - 0.50	0.00 - 0.50	0.50 - 1.20	0.00 - 0.50	0.00 - 0.50
Reporting Date: 09/01/2025	**DETS Sample No**	757812	757813	757814	757815	757816

Determinand	Unit	RL	Accreditation					
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
pH	pH Units	N/a	MCERTS	7.7	7.6	7.7	7.7	7.6
Total Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	< 200	MCERTS	466	464	263	345	281
Total Sulphate as SO_4	%	< 0.02	MCERTS	0.05	0.05	0.03	0.03	0.03
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	18	47	25	14	22
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	0.02	0.05	0.02	0.01	0.02
Fraction Organic Carbon (FOC)	Units	< 0.001	MCERTS	0.026	0.018	0.011	0.016	0.010
Arsenic (As)	mg/kg	< 2	MCERTS	10	11	10	9	9
Barium (Ba)	mg/kg	< 2.5	MCERTS	39	54	40	39	46
Beryllium (Be)	mg/kg	< 0.5	MCERTS	0.6	0.6	0.6	0.6	0.8
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	18	17	22	16	28
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	18	13	14	12	22
Lead (Pb)	mg/kg	< 3	MCERTS	24	19	15	19	17
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	9	8	9	8	11
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	28	29	34	27	45
Zinc (Zn)	mg/kg	< 3	MCERTS	53	40	39	44	49
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2

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)
~Sample details provided by customer and can affect the validity of results
Subcontracted analysis (S)

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Soil Analysis Certificate						
DETS Report No: 24-15530	**~Date Sampled**	20/12/24	20/12/24	20/12/24	20/12/24	20/12/24
Peter Baxter Associates Ltd	**~Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: High Barn, Crays Lane, Goose Green, Kent	**~TP / BH No**	TP04	TP05	TP05	TP06	TP06
~Project / Job Ref: 1724	**~Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: 1724	**~Depth (m)**	0.50 - 1.20	0.00 - 0.50	0.50 - 1.20	0.00 - 0.50	0.50 - 1.20
Reporting Date: 09/01/2025	**DETS Sample No**	757817	757818	757819	757820	757821

Determinand	Unit	RL	Accreditation					
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
pH	pH Units	N/a	MCERTS	7.6	7.5	7.6	7.3	7.6
Total Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	< 200	MCERTS	437	406	254	284	321
Total Sulphate as SO_4	%	< 0.02	MCERTS	0.04	0.04	0.03	0.03	0.03
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	63	35	28	65	50
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	0.06	0.03	0.03	0.06	0.05
Fraction Organic Carbon (FOC)	Units	< 0.001	MCERTS	0.006	0.006	0.011	0.005	0.010
Arsenic (As)	mg/kg	< 2	MCERTS	14	19	12	11	12
Barium (Ba)	mg/kg	< 2.5	MCERTS	109	73	51	43	60
Beryllium (Be)	mg/kg	< 0.5	MCERTS	2.3	1.6	0.8	0.8	0.9
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	34	29	28	29	23
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	25	19	16	19	15
Lead (Pb)	mg/kg	< 3	MCERTS	28	27	17	16	17
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	17	14	11	10	10
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	56	48	42	44	37
Zinc (Zn)	mg/kg	< 3	MCERTS	55	50	45	33	42
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2

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)

~Sample details provided by customer and can affect the validity of results

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-15530	**~Date Sampled**	20/12/24	20/12/24	20/12/24	20/12/24	20/12/24
Peter Baxter Associates Ltd	**~Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: High Barn, Crays Lane, Goose Green, Kent	**~TP / BH No**	TP01	TP02	TP02	TP03	TP04
~Project / Job Ref: 1724	**~Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: 1724	**~Depth (m)**	0.00 - 0.50	0.00 - 0.50	0.50 - 1.20	0.00 - 0.50	0.00 - 0.50
Reporting Date: 09/01/2025	**DETS Sample No**	757812	757813	757814	757815	757816

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6

~Sample details provided by customer and can affect the validity of results

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-15530	**~Date Sampled**	20/12/24	20/12/24	20/12/24	20/12/24	20/12/24
Peter Baxter Associates Ltd	**~Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: High Barn, Crays Lane, Goose Green, Kent	**~TP / BH No**	TP04	TP05	TP05	TP06	TP06
~Project / Job Ref: 1724	**~Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: 1724	**~Depth (m)**	0.50 - 1.20	0.00 - 0.50	0.50 - 1.20	0.00 - 0.50	0.50 - 1.20
Reporting Date: 09/01/2025	**DETS Sample No**	757817	757818	757819	757820	757821

