



Elemental GI Ltd

REPORT: PHASE 2 GEO-ENVIRONMENTAL
INVESTIGATION FOR LAND EAST OF
SOUTH DROVE, LUCKS BRIDGE, SPALDING

CLIENT: REMWAY DESIGN LTD

PHASE 2 GEO-ENVIRONMENTAL INVESTIGATION: LAND EAST OF SOUTH DROVE, LUCKS BRIDGE, SPALDING

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Semi-Technical Summary

The reader is referred to the terms and conditions which accompany this report, and which are presented at the end of this document. Please refer to the terms and conditions shown at the end of this report for an important list of exclusions / assumptions etc. Most importantly, the reliance upon / use of this report (in part or in full, including all text, drawings, logs, associated correspondence etc.) is prohibited unless all invoices relating to it are settled in full within the period specified on such invoices.

This semi-technical summary provides a brief overview of the main conditions which have been noted on site. These features / factors (alongside others) are explained fully in the following report and the following should therefore not be referred to in isolation. **No reliance should be placed on this summary until the whole report has been read in full**, including all appendices, drawings and notes / terms / conditions.

Ground Conditions / Foundations	The site is underlain by a limited thickness of made ground, beneath which are natural sandy silt / clay soils. Groundwater was recorded beneath the site at relatively shallow depths. The investigation of foundation suitability was beyond the remit of this report although it has been noted that traditional / shallow foundations do not appear suitable at this stage and that deeper foundations (e.g. 'piles') appear to be a more suitable option.
Contamination	There are elevated PAHs in made ground in the western area of the site within surfacing materials. Gardens and other soft landscaping in these areas will need to be capped if the made ground is not removed.
Recommendations	Further works have been recommended in this report, including the following main recommendations: ▪ Completion of further investigation and testing works as identified within this report (e.g. linear feature, suitability / properties of soil re. piled foundations etc.); ▪ There are mounds and stockpiles of materials in some areas of the site. All materials (natural or anthropogenic) which are to be moved (or removed) will require full inspection and classification to confirm the suitability of their fate and (where applicable) or suitability in the context of any future earthworks. It is reiterated that special caution should be applied to all potential costs associated with off-site disposal; ▪ Production of a Remedial Method Statement (RMS) confirm remediation requirements across the site; ▪ Verification of appropriate utility construction materials with the relevant providers; and ▪ Where soils are to be removed from site for disposal it is recommended that these are fully characterised (i.e. to confirm material types and disposal options) and that advice is sought from the appointed contractors to determine any requirements for specific testing etc.

Unless stated / agreed otherwise it is the responsibility of the Client to submit this report (and related documents) to the regulators, warranty providers etc.

1.0 INTRODUCTION

1.1 Report Status

A Phase I Geo-Environmental Assessment has been undertaken for the site by ourselves (ref. E24171/1/0 dated Sep. 2024). Please see section 1.2 below for further information.

Elemental GI Ltd were appointed by Remway Design Ltd (hereafter referred to as 'the Client') to undertake a Phase 2 Geo-Environmental Investigation for the land east of South Drove, Lucks Bridge, Spalding (hereafter referred to as 'the site').

This report has been prepared on the understanding that the site is to undergo redevelopment to support residential housing. We have been supplied with a copy of the proposed layout REF: Remway Design Ltd, Block Plan, 2475/02 Rev C and extracts of this plan are presented in the Proposed Site Layout Plan (Drawing 001) in Appendix I.

This report has been prepared in accordance with our notes concerning the terms and conditions of these works and of our engagement, which are presented at the end of this report. Please refer to these terms and conditions for an important list of exclusions / assumptions etc.

Should the development proposals alter, then the recommendations in this report may be subject to change. Whilst it may be utilised by others for reference purposes at the Client's discretion, it has not been prepared for any other purposes (e.g. waste classification etc.) and therefore additional works may be required by third parties dependent upon their own requirements / works.

No reliance should be placed on this document until the whole report has been read in full, including all appendices, drawings and notes / terms / conditions. Liability cannot be accepted for any misuse / misunderstandings etc. that arise where portions of this report are used without context or in isolation. Users of any / all of our reports, letters etc. must always ensure that they are reading the latest version / revision before undertaking any works and / or making any assessments, designs, decisions or related ventures. Please stop and check that this is the latest version for this site / project before proceeding any further.

1.2 Previous Reports

Elemental GI Ltd have been written the following report which relates to the subject site:

- Elemental GI Ltd: Phase 1 Geo-Environmental Assessment for Land East of South Drove, Lucks Bridge, Spalding (Ref. E24171/1/0 dated Sep. 2024).

The above referenced documents have not been reproduced herein and they should be referred to in full alongside this report.

1.2.1 Summary of Previous Reports

The following are noted from put Phase 1 Report:

- No records of artificial and made ground are recorded beneath the site on available 1:10,000 scale geological mapping. Drift deposits are recorded beneath the site on 1:10,000 scale mapping comprising Barroway Drove Beds (clay and silt). The solid geology beneath the site on 1:10,000 scale mapping is recorded as Oxford Clay Formation, mudstone.
- The drift deposits recorded beneath the site are classified as an 'Unproductive Aquifer'. The bedrock geology recorded beneath the site is classified as an 'Unproductive Aquifer'. No entries relating to abstractions are recorded within a 250m radius of the site. No. entries relating to potable abstractions are recorded within a 2000m radius of the site. The site is not recorded to be within an Environment Agency source protection zone for the total catchment.
- 2 No. entries relating to geological linear features are recorded within a 250m radius of the site on 1:10,000 scale mapping and are described as form lines. 1 No. is recorded on site and the remaining entry is recorded 184m west of the site.
- A review of database information shows that 3 No. entries relating to historical land uses are identified within a 250m radius of the site. 1 No. of these is recorded on site and is shown to be a nursery. The remaining entries recorded are a smithy 3m south-west of the site and nurseries 143m east of the site.
- A review of historic mapping indicates that the site has been an open field since the 1880's. Historic mapping shows a Smithy with a saw pit encroaching on to the entrance of the site from 1886 to 1969. Anecdotal evidence shows that the site was originally used for farming but during recent years the site has been used for storing building materials with storage sheds located in the north-western area of the site.
- Potential areas of concern were identified within the Phase 1 conceptual site model including historic activities, derelict sheds and mounded materials. A ground gas assessment was also undertaken which provisionally identified potential sources including organic materials beneath and around the nearby drains /watercourses and potential peat layers that may be present within the superficial deposits underlying the site and nearby.

1.3 The Site

The site is situated to the east of South Drove and is roughly centred at National Grid Reference 523420, 319186.

1.3.1 Site:

- The site forms an irregular but broadly rectangular shaped parcel of land;
- The site boundary is shown to include wooden fencing along the western boundary, a brick wall and conifer trees running along the northern boundary, a soil bund alongside the eastern boundary with hedgerows and semi-mature and mature trees along the southern boundary;
- The site is covered by mixed vegetation (dense in places) with anthropogenic materials intermixed with shallow soils including tarmac found in the track near the site access point;
- 4 No. dilapidated sheds are found in the north-western area of the site. Access to the sheds was limited due to overgrown vegetation and brambles. However, some waste materials could be seen inside including paint tins. The sheds were seen to constructed of wood and metal materials with steel roofs;
- Stockpiles of mixed soils with building waste and building materials could be found covering the western, central, southern and eastern areas of the site;
- Suspected asbestos containing materials (ACMs) were noted at the surface of stockpiles in the southern area of the site and were also found along the track near the site entrance;
- Derelict machinery parts, scrap metal including old drums and metal roof sheeting could be found in the north-western area of the site;
- The site exhibits mainly a level gradient except within the areas where the stockpiles are found. There is a soil bund alongside the site's eastern boundary that slopes downhill into Fantail Mill Drain;
- The site is set within a mixed residential / agricultural area;
- Land to the north of the site supports residential housing beyond which agricultural fields are found;
- Land to the east of the site supports Fantail Mill Drain which runs alongside the site's eastern boundary beyond which agricultural fields and the River Welland are found;
- Land to the south of the site supports residential housing beyond which the A1175 and agricultural fields are found;
- Land to the west of the site supports South Drove, South Drove Drain and Littleworth Drove beyond which residential housing beyond and agricultural fields are found; and
- Land in the wider area surrounding the site supports agricultural fields, drains and residential housing.

The appendices contained in this report include a Site Location Plan (Drawing 002), Site Features Plan (Drawing 003) and a General Photographic Record (Drawing 004). A Site Investigation Plan is also presented (Drawing 005).

The description of the site provided above is taken following a relatively brief visit and should not be taken as a full and thorough description of all of the site's features, some of which may also have been obscured during our visit in inaccessible areas, hidden by vegetation etc.

2.0 SCOPE OF PHASE II INVESTIGATION

2.1 Potential Areas of Concern

The Phase I Report identified the following potential areas of concern at the site which would merit further inspection / investigation:

- On-Site:
 - Barns (Potential Storage of Farm Machinery, Fuels, Oils, Pesticides etc);
 - Historic Farming (Possible Use of Pesticides);
 - Stockpiles (Including Mixed Soils with Building Waste and Materials);
 - Waste Materials (Including Derelict Machinery Parts, Scrap Metal, etc);
 - Suspected Asbestos Containing Materials;
 - Potential Peat Present in Superficial Deposits;
 - Historic Smithy;
- Off-Site:
 - Historic/Current Farming (Possible Use of Pesticides);
 - Historic Smithy and Saw Pit;
 - Nearby Drains / Watercourses (May Contain Organic Gas Generating Material); and
 - Potential Peat Present in Superficial Deposits.

Elemental GI Ltd can confirm that the potential sources / contaminants listed above are reasonable and should remain unchanged.

2.2 Site Investigation Layout

The following exploratory holes have been positioned at the site:

Table 2.1: Site Investigation Layout

Potential Source / Issue	Exploratory Holes
General Site Coverage	ALL HOLES
Barns	WS01
Historic Farming	ALL HOLES
Stockpiles	SS01, HTP02
Waste Materials	WS01, WS02, WS04, WS05, WS06, HTP01, HTP02
Suspected Asbestos Materials	WS06
Potential Peat	All WS HOLES
Historic Smithy and Saw Pit	HTP03

Whilst all reasonable efforts will be made to ensure sufficient coverage of the site / potential areas of concern, it should be noted that ground conditions may vary between exploratory positions. The reader is referred to the terms, conditions and notes which are presented at the end of this report in relation to its potential limitations.

All arisings shall be inspected following completion of each exploratory hole, and samples will be selected for analysis on the basis of their appearance (including visual or olfactory evidence of contamination). Elemental GI Ltd shall arrange for samples to be delivered to a suitably accredited laboratory for subsequent testing.

Samples shall be tested for a general range of contaminants (in accordance with NHBC Standards Chapter 4.1 'Land Quality - managing ground conditions' and CLR 8 'Potential Contaminants for the Assessment of Land' (withdrawn but used for reference purposes where applicable)). Where appropriate they shall also be analysed for specific / targeted analyses, and at the subject site this shall include:

- Heavy metals;
- Polycyclic aromatic hydrocarbons (PAHs);
- Phenols;
- pH;
- Total petroleum hydrocarbons (TPH);
- Asbestos; and
- Pesticides.

3.0 SITE INVESTIGATION WORKS

3.1 Completion of Works

The recent site investigation works were completed by Elemental GI Ltd in general accordance with BS 5930:2015+A1: 2020.

The Client cleared vegetation across investigation areas of the site prior to our recent site works, although dense vegetation remained present in some areas (e.g. south-western and north-western corners) and fill inspection of these areas was therefore not possible. Exploratory holes which were proposed in the vicinity of these were re-positioned to alternative locations nearby.

3.2 Site Investigation Details

The exploratory holes were completed by Elemental GI Ltd at the site as listed in Table 2.1 (above). These were completed to a maximum total depth of 5.00m below existing ground level (begl). Table 3.1 (below) presents a summary of the works completed:

Table 3.1: Site Investigation Summary

Exploratory Hole(s) ID	Maximum Final Depth (m)	Notes
WS01 to WS07	5.00	Window Sampler Drilling Locations
HTP01 to HTP03 and SS01	0.35	Hand-Dug Trial Pits

A copy of the exploratory hole records from these works is presented in Appendix VI.

4.0 GEOTECHNICAL ASSESSMENT

4.1 General Ground Conditions

4.1.1 Made Ground

Made ground was encountered in mostly all areas of the site to a maximum total depth of 1.1m below existing ground level (begl). This generally comprised either silty / sandy gravelly materials or reworked topsoil materials at shallow depths, which was underlain by reworked clay / silt materials in some areas.

The recent investigation has provided a 'snapshot' of the made ground materials but should not be taken as a full and complete description of all made ground materials which may be present on site. Such materials must therefore be investigated and classified / categorised fully by specialists undertaking their own works at the site (including but not limited to remedial works and geotechnical / groundworks) in advance of any estimates, works etc. so that the full composition of these materials can be understood by them to their own satisfaction (and to allow them to prepare a scheme of re-use and / or a schedule (including costings) for waste disposal purposes.). We cannot accept responsibility for any ground conditions (including groundwater, gas etc.) that have not been revealed by the exploratory holes, or which (most importantly) occur between / beneath them.

4.1.2 Topsoil

Topsoil was encountered at WS03 to a maximum total depth of 0.35m. This comprised brown slightly sandy clayey silty TOPSOIL with frequent roots and rootlets.

Topsoil was not encountered in any of the remaining exploratory holes completed during the recent investigation, although reworked topsoil was present at most locations which may be visually / aesthetically suitable for retention / re-use if proven 'clean'.

4.1.3 Natural Soils / Bedrock

The natural soils at the subject typically comprised orangish-brown and grey slightly sandy clay / silt overlying grey slightly sandy clay / silt (or silty sands).

These natural soils were typically very low strength, with mostly all recorded as being 'very soft' or 'soft'. Peat was recorded at the following locations / depths:

- WS04 - Pockets / bands recorded between 3.60m and 3.95m begl;
- WS05 - Pockets / bands recorded between 2.75m and 4.79m begl; and
- WS06 - Pockets / bands recorded between 3.40m and 3.90m begl.

4.1.4 Groundwater and Stability

Water was recorded at the following locations:

- WS01: Water encountered at 1.70m depth during drilling. No water encountered after drilling.
- WS02: Water encountered at 2.00m depth during drilling. Water encountered at 1.25m depth after drilling.
- WS03: Water encountered at 3.35m depth during drilling. Water encountered at 3.60m depth after drilling.
- WS04: Water encountered at 4.40m depth during drilling. Water encountered at 3.80m depth after drilling.
- WS05: Water encountered at 1.60m depth during drilling.
- WS06: Water encountered at 3.70m depth during drilling. No water encountered after drilling.
- WS07: Water encountered at 3.45m depth during drilling. No water encountered after drilling.

Return visits undertaken to site so far have recorded water ranging from 1.02m to 2.31m bgl in monitoring wells.

Based on the above, it is considered likely that dewatering or other forms of water management are likely to be required for shallow short term excavations at the site. Surface, perched water or groundwater should not be allowed to collect within excavations.

In general, the exploratory holes which were recently completed as part of our investigation remained stable at shallow depths for the short time which they were left 'open' although 'collapse' of slightly deeper soils was noted in most exploratory holes at the site following their completion, which should be considered carefully in the context of health and safety and trench support as part of all future construction works (see Exploratory Hole records presented in Appendix VI for further information).

4.2 Geotechnical Laboratory Testing

Geotechnical laboratory testing was beyond the remit of the current works which we have been appointed for at the subject site. However, it is recommended that the soil properties should be confirmed to assist with future construction designs including (but not limited to) the plasticity indices, particle size distributions and desiccation status. The classification / performance of soils in relation to highways and pavements may also require confirmation.

4.3 *In Situ* Testing

Equivalent SPTs (standard penetration tests) were undertaken in all boreholes at appropriate depths at the site. The following results were recorded:

Table 4.2: *In Situ* SPT 'N' Value Results v Depth

Depth (m begl)	Range Reported
1.0m	1 to 5 (Average 3.4)
2.0m	0 to 2 (Average 0.3)
3.0m	0 to 4 (Average 1.0)
4.0m	0 to 6 (Average 2.6)
5.0m	0 to 5 (Average 2.5)

In general, it was noted that SPT results were extremely low, often recording 'zero' blow counts as the test apparatus sank through the test zone under its own weight without any additional mechanical / percussive force.

4.4 Geotechnical Considerations

Geotechnical recommendations are beyond the remit of the current works which we have been appointed for at the subject site. However the following potential hazards (NB this is not an exhaustive list and would require specific further investigation(s) to confirm) have been identified at the site which may need to be considered by developers and their partners (including groundworkers, designers and other specialist engineers):

- Concrete Design Class - Elemental GI Ltd are not specialists in the specification and performance of concrete and therefore advice must always be sought by a suitable specialist on all sites. Results from the recent testing are included with this report for their review and classification in accordance with all relevant standards (e.g. BRE SD1). Minimum concrete specification should be in accordance with all relevant standards including BRE SD1 and NHBC Standards, Section 3.1. However, it is provisionally noted from the recent testing that extremely high concentrations of oxidisable sulphides may be present and therefore increased concrete design classes are likely to be required for future development / construction. We would strongly recommend contacting specialist concrete engineers (e.g. Dascon) for further site-specific advice before proceeding with any design or construction works.
- Granular Soils / Groundwater - Granular soils (and soils with high granular contents) are present across the site. Groundwater / perched water has also been encountered at shallow depths across the site (NB this should be specifically assessed by all designers (e.g. utility installers and drainage engineers) in advance of any redevelopment / construction works in relation to any constraints which shallow groundwater levels may present to their own designs / works). If water is found during construction, then alternative foundation strategies (and similar works) should be

considered as groundwater will reduce the bearing capacity of these materials. If present within an influencing depth of foundations and / or encountered during foundation excavations, then Elemental GI Ltd should be contacted for further advice. For all sites seasonally variable groundwater should be anticipated, and unless proven otherwise any derived bearing capacities should be adjusted appropriately adjusted by the designing Structural Engineers (i.e. 'halved') to allow for shallower water being present during wetter periods which may significantly reduce soil strengths temporarily. Dewatering is likely to be required in excavations should water be present at elevations above those recorded during our recent works.

