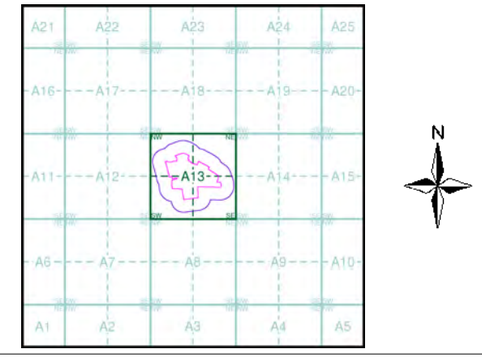
Geo-Environmental
London
Published 1985
Source map scale - 1:25,000

These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use.
They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)

TQ17 1985 1:25,000
TQ27 1985 1:25,000
TQ16 1985 1:25,000
TQ26 1985 1:25,000

Russian Map - Slice A



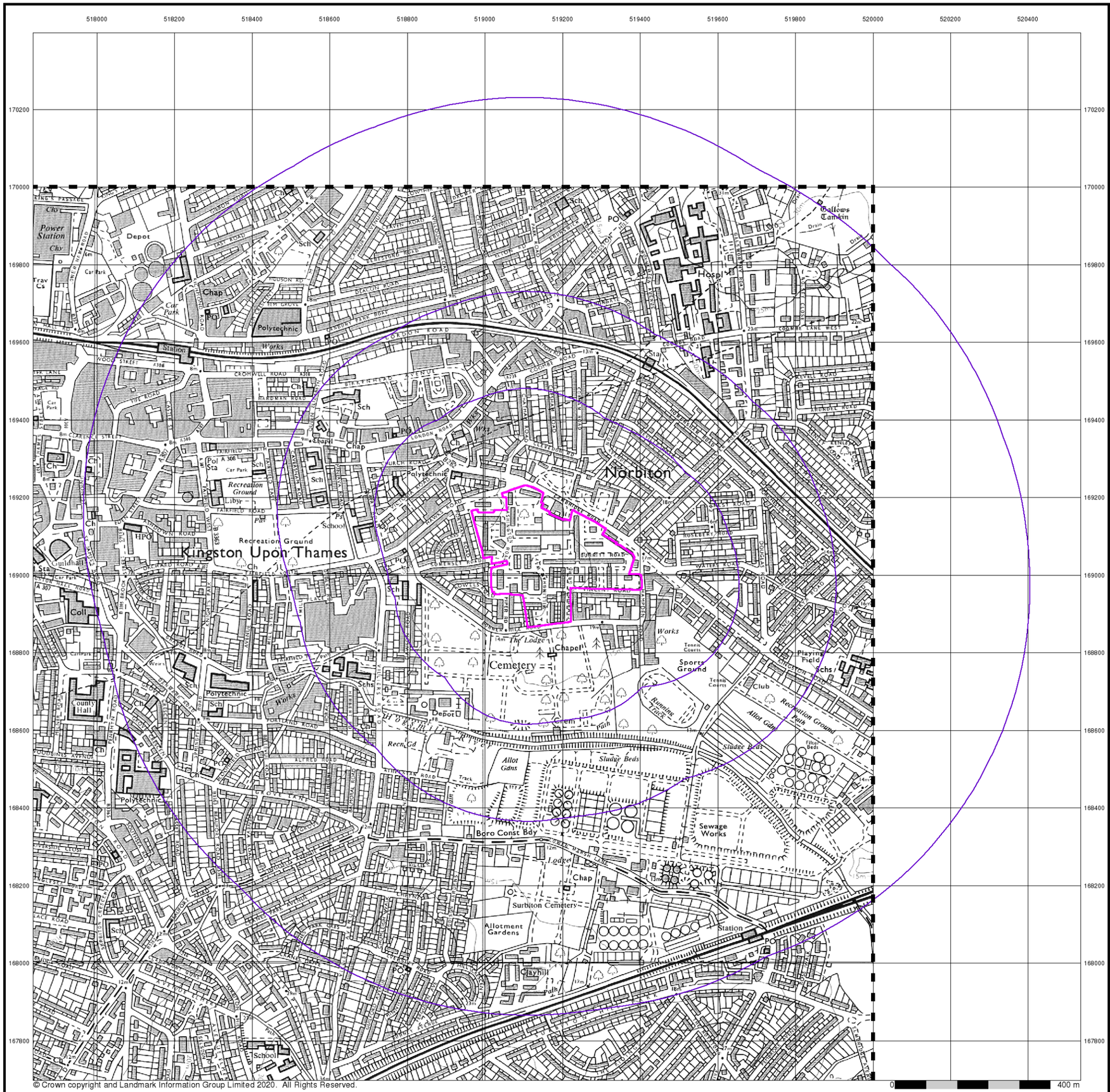
Order Details

Order Number:	255509049_1_1
Customer Ref:	GE18530
National Grid Reference:	519170, 169040
Slice:	A
Site Area (Ha):	8.65
Search Buffer (m):	1000

Site Details

Land off Cambridge Road, Kingston upon Thames, KT1 3HY

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Geo-Environmental

Ordnance Survey Plan

Published 1987

Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

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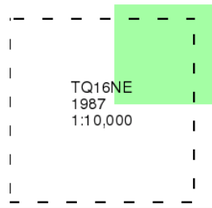
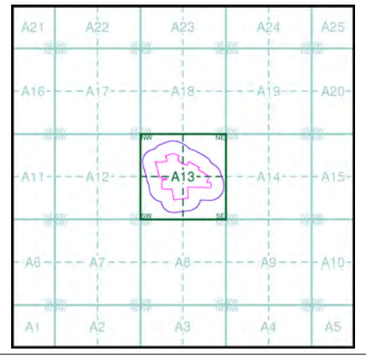