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6

~Sample details provided by customer and can affect the validity of results

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-15530	**~Date Sampled**	20/12/24	20/12/24	20/12/24	20/12/24	20/12/24
Peter Baxter Associates Ltd	**~Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: High Barn, Crays Lane, Goose Green, Kent	**~TP / BH No**	TP01	TP02	TP02	TP03	TP04
~Project / Job Ref: 1724	**~Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: 1724	**~Depth (m)**	0.00 - 0.50	0.00 - 0.50	0.50 - 1.20	0.00 - 0.50	0.00 - 0.50
Reporting Date: 09/01/2025	**DETS Sample No**	757812	757813	757814	757815	757816

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	17	< 10	< 10	< 10	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42

~Sample details provided by customer and can affect the validity of results

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 24-15530	**~Date Sampled**	20/12/24	20/12/24	20/12/24	20/12/24	20/12/24
Peter Baxter Associates Ltd	**~Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: High Barn, Crays Lane, Goose Green, Kent	**~TP / BH No**	TP04	TP05	TP05	TP06	TP06
~Project / Job Ref: 1724	**~Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: 1724	**~Depth (m)**	0.50 - 1.20	0.00 - 0.50	0.50 - 1.20	0.00 - 0.50	0.50 - 1.20
Reporting Date: 09/01/2025	**DETS Sample No**	757817	757818	757819	757820	757821

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42

~Sample details provided by customer and can affect the validity of results

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-15530	**~Date Sampled**	20/12/24	20/12/24	20/12/24	20/12/24	20/12/24
Peter Baxter Associates Ltd	**~Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: High Barn, Crays Lane, Goose Green, Kent	**~TP / BH No**	TP01	TP02	TP02	TP03	TP04
~Project / Job Ref: 1724	**~Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: 1724	**~Depth (m)**	0.00 - 0.50	0.00 - 0.50	0.50 - 1.20	0.00 - 0.50	0.00 - 0.50
Reporting Date: 09/01/2025	**DETS Sample No**	757812	757813	757814	757815	757816

Determinand	Unit	RL	Accreditation					
Benzene	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

~Sample details provided by customer and can affect the validity of results

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Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-15530	**~Date Sampled**	20/12/24	20/12/24	20/12/24	20/12/24	20/12/24
Peter Baxter Associates Ltd	**~Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: High Barn, Crays Lane, Goose Green, Kent	**~TP / BH No**	TP04	TP05	TP05	TP06	TP06
~Project / Job Ref: 1724	**~Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: 1724	**~Depth (m)**	0.50 - 1.20	0.00 - 0.50	0.50 - 1.20	0.00 - 0.50	0.50 - 1.20
Reporting Date: 09/01/2025	**DETS Sample No**	757817	757818	757819	757820	757821

Determinand	Unit	RL	Accreditation					
Benzene	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

~Sample details provided by customer and can affect the validity of results

Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
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4480

Soil Analysis Certificate - Volatile Organic Compounds (VOC)						
DETS Report No: 24-15530	**~Date Sampled**	20/12/24	20/12/24	20/12/24	20/12/24	20/12/24
Peter Baxter Associates Ltd	**~Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: High Barn, Crays Lane, Goose Green, Kent	**~TP / BH No**	TP01	TP02	TP02	TP03	TP04
~Project / Job Ref: 1724	**~Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: 1724	**~Depth (m)**	0.00 - 0.50	0.00 - 0.50	0.50 - 1.20	0.00 - 0.50	0.00 - 0.50
Reporting Date: 09/01/2025	**DETS Sample No**	757812	757813	757814	757815	757816