- Variable Ground Conditions - Advice should be sought where foundations straddle variable soil types (i.e. cohesive / granular). Whilst suitable mesh reinforcement may be sufficient to mitigate against differential settlement in some such situations, an adjustment of the foundation depths for each individual structure so that they sit fully within a singular consistent stratum (soil type) at depth through piling is usually recommended on sites such as this one to further reduce such risks. A 'linear feature' is recorded on geological mapping in the eastern area of the site. It is recommended that specific geotechnical investigations (e.g. trenching and / or probe-drilling) must be undertaken across this area of the site once final layouts are proposed so that specific risks may be explored and assessed, if present.
- Soft / Loose Soils - Very loose / very soft soils have been encountered across the site. These will need to be taken into account as part of any redevelopment. Peat was also encountered in some holes completed during the recent works. At this stage it is considered most likely that alternative foundations (e.g. piles) will be the optimum foundation solution for future construction, although it is recommended that this is fully assessed through completion of specific investigation works once final layouts are proposed. Peat was mostly encountered as thin bands at some southern / south-western locations, although the presence of these deposits must be assessed by all stakeholders / designers so that any constraints can be identified by them to the Client prior to the start of any works at the site.
- Running Sands - Running sands have not been encountered at this stage however, sands / granular soils saturated with water have been encountered, and therefore the potential for running sands must be considered as part of future redevelopment works. If encountered, then additional support will be required when excavating. Consideration may be given to the potential use of alternative foundation options (e.g. piled foundations) in areas where such ground conditions are extensive or prohibitive.
- General Limitations: The recent investigation has provided a 'snapshot' of the soils, groundwater, made ground materials and other site features but should not be taken as a full and complete description of everything which may be present on site. Such features must therefore be investigated and classified / categorised fully by specialists undertaking their own works at the site (including but not limited to

foundation designs, remedial works and geotechnical / groundworks) in advance of any estimates, works etc. so that the full composition of these materials can be understood by them to their own satisfaction. Any historic and / or natural ground disturbances (e.g. field boundaries) which ran through the site may not be encountered by site investigations, but any future construction should be vigilant for unusual ground conditions in such areas. Elemental GI Ltd should be contacted for further advice if encountered.

This report has been summarised and presented to allow the reader and other professionals / stakeholders to view the most important points easily. However, some important notes and precautions apply, and these are presented in the 'terms and conditions' section of this report. These are not standard caveats, and they include important points which should be followed carefully within the context of this report.

4.5 Foundation Recommendations

Foundation recommendations are beyond the remit of the current works which we have been appointed for at the subject site. However, at this stage it is provisionally noted that all foundations must always be deepened through all made ground and locally soft / loose shallow natural soils to terminate within deeper / competent natural soils. Due to the depth of soft / loose soils recorded during our initial investigation works, alternative foundation options such as piling will therefore be required at this site. It is recommended that advice should be sought from specialist contractors and designers, who are likely to require additional investigation of deeper ground conditions (i.e. to confirm the depths at which competent / robust ground is present).

Foundations terminating within cohesive soils or within an influencing depth of cohesive soils would usually need to be deepened within the influencing distance of trees due to their volume change potential and desiccation status, although this may not be a significant issue if alternative (piled) foundation options are considered although heave precautions etc. may still need to be considered. This should be assessed appropriately as part of any future investigations.

Please refer to these terms and conditions for an important list of exclusions / assumptions etc.

5.0 ENVIRONMENTAL ASSESSMENT

5.1 Selection of Screening Values

The current UK screening values for the comparison of soil test data are presented by DEFRA within their 'Category 4 Screening Levels' (C4SLs). This includes screening values for a selected range of end-uses for 6 No. determinands, and is supplemented by the CL:AIRE 'Phase 2 C4SLs', which provide screening values for a further 3 No. determinands. These screening values have been derived using an LLTC and are used as the primary comparison for risks from determinands within soil samples from the site. Where appropriate we have also reviewed and utilised screening values from other authoritative parties (e.g. LQM, CIEH etc.) who have calculated further screening values for additional determinands, although it is noted that these providers typically generate screening values which are based upon health criteria values (HCVs; as opposed to LLTCs) which represent a lower (minimal) risk level and are therefore more conservative.

At this stage screening values which assess the concentrations of determinands in comparison to a residential with plant uptake end-use have been adopted, which is considered to be appropriate for the proposed end-use at the site. However, alternative screening values (e.g. Public Open Space 1 or 2) may also be used where appropriate.

5.2 Environmental Laboratory Testing

Soil samples from the site were retrieved and submitted for laboratory analysis in accordance with Section 2.2 and Table 2.1 of this report.

Laboratory testing certificates are presented in Appendix VII, with Table 5.1 (overleaf) presenting a summary of the test data.

Table 5.1: Laboratory Analysis of Soil Samples

Analyte	Concentrations Detected (mg/kg)	Screening Values (mg/kg)	No. of Samples	No. of Exceedances
Arsenic	7.9 - 20.0	37.0 ^b	8	0
Cadmium	<1.6*	11.0 ^b	8	0
Chromium (Total)	36.0 - 60.9	910.0 ^b	8	0
Chromium VI	<0.04*	6.0 ^b	8	0
Lead	15.8 - 124.2	200.0 ^a	8	0
Selenium	<3.0*	250.0 ^b	8	0
Nickel	13.0 - 34.3	130.0 ^b	8	0
Copper	10.4 - 59.8	2400.0 ^b	8	0
Zinc	52.2 - 105.6	3700.0 ^b	8	0
Mercury	<0.7*	1.2 ^b	8	0
Benzo(a)pyrene	<0.02 - 38.0	2.2 ^b	8	1
Dibenzo(a,h)anthracene	<0.02 - 7.3	0.24 ^b	8	1
TPH Aliphatic EC ₅ -EC ₆	<0.1*	42.0 ^b	2	0
TPH Aliphatic EC ₆ -EC ₈	<0.1*	100.0 ^b	2	0
TPH Aliphatic EC ₈ -EC ₁₀	<0.1*	27.0 ^b	2	0
TPH Aliphatic EC ₁₀ -EC ₁₂	<1.0*	130.0 ^b	2	0
TPH Aliphatic EC ₁₂ -EC ₁₆	<0.5 - 1.42	1100.0 ^b	2	0
TPH Aliphatic EC ₁₆ -EC ₃₅	20.74 - 48.24	65000.0 ^b	2	0
TPH Aromatic EC ₅ -EC ₇	<0.01*	70.0 ^b	2	0
TPH Aromatic EC ₇ -EC ₈	<0.01*	130.0 ^b	2	0
TPH Aromatic EC ₈ -EC ₁₀	<0.01*	34.0 ^b	2	0
TPH Aromatic EC ₁₀ -EC ₁₂	0.9 - 2.0	74.0 ^b	2	0
TPH Aromatic EC ₁₂ -EC ₁₆	2.93 - 11.51	140.0 ^b	2	0
TPH Aromatic EC ₁₆ -EC ₂₁	6.79 - 49.41	260.0 ^b	2	0
TPH Aromatic EC ₂₁ -EC ₃₅	62.49 - 551.28	1100.0 ^b	2	0
Benzene	<0.003*	0.087 ^b	1	0
Toluene	<0.003*	130.0 ^b	1	0
Ethylbenzene	<0.002*	47.0 ^b	1	0
Xylenes (sum of isomers)	<0.008	56.0 ^b	1	0
Pesticides ('TICs')	ND	Varies ^d	1	0
pH	7.4 - 8.2	N/A	13	N/A
Asbestos	ND	D ^c	7	0

^a DEFRA C4SL values for a Residential end-use with gardens;

^b Third party UK screening values e.g. CIEH, CL:AIRE, Elemental GI Ltd and LQM 'S4UL' values for a residential end-use with private gardens (licence S4UL3849);

^c Elemental GI Ltd general screening level;

* Contaminants all recorded below laboratory limits of detection; and

DL = Detection Limits, N/A = Not Applicable, ND = Not Detected, D = Detected.

Table 5.1 has identified the following exceedances in relation to the selected screening values (residential with private gardens):

- 1 No. exceedance of benzo(a)pyrene:
 - Samples from HTP01 of made ground at 0.0m begl;
- 1 No. exceedance of dibenzo(a,h)anthracene:
 - Samples from HTP01 of made ground at 0.0m begl.

It is noted that the exceedances summarised above were all within samples retrieved from made ground materials which were present at the surface at / around HTP01. No exceedances from samples retrieved from the underlying natural soils or from any other made ground were encountered.

Given the site's history and current layout / features it is possible that currently unidentified areas of contamination or potentially contaminative features may be present which will be encountered during redevelopment. Please contact us for further advice immediately if this happens. During our recent ground investigation suspected asbestos containing materials were noted at the surface and upon stockpiles in the southern area of the site and were also found along the track near the site entrance. Testing of soils within and around these areas did not record the presence of asbestos materials or free fibres. However, as a precautionary measure we have recommended to the Client that a specialist asbestos surveyor is appointed to 'hand pick' any / all potential asbestos containing materials across the entire site prior to the start of any redevelopment / construction works.

This report has been summarised and presented to allow the reader and other professionals / stakeholders to view the most important points easily. However, some important notes and precautions apply, and these are presented in the 'terms and conditions' section of this report. These are not standard caveats, and they include important points which should be followed carefully within the context of this report.

5.3 Sulphate Classification

Please see Section 4.4.

5.4 Statistical Assessment

Statistical assessment of soil test data is only appropriate where a sufficient sample population is present. This requires a minimum number of soil samples from the same averaging zone. The data currently available for the subject site is not considered to be suitable for statistical assessment as the results may not prove reliable. As a conservative alternative the direct comparison of soil test data to the selected screening values (as outlined in the sections above) shall be adopted at this stage.

5.5 Radon and Ground Gas

The site is in an area where less than 1% of homes are estimated to be at or above the Action Level. Therefore, radon protective measures are not required, subject to regulatory approval.

The site's CSM indicated that potential risks were present and a ground gas monitoring exercise was therefore commissioned by the Client to assess potential risks further.

A copy of our gas monitoring records taken to date is presented in Appendix VIII. In summary the following concentrations / flows have been recorded thus far:

- Carbon dioxide (CO₂) recorded up to a maximum of 3.0 % v/v;
- Methane (CH₄) recorded up to a maximum of 0.00 % v/v;
- Oxygen (O₂) recorded to range from 18.6 % v/v and 20.4 % v/v; and
- Flow recorded up to a maximum of 0.0 l/hr.

In accordance with our standard ground gas assessment methodology the site would be indicatively classified as:

- CS1

At this stage ground gas protection measures will not therefore be required for new structures at the site, subject to the completion of final gas monitoring visits and regulatory / warranty provider approval.

Please note that peat deposits may exhibit highly variable ground gas generation patterns alongside factors such as saturation / water elevation(s), and the suitability of the above ground gas classification should therefore be re-assessed by a specialist assessor prior to the start of any future construction / redevelopment works.

6.0 UPDATED CONCEPTUAL SITE MODEL

The initial CSM was formed to set a basis for the assessment and investigation across the subject site. This has been used to provide focus and direction for certain parts of the site investigation works, and the data gathered from these works (including laboratory analyses and visual / olfactory observations) can now be used to update the CSM.

6.1 Human Health CSM

A review of historic mapping indicates that the site has been an open field since the 1880's. Historic mapping shows a Smithy with a saw pit encroaching on to the entrance of the site from 1886 to 1969. Anecdotal evidence shows that the site was originally used for farming but during recent years the site has been used for storing building materials with storage sheds located in the north-western area of the site.

Potential areas of concern were identified within the Phase 1 conceptual site model including historic activities, derelict sheds and mounded materials.

The site is underlain by a limited thickness of made ground, beneath which are natural sandy silt / clay soils. Groundwater was recorded beneath the site at relatively shallow depths.

The laboratory testing of soil samples indicated that the following exceedances are present in relation to the chosen initial screening values:

- 1 No. exceedance of benzo(a)pyrene:
 - Samples from HTP01 of made ground at 0.0m begl;
- 1 No. exceedance of dibenzo(a,h)anthracene:
 - Samples from HTP01 of made ground at 0.0m begl.

In accordance with our standard risk assessment methodology (presented at the end of this report), the following sources, pathways and receptors have been identified at the subject site at this stage:

Table 6.1: Updated Human Health CSM

<i>Investigated Onsite Sources</i>	Pathways	Receptors	Comment / Risk Rating [#]
Barns (Potential Storage of Farm Machinery, Fuels, Oils, Pesticides etc)	• Migration in Soils • Groundwater • Direct Contact • Plant Uptake • Dust Inhalation • Ingestion	• End Users • Groundwater	Risks ABSENT Contamination not recorded during investigation works
Historic Farming (Possible Use of Pesticides)	• Migration in Soils • Groundwater • Direct Contact • Plant Uptake • Dust Inhalation • Ingestion	• End Users • Groundwater	
Stockpiles (Including Mixed Soils with Building Waste and Materials)	• Migration in Soils • Direct Contact • Plant Uptake • Dust Inhalation • Ingestion	• End Users	
Waste Materials (Including Derelict Machinery Parts, Scrap Metal, etc)	• Migration in Soils • Groundwater • Direct Contact • Plant Uptake • Dust Inhalation • Ingestion	• End Users • Groundwater	LOW Exceedances of PAHs identified at location HTP01 associated with surfacing materials
Suspected Asbestos Containing Materials	• Migration in Soils • Dust Inhalation	• End Users	Risks ABSENT Contamination not recorded during investigation works
Potential Peat Present in Superficial Deposits	• Ground Gas Migration	• End Users	
Historic Smithy	• Migration in Soils • Groundwater • Direct Contact • Plant Uptake • Dust Inhalation • Ingestion	• End Users • Groundwater	
<i>Offsite Sources</i>			
Historic/Current Farming (Possible Use of Pesticides)	• Migration in Soils • Groundwater • Direct Contact • Plant Uptake • Dust Inhalation • Ingestion	• End Users • Groundwater	Risks ABSENT Contamination not recorded during investigation works
Historic Smithy and Saw Pit	• Migration in Soils • Groundwater	• End Users • Groundwater	
Nearby Drains / Watercourses (May Contain Organic Gas Generating Material)	• Ground Gas Migration	• End Users	
Potential Peat Present in Superficial Deposits	• Ground Gas Migration	• End Users	

[#] Risk ratings are described in Table A1 within the 'Standard Risk Assessment - Considerations and Methodology' section at the end of this report.

6.2 Potential Pollutant Linkages:

For an identified / confirmed pollutant linkage to be present, potential sources, pathways and receptors must be present. With reference to the proposed end use, feasible potential pollutant linkages have been identified at the site as outlined in table 6.1 above. Remediation works are therefore considered necessary to break these linkages to the satisfaction of the Client and regulatory authorities (and other parties, as appropriate e.g. NHBC).

6.3 Controlled Waters Summary

The site is underlain by 'unproductive' aquifers and is not set within an area of particular sensitivity in relation to controlled waters.

As summarised in section 6.1, exceedances have been recorded within soils at the site although this provisionally appears to be limited to surface materials (made ground) around location HTP01.

At this stage risks to controlled waters do not appear to be present.

6.4 Model Status and Uncertainty

The potential significant linkages discussed in this section are based on available data reviewed to date. Some areas of the site (e.g. beneath barns / sheds and across areas covered by vegetation) have not been observed / investigated and these areas must be suitably inspected prior to the start of any redevelopment / construction to ensure that they are free of contamination.

7.0 RECOMMENDATIONS

A review of the available site information (as discussed herein) has been undertaken to inform the following conclusions and recommendations. However, this report should be submitted to the appropriate regulators (and other stakeholders, as necessary) by the Client prior to the start of any irrecoverable works associated with the site.

7.1 Foundations and Enabling Works

Foundation recommendations are beyond the remit of the current works which we have been appointed for at the subject site. Elemental GI Ltd are aware that specialist structural engineers who are experts in local ground conditions in this area may be able to assess the shallow ground in some parts of the site to judge feasibility to support shallower foundations, subject to additional appropriate *in situ* testing and their own bespoke design works. The Client may wish to discuss this site with them to determine the feasibility of any such future investigations. However, at this stage it is provisionally noted that the soft / loose soils recorded during our initial investigation works are not considered suitable for shallow / traditional foundations and therefore alternative foundation options such as piling will be required at this site. It is recommended that advice should be sought from specialist contractors, who are likely to require additional investigation of deeper ground conditions (i.e. to confirm the depths at which competent / robust ground is present).

Please see section 4.0 for further information on other observations and potential hazards.

7.2 Groundwater

Water ingress was noted at variable (but typically shallow) depths during the recent site works. Return visits undertaken to site so far have recorded water ranging from 1.02m to 2.31m bgl in monitoring wells.

Based on the above, it is considered likely that dewatering or other forms of water management are likely to be required for shallow short term excavations at the site. Surface, perched water or groundwater should not be allowed to collect within excavations. We have also recommended that the shallow elevation(s) of groundwater should be closely and cautiously considered by all designers, utility providers etc. in the context of their own works at the site in relation to any constraints which this may present.