Historical Map - Slice A



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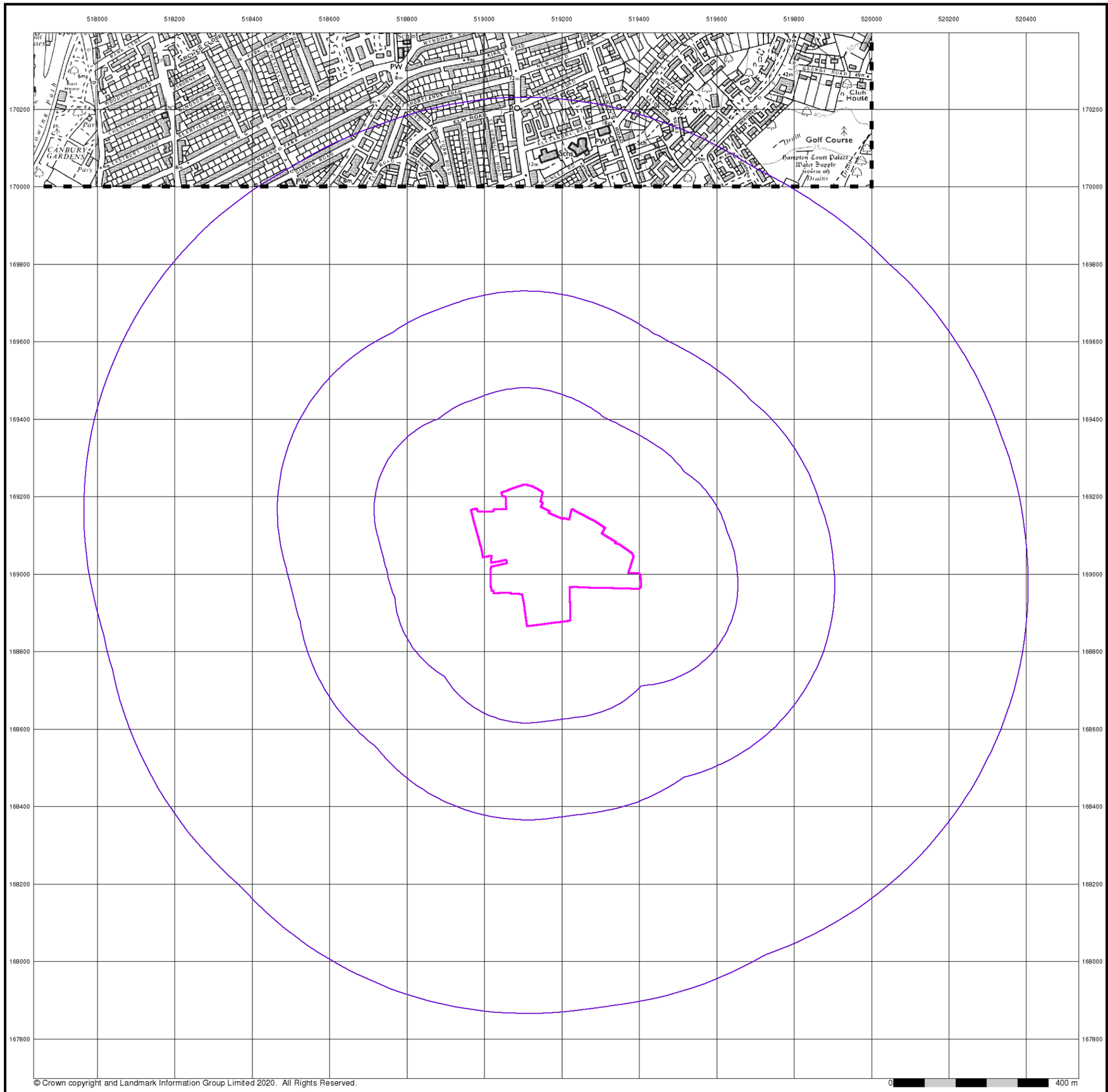

Geo-Environmental

Ordnance Survey Plan

Published 1992

Source map scale - 1:10,000

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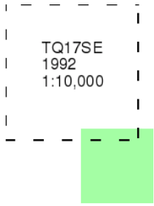
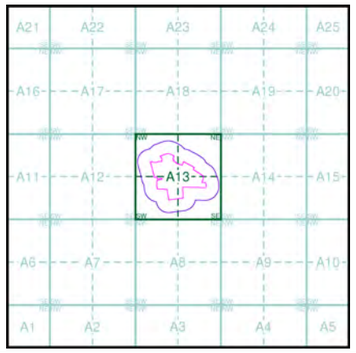


Historical Map - Slice A



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0 400 m

Geo-Environmental
10k Raster Mapping
Published 1999
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

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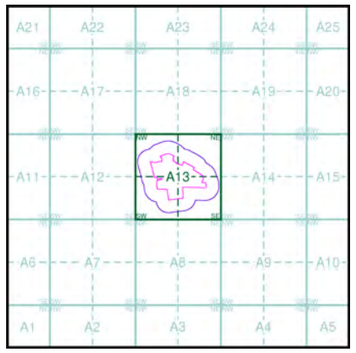
TQ16NE 1999 1:10,000	TQ26NW 1999 1:10,000

Historical Map - Slice A



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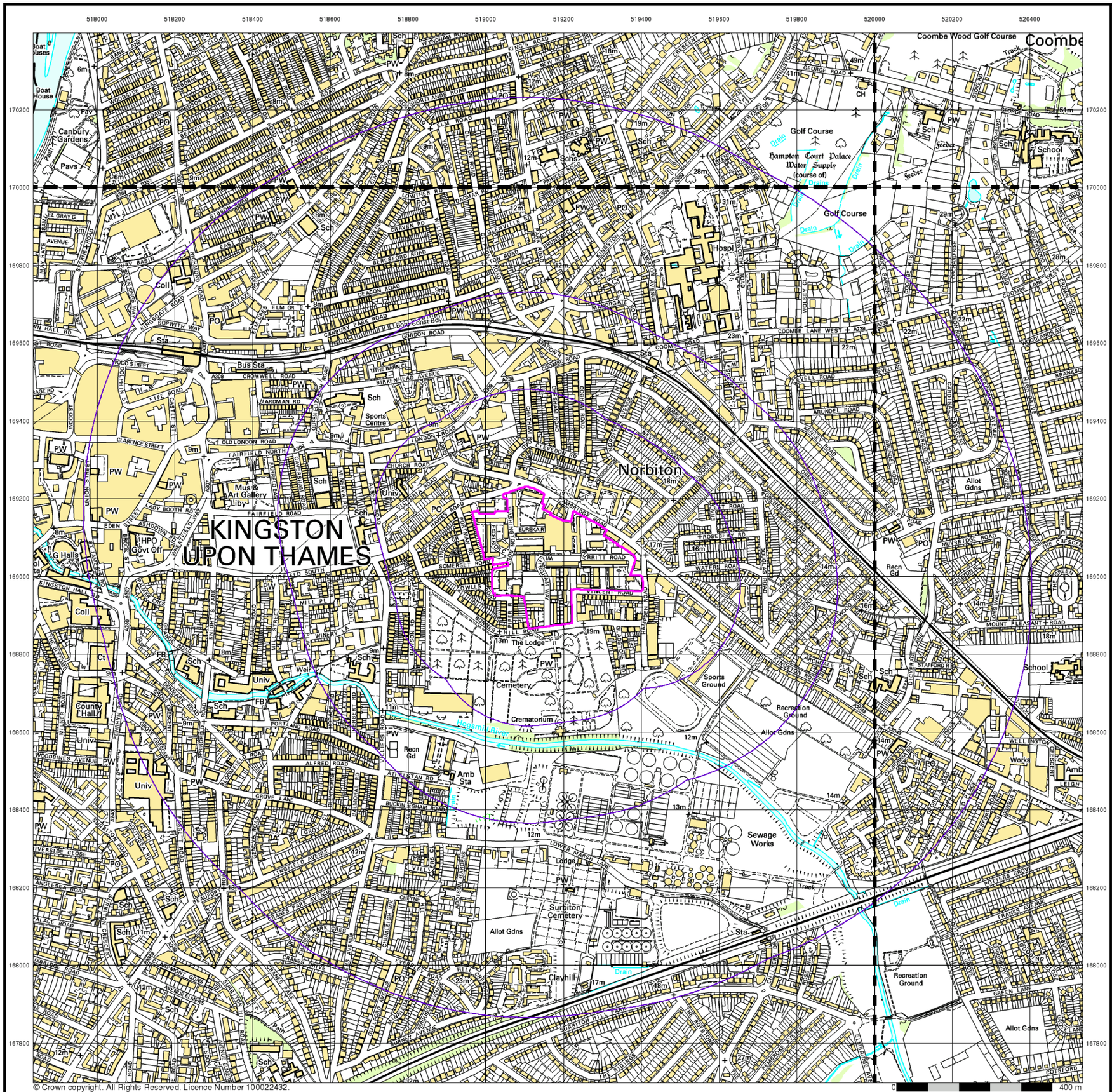