Determinand	Unit	RL	Accreditation					
Dichlorodifluoromethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Vinyl Chloride	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chloromethane	µg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Chloroethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromomethane	µg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Trichlorofluoromethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
MTBE	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
trans-1,2-Dichloroethene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
cis-1,2-Dichloroethene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
2,2-Dichloropropane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chloroform	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromochloromethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,1-Trichloroethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloropropene	µg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Carbon Tetrachloride	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dichloroethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Benzene	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
1,2-Dichloropropane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Trichloroethene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromodichloromethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Dibromomethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
TAME	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
cis-1,3-Dichloropropene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Toluene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
trans-1,3-Dichloropropene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	µg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
1,3-Dichloropropane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Tetrachloroethene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Dibromochloromethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dibromoethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chlorobenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,1,2-Tetrachloroethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethyl Benzene	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
m,p-Xylene	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-Xylene	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Styrene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromoform	µg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Isopropylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2,3-Trichloropropane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
n-Propylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromobenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
2-Chlorotoluene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,3,5-Trimethylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
4-Chlorotoluene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
tert-Butylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2,4-Trimethylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
sec-Butylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
p-Isopropyltoluene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,3-Dichlorobenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,4-Dichlorobenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
n-Butylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dichlorobenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
,2-Dibromo-3-chloropropane	µg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Hexachlorobutadiene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

~Sample details provided by customer and can affect the validity of results

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4480

Soil Analysis Certificate - Volatile Organic Compounds (VOC)						
DETS Report No: 24-15530	**~Date Sampled**	20/12/24	20/12/24	20/12/24	20/12/24	20/12/24
Peter Baxter Associates Ltd	**~Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: High Barn, Crays Lane, Goose Green, Kent	**~TP / BH No**	TP04	TP05	TP05	TP06	TP06
~Project / Job Ref: 1724	**~Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: 1724	**~Depth (m)**	0.50 - 1.20	0.00 - 0.50	0.50 - 1.20	0.00 - 0.50	0.50 - 1.20
Reporting Date: 09/01/2025	**DETS Sample No**	757817	757818	757819	757820	757821

Determinand	Unit	RL	Accreditation					
Dichlorodifluoromethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Vinyl Chloride	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chloromethane	µg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Chloroethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromomethane	µg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Trichlorofluoromethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
MTBE	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
trans-1,2-Dichloroethene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloroethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
cis-1,2-Dichloroethene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
2,2-Dichloropropane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chloroform	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromochloromethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,1-Trichloroethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1-Dichloropropene	µg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Carbon Tetrachloride	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dichloroethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Benzene	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
1,2-Dichloropropane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Trichloroethene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromodichloromethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Dibromomethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
TAME	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
cis-1,3-Dichloropropene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Toluene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
trans-1,3-Dichloropropene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,2-Trichloroethane	µg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
1,3-Dichloropropane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Tetrachloroethene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Dibromochloromethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dibromoethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Chlorobenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,1,2-Tetrachloroethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethyl Benzene	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
m,p-Xylene	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-Xylene	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Styrene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromoform	µg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Isopropylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,1,2,2-Tetrachloroethane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2,3-Trichloropropane	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
n-Propylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Bromobenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
2-Chlorotoluene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,3,5-Trimethylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
4-Chlorotoluene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
tert-Butylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2,4-Trimethylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
sec-Butylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
p-Isopropyltoluene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,3-Dichlorobenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,4-Dichlorobenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
n-Butylbenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
1,2-Dichlorobenzene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
,2-Dibromo-3-chloropropane	µg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Hexachlorobutadiene	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

~Sample details provided by customer and can affect the validity of results

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4480

Waste Acceptance Criteria Analytical Certificate

DETS Report No: 24-15530		**~Date Sampled**	20/12/24			
Peter Baxter Associates Ltd		**~Time Sampled**	None Supplied			
~Site Reference: High Barn, Crays Lane, Goose Green, Kent		**~TP / BH No**	TP02			
~Project / Job Ref: 1724		**~Additional Refs**	None Supplied			
~Order No: 1724		**~Depth (m)**	0.00 - 0.50			
Reporting Date: 09/01/2025		**DETS Sample No**	757813			
Determinand	**Unit**	**MDL**				
TOC[MU]	%	< 0.1	1.8			
Loss on Ignition[MU]	%	< 0.01	6.30			
BTEX[MU]	mg/kg	< 0.05	< 0.05			
Sum of PCBs	mg/kg	< 0.1	< 0.1			
Mineral Oil[MU]	mg/kg	< 10	< 10			
Total PAH[MU]	mg/kg	< 1.7	< 1.7			
pH[MU]	pH Units	N/a	7.6			
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	< 1			