7.3 Road Construction

Literature sources typically suggest that CBR values of less than 2% can be anticipated in the made ground and topsoil and values between 2% and 5% can be anticipated in the underlying natural soils subject to *in situ* testing. Lower CBR values may be anticipated at the subject site based upon the *in situ* strengths recorded within boreholes etc. All road construction proposals should be agreed with the Local Authority prior to finalising designs.

7.4 Drainage

The site is underlain by cohesive soils and by granular soils with a high cohesive content. Shallow groundwater is present. Infiltration rates would be assumed to be poor / low within these soils and therefore *in situ* soakaway testing would not be considered to be worthwhile at this stage. All drainage proposals should be reviewed by suitably qualified engineers and by the appropriate drainage regulator(s).

7.5 Radon and Ground Gas

The site is not set within an area which is known to be at risk from radon gas and therefore no precautions are necessary, subject to regulatory approval.

A ground gas monitoring programme has been commissioned for the site which is ongoing at the time of writing. At this stage no significant concentrations of ground gas have been recorded and therefore ground gas protection measure would not be recommended, subject to regulatory approval and completion of our final monitoring visits.

7.6 Excavations

In general, the exploratory holes which were recently completed as part of our investigation remained stable at shallow depths for the short time which they were left 'open' although 'collapse' of slightly deeper soils was noted in most exploratory holes at the site following their completion, which should be considered carefully in the context of health and safety and trench support as part of all future construction works (see Exploratory Hole records presented in Appendix VI for further information). All future excavations should therefore be assumed to be unstable as a conservative and risk-averse measure. The Client and / or site operators should assess risks associated with entry into excavations based upon these observations and should apply suitably safe working practices / support measures (in accordance with current best practice / guidance) to avoid risks to site workers / construction activities.

Shallow groundwater and soft soils were encountered at the site. These conditions should be considered with regards to the excavations of foundations, utility / service trenches etc. It is also recommended that all conditions which were encountered at the site should be assessed by the Client and their appointed groundworkers etc. in relation to future excavations of foundations, utility / service trenches etc. and (as always) all of the other findings from the recent ground investigation should be passed to your designers, groundworkers etc. for their own expert / independent appraisal in relation to how the conditions on site may affect their own works.

7.7 Contamination

The Phase II Conceptual Model and the Qualitative Risk Assessment outlined herein indicate that feasible pollutant linkages have been identified. This relates to elevated concentrations

of various PAH compounds in shallow surfacing materials around HTP01. Further made ground was encountered nearby (WS01) which did not contain elevated concentrations of contaminants, potentially indicating this to be a 'hotspot' associated with the shallow made ground in this area of the site.

Any future construction works within this area of the site should fully consider the risks from cross-contamination and creation of 'pathways'.

7.8 Remediation

Remediation works to protect human health are considered necessary. It is recommended that a remedial method statement (RMS) is produced to guide future remedial works. The potential hotspot of contamination which has been identified at the site may relate solely to the surface materials in this area, and therefore the localised removal of these shallow materials (i.e. for encapsulation beneath future hardstanding etc. or for off-site disposal) followed by the confirmatory testing of exposed deeper soils (i.e. to prove they are 'clean') may prove to be a suitable approach to break the identified pollutant linkages, subject to Regulatory Authority / NHBC (or similar) approval.

7.9 Topsoil / Management of Materials

Topsoil was not commonly encountered at the site (with the exception of location WS03) although reworked topsoil have been analysed and proven 'clean'. Importation of additional topsoil is therefore considered unlikely to be necessary, although the reworked soils may require pre-treatment (e.g. 'riddling', hand-picking etc.) to remove unsuitable materials.

As with all schemes / sites, all movements of all soils and similar materials (including their re-use on site, importation and exportation) must be undertaken in full compliance with all relevant licenses / permits / exemptions etc. as applicable (i.e. U1, MMP etc) and with all necessary regulatory permissions. These must be in place before any works take place. We would particularly draw your attention to the recently released Environment Agency guidance "*Excavated waste from utilities installation and repair: RPS 211 Updated 28 April 2023*". Retrospective implementation of all such applications may not be permitted and therefore this should be established by the Client prior to the start of construction works.

Any soils which are re-used or which are brought onto site should be suitably tested and approved by the Local Authority in advance (this may include classification of 'topsoil' against standards such as BS3882: 2015 'Specification for Topsoil').

7.10 Mining

No coal mining issues have been identified at the site at this stage, subject to regulatory authority approval. Whilst it is considered unrelated to mining, a 'linear feature' is recorded on geological mapping in the eastern area of the site. It is recommended that specific

geotechnical investigations (e.g. trenching and / or probe-drilling) should be undertaken across this area of the site once final layouts are proposed so that specific risks may be explored and assessed, if present.

7.11 Further Works

Further works have been recommended in this report, including the following main recommendations:

- Completion of further investigation and testing works as identified within this report (e.g. linear feature, suitability / properties of soil re. piled foundations etc.);
- There are mounds and stockpiles of materials in some areas of the site. All materials (natural or anthropogenic) which are to be moved (or removed) will require full inspection and classification to confirm the suitability of their fate and (where applicable) or suitability in the context of any future earthworks. It is recommended that special caution should be applied to all potential costs associated with off-site disposal;
- Production of a Remedial Method Statement (RMS) confirm remediation requirements across the site;
- Verification of appropriate utility construction materials with the relevant providers; and
- Where soils are to be removed from site for disposal it is recommended that these are fully characterised (i.e. to confirm material types and disposal options) and that advice is sought from the appointed contractors to determine any requirements for specific testing etc.

Terms and Conditions

Consideration of factors such as concrete design class, desiccation, settlement and related matters may need to be undertaken separately once this information is known / provided and this has not been assessed unless stated otherwise as it is assumed that your appointed Structural Engineers have made sufficient allowances etc. and / or have assessed such factors directly. Specific details relating to construction (e.g. concrete design class) MUST be assessed conservatively and directly by the parties finalising those aspects of the project as part of their own works once the project details can be considered holistically by them.

We have obtained and reviewed information relating to the site, but this may not be complete, and liability cannot be accepted for information not available to Elemental GI Ltd at the time of writing this report. This report has been written in consideration of construction / development proposals (or similar) as described in Section 1.0 of this report. If any of these proposals change (e.g. layout), then this report may be subject to change. Environmental factors may change over time (including climate change, water / rainfall conditions etc) which may present conditions not experienced during the works described herein. We cannot accept liability for any conditions not identified / experienced during the works described herein, and it is assumed that suitable contingencies are therefore included within site designs by your other appointed Engineers (and similar professionals) in accordance with best practice and appropriate precautions.

The actual measurable area of the site which has been physically inspected (e.g. through drilling / excavations etc.) as part of the works discussed in this report is very small when compared to the total area of the site, and therefore our findings should not be seen as being complete, thorough or comprehensive in relation to the ground / water conditions at this stage. Whilst we have endeavoured to assess and investigate the site in accordance with the scope of these works, it always remains possible that ground conditions will vary between and beneath locations. This may include ground type, strength and groundwater conditions. There may therefore be conditions prevailing on site which have not been revealed by this assessment and which have not been taken into account by this report. The best way to ensure that recommendations (including foundation recommendations) are appropriate is to appoint a suitably experienced and qualified Engineer to inspect all formations (foundation excavations) prior to construction. It is therefore always recommended that the Client undertakes this for all sites, and this advice applies to the site discussed in this report. Responsibility cannot be accepted for any works undertaken which deviate from the recommendations presented herein and for all / any conditions not revealed by this investigation and assessment. It should be noted that groundwater levels etc. may vary due to seasonal and other effects. Whilst it may be utilised by others for reference purposes at the Client's discretion, it has not been prepared for any other purposes (e.g. waste classification, drainage excavations etc.) and therefore additional works may be required by third parties dependent upon their own requirements / works. Any works which are proposed at greater depths than reported herein may require confirmatory investigation works as necessary.

This report has been prepared for the sole use and reliance of the Client. No other third party may rely upon, use or reproduce the content of this report without our prior written approval. If any unauthorised third party comes into possession of this report, they rely upon it entirely at their own risk and the authors do not owe them any warranty, duty of care or skill.

Our report, including the conclusions and recommendations, are considered reasonable based on the findings of the various assessments. However, these cannot be guaranteed to gain regulatory approval and therefore the Client should submit it to them (as necessary) for their comments and approval prior to undertaking any irrecoverable works associated with the subject site.

The findings and recommendations made in this report are based on published information (as presented in the accompanying appendices). Elemental GI Ltd cannot accept responsibility for the reliability and authenticity of published information or reports prepared by third parties.

The conclusions and recommendations presented herein are considered reasonable based on the assessments of the site undertaken by Elemental GI Ltd. However, these cannot be guaranteed to gain regulatory approval and therefore copies of this report should be sent to the appropriate regulatory authorities and / or other organisations (as appropriate) by the Client for their comments and approval prior to undertaking any irrecoverable works associated with the site.

We cannot accept responsibility for any ground conditions (including groundwater, gas etc.) that have not been revealed by the exploratory holes, or which (most importantly) occur between / beneath them. The possibility of significant variation in ground conditions existing between / beneath test locations / depths cannot be discounted and must be considered within the design proposals for the subject site. All soakaway designs should be approved by the relevant statutory authority prior to implementation and must adhere to the standard design and ground setting requirements, upon which your appointed drainage design engineers should advise you. Where comments / recommendations have been made relating to specific depths it cannot be guaranteed that ground conditions shall be similar at surrounding / underlying depths, which should be taken into consideration as necessary by others.

With respect to the document to which this sheet is appended, the warranty provided with our works / reports etc. shall only apply once all invoices that we have sent in relation to the same site / project discussed herein (i.e. the site discussed within this document) have been paid by the Client within the payment period specified on each invoice. The warranty and all reliance upon / use of this report (in part or in full, including all text, drawings, logs, associated correspondence etc.) is both voided and prohibited unless all invoices relating to it are settled in full within the period (i.e. 'Terms' e.g. 'Net 20') specified on such invoices.

Elemental GI Ltd - Our Standard Risk Assessment Approach

We have used various guidelines and current legislation in the preparation of this report. This includes (but is not limited to) the following:

- DEFRA / EA document 'Contaminated Land Report 11 (CLR11) Model Procedures for the Management of Land Contamination' (2004) [*withdrawn but used for general reference purposes*];
- NHBC / EA / CIEH document 'Guidance for the Safe Development of Housing on Land Affected by Contamination' (2008);
- DEFRA 'Environmental Protection Act 1990: Part 2A - Contaminated Land Statutory Guidance (2012); and
- Environment Agency 'Land contamination risk management (LCRM)' (2020, last updated April 2021) held at:
 - <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>

Construction of Conceptual Site Model

Elemental GI Ltd have based our standard risk assessment methodology upon current legislation and prevailing best practice and available guidance. This includes the assessment of potentially contaminated land in terms of 'significant pollutants' and 'pollutant linkages', using SOURCE-PATHWAY-RECEPTOR scenarios for the site. For a pollutant linkage to exist all three of these elements must be present. These have been clearly defined in the guidance as follows:

- potential source as 'a contaminant which is in, or under the land and which has the potential to cause significant harm or to cause pollution of controlled waters'.
 - potential pathway as 'one or more routes or means by, or through, which a receptor is being exposed to, or affected by a contaminant, or could be so exposed or affected'.
 - potential receptor as 'a living organism, a group of living organisms, an ecological system or a piece of property which is being or could be, harmed by a contaminant or controlled waters which are being, or could be, polluted by a contaminant'.
-

Within this report, common pathways including (but not limited to) the following have been considered (amended on a site-specific basis):

- Ingestion of soil;
- Ingestion of site-grown vegetables;
- Ingestion of site-reared livestock / fish;
- Dermal contact with soils;
- Inhalation of vapours;
- Inhalation of soil-derived dust.

Receptors will be considered on a site-specific basis, but will usually include the current / future users of the site itself as well as users of surrounding sites. Other receptors including controlled waters will also be considered and assessed.

Risk Assessment Methodology

Our risk assessment methodology is based upon a phased approach which is created through the construction of the sites conceptual site model, and which takes the following steps (taken from LCRM Guidance):

1. *Identify the hazard - establish contaminant sources.*
2. *Assess the hazard - use a source-pathway-receptor (S-P-R) linkage approach to find out if there is the potential for unacceptable risk.*
3. *Estimate the risk - predict what degree of harm or pollution might result and how likely it is to occur by using the tiered approach to risk assessment.*
4. *Evaluate the risk - decide whether a risk is unacceptable.*

The meaning of the terms are:

- *hazard - a property or situation that in particular circumstances could lead to harm or pollution;*
 - *risk - a combination of the probability, or frequency of occurrence of a defined hazard and the magnitude of the consequences of the occurrence;*
 - *risk assessment - the formal process of identifying, assessing and evaluating the health and environmental risks that may be associated with a hazard;*
 - *risk management - the formal process to identify, assess and determine the risks, and to select and take action to mitigate them.*
-

Our definitions and classification matrix for risk descriptions have been taken from the NHBC document “Guidance for the Safe Development of Housing on Land Affected by Contamination” (Ref. R&D P66, dated 2008)

Table A1: Risk Categorisation (Adapted from Table 1.8 of NHBC, R&D P66 (2008))

Probability (Likelihood)		Consequence			
		Severe	Medium	Mild	Minor
	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate / Low Risk
	Likely	High Risk	Moderate Risk	Moderate / Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate / Low Risk	Low Risk	Very Low Risk
	Not likely	Moderate / Low Risk	Low Risk	Very Low Risk	Very Low Risk

The R&D P66 document goes on to provide further descriptions of these risk levels, which are also reproduced below:

Table A2: Risk Level Descriptions (Adapted from Table 1.9 of NHBC, R&D P66 (2008))

Term	Description
Very High Risk	A high probability exists that severe / significant harm could arise to someone or something from the hazard which has been identified. Remedial action is required.
High Risk	Harm is likely to arise to someone or something from the hazard which has been identified. Remedial action is usually required.
Moderate Risk	Harm could potentially arise to someone or something from the hazard which has been identified without remedial action, although it is considered to be relatively <u>unlikely</u> that such harm would be severe.
Low Risk	Harm could theoretically arise to someone or something from the hazard which has been identified without remedial action, although it is considered that any effects would be mild.
Very Low Risk	Harm is not likely to arise to someone or something from the hazard which has been identified.

APPENDIX I

Proposed Site Layout Plan



CLIENT:



TITLE:

Proposed Site Layout Plan

DATE:

Sept. 2024

DRAWING No:

E24171_001

SCALE@SIZE:

NOT TO SCALE

DESIGN/DRAWN:

JR

Elemental GI Ltd

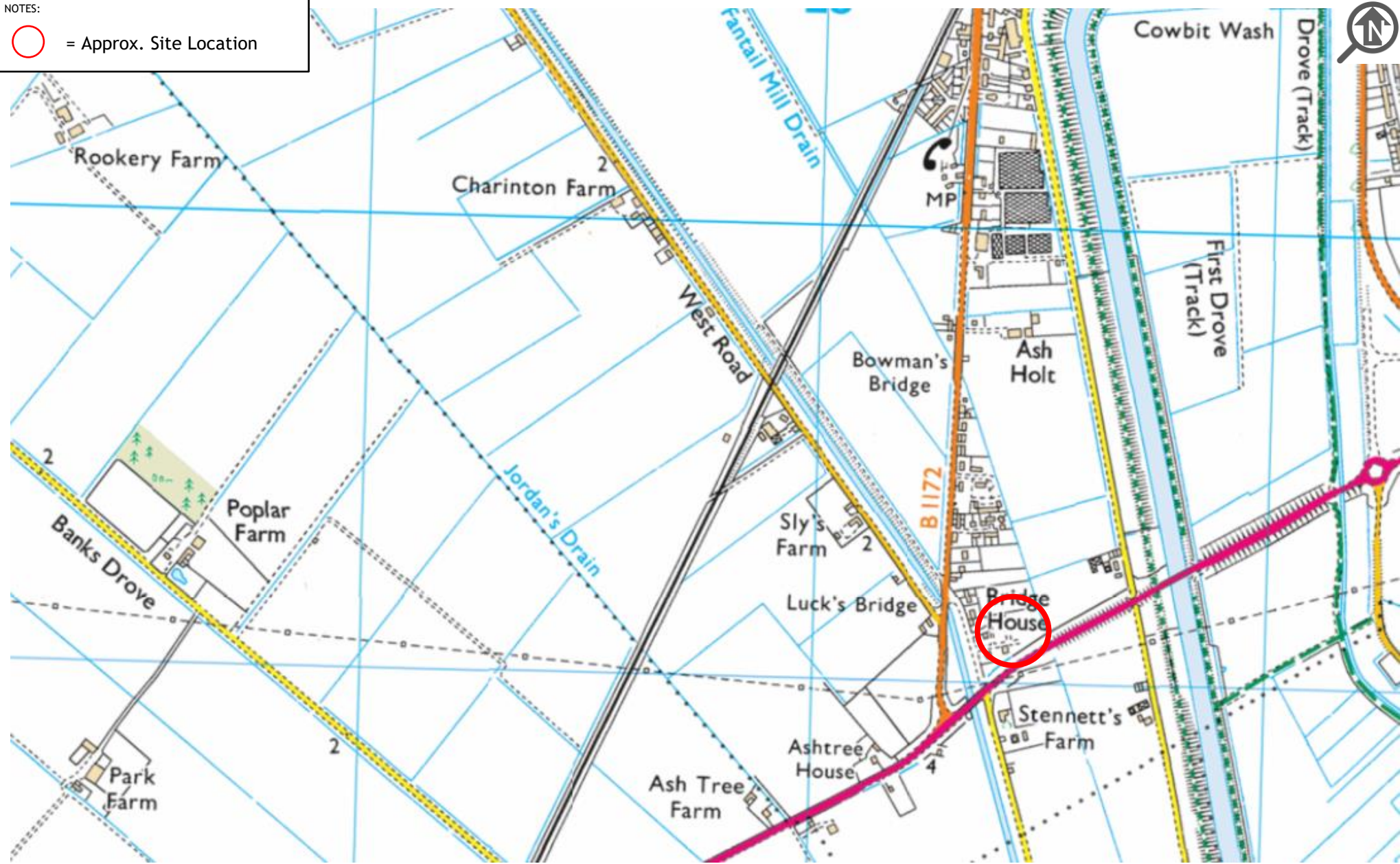
APPENDIX II

Site Location Plan

NOTES:



= Approx. Site Location



CLIENT:



TITLE:

Site Location Plan

DATE:

Sept. 2024

DRAWING No:

E24171_002

SCALE@SIZE:

NOT TO SCALE

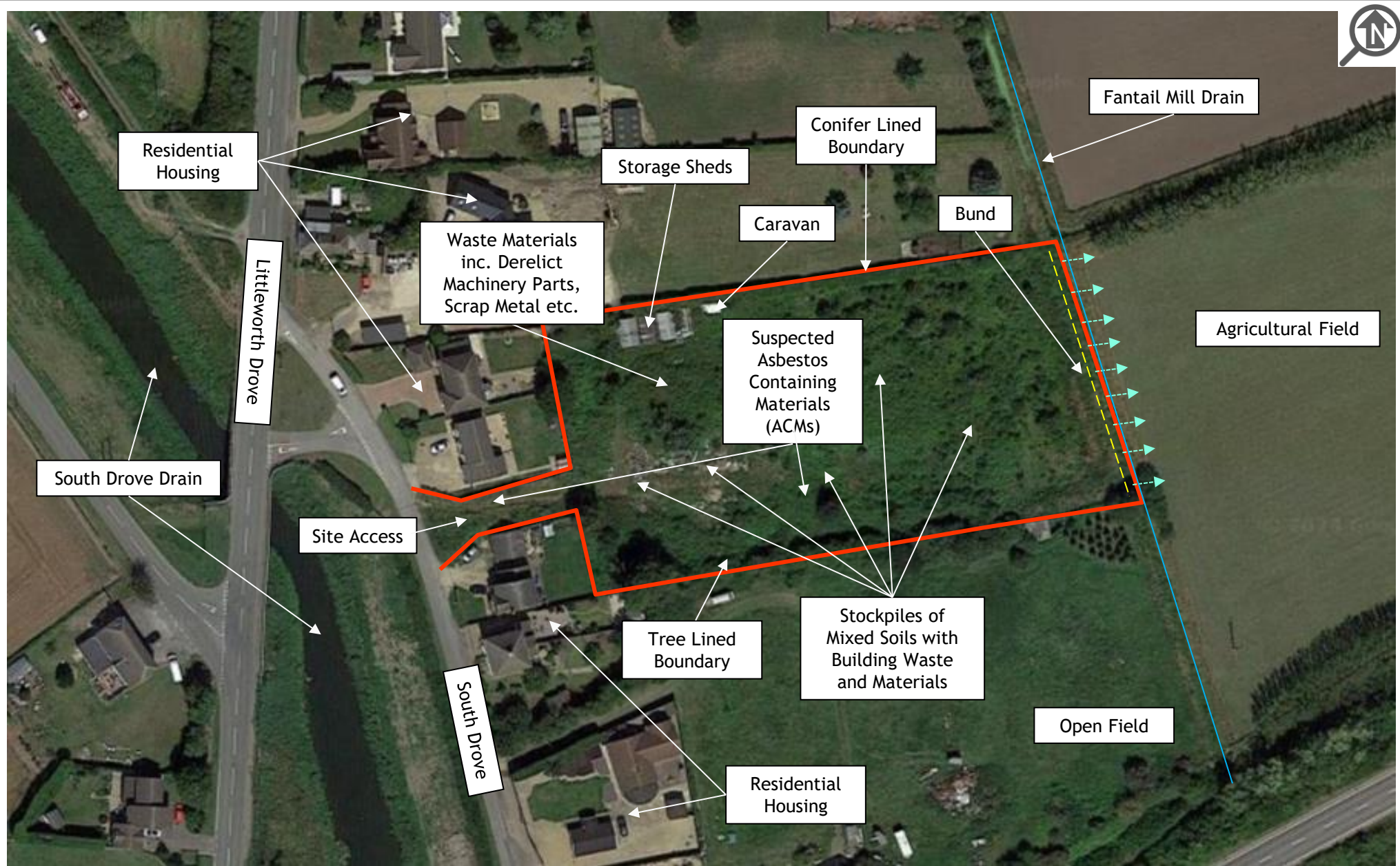
DESIGN/DRAWN:

JR

Elemental GI Ltd

APPENDIX III

Site Features Plan



APPENDIX IV

General Photographic Record



Photo 1 - Site Entrance in Western Area of the Site.



Photo 2 - Stockpiles near the Site Entrance.



Photo 3 - Storage sheds, Waste Materials and Caravan in North-Western Area of the Site.



Photo 4 - Overlooking Western Area of the Site.

CLIENT:



TITLE:

General Site Photographs

DATE:

Sept. 2024

DRAWING No:

E24171_003a

SCALE@SIZE:

NOT TO SCALE

DESIGN/DRAWN:

JR

Elemental GI Ltd



Photo 5 - Overlooking South-Western Area of the Site.



Photo 6 - Suspected Asbestos Containing Materials (ACMs) In Stockpile in Southern Area Of the Site.



Photo 7 - Overlooking Stockpiles in Western Area of Site.



Photo 8 - Overlooking Northern Central Area of Site.

CLIENT:



TITLE:

General Site Photographs

DATE:

Sept. 2024

DRAWING No:

E24171_003b

SCALE@SIZE:

NOT TO SCALE

DESIGN/DRAWN:

JR

Elemental GI Ltd



Photo 9 - Overlooking North-Eastern Area of site.



Photo 10 - Overlooking Eastern Area of the Site.



Photo 11 - Bund Alongside the Eastern Boundary of the Site.



Photo 12 - Overlooking Southern Area of the Site.

CLIENT:



TITLE:

General Site Photographs

DATE:

Sept. 2024

DRAWING No:

E24171_003c

SCALE@SIZE:

NOT TO SCALE

DESIGN/DRAWN:

JR

Elemental GI Ltd



Photo 9 - Window Sampler Drilling.



Photo 10 - Arisings from WS03.



Photo 11 - Excavation of HTP.

APPENDIX V

Site Investigation Plan

- NOTES:
-  Approx. Site Boundary
 -  Approx. Location of Boreholes
 -  Approx. Location of Ground Gas Monitoring Wells
 -  Approx. Location of Hand Dug Trial Pits

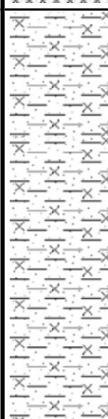


CLIENT:	TITLE: Exploratory Hole Layout Plan	DATE: DRAWING No:	SCALE@SIZE: NOT TO SCALE DESIGN/DRAWN: JR	Elemental GI Ltd
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APPENDIX VI

Exploratory Hole Logs

Site:		Land East of South Drove, Lucks Bridge, Spalding		Elemental GI Ltd	
Client:		Remway Design Ltd			
Contractor: RP Drilling		Project No: E24171		Sheet: 1 of 1	
Equipment: Window Sampler Drilling Rig		Logged by: JR		Date: 21st August 2024	
Field Monitoring and Sampling		Strata		Legend	Well
Depth	Type	Result	Depth	Description	
(m)		(SPT)(HSV)	(m)		
0.00	JVT	N = 2	0.15	MADE GROUND (Comprising grey silty very sandy subangular fine to coarse gravel of concrete, brick and other aggregates).	
0.40	JT		0.55	MADE GROUND (Comprising reworked brown slightly sandy clayey silty topsoil with rootlets). (Desiccated)	
			1m	Very soft to soft orangish brown and grey mottled slightly sandy CLAY/SILT with frequent rootlets.	
				... no recovery between 1.00m and 1.55m depth.	
1.70	B	N = 0	1.55	Very soft grey slightly sandy CLAY/SILT with frequent small (1cm) bands of black organic material.	
		N = 0	2m		
		N = 0	3m		
		N = 2	4.00	Borehole completed at 4.00m depth.	
			5m		
Water Observations:					
Water encountered at 1.70m depth during drilling. No water encountered after drilling.					
Remarks:					
1) Borehole terminated on completion of testing at 4.00m depth.					
2) Borehole collapsed to 2.00m depth after drilling.					
Where unaccompanied by in situ tests, strength descriptions of soils are based on Engineer's field description(s) and must not be relied upon.					
HSV = Hand Shear Vane (kPa). PP = Pocket Penetrometer (daN/cm ²)					

Site:		Land East of South Drove, Lucks Bridge, Spalding		Elemental GI Ltd			
Client:		Remway Design Ltd					
Contractor: RP Drilling			Project No: E24171		Sheet: 1 of 1	WS02	
Equipment: Window Sampler Drilling Rig			Logged by: JR		Date: 21st August 2024		
Field Monitoring and Sampling			Strata			Legend	Well
Depth	Type	Result	Depth	Description			
(m)		(SPT)(HSV)	(m)				
0.20	JT	N = 4	0.30	MADE GROUND (Comprising reworked brown slightly sandy clayey silty topsoil with rootlets). (Desiccated)			
			1m	Soft to firm brown and orangish brown mottled slightly sandy CLAY/SILT with rootlets. (Possibly slightly desiccated) ... becoming locally soft and grey from 0.60m depth. ... becoming locally very soft and with light grey and orangish brown mottling present from 1.05m depth. ... becoming sandy from 1.60m depth.			
			1.95	Very soft light grey very sandy CLAY/SILT. ... with frequent small (1cm) bands of black organic matter present between 2.80m and 2.95m depth.			
2.90	JT	N = 3	3m				
			4.00	Borehole completed at 4.00m depth.			
		N = 4	5m				
Water Observations:							
Water encountered at 2.00m depth during drilling. Water encountered at 1.25m depth after drilling.							
Remarks:							
1) Borehole terminated on completion of testing at 4.00m depth.							
2) Borehole collapsed to 2.21m depth after drilling.							
Where unaccompanied by in situ tests, strength descriptions of soils are based on Engineer's field description(s) and must not be relied upon.							
HSV = Hand Shear Vane (kPa). PP = Pocket Penetrometer (daN/cm ²)							

Site:		Land East of South Drove, Lucks Bridge, Spalding		Elemental GI Ltd	
Client:		Remway Design Ltd			
Contractor: RP Drilling		Project No: E24171		Sheet: 1 of 1	
Equipment: Window Sampler Drilling Rig		Logged by: JR		Date: 21st August 2024	
Field Monitoring and Sampling		Strata		Legend	Well
Depth	Type	Result	Depth	Description	
(m)		(SPT)(HSV)	(m)		
0.10	JT	N = 5	0.35	Brown slightly sandy clayey silty TOPSOIL with frequent roots and rootlets. (Possibly desiccated)	
0.50	JT		1m	Firm brown, grey and orangish brown mottled slightly sandy CLAY/SILT with frequent rootlets. (Possibly slightly desiccated) ... becoming soft from 0.90m depth. ... becoming very soft from 1.50m depth.	
2.00	B	N = 2	2.30	Very loose light grey and orangish brown mottled very silty fine SAND. Damp. ... becoming grey from 2.60m depth.	
3.00	T	N = 0	3m		
		N = 6	4.00	Borehole completed at 4.00m depth.	
			5m		
Water Observations:					
Water encountered at 3.35m depth during drilling. Water encountered at 3.60m depth after drilling.					
Remarks:					
1) Borehole terminated on completion of testing at 4.00m depth.					
2) Borehole completed as a monitoring well.					
Where unaccompanied by in situ tests, strength descriptions of soils are based on Engineer's field description(s) and must not be relied upon.					
HSV = Hand Shear Vane (kPa). PP = Pocket Penetrometer (daN/cm ²)					

Site:		Land East of South Drove, Lucks Bridge, Spalding		Elemental GI Ltd	
Client:		Remway Design Ltd			
Contractor: RP Drilling		Project No: E24171		Sheet: 1 of 1	
Equipment: Window Sampler Drilling Rig		Logged by: JR		Date: 21st August 2024	
Field Monitoring and Sampling		Strata		Legend	Well
Depth	Type	Result	Depth	Description	
(m)		(SPT)(HSV)	(m)		
0.10	JT	N = 4	0.35	MADE GROUND (Comprising reworked dark brown slightly sandy clayey silty topsoil with rootlets).	
0.90	JTT		1.10	MADE GROUND (Comprising brown and orangish brown mottled slightly sandy clay/silt). (Possibly reworked) (Possibly desiccated) ... with a root present at 0.70m depth.	
			1.90	Soft orangish brown and grey mottled very sandy CLAY/SILT with frequent sandy bands. ... with roots and rootlets present from 1.25m depth. ... becoming very soft and damp from 1.30m depth.	
3.60	J	N = 0	2m	Very soft light brown and grey mottled sandy CLAY/SILT with frequent decayed dark brown organic inclusions.	
			3m		
		N = 2	4m	... with a small (5cm) pocket of dark brown semi-amorphous peat at 3.60m depth. ... with a 5cm band of dark brown amorphous peat present between 3.90m and 3.95m depth. ... possibly grading into a very silty fine sand from 4.35m depth.	
		N = 5	5.00	Borehole completed at 5.00m depth.	
Water Observations:					
Water encountered at 4.40m depth during drilling. Water encountered at 3.80m depth after drilling.					
Remarks:					
1) Borehole terminated on completion of testing at 5.00m depth.					
2) Borehole collapsed to 4.00m depth after drilling.					
3) Borehole cased to 2.00m depth.					
4) Borehole completed as a monitoring well.					
Where unaccompanied by in situ tests, strength descriptions of soils are based on Engineer's field description(s) and must not be relied upon.					
HSV = Hand Shear Vane (kPa). PP = Pocket Penetrometer (daN/cm ²)					

Site:		Land East of South Drove, Lucks Bridge, Spalding			Elemental GI Ltd						
Client:		Remway Design Ltd									
Contractor: RP Drilling				Project No: E24171		Sheet: 1 of 1		WS05			
Equipment: Window Sampler Drilling Rig				Logged by: JR		Date: 21st August 2024					
Field Monitoring and Sampling				Strata				Legend		Well	
Depth	Type	Result	Depth	Description							
(m)		(SPT)(HSV)	(m)								
0.10	JVT			MADE GROUND (Comprising grey silty very sandy subangular fine to coarse gravel of concrete, brick and other aggregates).							
			0.25	MADE GROUND (Comprising reworked dark greyish orangish brown very sandy silt). (Desiccated)							
			0.65								
1.00	JTB	N = 1	1m	Soft light brown, light grey and orangish brown mottled slightly sandy CLAY/SILT. ... becoming very soft from 1.00m depth.							
			1.35								
		N = 0	2m	Very soft light grey and light brown mottled slightly sandy CLAY/SILT with frequent small (1-2cm) pockets of dark brown/black organic matter.							
		N = 0	3m	... with a band of dark brown semi-amorphous peat present between 2.75m and 2.79m depth. ... with a band of dark brown semi-amorphous peat present between 2.80m and 2.82m depth. ... with frequent intermixed small 1-2cm pockets of semi amorphous and amorphous peat noted from 2.90m depth.							
4.00	J	N = 0	4m	... with a band of dark brown semi-amorphous peat present between 3.60m and 3.62m depth. ... with a band of dark brown semi-amorphous peat present between 3.65m and 3.66m depth. ... with a band of dark brown semi-amorphous peat present between 3.69m and 3.71m depth. ... with a band of dark brown semi-amorphous peat present between 3.81m and 3.82m depth. ... with a band of dark brown semi-amorphous peat present between 3.83m and 3.85m depth. ... with a band of dark brown semi-amorphous peat present between 3.86m and 3.87m depth. ... with a band of dark brown semi-amorphous peat present between 3.95m and 4.00m depth. ... with a band of dark brown semi-amorphous peat present between 4.77m and 4.79m depth.							
		N = 0	5.00	Borehole completed at 5.00m depth.							
Water Observations:											
Water encountered at 1.60m depth during drilling.											
Remarks:											
1) Borehole terminated on completion of testing at 5.00m depth.											
2) Borehole cased to 1.00m depth.											
3) Borehole completed as a monitoring well.											
Where unaccompanied by in situ tests, strength descriptions of soils are based on Engineer's field description(s) and must not be relied upon.											
HSV = Hand Shear Vane (kPa), PP = Pocket Penetrometer (daN/cm ²)											

Site:		Land East of South Drove, Lucks Bridge, Spalding		Elemental GI Ltd			
Client:		Remway Design Ltd					
Contractor: RP Drilling			Project No: E24171		Sheet: 1 of 1	WS06	
Equipment: Window Sampler Drilling Rig			Logged by: JR		Date: 21st August 2024		
Field Monitoring and Sampling			Strata			Legend	Well
Depth	Type	Result	Depth	Description			
(m)		(SPT)(HSV)	(m)				
0.10	JT		0.30	MADE GROUND (Comprising reworked brown slightly sandy clayey silty topsoil with rootlets).			
0.80	JT				MADE GROUND (Comprising brown, greyish brown and orangish brown mottled slightly sandy clay/silt with rootlets). (Possibly reworked) (Desiccated)		
		N = 4	1.00	Soft greyish brown and orangish brown mottled slightly sandy CLAY/SILT with occasional rootlets. ... becoming very soft from 1.10m depth. ... damp from 1.75m depth.			
		N = 0	2.00	Very soft light grey sandy CLAY/SILT with frequent decayed organic inclusions. ... with a small (5cm) pocket of dark brown semi-amorphous peat present at 3.40m depth. ... with a band of dark brown amorphous peat present between 3.80m and 3.90m depth.			
		N = 0	3m				
		N = 3	4.00	Borehole completed at 4.00m depth.			
			5m				
Water Observations:							
Water encountered at 3.70m depth during drilling. No water encountered after drilling.							
Remarks:							
1) Borehole terminated on completion of testing at 4.00m depth.							
2) Borehole collapsed to 3.46m depth after drilling.							
Where unaccompanied by in situ tests, strength descriptions of soils are based on Engineer's field description(s) and must not be relied upon.							
HSV = Hand Shear Vane (kPa). PP = Pocket Penetrometer (daN/cm ²)							

Site:	Land East of South Drove, Lucks Bridge, Spalding			Elemental GI Ltd				
Client:	Remway Design Ltd							
Contractor: RP Drilling			Project No: E24171		Sheet: 1 of 1		WS07	
Equipment: Window Sampler Drilling Rig			Logged by: JR		Date: 21st August 2024			
Field Monitoring and Sampling			Strata				Legend	Well
Depth	Type	Result (SPT)(HSV)	Depth	Description				
(m)			(m)					
0.20 <								

APPENDIX VII

Laboratory Testing Data



ANALYTICAL TEST REPORT

Contract no: 136238

Contract name: E24171 Lucks Bridge

Client reference: -

Clients name: Elemental GI

Clients address: Suite 8
Riverside Business Centre
Foundry Lane, Milford
DE56 0RN

Samples received:

Analysis started: 23 August 2024

Analysis completed: 04 September 2024

Report issued: 04 September 2024

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:

Abbie Neasham-Bourn
Senior Reporting Administrator

Unit 6 Parkhead, Greencroft Industrial Park, Stanley, County Durham, DH9 7YB
Tel 01207 528578 Email customerservices@chemtech-env.co.uk
Vat Reg No. 772 5703 18 Registered in England number 4284013

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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.

