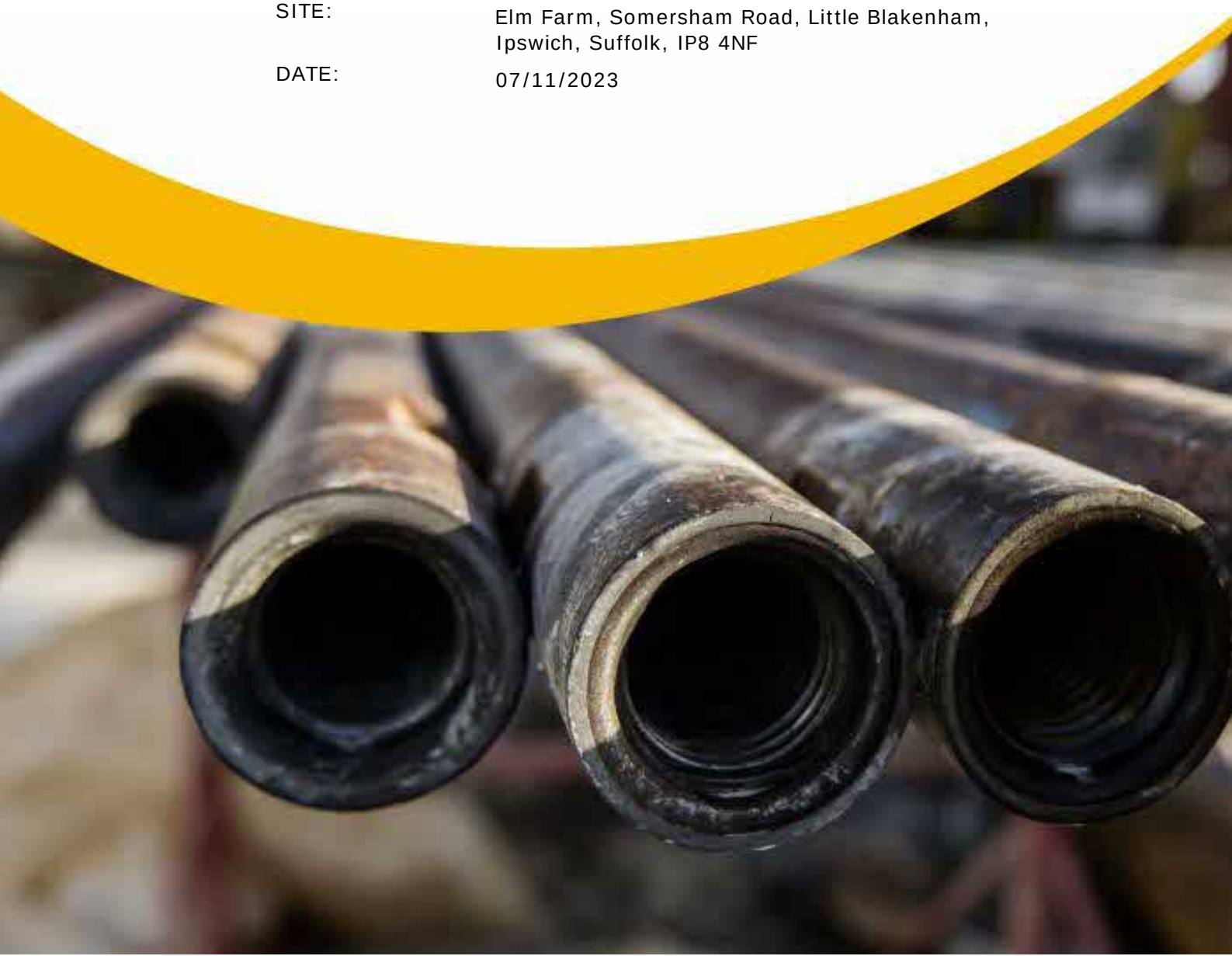
GEOSPHERE ENVIRONMENTAL

REPORT NUMBER:	7826,GI,GROUND,JK,JD,07-11-23,V1
SITE:	Elm Farm, Somersham Road, Little Blakenham, Ipswich, Suffolk, IP8 4NF
DATE:	07/11/2023



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Geosphere Environmental Ltd, Brightwell Barns, Ipswich Road, Brightwell, Suffolk, IP10 0BJ.
T: 01603 298 076 / 01473 353 519. W: www.geosphere-environmental.co.uk

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This report is based upon the site findings at the time of the associated walkover/site investigation works and information provided by the client at the time of writing. Should site conditions alter or development proposals alter, a reassessment of the enclosed findings should be undertaken. Refer to Appendix 1 for full details of report limitations.

Prepared By:	Reviewed By:	Authorised By:
Jonathan Khan	Jim Dawson	Paul Davies
Geo-environmental Consultant	Associate Director	Director

[redacted]

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V1	07/11/23	Original Version	JK	HP

EXECUTIVE SUMMARY

SITE INVESTIGATION DATA REVIEW		
Introduction		Geosphere Environmental Ltd was commissioned by the Client, Beechlake Developments Ltd to undertake a preliminary Phase 2 Ground Investigation for a proposed residential development at Elm Farm, Somersham Road, Little Blakenham, Ipswich, Suffolk, IP8 4NF. It was understood that the site is to be developed into three residential dwellings with associated soft landscaping, car parking and private garden areas.
Site Works		Site works were carried out on 14 September 2023 and comprised the following: Excavation of seven window sample boreholes (WS01-07) to a depth of 3.00m below ground level (bgl); Installation of three wells for ground gas and groundwater monitoring, within selected boreholes (WS01, WS03 and WS06); and Associated soil logging, sampling and environmental testing (both soils and groundwater).
Ground Conditions		Made Ground was encountered of variable depth and composition, max depth 1.00mbgl. The Made Ground was underlain by superficial deposits (interpreted as Diamicton) to >3mbgl. Groundwater was not encountered during the intrusive investigation but was monitored at depths between 1.75mbgl and 2.75mbgl during subsequent monitoring visits.
Environmental Laboratory Analysis, Soils and Groundwater		Thirteen soil samples were analysed along with two groundwater samples. Exceedances of the soil quality screening criteria for a "residential with plant uptake" land use scenario were identified in three samples from two exploratory hole locations: WS03 (E1, 0.1mbgl) and WS06 (E1, 0.2mbgl and E2, 0.5mbgl). The soil at these locations can be considered unsuitable for the proposed land use due to elevated concentrations of aromatic hydrocarbons (>C16-C21) and some PAH congeners; they pose a hazard and moderate to high risk to end users. Groundwater taken from WS03 and WS06 showed no visual or olfactory evidence of contamination during sampling, confirmed by the chemical analysis: the majority of analytes are reported at <laboratory LODs. This suggests that the shallow groundwater at these sampling locations is not impacted by hydrocarbons or PAHs.
Ground Gas Assessment		Based upon the data, a Characteristic Situation CS1 can be applied to the site. no additional monitoring is recommended at this stage and no specialist gas protection measures are proposed necessary for the proposed structures.
Updated Conceptual Model		The updated CSM revised the risks associated with these potential sources of contamination to: PACMs from extant / previous structures.– Low Risk; Made Ground / poor quality soil.– Moderate to High Risk; and Potentially infilled pond – Negligible to Low Risk.
Conclusions and Recommendations		Further soil sampling is required (potentially post-demolition / site clearance) to delineate the lateral extent of the contaminated soils, principally at WS01 and WS03 with further assessment at WS06 and proposed garden areas. Dependent upon the results of this, remediation (and validation) may be required in order to reduce the risk to receptors.
This Executive Summary only provides a summary of the site data and its assessment. It does not provide a definitive engineering analysis and is for guidance only. It is recommended that the reader reviews the report in its entirety and any material referenced therein.		

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1. INTRODUCTION

Geosphere Environmental Ltd was commissioned by the Client, Beechlake Developments Ltd to undertake a Phase 2 Preliminary Ground Investigation for a proposed residential development at Elm Farm, Somersham Road, Little Blakenham, Ipswich, Suffolk, IP8 4NF.

It was understood that the site is to be developed into three residential dwellings with associated soft landscaping, car parking and private garden areas. (A Proposed Development Plan, Drawing ref. PW1284-BR03revC by Peter Wells Architects, is provided within Appendix 3. Please see below regarding variations in site areas.)

1.1 Objectives of Phase 2 - Ground Investigation

The primary objectives of this ground investigation were to:

Assess the ground conditions at the site; and
Assess the potential risk to human health and the environment based upon the findings of the investigation.

These were achieved by:

Undertaking an intrusive investigation of the site, based upon the findings of previous site data, the proposed development layout and the scope agreed with the Client;
Logging and sampling the soils on the site and noting any visual or olfactory evidence of contamination;
Installing monitoring wells with subsequent ground gas and groundwater level monitoring;
Undertaking laboratory chemical analysis of selected soil and groundwater samples to assess soil and groundwater quality at the site;
Updating the Conceptual Site Model and defining suitable remedial/mitigating and verification actions.

1.2 Previous Reports

A Stage 1 / Tier 1 Geo-environmental Desk Study Report has been undertaken for the site, produced by A F Howland Associates; report reference: JAH/19.349/PhaseI, dated 29/10/2019. It is assumed that the Client has reliance upon this report; it is summarised below for information but for a detailed account please refer to the report.

The purpose of the Phase 1 report was to document the environmental setting of the site and surrounding area for use in determining the contamination status of the site and whether any intrusive-based investigation works were required.

Based on an historical review of available mapping, the site appears to have been a farm from the earliest maps studied, dated 1882-1884. The 1964-70 mapping appeared to show significant redevelopment onsite, including construction of three new buildings, labelled as Piggeries, (commensurate with Barns B, C and D – see Site Plan Drawing ref. 174_EF_2_HAT_PL_010 by HAT Projects). By 1973 two of the buildings on the eastern boundary of the site were no longer mapped, leaving a single building (commensurate with Barn A). Examining the later aerial photographs, from 2000, the site was noted to be broadly similar to the present-day layout with the addition of a barn along the western site boundary. Redevelopment of the adjacent Elm Farmhouse was noted in the 2015 mapping.

Historic directories record that as well as a farm use for the site, in general, a timber merchant was present in one of the units for a period of time.

The surrounding area mainly comprised agricultural land and several ponds that have been infilled over the years. The 1964-70 mapping showed a sewage works approximately 120m south of site. These works were noted to still be present in a similar configuration in the current day.

Geologically, the site was detailed within the Desk Study report as being underlain by bedrock of the Newhaven Chalk Formation with superficial Head deposits recorded in the very near vicinity of the site; this is updated below with data from the BGS website. The bedrock is classified as principal aquifer and the site was located within a Zone 3 Source Protection Zone. A water abstraction is recorded at the adjacent Elm Farm premises, 9m west.

The site walkover detailed the following sources of potential contamination: 2no. infilled pits, PACM as stacked of boards and fragments, surface staining adjacent to a log splitter.

Based on the findings of the report, potential onsite contaminative hazards included; Made Ground and PACMs from historical onsite development, potentially infilled land, and the historical use of the onsite structures. All the above were considered to be of low to moderate risk to site / potential receptors and an intrusive-based investigation was recommended.

No significant sources of ground gas were considered, in the summary, to be present but this may have overlooked the 2no. infilled areas.

2. SITE SETTINGS

2.1 Site Location

The subject site was situated on the western outskirts of the village of Little Blakenham, approximately 7.3km northwest of Ipswich, and may be located by postcode IP8 4NF and Grid Reference TM 09995 48754.

2.2 Site Description

At the time of the intrusive works the site was a rectangular shaped parcel of land, occupying an approximate area of 0.31 ha. The site sloped slightly downhill from Somersham Road (at an elevation of approximately 18m AOD) falling to the south at an elevation of approximately 15m AOD. The site comprised a collection of single storey agricultural buildings and barns (of mixed construction materials) as outlined within the Site Plan, Drawing ref: 174_EF_2_HAT_PL_010 by HAT Projects. It is understood that the site was once a piggery and as such the two larger barns, Barn C and Barn D were used to house the pigs. At the time of the intrusive works, Barns A, B and C had been demolished. Barn A was also deemed outside of the area of investigation for this development scheme. A potentially infilled pit highlighted by the Desk Study review was clearly visible towards the southern boundary of site. The southern pit / depression extends south and outside the site boundary.

The surrounding area comprised predominantly agricultural land, which formed a border with the site to the south and east. The site was enclosed by Somersham Road to the north and the adjacent Elm Farm Barns to the west. There was a stream approximately 15m south of the site that ran into the River Gipping and beyond that a sewage works was situated 120m south of site.

An Exploratory Hole Plan, a Site Location Plan, Site Plan, and Proposed Development Plan are included within Appendix 3 as Drawing refs. 7826,GI/001/Rev0, 7826,GI/002/Rev0, 174_EF_2_HAT_PL_010 by HAT Projects and PW1284-BR03revC by Peter Wells Architects respectively.

3. PHASE 2 - SITE WORKS

3.1 Methodology

This site investigation was carried out in accordance with the practices set out in BS 10175:2011+A2:2017, (ref. R.1) and BS 5930:2015+A1:2020 (ref. R.2). The locations of exploratory holes have been planned, where possible, to give the best possible coverage within budgetary constraints, whilst targeting any locations highlighted in the Desk Study and / or site walkover.

3.2 Scope

Site works were carried out on 14 September 2023 and comprised the following:

Excavation of seven window sample boreholes (WS01-07) to a depth of 3.00m below ground level (bgl);
Installation of three wells for ground gas and groundwater monitoring, within selected boreholes (WS01, WS03 and WS06); and
Associated soil logging, sampling and environmental testing (both soils and groundwater).

The exploratory investigation comprised a distribution across the site, as best possible, to provide lateral coverage, but also targeted sampling of the potential sources of contamination. For example, WS05 and WS06 were located in the area of the former piggery; WS01 was located on the former silage pit, and WS03 and WS07 were located to target the potential chemical contamination from the hydraulic wood splitter and the adjacent potentially infilled pit.

Photographic records from the site works are presented in Appendix 8 of this report.

3.2.1 Site Area Considerations

The site development boundary at the time of the intrusive works was understood to comprise a generally rectangular area including the area of the "manure pile" storage area at the east of the site and part of the arable field to the south of the barn structures. The latest proposed development boundary, as included within the appendices, includes a more irregular site boundary. As a result some of the sampling locations targeting some of the potential sources of contamination may have been drilled on or just outside the red-line boundary / garden areas.

3.3 Ground Conditions Encountered

The sequence of the strata encountered during the investigation indicate some variation from the Desk Study data and the anticipated geology (from the British Geological Survey (BGS) digital mapping, at a scale of 1:50,000.)

Superficial deposits, interpreted to be Diamicton deposits (although may also be Head deposits) were encountered across site at depths up to 3.0mbgl. The cohesive nature of the superficial deposit would indicate some form of glacial fluvial deposit. They may also potentially be Head deposits, often more granular in nature and more variable; for this report Diamicton is applied.

The sequence and indicative thickness of the strata encountered are provided in Table 1, below:

Table 1 - Ground Conditions

Strata	Depth Encountered (mbgl)		Strata Thickness (m)	Extent / Composition
	From	To		
Made Ground	0.00	0.50 – 1.00	0.50 – 1.00	All Exploratory Hole Locations: Dark brown sandy gravelly clay. Gravel of fine to coarse subangular to subrounded flint, chalk, brick and concrete fragments.
Superficial deposits (Diamicton)	0.50 – 1.00	2.00 – 3.00	1.5 - unproven	All Exploratory Hole Locations: Brown sandy gravelly clay. Gravel of fine to medium subangular to subrounded flint and chalk.

3.4 Groundwater

No groundwater was encountered in any of the exploratory holes during the intrusive works.

3.5 Visual and Olfactory Evidence of Contamination

Within the Made Ground, colour changes and anthropogenic content suggest historically emplaced soils (to be anticipated for this land use) resulting in potential variable quality and potentially contaminated soil. This includes site wide Made Ground, the infilled pit and PACMs found both on the surface of site and at depths up to 0.9mbgl (WS03). PACM cement fragments were found on the ground surface near the location of WS01. No significant evidence (i.e. visual or olfactory) of hydrocarbon contamination was encountered during the site works.

4. LABORATORY TESTING

4.1 Methodology

Representative disturbed soil samples were taken at the depths shown on the exploratory hole records and despatched to the laboratory. The Exploratory Hole Logs are included in Appendix 5.

Samples were collected for environmental purposes in amber glass jars and sealed plastic pots and kept in a cool box with cooling aid for transit to the laboratory.

4.2 Environmental Testing Suite

4.2.1 Quality Control

The environmental laboratory used (DETS) is an accredited laboratory by the United Kingdom Accreditation Service (UKAS), and at least 50% of individual parameters are from methods pending accreditation to the Environment Agency Monitoring Certification Scheme (MCERTS) for the range of analyses undertaken as part of this investigation. The MCERTS performance standard for the chemical testing of soil is an application of ISO 17025: 2005, specifically for the chemical testing of soil.

4.2.2 Environmental Testing Suite – Soils

The suite of chemical analyses was based upon the findings of the Phase 1 Desk Study and site walkover, the Conceptual Model and observations onsite. The chemical analyses were carried out on a total of thirteen samples of soil. The analyses undertaken were a combination of the analytes detailed below, selected based upon the site data:

Metals screen - arsenic, cadmium, chromium, lead, mercury, selenium, boron (water soluble), beryllium, copper, nickel, vanadium and zinc;
Organic screen - total petroleum hydrocarbons (TPH) – with specific carbon banding; benzene, toluene, ethylbenzene and xylenes (BTEX); polyaromatic hydrocarbons (PAH) – USEPA 16 suite;
Inorganics screen - cyanide (total), sulphate (water soluble);
Others - pH, organic matter, asbestos screen and where asbestos identified, an asbestos quantification.

A copy of the laboratory test results is included in Appendix 7.

4.2.3 Environmental Testing Suite – Waters

The suite of chemical analyses was based upon the findings of the Phase 1 Desk Study and site walkover, the Conceptual Site Model, and observations onsite. The chemical analyses were carried out on two samples of groundwater (from WS03 and WS06). The nature of the analyses is detailed below:

Metals screen - arsenic, cadmium, chromium (total and hexavalent), lead, mercury, molybdenum, selenium, barium, boron, beryllium, copper, nickel, vanadium and zinc;
Organic screen – Total Petroleum Hydrocarbons (TPH) including CWG banding and BTEX; polyaromatic hydrocarbons (PAH) – USEPA 16 suite;
Inorganics screen - cyanide (total), sulphate; and
Others – pH; Total Organic Carbon (TOC).

A copy of the laboratory test results is included in Appendix 7.

5. MONITORING

Three monitoring wells were installed as part of the current investigation. The wells were installed with 63mm HDPE pipework with a gravel filter pack, bentonite seal and bung / gas tap.

5.1 Ground Gas

Ground gas monitoring was undertaken by a suitably qualified Environmental Consultant, using a GFM436 landfill gas analyser and a MultiRaeLite Photo-ionisation detector (PID). The main determinants recorded were methane (CH_4), carbon dioxide (CO_2), oxygen (O_2), volatile organic compounds (VOCs) and the flow rate.

Ground gas monitoring was carried out in accordance with current guidance (ref. R.5). Six consecutive monitoring visits were undertaken over a period of six weeks including falling barometric pressure conditions.

The results of ground gas monitoring are included in Appendix 6 and a summary is presented in Table 2, below:

Table 2 - Ground Gas Monitoring Results Summary

Location	Range of Recorded Concentrations						Flow Rate (l/hr)	VOC (ppm)	Atmospheric Pressure (mb)
	Methane (CH_4) [% v/v]		Carbon Dioxide (CO_2) [% v/v]		Oxygen (O_2) [% v/v]				
	(Min)	(Max)	(Min)	(Max)	(Min)	(Max)	(Range)	(Max)	(Range)
WS01	<0.1	<0.1	0.7	2.4	16.1	20.1	<0.1	<1	972 - 1017
WS03	<0.1	<0.1	0.1	2.3	13.3	20.6	<0.1	<1	971 - 1019
WS06	<0.1	<0.1	0.9	2.0	17.0	19.6	<0.1	<1	972 - 1018

5.2 Groundwater

The measured groundwater levels were recorded using a dipmeter and the results of monitoring are presented in Table 3, overleaf:

Table 3 – Groundwater Monitoring Results							
Monitoring Well	Depth of Monitoring Well (mbgl)	Groundwater Encountered at (mbgl)					
		Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
		22/09/23	27/09/23	06/10/23	10/10/23	20/10/23	27/10/23
WS01	3.00	Dry	Dry	Dry	Dry	Dry	Dry
WS03	3.00	1.80	1.91	1.99	2.06	0.36	1.95
WS06	3.00	2.61	2.66	2.75	2.74	2.75	2.64
Notes: Dry - no groundwater encountered. n/m – not measured.							

6. RISK ASSESSMENT

6.1 Risk to Human Health

6.1.1 Methodology

The current guidance requires that a Conceptual Model be formulated (or, in this case, updated from the CSM within the Phase 1 report) based upon the findings of the investigation. The Conceptual Model is limited, at this stage, to the identification and assessment of potential 'hazards', identified or suspected from the results of the research; the potential 'receptors' that may be affected and the anticipated 'pathways' to those receptors. The findings are summarised in the following subsections.

The guidance proposes a four-stage approach for the assessment of contamination and the associated risks. The four stages are listed below:

Hazard Identification;
Hazard Assessment;
Risk Estimation;
Risk Evaluation.

6.1.2 Soil Quality Screening Values

The results of the soil analyses have been compared to soil quality screening values, where deemed applicable, including:

The LQM/CIEH S4ULs for Human Health Risk Assessment, (ref. R.4); and
Defra/CL:AIRE Final C4SLs, (ref. R.11).

Based upon the proposed redevelopment a Land Use Scenario of "Residential with Plant Uptake" is applied and the screening values from the above utilised.

Where the concentrations reported by the laboratory analysis (and thus determined onsite) are at or below the respective screening concentrations, they are considered not to pose a risk and are removed from further consideration, unless otherwise stated in the following sections.

6.2 Soil Quality Assessment

6.2.1 General

The locations, depths and other relevant information of the elevated concentrations of the specific analytes are summarised in Table 4, overleaf, and assessed in more details where necessary.

The composition and resulting SOM values of the Made Ground varied; the composition of the natural soils was generally consistent across the site. Although the majority of samples tested report results below the applied soil quality screening values, there were some elevated concentrations, particularly in the samples from locations WS03 and WS06. In terms of selecting a suitable screening value for some of the analytes, a combination of 1%, 2.5% and 6% SOM values have been applied; please see Table 4, and the notes below.