Geo-Environmental
10k Raster Mapping
Published 2006
Source map scale - 1:10,000

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Map Name(s) and Date(s)

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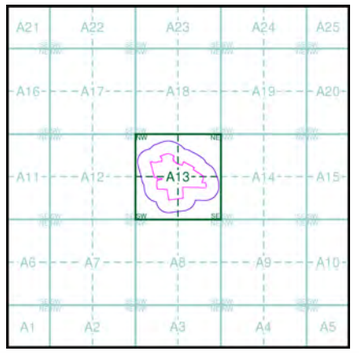
TQ16NE 2006 1:10,000	TQ26NW 2006 1:10,000

Historical Map - Slice A



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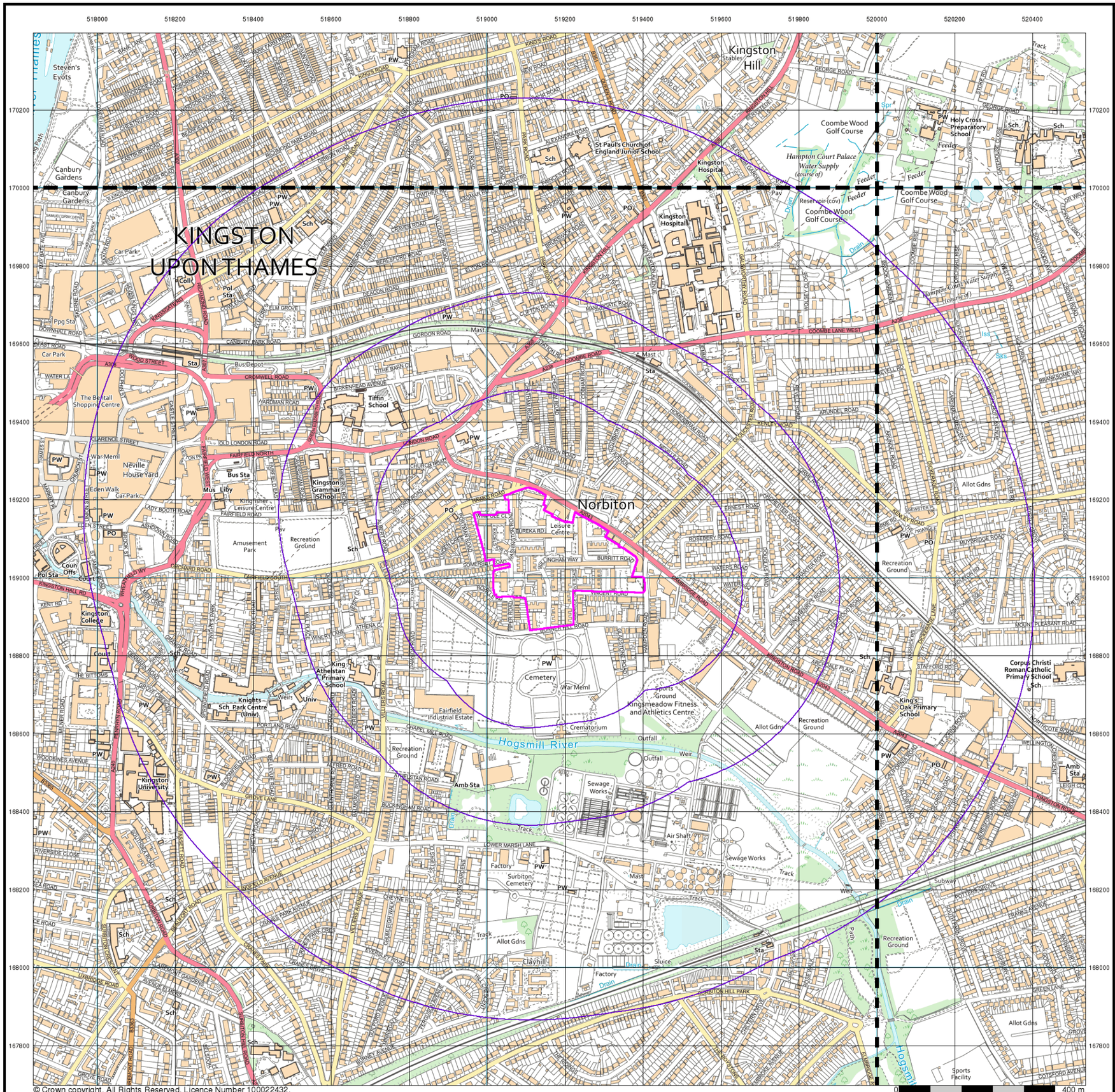


Geo-Environmental

VectorMap Local

Published 2020

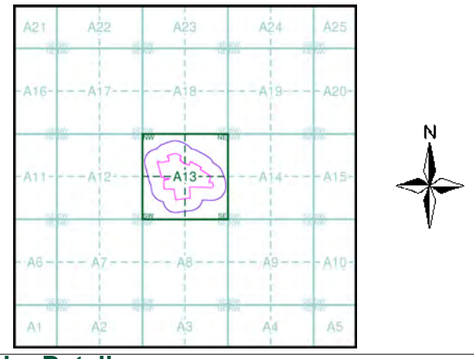
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities),1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)

TQ17SE 2020 Variable	TQ27SW 2020 Variable
TQ16NE 2020 Variable	TQ26NW 2020 Variable