Landfill Waste Acceptance Criteria Limits		
Inert Waste Landfill	**Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
3%	5%	6%
--	--	10%
6	--	--
1	--	--
500	--	--
100	--	--
--	>6	--
--	To be evaluated	To be evaluated

Eluate Analysis	**2:1 mg/l**	**8:1 mg/l**		**Cumulative 10:1 * mg/kg**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)**		
Arsenic[U]	0.0025	0.0013		0.025	0.5	2	25
Barium[U]	0.0249	0.0114		0.215	20	100	300
Cadmium[U]	< 0.0002	< 0.0002		< 0.002	0.04	1	5
Chromium[U]	< 0.0002	0.0004		0.007	0.5	10	70
Copper[U]	0.0039	0.0025		0.046	2	50	100
Mercury[U]	< 0.00004	< 0.00004		< 0.0004	0.01	0.2	2
Molybdenum[U]	0.0009	0.0010		0.018	0.5	10	30
Nickel[U]	0.0011	0.0007		0.0137	0.4	10	40
Lead[U]	0.0004	0.0004		0.007	0.5	10	50
Antimony[U]	< 0.0002	< 0.0002		< 0.002	0.06	0.7	5
Selenium[U]	0.0008	0.0004		0.0070	0.1	0.5	7
Zinc[U]	0.009	< 0.001		< 0.01	4	50	200
Chloride[U]	6	3		57	800	15000	25000
Fluoride[U]	< 0.5	< 0.5		< 1	10	150	500
Sulphate[U]	13	5		90	1000	20000	50000
TDS	149	81		1512	4000	60000	100000
Phenol Index[U]	< 0.01	< 0.01		< 0.5	1	-	-
DOC[U]	24.6	12.6		237	500	800	1000
Leach Test Information							
Sample Mass (kg)	0.11						
Dry Matter (%)	79.8						
Moisture (%)	25.4						
Stage 1							
Volume Eluate L2 (litres)	0.15						
Filtered Eluate VE1 (litres)	0.06						

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Samples Descriptions page describes if the test is performed on the dried or as-received portion
Stated limits are for guidance only and Normec DETS Limited cannot be held responsible for any discrepencies with current legislation
M Denotes MCERTS accredited test
U Denotes ISO17025 accredited test
~Sample details provided by customer and can affect the validity of results
* DETS are accredited for the testing of leachate and not the leachate preparation stage which is unaccredited

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4480

Waste Acceptance Criteria Analytical Certificate

DETS Report No: 24-15530		**~Date Sampled**	20/12/24				**Landfill Waste Acceptance Criteria Limits**	
Peter Baxter Associates Ltd		**~Time Sampled**	None Supplied				**Inert Waste Landfill**	**Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
~Site Reference: High Barn, Crays Lane, Goose Green, Kent		**~TP / BH No**	TP04						
~Project / Job Ref: 1724		**~Additional Refs**	None Supplied						
~Order No: 1724		**~Depth (m)**	0.00 - 0.50						
Reporting Date: 09/01/2025		**DETS Sample No**	757816						
Determinand	**Unit**	**MDL**							
TOC[MU]	%	< 0.1	1				3%	5%	6%
Loss on Ignition[MU]	%	< 0.01	7.30				--	--	10%
BTEX[MU]	mg/kg	< 0.05	< 0.05				6	--	--
Sum of PCBs	mg/kg	< 0.1	< 0.1				1	--	--
Mineral Oil[MU]	mg/kg	< 10	< 10				500	--	--
Total PAH[MU]	mg/kg	< 1.7	< 1.7				100	--	--
pH[MU]	pH Units	N/a	7.6				--	>6	--
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	< 1				--	To be evaluated	To be evaluated