6.2.2 Elevated Soil Concentrations

Table 4 - Summary of Soil Analyses and Comparison with Current Screening Values

Analyte	Analyte Concentration Range (mg/kg)		Screening Value (mg/kg) for Land Use	Number of Elevated Concentrations
	Minimum	Maximum	Residential With Plant Uptake (1% SOM Assumed)	
Arsenic	14	28	37	0
Beryllium	<0.5	1.10	1.7	0
Cadmium	<0.2	0.50	11	0
Chromium	10	28	910	0
Copper	10	32	2400	0
Lead	9	40	200	0
Mercury	<1	<1	40	0
Nickel	16	32	180	0
Zinc	27	117	3700	0
Naphthalene	<0.1	9.13	2.3, 13**	1 (WS03, E1, 0.1mbgl)
Acenaphthene	<0.1	31.40	210	0
Fluorene	<0.1	48.90	170	0
Phenanthrene	<0.1	192	95, 440**	0
Anthracene	<0.1	53.40	2,400	0
Fluoranthene	<0.1	109	280	0
Pyrene	<0.1	85.8	620	0
Benzo(a)anthracene	<0.1	70.20	7.2, 13**	1 (WS03, E1, 0.1mbgl)
Chrysene	<0.1	63	15, 27**	1 (WS03, E1, 0.1mbgl)
Benzo(b)fluoranthene	<0.1	48.60	2.6, 3.3*, 3.7**	3 (WS03, E1, 0.1mbgl), (WS06, E1, 0.2mbgl + E2, 0.5mbgl)
Benzo(k)fluoranthene	<0.1	17.10	77	0

Table 4 - Summary of Soil Analyses and Comparison with Current Screening Values				
Analyte	Analyte Concentration Range (mg/kg)		Screening Value (mg/kg) for Land Use	Number of Elevated Concentrations
	Minimum	Maximum	Residential With Plant Uptake (1% SOM Assumed)	
Benzo(a)pyrene	<0.1	45.50	2.2, 2.7*, 3.0**	3 (WS03, E1, 0.1mbgl), (WS06, E1, 0.2mbgl + E2, 0.5mbgl)
Indeno(1,2,3-cd)pyrene	<0.1	10.20	27	0
Dibenz(a,h)anthracene	<0.1	4.94	0.24, 0.28*, 0.3**	3 (WS03, E1, 0.1mbgl), (WS06, E1, 0.2mbgl + E2, 0.5mbgl)
Benzo(ghi)perylene	<0.1	7.82	320	0
Aromatic >C16-C21 TPH CWG	<3	1245	260, 930**	1 (WS03, E1, 0.1mbgl)
Notes: 2.5% SOM applied = * 6% SOM applied = **				

Of the 13 soil samples analysed, exceedances of the specified screening criteria for the protection of human health were identified in three samples from two exploratory hole locations:WS03 (E1, 0.1mbgl) and WS06 (E1, 0.2mbgl and E2, 0.5mbgl).

In summary, the soil at these locations can be considered unsuitable for the proposed land use due to elevated concentrations of aromatic hydrocarbons (>C16-C21) and some PAH congeners; they pose a hazard and moderate to high risk to end users.

WS03 is located adjacent to the backfilled pit area at the southern boundary; the soils encountered did not exhibit visual or olfactory evidence of PAH contamination during sampling but the moderately to significantly elevated concentrations of PAH congeners in the sample at 0.1mbgl indicate a possible leak or spillage of a PAH source; for example timber treatment liquids or waste oil. The corresponding TPH content can be interpreted to indicate that a timber treatment liquid type of source is more likely, however further assessment would be required to determine this.

The underlying soil samples (0.6mbgl and 0.9mbgl) do not exhibit elevated PAH concentrations; this would indicate that the contamination by PAHs / TPH is limited to this shallow soil; the lateral extent is not determined by this limited scheme of investigation but the absence of similar contamination in the nearby WS07 indicates a limited lateral extent to the north.

The concentrations of PAHs at WS06 (0.2mbgl and 0.5mbgl) are not significantly elevated compared to the screening values for the residential land use scenarios but do exceed them. A low to moderate risk is posed as a result. Further consideration of the proposed development layout indicates that the soft landscaping at the northern side of the site would be comparable to a land use scenario where Public Open Space land could be applicable. In this case, the concentration of Dibenz(a,h)anthracene, only, exceeds the applicable screening concentration, marginally (0.60mg/kg present, compared to 0.57mg/kg screening concentration. This poses a low risk to end users, assuming that the assumption of this landscaping / land use type is applicable. No further works in this area of the site are recommended.

The Made Ground quality is variable and it cannot be discounted that further poor-quality soils are present onsite.

Further assessment and delineation of these exceedances / unsuitable soil quality will be required and / or risk reduction via remediation will be recommended. A Discovery Strategy should be in place, as outlined below.

6.2.3 Asbestos in Soils

Fibres

A total of 13 (no.) soil samples were screened for the presence of asbestos. These samples were taken from depths between 0.10 – 1.10mbgl.

Asbestos containing material was reported present, by the laboratory analysis, in one sample (WS01, E1, 0.1mbgl), as "chrysotile present in visible cement"; subsequent asbestos quantification analysis of this sample (lab report ref. 23-13101) reports 0.323% asbestos content of this sample. This poses a moderate to high risk to construction workers and end users.

None of the other 12 samples returned positive detection of asbestos within the soil matrix, during the general screening. Based upon this, in general, the soils at the site do not have detectable concentrations of loose asbestos fibres within the soils and a low to moderate risk is posed to receptors. In the event of further suspected ACMs in soils being encountered following site clearance and throughout the construction scheme, a relevant Discovery Strategy should be employed; see below.

However, based upon the data at WS01, asbestos fibres have been shed by the fragments(s) in that soil and the concentration of fibres within the soil sample is considered elevated.

WS01 should be considered a localised "hotspot" of asbestos in soils. Based upon the proposed development layout, WS01 is within the garden area of the eastern-most plot / Plot 3.

Further ground investigation works and soil quality assessment in this area is recommended around WS01 so that the lateral extent of asbestos fibres in shallow soils can be assessed. This should assist in preventing the spreading of contaminated soils, cross contamination etc.

Fragments

In addition, two PACM fragments were encountered within the soils and analysed to assess for ACM content (WS01, 0.1mbgl and WS03, 0.9mbgl). Both of these are reported to be chrysotile-containing cement fragments.

The risk to all receptors with this type of fragment of cement-bound ACM is generally low but awareness of it is necessary for all construction workers and end users. (Other ACM types may be present onsite, buried in soil or within the building fabric.)

It is assumed that the redevelopment of site will result in excavations and exposure of the soils across the site. It cannot be discounted that other ACMs or fragments of ACM are present in other Made Ground soils onsite, due to the nature of soil mixing / soil re-working during human activities.

Where ACM fragments are onsite at surface or within exposed soils, removal of these fragments is required, due to the asbestos content, albeit low.

A "picking" exercise is likely to be applicable (where the soil is visually screened and ACMs are picked from the soil). A Remediation and Validation Method Statement may be required by the LA to clarify how this would be undertaken.

6.2.4 Risk to Construction Workers

As discussed in Section 6.2.2, elevated levels of contaminants have been identified within the Made Ground at site, including PAHs, TPHs and asbestos. The presence of asbestos in soils provides a hazard to Construction workers (and the general public) and controls must be undertaken to prevent exposure, as per the Control of Asbestos at Work regulations 2012 (ref. R.8) . The concentrations of PAHs in shallow soil at WS03 pose a potential hazard to construction workers also, where exposure such as direct contact may occur.

With the exception of soils at WS01, in general the soils sampled elsewhere onsite do not pose a significant hazard to construction workers or the general public but in consideration of the volume of soil sampled in this limited scheme and the soils that will be exposed as part of site preparation and construction must be subject to a Discovery Strategy.

Based upon the worst-case soils quality data of this investigation (WS01 and WS03) the risk to construction workers is moderate; in consideration of the other soils data the risk is low.

As such, health and safety measures onsite should take into account the results provided within the report and if necessary, undertake additional screening to further detail the risk to construction workers and determine appropriate mitigation measures during groundworks, although basic PPE and good hygiene practice forms a solid foundation to build upon. For example, additional measures such as dust suppression measures may be necessary if additional evidence of asbestos in soils is encountered.

Hydrocarbon or other chemical odours, if encountered, can affect personnel in a combination of ways with potential short- and long-term health effects; further assessment monitoring should be undertaken in the event of odours being present or encountered during construction.

6.2.5 Soil Quality for Garden Areas

With the localised exceptions above, the analysed near surface soil / Made Ground has no elevated concentrations of the analytes. Consideration should be given to the end product soils of the proposed gardens, however. It is assumed that a large proportion of the Made Ground will be removed from site in order to create the structures.

It is recommended that the garden areas are created with a suitable depth and quality of subsoil and topsoils; these should be devoid of entrained building materials, in particular PACM fragments; see recommendations below of the pre-construction "pick" activity of ACM fragments and vigilance for PACMs in soils should be continued throughout the construction period to remove any ACM fragments entrained in soils, as at WS03.

6.3 Risk via Services – Potable Water Pipes

An initial comparison of the laboratory results has been made against the Contaminated Land Assessment Guidance, published by Water UK (ref. R.6), also often termed the "UKWIR Guidance". Note, the full range of thresholds given in this guidance have not specifically been tested for within the scope of this investigation; further soil sampling and analysis may be required by the water providing company or designers.

It is advised that the UK Water Industry Research Guidance (ref. R.7) is adopted and consultation with the local water company is sought prior to laying any services. In addition, as part of any Discovery Strategy for soil disturbance works, if suspected poor-quality or contaminated soils are encountered where potable water pipes are to be laid, further assessment is likely to be required.

In general the soil quality data across the site poses a low risk to end users via permeation of potable water pipes.

However, the Made Ground soil analysis undertaken indicates concentrations of some PAH congeners that have the potential to affect (permeate) standard PE pipes, in particular, at WS03, at the southwest of the site. Two initial options exist for consultation and agreement with the local water supply company prior to further design of the scheme and before laying any services:

Removal of all Made Ground or contaminated soil in the vicinity of the proposed routes of potable water pipes, appropriate recording of this and backfilling with clean soil / granular materials; this may also require pipe "wrapping" with geotextile; or
Use of a "barrier" pipe and fittings throughout the development.

6.4 Risk to Controlled Waters

6.4.1 Controlled Waters Setting

The soils data encountered in this intrusive investigation plus the hydrogeological setting indicate a Secondary Type B or Secondary (undifferentiated) aquifer overlaying a bedrock Principal Aquifer.

The Environment Agency defines areas of high groundwater vulnerability as 'areas able to easily transmit pollution to groundwater. They are characterised by high leaching soils and the absence of low permeability superficial deposits.

Soils of high leaching potential are soils that readily transmit liquid discharges because they are either shallow or susceptible to rapid by-pass flow directly to rock, gravel or groundwater.

The site was located within a 'Zone III' (Total Catchment) groundwater Source Protection Zone i.e., it was within the total area required to support the discharge from a protected groundwater source.

The closest groundwater abstraction license was 9m west of site and was associated with general farming and domestic use.

Groundwater at site is indicated to be between 1.75mbgl and 2.75mbgl, within the monitoring pipes.

A stream was noted in close proximity to site, approximately 25m/S, running parallel with the southern site boundary. Beyond the stream, approximately 120m/S of site, lies a sewage works. The sewage works is unlikely to impact the soils and groundwater quality onsite.

6.4.2 Groundwater Sample Data Based Assessment

Potentially mobile contaminants including PAHs and TPHs were identified in moderate to elevated concentrations at locations WS03 and WS06.

It is plausible for any near surface contamination to become mobile and enter the water environment where shallow groundwater is present, including migration into the adjacent stream to the south. Groundwater samples were collected during a return visit to site and sent for laboratory analysis.

Two water samples were obtained and analysed for a suite of determinants similar to those analysed in the soil quality assessment. These samples were taken from WS03 and WS06 (no groundwater was present in WS01.)

The results of the water analyses have been compared to available guidance and environmental quality standards; this data reports no visual or olfactory evidence of contamination during sampling, confirmed by the chemical analysis (report reference 23-12621); the majority of analytes are reported at <laboratory LODs. This suggests that the shallow groundwater at these sampling locations is not impacted by hydrocarbons, PAHs or the other analytes.

Although the Desk Study highlights the wood splitter as a potential source of hydrocarbon (TPH/PAH) contamination the possibility of additional sources onsite cannot be ruled out at this point. Groundwater, if encountered during construction, should be included within the Discovery Strategy.

6.5 Risk to Plants

A review of the commonly occurring phytotoxic chemicals copper, nickel and zinc, has been undertaken based upon the criteria set out in BS3882 standard for topsoil. These criteria are pH dependant and, based on the sampled soils all having a pH <6.0 / 6.0 – 7.0 / >7, are as follows:

Copper – 100 / 135 / 200 mg/kg;
Nickel – 60 / 75 / 110 mg/kg;
Zinc – 200 / 200 / 300 mg/kg.

Concentrations of metals were recorded at concentrations below the thresholds considered to have phytotoxic effects. As a result of which, the risk to plants from the current soil quality is assessed to be low. This is notwithstanding the quality of the soil utilised within areas of planting; soil quality in terms of nutrients and suitability for the applied planting is outside of the scope of this assessment and specialist advice may need to be sought along with utilising suitable quality landscaping materials.

6.6 Ground Gas

The results of the soil gas monitoring have been compared with current guidance (ref. R.9) The results show no detectable methane generation within soils, and limited generation of carbon dioxide. No detectable gas flow was detected within the wells across the site.

A Gas Screening Value (GSV) has been equated for each of the monitoring points during each of the monitoring visits by multiplying the recorded flow rate with the recorded carbon dioxide or methane concentration. The highest calculated GSV for each monitoring locations is presented in Table 5, below:

Table 5 - Ground Gas Screening Values (GSV)

Location	Recorded Values			Gas Screening Values	
	Methane (CH_4) [% v/v]	Carbon Dioxide (CO_2) [% v/v]	Flow Rate (l/hr)	Methane lCH_4/hr	Carbon Dioxide lCO_2/hr
WS01	0.1	2.4	0.1	0.0001	0.0024
WS03	0.1	2.3	0.1	0.0001	0.0023
WS06	0.1	2.0	0.1	0.0001	0.002

Notes:-

Where no detectable flow has been recorded, the limit of detection of the apparatus (0.1l/hr) has been used;
Where no detectable Carbon Dioxide or Methane has been recorded, the limit of detection of the apparatus (0.1%$_{CO2}$ and 0.1%$_{CH4}$) has been used.

The proposed development is considered to be best represented by a Type A development. Type A developments are fully defined in BS8485, but in summary comprise:

Type A building – Private residential property with no building management controls e.g. conventional private housing.

Based upon the results, the site has been placed in Characteristic Situation CS1 and no special gas protection measures are required.

6.7 Updated Conceptual Site Model

Following the findings of the site investigation the Preliminary Conceptual Site Model for the site has been reviewed and the conclusions are presented in the Updated Conceptual Site Model in Table 6, overleaf:

Table 6 – Updated Conceptual Site Model

Sources	PATHWAYS: Root Uptake	Direct Contact	Ingestion	Respiration	Gas Accumulation	RECEPTORS: Plants	End Users	Structures (Concrete)	Services/Utilities	Construction Workers	Controlled Waters	Risk Rating	Comments
Onsite: PACMs from extant / previous structures.	N	L	U	U	N	N	Mi	N	Mi	Mo	Mi	LR	PACMs were identified in/on the surface of soils and within Made Ground at several locations at variable depth. Risk-reduction measures (a soil "pick" of ACM fragments) are recommended. In addition, a Discovery Strategy should be in place.
Onsite: Made Ground / poor quality soil.	L	L	L	L	U	Mo	Mo	Mo	Mo	Mo	Mi	MR-HR	Made Ground of variable composition was encountered across site. Elevated concentrations of TPH and some PAH congeners were identified in locations WS03 and WS06, possibly indicative of leaks or spills from previous activities. Available data indicates localised occurrences. Further investigation is recommended.
Onsite: Potentially infilled pond.	N	N	N	U	U	N	N	N	N	N	N	NR-LR	No significant concentrations of ground gas were recorded during the monitoring works.

Legend:-
See Comparison of Consequence Against Probability within Appendix 4 for Key to Legend.

Probability:	
Negligible (N)	
Unlikely (U)	
Likely (L)	
Highly Likely (HL)	

Consequence (Severity):	
Negligible (N)	
Mild (Mi)	
Moderate (Mo)	
Severe (S)	

Risk Rating:	
Very High Risk	VH
High Risk	HR
Moderate Risk	MR
Low Risk	LR
Negligible Risk	NR

7. SOIL MATERIAL WASTE CLASSIFICATION

The following guidance and discussion are provided as standard and in consideration of the scheme that may involve a small to moderate volume of soil disturbance and excavation. It is understood that some excess or waste soil will be created or cannot be re-used as part of this scheme.

Under the European Waste Directive, waste materials, including soils from the scheme will require waste category classification; in addition to which, soils will be required to be pre-treated, prior to disposal, in order to apply any possible waste volume reduction.

The pre-treatment process(es) must be physical, thermal, chemical, or biological, including sorting. It must change the characteristics of the waste in order to reduce its volume, hazardous nature, facilitate handling or enhance recovery. The waste producer can carry out the treatment, but they will need to provide documentation to prove that this has been carried out. Alternatively, the treatment can be carried out by an approved contractor. The Environment Agency has issued a Position Paper#13 which states that in certain circumstances, segregation at source may be considered as pre-treatment and thus excavated material may not have to be treated prior to offsite disposal / landfilling if the soils can be segregated onsite prior to excavation by sufficiently characterising the soils in-situ prior to excavation.

The latter segregation of soils and other site materials is common / standard practice on construction sites but a detailed Materials Management Plan that is adhered to can greatly assist waste reduction / recycling / re-use rates.

Some of the soils encountered within this phase of investigation have been considered to be likely to be excess or waste soil, in the absence of a Materials Management Plan (or similar) for the scheme at this stage.

It is understood that the proposed scheme to redevelop the piggeries at Elm Farm Barns does not include for soil / surface materials re-use within the scheme boundary. If this standpoint alters, there may be the opportunity to reduce the amount of soil to be removed from site as waste, in which a control system such as a Materials Management Plan must be drawn up and followed through the scheme to validation and sign-off. Details can be provided, or the scheme assessed, for the most appropriate system if waste-soil reduction becomes part of the scheme.

Granular and anthropogenic materials (i.e., demolition waste / rubble, hardcore, flexible paving materials) from the site will require assessment, segregation, and re-processing (where applicable onsite or offsite) to enable suitability for re-use or suitable removal from site. Reputable, suitably licenced, and competent contractors should be engaged to assist the designs and costings.

Similarly, waste, or excess soils should be sentenced for offsite disposal or re-use appropriately, in accordance with current guidance, legislation and with the assistance of reputable, suitably licenced and competent contractors. Classification of the soils is provided below, for assessment by the receivers.

Landfill tax can be avoided if / where the soils are sent to non-landfill destinations and suitable for processing, re-use, etc.

It may be possible to claim Remediation tax relief where any remedial works undertaken onsite are deemed applicable for this.

7.1 Soil: Waste Classification

Waste is classified as being either Hazardous or Non-Hazardous; in addition, landfills receiving waste are classified as accepting hazardous or non-hazardous wastes or the non-hazardous sub-category of inert waste, in accordance with the Waste Directive. Similarly, the facilities providing soil / materials treatment and re-use will require the material to be classified as either non-hazardous or hazardous. Waste classification is a staged process, and this investigation (along with any other site data) represents the initial phases of that process. Landfilling excess soil / materials normally incurs significantly greater costs than the various options for re-use, treatment-and-re-use or others.

Once the extent and location of the excess or waste (soil / materials) that is to be removed has been defined, further sampling and testing may be necessary. The results from this ground investigation should be used to help define the sampling plan for such further testing and, moreover, the optioneering and design for soil re-use, aggregate manufacture etc. within the scheme and for export and re-use.

(It should be noted that "WAC" analysis (leaching test results) must not be used for waste classification purposes, other than for some landfill destinations. However, undertaking WAC testing at the time of analysis does enable all waste soil removal and disposal options to be considered.)

The following applies to most construction schemes:

- Segregating Made Ground soils from Natural soils is likely to assist with volume reduction and adherence to the guidance provided above;
- Of similar importance will be the segregation of contaminated (or potentially contaminated) soil from "clean" soils or natural soils that have the potential for re-use;
- Including removal and segregation of "oversize" and non-compressible materials or others that may pose a hazard to machinery or personnel, in particular, fragments of metal, pipe or similar anthropogenic materials.

Analysis has been undertaken to assist this assessment, utilising the available soil analysis data from this phase and has been assessed, in accordance with WM3 (ref. R.10) and is provided as Appendix 9 as a HazWasteOnline report.

The below assessments of the classification of the excavated soils are provided for guidance only and should be confirmed by the receiving facility (landfill / non-landfill) once the soils to be discarded have been identified and, where necessary, re-analysed.

The majority of the assessed soils (natural and Made Ground) are reported to be non-hazardous (for non-landfill destinations);

This is with the exception of soils at WS03 due to the hydrocarbon content; this soil is classed as hazardous waste, for non-landfill destinations. The content of asbestos in soils at WS01 (sample 0.1mbgl only) remains non-hazardous based upon the HWOL assessment but receivers may require further assessment.

Natural soil arisings are also likely to be (chemically) suitable for re-use at other sites or onsite, in a POS or residential land- use scenario;

If soils are sent for a landfill destination, the classification of the majority of soils is likely to be inert, but WAC analysis may be required, dependent upon the receiver licence / acceptance requirements;

EWC code 17-05-04 will apply to the non-hazardous soils; code 17-05-03 for the hazardous soil.

Further assessment and investigation of these may be warranted to delineate these factors.

8. CONCLUSIONS AND RECOMMENDATIONS

8.1 General

Geosphere Environmental Ltd was commissioned by Beechlake Developments Ltd to undertake a Phase 2 Ground Investigation for a proposed residential development at Elm Farm, Somersham Road, Little Blakenham, Ipswich, Suffolk, IP8 4NF.

It was understood that the site is to be developed into three residential dwellings with associated soft landscaping, car parking and private garden areas.

Based on the findings of the previous Desk Study and walkover for the site (by others), a number of potential contaminant sources and pathways to sensitive receptors had been identified. The sources that warranted further investigation were:

Potential Made Ground and ACMs;
Ground contamination from historical site uses; and
Ground gas generation from potentially infilled pond onsite.