Historical Map - Slice A



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Geo-Environmental

GROUND INVESTIGATION REPORT

for the site at

PHASE 1, CAMBRIDGE ROAD,

KINGSTON UPON THAMES,

KT1 3LA

on behalf of

CAMBRIDGE ROAD (RBK) LLP

Report:	**GROUND INVESTIGATION REPORT**
Site:	**PHASE 1, CAMBRIDGE ROAD, KINGSTON UPON THAMES, KT1 3LA**
Client:	**CAMBRIDGE ROAD (RBK) LLP**
Date:	**6th October 2020**
Reference:	**GE18530/GIR/OCT20**
Version:	**2.0**
Prepared by:	
	LUCY HOLFORD, Bsc (Hons), FGS **CONSULTING ENGINEER**
Reviewed by:	
	KATIE BRAYNE CSci, BSc (Hons), MSc, FGS, MIEnvSc **REGIONAL MANAGER - EAST**
Authorised by:	
	JONATHAN TINGLEY CEnv, BEng (Hons), MSc, FGS, MIEnvSc **TECHNICAL DIRECTOR**

Geo-Environmental Services Limited
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AMENDMENT RECORD

Revision ref.	Date	Reasons for amendment	Author	Reviewed By	Authorised By
1.0	06/10/20	First issue	LH	KB	JT
2.0	29/10/20	Second Issue – client name change - Cambridge Road (RBK) LLP and updated Phasing drawing.	LH	KB	JT

CONTENTS

FIGURES

APPENDICES

EXECUTIVE SUMMARY		
Site Details	Site Address	Cambridge Road, Kingston Upon Thames, KT1 3LA
	National Grid Reference	519170, 169040
	Form of Development	It is proposed to regenerate the site by replacing the current housing stock with new purpose built reinforced concrete framed buildings, which range in height from three to thirteen storeys.
	Scope of works	An intrusive investigation in Phase 1 to confirm the ground conditions and to support the development of geo-environmental assessments of the site in relation to the proposed residential development.
Encountered Conditions	Ground Conditions	The ground conditions comprised Made Ground overlying Kempton Park Gravel/Langley Silt Member and London Clay at depth.
	Groundwater	Groundwater was recorded at one location (WS05) at 2.9m bgl within the Kempton Park Gravel at the time of the investigation. Four standpipes were installed during the investigation in WS01, WS07, WS10 and WS13. During the single return monitoring visit undertaken on 17th September 2020, groundwater was recorded at depths of between 2.59m and 2.96m bgl. WS01 was recorded as dry.
Environmental Considerations	Human Health	Made Ground soils at the site have been found to be impacted by lead, and locally, Arsenic, Benzo(a)pyrene and PCB contamination. The sample from WS14 at 0.50mbgl recorded asbestos in the form of Amosite (A.I.B). Remedial measures such as the implementation of a clean soil cover system within the soft landscaped areas proposed are likely to be required for the protection of end users.
	Groundwater	Based on the results no remedial measures are considered necessary with respect to groundwater at this stage.
	Ground Gas	A single ground gas monitoring visit was conducted on 17th September 2020 and marginally elevated carbon dioxide exceeded the CS1 limiting value check (5%). It is recommended additional visits are completed in line with best practice to fully characterise the ground gases on the site.
	Built Environment	The results of the chemical testing indicate that barrier pipe is likely to be required for the protection of potable water supplies. It is recommended that the results of the chemical testing be forwarded to the water utility company to confirm their requirements on pipe material.
	Waste Disposal	The chemical test results were initially assessed using the Atkins CatWaste tool, which indicated that the Made Ground soils had potentially hazardous properties based on the lead concentrations at four locations. It should also be noted further testing and sampling should include quantification of any asbestos identified to aid classification for disposal. In addition to the above, four samples of Made Ground soils were submitted to the laboratory for Waste Acceptance Criteria (WAC) testing. The results indicated that the Made Ground soils tested would likely be suitable for disposal at a landfill licenced to accept stable non-reactive hazardous waste on account of elevated pH, Total Organic Carbon, and antimony within the leachate.

		Natural uncontaminated soil arisings of the Kempton Park Gravel/Langley Silt Member and London Clay Formation are likely to be classified as 'inert' waste. However, if there is any visual or olfactory evidence of contamination encountered during works, further testing will be required to confirm this assessment.

Further Action:

- Additional ground gas monitoring in line with best practice.
- Additional investigation post demolition beneath the building footprints.
- Remediation Strategy and Verification Plan (RSVP) will be required by the Local Authority.
- Geotechnical investigation for foundation design parameters.

This Executive Summary is intended to provide a brief summary of the main findings and conclusions of the investigation. For further information, reference should be made to the main report ref. GE18530/GIR/OCT20

1.0 INTRODUCTION

1.1 General

Geo-Environmental Services Limited was instructed by CTP Consulting Ltd on behalf of Cambridge Road (RBK) LLP to undertake an investigation into the geo-environmental factors pertaining to Phase 1, Cambridge Road, Kingston Upon Thames, KT1 3LA (National Grid Coordinates at centre: 519170, 169040), herein referred to as the 'site'. The site's location is presented in Figure 1.

A desk study report for the wider Masterplan area (Phases 1-5) was undertaken by Geo-Environmental in September 2020, referenced GE18530-DSR-SEPT20. A summary of the risks identified by the desk study can be found within section 2.1 of this report.

1.2 Form of Development

It was understood that at the time of writing the Phase 1 development comprises the demolition of existing residential properties and the construction of approximately three residential apartments blocks ranging between 3 and 13 storeys in height, with communal gardens, car parking, access roads and associated infrastructure.

1.3 Objectives

The analysis comprised an intrusive investigation into the geo-environmental conditions pertaining to the site. Analysis for geotechnical parameters was outside the scope of works.

In terms of the environmental investigation, a Preliminary Risk Assessment (PRA) was undertaken within the Desk Study in accordance with CLR11, in order to provide a basis for the scope and rationale of the subsequent Phase II environmental investigation. The objective of the risk assessments was to evaluate the risks posed to the proposed redevelopment, adjacent land uses, and the wider environment, in the context of the development options, immediate liabilities under the Environment Act 1990, and risks posed to Controlled Waters under the Water Resources Act.

1.4 Site Description

The site was located at National Grid Reference 519170, 169040 and extended to approximately 8.86ha in area. The topography of the site slopes gently down from the south east boundary towards the north west with an overall fall in level of c.7.5m across the whole site.

The northern half of the site was mostly occupied by tower blocks and 4-5 storey blocks of apartments whereas the southern half was mostly occupied by terraced housing. For ease of reference, the site has been split into the northern and southern halves for the description.

Northern Portion

At the time of the site walkover in September 2020, the northern part of the site was occupied by four 16 storey tower blocks interspersed with numerous five storey blocks of apartments. The style of the buildings indicated they were most likely constructed in the 1960s.

Between the apartment buildings there was a mix of soft and hard landscaping with several play areas noted. The limited soft landscaping comprised open lawned amenity space which included several mature trees between many of the lower level apartment blocks. Some of the apartment blocks were noted to have garages on the ground floor running along the length of the building. Most of the lower rise apartment blocks were joined by pedestrian bridges.

A large hotel (Bull and Bush) with a hotel garden and parcel locker facility was noted within the north west of the site.