Lab ref	Sample id	Depth (m)	Sample description	Material removed	% Removed	% Moisture
136238-1	HTP01	0.00	Sand with Gravel & Roots	-	-	2.4
136238-2	HTP02	0.00	Clayey Sand with Gravel & Roots	-	-	13.4
136238-3	HTP03	0.00	Sand with Gravel & Roots	-	-	8.5
136238-4	SS01	0.00	Sand with Gravel & Roots	-	-	10.1
136238-5	WS01	0.00	Sand with Gravel & Roots	-	-	5.3
136238-6	WS01	0.40	Sandy Clay with Gravel & Roots	-	-	17.7
136238-7	WS02	2.90	Loamy Clay with Roots	-	-	44.7
136238-8	WS03	0.10	Sandy Clay with Gravel & Roots	-	-	13.9
136238-9	WS03	0.50	Sandy Clay with Gravel & Roots	-	-	17.5
136238-10	WS03	3.00	Clay with Roots	-	-	28.6
136238-11	WS04	0.10	Sandy Clay with Gravel & Roots	-	-	13
136238-12	WS04	0.90	Sand with Gravel & Roots	-	-	17.9
136238-13	WS05	0.10	Sand with Gravel & Roots	-	-	1.9
136238-14	WS05	1.00	Sandy Clay with Gravel	-	-	27.1
136238-15	WS06	4.00	Loam with Gravel & Roots	-	-	67.9
136238-16	WS06	0.10	Sandy Clay with Gravel & Roots	-	-	15.3
136238-17	WS06	0.80	Sandy Clay with Gravel & Roots	-	-	18.9

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SOILS

Lab number Sample id Depth (m) Date sampled			136238-1 HTP01 0.00 21/08/2024	136238-2 HTP02 0.00 21/08/2024	136238-3 HTP03 0.00 21/08/2024	136238-4 SS01 0.00 21/08/2024	136238-5 WS01 0.00 21/08/2024	136238-6 WS01 0.40 21/08/2024
Test	Method	Units						
Moisture Content	CE001	% w/w	2.4	-	-	-	5.3	17.7
Arsenic (total)	CE264 ^U	mg/kg As	9.4	-	-	-	13.1	18.2
Cadmium (total)	CE264 ^M	mg/kg Cd	<1.6	-	-	-	<1.6	<1.6
Chromium (total)	CE264 ^U	mg/kg Cr	60.9	-	-	-	41.8	41.0
Chromium (VI)	CE263	mg/kg CrVI	<0.04	-	-	-	<0.04	<0.04
Copper (total)	CE264 ^M	mg/kg Cu	18.8	-	-	-	20.6	59.8
Lead (total)	CE264 ^U	mg/kg Pb	36.7	-	-	-	68.5	124.2
Mercury (total)	CE264 ^U	mg/kg Hg	<0.7	-	-	-	<0.7	<0.7
Nickel (total)	CE264 ^M	mg/kg Ni	13.0	-	-	-	15.0	21.5
Selenium (total)	CE264	mg/kg Se	<3	-	-	-	<3	<3
Zinc (total)	CE264 ^M	mg/kg Zn	58.2	-	-	-	105.6	91.7
pH	CE004 ^M	units	8.2	-	-	-	8.2	8.1
Sulphate (2:1 water soluble)	CE061 ^U	mg/l SO ₄	274	-	-	-	59	80
Sulphate (acid extractable)	CE062 ^M	mg/kg SO ₄	-	-	-	-	-	-
Sulphur (total)	CE119	mg/kg S	-	-	-	-	-	-
Phenols (total)	CE078	mg/kg PhOH	<0.5	-	-	-	<0.5	<0.5
Total Organic Carbon (TOC)	CE197	% w/w C	4.8	-	-	-	7.6	5.4
PAH								
Naphthalene	CE087 ^M	mg/kg	0.77	-	-	-	0.04	<0.02
Acenaphthylene	CE087 ^M	mg/kg	4.03	-	-	-	<0.02	<0.02
Acenaphthene	CE087 ^M	mg/kg	2.12	-	-	-	0.03	<0.02
Fluorene	CE087 ^U	mg/kg	2.31	-	-	-	0.03	<0.02
Phenanthrene	CE087 ^M	mg/kg	23.65	-	-	-	0.35	0.11
Anthracene	CE087 ^U	mg/kg	9.06	-	-	-	0.09	0.03
Fluoranthene	CE087 ^M	mg/kg	66.94	-	-	-	0.68	0.36
Pyrene	CE087 ^M	mg/kg	57.32	-	-	-	0.57	0.33
Benzo(a)anthracene	CE087 ^U	mg/kg	34.57	-	-	-	0.35	0.19
Chrysene	CE087 ^M	mg/kg	34.29	-	-	-	0.36	0.22
Benzo(b)fluoranthene	CE087 ^M	mg/kg	50.38	-	-	-	0.44	0.27
Benzo(k)fluoranthene	CE087 ^M	mg/kg	20.22	-	-	-	0.19	0.12
Benzo(a)pyrene	CE087 ^U	mg/kg	38.00	-	-	-	0.38	0.22
Indeno(123cd)pyrene	CE087 ^M	mg/kg	7.04	-	-	-	0.36	0.20
Dibenz(ah)anthracene	CE087 ^M	mg/kg	7.24	-	-	-	0.06	0.04
Benzo(ghi)perylene	CE087 ^M	mg/kg	28.56	-	-	-	0.30	0.16
PAH (total of USEPA 16)	CE087	mg/kg	386	-	-	-	4.25	2.25

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SOILS

Lab number Sample id Depth (m) Date sampled			136238-1 HTP01 0.00 21/08/2024	136238-2 HTP02 0.00 21/08/2024	136238-3 HTP03 0.00 21/08/2024	136238-4 SS01 0.00 21/08/2024	136238-5 WS01 0.00 21/08/2024	136238-6 WS01 0.40 21/08/2024
Test	Method	Units						
BTEX & TPH								
VPH Aromatic (>EC5-EC7)	CE067	mg/kg	-	-	-	-	<0.01	-
VPH Aromatic (>EC7-EC8)	CE067	mg/kg	-	-	-	-	<0.01	-
VPH Aromatic (>EC8-EC10)	CE067	mg/kg	-	-	-	-	<0.01	-
EPH Aromatic (>EC10-EC12)	CE250	mg/kg	-	-	-	-	1	-
EPH Aromatic (>EC12-EC16)	CE250	mg/kg	-	-	-	-	3	-
EPH Aromatic (>EC16-EC21)	CE250	mg/kg	-	-	-	-	7	-
EPH Aromatic (>EC21-EC35)	CE250	mg/kg	-	-	-	-	62	-
EPH Aromatic (>EC35-EC44)	CE250	mg/kg	-	-	-	-	14	-
VPH Aliphatic (>C5-C6)	CE067	mg/kg	-	-	-	-	<0.1	-
VPH Aliphatic (>C6-C8)	CE067	mg/kg	-	-	-	-	<0.1	-
VPH Aliphatic (>C8-C10)	CE067	mg/kg	-	-	-	-	<0.1	-
EPH Aliphatic (>C10-C12)	CE250	mg/kg	-	-	-	-	<1	-
EPH Aliphatic (>C12-C16)	CE250	mg/kg	-	-	-	-	<0.5	-
EPH Aliphatic (>C16-C35)	CE250	mg/kg	-	-	-	-	21	-
EPH Aliphatic (>C35-C44)	CE250	mg/kg	-	-	-	-	<0.5	-

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SOILS

Lab number Sample id Depth (m) Date sampled			136238-1 HTP01 0.00 21/08/2024	136238-2 HTP02 0.00 21/08/2024	136238-3 HTP03 0.00 21/08/2024	136238-4 SS01 0.00 21/08/2024	136238-5 WS01 0.00 21/08/2024	136238-6 WS01 0.40 21/08/2024
Test	Method	Units						
Volatiles								
MTBE	CE267	mg/kg	-	-	-	-	<0.004	-
Benzene	CE267	mg/kg	-	-	-	-	<0.003	-
Toluene	CE267	mg/kg	-	-	-	-	<0.003	-
Ethylbenzene	CE267	mg/kg	-	-	-	-	<0.002	-
m & p-Xylene	CE267	mg/kg	-	-	-	-	<0.005	-
o-Xylene	CE267	mg/kg	-	-	-	-	<0.003	-
Dichlorodifluoromethane	CE174	mg/kg	-	-	-	-	<0.01	-
Chloromethane	CE174	mg/kg	-	-	-	-	<0.01	-
Vinyl chloride	CE174	mg/kg	-	-	-	-	<0.01	-
Bromomethane	CE174	mg/kg	-	-	-	-	<0.01	-
Chloroethane	CE174	mg/kg	-	-	-	-	<0.01	-
Trichlorofluoromethane	CE174	mg/kg	-	-	-	-	<0.01	-
1,1-Dichloroethene	CE174	mg/kg	-	-	-	-	<0.01	-
Trans-1,2-Dichloroethene	CE174	mg/kg	-	-	-	-	<0.01	-
1,1-Dichloroethane	CE174	mg/kg	-	-	-	-	<0.01	-
2,2-Dichloropropane	CE174	mg/kg	-	-	-	-	<0.01	-
Cis-1,2-Dichloroethene	CE174	mg/kg	-	-	-	-	<0.01	-
Bromochloromethane	CE174	mg/kg	-	-	-	-	<0.01	-
Chloroform	CE174	mg/kg	-	-	-	-	<0.01	-
1,1,1-Trichloroethane	CE174	mg/kg	-	-	-	-	<0.01	-
Carbon tetrachloride	CE174	mg/kg	-	-	-	-	<0.01	-
1,1-Dichloro-1-propene	CE174	mg/kg	-	-	-	-	<0.01	-
1,2-Dichloroethane	CE174	mg/kg	-	-	-	-	<0.01	-
Trichloroethene	CE174	mg/kg	-	-	-	-	<0.01	-
1,2-Dichloropropane	CE174	mg/kg	-	-	-	-	<0.01	-
Dibromomethane	CE174	mg/kg	-	-	-	-	<0.01	-
Bromodichloromethane	CE174	mg/kg	-	-	-	-	<0.01	-
cis-1,3-Dichloro-1-propene	CE174	mg/kg	-	-	-	-	<0.01	-
trans-1,3-Dichloro-1-propene	CE174	mg/kg	-	-	-	-	<0.01	-
1,1,2-Trichloroethane	CE174	mg/kg	-	-	-	-	<0.01	-
Tetrachloroethene	CE174	mg/kg	-	-	-	-	<0.01	-
1,3-Dichloropropane	CE174	mg/kg	-	-	-	-	<0.01	-
Dibromochloromethane	CE174	mg/kg	-	-	-	-	<0.01	-
1,2-Dibromoethane	CE174	mg/kg	-	-	-	-	<0.01	-
Chlorobenzene	CE174	mg/kg	-	-	-	-	<0.01	-
1,1,1,2-Tetrachloroethane	CE174	mg/kg	-	-	-	-	<0.01	-
Styrene	CE174	mg/kg	-	-	-	-	<0.01	-
Tribromomethane	CE174	mg/kg	-	-	-	-	<0.01	-
Isopropylbenzene	CE174	mg/kg	-	-	-	-	<0.01	-
Bromobenzene	CE174	mg/kg	-	-	-	-	<0.01	-

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SOILS

Lab number Sample id Depth (m) Date sampled			136238-1 HTP01 0.00 21/08/2024	136238-2 HTP02 0.00 21/08/2024	136238-3 HTP03 0.00 21/08/2024	136238-4 SS01 0.00 21/08/2024	136238-5 WS01 0.00 21/08/2024	136238-6 WS01 0.40 21/08/2024
Test	Method	Units						
1,1,2,2-Tetrachloroethane	CE174	mg/kg	-	-	-	-	<0.01	-
1,2,3-Trichloropropane	CE174	mg/kg	-	-	-	-	<0.01	-
Propylbenzene	CE174	mg/kg	-	-	-	-	<0.01	-
2-Chlorotoluene	CE174	mg/kg	-	-	-	-	<0.01	-
4-Chlorotoluene	CE174	mg/kg	-	-	-	-	<0.01	-
1,3,5-Trimethylbenzene	CE174	mg/kg	-	-	-	-	<0.01	-
tert-Butylbenzene	CE174	mg/kg	-	-	-	-	<0.01	-
1,2,4-Trimethylbenzene	CE174	mg/kg	-	-	-	-	<0.01	-
sec-Butylbenzene	CE174	mg/kg	-	-	-	-	<0.01	-
1,3-Dichlorobenzene	CE174	mg/kg	-	-	-	-	<0.01	-
4-Isopropyltoluene	CE174	mg/kg	-	-	-	-	<0.01	-
1,4-Dichlorobenzene	CE174	mg/kg	-	-	-	-	<0.01	-
1,2-Dichlorobenzene	CE174	mg/kg	-	-	-	-	<0.01	-
Butylbenzene	CE174	mg/kg	-	-	-	-	<0.01	-
1,2-Dibromo-3-chloropropane	CE174	mg/kg	-	-	-	-	<0.01	-
1,2,4-Trichlorobenzene	CE174	mg/kg	-	-	-	-	<0.01	-
Hexachloro-1,3-butadiene	CE174	mg/kg	-	-	-	-	<0.01	-
1,2,3-Trichlorobenzene	CE174	mg/kg	-	-	-	-	<0.01	-
VOC Tentatively Identified Compounds	CE174	-	-	-	-	-	<0.01	-