8.2 Conclusions

Based upon the results of chemical testing of soils from the subsequent investigation, localised contamination of Made Ground soil by asbestos, hydrocarbons and some PAH congeners were reported at 3 disparate locations (WS01, WS03, WS06). The concentrations exceed the relevant thresholds for human health (for the assigned land-use scenario) and therefore a moderate risk to human health receptors has been assigned to the soils at these locations. In general, however, the soil quality across the site is chemically acceptable (see Section 6.2.5).

Fragments of suspected cement-bound ACM were encountered at ground surface and within a small number of soil samples, including at 0.9mbgl. Analysis of these fragments of PACM returned positive identification of asbestos in the form of chrysotile containing cement board materials. As outlined in Section 6.2.3, the results suggest that ACMs found on the surface of site and at depth of 0.9mbgl have, generally, not released free asbestos fibres into the soils. Based upon this information, the risk to human health receptors is low.

Other fragments of this cement-bound, low-hazard ACMs may be encountered across the site. The risk associated to all receptors with this type of fragment of cement-bound ACM is generally low but awareness of it is necessary for all construction workers and end users. (Other ACM types may be present onsite, buried in soil or within the building fabric.)

Asbestos (as chrysotile) is reported in one sample, WS01, at 0.1mbgl at 0.323% w/w content. This suggests that, based upon the data at WS01, asbestos fibres have been shed by the fragments(s) in that soil and the concentration of fibres within the soil sample is considered elevated.

WS01 should be considered a localised "hotspot" of asbestos in soils. Based upon the proposed development layout, WS01 is within the garden area of the eastern-most plot / Plot 3.

Elevated concentrations of PAHs and TPH (Aromatic >C16-C21) are reported at WS03 within the Made Ground; similarly, PAHs are reported within WS06, but not significantly elevated.

Analysis of two groundwater samples suggests that the groundwater at site is not affected by hydrocarbons or PAHs and therefore the risk to controlled waters is low.

Based on ground gas monitoring of the site, the site has been placed in CS-1 in line with the current guidance; no gas protection measures are envisaged as being required for the redevelopment.

As such, the updated CSM revised the risks associated with these potential sources of contamination to:

PACMs from extant / previous structures– Low Risk;
Made Ground / poor quality soil including asbestos at one location– Moderate Risk; and
Potentially infilled pond – Negligible to Low Risk.

8.3 Recommendations and Further works

Further ground investigation works and soil quality assessment in this area is recommended around WS01 so that the lateral extent of asbestos fibres in shallow soils can be assessed.

In the event of further suspected ACMs in soils being encountered during / following site clearance and throughout the construction scheme, a relevant Discovery Strategy should be employed; see below. Where ACM fragments are onsite at surface or within exposed soils, controlled removal of these fragments is required. For example, a "picking" exercise is likely to be applicable (where the soil is visually screened and ACMs are picked from the soil). A Remediation and Validation Method Statement may be required by the LA to clarify how this would be undertaken. As a minimum the picking activities (and any materials removed as part of this) should be recorded, by the Client for example.

The Made Ground quality is variable and it cannot be discounted that further poor-quality soils are present onsite. Further assessment and delineation of the unsuitable soil quality (at WS01, WS03 and WS06) is recommended. Dependent upon this, risk reduction via remediation (with associated validation) may be recommended. A Discovery Strategy should be in place, as outlined above.

It is recommended that this report be submitted to the Local Authority as part of the planning submission for the site.

For foundation design, cohesive ground conditions and the presence of mature trees should be taken into consideration. Any excavation of foundations should be carried out in accordance with the NHBC standards.

Any site investigation should be designed in general accordance with CLR 4, (ref. R.3) and undertaken in compliance with BS 10175:2011+A2:2017, (ref. R.1) and BS 5930:2015+A1:2020, (ref. R.2).

8.4 Demolition works

The demolition and / or refurbishment of the buildings will require an Asbestos Refurbishment and Demolition survey of the buildings, in accordance with HSG 264 (ref. R.12) in advance of commencement. All ACMs must be removed/ dismantled in accordance with best practice and guidance (i.e. ref. R.8) by suitably licenced and trained personnel; all waste ACMs must be disposed of via suitably licenced carrier to applicable receiving facilities.

APPENDICES

APPENDIX 1 – REPORT LIMITATIONS AND CONDITIONS

General Limitations and Exceptions

This report was prepared solely for our Client for the stated purposes only and is not intended to be relied on by any other party or for any other use. No extended duty of care to any third party is implied or offered.

Geosphere Environmental Ltd does not purport to provide specialist legal advice.

The Executive Summary, Conclusions and Recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon, until considered within the context of the whole report.

Interpretations and recommendations contained within the report represent our professional opinions, which were arrived at in accordance with currently accepted industry practices at the time of reporting and based upon current legislation in force at that time.

Environmental and Geotechnical Reporting (including Phase 1, Phase 2 and Site Walkovers) Limitations and Exceptions

The comments given in this report and the options expressed herein, are based upon the readily available information collated for the report and an assessment based upon the current guidance which for Phase 1 / Phase 2 reports is primarily the Environment Agency's Land Contamination Risk Management (LCRM) report, 2021.

The report has been prepared in relation to the proposed end-use and should another end-use be intended, reassessment may be required.

No warranty is given as to the possibility of future changes in the condition of the site.

The opinions expressed cannot be absolute, due to the limitation of time and resources imposed by the agreed brief.

With regards to any aspect of land contamination referred to, this is limited to those aspects specifically stated and necessarily qualified. No liability shall be accepted for other aspects which may be the result of gradual or sudden pollution incidents, past or present land uses and the potential for associated contamination migration.

Any Desk Study Report / data has been produced largely from the information purchased from The Landmark Information Group. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. The information purchased has been assumed to be correct and free from errors. However, there is the possibility that some data may be missing from the report including (but not limited to) unrecorded land uses both onsite and offsite or unrecorded pollution events. No attempt has been made to verify the information.

The accuracy of any map extracts cannot be guaranteed. It is possible that different conditions existed onsite, between and subsequent to the various map surveys provided.

Any site walkover undertaken is a snapshot of the site recording the visually evident conditions at the time of the walkover in the areas readily accessible. It is possible that after the walkover, the site was altered (for example by fly-tipping or groundworks) or before the walkover, the site conditions changed removing evidence of potentially contaminative features (such as oil tanks removed).

Any intrusive works only cover a tiny proportion of the site. Where exploratory holes are positioned by Geosphere Environmental Ltd, they are located to give as good a coverage of the site as possible and to target features / proposed land use where applicable, whilst allowing for areas that cannot be accessed, Client requested locations and other site / time / budget constraints. Whilst assumptions may have been drawn between exploratory holes on the ground conditions and / or extent or otherwise of any contamination, this is for guidance only and no liability can be accepted on its accuracy.

Foundation design is outside of the remit of Geosphere Environmental Ltd unless specifically stated and it is recommended that the services of foundation design specialists are sought as required. Any foundation appraisal contained within the report is limited to foundation optioneering.

Any conceptual model is based upon the information available at the time of conducting this assessment and is an interpretive assessment of the conditions at the site. Redevelopment and / or further investigation of the site may reveal additional information and therefore alter the conceptual model and the report conclusions.

Any infiltration testing results are considered to be representative of the ground conditions at the locations tested and at the time of testing. As well as lateral variation in ground conditions, seasonal changes in ground water level may affect the results.

Any post-fieldwork monitoring (including ground gas / groundwater) is a snapshot of the conditions at the time of monitoring.

APPENDIX 2 – REFERENCES

R.1. British Standards Institute: BS 10175:2011+A2:2017 'Investigation of Potentially Contaminated Sites', Code of Practice, 2017.

R.2. British Standards Institute: BS 5930:2015+A1:2020 'Code of Practice for Ground Investigations', 2020.

R.3. CLR 4, 'Sampling strategies for contaminated land', DoE 1994.

R.4. Land Quality Press, The LQM/CIEH S4ULs for Human Health Risk Assessment, 2015.

R.5. CIRIA Reports 149 to 152, 'Methane and Associated Hazards to Construction', 1995.

R.6. Contaminated Land Assessment Guidance Protocols, Published by agreement between Water UK and the Home Builders Federation, Published by Water UK, January 2014.

R.7. UKWIR 'Guidance for the Selection of Water Supply Pipes to be Used in Brownfield Sites, August 2010.

R.8. Health and Safety Executive, Control of Asbestos Regulations (CAR), 2012.

R.9. British Standards Institute, BS8485:2015+A1:2019, 'Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings', 2019.

R.10. The Environment Agency, Technical Guidance WM3, 'Waste Classification: Guidance on the Classification and Assessment of Waste' 1st Edition, May 2015 (V1.2 – October 2021).

R.11. SP1010 – Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination, Final Project Report (Revision 2), Contaminated Land: Applications in Real Environments (CL:AIRE) September 2014. Appendix H – Lead.

R.12. Asbestos: The Survey Guide, HSG 264, 2nd Edition, 2012.

APPENDIX 3 – DRAWINGS

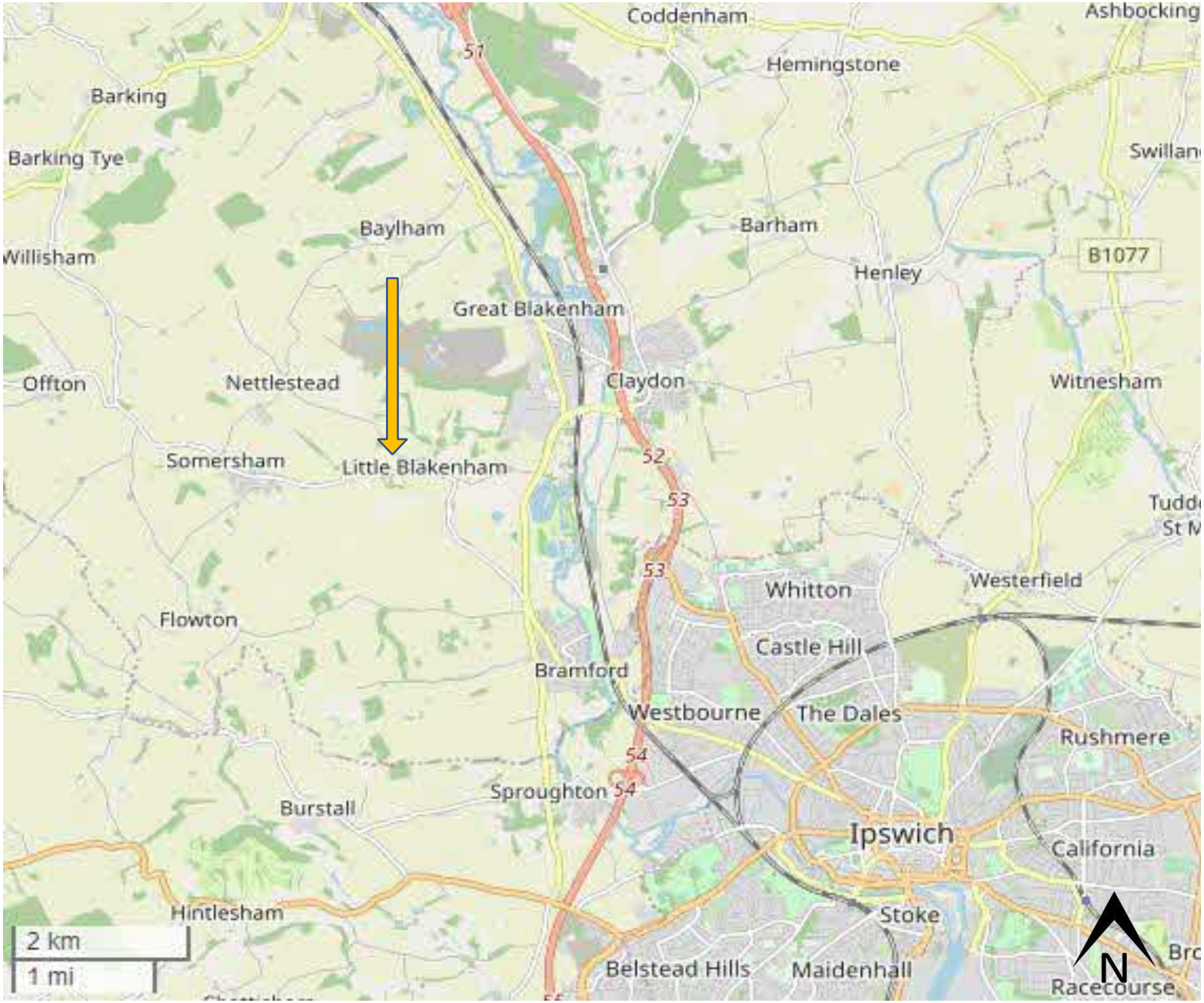
Site Location Plan – Drawing ref: 7826,GI/002/Rev0

Site Plan – Drawing ref: 174_EF_2_HAT_PL_010 by HAT Projects

Proposed Development Plan – Drawing ref: PW1284-BR03revC by Peter Wells Architects.

Exploratory Hole Location Plan – Drawing ref. 7826,GI/001/Rev0

Chemical Data Summary Plan – Drawing ref. 7826,GI/003/Rev0



GEOSPHERE ENVIRONMENTAL

LEGEND

Site Location

SOURCE

© OpenStreetMap contributors

PROJECT

Elm Farm, Somersham Road, Little Blakenham, Ipswich, Suffolk, IP8 4NF

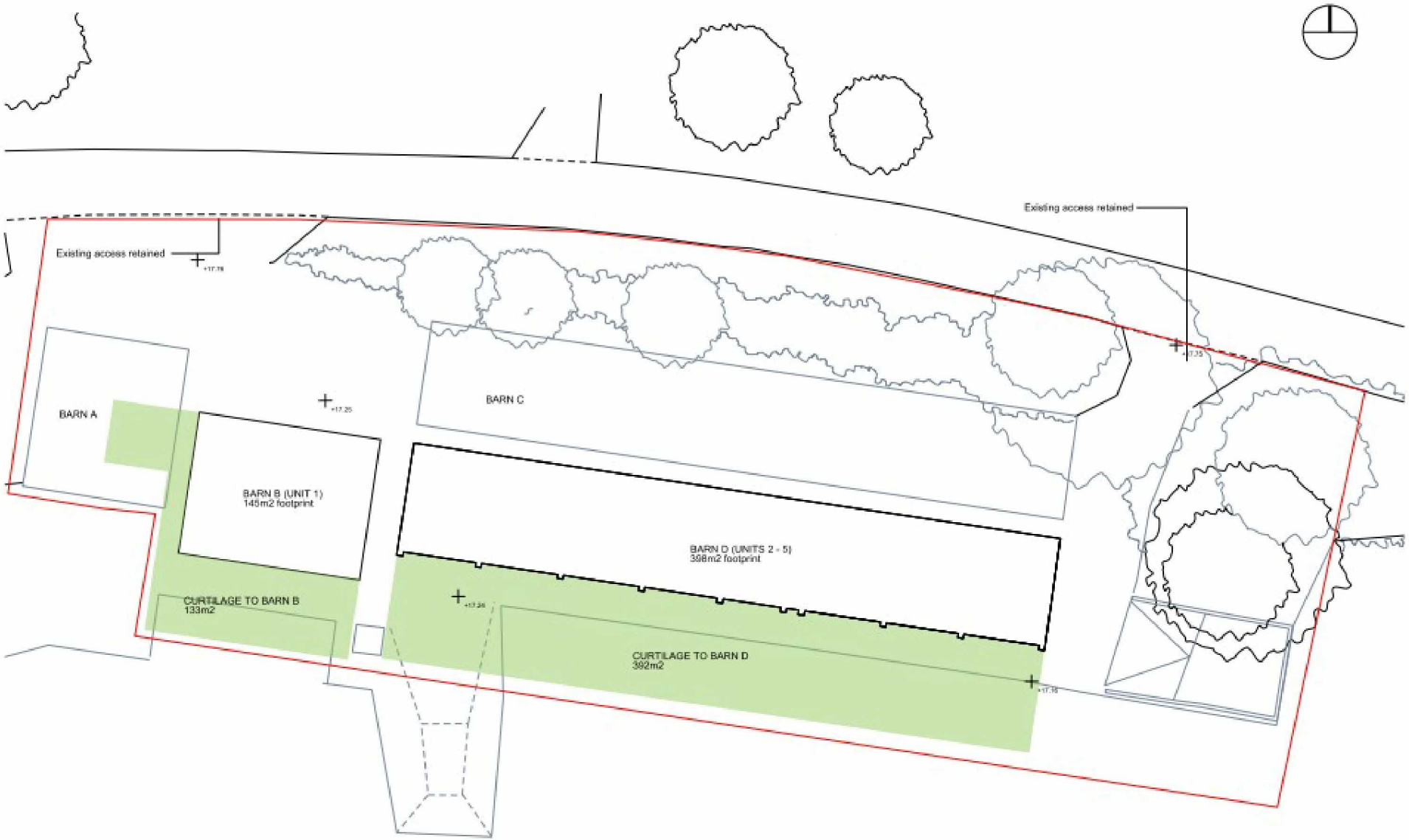
TITLE

Site Location Plan

DRAWING NUMBER

7826,GI/002/Rev0

SCALE	DATE
As marked	05/10/2023
DRAWN BY	CHECKED BY
JK	JD



This drawing must be printed in colour.

Key

- Site boundary
- Existing structure to be demolished
- Existing tree/hedge to be removed

0 1 5 10 20 30 50

The Piggeries
Blakenham Farms

Site Plan

174_EF_2_HAT_PL_010

Status: Planning

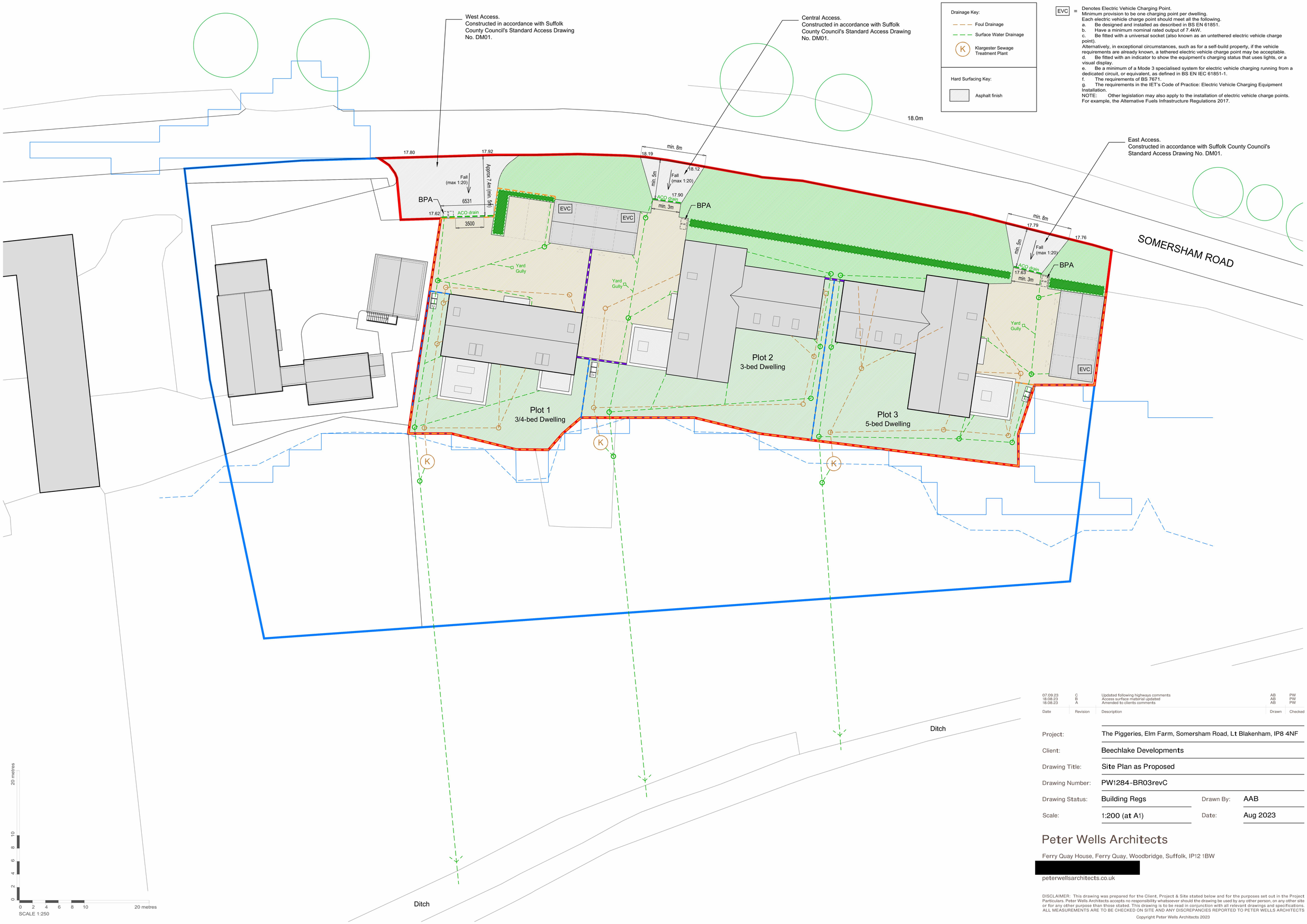
Revision: P1

Date: 26/09/2019

Scale: 1:300@A3

HAT Projects

Trinity Works, 24 Trinity Street, Colchester, Essex, CO1 1JN



Date	Revision	Description	Drawn	Checked
07.09.23	C	Updated following highways comments	AB	PW
18.08.23	B	Access surface material updated	AB	PW
18.08.23	A	Amended to clients comments	AB	PW