Further east the buildings were arranged in rows trending north-south with the first row being an apartment block and the next few rows were terraced houses with several small blocks of six apartments.

Southern Portion

The southernmost portion of the site entirely comprised terrace properties with areas of both soft and hard landscaping. Many mature and semi mature trees were noted in the landscaped areas. The western portion of the site was occupied by relatively new terraced houses as well as a new apartment block known as Ely Court. West of Ely Court was a community centre (Piper Community Hall) and carpark. The western portion of site comprised an additional apartment block with a series of shops at ground level. the shops appeared predominantly disused with the exception of the housing office.

The site was bounded to the south by the Kingston-upon-Thames cemetery, to the east and west by a continuation of residential properties, to the north by Cambridge Road and then beyond a line of shops with residential properties.

1.5 Standards

Where practicable, the ground investigation and subsequent environmental assessments were undertaken in accordance with the following documents and guidance:

- British Standards Institute - Code of Practice for Site Investigations (BS5930:2015).
- British Standards Institute - Code of Practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings (BS8485:2015+A1:2019).
- British Standards Institute - Eurocode 7 – Geotechnical Design - Parts 1 & 2 (BS EN1997-1:2004 & BS EN1997-2:2007).
- British Standards Institute - Guidance on investigations for ground gas. Permanent gases and Volatile Organic Compounds (VOCs) (BS8576:2013).
- British Standards Institute - Investigation of Potentially Contaminated Sites - Code of Practice (BS10175:2011+A1:2013).
- British Standards Institute - Soils for Civil Engineering Purposes (BS1377:1990).
- British Standards Institute - Specification for Topsoil and Requirements for Use (BS3882:2015).
- Building Research Establishment - The Performance of Building Materials in Contaminated Land (BRE255) (1994).
- Construction Industry Research and Information Association - Assessing risks posed by hazardous ground gases to buildings (C665) (2007).
- Department for Communities and Local Government - National Planning Policy Framework (2012).
- Department for Environment Food and Rural Affairs and CL:AIRE - Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination (SP1010) (2014).
- Department for Environment Food and Rural Affairs and Environment Agency - Model Procedures for the Management of Contaminated Land (CLR11) (2004).
- Department of Environment - Industry Profiles (1995 - 1996).
- Environment Agency - Guidance for waste destined for disposal in landfills (2006).
- Environment Agency - Guidance on Requirements for Land Contamination Reports (2005).

- National House Building Council, Environment Agency & Chartered Institute of Environmental Health - Guidance for the Safe Development of Housing on Land Affected by Contamination (R&D Publication 66) (2008).
- National House Building Council - Guidance on evaluation of development proposals on sites where methane and carbon dioxide are present (10627-R01[04]) (2007).
- National House Building Council – Standards, Chapter 4.1 Land Quality - Managing Ground Conditions (2020).

1.6 Conditions

This report does not purport to be a "Geotechnical Design Report" as defined in Clause 2.8 of Eurocode 7 (Geotechnical Design BS EN 1997-1:2004) and some of the data used may not be fully compliant with that design code. It is considered necessary that further detailed ground investigations would be required to facilitate the detailed geotechnical assessment.

The data collected from the investigations have been used to provide an interpretation of the environmental conditions pertaining to the site. The recommendations and opinions expressed in this report are based on the data obtained. Geo-Environmental takes no responsibility for conditions that either have not been revealed in the available records, or that occurs between or under points of physical investigation. Whilst every effort has been made to interpret the conditions, such information is only indicative, and liability cannot be accepted for its accuracy.

It should be noted that in particular the concentrations and levels of mobile liquid and gaseous materials are likely to vary with time. The results obtained may therefore only be representative of the conditions at the time of sampling. This report should not be taken as any guarantee that a site is free of hazardous or potentially contaminative materials.

Information contained in this report is intended for the use of the Client, and Geo-Environmental can take no responsibility for the use of this information by any party for uses other than that described in this report. Geo-Environmental makes no warranty or representation whatsoever express or implied with respect to the use of this information by any third party. Geo-Environmental does not indemnify the Client or any third parties against any dispute or claim arising from any finding or other result of this investigation report or any consequential losses.

Assessment criteria or other parameters developed for the evaluation of contamination on this site are based on a number of assumptions regarding exposure and toxicology, and exposure to contaminants and levels of adverse effects may therefore vary. Whilst every care and expertise has been employed in the development of such criteria, no liability is accepted in this respect. Other criteria or guidance on the development of assessment criteria may be published in the future, and no liability is accepted in this respect.

2.0 PRELIMINARY RISK ASSESSMENT SUMMARY

Geo-Environmental was not made aware of any previous investigation at the site.

2.1 Preliminary Risk Assessment

A summary of the preliminary risk assessment (taken from ref: GE18530-DSR-SEPT20) is presented in Table 2.1 overleaf.

The desk study process identified plausible potential pollutant linkages that exist in relation to the proposed redevelopment of the site. The risks relate to the potential for contamination within any near surface soils or Made Ground, potential for ground gases and aggressive ground conditions. The potential pollutant linkages have been preliminarily assessed as falling into moderate to low, low and very low risk ratings.

For further details please see the Desk Study Report ref: GE18530-DSR-SEPT20.

Potential Source/Media	Potential Receptors	Potential Pathways	Probability	Consequence	Risk and Justification
Shallow soils and shallow Made Ground (on and off site)	End users	Direct contact and inhalation of soil derived dust	Likely	Mild	**Moderate to Low** End users likely to come into contact with soils via direct contact in areas of soft landscaping/gardens on the proposed residential development, albeit that gross contamination is not anticipated based on desk study information. Soft landscaping would be completed with uncontaminated soils in the near surface root zone.
	Soft Landscaping	Root Uptake	Likely	Mild	**Moderate to Low** The proposed development is likely to include areas of soft landscaping including private gardens. However, landscaping would be completed with uncontaminated soils in the near surface root zone and no evidence of harm to the existing vegetation was observed.
	Adjacent land users	Direct contact	Unlikely	Minor	**Very Low** Adjacent site users are unlikely to come into contact with soils within areas of proposed soft landscaping.
	Water supply pipes	Direct contact	Likely	Mild	**Moderate to Low** Water supply pipes could come into contact with impacted soils depending upon depth of installation and extent of soil impact.
	Buildings and infrastructure	Direct contact	Likely	Minor	**Low** Foundations and utilities will be placed within potentially aggressive soils (e.g. sulphate). However, the consequence is anticipated to be minor.