Eluate Analysis	**2:1 mg/l**	**8:1 mg/l**		**Cumulative 10:1 * mg/kg**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)**		
Arsenic[U]	0.0003	0.0005		0.009	0.5	2	25
Barium[U]	0.0061	0.0036		0.066	20	100	300
Cadmium[U]	< 0.0002	< 0.0002		< 0.002	0.04	1	5
Chromium[U]	< 0.0002	0.0004		0.008	0.5	10	70
Copper[U]	0.0020	0.0016		0.030	2	50	100
Mercury[U]	< 0.00004	< 0.00004		< 0.0004	0.01	0.2	2
Molybdenum[U]	0.0003	0.0004		0.008	0.5	10	30
Nickel[U]	0.0004	0.0006		0.0108	0.4	10	40
Lead[U]	< 0.0002	0.0006		0.010	0.5	10	50
Antimony[U]	< 0.0002	< 0.0002		< 0.002	0.06	0.7	5
Selenium[U]	0.0002	0.0005		0.0084	0.1	0.5	7
Zinc[U]	0.011	< 0.001		< 0.01	4	50	200
Chloride[U]	3	3		51	800	15000	25000
Fluoride[U]	< 0.5	< 0.5		< 1	10	150	500
Sulphate[U]	31	3		69	1000	20000	50000
TDS	120	63		1164	4000	60000	100000
Phenol Index[U]	< 0.01	< 0.01		< 0.5	1	-	-
DOC[U]	10.9	10.2		184	500	800	1000
Leach Test Information							
Sample Mass (kg)	0.11						
Dry Matter (%)	76						
Moisture (%)	31.6						
Stage 1							
Volume Eluate L2 (litres)	0.15						
Filtered Eluate VE1 (litres)	0.04						

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Samples Descriptions page describes if the test is performed on the dried or as-received portion
Stated limits are for guidance only and Normec DETS Limited cannot be held responsible for any discrepencies with current legislation
M Denotes MCERTS accredited test
U Denotes ISO17025 accredited test
~Sample details provided by customer and can affect the validity of results
* DETS are accredited for the testing of leachate and not the leachate preparation stage which is unaccredited

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Waste Acceptance Criteria Analytical Certificate

DETS Report No: 24-15530		**~Date Sampled**	20/12/24				**Landfill Waste Acceptance Criteria Limits**	
Peter Baxter Associates Ltd		**~Time Sampled**	None Supplied				**Inert Waste Landfill**	**Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
~Site Reference: High Barn, Crays Lane, Goose Green, Kent		**~TP / BH No**	TP06						
~Project / Job Ref: 1724		**~Additional Refs**	None Supplied						
~Order No: 1724		**~Depth (m)**	0.00 - 0.50						
Reporting Date: 09/01/2025		**DETS Sample No**	757820						
Determinand	**Unit**	**MDL**							
TOC[MU]	%	< 0.1	0.5				3%	5%	6%
Loss on Ignition[MU]	%	< 0.01	5.30				--	--	10%
BTEX[MU]	mg/kg	< 0.05	< 0.05				6	--	--
Sum of PCBs	mg/kg	< 0.1	< 0.1				1	--	--
Mineral Oil[MU]	mg/kg	< 10	< 10				500	--	--
Total PAH[MU]	mg/kg	< 1.7	< 1.7				100	--	--
pH[MU]	pH Units	N/a	7.3				--	>6	--
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	< 1				--	To be evaluated	To be evaluated

Eluate Analysis	**2:1 mg/l**	**8:1 mg/l**		**Cumulative 10:1 * mg/kg**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)**		
Arsenic[U]	0.0004	0.0002		0.005	0.5	2	25
Barium[U]	0.0108	0.0044		0.082	20	100	300
Cadmium[U]	< 0.0002	< 0.0002		< 0.002	0.04	1	5
Chromium[U]	< 0.0002	< 0.0002		< 0.002	0.5	10	70
Copper[U]	0.0024	0.0011		0.020	2	50	100
Mercury[U]	< 0.00004	< 0.00004		< 0.0004	0.01	0.2	2
Molybdenum[U]	< 0.0002	< 0.0002		0.003	0.5	10	30
Nickel[U]	0.0005	0.0005		0.0094	0.4	10	40
Lead[U]	< 0.0002	< 0.0002		< 0.002	0.5	10	50
Antimony[U]	< 0.0002	< 0.0002		< 0.002	0.06	0.7	5
Selenium[U]	0.0004	0.0004		0.0081	0.1	0.5	7
Zinc[U]	0.005	< 0.001		< 0.01	4	50	200
Chloride[U]	5	3		51	800	15000	25000
Fluoride[U]	< 0.5	< 0.5		< 1	10	150	500
Sulphate[U]	52	11		220	1000	20000	50000
TDS	160	64		1198	4000	60000	100000
Phenol Index[U]	< 0.01	< 0.01		< 0.5	1	-	-
DOC[U]	8.4	17.4		312	500	800	1000
Leach Test Information							
Sample Mass (kg)	0.11						
Dry Matter (%)	80						
Moisture (%)	25.2						
Stage 1							
Volume Eluate L2 (litres)	0.15						
Filtered Eluate VE1 (litres)	0.04						