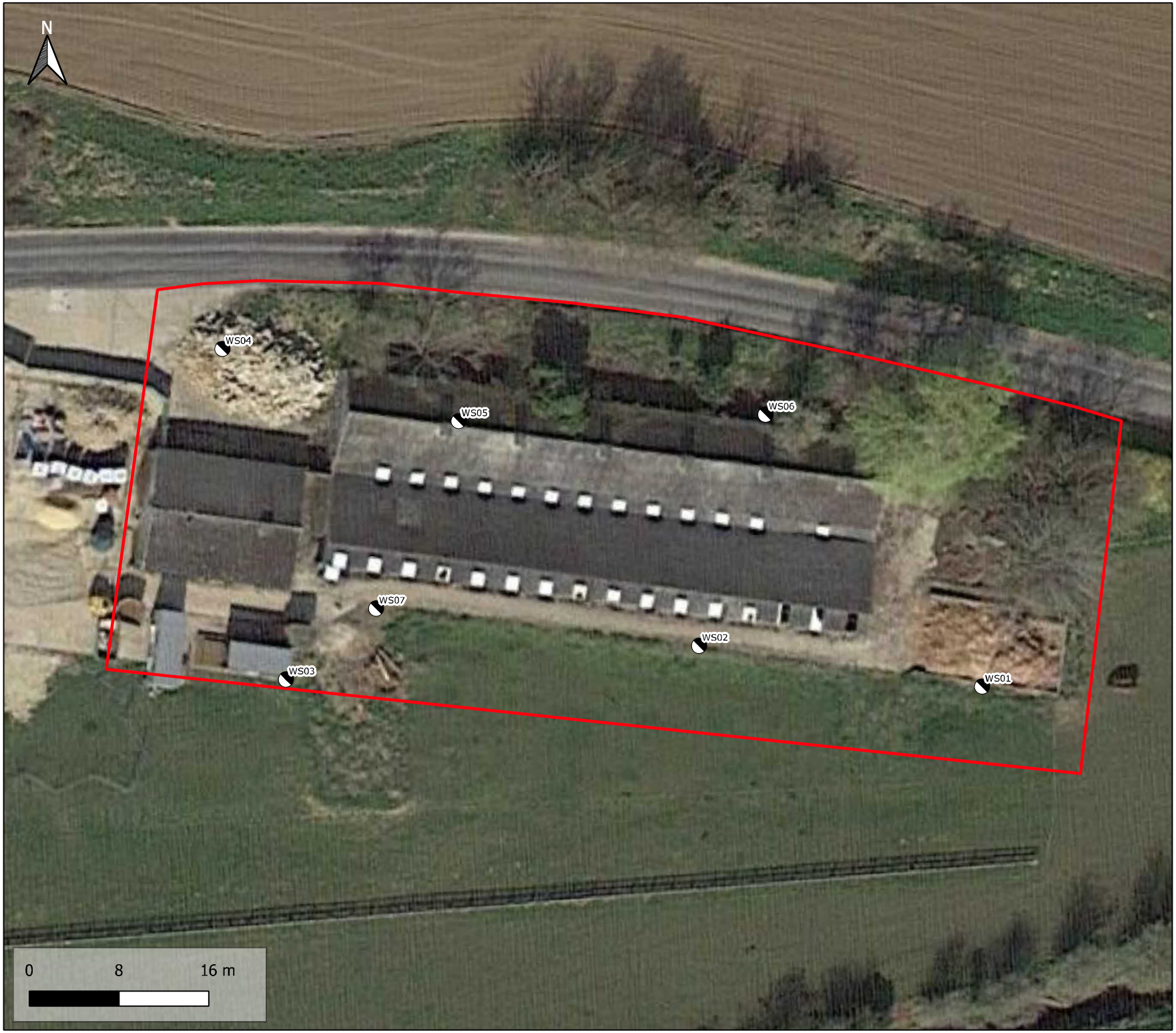
Project:	The Piggeries, Elm Farm, Somersham Road, Lt Blakenham, IP8 4NF		
Client:	Beechlake Developments		
Drawing Title:	Site Plan as Proposed		
Drawing Number:	PW1284-BR03revC		
Drawing Status:	Building Regs	Drawn By:	AAB
Scale:	1:200 (at A1)	Date:	Aug 2023

Peter Wells Architects

Ferry Quay House, Ferry Quay, Woodbridge, Suffolk, IP12 1BW

[redacted]

peterwellsarchitects.co.uk



Legend

- Window Sample Locations
- Site Boundary

GEOSPHERE ENVIRONMENTAL

Project

Elm Farm, Somersham Road, Little Blakenham, Ipswich, IP8 4NF

Drawing Title

Exploratory Hole Plan

Drawing Number

7826,GI/001/Rev0

Date

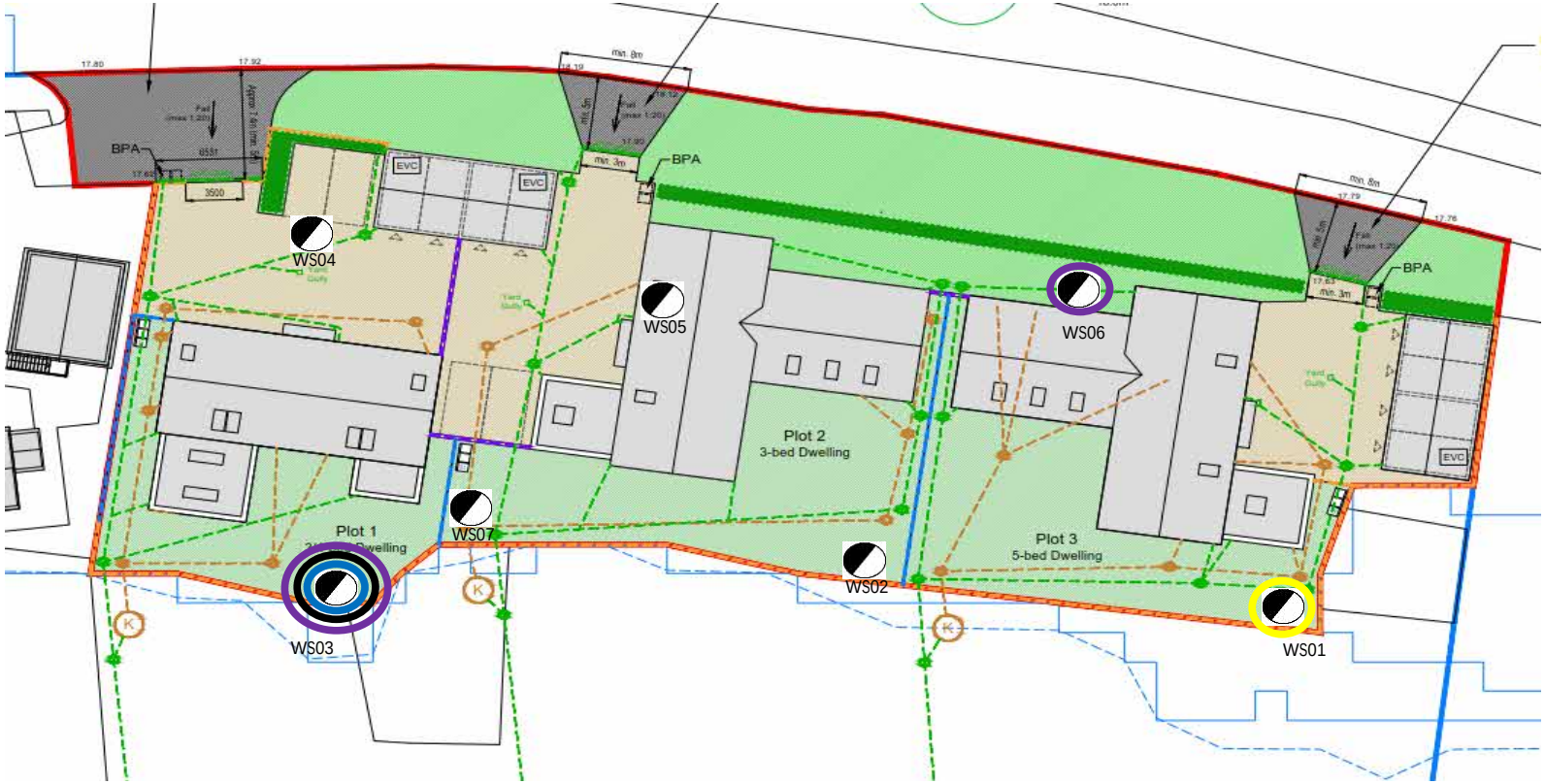
29/09/2023

Author / Checked By

JK / JD

Source

GEOSPHERE ENVIRONMENTAL



LEGEND

- Site boundary
- Window Sample Location
- PAH Contamination
- TPH Contamination
- Asbestos Fibres in Soil
- Asbestos Cement in Soil

SOURCE

Background image provided by client

PROJECT

Elm Farm, Somersham Road, Little Blakenham, Ipswich, Suffolk, IP8 4NF

TITLE

Chemical Data Summary Plan

DRAWING NUMBER

7826,GI/003/Rev0

SCALE	DATE
NTS	03/11/203
DRAWN BY	CHECKED BY
JK	JD

N

APPENDIX 4 – COMPARISON OF CONSEQUENCES AGAINST PROBABILITY

		Consequence (Severity of Linkage)			
		Severe (S)	Moderate (Mo)	Mild (Mi)	Negligible (N)
Probability (Likelihood of linkage from source)	Highly Likely (HL)	Very High Risk (VH)	High Risk (HR)	Moderate Risk (MR)	Moderate/Low Risk (MR-LR)
	Likely (L)	High Risk (HR)	Moderate Risk (MR)	Moderate/Low Risk (MR-LR)	Low Risk (LR)
	Unlikely (U)	Moderate Risk (MR)	Moderate/Low Risk (MR-LR)	Low Risk (LR)	Negligible Risk (NR)
	Negligible (N)	Moderate/Low Risk (MR-LR)	Low Risk (LR)	Negligible Risk (NR)	Negligible Risk (NR)

This table is to provide reference information in conjunction with the GEL Conceptual Model attached within the Hazard Risk Assessment sections of this report and Table 6 – Updated Conceptual Site Model.

Very High Risk (VH)

There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is happening currently.

Urgent investigation and remediation are likely to be required and advised.

High Risk (HR)

Harm is likely to arise to a designated receptor from an identified hazard.

Urgent investigation is required and remedial works are likely necessary in both the short to long term.

Moderate Risk (MR)

It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild.

Investigation is required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.

Low Risk (LR)

It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild. Limited investigation recommended.

Negligible Risk (NR)

There is a minimal possibility that harm could arise to a receptor. In the event of such harm being realised it is high likely to not be severe. Investigation not deemed necessary.

APPENDIX 5 – EXPLORATORY HOLE LOGS

Windowless Sample Hole Logs

(WS01 to WS07)

CLIENT: Beechlake Developments Ltd	PROJECT: Elm Farm, Little Blakenham, Ipswich, Suffolk, IP8 4NF	GROUND LEVEL m	HOLE No. WS01
LOGGED BY: JK FIELDWORK BY: GEL TEMPLATE REF: GEL AGS BH BETA CHECKED BY: JD DATE: 07/11/2023	EXCAVATION METHOD: Window Sampler Uncased to 3.0 m	Grid Reference: DATES 14/09/2023 - 14/09/2023	SHEET 1 OF 1 PROJECT NO. 7826,GI

Date/Time and Depth	Depth of Casing	Depth* of Water	Piez.	Description of Strata	Strata: Leg	Strata: Reduced Level	Strata: Depth	Graphical Representation: SPT 'N' Value (0 10 20 30 40)	Sampling/In-Situ Testing: Depths	Type	No.	Blows	SPT N	Laboratory Testing: <425 %	WC %	PL %	LL %	ρ Mg/m³	Cu kN/m²	Additional Tests and Notes
				MADE GROUND (Soft dark brown slightly sandy gravelly CLAY. Gravel is fine to coarse angular and sub-rounded flint, wood and chalk with occasional roots). 0.10 PACM.			0.00		0												
									0.10	ES	1									
				Firm dark brown slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular and sub-rounded flint and chalk.			0.50													
									0.60	ES	2									
				Firm light brown slightly sandy slightly gravelly CLAY. Gravel is fine and medium sub-angular and sub-rounded flint and chalk.			1.00		1											
									1.40	ES	3									
				Firm brown slightly sandy slightly gravelly CLAY. Gravel is fine and medium sub-angular and sub-rounded flint and chalk.			2.00		2											
									2.50	ES	4									
				END OF EXPLORATORY HOLE			3.00		3											

*WATER ▼ Standing water level ▽ Water strikes

PIEZOMETER Upper seal / Response zone / Lower seal

SAMPLE AND TEST KEY
- D Small disturbed sample
- B Bulk disturbed sample
- U Undisturbed sample
- P Piston sample
- J Disturbed jar sample
- ES Environmental soil sample
- W Water Sample
- S Standard penetration test
- C Cone penetration test
- K Permeability test

Blows SPT blows for each 75mm increment (35) Undisturbed sample blow count
SPT N N = SPT N value (blows after seating) N*120 = Total blows/penetration including seating
<425 Sample % passing 425 micron sieve

DEPTH All depths, level and thicknesses in metres

Geosphere Environmental ltd
Unit 11 Brightwell Barns
Ipswich, IP10 0BJ

HOLE No. WS01 | SHEET 1 OF 1 | PROJECT No. 7826,GI

GEL AGS BH BETA 7826.GI ELM FARM, LITTLE BLAKENHAM, SUFFOLK.GPJ GINT STD AGS 3 1.GDT 7/11/23

CLIENT: Beechlake Developments Ltd	PROJECT: Elm Farm, Little Blakenham, Ipswich, Suffolk, IP8 4NF	GROUND LEVEL m	HOLE No. WS02
LOGGED BY: JK FIELDWORK BY: GEL TEMPLATE REF: GEL AGS BH BETA CHECKED BY: JD DATE: 07/11/2023	EXCAVATION METHOD: Window Sampler Uncased to 3.0 m	Grid Reference: DATES 14/09/2023 - 14/09/2023	SHEET 1 OF 1 PROJECT NO. 7826,GI

Date/Time and Depth	Depth of Casing	Depth* of Water	Piez.	Description of Strata	Strata: Leg	Strata: Reduced Level	Strata: Depth	Graphical Representation: SPT 'N' Value (0 10 20 30 40)	Sampling/In-Situ Testing: Depths	Type	No.	Blows	SPT N	Laboratory Testing: <425 %	WC %	PL %	LL %	ρ Mg/m³	Cu kN/m²	Additional Tests and Notes
				MADE GROUND (Soft dark brown slightly sandy gravelly CLAY. Gravel is fine and medium sub-angular and sub-rounded flint, chalk and brick fragments with occasional roots).			0.00		0												
				MADE GROUND (Greyish brown slightly sandy slightly clayey GRAVEL. Gravel is fine to coarse sub-angular and sub-rounded flint, chalk and brick fragments).			0.20		0.10	ES	1										
									0.70	ES	2									
				Firm brown slightly sandy slightly gravelly CLAY. Gravel is fine and medium sub-angular and sub-rounded flint and chalk.			0.90		1											
									1.20	ES	3									
									2											
									2.20	ES	4									
				END OF EXPLORATORY HOLE			3.00		3											

*WATER: Standing water level; Water strikes. PIEZOMETER: Upper seal; Response zone; Lower seal.

SAMPLE AND TEST KEY
- D Small disturbed sample
- B Bulk disturbed sample
- U Undisturbed sample
- P Piston sample
- J Disturbed jar sample
- ES Environmental soil sample
- W Water Sample
- S Standard penetration test
- C Cone penetration test
- K Permeability test

Blows: SPT blows for each 75mm increment (35) Undisturbed sample blow count
SPT N: N = SPT N value (blows after seating); N*120 = Total blows/penetration including seating
<425: Sample % passing 425 micron sieve

DEPTH All depths, level and thicknesses in metres

Geosphere Environmental ltd
Unit 11 Brightwell Barns
Ipswich, IP10 0BJ

HOLE No. WS02. SHEET 1 OF 1 PROJECT No. 7826,GI

GEL AGS BH BETA 7826.GI ELM FARM, LITTLE BLAKENHAM, SUFFOLK.GPJ GINT STD AGS 3 1.GDT 7/11/23

CLIENT: Beechlake Developments Ltd	PROJECT: Elm Farm, Little Blakenham, Ipswich, Suffolk, IP8 4NF	GROUND LEVEL m	HOLE No. WS03
LOGGED BY: JK FIELDWORK BY: GEL TEMPLATE REF: GEL AGS BH BETA CHECKED BY: JD DATE: 07/11/2023	EXCAVATION METHOD: Window Sampler Uncased to 3.0 m	Grid Reference: DATES 14/09/2023 - 14/09/2023	SHEET 1 OF 1 PROJECT NO. 7826,GI

Date/Time and Depth	Depth of Casing	Depth* of Water	Piez.	Description of Strata	Strata: Leg	Strata: Reduced Level	Strata: Depth	Graphical Representation: SPT 'N' Value (0 10 20 30 40)	Sampling/In-Situ Testing: Depths	Type	No.	Blows	SPT N	Laboratory Testing: <425 %	WC %	PL %	LL %	ρ Mg/m³	Cu kN/m²	Additional Tests and Notes
				MADE GROUND (Soft dark brown slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular and sub-rounded flint, chalk and brick fragments with occasional roots).			0.00		0											
									0.10	ES	1									
				MADE GROUND (Greyish brown slightly sandy slightly clayey GRAVEL. Gravel is fine to coarse sub-angular and sub-rounded flint, chalk and brick fragments).			0.20													
									0.60	ES	2									
				MADE GROUND (Firm brown slightly sandy gravelly CLAY. Gravel is fine and medium sub-angular and sub-rounded flint, chalk and brick fragments). 0.90 Fragments of PACM.			0.70													
									0.90	ES	3									
				Firm brown slightly sandy slightly gravelly CLAY. Gravel is fine and medium sub-angular and sub-rounded flint and chalk.			1.00		1											
									1.30	ES	4									
									2											
				END OF EXPLORATORY HOLE			3.00		3											

*WATER ▼ Standing water level ▽ Water strikes

PIEZOMETER Upper seal / Response zone / Lower seal

SAMPLE AND TEST KEY
D Small disturbed sample
B Bulk disturbed sample
U Undisturbed sample
P Piston sample
J Disturbed jar sample
ES Environmental soil sample
W Water Sample
S Standard penetration test
C Cone penetration test
K Permeability test

Blows SPT blows for each 75mm increment (35) Undisturbed sample blow count
SPT N N = SPT N value (blows after seating) N*120 = Total blows/penetration including seating
<425 Sample % passing 425 micron sieve

DEPTH All depths, level and thicknesses in metres

Geosphere Environmental ltd
Unit 11 Brightwell Barns
Ipswich, IP10 0BJ

HOLE No. WS03 | SHEET 1 OF 1 | PROJECT No. 7826,GI

GEL AGS BH BETA 7826.GI ELM FARM, LITTLE BLAKENHAM, SUFFOLK.GPJ GINT STD AGS 3 1.GDT 7/11/23

CLIENT: Beechlake Developments Ltd	PROJECT: Elm Farm, Little Blakenham, Ipswich, Suffolk, IP8 4NF	GROUND LEVEL m	HOLE No. WS04
LOGGED BY: JK FIELDWORK BY: GEL TEMPLATE REF: GEL AGS BH BETA CHECKED BY: JD DATE: 07/11/2023	EXCAVATION METHOD: Window Sampler Uncased to 3.0 m	Grid Reference: DATES 14/09/2023 - 14/09/2023	SHEET 1 OF 1 PROJECT NO. 7826,GI

Date/Time and Depth	Depth of Casing	Depth* of Water	Piez.	Description of Strata	Strata: Leg	Strata: Reduced Level	Strata: Depth	Graphical Representation: SPT 'N' Value (0 10 20 30 40)	Sampling/In-Situ Testing: Depths	Type	No.	Blows	SPT N	Laboratory Testing: <425 %	WC %	PL %	LL %	ρ Mg/m³	Cu kN/m²	Additional Tests and Notes
				MADE GROUND. (Greyish brown slightly sandy clayey GRAVEL. Gravel is fine to coarse sub-angular and sub-rounded flint, chalk and crushed concrete).			0.00		0												
									0.40	ES	1									
				Firm brown slightly sandy slightly gravelly CLAY. Gravel is fine and medium sub-angular and sub-rounded flint and chalk.			0.70													
									0.90	ES	2									
									1											
				2.20 - 2.50 Pocket of very soft CLAY.																
									2											
									2.30	ES	3									
				Soft brown slightly sandy gravelly CLAY. Gravel is fine and medium sub-angular and sub-rounded flint and chalk.			2.80													
				END OF EXPLORATORY HOLE			3.00		3											

*WATER: Standing water level; Water strikes

PIEZOMETER: Upper seal; Response zone; Lower seal

SAMPLE AND TEST KEY

D Small disturbed sample
B Bulk disturbed sample
U Undisturbed sample
P Piston sample
J Disturbed jar sample
ES Environmental soil sample
W Water Sample
S Standard penetration test
C Cone penetration test
K Permeability test

Blows SPT blows for each 75mm increment (35) Undisturbed sample blow count
SPT N N = SPT N value (blows after seating) N*120 = Total blows/penetration including seating
<425 Sample % passing 425 micron sieve

DEPTH All depths, level and thicknesses in metres

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Ipswich, IP10 0BJ

HOLE No. WS04 | SHEET 1 OF 1 | PROJECT No. 7826,GI

GEL AGS BH BETA 7826 GI ELM FARM, LITTLE BLAKENHAM, SUFFOLK.GPJ GINT STD AGS 3 1.GDT 7/11/23

CLIENT: Beechlake Developments Ltd	PROJECT: Elm Farm, Little Blakenham, Ipswich, Suffolk, IP8 4NF	GROUND LEVEL m	HOLE No. WS05
LOGGED BY: JK FIELDWORK BY: GEL TEMPLATE REF: GEL AGS BH BETA CHECKED BY: JD DATE: 07/11/2023	EXCAVATION METHOD: Window Sampler Uncased to 3.0 m	Grid Reference: DATES 14/09/2023 - 14/09/2023	SHEET 1 OF 1 PROJECT NO. 7826,GI

Date/Time and Depth	Depth of Casing	Depth* of Water	Piez.	Description of Strata	Strata: Leg	Strata: Reduced Level	Strata: Depth	Graphical Representation: SPT 'N' Value (0 10 20 30 40)	Sampling/In-Situ Testing: Depths	Type	No.	Blows	SPT N	Laboratory Testing: <425 %	WC %	PL %	LL %	ρ Mg/m³	Cu kN/m²	Additional Tests and Notes
				MADE GROUND (Orangish brown slightly clayey gravelly SAND. Sand is fine and medium. Gravel is fine and medium sub-angular and sub-rounded flint and crushed concrete).			0.00		0											
				MADE GROUND (Greyish brown slightly sandy clayey GRAVEL. Gravel is fine to coarse sub-angular and sub-rounded flint, chalk and crushed concrete).			0.20		0.10	ES	1									
									0.50	ES	2									
				Soft brown slightly sandy slightly gravelly CLAY. Gravel is fine and medium sub-angular and sub-rounded flint and chalk. Becoming darker and firmer with depth.			1.00		1											
									1.50	ES	3									
									2											
				END OF EXPLORATORY HOLE			3.00		3											