Potential Source/Media	Potential Receptors	Potential Pathways	Probability	Consequence	Risk and Justification
	Groundwater	Vertical migration	Low	Mild	**Very Low** Shallow groundwater (<5m bgl) or perched groundwater may be present within more granular parts of the Head Deposits. The strata beneath the site are classified as an Unproductive Aquifer and is outside any Source Protection Zones.
Ground Gases and Vapours	End users	Inhalation	Low	Medium	**Moderate to Low** Ingress of hazardous ground gas into buildings could occur where ground gases are identified on site. This is only considered to present a risk from on-site sources should a plausible source be identified. However, the possible presence of deep made ground on-site could also be another source of ground gas.
	Adjacent land users	Inhalation	Unlikely	Mild	**Low** It is considered to be unlikely that adjacent land users will come into contact with ground gases and vapours originating on site. Should ground gases and vapours be identified, on-site service routes should be constructed in line with best practice to prevent the creation of preferential pathways off site. In addition, if gross contamination is identified that could represent a source of gas/vapour which could impact adjacent land users then remedial action would be required to reduce, remove or otherwise mitigate the source or break the exposure pathway(s).
	Buildings and infrastructure	Gas accumulation and potential	Unlikely	Minor	**Very Low**

Potential Source/Media	Potential Receptors	Potential Pathways	Probability	Consequence	Risk and Justification
		explosion of flammable gases			Foundations and utilities will be constructed in/through Made Ground soils (if present). Protection measures, if required, to protect end users would also serve to reduce risks to buildings.
Naturally occurring aggressive ground conditions	End users	Direct contact and inhalation of soil derived dust	Unlikely	Minor	**Very Low** No naturally occurring potential sources which could harm human health have been identified.
	Soft Landscaping	Root Uptake	Unlikely	Minor	**Very Low** Gardens and soft landscaping areas are proposed but are unlikely to be affected by naturally occurring aggressive ground conditions. Current vegetation around the site appeared in good condition.
	Adjacent land users	Direct contact	Unlikely	Minor	**Very Low** No potential sources which could harm human health have been identified.
	Water supply pipes	Direct contact	Unlikely	Minor	**Very Low** No potential sources which could harm human health have been identified.
	Buildings and infrastructure	Direct contact	Likely	Minor	**Low** Foundations will be placed within soils which may be an aggressive environment for concrete.

Table3.1 Preliminary Risk Assessment

3.0 SITE INVESTIGATION SCOPE & STRATEGY

3.1 Scope of Works

In summary, the following scope of works for the intrusive investigation was agreed with the Client:

- Construction of 18No. dynamic sampler boreholes to depths of up to 4m bgl, depending on drilling conditions, using a self-propelled track mounted rig.
- Supervision by a UXO engineer during the drilling of the boreholes.
- Installation of 4No. groundwater and ground gas monitoring wells to depths of 3m.
- One ground gas monitoring (spot monitoring) visit.
- Geochemical laboratory testing on soils and water for a suite of commonly occurring brownfield contaminants and asbestos screening
- Waste categorisation testing on soil samples to aid the assessment of likely waste classification of surplus soils.
- Waste Acceptance Criteria (WAC) testing on selected samples representative of soils to be removed from site for disposal as waste.

Where a site has been subject to any form of development, there is the potential for asbestos to be present within the fabric of buildings, entrained within hardstanding layers, as aggregate layers, discrete pockets, localised burial or the like. As such, where testing for asbestos forms part of an assessment, the absence of asbestos in samples should not be presumed to guarantee the absence of asbestos elsewhere within that site.

3.2 Investigation Strategy

Tables 3.1 summarises the strategy of the environmental investigation.

Environmental Area of Concern	Investigation	Position
Made Ground & Near Surface Soils	Exploratory holes located across the site, coupled with sampling and laboratory analysis.	All
Sources of ground gases and vapours	Monitoring standpipes and return ground gas monitoring.	WS01, WS07, WS10 and WS13

Table 3.1 Summary of Environmental Investigation Strategy

Based on the agreed scope of works, it was possible to make an appraisal for each area of environmental concern identified as part of the investigation.

Soil samples were collected and placed into amber jars and cool boxes on site for transit to the office, where they were stored under chilled conditions (<4^{o}C) prior to final transportation in cool boxes to the laboratory by their in-house courier. Both the geotechnical and contamination testing were undertaken by UKAS accredited laboratories. Contamination testing of soil samples was also undertaken in accordance with accredited MCerts protocols. Samples were stored in temperature controlled conditions from sampling until receipt at the laboratory from which time sample preparation and storage was determined by testing requirements and in line with laboratory's protocols.

4.0 ENCOUNTERED CONDITIONS

A factual record of the conditions encountered during the physical investigation of the site is presented in the following sections.

For further details of the encountered ground conditions, reference should be made to the engineer's logs and cross sections presented in Appendix A, the chemical testing results in Appendix B, ground gas monitoring and assessment sheet in Appendix C and CATWASTE assessment in Appendix D.

The physical ground investigation works were undertaken on 8th - 10th September 2020.

Unless stated otherwise, all depths are reported as metres below ground level (m bgl).

4.1 Ground Conditions

British Geological Survey geological mapping indicated the geology of the site to comprise Langley Silt Member overlying London Clay Formation in the extreme western portion of the site. The Langley Silt could potentially be underlain by River Terrace Deposits. There is also likely to be a mantle of Made Ground across the natural strata at the site from previous development phases.

The investigation generally confirmed the anticipated published geology underlying the site albeit the extent of the Langley Silt Member appeared to extend further east than anticipated. In addition, a more granular sequence of soils was encountered at many locations beneath the Langley Silt Member and this has been interpreted as representing the Kempton Park Gravel. A generalised summary of the encountered ground conditions is presented in Table 4.1.

Top (m bgl)	Base (m bgl)	Geology	Position
0.00	0.15 – 0.30	**TOPSOIL:** Brown silty gravelly sand with frequent brick and concrete and occasional rootlets and tarmacadam. Gravel comprises fine to medium sub-angular to sub-rounded flint and brick.	All (Excluding WS07)
0.15 – 0.30	0.70– 2.15	**MADE GROUND:** Brown clayey gravelly silty sand with occasional carbonaceous inclusions, brick, chalk and metal, and rare glass. Gravel comprises fine to medium sub-angular to sub-rounded.	All (Excluding WS12)
0.30 – 2.05	0.95-2.40	**LANGLEY SILT MEMBER:** Orangish brown and brown mottled sandy CLAY with occasional rootlets, rare fine to medium sub-angular to sub-rounded flint gravel.	WS01, WS03, WS04, WS05, WS07, WS08a, WS09, WS11, WS12, WS14, WS17, WS18
0.70- 2.40	1.40 - 2.85	**KEMPTON PARK GRAVEL:** Light brown and brown mottled clayey fine to medium SAND with rare fine to medium sub-angular to subrounded flint gravel.	WS01, WS04, WS05, WS07, WS08a, WS10, WS11, WS13, WS15, WS16, WS17, WS18

0.95 – 2.85	3-4+	**LONDON CLAY:** Brown and grey mottled silty CLAY with occasional calcareous inclusions and roots.	WS01, WS03, WS04, WS05, WS07, WS08a, WS09, WS10, WS11, WS12, WS13, WS15, WS16, WS17, WS18

Table 4.1 Summary of Ground Conditions

For further details of the ground conditions encountered, reference should be made to the borehole logs and sections presented in Appendix A.