Chemtech Environmental Limited

SOILS

Lab number Sample id Depth (m) Date sampled			136238-1 HTP01 0.00 21/08/2024	136238-2 HTP02 0.00 21/08/2024	136238-3 HTP03 0.00 21/08/2024	136238-4 SS01 0.00 21/08/2024	136238-5 WS01 0.00 21/08/2024	136238-6 WS01 0.40 21/08/2024
Test	Method	Units						
Semi-volatiles								
N-Nitrosodimethylamine	CE189	mg/kg	-	-	-	-	<0.1	-
Phenol	CE189	mg/kg	-	-	-	-	<0.1	-
Bis(2-chloroethyl)ether	CE189	mg/kg	-	-	-	-	<0.1	-
2-Chlorophenol	CE189	mg/kg	-	-	-	-	<0.1	-
1,3-Dichlorobenzene	CE189	mg/kg	-	-	-	-	<0.1	-
1,4-Dichlorobenzene	CE189	mg/kg	-	-	-	-	<0.1	-
2-Methylphenol	CE189	mg/kg	-	-	-	-	<0.1	-
1,2-Dichlorobenzene	CE189	mg/kg	-	-	-	-	<0.1	-
Bis(2-chloroisopropyl)ether	CE189	mg/kg	-	-	-	-	<0.1	-
3&4-Methylphenol	CE189	mg/kg	-	-	-	-	<0.1	-
N-Nitrosodi-n-propylamine	CE189	mg/kg	-	-	-	-	<0.1	-
Hexachloroethane	CE189	mg/kg	-	-	-	-	<0.1	-
Nitrobenzene	CE189	mg/kg	-	-	-	-	<0.1	-
Isophorone	CE189	mg/kg	-	-	-	-	<0.1	-
2,4-Dimethylphenol	CE189	mg/kg	-	-	-	-	<0.1	-
2-Nitrophenol	CE189	mg/kg	-	-	-	-	<0.1	-
Bis(2-chloroethoxy)methane	CE189	mg/kg	-	-	-	-	<0.1	-
2,4-Dichlorophenol	CE189	mg/kg	-	-	-	-	<0.1	-
1,2,4-Trichlorobenzene	CE189	mg/kg	-	-	-	-	<0.1	-
4-Chloroaniline	CE189	mg/kg	-	-	-	-	<0.1	-
Hexachlorobutadiene	CE189	mg/kg	-	-	-	-	<0.1	-
4-Chloro-3-methylphenol	CE189	mg/kg	-	-	-	-	<0.1	-
2-Methylnaphthalene	CE189	mg/kg	-	-	-	-	<0.1	-
1-Methylnaphthalene	CE189	mg/kg	-	-	-	-	<0.1	-
Hexachlorocyclopentadiene	CE189	mg/kg	-	-	-	-	<0.1	-
2,4,6-Trichlorophenol	CE189	mg/kg	-	-	-	-	<0.1	-
2,4,5-Trichlorophenol	CE189	mg/kg	-	-	-	-	<0.1	-
2-Chloronaphthalene	CE189	mg/kg	-	-	-	-	<0.1	-
2-Nitroaniline	CE189	mg/kg	-	-	-	-	<0.1	-
Dimethyl phthalate	CE189	mg/kg	-	-	-	-	<0.1	-
2,6-Dinitrotoluene	CE189	mg/kg	-	-	-	-	<0.1	-
3-Nitroaniline	CE189	mg/kg	-	-	-	-	<0.1	-
2,4-Dinitrophenol	CE189	mg/kg	-	-	-	-	<0.1	-
4-Nitrophenol	CE189	mg/kg	-	-	-	-	<0.1	-
2,4-Dinitrotoluene	CE189	mg/kg	-	-	-	-	<0.1	-
Dibenzofuran	CE189	mg/kg	-	-	-	-	<0.1	-
Diethyl phthalate	CE189	mg/kg	-	-	-	-	<0.1	-
4-Chlorophenylphenyl ether	CE189	mg/kg	-	-	-	-	<0.1	-
4-Nitroaniline	CE189	mg/kg	-	-	-	-	<0.1	-
2-Methyl-4,6-dinitrophenol	CE189	mg/kg	-	-	-	-	<0.1	-

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SOILS

Lab number Sample id Depth (m) Date sampled			136238-1 HTP01 0.00 21/08/2024	136238-2 HTP02 0.00 21/08/2024	136238-3 HTP03 0.00 21/08/2024	136238-4 SS01 0.00 21/08/2024	136238-5 WS01 0.00 21/08/2024	136238-6 WS01 0.40 21/08/2024
Test	Method	Units						
Azobenzene	CE189	mg/kg	-	-	-	-	<0.1	-
4-Bromophenylphenyl ether	CE189	mg/kg	-	-	-	-	<0.1	-
Hexachlorobenzene	CE189	mg/kg	-	-	-	-	<0.1	-
Pentachlorophenol	CE189	mg/kg	-	-	-	-	<0.1	-
Carbazole	CE189	mg/kg	-	-	-	-	<0.1	-
Di-n-butyl phthalate	CE189	mg/kg	-	-	-	-	<0.1	-
Butylbenzyl phthalate	CE189	mg/kg	-	-	-	-	<0.1	-
Bis(2-ethylhexyl)phthalate	CE189	mg/kg	-	-	-	-	<0.1	-
Di-n-octyl phthalate	CE189	mg/kg	-	-	-	-	<0.1	-
SVOC Tentatively Identified Compounds	CE189	-	-	-	-	-	<0.1	-
Subcontracted Analysis								
Asbestos (qualitative)	\$	-	NAD	NAD	NAD	NAD	-	NAD

Chemtech Environmental Limited

SOILS

Lab number Sample id Depth (m) Date sampled			136238-7 WS02 2.90 21/08/2024	136238-8 WS03 0.10 21/08/2024	136238-9 WS03 0.50 21/08/2024	136238-10 WS03 3.00 21/08/2024	136238-11 WS04 0.10 21/08/2024	136238-12 WS04 0.90 21/08/2024
Test	Method	Units						
Moisture Content	CE001	% w/w	-	13.9	-	-	13.0	17.9
Arsenic (total)	CE264 ^U	mg/kg As	-	17.8	-	-	10.2	7.9
Cadmium (total)	CE264 ^M	mg/kg Cd	-	<1.6	-	-	<1.6	<1.6
Chromium (total)	CE264 ^U	mg/kg Cr	-	44.8	-	-	36.0	42.7
Chromium (VI)	CE263	mg/kg CrVI	-	<0.04	-	-	<0.04	<0.04
Copper (total)	CE264 ^M	mg/kg Cu	-	34.8	-	-	21.6	10.4
Lead (total)	CE264 ^U	mg/kg Pb	-	80.8	-	-	49.2	15.8
Mercury (total)	CE264 ^U	mg/kg Hg	-	<0.7	-	-	<0.7	<0.7
Nickel (total)	CE264 ^M	mg/kg Ni	-	26.7	-	-	22.6	24.5
Selenium (total)	CE264	mg/kg Se	-	<3	-	-	<3	<3
Zinc (total)	CE264 ^M	mg/kg Zn	-	76.9	-	-	59.9	52.2
pH	CE004 ^M	units	7.6	7.4	7.5	7.7	7.6	7.7
Sulphate (2:1 water soluble)	CE061 ^U	mg/l SO ₄	1552.0	51	-	-	76	108
Sulphate (acid extractable)	CE062 ^M	mg/kg SO ₄	3534	-	-	-	-	-
Sulphur (total)	CE119	mg/kg S	27099	-	-	-	-	-
Phenols (total)	CE078	mg/kg PhOH	-	<0.5	-	-	<0.5	<0.5
Total Organic Carbon (TOC)	CE197	% w/w C	-	3.7	-	-	3.7	1.1
PAH								
Naphthalene	CE087 ^M	mg/kg	-	<0.02	-	-	<0.02	<0.02
Acenaphthylene	CE087 ^M	mg/kg	-	<0.02	-	-	<0.02	<0.02
Acenaphthene	CE087 ^M	mg/kg	-	<0.02	-	-	<0.02	<0.02
Fluorene	CE087 ^U	mg/kg	-	<0.02	-	-	<0.02	<0.02
Phenanthrene	CE087 ^M	mg/kg	-	0.07	-	-	0.10	0.03
Anthracene	CE087 ^U	mg/kg	-	<0.02	-	-	0.02	<0.02
Fluoranthene	CE087 ^M	mg/kg	-	0.16	-	-	0.23	<0.02
Pyrene	CE087 ^M	mg/kg	-	0.14	-	-	0.19	<0.02
Benzo(a)anthracene	CE087 ^U	mg/kg	-	0.08	-	-	0.11	<0.02
Chrysene	CE087 ^M	mg/kg	-	0.11	-	-	0.14	<0.03
Benzo(b)fluoranthene	CE087 ^M	mg/kg	-	0.12	-	-	0.16	<0.02
Benzo(k)fluoranthene	CE087 ^M	mg/kg	-	0.05	-	-	0.06	<0.03
Benzo(a)pyrene	CE087 ^U	mg/kg	-	0.09	-	-	0.12	<0.02
Indeno(123cd)pyrene	CE087 ^M	mg/kg	-	0.08	-	-	0.10	<0.02
Dibenz(ah)anthracene	CE087 ^M	mg/kg	-	<0.02	-	-	0.02	<0.02
Benzo(ghi)perylene	CE087 ^M	mg/kg	-	0.08	-	-	0.09	<0.02
PAH (total of USEPA 16)	CE087	mg/kg	-	0.98	-	-	1.35	<0.34

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SOILS

Lab number Sample id Depth (m) Date sampled			136238-7 WS02 2.90 21/08/2024	136238-8 WS03 0.10 21/08/2024	136238-9 WS03 0.50 21/08/2024	136238-10 WS03 3.00 21/08/2024	136238-11 WS04 0.10 21/08/2024	136238-12 WS04 0.90 21/08/2024
Test	Method	Units						
BTEX & TPH								
VPH Aromatic (>EC5-EC7)	CE067	mg/kg	-	-	-	-	-	-
VPH Aromatic (>EC7-EC8)	CE067	mg/kg	-	-	-	-	-	-
VPH Aromatic (>EC8-EC10)	CE067	mg/kg	-	-	-	-	-	-
EPH Aromatic (>EC10-EC12)	CE250	mg/kg	-	-	-	-	-	-
EPH Aromatic (>EC12-EC16)	CE250	mg/kg	-	-	-	-	-	-
EPH Aromatic (>EC16-EC21)	CE250	mg/kg	-	-	-	-	-	-
EPH Aromatic (>EC21-EC35)	CE250	mg/kg	-	-	-	-	-	-
EPH Aromatic (>EC35-EC44)	CE250	mg/kg	-	-	-	-	-	-
VPH Aliphatic (>C5-C6)	CE067	mg/kg	-	-	-	-	-	-
VPH Aliphatic (>C6-C8)	CE067	mg/kg	-	-	-	-	-	-
VPH Aliphatic (>C8-C10)	CE067	mg/kg	-	-	-	-	-	-
EPH Aliphatic (>C10-C12)	CE250	mg/kg	-	-	-	-	-	-
EPH Aliphatic (>C12-C16)	CE250	mg/kg	-	-	-	-	-	-
EPH Aliphatic (>C16-C35)	CE250	mg/kg	-	-	-	-	-	-
EPH Aliphatic (>C35-C44)	CE250	mg/kg	-	-	-	-	-	-

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Lab number Sample id Depth (m) Date sampled			136238-7 WS02 2.90 21/08/2024	136238-8 WS03 0.10 21/08/2024	136238-9 WS03 0.50 21/08/2024	136238-10 WS03 3.00 21/08/2024	136238-11 WS04 0.10 21/08/2024	136238-12 WS04 0.90 21/08/2024
Test	Method	Units						
Volatiles								
MTBE	CE267	mg/kg	-	-	-	-	-	-
Benzene	CE267	mg/kg	-	-	-	-	-	-
Toluene	CE267	mg/kg	-	-	-	-	-	-
Ethylbenzene	CE267	mg/kg	-	-	-	-	-	-
m & p-Xylene	CE267	mg/kg	-	-	-	-	-	-
o-Xylene	CE267	mg/kg	-	-	-	-	-	-
Dichlorodifluoromethane	CE174	mg/kg	-	-	-	-	-	-
Chloromethane	CE174	mg/kg	-	-	-	-	-	-
Vinyl chloride	CE174	mg/kg	-	-	-	-	-	-
Bromomethane	CE174	mg/kg	-	-	-	-	-	-
Chloroethane	CE174	mg/kg	-	-	-	-	-	-
Trichlorofluoromethane	CE174	mg/kg	-	-	-	-	-	-
1,1-Dichloroethene	CE174	mg/kg	-	-	-	-	-	-
Trans-1,2-Dichloroethene	CE174	mg/kg	-	-	-	-	-	-
1,1-Dichloroethane	CE174	mg/kg	-	-	-	-	-	-
2,2-Dichloropropane	CE174	mg/kg	-	-	-	-	-	-
Cis-1,2-Dichloroethene	CE174	mg/kg	-	-	-	-	-	-
Bromochloromethane	CE174	mg/kg	-	-	-	-	-	-
Chloroform	CE174	mg/kg	-	-	-	-	-	-
1,1,1-Trichloroethane	CE174	mg/kg	-	-	-	-	-	-
Carbon tetrachloride	CE174	mg/kg	-	-	-	-	-	-
1,1-Dichloro-1-propene	CE174	mg/kg	-	-	-	-	-	-
1,2-Dichloroethane	CE174	mg/kg	-	-	-	-	-	-
Trichloroethene	CE174	mg/kg	-	-	-	-	-	-
1,2-Dichloropropane	CE174	mg/kg	-	-	-	-	-	-
Dibromomethane	CE174	mg/kg	-	-	-	-	-	-
Bromodichloromethane	CE174	mg/kg	-	-	-	-	-	-
cis-1,3-Dichloro-1-propene	CE174	mg/kg	-	-	-	-	-	-
trans-1,3-Dichloro-1-propene	CE174	mg/kg	-	-	-	-	-	-
1,1,2-Trichloroethane	CE174	mg/kg	-	-	-	-	-	-
Tetrachloroethene	CE174	mg/kg	-	-	-	-	-	-
1,3-Dichloropropane	CE174	mg/kg	-	-	-	-	-	-
Dibromochloromethane	CE174	mg/kg	-	-	-	-	-	-
1,2-Dibromoethane	CE174	mg/kg	-	-	-	-	-	-
Chlorobenzene	CE174	mg/kg	-	-	-	-	-	-
1,1,1,2-Tetrachloroethane	CE174	mg/kg	-	-	-	-	-	-
Styrene	CE174	mg/kg	-	-	-	-	-	-
Tribromomethane	CE174	mg/kg	-	-	-	-	-	-
Isopropylbenzene	CE174	mg/kg	-	-	-	-	-	-
Bromobenzene	CE174	mg/kg	-	-	-	-	-	-

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SOILS

Lab number Sample id Depth (m) Date sampled			136238-7 WS02 2.90 21/08/2024	136238-8 WS03 0.10 21/08/2024	136238-9 WS03 0.50 21/08/2024	136238-10 WS03 3.00 21/08/2024	136238-11 WS04 0.10 21/08/2024	136238-12 WS04 0.90 21/08/2024
Test	Method	Units						
1,1,2,2-Tetrachloroethane	CE174	mg/kg	-	-	-	-	-	-
1,2,3-Trichloropropane	CE174	mg/kg	-	-	-	-	-	-
Propylbenzene	CE174	mg/kg	-	-	-	-	-	-
2-Chlorotoluene	CE174	mg/kg	-	-	-	-	-	-
4-Chlorotoluene	CE174	mg/kg	-	-	-	-	-	-
1,3,5-Trimethylbenzene	CE174	mg/kg	-	-	-	-	-	-
tert-Butylbenzene	CE174	mg/kg	-	-	-	-	-	-
1,2,4-Trimethylbenzene	CE174	mg/kg	-	-	-	-	-	-
sec-Butylbenzene	CE174	mg/kg	-	-	-	-	-	-
1,3-Dichlorobenzene	CE174	mg/kg	-	-	-	-	-	-
4-Isopropyltoluene	CE174	mg/kg	-	-	-	-	-	-
1,4-Dichlorobenzene	CE174	mg/kg	-	-	-	-	-	-
1,2-Dichlorobenzene	CE174	mg/kg	-	-	-	-	-	-
Butylbenzene	CE174	mg/kg	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane	CE174	mg/kg	-	-	-	-	-	-
1,2,4-Trichlorobenzene	CE174	mg/kg	-	-	-	-	-	-
Hexachloro-1,3-butadiene	CE174	mg/kg	-	-	-	-	-	-
1,2,3-Trichlorobenzene	CE174	mg/kg	-	-	-	-	-	-
VOC Tentatively Identified Compounds	CE174	-	-	-	-	-	-	-

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SOILS

Lab number Sample id Depth (m) Date sampled			136238-7 WS02 2.90 21/08/2024	136238-8 WS03 0.10 21/08/2024	136238-9 WS03 0.50 21/08/2024	136238-10 WS03 3.00 21/08/2024	136238-11 WS04 0.10 21/08/2024	136238-12 WS04 0.90 21/08/2024
Test	Method	Units						
Semi-volatiles								
N-Nitrosodimethylamine	CE189	mg/kg	-	-	-	-	-	-
Phenol	CE189	mg/kg	-	-	-	-	-	-
Bis(2-chloroethyl)ether	CE189	mg/kg	-	-	-	-	-	-
2-Chlorophenol	CE189	mg/kg	-	-	-	-	-	-
1,3-Dichlorobenzene	CE189	mg/kg	-	-	-	-	-	-
1,4-Dichlorobenzene	CE189	mg/kg	-	-	-	-	-	-
2-Methylphenol	CE189	mg/kg	-	-	-	-	-	-
1,2-Dichlorobenzene	CE189	mg/kg	-	-	-	-	-	-
Bis(2-chloroisopropyl)ether	CE189	mg/kg	-	-	-	-	-	-
3&4-Methylphenol	CE189	mg/kg	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	CE189	mg/kg	-	-	-	-	-	-
Hexachloroethane	CE189	mg/kg	-	-	-	-	-	-
Nitrobenzene	CE189	mg/kg	-	-	-	-	-	-
Isophorone	CE189	mg/kg	-	-	-	-	-	-
2,4-Dimethylphenol	CE189	mg/kg	-	-	-	-	-	-
2-Nitrophenol	CE189	mg/kg	-	-	-	-	-	-
Bis(2-chloroethoxy)methane	CE189	mg/kg	-	-	-	-	-	-
2,4-Dichlorophenol	CE189	mg/kg	-	-	-	-	-	-
1,2,4-Trichlorobenzene	CE189	mg/kg	-	-	-	-	-	-
4-Chloroaniline	CE189	mg/kg	-	-	-	-	-	-
Hexachlorobutadiene	CE189	mg/kg	-	-	-	-	-	-
4-Chloro-3-methylphenol	CE189	mg/kg	-	-	-	-	-	-
2-Methylnaphthalene	CE189	mg/kg	-	-	-	-	-	-
1-Methylnaphthalene	CE189	mg/kg	-	-	-	-	-	-
Hexachlorocyclopentadiene	CE189	mg/kg	-	-	-	-	-	-
2,4,6-Trichlorophenol	CE189	mg/kg	-	-	-	-	-	-
2,4,5-Trichlorophenol	CE189	mg/kg	-	-	-	-	-	-
2-Chloronaphthalene	CE189	mg/kg	-	-	-	-	-	-
2-Nitroaniline	CE189	mg/kg	-	-	-	-	-	-
Dimethyl phthalate	CE189	mg/kg	-	-	-	-	-	-
2,6-Dinitrotoluene	CE189	mg/kg	-	-	-	-	-	-
3-Nitroaniline	CE189	mg/kg	-	-	-	-	-	-
2,4-Dinitrophenol	CE189	mg/kg	-	-	-	-	-	-
4-Nitrophenol	CE189	mg/kg	-	-	-	-	-	-
2,4-Dinitrotoluene	CE189	mg/kg	-	-	-	-	-	-
Dibenzofuran	CE189	mg/kg	-	-	-	-	-	-
Diethyl phthalate	CE189	mg/kg	-	-	-	-	-	-
4-Chlorophenylphenyl ether	CE189	mg/kg	-	-	-	-	-	-
4-Nitroaniline	CE189	mg/kg	-	-	-	-	-	-
2-Methyl-4,6-dinitrophenol	CE189	mg/kg	-	-	-	-	-	-