*WATER ▼ Standing water level ▽ Water strikes

PIEZOMETER Upper seal / Response zone / Lower seal

SAMPLE AND TEST KEY
D Small disturbed sample
B Bulk disturbed sample
U Undisturbed sample
P Piston sample
J Disturbed jar sample
ES Environmental soil sample
W Water Sample
S Standard penetration test
C Cone penetration test
K Permeability test

Blows SPT blows for each 75mm increment (35) Undisturbed sample blow count
SPT N N = SPT N value (blows after seating) N*120 = Total blows/penetration including seating
<425 Sample % passing 425 micron sieve

DEPTH All depths, level and thicknesses in metres

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Unit 11 Brightwell Barns
Ipswich, IP10 0BJ

HOLE No. WS05 | SHEET 1 OF 1 | PROJECT No. 7826,GI

GEL AGS BH BETA 7826,GI ELM FARM, LITTLE BLAKENHAM, SUFFOLK.GPJ GINT STD AGS 3 1.GDT 7/11/23

CLIENT: Beechlake Developments Ltd	PROJECT: Elm Farm, Little Blakenham, Ipswich, Suffolk, IP8 4NF	GROUND LEVEL m	HOLE No. WS06
LOGGED BY: JK FIELDWORK BY: GEL TEMPLATE REF: GEL AGS BH BETA CHECKED BY: JD DATE: 07/11/2023	EXCAVATION METHOD: Window Sampler Uncased to 3.0 m	Grid Reference: DATES 14/09/2023 - 14/09/2023	SHEET 1 OF 1 PROJECT NO. 7826,GI

Date/Time and Depth	Depth of Casing	Depth* of Water	Piez.	Description of Strata	Strata: Leg	Strata: Reduced Level	Strata: Depth	Graphical Representation: SPT 'N' Value (0 10 20 30 40)	Sampling/In-Situ Testing: Depths	Type	No.	Blows	SPT N	Laboratory Testing: <425 %	WC %	PL %	LL %	ρ Mg/m³	Cu kN/m²	Additional Tests and Notes
				MADE GROUND (Soft dark brown slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular and sub-rounded flint, chalk, wood and brick fragments with occasional roots).			0.00		0												
				MADE GROUND (Greyish brown slightly sandy clayey GRAVEL. Gravel is fine to coarse sub-angular and sub-rounded flint and chalk.			0.30		0.20	ES	1										
									0.50	ES	2									
				Brown slightly sandy slightly gravelly CLAY. Gravel is fine and medium sub-angular and sub-rounded flint and chalk with occasional roots.			0.70		1											
									1.20	ES	3									
									2											
									2.80	ES	4									
				END OF EXPLORATORY HOLE			3.00		3											

*WATER ▼ Standing water level ▽ Water strikes

PIEZOMETER Upper seal / Response zone / Lower seal

SAMPLE AND TEST KEY
D Small disturbed sample
B Bulk disturbed sample
U Undisturbed sample
P Piston sample
J Disturbed jar sample
ES Environmental soil sample
W Water Sample
S Standard penetration test
C Cone penetration test
K Permeability test

Blows SPT blows for each 75mm increment (35) Undisturbed sample blow count
SPT N N = SPT N value (blows after seating) N*120 = Total blows/penetration including seating
<425 Sample % passing 425 micron sieve

DEPTH All depths, level and thicknesses in metres

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Unit 11 Brightwell Barns
Ipswich, IP10 0BJ

HOLE No. WS06 | SHEET 1 OF 1 | PROJECT No. 7826,GI

GEL AGS BH BETA 7826 GI ELM FARM, LITTLE BLAKENHAM, SUFFOLK.GPJ GINT STD AGS 3_1.GDT 7/11/23

CLIENT: Beechlake Developments Ltd	PROJECT: Elm Farm, Little Blakenham, Ipswich, Suffolk, IP8 4NF	GROUND LEVEL m	HOLE No. WS07
LOGGED BY: JK FIELDWORK BY: GEL TEMPLATE REF: GEL AGS BH BETA CHECKED BY: JD DATE: 07/11/2023	EXCAVATION METHOD: Window Sampler Uncased to 2.0 m	Grid Reference: DATES 14/09/2023 - 14/09/2023	SHEET 1 OF 1 PROJECT NO. 7826,GI

Date/Time and Depth	Depth of Casing	Depth* of Water	Piez.	Description of Strata	Strata: Leg	Strata: Reduced Level	Strata: Depth	Graphical Representation: SPT 'N' Value (0 10 20 30 40)	Sampling/In-Situ Testing: Depths	Type	No.	Blows	SPT N	Laboratory Testing: <425 %	WC %	PL %	LL %	ρ Mg/m³	Cu kN/m²	Additional Tests and Notes
				MADE GROUND (Greyish brown slightly sandy clayey GRAVEL. Gravel is fine to coarse sub-angular and sub-rounded flint, chalk, brick fragments and broken glass).			0.00		0												
									0.30	ES	1									
				Brown slightly sandy slightly gravelly CLAY. Gravel is fine and medium sub-angular and sub-rounded flint and chalk.			0.90		1												
									1.10	ES	2									
				END OF EXPLORATORY HOLE			2.00		2												
									3												

*WATER ▼ Standing water level ▽ Water strikes

PIEZOMETER Upper seal / Response zone / Lower seal

SAMPLE AND TEST KEY
D Small disturbed sample
B Bulk disturbed sample
U Undisturbed sample
P Piston sample
J Disturbed jar sample
ES Environmental soil sample
W Water Sample
S Standard penetration test
C Cone penetration test
K Permeability test

Blows SPT blows for each 75mm increment (35) Undisturbed sample blow count
SPT N N = SPT N value (blows after seating) N*120 = Total blows/penetration including seating
<425 Sample % passing 425 micron sieve

DEPTH All depths, level and thicknesses in metres

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Unit 11 Brightwell Barns
Ipswich, IP10 0BJ

HOLE No. WS07 | SHEET 1 OF 1 | PROJECT No. 7826,GI

GEL AGS BH BETA 7826 GI ELM FARM, LITTLE BLAKENHAM, SUFFOLK.GPJ GINT STD AGS 3 1.GDT 7/11/23

APPENDIX 6 – GAS AND GROUNDWATER MONITORING DATA

GROUND GAS AND GROUNDWATER MONITORING DATA

GEOSPHERE ENVIRONMENTAL

Project Number: 7826,GI

Project Name: Elm Farm, Somersham Road, Little Blakenham, Ipswich, Suffolk, IP8 4NF

Date: 07/11/2023

Exploratory Hole Location: WS01 — Date of Installation: 14/09/2023

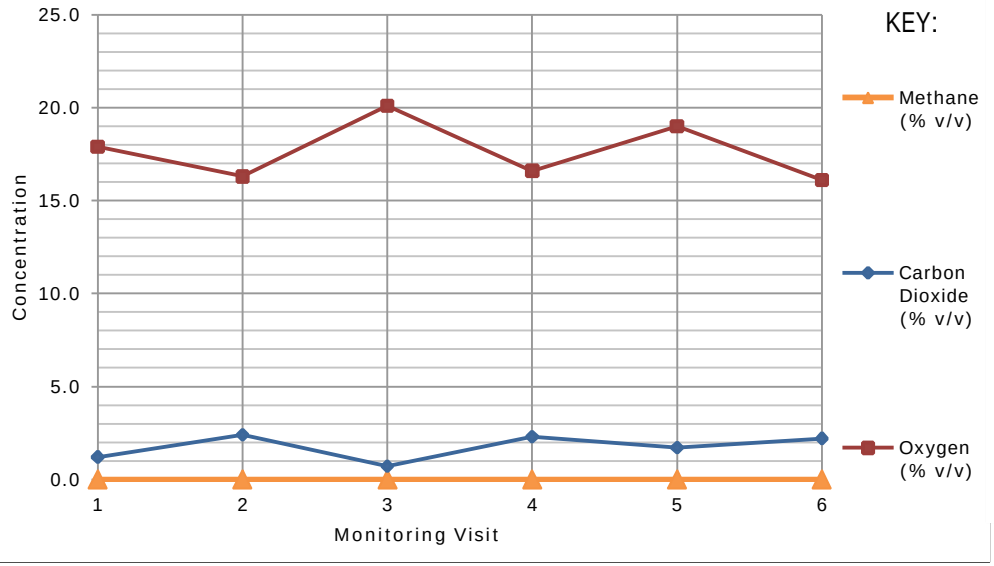
Return Visit #	Monitoring Date	Atmospheric Pressure (mb)	Methane Content (% v/v)	Methane Content (% LEL)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	Flow Rate (l/hr)	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Base of Well (mbgl)	Weather Conditions	Comments / Pressure Rise or Fall
1st visit	22/09/2023	1002	<0.1	<2	1.2	17.9	0.1	0	0	0	0.00	2.97	Warm, Cloudy, Damp, Breezy. (17°C)	
2nd Visit	27/09/2023	1013	<0.1	<2	2.4	16.3	0.1	0	0	0	0.00	2.98	Warm, Overcast, Damp, Breezy. (19°C)	
3rd Visit	06/10/2023	1017	<0.1	<2	0.7	20.1	0.1	0	0	0	0.00	2.98	Warm, Sunny, Dry, Windy. (20°C)	
4th Visit	10/10/2023	1017	<0.1	<2	2.3	16.6	0.1	0	0	0	0.00	2.99	Cool, Cloudy, Dry, Calm. (15°C)	
5ht Visit	20/10/2023	972	<0.1	<2	1.7	19.0	0.1	0	0	0	0.00	2.93	Cool, Overcast, Wet, Breezy. (14°C)	Well disturbed by client
6th Visit	27/10/2023	984	<0.1	<2	2.2	16.1	0.1	0	0	0	0.00	2.97	Cool, Cloudy, Wet, Calm. (13°C)	

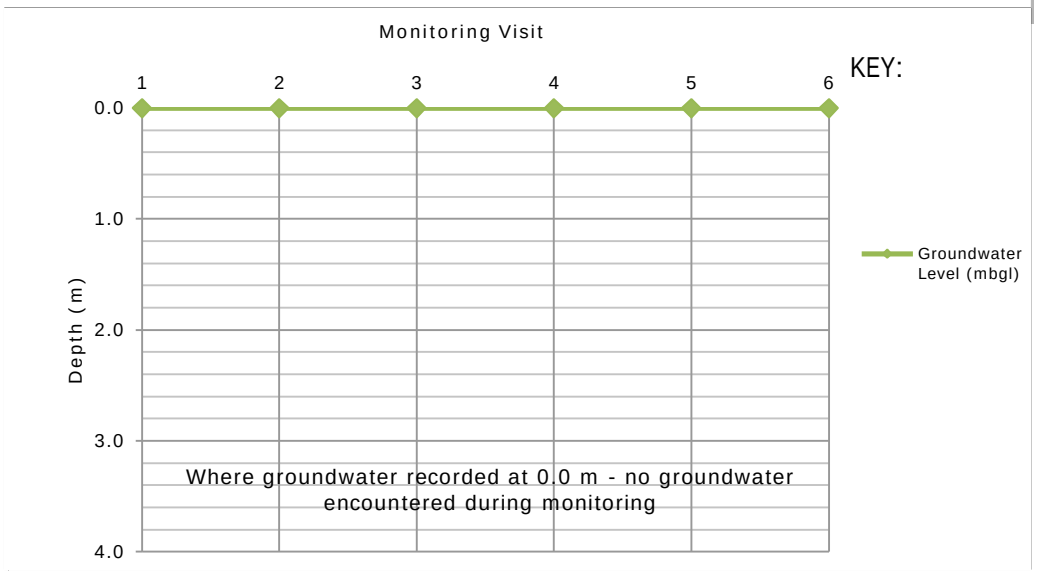
Instruments Used: Equipment used: [Choose from drop-down box]

NOTE: n/a Not applicable

nm Not measured

REMARKS:





GROUND GAS AND GROUNDWATER MONITORING DATA

Project Number: 7826,GI

Project Name: Elm Farm, Somersham Road, Little Blakenham, Ipswich, Suffolk, IP8 4NF

Date: 07/11/2023

Exploratory Hole Location: WS03 — Date of Installation: 14/09/2023

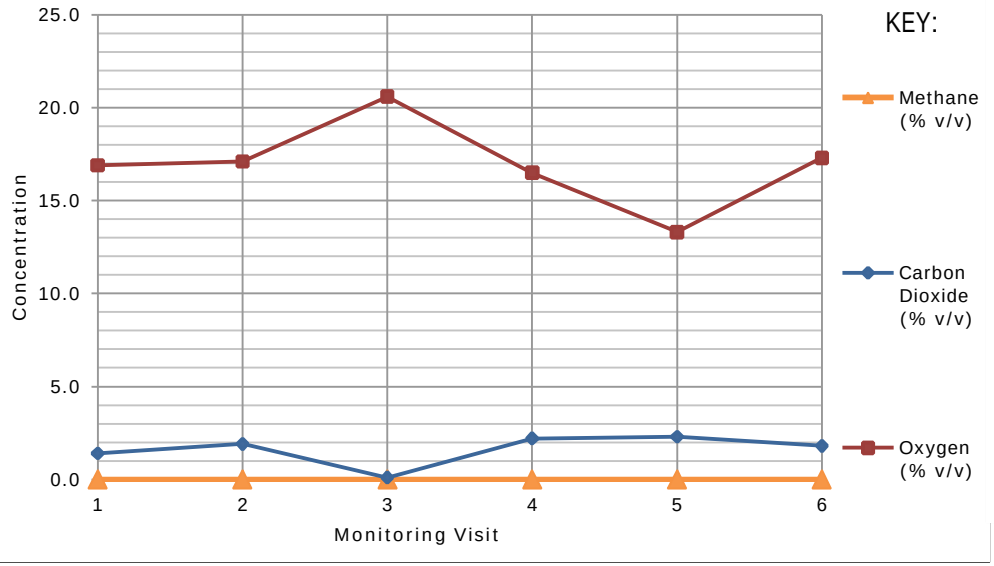
Return Visit #	Monitoring Date	Atmospheric Pressure (mb)	Methane Content (% v/v)	Methane Content (% LEL)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	Flow Rate (l/hr)	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Base of Well (mbgl)	Weather Conditions	Comments / Pressure Rise or Fall
1st visit	22/09/2023	1002	<0.1	<2	1.4	16.9	0.1	0	0	0	1.80	2.92	Warm, Cloudy, Damp, Breezy. (17°C)	
2nd Visit	27/09/2023	1014	<0.1	<2	1.9	17.1	0.1	0	0	0	1.91	2.93	Warm, Overcast, Damp, Breezy. (19°C)	
3rd Visit	06/10/2023	1017	<0.1	<2	0.1	20.6	0.1	0	0	0	1.99	2.99	Warm, Sunny, Dry, Windy. (20°C)	
4th Visit	10/10/2023	1019	<0.1	<2	2.2	16.5	0.1	0	0	0	2.06	2.94	Cool, Cloudy, Dry, Calm. (15°C)	
5th Visit	20/10/2023	971	<0.1	<2	2.3	13.3	0.1	0	0	0	0.36	2.92	Cool, Overcast, Wet, Breezy. (14°C)	Recent very wet weather
6th Visit	27/10/2023	984	<0.1	<2	1.8	17.3	0.1	0	0	0	1.95	2.94	Cool, Cloudy, Wet, Calm. (13°C)	

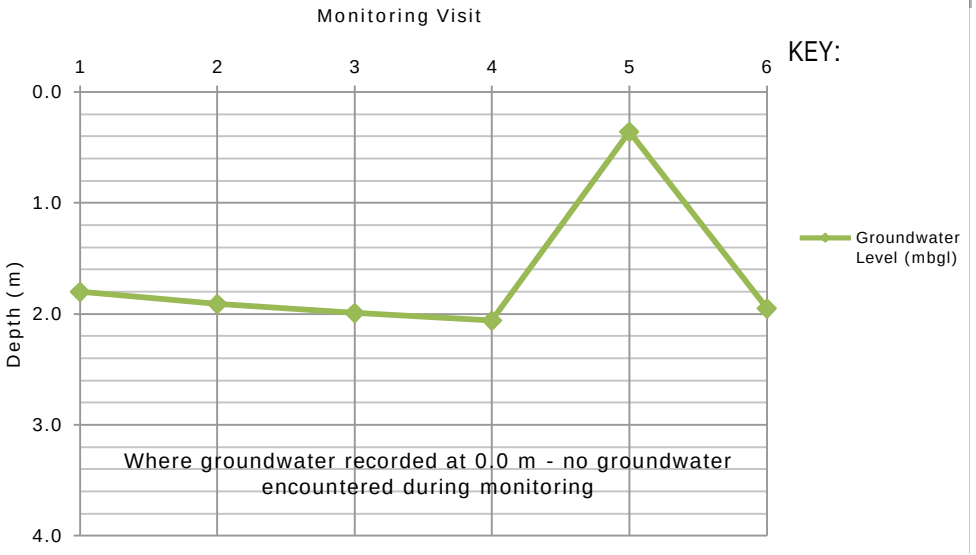
Instruments Used: Equipment used: [Choose from drop-down box]

NOTE: n/a Not applicable

nm Not measured

REMARKS:





GROUND GAS AND GROUNDWATER MONITORING DATA

Project Number: 7826,GI

Project Name: Elm Farm, Somersham Road, Little Blakenham, Ipswich, Suffolk, IP8 4NF

Date: 07/11/2023

Exploratory Hole Location: WS06 — Date of Installation: 14/09/2023

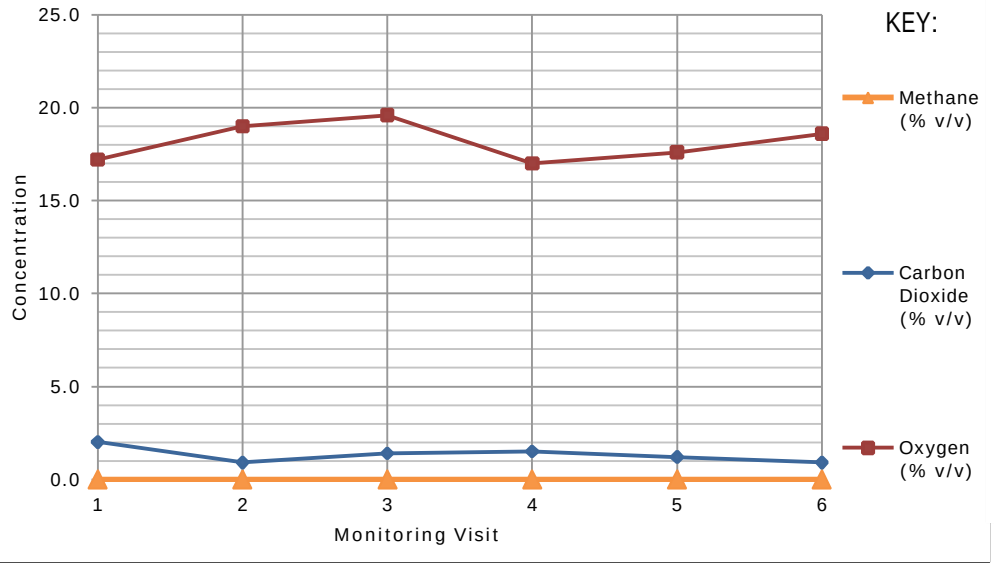
Return Visit #	Monitoring Date	Atmospheric Pressure (mb)	Methane Content (% v/v)	Methane Content (% LEL)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	Flow Rate (l/hr)	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Base of Well (mbgl)	Weather Conditions	Comments / Pressure Rise or Fall
1st visit	22/09/2023	1003	<0.1	<2	2.0	17.2	0.1	0	0	0	2.61	2.99	Warm, Cloudy, Damp, Breezy. (17°C)	
2nd Visit	27/09/2023	1013	<0.1	<2	0.9	19.0	0.1	0	0	0	2.66	3.00	Warm, Overcast, Damp, Breezy. (19°C)	
3rd Visit	06/10/2023	1017	<0.1	<2	1.4	19.6	0.1	0	0	0	2.75	2.92	Warm, Sunny, Dry, Windy. (20°C)	
4th Visit	10/10/2023	1018	<0.1	<2	1.5	17.0	0.1	0	0	0	2.74	3.05	Cool, Cloudy, Dry, Calm. (15°C)	
5ht Visit	20/10/2023	972	<0.1	<2	1.2	17.6	0.1	0	0	0	1.75	2.97	Cool, Overcast, Wet, Breezy. (14°C)	Usually wet weather.
6th Visit	27/10/2023	984	<0.1	<2	0.9	18.6	0.1	0	0	0	2.64	3.01	Cool, Cloudy, Wet, Calm. (13°C)	

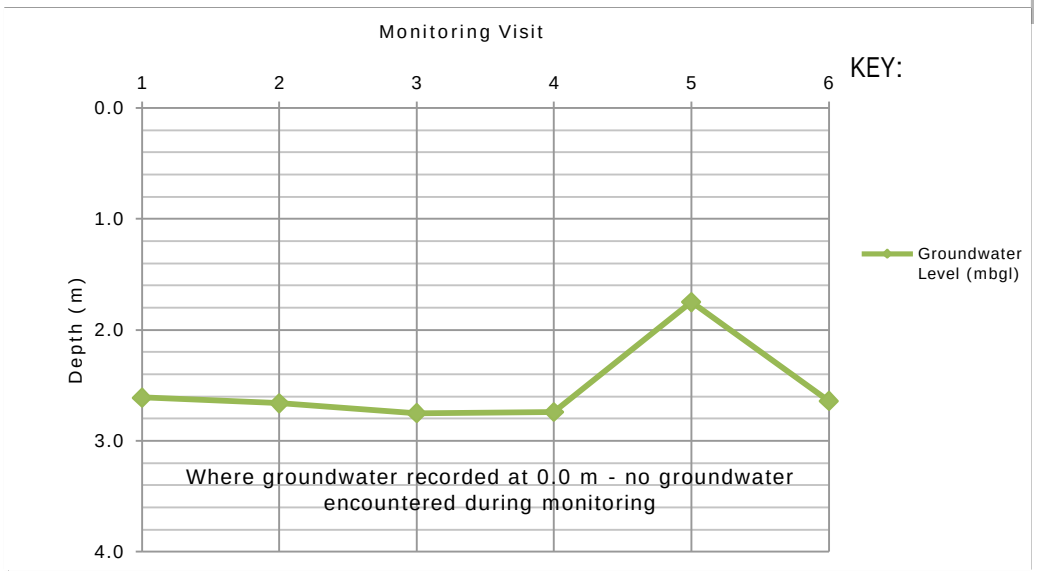
Instruments Used: Equipment used: [Choose from drop-down box]