4.2 Groundwater

Groundwater was encountered within WS05 at 2.85m bgl within the Kempton Park Gravel, during the site investigation.

Monitoring wells were installed within WS01, WS07, WS10 and WS13. During return monitoring visit undertaken on 17th September 2020, water depths were recorded between 2.59m bgl and 2.95m bgl. WS01 was recorded as dry (>2.88m bgl). For the full results, refer to Appendix C.

It should be noted that changes in groundwater levels do occur for a number of reasons, including seasonal effects and variations in drainage. Such fluctuations may only be recorded by the measurement of the groundwater level within a standpipe or piezometer.

4.3 Ground Gases & Vapours

Ground gas monitoring was also undertaken on 17th September 2020 within standpipes installed in WS01, WS07, WS10 and WS13. During the monitoring methane concentrations was recorded at 0.0%. Carbon dioxide concentrations ranged between 0% and 7.5% with oxygen concentrations ranging between 14.9% and 21.7%. Borehole gas flow was recorded as 0.1l/hr. A maximum VOC concentration of 1.6ppm was recorded. Atmospheric pressure was recorded at 1029mb during the duration of the monitoring visit. A summary of the results is shown in Table 4.2. For the full results, refer to Appendix C.

Location	Methane (%)		Carbon Dioxide (%)		Oxygen (%)		VOC (ppm)	Max Steady Flow (l/hr)
	Min	Max	Min	Max	Min	Max		
WS01	0.0	0.0	0.0	3.6	16.3	21.0	0.1	0.1
WS07	0.0	0.0	0.0	4.3	17.4	21.0	0.2	0.1
WS10	0.0	0.0	0.0	7.5	14.9	21.7	0.1	0.1
WS13	0.0	0.0	0.0	2.2	19.2	21.4	1.6	0.1

Table 4.2 Summary of Ground Gas Results

4.4 Obstructions

A pipe and cables were encountered during excavation of the service inspection pits for WS02, WS08 and WS15 and subsequently the locations were moved to avoid these obstructions. However, WS02 and WS02a refused on brick and concrete at 0.8m bgl. Additionally, a void was encountered in WS06 and the borehole was

abandoned at 2.15m bgl. Due to limited access, WS14 was hand dug to 0.9m bgl and then terminated. All other window sample borehole reached the targeted depths of 3-4m

Based on the previous form of development within the site the presence of artificial obstructions elsewhere on site should not be discounted.

4.5 Geochemical Analysis

In order to assess the general chemical quality of the strata encountered, samples of soils recovered from the exploratory holes were submitted for analysis for a range of potential contaminants selected on the basis of the findings of the desk study and supported by the joint National House Building Council (NHBC), Environment Agency (EA) and Chartered Institute of Environmental Health (CIEH) publication, '*Guidance for the Safe Development of Housing on Land Affected by Contamination*' (2008).

Table 4.3 outlines the number of samples scheduled for specific analysis. The full screening suite is a comprehensive suite of common zootoxic and phytotoxic elements based upon determinants listed within the above guidance including total petroleum hydrocarbons and asbestos screens.

Strata	Full Screening Suite	DRO and PRO	WAC Analysis
Topsoil	**6**	**1**	**-**
Made Ground	**15**	**3**	**4**
Langley Silt Member	**3**	**2**	**-**

Table 4.3 Summary of Laboratory Analysis

Three samples of groundwater were obtained during the return monitoring visit on 17th September. Only limited volumes of water could be retrieved from the standpipes in WS10 and WS07 and consequently a reduced suite of analysis excluding TPH CWG and PAH was run on these samples.

Soil and groundwater samples were placed into plastic containers for general inorganic analysis and into amber jars for organic analysis. Samples were stored in temperature controlled conditions from sampling until receipt at the laboratory from which time sample preparation and storage was determined by testing requirements and in line with the laboratory's protocols.

5.0 ENVIRONMENTAL CONSIDERATIONS

A Generic Quantitative Risk Assessment (GQRA) incorporating the results of the ground investigation was undertaken in accordance with CLR11, the findings of which are presented in the following sections.

5.1 Outline Risk Assessment

A number of plausible pollutant linkages were identified by the desk study (ref: GE18530-DSR-SEPT20).

5.2 Soil Contamination vs. End Users

Given the sensitivity of the proposed development, soil samples were submitted to a UKAS accredited laboratory for general chemical screening including common zootoxic and phytotoxic elements and asbestos screening.

The presence of a possible contaminant does not necessarily imply that a site or area is contaminated or that there is any unacceptable risk to human health. A Preliminary Quantitative Risk Assessment has been undertaken in accordance with CLR11, in order to evaluate any unacceptable risks posed to human health with respect to the proposed redevelopment. It should be noted that this assessment is protective of the chronic long-term effects of contaminants, which is also likely to be protective of any possible immediate acute effects.

A quantitative risk assessment has been undertaken by comparing the results of the laboratory chemical testing of shallow soils against Tier 1 screening criteria in the first instance. These criteria comprise the Atkins ATRISK soil screening values (SSVs), the Suitable for Use Levels (S4ULs) published by LQM (Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3453. All rights reserved) and the Category 4 Screening Levels (C4SLs) published by DEFRA. Although the C4SLs were released for Part 2A use, the associated policy companion document for the C4SLs indicated that they may also be used for planning. Although the C4SLs represent a marginally higher risk level than the SSACs (low risk rather than minimal risk) it is considered that the risk levels remain very low. Therefore, the final C4SLs are considered to be suitable to assess soils under the planning regime.

Based on the nature of the development i.e. blocks of residential apartments, the laboratory results were compared individually against thresholds for a residential end use without home grown produce (6% SOM). if the development proposals for Phase 1 change to include private gardens, this assessment would need to be reviewed and updated.

The chemical testing undertaken on the samples of Topsoil and Made Ground soils identified exceedances of the SSVs for a residential end use without home grown produce in respect of the levels of Arsenic, Lead, several Polyaromatic Hydrocarbons. Furthermore, locally PCB (congeners) were recorded within the Made Ground soils. No exceedances were identified within the Langley Silt Member. Exceedances are summarised in Table 5.1.