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SOILS

Lab number Sample id Depth (m) Date sampled			136238-7 WS02 2.90 21/08/2024	136238-8 WS03 0.10 21/08/2024	136238-9 WS03 0.50 21/08/2024	136238-10 WS03 3.00 21/08/2024	136238-11 WS04 0.10 21/08/2024	136238-12 WS04 0.90 21/08/2024
Test	Method	Units						
Azobenzene	CE189	mg/kg	-	-	-	-	-	-
4-Bromophenylphenyl ether	CE189	mg/kg	-	-	-	-	-	-
Hexachlorobenzene	CE189	mg/kg	-	-	-	-	-	-
Pentachlorophenol	CE189	mg/kg	-	-	-	-	-	-
Carbazole	CE189	mg/kg	-	-	-	-	-	-
Di-n-butyl phthalate	CE189	mg/kg	-	-	-	-	-	-
Butylbenzyl phthalate	CE189	mg/kg	-	-	-	-	-	-
Bis(2-ethylhexyl)phthalate	CE189	mg/kg	-	-	-	-	-	-
Di-n-octyl phthalate	CE189	mg/kg	-	-	-	-	-	-
SVOC Tentatively Identified Compounds	CE189	-	-	-	-	-	-	-
Subcontracted Analysis								
Asbestos (qualitative)	\$	-	-	-	-	-	NAD	-

Chemtech Environmental Limited

SOILS

Lab number Sample id Depth (m) Date sampled			136238-13 WS05 0.10 21/08/2024	136238-14 WS05 1.00 21/08/2024	136238-15 WS06 4.00 21/08/2024	136238-16 WS06 0.10 21/08/2024	136238-17 WS06 0.80 21/08/2024
Test	Method	Units					
Moisture Content	CE001	% w/w	-	27.1	-	15.3	-
Arsenic (total)	CE264 ^U	mg/kg As	-	15.5	-	20.0	-
Cadmium (total)	CE264 ^M	mg/kg Cd	-	<1.6	-	<1.6	-
Chromium (total)	CE264 ^U	mg/kg Cr	-	47.0	-	51.3	-
Chromium (VI)	CE263	mg/kg CrVI	-	<0.04	-	<0.04	-
Copper (total)	CE264 ^M	mg/kg Cu	-	13.5	-	21.7	-
Lead (total)	CE264 ^U	mg/kg Pb	-	20.7	-	59.9	-
Mercury (total)	CE264 ^U	mg/kg Hg	-	<0.7	-	<0.7	-
Nickel (total)	CE264 ^M	mg/kg Ni	-	34.3	-	32.9	-
Selenium (total)	CE264	mg/kg Se	-	<3	-	<3	-
Zinc (total)	CE264 ^M	mg/kg Zn	-	71.6	-	88.3	-
pH	CE004 ^M	units	-	7.8	8.0	7.8	7.6
Sulphate (2:1 water soluble)	CE061 ^U	mg/l SO ₄	-	95	1490.1	38	-
Sulphate (acid extractable)	CE062 ^M	mg/kg SO ₄	-	-	6159	-	-
Sulphur (total)	CE119	mg/kg S	-	-	45204	-	-
Phenols (total)	CE078	mg/kg PhOH	-	<0.5	-	<0.5	-
Total Organic Carbon (TOC)	CE197	% w/w C	-	1.6	-	4.0	-
PAH							
Naphthalene	CE087 ^M	mg/kg	-	<0.02	-	<0.02	-
Acenaphthylene	CE087 ^M	mg/kg	-	<0.02	-	<0.02	-
Acenaphthene	CE087 ^M	mg/kg	-	<0.02	-	<0.02	-
Fluorene	CE087 ^U	mg/kg	-	<0.02	-	<0.02	-
Phenanthrene	CE087 ^M	mg/kg	-	<0.02	-	0.05	-
Anthracene	CE087 ^U	mg/kg	-	<0.02	-	<0.02	-
Fluoranthene	CE087 ^M	mg/kg	-	0.02	-	0.10	-
Pyrene	CE087 ^M	mg/kg	-	<0.02	-	0.09	-
Benzo(a)anthracene	CE087 ^U	mg/kg	-	<0.02	-	0.05	-
Chrysene	CE087 ^M	mg/kg	-	<0.03	-	0.07	-
Benzo(b)fluoranthene	CE087 ^M	mg/kg	-	0.02	-	0.08	-
Benzo(k)fluoranthene	CE087 ^M	mg/kg	-	<0.03	-	0.03	-
Benzo(a)pyrene	CE087 ^U	mg/kg	-	<0.02	-	0.06	-
Indeno(123cd)pyrene	CE087 ^M	mg/kg	-	0.02	-	0.05	-
Dibenz(ah)anthracene	CE087 ^M	mg/kg	-	<0.02	-	<0.02	-
Benzo(ghi)perylene	CE087 ^M	mg/kg	-	0.03	-	0.05	-
PAH (total of USEPA 16)	CE087	mg/kg	-	<0.34	-	0.62	-

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SOILS

Lab number			136238-13	136238-14	136238-15	136238-16	136238-17
Sample id			WS05	WS05	WS06	WS06	WS06
Depth (m)			0.10	1.00	4.00	0.10	0.80
Date sampled			21/08/2024	21/08/2024	21/08/2024	21/08/2024	21/08/2024
Test	Method	Units					
BTEX & TPH							
VPH Aromatic (>EC5-EC7)	CE067	mg/kg	<0.01	-	-	-	-
VPH Aromatic (>EC7-EC8)	CE067	mg/kg	<0.01	-	-	-	-
VPH Aromatic (>EC8-EC10)	CE067	mg/kg	<0.01	-	-	-	-
EPH Aromatic (>EC10-EC12)	CE250	mg/kg	2	-	-	-	-
EPH Aromatic (>EC12-EC16)	CE250	mg/kg	12	-	-	-	-
EPH Aromatic (>EC16-EC21)	CE250	mg/kg	49	-	-	-	-
EPH Aromatic (>EC21-EC35)	CE250	mg/kg	551	-	-	-	-
EPH Aromatic (>EC35-EC44)	CE250	mg/kg	312	-	-	-	-
VPH Aliphatic (>C5-C6)	CE067	mg/kg	<0.1	-	-	-	-
VPH Aliphatic (>C6-C8)	CE067	mg/kg	<0.1	-	-	-	-
VPH Aliphatic (>C8-C10)	CE067	mg/kg	<0.1	-	-	-	-
EPH Aliphatic (>C10-C12)	CE250	mg/kg	<1	-	-	-	-
EPH Aliphatic (>C12-C16)	CE250	mg/kg	1	-	-	-	-
EPH Aliphatic (>C16-C35)	CE250	mg/kg	48	-	-	-	-
EPH Aliphatic (>C35-C44)	CE250	mg/kg	13	-	-	-	-

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SOILS

Lab number Sample id Depth (m) Date sampled			136238-13 WS05 0.10 21/08/2024	136238-14 WS05 1.00 21/08/2024	136238-15 WS06 4.00 21/08/2024	136238-16 WS06 0.10 21/08/2024	136238-17 WS06 0.80 21/08/2024
Test	Method	Units					
Volatiles							
MTBE	CE267	mg/kg	-	-	-	-	-
Benzene	CE267	mg/kg	-	-	-	-	-
Toluene	CE267	mg/kg	-	-	-	-	-
Ethylbenzene	CE267	mg/kg	-	-	-	-	-
m & p-Xylene	CE267	mg/kg	-	-	-	-	-
o-Xylene	CE267	mg/kg	-	-	-	-	-
Dichlorodifluoromethane	CE174	mg/kg	-	-	-	-	-
Chloromethane	CE174	mg/kg	-	-	-	-	-
Vinyl chloride	CE174	mg/kg	-	-	-	-	-
Bromomethane	CE174	mg/kg	-	-	-	-	-
Chloroethane	CE174	mg/kg	-	-	-	-	-
Trichlorofluoromethane	CE174	mg/kg	-	-	-	-	-
1,1-Dichloroethene	CE174	mg/kg	-	-	-	-	-
Trans-1,2-Dichloroethene	CE174	mg/kg	-	-	-	-	-
1,1-Dichloroethane	CE174	mg/kg	-	-	-	-	-
2,2-Dichloropropane	CE174	mg/kg	-	-	-	-	-
Cis-1,2-Dichloroethene	CE174	mg/kg	-	-	-	-	-
Bromochloromethane	CE174	mg/kg	-	-	-	-	-
Chloroform	CE174	mg/kg	-	-	-	-	-
1,1,1-Trichloroethane	CE174	mg/kg	-	-	-	-	-
Carbon tetrachloride	CE174	mg/kg	-	-	-	-	-
1,1-Dichloro-1-propene	CE174	mg/kg	-	-	-	-	-
1,2-Dichloroethane	CE174	mg/kg	-	-	-	-	-
Trichloroethene	CE174	mg/kg	-	-	-	-	-
1,2-Dichloropropane	CE174	mg/kg	-	-	-	-	-
Dibromomethane	CE174	mg/kg	-	-	-	-	-
Bromodichloromethane	CE174	mg/kg	-	-	-	-	-
cis-1,3-Dichloro-1-propene	CE174	mg/kg	-	-	-	-	-
trans-1,3-Dichloro-1-propene	CE174	mg/kg	-	-	-	-	-
1,1,2-Trichloroethane	CE174	mg/kg	-	-	-	-	-
Tetrachloroethene	CE174	mg/kg	-	-	-	-	-
1,3-Dichloropropane	CE174	mg/kg	-	-	-	-	-
Dibromochloromethane	CE174	mg/kg	-	-	-	-	-
1,2-Dibromoethane	CE174	mg/kg	-	-	-	-	-
Chlorobenzene	CE174	mg/kg	-	-	-	-	-
1,1,1,2-Tetrachloroethane	CE174	mg/kg	-	-	-	-	-
Styrene	CE174	mg/kg	-	-	-	-	-
Tribromomethane	CE174	mg/kg	-	-	-	-	-
Isopropylbenzene	CE174	mg/kg	-	-	-	-	-
Bromobenzene	CE174	mg/kg	-	-	-	-	-

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SOILS

Lab number Sample id Depth (m) Date sampled			136238-13 WS05 0.10 21/08/2024	136238-14 WS05 1.00 21/08/2024	136238-15 WS06 4.00 21/08/2024	136238-16 WS06 0.10 21/08/2024	136238-17 WS06 0.80 21/08/2024
Test	Method	Units					
1,1,2,2-Tetrachloroethane	CE174	mg/kg	-	-	-	-	-
1,2,3-Trichloropropane	CE174	mg/kg	-	-	-	-	-
Propylbenzene	CE174	mg/kg	-	-	-	-	-
2-Chlorotoluene	CE174	mg/kg	-	-	-	-	-
4-Chlorotoluene	CE174	mg/kg	-	-	-	-	-
1,3,5-Trimethylbenzene	CE174	mg/kg	-	-	-	-	-
tert-Butylbenzene	CE174	mg/kg	-	-	-	-	-
1,2,4-Trimethylbenzene	CE174	mg/kg	-	-	-	-	-
sec-Butylbenzene	CE174	mg/kg	-	-	-	-	-
1,3-Dichlorobenzene	CE174	mg/kg	-	-	-	-	-
4-Isopropyltoluene	CE174	mg/kg	-	-	-	-	-
1,4-Dichlorobenzene	CE174	mg/kg	-	-	-	-	-
1,2-Dichlorobenzene	CE174	mg/kg	-	-	-	-	-
Butylbenzene	CE174	mg/kg	-	-	-	-	-
1,2-Dibromo-3-chloropropane	CE174	mg/kg	-	-	-	-	-
1,2,4-Trichlorobenzene	CE174	mg/kg	-	-	-	-	-
Hexachloro-1,3-butadiene	CE174	mg/kg	-	-	-	-	-
1,2,3-Trichlorobenzene	CE174	mg/kg	-	-	-	-	-
VOC Tentatively Identified Compounds	CE174	-	-	-	-	-	-

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SOILS

Lab number Sample id Depth (m) Date sampled			136238-13 WS05 0.10 21/08/2024	136238-14 WS05 1.00 21/08/2024	136238-15 WS06 4.00 21/08/2024	136238-16 WS06 0.10 21/08/2024	136238-17 WS06 0.80 21/08/2024
Test	Method	Units					
Semi-volatiles							
N-Nitrosodimethylamine	CE189	mg/kg	-	-	-	-	-
Phenol	CE189	mg/kg	-	-	-	-	-
Bis(2-chloroethyl)ether	CE189	mg/kg	-	-	-	-	-
2-Chlorophenol	CE189	mg/kg	-	-	-	-	-
1,3-Dichlorobenzene	CE189	mg/kg	-	-	-	-	-
1,4-Dichlorobenzene	CE189	mg/kg	-	-	-	-	-
2-Methylphenol	CE189	mg/kg	-	-	-	-	-
1,2-Dichlorobenzene	CE189	mg/kg	-	-	-	-	-
Bis(2-chloroisopropyl)ether	CE189	mg/kg	-	-	-	-	-
3&4-Methylphenol	CE189	mg/kg	-	-	-	-	-
N-Nitrosodi-n-propylamine	CE189	mg/kg	-	-	-	-	-
Hexachloroethane	CE189	mg/kg	-	-	-	-	-
Nitrobenzene	CE189	mg/kg	-	-	-	-	-
Isophorone	CE189	mg/kg	-	-	-	-	-
2,4-Dimethylphenol	CE189	mg/kg	-	-	-	-	-
2-Nitrophenol	CE189	mg/kg	-	-	-	-	-
Bis(2-chloroethoxy)methane	CE189	mg/kg	-	-	-	-	-
2,4-Dichlorophenol	CE189	mg/kg	-	-	-	-	-
1,2,4-Trichlorobenzene	CE189	mg/kg	-	-	-	-	-
4-Chloroaniline	CE189	mg/kg	-	-	-	-	-
Hexachlorobutadiene	CE189	mg/kg	-	-	-	-	-
4-Chloro-3-methylphenol	CE189	mg/kg	-	-	-	-	-
2-Methylnaphthalene	CE189	mg/kg	-	-	-	-	-
1-Methylnaphthalene	CE189	mg/kg	-	-	-	-	-
Hexachlorocyclopentadiene	CE189	mg/kg	-	-	-	-	-
2,4,6-Trichlorophenol	CE189	mg/kg	-	-	-	-	-
2,4,5-Trichlorophenol	CE189	mg/kg	-	-	-	-	-
2-Chloronaphthalene	CE189	mg/kg	-	-	-	-	-
2-Nitroaniline	CE189	mg/kg	-	-	-	-	-
Dimethyl phthalate	CE189	mg/kg	-	-	-	-	-
2,6-Dinitrotoluene	CE189	mg/kg	-	-	-	-	-
3-Nitroaniline	CE189	mg/kg	-	-	-	-	-
2,4-Dinitrophenol	CE189	mg/kg	-	-	-	-	-
4-Nitrophenol	CE189	mg/kg	-	-	-	-	-
2,4-Dinitrotoluene	CE189	mg/kg	-	-	-	-	-
Dibenzofuran	CE189	mg/kg	-	-	-	-	-
Diethyl phthalate	CE189	mg/kg	-	-	-	-	-
4-Chlorophenylphenyl ether	CE189	mg/kg	-	-	-	-	-
4-Nitroaniline	CE189	mg/kg	-	-	-	-	-
2-Methyl-4,6-dinitrophenol	CE189	mg/kg	-	-	-	-	-

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SOILS

Lab number Sample id Depth (m) Date sampled			136238-13 WS05 0.10 21/08/2024	136238-14 WS05 1.00 21/08/2024	136238-15 WS06 4.00 21/08/2024	136238-16 WS06 0.10 21/08/2024	136238-17 WS06 0.80 21/08/2024
Test	Method	Units					
Azobenzene	CE189	mg/kg	-	-	-	-	-
4-Bromophenylphenyl ether	CE189	mg/kg	-	-	-	-	-
Hexachlorobenzene	CE189	mg/kg	-	-	-	-	-
Pentachlorophenol	CE189	mg/kg	-	-	-	-	-
Carbazole	CE189	mg/kg	-	-	-	-	-
Di-n-butyl phthalate	CE189	mg/kg	-	-	-	-	-
Butylbenzyl phthalate	CE189	mg/kg	-	-	-	-	-
Bis(2-ethylhexyl)phthalate	CE189	mg/kg	-	-	-	-	-
Di-n-octyl phthalate	CE189	mg/kg	-	-	-	-	-
SVOC Tentatively Identified Compounds	CE189	-	-	-	-	-	-
Subcontracted Analysis							
Asbestos (qualitative)	\$	-	-	-	-	NAD	-