NOTE: n/a Not applicable

nm Not measured

REMARKS:





APPENDIX 7 – ENVIRONMENTAL LABORATORY TEST RESULTS

Jonathan Khan
Geosphere Environmental Ltd
Brightwell Barns
Ipswich Road
Brightwell
Suffolk
IP10 0BJ

Derwentside Environmental Testing Services Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
[redacted]

DETS Report No: 23-11722

Site Reference:	Elm Farm, Little Blakenham
Project / Job Ref:	7826,GI
Order No:	None Supplied
Sample Receipt Date:	18/09/2023
Sample Scheduled Date:	18/09/2023
Report Issue Number:	1
Reporting Date:	25/09/2023

Authorised by:

[redacted]

Dave Ashworth
Technical Manager

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

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4480

Soil Analysis Certificate						
DETS Report No: 23-11722	**Date Sampled**	14/09/23	14/09/23	14/09/23	14/09/23	14/09/23
Geosphere Environmental Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Elm Farm, Little Blakenham	**TP / BH No**	WS01	WS01	WS02	WS02	WS03
Project / Job Ref: 7826,GI	**Additional Refs**	E1	E2	E1	E2	E1
Order No: None Supplied	**Depth (m)**	0.10	0.60	0.10	0.70	0.10
Reporting Date: 25/09/2023	**DETS Sample No**	675309	675310	675311	675312	675313

Determinand	Unit	RL	Accreditation				(n)	(n)
Asbestos Screen (S)	N/a	N/a	ISO17025	Detected	Not Detected	Not Detected	Not Detected	Not Detected
Sample Matrix (S)	Material Type	N/a	NONE	Chrysotile present in visible cement				
Asbestos Type (S)	PLM Result	N/a	ISO17025	Chrysotile				
pH	pH Units	N/a	MCERTS	7.9	8.0	7.8	7.9	7.7
Total Cyanide	mg/kg	< 1	NONE					< 1
Complex Cyanide	mg/kg	< 1	NONE					< 1
Free Cyanide	mg/kg	< 1	NONE					< 1
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	18	20	59	529	356
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	0.02	0.02	0.06	0.53	0.36
Organic Matter (SOM)	%	< 0.1	MCERTS	4.8	4	6.4	2.2	5.6
Arsenic (As)	mg/kg	< 2	MCERTS	18	18	21	28	21
Barium (Ba)	mg/kg	< 2.5	MCERTS	69	73	47	33	55
Beryllium (Be)	mg/kg	< 0.5	MCERTS	0.9	0.9	< 0.5	< 0.5	0.5
W/S Boron	mg/kg	< 1	NONE	2.4	1.1	2	< 1	1.1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.4	0.3	0.4	0.5	0.4
Chromium (Cr)	mg/kg	< 2	MCERTS	24	25	17	14	15
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	31	30	28	16	32
Lead (Pb)	mg/kg	< 3	MCERTS	27	26	21	14	40
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Molybdenum (Mo)	mg/kg	< 1	MCERTS					1.4
Nickel (Ni)	mg/kg	< 3	MCERTS	26	27	19	22	17
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	39	38	25	22	26
Zinc (Zn)	mg/kg	< 3	MCERTS	99	99	104	50	90

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)
(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

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mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME
UKAS TESTING 4480

Soil Analysis Certificate						
DETS Report No: 23-11722	**Date Sampled**	14/09/23	14/09/23	14/09/23	14/09/23	14/09/23
Geosphere Environmental Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Elm Farm, Little Blakenham	**TP / BH No**	WS03	WS03	WS04	WS05	WS06
Project / Job Ref: 7826,GI	**Additional Refs**	E2	E3	E1	E1	E1
Order No: None Supplied	**Depth (m)**	0.60	0.90	0.40	0.10	0.20
Reporting Date: 25/09/2023	**DETS Sample No**	675314	675315	675316	675317	675318

Determinand	Unit	RL	Accreditation				(n)	
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Sample Matrix (S)	Material Type	N/a	NONE					
Asbestos Type (S)	PLM Result	N/a	ISO17025					
pH	pH Units	N/a	MCERTS	8.1	7.9	8.2	7.9	7.5
Total Cyanide	mg/kg	< 1	NONE					
Complex Cyanide	mg/kg	< 1	NONE					
Free Cyanide	mg/kg	< 1	NONE					
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	49	44	215	444	38
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	0.05	0.04	0.21	0.44	0.04
Organic Matter (SOM)	%	< 0.1	MCERTS	2.9	2.7	1.6	0.4	4.3
Arsenic (As)	mg/kg	< 2	MCERTS	15	16	14	21	15
Barium (Ba)	mg/kg	< 2.5	MCERTS	45	76	23	19	49
Beryllium (Be)	mg/kg	< 0.5	MCERTS	0.5	0.9	< 0.5	< 0.5	0.5
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	1.8
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	0.3	0.2	0.4	0.5
Chromium (Cr)	mg/kg	< 2	MCERTS	15	24	16	10	13
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	16	24	10	12	17
Lead (Pb)	mg/kg	< 3	MCERTS	15	21	9	9	27
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Molybdenum (Mo)	mg/kg	< 1	MCERTS					
Nickel (Ni)	mg/kg	< 3	MCERTS	19	27	16	18	16
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	26	37	20	27	23
Zinc (Zn)	mg/kg	< 3	MCERTS	50	79	27	79	72

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

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UKAS TESTING 4480

Soil Analysis Certificate						
DETS Report No: 23-11722	**Date Sampled**	14/09/23	14/09/23	14/09/23	14/09/23	14/09/23
Geosphere Environmental Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Elm Farm, Little Blakenham	**TP / BH No**	WS06	WS07	WS07	WS01	WS03
Project / Job Ref: 7826,GI	**Additional Refs**	E2	E1	E2	PACM	PACM
Order No: None Supplied	**Depth (m)**	0.50	0.30	1.10	0.10	0.90
Reporting Date: 25/09/2023	**DETS Sample No**	675319	675320	675321	675322	675323

Determinand	Unit	RL	Accreditation	(n)				
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected		
Sample Matrix (S)	Material Type	N/a	NONE					
Asbestos Type (S)	PLM Result	N/a	ISO17025					
pH	pH Units	N/a	MCERTS	8.0	8.1	7.9		
Total Cyanide	mg/kg	< 1	NONE		< 1			
Complex Cyanide	mg/kg	< 1	NONE		< 1			
Free Cyanide	mg/kg	< 1	NONE		< 1			
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	235	128	49		
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	0.24	0.13	0.05		
Organic Matter (SOM)	%	< 0.1	MCERTS	3.3	3.1	2.7		
Arsenic (As)	mg/kg	< 2	MCERTS	16	21	18		
Barium (Ba)	mg/kg	< 2.5	MCERTS	36	43	90		
Beryllium (Be)	mg/kg	< 0.5	MCERTS	< 0.5	< 0.5	1.1		
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	1.4		
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	0.4	0.3		
Chromium (Cr)	mg/kg	< 2	MCERTS	14	18	28		
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2		
Copper (Cu)	mg/kg	< 4	MCERTS	15	30	26		
Lead (Pb)	mg/kg	< 3	MCERTS	15	24	24		
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1		
Molybdenum (Mo)	mg/kg	< 1	MCERTS		1.9			
Nickel (Ni)	mg/kg	< 3	MCERTS	20	18	32		
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2		
Vanadium (V)	mg/kg	< 1	MCERTS	21	20	42		
Zinc (Zn)	mg/kg	< 3	MCERTS	46	117	87		

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

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Maidstone
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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-11722	**Date Sampled**	14/09/23	14/09/23	14/09/23	14/09/23	14/09/23
Geosphere Environmental Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Elm Farm, Little Blakenham	**TP / BH No**	WS01	WS01	WS02	WS02	WS03
Project / Job Ref: 7826,GI	**Additional Refs**	E1	E2	E1	E2	E1
Order No: None Supplied	**Depth (m)**	0.10	0.60	0.10	0.70	0.10
Reporting Date: 25/09/2023	**DETS Sample No**	675309	675310	675311	675312	675313

Determinand	Unit	RL	Accreditation				(n)	(n)
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	9.13
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.11
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	31.40
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	48.90
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.12	< 0.1	192
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	53.40
Fluoranthene	mg/kg	< 0.1	MCERTS	0.25	0.34	0.41	< 0.1	109
Pyrene	mg/kg	< 0.1	MCERTS	0.23	0.34	0.36	< 0.1	85.80
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.16	0.23	0.30	< 0.1	70.20
Chrysene	mg/kg	< 0.1	MCERTS	0.17	0.20	0.33	< 0.1	63
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.26	0.34	0.47	< 0.1	48.60
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.17	< 0.1	17.10
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.23	0.29	0.41	< 0.1	45.50
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.20	0.20	0.33	< 0.1	10.20
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	4.94
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.19	0.21	0.33	< 0.1	7.82
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	1.7	2.2	3.2	< 1.6	797

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-11722	**Date Sampled**	14/09/23	14/09/23	14/09/23	14/09/23	14/09/23
Geosphere Environmental Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Elm Farm, Little Blakenham	**TP / BH No**	WS03	WS03	WS04	WS05	WS06
Project / Job Ref: 7826,GI	**Additional Refs**	E2	E3	E1	E1	E1
Order No: None Supplied	**Depth (m)**	0.60	0.90	0.40	0.10	0.20
Reporting Date: 25/09/2023	**DETS Sample No**	675314	675315	675316	675317	675318

Determinand	Unit	RL	Accreditation				(n)	
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	0.27	< 0.1	< 0.1	0.96
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.20
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.31	< 0.1	< 0.1	4.78
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.26	< 0.1	< 0.1	4.61
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	0.15	< 0.1	< 0.1	2.80
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	0.15	< 0.1	< 0.1	2.63
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.14	< 0.1	< 0.1	3.32
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	1.21
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	3.15
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	1.89
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.60
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	1.72
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	27.9

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Soil Analysis Certificate - Speciated PAHs							
DETS Report No: 23-11722	**Date Sampled**	14/09/23	14/09/23	14/09/23		
Geosphere Environmental Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied		
Site Reference: Elm Farm, Little Blakenham	**TP / BH No**	WS06	WS07	WS07		
Project / Job Ref: 7826,GI	**Additional Refs**	E2	E1	E2		
Order No: None Supplied	**Depth (m)**	0.50	0.30	1.10		
Reporting Date: 25/09/2023	**DETS Sample No**	675319	675320	675321		

Determinand	Unit	RL	Accreditation	(n)				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Phenanthrene	mg/kg	< 0.1	MCERTS	0.75	< 0.1	< 0.1		
Anthracene	mg/kg	< 0.1	MCERTS	0.21	< 0.1	< 0.1		
Fluoranthene	mg/kg	< 0.1	MCERTS	4.93	0.54	< 0.1		
Pyrene	mg/kg	< 0.1	MCERTS	4.99	0.53	< 0.1		
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	3.10	0.28	< 0.1		
Chrysene	mg/kg	< 0.1	MCERTS	2.78	0.27	< 0.1		
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	3.56	0.33	< 0.1		
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	1.40	0.13	< 0.1		
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	3.63	0.29	< 0.1		
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	2.16	0.28	< 0.1		
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	0.64	< 0.1	< 0.1		
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	1.86	0.24	< 0.1		
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	30	2.9	< 1.6		

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 23-11722	**Date Sampled**	14/09/23	14/09/23	14/09/23	14/09/23	
Geosphere Environmental Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Elm Farm, Little Blakenham	**TP / BH No**	WS03	WS07	WS01	WS03	
Project / Job Ref: 7826,GI	**Additional Refs**	E1	E1	PACM	PACM	
Order No: None Supplied	**Depth (m)**	0.10	0.30	0.10	0.90	
Reporting Date: 25/09/2023	**DETS Sample No**	675313	675320	675322	675323	

Determinand	Unit	RL	Accreditation	(n)	(n)			
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01			
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05			
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2			
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2			
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3			
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3			
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	< 10			
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21	< 21			
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01			
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05			
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2			
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	15	< 2			
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	228	< 2			
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	1245	< 3			
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	734	< 10			
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	2221	< 21			
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE	2221	< 42			

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 23-11722	**Date Sampled**	14/09/23	14/09/23			
Geosphere Environmental Ltd	**Time Sampled**	None Supplied	None Supplied			
Site Reference: Elm Farm, Little Blakenham	**TP / BH No**	WS03	WS07			
Project / Job Ref: 7826,GI	**Additional Refs**	E1	E1			
Order No: None Supplied	**Depth (m)**	0.10	0.30			
Reporting Date: 25/09/2023	**DETS Sample No**	675313	675320			

Determinand	Unit	RL	Accreditation	(n)	(n)			
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2			
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5			
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2			
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2			
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2			
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5			

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

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[redacted]

Bulk Analysis Certificate						
DETS Report No: 23-11722	**Date Sampled**	14/09/23	14/09/23			
Geosphere Environmental Ltd	**Time Sampled**	None Supplied	None Supplied			
Site Reference: Elm Farm, Little Blakenham	**TP / BH No**	WS01	WS03			
Project / Job Ref: 7826,GI	**Additional Refs**	PACM	PACM			
Order No: None Supplied	**Depth (m)**	0.10	0.90			
Reporting Date: 25/09/2023	**DETS Sample No**	675322	675323			

Determinand	Unit	RL	Accreditation					
Asbestos Type (S)	PLM Result	N/a	ISO17025	Chrysotile	Chrysotile			
Sample Matrix (S)	Material Type	N/a	NONE	Cement	Cement			

The samples have been examined to identify the presence of asbestiform minerals by polarising light microscopy and dispersion staining technique to In-House Procedures QTSE600 Determination of Asbestos in Bulk Materials; Asbestos in Soils/Sediments (fibre screening and identification) that is in accordance with the Health and Safety Executive HSG 248 Appendix 2.

This report refers to samples as received, and Dets Ltd, takes no responsibility for the accuracy or competence of sampling by others.

The material description shall be regarded as tentative and is not included in our scope of UKAS Accreditation.

Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation.

RL: Reporting Limit

Subcontracted analysis (S)

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Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 23-11722	
Geosphere Environmental Ltd	
Site Reference: Elm Farm, Little Blakenham	
Project / Job Ref: 7826,GI	
Order No: None Supplied	
Reporting Date: 25/09/2023	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
675309	WS01	E1	0.10	19.1	Brown sandy clay
675310	WS01	E2	0.60	14.8	Brown sandy clay
675311	WS02	E1	0.10	17.4	Brown loamy sand with stones and vegetation
675312	WS02	E2	0.70	6.5	Brown sandy gravel with stones and chalk
675313	WS03	E1	0.10	12.7	Brown sandy gravel with stones and chalk
675314	WS03	E2	0.60	13	Brown sandy clay with stones and chalk
675315	WS03	E3	0.90	20	Brown sandy clay
675316	WS04	E1	0.40	5	Brown sandy clay with stones and chalk
675317	WS05	E1	0.10	5.1	Light brown sandy gravel with stones
675318	WS06	E1	0.20	16.3	Brown sandy clay with stones
675319	WS06	E2	0.50	9.3	Brown sandy clay with stones and chalk
675320	WS07	E1	0.30	7.1	Brown sandy gravel with stones and concrete
675321	WS07	E2	1.10	20.2	Brown sandy clay

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

Insufficient Sample I/S

Unsuitable Sample U/S

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Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 23-11722
Geosphere Environmental Ltd
Site Reference: Elm Farm, Little Blakenham
Project / Job Ref: 7826,GI
Order No: None Supplied
Reporting Date: 25/09/2023

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

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Rose Lane
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List of HWOL Acronyms and Operators
DETS Report No: 23-11722
Geosphere Environmental Ltd
Site Reference: Elm Farm, Little Blakenham
Project / Job Ref: 7826,GI
Order No: None Supplied
Reporting Date: 25/09/2023

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det - Acronym
Benzene - HS_1D_MS
Ethylbenzene - HS_1D_MS
MTBE - HS_1D_MS
TPH CWG - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH CWG - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH CWG - Aliphatic >C16 - C21 - EH_CU_1D_AL
TPH CWG - Aliphatic >C21 - C34 - EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH CWG - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH CWG - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH CWG - Aliphatic C5 - C34 - HS_1D_MS+EH_CU_1D_AL
TPH CWG - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH CWG - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH CWG - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C35 - HS_1D_MS+EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH CWG - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH CWG - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH CWG - Total >C5 - C35 - HS_1D_MS+EH_CU_1D_Total
Toluene - HS_1D_MS
m & p-xylene - HS_1D_MS
o-Xylene - HS_1D_MS

Jonathan Khan
Geosphere Environmental Ltd
Brightwell Barns
Ipswich Road
Brightwell
Suffolk
IP10 0BJ

Derwentside Environmental Testing Services Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
[redacted]

DETS Report No: 23-13101

Site Reference:	Elm Farm, Little Blakenham
Project / Job Ref:	7826,GI
Order No:	None Supplied
Sample Receipt Date:	23/10/2023
Sample Scheduled Date:	23/10/2023
Report Issue Number:	1
Reporting Date:	27/10/2023

Authorised by:

[redacted]

Dave Ashworth
Technical Manager

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

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

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Soil Analysis Certificate							
DETS Report No: 23-13101	**Date Sampled**	14/09/23					
Geosphere Environmental Ltd	**Time Sampled**	None Supplied					
Site Reference: Elm Farm, Little Blakenham	**TP / BH No**	WS01					
Project / Job Ref: 7826,GI	**Additional Refs**	E1					
Order No: None Supplied	**Depth (m)**	0.10					
Reporting Date: 27/10/2023	**DETS Sample No**	681584					

Determinand	Unit	RL	Accreditation					
Asbestos Quantification (S)	%	< 0.001	ISO17025	0.323				

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

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Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 23-13101
Geosphere Environmental Ltd
Site Reference: Elm Farm, Little Blakenham
Project / Job Ref: 7826,GI
Order No: None Supplied
Reporting Date: 27/10/2023

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

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List of HWOL Acronyms and Operators
DETS Report No: 23-13101
Geosphere Environmental Ltd
Site Reference: Elm Farm, Little Blakenham
Project / Job Ref: 7826,GI
Order No: None Supplied
Reporting Date: 27/10/2023

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det - Acronym

Jonathan Khan
Geosphere Environmental Ltd
Brightwell Barns
Ipswich Road
Brightwell
Suffolk
IP10 0BJ

Derwentside Environmental Testing Services Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
[redacted]

DETS Report No: 23-12621

Site Reference:	Elm Farm
Project / Job Ref:	7826
Order No:	None Supplied
Sample Receipt Date:	11/10/2023
Sample Scheduled Date:	11/10/2023
Report Issue Number:	1
Reporting Date:	17/10/2023

Authorised by:

[redacted]

Dave Ashworth
Technical Manager

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

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Water Analysis Certificate						
DETS Report No: 23-12621	**Date Sampled**	10/10/23	10/10/23			
Geosphere Environmental Ltd	**Time Sampled**	None Supplied	None Supplied			
Site Reference: Elm Farm	**TP / BH No**	W1	W1			
Project / Job Ref: 7826	**Additional Refs**	WS03	WS06			
Order No: None Supplied	**Depth (m)**	None Supplied	None Supplied			
Reporting Date: 17/10/2023	**DETS Sample No**	679474	679475			

Determinand	Unit	RL	Accreditation					
pH	pH Units	N/a	ISO17025	7.6	7.2			
Total Cyanide	ug/l	< 5	ISO17025	< 5	< 5			
Complex Cyanide	ug/l	< 5	ISO17025	< 5	< 5			
Free Cyanide	ug/l	< 5	ISO17025	< 5	< 5			
Sulphate as SO_4	mg/l	< 1	ISO17025	172	7			
Total Organic Carbon (TOC)	mg/l	< 1.0	ISO17025	18.5	66.5			
Arsenic (dissolved)	ug/l	< 5	ISO17025	< 5	17			
Barium (dissolved)	ug/l	< 5	ISO17025	57	159			
Beryllium (dissolved)	ug/l	< 3	ISO17025	< 3	< 3			
Boron (dissolved)	ug/l	< 5	ISO17025	63	169			
Cadmium (dissolved)	ug/l	< 0.4	ISO17025	< 0.4	< 0.4			
Chromium (dissolved)	ug/l	< 5	ISO17025	< 5	< 5			
Chromium (hexavalent)	ug/l	< 20	NONE	< 20	< 20			
Copper (dissolved)	ug/l	< 5	ISO17025	< 5	< 5			
Lead (dissolved)	ug/l	< 5	ISO17025	< 5	< 5			
Mercury (dissolved)	ug/l	< 0.05	ISO17025	< 0.05	< 0.05			
Molybdenum (dissolved)	ug/l	< 5	ISO17025	< 5	< 5			
Nickel (dissolved)	ug/l	< 5	ISO17025	< 5	14			
Selenium (dissolved)	ug/l	< 5	ISO17025	< 5	< 5			
Vanadium (dissolved)	ug/l	< 5	ISO17025	< 5	< 5			
Zinc (dissolved)	ug/l	< 2	ISO17025	6	15			

Subcontracted analysis (S)
Insufficient sample I/S
Unsuitable Sample U/S

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
[redacted]

Water Analysis Certificate - Speciated PAH							
DETS Report No: 23-12621	Date Sampled	10/10/23	10/10/23				
Geosphere Environmental Ltd	Time Sampled	None Supplied	None Supplied				
Site Reference: Elm Farm	TP / BH No	W1	W1				
Project / Job Ref: 7826	Additional Refs	WS03	WS06				
Order No: None Supplied	Depth (m)	None Supplied	None Supplied				
Reporting Date: 17/10/2023	DETS Sample No	679474	679475				

Determinand	Unit	RL	Accreditation					
Naphthalene	ug/l	< 0.01	NONE	< 0.01	< 0.01			
Acenaphthylene	ug/l	< 0.01	NONE	< 0.01	< 0.01			
Acenaphthene	ug/l	< 0.01	NONE	< 0.01	< 0.01			
Fluorene	ug/l	< 0.01	NONE	< 0.01	< 0.01			
Phenanthrene	ug/l	< 0.01	NONE	< 0.01	< 0.01			
Anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01			
Fluoranthene	ug/l	< 0.01	NONE	< 0.01	< 0.01			
Pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01			
Benzo(a)anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01			
Chrysene	ug/l	< 0.01	NONE	< 0.01	< 0.01			
Benzo(b)fluoranthene	ug/l	< 0.01	NONE	< 0.01	< 0.01			
Benzo(k)fluoranthene	ug/l	< 0.01	NONE	< 0.01	< 0.01			
Benzo(a)pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01			
Indeno(1,2,3-cd)pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01			
Dibenz(a,h)anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01			
Benzo(ghi)perylene	ug/l	< 0.008	NONE	< 0.008	< 0.008			
Total EPA-16 PAHs	ug/l	< 0.16	NONE	< 0.16	< 0.16			