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Samples Descriptions page describes if the test is performed on the dried or as-received portion
Stated limits are for guidance only and Normec DETS Limited cannot be held responsible for any discrepencies with current legislation
M Denotes MCERTS accredited test
U Denotes ISO17025 accredited test
~Sample details provided by customer and can affect the validity of results
* DETS are accredited for the testing of leachate and not the leachate preparation stage which is unaccredited

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4480

Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 24-15530	
Peter Baxter Associates Ltd	
~Site Reference: High Barn, Crays Lane, Goose Green, Kent	
~Project / Job Ref: 1724	
~Order No: 1724	
Reporting Date: 09/01/2025	

DETS Sample No	~TP / BH No	~Additional Refs	~Depth (m)	Moisture Content (%)	Sample Matrix Description
757812	TP01	None Supplied	0.00 - 0.50	22.1	Brown clay
757813	TP02	None Supplied	0.00 - 0.50	19.7	Brown clay
757814	TP02	None Supplied	0.50 - 1.20	16.9	Brown clay
757815	TP03	None Supplied	0.00 - 0.50	18.7	Brown clay
757816	TP04	None Supplied	0.00 - 0.50	23.5	Light brown clay
757817	TP04	None Supplied	0.50 - 1.20	20.5	Light brown sandy clay
757818	TP05	None Supplied	0.00 - 0.50	17.2	Light brown clay
757819	TP05	None Supplied	0.50 - 1.20	18.8	Light brown clay
757820	TP06	None Supplied	0.00 - 0.50	19.5	Light brown clay
757821	TP06	None Supplied	0.50 - 1.20	18.4	Light brown clay

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

Insufficient Sample I/S

Unsuitable Sample U/S

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Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 24-15530
Peter Baxter Associates Ltd
~Site Reference: High Barn, Crays Lane, Goose Green, Kent
~Project / Job Ref: 1724
~Order No: 1724
Reporting Date: 09/01/2025

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

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Water Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 24-15530
Peter Baxter Associates Ltd
~Site Reference: High Barn, Crays Lane, Goose Green, Kent
~Project / Job Ref: 1724
~Order No: 1724
Reporting Date: 09/01/2025

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	F	Ammoniacal Nitrogen	Determination of ammoniacal nitrogen by discrete analyser.	E126
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	F	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	UF	Biological Oxygen Demand (BOD)	Determination using BOD sensors measuring the change of pressure	E133
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazide followed by	E116
Water	UF	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR dete	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 – C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E104
Water	F	Fluoride	Determination of Fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	UF	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E121
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichlorometha	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Low heat with persulphate addition followed by IR detection	E110
Water	F	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 liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C35. C5 to C8 by headspace GC-MS	E104
Water	F	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 liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C44. C5 to C8 by headspace GC-MS	E104
Water	UF	VOCs	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E101

Key

F Filtered
UF Unfiltered
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Parameter	Matrix Type	Expanded Uncertainity Measurement	Unit
TOC	Soil	12.2	%
Loss on Ignition	Soil	22.9	%
BTEX	Soil	11.2	%
Sum of PCBs	Soil	43.4	%
Mineral Oil	Soil	9.0	%
Total PAH	Soil	18.5	%
pH	Soil	0.335	Units
Acid Neutralisation Capacity	Soil	18.0	%
Clay Content	Soil	15.0	%
Silt Content	Soil	14.0	%
Sand Content	Soil	13.0	%
Loss on Ignition	Soil	22.9	%
pH	Soil	0.335	Units
Carbonate	Soil	12.0	%
Total Nitrogen	Soil	12.0	%
Phosphorus (Extractable)	Soil	24.0	%
Potassium (Extractable)	Soil	20.0	%
Magnesium (Extractable)	Soil	26.0	%
Zinc	Soil	21.6	%
Copper	Soil	18.2	%
Nickel	Soil	24.3	%
Available Sodium	Soil	23.0	%
Available Calcium	Soil	23.0	%
Electrical Conductivity	Soil	10.0	%