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METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE001	Moisture Content	Gravimetry, reported on Wet Weight basis	As received		0.1	% w/w
CE264	Arsenic (total)	Aqua Regia Extraction, ICPOES	Dry	U	1.8	mg/kg As
CE264	Cadmium (total)	Aqua Regia Extraction, ICPOES	Dry	M	1.6	mg/kg Cd
CE264	Chromium (total)	Aqua Regia Extraction, ICPOES	Dry	U	2	mg/kg Cr
CE263	Chromium (VI)	Discrete Analyser	Dry		0.04	mg/kg CrVI
CE264	Copper (total)	Aqua Regia Extraction, ICPOES	Dry	M	1.6	mg/kg Cu
CE264	Lead (total)	Aqua Regia Extraction, ICPOES	Dry	U	2.3	mg/kg Pb
CE264	Mercury (total)	Aqua Regia Extraction, ICPOES	Dry	U	0.7	mg/kg Hg
CE264	Nickel (total)	Aqua Regia Extraction, ICPOES	Dry	M	2.1	mg/kg Ni
CE264	Selenium (total)	Aqua Regia Extraction, ICPOES	Dry	U	3	mg/kg Se
CE264	Zinc (total)	Aqua Regia Extraction, ICPOES	Dry	M	4	mg/kg Zn

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METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE004	pH	Based on BS 1377, pH Meter	As received	M	-	units
CE061	Sulphate (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry	U	10	mg/l SO ₄
CE062	Sulphate (acid extractable)	HCl extract, analysed by ICP-OES	Dry	M	100	mg/kg SO ₄
CE119	Sulphur (total)	Aqua regia digest, ICP-OES	Dry		100	mg/kg S
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

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METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE087	Naphthalene	Solvent extraction, GC-MS	As received	M	0.016	mg/kg
CE087	Acenaphthylene	Solvent extraction, GC-MS	As received	M	0.015	mg/kg
CE087	Acenaphthene	Solvent extraction, GC-MS	As received	M	0.013	mg/kg
CE087	Fluorene	Solvent extraction, GC-MS	As received	U	0.013	mg/kg
CE087	Phenanthrene	Solvent extraction, GC-MS	As received	M	0.014	mg/kg
CE087	Anthracene	Solvent extraction, GC-MS	As received	U	0.017	mg/kg
CE087	Fluoranthene	Solvent extraction, GC-MS	As received	M	0.017	mg/kg
CE087	Pyrene	Solvent extraction, GC-MS	As received	M	0.016	mg/kg
CE087	Benzo(a)anthracene	Solvent extraction, GC-MS	As received	U	0.012	mg/kg
CE087	Chrysene	Solvent extraction, GC-MS	As received	M	0.028	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	0.025	mg/kg
CE087	Benzo(a)pyrene	Solvent extraction, GC-MS	As received	U	0.019	mg/kg
CE087	Indeno(123cd)pyrene	Solvent extraction, GC-MS	As received	M	0.019	mg/kg
CE087	Dibenz(ah)anthracene	Solvent extraction, GC-MS	As received	M	0.017	mg/kg
CE087	Benzo(ghi)perylene	Solvent extraction, GC-MS	As received	M	0.019	mg/kg
CE087	PAH (total of USEPA 16)	Solvent extraction, GC-MS	As received		0.028	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
CE067	VPH Aromatic (>EC8-EC10)	Headspace GC-FID	As received		0.01	mg/kg
CE250	EPH Aromatic (>EC10-EC12)	Solvent extraction, GCxGC-FID	As received		0.6	mg/kg
CE250	EPH Aromatic (>EC12-EC16)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
CE250	EPH Aromatic (>EC16-EC21)	Solvent extraction, GCxGC-FID	As received		1.5	mg/kg
CE250	EPH Aromatic (>EC21-EC35)	Solvent extraction, GCxGC-FID	As received		4.5	mg/kg
CE250	EPH Aromatic (>EC35-EC44)	Solvent extraction, GCxGC-FID	As received		2	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
CE250	EPH Aliphatic (>C10-C12)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
CE250	EPH Aliphatic (>C12-C16)	Solvent extraction, GCxGC-FID	As received		0.5	mg/kg
CE250	EPH Aliphatic (>C16-C35)	Solvent extraction, GCxGC-FID	As received		3	mg/kg
CE250	EPH Aliphatic (>C35-C44)	Solvent extraction, GCxGC-FID	As received		0.5	mg/kg
\$	Asbestos (qualitative)	HSG 248, Microscopy	Dry	U	-	-
\$	Asbestos (quantitative)	HSG 248, Microscopy & Gravimetry	Dry	U	0.001	% w/w
CE267	MTBE	Headspace GC-FID	As received		0.004	mg/kg
CE267	Benzene	Headspace GC-FID	As received		0.003	mg/kg
CE267	Toluene	Headspace GC-FID	As received		0.003	mg/kg
CE267	Ethylbenzene	Headspace GC-FID	As received		0.002	mg/kg
CE267	m & p-Xylene	Headspace GC-FID	As received		0.005	mg/kg
CE267	o-Xylene	Headspace GC-FID	As received		0.003	mg/kg

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METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE174	Dichlorodifluoromethane	Headspace GC-MS	As received		0.01	mg/kg
CE174	Chloromethane	Headspace GC-MS	As received		0.01	mg/kg
CE174	Vinyl chloride	Headspace GC-MS	As received		0.01	mg/kg
CE174	Bromomethane	Headspace GC-MS	As received		0.03	mg/kg
CE174	Chloroethane	Headspace GC-MS	As received		0.01	mg/kg
CE174	Trichlorofluoromethane	Headspace GC-MS	As received		0.01	mg/kg
CE174	1,1-Dichloroethene	Headspace GC-MS	As received		0.01	mg/kg
CE174	Trans-1,2-Dichloroethene	Headspace GC-MS	As received		0.01	mg/kg
CE174	1,1-Dichloroethane	Headspace GC-MS	As received		0.01	mg/kg
CE174	2,2-Dichloropropane	Headspace GC-MS	As received		0.01	mg/kg
CE174	Cis-1,2-Dichloroethene	Headspace GC-MS	As received		0.01	mg/kg
CE174	Bromochloromethane	Headspace GC-MS	As received		0.01	mg/kg
CE174	Chloroform	Headspace GC-MS	As received		0.01	mg/kg
CE174	1,1,1-Trichloroethane	Headspace GC-MS	As received		0.01	mg/kg
CE174	Carbon tetrachloride	Headspace GC-MS	As received		0.01	mg/kg
CE174	1,1-Dichloro-1-propene	Headspace GC-MS	As received		0.01	mg/kg
CE174	1,2-Dichloroethane	Headspace GC-MS	As received		0.01	mg/kg
CE174	Trichloroethene	Headspace GC-MS	As received		0.01	mg/kg
CE174	1,2-Dichloropropane	Headspace GC-MS	As received		0.01	mg/kg
CE174	Dibromomethane	Headspace GC-MS	As received		0.01	mg/kg
CE174	Bromodichloromethane	Headspace GC-MS	As received		0.01	mg/kg
CE174	cis-1,3-Dichloro-1-propene	Headspace GC-MS	As received		0.01	mg/kg
CE174	trans-1,3-Dichloro-1-propene	Headspace GC-MS	As received		0.01	mg/kg
CE174	1,1,2-Trichloroethane	Headspace GC-MS	As received		0.01	mg/kg
CE174	Tetrachloroethene	Headspace GC-MS	As received		0.01	mg/kg
CE174	1,3-Dichloropropane	Headspace GC-MS	As received		0.01	mg/kg
CE174	Dibromochloromethane	Headspace GC-MS	As received		0.01	mg/kg

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METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE174	1,2-Dibromoethane	Headspace GC-MS	As received		0.01	mg/kg
CE174	Chlorobenzene	Headspace GC-MS	As received		0.01	mg/kg
CE174	1,1,1,2-Tetrachloroethane	Headspace GC-MS	As received		0.01	mg/kg
CE174	Styrene	Headspace GC-MS	As received		0.01	mg/kg
CE174	Tri bromomethane	Headspace GC-MS	As received		0.01	mg/kg
CE174	Isopropylbenzene	Headspace GC-MS	As received		0.01	mg/kg
CE174	Bromobenzene	Headspace GC-MS	As received		0.01	mg/kg
CE174	1,1,2,2-Tetrachloroethane	Headspace GC-MS	As received		0.01	mg/kg
CE174	1,2,3-Trichloropropane	Headspace GC-MS	As received		0.01	mg/kg
CE174	Propylbenzene	Headspace GC-MS	As received		0.01	mg/kg
CE174	2-Chlorotoluene	Headspace GC-MS	As received		0.01	mg/kg
CE174	4-Chlorotoluene	Headspace GC-MS	As received		0.01	mg/kg
CE174	1,3,5-Trimethylbenzene	Headspace GC-MS	As received		0.01	mg/kg
CE174	tert-Butylbenzene	Headspace GC-MS	As received		0.01	mg/kg
CE174	1,2,4-Trimethylbenzene	Headspace GC-MS	As received		0.01	mg/kg
CE174	sec-Butylbenzene	Headspace GC-MS	As received		0.01	mg/kg
CE174	1,3-Dichlorobenzene	Headspace GC-MS	As received		0.01	mg/kg
CE174	4-Isopropyltoluene	Headspace GC-MS	As received		0.01	mg/kg
CE174	1,4-Dichlorobenzene	Headspace GC-MS	As received		0.01	mg/kg
CE174	1,2-Dichlorobenzene	Headspace GC-MS	As received		0.01	mg/kg
CE174	Butylbenzene	Headspace GC-MS	As received		0.01	mg/kg
CE174	1,2-Dibromo-3-chloropropane	Headspace GC-MS	As received		0.01	mg/kg
CE174	1,2,4-Trichlorobenzene	Headspace GC-MS	As received		0.01	mg/kg
CE174	Hexachloro-1,3-butadiene	Headspace GC-MS	As received		0.01	mg/kg
CE174	1,2,3-Trichlorobenzene	Headspace GC-MS	As received		0.01	mg/kg
CE174	VOC Tentatively Identified Compounds	Headspace GC-MS	As received		-	-

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METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE189	N-Nitrosodimethylamine	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	Phenol	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	Bis(2-chloroethyl)ether	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	2-Chlorophenol	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	1,3-Dichlorobenzene	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	1,4-Dichlorobenzene	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	2-Methylphenol	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	1,2-Dichlorobenzene	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	Bis(2-chloroisopropyl)ether	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	3&4-Methylphenol	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	N-Nitrosodi-n-propylamine	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	Hexachloroethane	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	Nitrobenzene	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	Isophorone	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	2,4-Dimethylphenol	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	2-Nitrophenol	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	Bis(2-chloroethoxy)methane	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	2,4-Dichlorophenol	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	1,2,4-Trichlorobenzene	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	4-Chloroaniline	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	Hexachlorobutadiene	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	4-Chloro-3-methylphenol	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	2-Methylnaphthalene	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	1-Methylnaphthalene	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	Hexachlorocyclopentadiene	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	2,4,6-Trichlorophenol	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	2,4,5-Trichlorophenol	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	2-Chloronaphthalene	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	2-Nitroaniline	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	Dimethyl phthalate	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	2,6-Dinitrotoluene	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	3-Nitroaniline	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	2,4-Dinitrophenol	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	4-Nitrophenol	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	2,4-Dinitrotoluene	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	Dibenzofuran	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	Diethyl phthalate	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	4-Chlorophenylphenyl ether	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	4-Nitroaniline	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	2-Methyl-4,6-dinitrophenol	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	Azobenzene	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	4-Bromophenylphenyl ether	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	Hexachlorobenzene	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	Pentachlorophenol	Solvent extraction, GC-MS	As received		0.1	mg/kg

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METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE189	Carbazole	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	Di-n-butyl phthalate	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	Butylbenzyl phthalate	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	Bis(2-ethylhexyl)phthalate	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	Di-n-octyl phthalate	Solvent extraction, GC-MS	As received		0.1	mg/kg
CE189	SVOC Tentatively Identified Compounds	Solvent extraction, GC-MS	As received		-	-

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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)
136238-1	HTP01	0.00	N	
136238-2	HTP02	0.00	N	
136238-3	HTP03	0.00	N	
136238-4	SS01	0.00	N	
136238-5	WS01	0.00	N	
136238-6	WS01	0.40	N	
136238-7	WS02	2.90	N	
136238-8	WS03	0.10	N	
136238-9	WS03	0.50	N	
136238-10	WS03	3.00	N	
136238-11	WS04	0.10	N	
136238-12	WS04	0.90	N	
136238-13	WS05	0.10	N	
136238-14	WS05	1.00	N	
136238-15	WS06	4.00	N	
136238-16	WS06	0.10	N	
136238-17	WS06	0.80	N	

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ADDITIONAL INFORMATION

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.

Soil/Solid samples will be disposed of 4 weeks from initial receipt unless otherwise agreed.

Waters and leachate samples will be disposed of 2 weeks from report issue unless otherwise agreed.

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For soils and solids, all results are reported on a dry basis. Samples dried at no more than 30°C in a drying cabinet.

For soils and solids, analytical results are inclusive of stones, where applicable.

Moisture Content Calculated on a Wet Weight basis

APPENDIX VIII

Gas and Groundwater Monitoring Sheets

SITE	E24171 - Land East of South Drove, Lucks Bridge, Spalding	ENGINEER	JR
DATE	27th August 2024	PRESSURE (START)	1017 mb
EQUIPMENT	GFM 456 Gas Analyser and Dipmeter	PRESSURE (START)	1017 mb
WEATHER	Cloudy, dry and windy		

Borehole	Flow (l/hr)		Methane % v/v		Carbon Dioxide % v/v		Oxygen % v/v		Hydrogen Sulphide (ppm)	Carbon Monoxide (ppm)	Depth to Water (m)	Depth to Base (m)
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady				
AMBIENT	-	0.0	-	0.0	-	0.0	-	20.6	0	0	N/A	N/A
WS03	0.0	0.0	0.0	0.0	2.3	2.3	19.4	19.4	0	0	2.31	3.91
WS04	0.0	0.0	0.0	0.0	0.4	0.4	20.4	20.4	0	0	1.79	3.93
WS05	0.0	0.0	0.0	0.0	0.9	0.9	19.9	19.9	0	0	1.05	4.71
MAX:	0.0	0.0	0.0	0.0	2.3	2.3	20.4	20.4	0.0	0.0	2.3	4.7

Comments:

Notes:

- Peak readings are the maximum results recorded for flow, CH4 or CO2 and the minimum results recorded for
- Steady readings are the values recorded after approx. 90 to 120 seconds of monitoring. Where values fluctuate then this period will have been lengthened.
- Gas analyser calibration certificates are available upon request.

SITE	E24171 - Land East of South Drove, Lucks Bridge, Spalding	ENGINEER	JR
DATE	9th September 2024	PRESSURE (START)	1009 mb
EQUIPMENT	GFM 456 Gas Analyser and Dipmeter	PRESSURE (START)	1008mb
WEATHER	Cloudy, dry and slightly breezy		

Borehole	Flow (l/hr)		Methane % v/v		Carbon Dioxide % v/v		Oxygen % v/v		Hydrogen Sulphide (ppm)	Carbon Monoxide (ppm)	Depth to Water (m)	Depth to Base (m)
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady				
AMBIENT	-	0.0	-	0.0	-	0.0	-	20.6	0	0	N/A	N/A
WS03	0.0	0.0	0.0	0.0	3.0	3.0	18.6	18.6	0	0	2.30	3.91
WS04	0.0	0.0	0.0	0.0	0.4	0.4	20.4	20.4	0	0	1.78	3.92
WS05	0.0	0.0	0.0	0.0	0.6	0.6	20.3	20.3	0	0	1.02	4.70
MAX:	0.0	0.0	0.0	0.0	3.0	3.0	20.4	20.4	0.0	0.0	2.3	4.7

Comments:

Notes:

- Peak readings are the maximum results recorded for flow, CH4 or CO2 and the minimum results recorded for
- Steady readings are the values recorded after approx. 90 to 120 seconds of monitoring. Where values fluctuate then this period will have been lengthened.
- Gas analyser calibration certificates are available upon request.

SITE	E24171 - Land East of South Drove, Lucks Bridge, Spalding	ENGINEER	JR
DATE	16th September 2024	PRESSURE (START)	1029 mb
EQUIPMENT	GFM 456 Gas Analyser and Dipmeter	PRESSURE (START)	1028mb
WEATHER	Sunny, dry and still		

Borehole	Flow (l/hr)		Methane % v/v		Carbon Dioxide % v/v		Oxygen % v/v		Hydrogen Sulphide (ppm)	Carbon Monoxide (ppm)	Depth to Water (m)	Depth to Base (m)
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady				
AMBIENT	-	0.0	-	0.0	-	0.0	-	20.6	0	0	N/A	N/A
WS03	0.0	0.0	0.0	0.0	2.8	2.8	18.8	18.8	0	0	2.28	3.90
WS04	0.0	0.0	0.0	0.0	0.4	0.4	20.4	20.4	0	0	1.80	3.92
WS05	0.0	0.0	0.0	0.0	0.7	0.7	20.1	20.1	0	0	1.03	4.70
MAX:	0.0	0.0	0.0	0.0	2.8	2.8	20.4	20.4	0.0	0.0	2.3	4.7

Comments:Notes:

- Peak readings are the maximum results recorded for flow, CH₄ or CO₂ and the minimum results recorded for
- Steady readings are the values recorded after approx. 90 to 120 seconds of monitoring. Where values fluctuate then this period will have been lengthened.
- Gas analyser calibration certificates are available upon request.