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Water Analysis Certificate - TPH CWG Banded							
DETS Report No: 23-12621	Date Sampled	10/10/23	10/10/23				
Geosphere Environmental Ltd	Time Sampled	None Supplied	None Supplied				
Site Reference: Elm Farm	TP / BH No	W1	W1				
Project / Job Ref: 7826	Additional Refs	WS03	WS06				
Order No: None Supplied	Depth (m)	None Supplied	None Supplied				
Reporting Date: 17/10/2023	DETS Sample No	679474	679475				

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10	< 10			
Aliphatic >C6 - C8 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10	< 10			
Aliphatic >C8 - C10 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10			
Aliphatic >C10 - C12 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10			
Aliphatic >C12 - C16 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10			
Aliphatic >C16 - C21 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10			
Aliphatic >C21 - C34 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10			
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	ug/l	< 70	NONE	< 70	< 70			
Aromatic >C5 - C7 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10	< 10			
Aromatic >C7 - C8 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10	< 10			
Aromatic >C8 - C10 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10			
Aromatic >C10 - C12 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10			
Aromatic >C12 - C16 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10			
Aromatic >C16 - C21 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10			
Aromatic >C21 - C35 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10			
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	ug/l	< 70	NONE	< 70	< 70			
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Total	ug/l	< 140	NONE	< 140	< 140			

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Water Analysis Certificate - BTEX / MTBE						
DETS Report No: 23-12621	**Date Sampled**	10/10/23	10/10/23			
Geosphere Environmental Ltd	**Time Sampled**	None Supplied	None Supplied			
Site Reference: Elm Farm	**TP / BH No**	W1	W1			
Project / Job Ref: 7826	**Additional Refs**	WS03	WS06			
Order No: None Supplied	**Depth (m)**	None Supplied	None Supplied			
Reporting Date: 17/10/2023	**DETS Sample No**	679474	679475			

Determinand	Unit	RL	Accreditation					
Benzene : HS_1D_MS	ug/l	< 1	ISO17025	< 1	< 1			
Toluene : HS_1D_MS	ug/l	< 5	ISO17025	< 5	< 5			
Ethylbenzene : HS_1D_MS	ug/l	< 5	ISO17025	< 5	< 5			
p & m-xylene : HS_1D_MS	ug/l	< 10	ISO17025	< 10	< 10			
o-xylene : HS_1D_MS	ug/l	< 5	ISO17025	< 5	< 5			
MTBE : HS_1D_MS	ug/l	< 10	ISO17025	< 10	< 10			

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Water Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 23-12621
Geosphere Environmental Ltd
Site Reference: Elm Farm
Project / Job Ref: 7826
Order No: None Supplied
Reporting Date: 17/10/2023

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	F	Ammoniacal Nitrogen	Determination of ammoniacal nitrogen by discrete analyser.	E126
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	UF	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazide followed by	E116
Water	UF	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR dete	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 – C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E104
Water	F	Fluoride	Determination of Fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	UF	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E121
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichlorometha	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Low heat with persulphate addition followed by IR detection	E110
Water	F	TPH CWG (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C35. C5 to C8 by headspace GC-MS	E104
Water	F	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C44. C5 to C8 by headspace GC-MS	E104
Water	UF	VOCs	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E101

Key

F Filtered
UF Unfiltered

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List of HWOL Acronyms and Operators

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det - Acronym
Benzene - HS_1D_MS
Ethylbenzene - HS_1D_MS
MTBE - HS_1D_MS
TPH CWG - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH CWG - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH CWG - Aliphatic >C16 - C21 - EH_CU_1D_AL
TPH CWG - Aliphatic >C21 - C34 - EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C34 - HS_1D_MS+EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH CWG - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH CWG - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH CWG - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH CWG - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH CWG - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH CWG - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH CWG - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH CWG - Aromatic C5 - C35 - HS_1D_MS+EH_CU_1D_AR
TPH CWG - Total >C5 - C35 - HS_1D_MS+EH_CU_1D_Total
Toluene - HS_1D_MS
m & p-xylene - HS_1D_MS
o-Xylene - HS_1D_MS

APPENDIX 8 – PHOTOGRAPHS

Photograph 1

Photograph 2

Photograph 3

Photograph 4

GEOSPHERE ENVIRONMENTAL

DESCRIPTION

Photograph 1

WS01

Photograph 2

WS02

Photograph 3

WS03

Photograph 4

WS04

PROJECT

Elm Farm, Somersham Rd, Little Blakenham, Ipswich, Suffolk, IP8 4NF

PROJECT NUMBER

7826,GI

TITLE

Selected Photographs Relating To Phase 2 Intrusive Investigation

DATE

07/11/2023

Photograph 5

Photograph 6

Photograph 7

Photograph 8

GEOSPHERE ENVIRONMENTAL

DESCRIPTION

Photograph 5
WS05

Photograph 6
WS06

Photograph 7
WS07

Photograph 8
Asbestos in the surface soils surrounding WS01

PROJECT

Elm Farm, Somersham Rd, Little Blakenham, Ipswich, Suffolk, IP8 4NF

PROJECT NUMBER

7826,GI

TITLE

Selected Photographs Relating To Phase 2 Intrusive Investigation

DATE

07/11/2023

APPENDIX 9 – HAZWASTE ONLINE ASSESSMENT

GEOSPHERE ENVIRONMENTAL

HazWasteOnline™

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

945BT-OX3GX-KEQRA

Job name

7826,GI, Elm Farm, Great Blakenham

Description/Comments

Ground investigation soils lab analysis data

Project

7826,GI, Elm Farm, Great Blakenham

Site

7826,GI, Elm Farm, Great Blakenham

Classified by

Name:
Jim Dawson
Date:
03 Nov 2023 11:20 GMT
Telephone:
01603 298076

Company:
Geosphere Environmental Ltd
Brightwell Barns, Ipswich Road
Brightwell
IP10 0BJ

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**

Course	Date
Hazardous Waste Classification	11 Mar 2020
Most recent 3 year Refresher	07 Feb 2023

Next 3 year Refresher due by Feb 2026

Purpose of classification

2 - Material Characterisation

Address of the waste

7826,GI, Elm Farm, Great Blakenham **Post Code** IP8 4NF

SIC for the process giving rise to the waste

41202 Construction of domestic buildings

Description of industry/producer giving rise to the waste

Anticipated excess or waste soils from residential housing construction

Description of the specific process, sub-process and/or activity that created the waste

Soils from foundation excavations, construction preparation, drainage trenches etc.

Description of the waste

Made Ground and natural soils (brown slightly gravelly clays)

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	WS01-0.10-14/09/2023	0.10	Non Hazardous		3
2	WS01-0.60-14/09/2023	0.60	Non Hazardous		5
3	WS02-0.10-14/09/2023	0.10	Non Hazardous		7
4	WS02-0.70-14/09/2023	0.70	Non Hazardous		9
5	WS03-0.10-14/09/2023	0.10	Hazardous	HP 7, HP 11	11
6	WS03-0.60-14/09/2023	0.60	Non Hazardous		14
7	WS03-0.90-14/09/2023	0.90	Non Hazardous		16
8	WS04-0.40-14/09/2023	0.40	Non Hazardous		18
9	WS05-0.10-14/09/2023	0.10	Non Hazardous		20
10	WS06-0.20-14/09/2023	0.20	Non Hazardous		22
11	WS06-0.50-14/09/2023	0.50	Non Hazardous		24
12	WS07-0.30-14/09/2023	0.30	Non Hazardous		26
13	WS07-1.10-14/09/2023	1.10	Non Hazardous		29

Related documents

#	Name	Description
1	23-11722.1.xlsx	Lab data, excel
2	23-11722.1.pdf	lab data, pdf
3	23-11722.1.hwol	DETS South .hwol file used to populate the Job
4	GEL HWOL waste stream standard Nov2022	waste stream template used to create this Job

Report

Created by: Jim Dawson

Created date: 03 Nov 2023 11:20 GMT

Classification of sample: WS01-0.10-14/09/2023

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS01-0.10-14/09/2023
Sample Depth:
0.10 m
Moisture content:
19.1%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 19.1% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		18	mg/kg	1.32	19.227	mg/kg	0.00192 %	✓	
2	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.9	mg/kg	2.775	2.021	mg/kg	0.000202 %	✓	
3	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		2.4	mg/kg	3.22	6.252	mg/kg	0.000625 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.4	mg/kg	1.142	0.37	mg/kg	0.000037 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		24	mg/kg	1.462	28.378	mg/kg	0.00284 %	✓	
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<2	mg/kg	2.27	<4.54	mg/kg	<0.000454 %		<LOD
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		31	mg/kg	1.126	28.236	mg/kg	0.00282 %	✓	
8	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	27	mg/kg	1.56	34.071	mg/kg	0.00218 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<LOD
10	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		26	mg/kg	2.976	62.603	mg/kg	0.00626 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<2	mg/kg	2.554	<5.108	mg/kg	<0.000511 %		<LOD
12	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		99	mg/kg	2.774	222.184	mg/kg	0.0222 %	✓	
13	pH			PH		7.9	pH		7.9	pH	7.9 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
15	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
17		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
18		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
19		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
20		fluoranthene				0.25	mg/kg		0.202	mg/kg	0.0000202 %	✓	
			205-912-4	206-44-0									
21		pyrene				0.23	mg/kg		0.186	mg/kg	0.0000186 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.16	mg/kg		0.129	mg/kg	0.0000129 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.17	mg/kg		0.138	mg/kg	0.0000138 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				0.26	mg/kg		0.21	mg/kg	0.000021 %	✓	
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.23	mg/kg		0.186	mg/kg	0.0000186 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.2	mg/kg		0.162	mg/kg	0.0000162 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.19	mg/kg		0.154	mg/kg	0.0000154 %	✓	
			205-883-8	191-24-2									
30		asbestos				0.323	mg/kg		0.261	mg/kg	0.0000261 %	✓	
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
31		asbestos in identifiable pieces of suspected ACM				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
				ACM_FRAG									
32		barium { barium sulphide }				69	mg/kg	1.233	68.855	mg/kg	0.00689 %	✓	
		016-002-00-X	244-214-4	21109-95-5									
33		vanadium { divanadium pentaoxide; vanadium pentoxide }				39	mg/kg	1.785	56.324	mg/kg	0.00563 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.053 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
ACM	Asbestos Containing Materials

Classification of sample: WS01-0.60-14/09/2023

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS01-0.60-14/09/2023
Sample Depth:
0.60 m
Moisture content:
14.8%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 14.8% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		18	mg/kg	1.32	20.249	mg/kg	0.00202 %	✓	
2	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.9	mg/kg	2.775	2.128	mg/kg	0.000213 %	✓	
3	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.1	mg/kg	3.22	3.018	mg/kg	0.000302 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.3	mg/kg	1.142	0.292	mg/kg	0.0000292 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		25	mg/kg	1.462	31.131	mg/kg	0.00311 %	✓	
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<2	mg/kg	2.27	<4.54	mg/kg	<0.000454 %		<LOD
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		30	mg/kg	1.126	28.778	mg/kg	0.00288 %	✓	
8	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	26	mg/kg	1.56	34.553	mg/kg	0.00222 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<LOD
10	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		27	mg/kg	2.976	68.466	mg/kg	0.00685 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<2	mg/kg	2.554	<5.108	mg/kg	<0.000511 %		<LOD
12	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		99	mg/kg	2.774	233.994	mg/kg	0.0234 %	✓	
13	pH			PH		8	pH		8	pH	8pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
15	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
17		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
18		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
19		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
20		fluoranthene				0.34	mg/kg		0.29	mg/kg	0.000029 %	✓	
			205-912-4	206-44-0									
21		pyrene				0.34	mg/kg		0.29	mg/kg	0.000029 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.23	mg/kg		0.196	mg/kg	0.0000196 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.2	mg/kg		0.17	mg/kg	0.000017 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				0.34	mg/kg		0.29	mg/kg	0.000029 %	✓	
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.29	mg/kg		0.247	mg/kg	0.0000247 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.2	mg/kg		0.17	mg/kg	0.000017 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.21	mg/kg		0.179	mg/kg	0.0000179 %	✓	
			205-883-8	191-24-2									
30		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
31		asbestos in identifiable pieces of suspected ACM				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
				ACM_FRAG									
32		vanadium { divanadium pentaoxide; vanadium pentoxide }				38	mg/kg	1.785	57.797	mg/kg	0.00578 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.0482 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
ACM	Asbestos Containing Materials

Classification of sample: WS02-0.10-14/09/2023

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS02-0.10-14/09/2023
Sample Depth:
0.10 m
Moisture content:
17.4%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 17.4% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		21	mg/kg	1.32	22.902	mg/kg	0.00229 %	✓	
2	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		<0.5	mg/kg	2.775	<1.388	mg/kg	<0.000139 %		<**LOD**
3	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		2	mg/kg	3.22	5.319	mg/kg	0.000532 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.4	mg/kg	1.142	0.377	mg/kg	0.0000377 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		17	mg/kg	1.462	20.523	mg/kg	0.00205 %	✓	
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<2	mg/kg	2.27	<4.54	mg/kg	<0.000454 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		28	mg/kg	1.126	26.04	mg/kg	0.0026 %	✓	
8	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	21	mg/kg	1.56	27.057	mg/kg	0.00173 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<**LOD**
10	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		19	mg/kg	2.976	46.709	mg/kg	0.00467 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<2	mg/kg	2.554	<5.108	mg/kg	<0.000511 %		<**LOD**
12	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		104	mg/kg	2.774	238.31	mg/kg	0.0238 %	✓	
13	pH			PH		7.8	pH		7.8	pH	7.8 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
15	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
17		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
18		phenanthrene				0.12	mg/kg		0.0991	mg/kg	0.00000991 %	✓	
			201-581-5	85-01-8									
19		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
20		fluoranthene				0.41	mg/kg		0.339	mg/kg	0.0000339 %	✓	
			205-912-4	206-44-0									
21		pyrene				0.36	mg/kg		0.297	mg/kg	0.0000297 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.3	mg/kg		0.248	mg/kg	0.0000248 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.33	mg/kg		0.273	mg/kg	0.0000273 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				0.47	mg/kg		0.388	mg/kg	0.0000388 %	✓	
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.17	mg/kg		0.14	mg/kg	0.000014 %	✓	
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.41	mg/kg		0.339	mg/kg	0.0000339 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.33	mg/kg		0.273	mg/kg	0.0000273 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.33	mg/kg		0.273	mg/kg	0.0000273 %	✓	
			205-883-8	191-24-2									
30		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
31		asbestos in identifiable pieces of suspected ACM				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
				ACM_FRAG									
32		barium { barium sulphide }				47	mg/kg	1.233	47.887	mg/kg	0.00479 %	✓	
		016-002-00-X	244-214-4	21109-95-5									
33		vanadium { divanadium pentaoxide; vanadium pentoxide }				25	mg/kg	1.785	36.864	mg/kg	0.00369 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.0478 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
ACM	Asbestos Containing Materials

Classification of sample: WS02-0.70-14/09/2023

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS02-0.70-14/09/2023
Sample Depth:
0.70 m
Moisture content:
6.5%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 6.5% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		28	mg/kg	1.32	34.566	mg/kg	0.00346 %	✓	
2	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		<0.5	mg/kg	2.775	<1.388	mg/kg	<0.000139 %		<LOD
3	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<1	mg/kg	3.22	<3.22	mg/kg	<0.000322 %		<LOD
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.5	mg/kg	1.142	0.534	mg/kg	0.0000534 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		14	mg/kg	1.462	19.132	mg/kg	0.00191 %	✓	
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<2	mg/kg	2.27	<4.54	mg/kg	<0.000454 %		<LOD
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		16	mg/kg	1.126	16.843	mg/kg	0.00168 %	✓	
8	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	14	mg/kg	1.56	20.418	mg/kg	0.00131 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<LOD
10	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		22	mg/kg	2.976	61.222	mg/kg	0.00612 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<2	mg/kg	2.554	<5.108	mg/kg	<0.000511 %		<LOD
12	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		50	mg/kg	2.774	129.691	mg/kg	0.013 %	✓	
13	pH			PH		7.9	pH		7.9	pH	7.9 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
15	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
17		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
18		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
19		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
20		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-912-4	206-44-0									
21		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
30		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
31		asbestos in identifiable pieces of suspected ACM				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
				ACM_FRAG									
32		barium { barium sulphide }				33	mg/kg	1.233	38.059	mg/kg	0.00381 %	✓	
		016-002-00-X	244-214-4	21109-95-5									
33		vanadium { divanadium pentaoxide; vanadium pentoxide }				22	mg/kg	1.785	36.721	mg/kg	0.00367 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.0367 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
ACM	Asbestos Containing Materials

Classification of sample: WS03-0.10-14/09/2023

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
WS03-0.10-14/09/2023
Sample Depth:
0.10 m
Moisture content:
12.7%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.194%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.194%)

Determinands

Moisture content: 12.7% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		21	mg/kg	1.32	24.206	mg/kg	0.00242 %	✓	
2	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.5	mg/kg	2.775	1.211	mg/kg	0.000121 %	✓	
3	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.1	mg/kg	3.22	3.092	mg/kg	0.000309 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.4	mg/kg	1.142	0.399	mg/kg	0.0000399 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		15	mg/kg	1.462	19.139	mg/kg	0.00191 %	✓	
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<2	mg/kg	2.27	<4.54	mg/kg	<0.000454 %		**<LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		32	mg/kg	1.126	31.453	mg/kg	0.00315 %	✓	

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
8	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	40 mg/kg	1.56	54.469 mg/kg	0.00349 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
10	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		1.4 mg/kg	1.5	1.834 mg/kg	0.000183 %	✓	
11	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		17 mg/kg	2.976	44.171 mg/kg	0.00442 %	✓	
12	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<2 mg/kg	2.554	<5.108 mg/kg	<0.000511 %		<LOD
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		90 mg/kg	2.774	217.965 mg/kg	0.0218 %	✓	
14	TPH (C6 to C40) petroleum group			TPH		2221 mg/kg		1938.933 mg/kg	0.194 %	✓	
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
16	benzene	601-020-00-8	200-753-7	71-43-2		<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
17	toluene	601-021-00-3	203-625-9	108-88-3		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
18	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
19	xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<LOD
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
21	pH			PH		7.7 pH		7.7 pH	7.7 pH		
22	naphthalene	601-052-00-2	202-049-5	91-20-3		9.13 mg/kg		7.97 mg/kg	0.000797 %	✓	
23	acenaphthylene		205-917-1	208-96-8		0.11 mg/kg		0.096 mg/kg	0.0000096 %	✓	
24	acenaphthene		201-469-6	83-32-9		31.4 mg/kg		27.412 mg/kg	0.00274 %	✓	
25	fluorene		201-695-5	86-73-7		48.9 mg/kg		42.69 mg/kg	0.00427 %	✓	
26	phenanthrene		201-581-5	85-01-8		192 mg/kg		167.616 mg/kg	0.0168 %	✓	
27	anthracene		204-371-1	120-12-7		53.4 mg/kg		46.618 mg/kg	0.00466 %	✓	
28	fluoranthene		205-912-4	206-44-0		109 mg/kg		95.157 mg/kg	0.00952 %	✓	
29	pyrene		204-927-3	129-00-0		85.8 mg/kg		74.903 mg/kg	0.00749 %	✓	
30	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		70.2 mg/kg		61.285 mg/kg	0.00613 %	✓	
31	chrysene	601-048-00-0	205-923-4	218-01-9		63 mg/kg		54.999 mg/kg	0.0055 %	✓	
32	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		48.6 mg/kg		42.428 mg/kg	0.00424 %	✓	
33	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		17.1 mg/kg		14.928 mg/kg	0.00149 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
34		benzo[a]pyrene; benzo[def]chrysene				45.5	mg/kg		39.722	mg/kg	0.00397 %	✓	
		601-032-00-3	200-028-5	50-32-8									
35		indeno[123-cd]pyrene				10.2	mg/kg		8.905	mg/kg	0.00089 %	✓	
			205-893-2	193-39-5									
36		dibenz[a,h]anthracene				4.94	mg/kg		4.313	mg/kg	0.000431 %	✓	
		601-041-00-2	200-181-8	53-70-3									
37		benzo[ghi]perylene				7.82	mg/kg		6.827	mg/kg	0.000683 %	✓	
			205-883-8	191-24-2									
38		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
39		asbestos in identifiable pieces of suspected ACM				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
				ACM_FRAG									
40		barium { barium sulphide }				55	mg/kg	1.233	59.226	mg/kg	0.00592 %	✓	
		016-002-00-X	244-214-4	21109-95-5									
41		vanadium { divanadium pentaoxide; vanadium pentoxide }				26	mg/kg	1.785	40.52	mg/kg	0.00405 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.313 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
ACM	Asbestos Containing Materials

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Soils with hydrocarbon content of less than 5000mg/kg will not be flammable; Concentrations of greater than 5000mg/kg have the limited potential to be flammable, if, as free product hydrocarbon; further assessment should be undertaken where this is the case, however flammability still remains a low likelihood due to the soil matrix being inflammable.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.194%)

Classification of sample: WS03-0.60-14/09/2023

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS03-0.60-14/09/2023
Sample Depth:
0.60 m
Moisture content:
13%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 13% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		15	mg/kg	1.32	17.23	mg/kg	0.00172 %	✓	
2	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.5	mg/kg	2.775	1.207	mg/kg	0.000121 %	✓	
3	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<1	mg/kg	3.22	<3.22	mg/kg	<0.000322 %		<LOD
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		15	mg/kg	1.462	19.073	mg/kg	0.00191 %	✓	
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<2	mg/kg	2.27	<4.54	mg/kg	<0.000454 %		<LOD
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		16	mg/kg	1.126	15.672	mg/kg	0.00157 %	✓	
8	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	15	mg/kg	1.56	20.356	mg/kg	0.00131 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<LOD
10	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		19	mg/kg	2.976	49.198	mg/kg	0.00492 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<2	mg/kg	2.554	<5.108	mg/kg	<0.000511 %		<LOD
12	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		50	mg/kg	2.774	120.675	mg/kg	0.0121 %	✓	
13	pH			PH		8.1	pH		8.1	pH	8.1 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
15	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
17		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
18		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
19		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
20		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-912-4	206-44-0									
21		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
30		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
31		asbestos in identifiable pieces of suspected ACM				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
				ACM_FRAG									
32		barium { barium sulphide }				45	mg/kg	1.233	48.291	mg/kg	0.00483 %	✓	
		016-002-00-X	244-214-4	21109-95-5									
33		vanadium { divanadium pentaoxide; vanadium pentoxide }				26	mg/kg	1.785	40.381	mg/kg	0.00404 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.0341 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
ACM	Asbestos Containing Materials

Classification of sample: WS03-0.90-14/09/2023

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS03-0.90-14/09/2023
Sample Depth:
0.90 m
Moisture content:
20%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 20% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		16	mg/kg	1.32	16.9	mg/kg	0.00169 %	✓	
2	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.9	mg/kg	2.775	1.998	mg/kg	0.0002 %	✓	
3	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<1	mg/kg	3.22	<3.22	mg/kg	<0.000322 %		<LOD
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.3	mg/kg	1.142	0.274	mg/kg	0.0000274 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		24	mg/kg	1.462	28.062	mg/kg	0.00281 %	✓	
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<2	mg/kg	2.27	<4.54	mg/kg	<0.000454 %		<LOD
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		24	mg/kg	1.126	21.617	mg/kg	0.00216 %	✓	
8	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	21	mg/kg	1.56	26.205	mg/kg	0.00168 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<LOD
10	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		27	mg/kg	2.976	64.287	mg/kg	0.00643 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<2	mg/kg	2.554	<5.108	mg/kg	<0.000511 %		<LOD
12	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		79	mg/kg	2.774	175.326	mg/kg	0.0175 %	✓	
13	pH			PH		7.9	pH		7.9	pH	7.9 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
15	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
17		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
18		phenanthrene				0.27	mg/kg		0.216	mg/kg	0.0000216 %	✓	
			201-581-5	85-01-8									
19		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
20		fluoranthene				0.31	mg/kg		0.248	mg/kg	0.0000248 %	✓	
			205-912-4	206-44-0									
21		pyrene				0.26	mg/kg		0.208	mg/kg	0.0000208 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.15	mg/kg		0.12	mg/kg	0.000012 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.15	mg/kg		0.12	mg/kg	0.000012 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				0.14	mg/kg		0.112	mg/kg	0.0000112 %	✓	
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
30		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
31		asbestos in identifiable pieces of suspected ACM				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
				ACM_FRAG									
32		barium { barium sulphide }				76	mg/kg	1.233	74.996	mg/kg	0.0075 %	✓	
		016-002-00-X	244-214-4	21109-95-5									
33		vanadium { divanadium pentaoxide; vanadium pentoxide }				37	mg/kg	1.785	52.841	mg/kg	0.00528 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.0469 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
ACM	Asbestos Containing Materials

Classification of sample: WS04-0.40-14/09/2023

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS04-0.40-14/09/2023
Sample Depth:
0.40 m
Moisture content:
5%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 5% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		14 mg/kg	1.32	17.56 mg/kg	0.00176 %	✓	
2	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		<0.5 mg/kg	2.775	<1.388 mg/kg	<0.000139 %		<LOD
3	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<1 mg/kg	3.22	<3.22 mg/kg	<0.000322 %		<LOD
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2 mg/kg	1.142	0.217 mg/kg	0.0000217 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		16 mg/kg	1.462	22.216 mg/kg	0.00222 %	✓	
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<2 mg/kg	2.27	<4.54 mg/kg	<0.000454 %		<LOD
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		10 mg/kg	1.126	10.696 mg/kg	0.00107 %	✓	
8	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	9 mg/kg	1.56	13.336 mg/kg	0.000855 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
10	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		16 mg/kg	2.976	45.239 mg/kg	0.00452 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<2 mg/kg	2.554	<5.108 mg/kg	<0.000511 %		<LOD
12	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		27 mg/kg	2.774	71.157 mg/kg	0.00712 %	✓	
13	pH			PH		8.2 pH		8.2 pH	8.2 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
17		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
18		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
19		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
20		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-912-4	206-44-0									
21		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
30		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
31		asbestos in identifiable pieces of suspected ACM				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
				ACM_FRAG									
32		barium { barium sulphide }				23	mg/kg	1.233	26.952	mg/kg	0.0027 %	✓	
		016-002-00-X	244-214-4	21109-95-5									
33		vanadium { divanadium pentaoxide; vanadium pentoxide }				20	mg/kg	1.785	33.919	mg/kg	0.00339 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.0254 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
ACM	Asbestos Containing Materials

Classification of sample: WS05-0.10-14/09/2023

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS05-0.10-14/09/2023
Sample Depth:
0.10 m
Moisture content:
5.1%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 5.1% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		21 mg/kg	1.32	26.313 mg/kg	0.00263 %	✓	
2	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		<0.5 mg/kg	2.775	<1.388 mg/kg	<0.000139 %		<LOD
3	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<1 mg/kg	3.22	<3.22 mg/kg	<0.000322 %		<LOD
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.4 mg/kg	1.142	0.434 mg/kg	0.0000434 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		10 mg/kg	1.462	13.87 mg/kg	0.00139 %	✓	
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<2 mg/kg	2.27	<4.54 mg/kg	<0.000454 %		<LOD
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		12 mg/kg	1.126	12.822 mg/kg	0.00128 %	✓	
8	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	9 mg/kg	1.56	13.322 mg/kg	0.000854 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
10	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		18 mg/kg	2.976	50.841 mg/kg	0.00508 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<2 mg/kg	2.554	<5.108 mg/kg	<0.000511 %		<LOD
12	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		79 mg/kg	2.774	207.981 mg/kg	0.0208 %	✓	
13	pH			PH		7.9 pH		7.9 pH	7.9 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
17		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
18		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
19		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
20		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-912-4	206-44-0									
21		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
30		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
31		asbestos in identifiable pieces of suspected ACM				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
				ACM_FRAG									
32		barium { barium sulphide }				19	mg/kg	1.233	22.241	mg/kg	0.00222 %	✓	
		016-002-00-X	244-214-4	21109-95-5									
33		vanadium { divanadium pentaoxide; vanadium pentoxide }				27	mg/kg	1.785	45.742	mg/kg	0.00457 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.0406 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
ACM	Asbestos Containing Materials

Classification of sample: WS06-0.20-14/09/2023

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS06-0.20-14/09/2023
Sample Depth:
0.20 m
Moisture content:
16.3%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 16.3% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		15 mg/kg	1.32	16.577 mg/kg	0.00166 %	✓	
2	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.5 mg/kg	2.775	1.161 mg/kg	0.000116 %	✓	
3	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.8 mg/kg	3.22	4.851 mg/kg	0.000485 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.5 mg/kg	1.142	0.478 mg/kg	0.0000478 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		13 mg/kg	1.462	15.903 mg/kg	0.00159 %	✓	
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<2 mg/kg	2.27	<4.54 mg/kg	<0.000454 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		17 mg/kg	1.126	16.02 mg/kg	0.0016 %	✓	
8	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	27 mg/kg	1.56	35.25 mg/kg	0.00226 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<**LOD**
10	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		16 mg/kg	2.976	39.858 mg/kg	0.00399 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<2 mg/kg	2.554	<5.108 mg/kg	<0.000511 %		<**LOD**
12	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		72 mg/kg	2.774	167.181 mg/kg	0.0167 %	✓	
13	pH			PH		7.5 pH		7.5 pH	7.5 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
15	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-469-6	83-32-9									
17		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
18		phenanthrene				0.96	mg/kg		0.804	mg/kg	0.0000804 %	✓	
			201-581-5	85-01-8									
19		anthracene				0.2	mg/kg		0.167	mg/kg	0.0000167 %	✓	
			204-371-1	120-12-7									
20		fluoranthene				4.78	mg/kg		4.001	mg/kg	0.0004 %	✓	
			205-912-4	206-44-0									
21		pyrene				4.61	mg/kg		3.859	mg/kg	0.000386 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				2.8	mg/kg		2.344	mg/kg	0.000234 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				2.63	mg/kg		2.201	mg/kg	0.00022 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				3.32	mg/kg		2.779	mg/kg	0.000278 %	✓	
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				1.21	mg/kg		1.013	mg/kg	0.000101 %	✓	
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				3.15	mg/kg		2.637	mg/kg	0.000264 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				1.89	mg/kg		1.582	mg/kg	0.000158 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.6	mg/kg		0.502	mg/kg	0.0000502 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				1.72	mg/kg		1.44	mg/kg	0.000144 %	✓	
			205-883-8	191-24-2									
30		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
31		asbestos in identifiable pieces of suspected ACM				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
				ACM_FRAG									
32		barium { barium sulphide }				49	mg/kg	1.233	50.589	mg/kg	0.00506 %	✓	
		016-002-00-X	244-214-4	21109-95-5									
33		vanadium { divanadium pentaoxide; vanadium pentoxide }				23	mg/kg	1.785	34.367	mg/kg	0.00344 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.0404 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
ACM	Asbestos Containing Materials

Classification of sample: WS06-0.50-14/09/2023

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS06-0.50-14/09/2023
Sample Depth:
0.50 m
Moisture content:
9.3%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 9.3% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		16	mg/kg	1.32	19.161	mg/kg	0.00192 %	✓	
2		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		<0.5	mg/kg	2.775	<1.388	mg/kg	<0.000139 %		<LOD
3		boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<1	mg/kg	3.22	<3.22	mg/kg	<0.000322 %		<LOD
4		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		14	mg/kg	1.462	18.559	mg/kg	0.00186 %	✓	
6		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<2	mg/kg	2.27	<4.54	mg/kg	<0.000454 %		<LOD
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		15	mg/kg	1.126	15.318	mg/kg	0.00153 %	✓	
8		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	15	mg/kg	1.56	21.221	mg/kg	0.00136 %	✓	
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<LOD
10		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		20	mg/kg	2.976	53.989	mg/kg	0.0054 %	✓	
11		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<2	mg/kg	2.554	<5.108	mg/kg	<0.000511 %		<LOD
12		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		46	mg/kg	2.774	115.743	mg/kg	0.0116 %	✓	
13		pH			PH		8	pH		8	pH	8pH		
14		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
15		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-469-6	83-32-9									
17		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
18		phenanthrene				0.75	mg/kg		0.68	mg/kg	0.000068 %	✓	
			201-581-5	85-01-8									
19		anthracene				0.21	mg/kg		0.19	mg/kg	0.000019 %	✓	
			204-371-1	120-12-7									
20		fluoranthene				4.93	mg/kg		4.472	mg/kg	0.000447 %	✓	
			205-912-4	206-44-0									
21		pyrene				4.99	mg/kg		4.526	mg/kg	0.000453 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				3.1	mg/kg		2.812	mg/kg	0.000281 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				2.78	mg/kg		2.521	mg/kg	0.000252 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				3.56	mg/kg		3.229	mg/kg	0.000323 %	✓	
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				1.4	mg/kg		1.27	mg/kg	0.000127 %	✓	
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				3.63	mg/kg		3.292	mg/kg	0.000329 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				2.16	mg/kg		1.959	mg/kg	0.000196 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.64	mg/kg		0.58	mg/kg	0.000058 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				1.86	mg/kg		1.687	mg/kg	0.000169 %	✓	
			205-883-8	191-24-2									
30		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
31		asbestos in identifiable pieces of suspected ACM				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
				ACM_FRAG									
32		barium { barium sulphide }				36	mg/kg	1.233	40.276	mg/kg	0.00403 %	✓	
		016-002-00-X	244-214-4	21109-95-5									
33		vanadium { divanadium pentaoxide; vanadium pentoxide }				21	mg/kg	1.785	34.002	mg/kg	0.0034 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.0354 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
ACM	Asbestos Containing Materials

Classification of sample: WS07-0.30-14/09/2023

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS07-0.30-14/09/2023
Sample Depth:
0.30 m
Moisture content:
7.1%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 7.1% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		21 mg/kg	1.32	25.758 mg/kg	0.00258 %	✓	
2	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		<0.5 mg/kg	2.775	<1.388 mg/kg	<0.000139 %		<LOD
3	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<1 mg/kg	3.22	<3.22 mg/kg	<0.000322 %		<LOD
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.4 mg/kg	1.142	0.424 mg/kg	0.0000424 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		18 mg/kg	1.462	24.44 mg/kg	0.00244 %	✓	
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<2 mg/kg	2.27	<4.54 mg/kg	<0.000454 %		<LOD
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		30 mg/kg	1.126	31.379 mg/kg	0.00314 %	✓	
8	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	24 mg/kg	1.56	34.778 mg/kg	0.00223 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
10	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		1.9 mg/kg	1.5	2.648 mg/kg	0.000265 %	✓	
11	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		18 mg/kg	2.976	49.769 mg/kg	0.00498 %	✓	
12	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<2 mg/kg	2.554	<5.108 mg/kg	<0.000511 %		<LOD
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		117 mg/kg	2.774	301.53 mg/kg	0.0302 %	✓	
14	TPH (C6 to C40) petroleum group			TPH		<42 mg/kg		<42 mg/kg	<0.0042 %		<LOD
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		benzene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
17		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
18		ethylbenzene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
19		xylene				<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
20		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
21		pH				8.1	pH		8.1	pH	8.1 pH		
				PH									
22		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
23		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
24		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
25		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
26		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
27		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
28		fluoranthene				0.54	mg/kg		0.502	mg/kg	0.0000502 %	✓	
			205-912-4	206-44-0									
29		pyrene				0.53	mg/kg		0.492	mg/kg	0.0000492 %	✓	
			204-927-3	129-00-0									
30		benzo[a]anthracene				0.28	mg/kg		0.26	mg/kg	0.000026 %	✓	
		601-033-00-9	200-280-6	56-55-3									
31		chrysene				0.27	mg/kg		0.251	mg/kg	0.0000251 %	✓	
		601-048-00-0	205-923-4	218-01-9									
32		benzo[b]fluoranthene				0.33	mg/kg		0.307	mg/kg	0.0000307 %	✓	
		601-034-00-4	205-911-9	205-99-2									
33		benzo[k]fluoranthene				0.13	mg/kg		0.121	mg/kg	0.0000121 %	✓	
		601-036-00-5	205-916-6	207-08-9									
34		benzo[a]pyrene; benzo[def]chrysene				0.29	mg/kg		0.269	mg/kg	0.0000269 %	✓	
		601-032-00-3	200-028-5	50-32-8									
35		indeno[123-cd]pyrene				0.28	mg/kg		0.26	mg/kg	0.000026 %	✓	
			205-893-2	193-39-5									
36		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
37		benzo[ghi]perylene				0.24	mg/kg		0.223	mg/kg	0.0000223 %	✓	
			205-883-8	191-24-2									
38		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
39		asbestos in identifiable pieces of suspected ACM				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
				ACM_FRAG									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
40		barium { barium sulphide }				43 mg/kg	1.233	49.274 mg/kg	0.00493 %	✓	
		016-002-00-X	244-214-4	21109-95-5							
41		vanadium { divanadium pentaoxide; vanadium pentoxide }				20 mg/kg	1.785	33.169 mg/kg	0.00332 %	✓	
		023-001-00-8	215-239-8	1314-62-1							
								Total:	0.0604 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
ACM	Asbestos Containing Materials

Classification of sample: WS07-1.10-14/09/2023

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS07-1.10-14/09/2023
Sample Depth:
1.10 m
Moisture content:
20.2%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 20.2% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		18	mg/kg	1.32	18.965	mg/kg	0.0019 %	✓	
2	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.1	mg/kg	2.775	2.436	mg/kg	0.000244 %	✓	
3	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.4	mg/kg	3.22	3.597	mg/kg	0.00036 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.3	mg/kg	1.142	0.273	mg/kg	0.0000273 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		28	mg/kg	1.462	32.657	mg/kg	0.00327 %	✓	
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<2	mg/kg	2.27	<4.54	mg/kg	<0.000454 %		<LOD
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		26	mg/kg	1.126	23.36	mg/kg	0.00234 %	✓	
8	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	24	mg/kg	1.56	29.874	mg/kg	0.00192 %	✓	
9	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<LOD
10	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		32	mg/kg	2.976	76.002	mg/kg	0.0076 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<2	mg/kg	2.554	<5.108	mg/kg	<0.000511 %		<LOD
12	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		87	mg/kg	2.774	192.598	mg/kg	0.0193 %	✓	
13	pH			PH		7.9	pH		7.9	pH	7.9 pH		
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
15	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
17		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
18		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
19		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
20		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-912-4	206-44-0									
21		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
30		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
31		asbestos in identifiable pieces of suspected ACM				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
				ACM_FRAG									
32		barium { barium sulphide }				90	mg/kg	1.233	88.59	mg/kg	0.00886 %	✓	
		016-002-00-X	244-214-4	21109-95-5									
33		vanadium { divanadium pentaoxide; vanadium pentoxide }				42	mg/kg	1.785	59.832	mg/kg	0.00598 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.053 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
ACM	Asbestos Containing Materials

Appendix A: Classifier defined and non GB MCL determinands

chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

anthracene (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

fluoranthene (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

pyrene (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

indeno[123-cd]pyrene (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **asbestos in identifiable pieces of suspected ACM** (CAS Number: ACM_FRAG)

Description/Comments: Enter the concentration of asbestos relative to the suspected ACM not the whole waste
Data source: WM3 v1, Chapter 3.1
Data source date: 31 May 2015
Hazard Statements: Carc. 1A; H350 , STOT RE 1; H372

- **barium sulphide** (EC Number: 244-214-4, CAS Number: 21109-95-5)

GB MCL index number: 016-002-00-X
Description/Comments:
Additional Hazard Statement(s): EUH031 >= 0.8 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - EUH031 >= 0.8 % hazard statement sourced from: WM3, Table C12.2

- **divanadium pentaoxide; vanadium pentoxide** (EC Number: 215-239-8, CAS Number: 1314-62-1)

GB MCL index number: 023-001-00-8
Description/Comments: Hazard statements H301, H330, H350 added by HazWasteOnline due to ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be Carc. 1B; H350. The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List]. Substance has therefore been self-classified.
Additional Hazard Statement(s): Carc. 1B; H350 , Acute Tox. 3; H301 , Acute Tox. 2; H330
Reason for additional Hazards Statement(s):
20 Sep 2022 - Carc. 1B; H350 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be Carc. 1B; H350. The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List]. Substance has therefore been self-classified.
28 Sep 2022 - Acute Tox. 3; H301 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be "Acute tox 3; H301". The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List]. Substance has therefore been self-classified.
28 Sep 2022 - Acute Tox. 2; H330 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be "Acute tox 2; H330". The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List]. Substance has therefore been self-classified.

- **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

- **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

- **salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

GB MCL index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds (edit as required)

beryllium {beryllium oxide}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: most common (non alloy) form, used in ceramics (edit as required)

boron {diboron trioxide; boric oxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass (edit as required)

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. (edit as required) Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history (edit as required)

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass (edit as required)

chromium in chromium(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight (edit as required)

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected. (edit as required)

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

barium {barium sulphide}

In the absence of significant chromium in samples, chromate species (barium chromate) not possible or very unlikely; barium sulphide selected as applicable

vanadium {divanadium pentaoxide; vanadium pentoxide}

worst case / most likely species

molybdenum {molybdenum(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide] (edit as required)

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2023.306.5795.10723 (02 Nov 2023)
HazWasteOnline Database: 2023.306.5795.10723 (02 Nov 2023)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1stEditionv1.2.GB-Oct2021
CLP Regulation - Regulation1272/2008/ECof16December2008
1st ATP - Regulation790/2009/ECof10August2009
2nd ATP - Regulation286/2011/ECof10March2011
3rd ATP - Regulation618/2012/EUof10July2012
4th ATP - Regulation487/2013/EUof8May2013
Correction to 1st ATP - Regulation758/2013/EUof7August2013
5th ATP - Regulation944/2013/EUof2October2013
6th ATP - Regulation605/2014/EUof5June2014
WFD Annex III replacement - Regulation1357/2014/EUof18December2014
Revised List of Waste 2014 - Decision2014/955/EUof18December2014
7th ATP - Regulation2015/1221/EUof24July2015
8th ATP - Regulation(EU)2016/918of19May2016
9th ATP - Regulation(EU)2016/1179of19July2016
10th ATP - Regulation(EU)2017/776of4May2017
HP14 amendment - Regulation(EU)2017/997of8June2017
13th ATP - Regulation(EU)2018/1480of4October2018
14th ATP - Regulation(EU)2020/217of4October2019
15th ATP - Regulation(EU)2020/1182of19May2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK:2020No.1567of16thDecember2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version1.1of09June2021

APPENDIX 10 – DISCOVERY STRATEGY

There is the possibility that sources of contamination may be present on the site which were not identified during this investigation. Should contamination be identified or suspected during any phase of the development (most likely groundworks) this should be assessed accordingly by implementing the following:

Immediate action

All works in the vicinity of the suspected contaminated material to cease; and

Attendance by a suitably experienced Environmental Engineer to assess the suspected contaminated material and if necessary, sample for characterisation.

Likely steps (to be confirmed following initial assessment)

If it is not feasible to keep the suspected material in situ, then these should be removed and temporarily stored in a fenced area, whilst characterisation is undertaken. The storage area should be secured and contained to ensure that potential contamination does not get moved and affect other areas of the site. Depending upon the amounts of material under consideration, this could be either a skip or a lined area;

If the suspected contaminated material is dry or is suspected to contain asbestos, the material should be covered to prevent airborne contamination in the form of dust or fibres;

Upon characterisation of the suspected contamination, if assessed to be impacted, the material may be either treated or removed from site following suitable waste management licensing or obtaining appropriate consents or agreements with relevant Regulatory Authorities;

All contaminated material to be removed from site, should be disposed of at a suitably licensed facility / removed by a suitably licensed waste handler;

Following excavation and removal, any open excavations or service trenches should be backfilled with soil that is suitable and certified as 'clean', (this may be either site-won or imported); and

Validation of backfilling and remedial works will likely be required.

The Discovery Strategy is applicable during all phases of the development.

GEOSPHERE ENVIRONMENTAL

Ec Ecology.

Fr Flood Risk.

Ge Geotechnical.

En Environmental.

Kw Knotweed.

GEOSPHERE ENVIRONMENTAL LTD

Brightwell Barns, Ipswich Road, Brightwell, Suffolk, IP10 0BJ

[redacted] | **W**: geosphere-environmental.co.uk