Determinand	Threshold (mg/kg)	Concentration Range (mg/kg)	Number of Exceedances	Fail Location
Arsenic	39.9[1]	9.7-65.2	2	WS16 &WS17
Lead	200[2]	23.3-2060	20 (Topsoil and Made Ground)	WS01, WS02, WS02a, WS03, WS04, WS05, WS06, WS07, WS08,

Determinand	Threshold (mg/kg)	Concentration Range (mg/kg)	Number of Exceedances	Fail Location
				WS08a, WS09, WS10, WS11, WS12, WS14, WS15, WS16, WS17, WS18
Benzo(a)pyrene	5.00[1]	0.1-8.1	2 (Topsoil and Made Ground)	WS03, WS09
PCB (Total of 7 Congeners)	0.012[1]	0.03-0.2	1	WS14

[1]derived from ATRISK, Residential without consumption of home-grown vegetables
[2]derived from C4SL

Table 5.1 Exceedances against individual thresholds

In addition, a single sample submitted for asbestos screens returned a positive identification for 'Amosite (A.I.B) asbestos fibres. The presence of asbestos elsewhere on site within the near surface soils cannot be discounted and should be assessed as part of a watching brief throughout the development.

Given the Lead concentrations within both the Topsoil and Made Ground remedial measures will be required within areas of proposed soft landscaping for the protection of end users.

5.2.1 Preliminary Remedial Recommendations - Soils

Further investigation will be required post demolition of the existing buildings. However, preliminarily based on the chemically and physically unsuitable nature of the Topsoil and Made Ground soils encountered across the site, remediation is recommended to protect end users from soil contamination.

Asbestos has been identified in one of the samples and there remains the potential for asbestos to be present elsewhere in Made Ground soils. Therefore, it is likely that an engineered cover system incorporating a 'deter-to-dig' layer will be most suitable in the soft landscaping areas which are not upon any proposed podium slabs.

For communal gardens or areas of soft landscaping it is likely that a total cover system thickness of 400mm be utilised. This should comprise 250mm of certifiably 'clean' Topsoil and subsoil overlying a 150mm thick layer of crushed stone or gravel (to act as a deter to dig layer) sandwiched between two geo-textile membranes. The upper membrane should be specified as high visibility.

Should private garden areas be proposed in this phase then it is most likely that the engineered cover system would be increased to provide a total cover system thickness of 750mm. This is likely to comprise 600mm of certifiably 'clean' Topsoil and subsoil overlying a 150mm thick layer of crushed stone or gravel (to act as a deter to dig layer) sandwiched between two geo-textile membranes. The upper membrane should be specified as high visibility.

It may be necessary to deepen the cover system within the pits excavated for any proposed trees.

It should be noted that a piling mat would also act as a suitable deter-to-dig barrier at the base of the subsoil.

Raised planters could be utilised where there are limited soft landscaped areas proposed on site. Concrete or brick built troughs filled with certifiably 'clean' Topsoil and sub-soil would effectively sever any source-pathway-receptor as the soils within the raised planters would not be in contact with the underlying affected

soils. As such, thicknesses of verifiably 'clean' Topsoil/sub-soil would be dependent on proposed planting/rooting depths.

Certification for both sub-soil and Topsoil should include laboratory analysis for determinands known to pose a risk to human health (i.e. heavy metals, poly-aromatic hydrocarbons [PAHs], total petroleum hydrocarbons [TPH] and asbestos) as well as broadly meeting the requirements of BS3882:2015.

All remedial works should be undertaken in accordance with a regulatory approved Remedial Strategy and Verification Plan (RSVP) with independent validation on completion.

5.3 Soil Contamination vs. Adjacent Land Users

Surrounding land uses were mixed residential and industrial. Concentrations of potentially harmful contaminants were identified as part of the laboratory analyses in the context of the proposed end use. The contaminants identified were elevated concentrations of Lead. The proposed clean cover system to be protective of end users would mean that the risk to adjacent land users would be negligible. In view of the above, no remedial action is considered necessary to protect adjacent land users from soils on site.

This aside, it is recommended that dust suppression techniques, e.g. damping down exposed soils, are employed during the construction phases on site in order to minimise the potential for airborne migration of specific hazards and to manage potential nuisance issues for adjacent land users.

5.4 Soil Contamination vs. Soft Landscaping

British Standard BS3882:2015 *Specification for topsoil and requirements for use* provides assessment criteria for a number of potentially phytotoxic contaminants in terms of new planting.

The results of the chemical analysis for determinants known to pose a potential phytotoxic risk to plant growth are summarised in Table 5.2, together with the respective adopted Generic Assessment Criteria (GAC) for plant growth. The compliance criteria set out in BS3882:2015 are pH dependent and thus the GAC used relate to the pH range measured on samples recovered from the site.

Determinand	Phytotoxicity GAC (mg/kg)			GAC Exceedances
	pH <6.0	pH 6.0-7.0	pH >7.0	
Zinc	200	200	300	Yes
Copper	100	135	200	Yes
Nickel	60	75	110	No

Table 5.2 Summary of Plant Phytotoxicity Assessment

The phytotoxicity assessment has identified exceedances of the thresholds for Zinc and Copper. As such, it is considered that remedial measures would be likely to be required to ensure the protection of plant growth within proposed soft landscaped areas in the development. It is considered that the remedial measures that have been preliminarily recommended in areas of soft landscaping for the protection of end users from soil contamination would serve to provide protection to plants from any contamination within the underlying soils. As such, additional remedial measures to protect proposed soft landscaping are unlikely to be necessary.

5.5 Soil Contamination vs. Building Materials

The recommendations with respect to sulphate and buried concrete are outside of the scope of works.

The current guidance on selection of materials for water supply pipes to be laid in contaminated land is contained in UK Water Industry Research's (UKWIR) report reference 10/WM/03/21 (re-issued 2010). However, the guidance is not mandatory and there have been concerns raised by various industry technical associations regarding the document and the methodologies proposed.

In lieu of any further guidance in the first instance the results of this investigation have been compared with the proposed thresholds published in UKWIR Table 3.1. The results of the relevant chemical analyses indicated exceedances of PAH and TPH which would indicate that barrier pipe is likely to be required by the water company for the protection of the drinking water supply infrastructure. Accordingly, it is recommended that the results of this investigation be presented to the water utility company as soon as reasonably practicable in order to confirm the pipe material required.

As a matter of good practice, and to maximise the protection to utilities, it is recommended that clean, granular backfill is used in service runs and that marker tapes are used for all buried services.

5.6 Soil Contamination vs. Surface Water

The site is situated 253m north of the nearest surface water feature on the ground surface (stream/river). Mobile contamination in the form of petroleum hydrocarbons were not recorded within Made Ground soils on the site therefore the risk to surface water is negligible.

5.7 Soil Contamination vs. Groundwater

During the monitoring visit, samples of water were taken from WS07, WS10 and WS13. Due to the depths of the monitoring wells, this is likely to have been perched water. The superficial deposits (Langley Silt Member) and the bedrock geology (London Clay Formation) were both classified as unproductive strata and the site is outside any Source Protection Zone.

In the first instance the results have been compared against the 'The River Basin Districts Typology, Standards and Groundwater threshold values (Water Framework Directive) (England and Wales) Directions' (2010). Where thresholds were not available within this publication, the results were then compared against the Water Supply Regulations 'Drinking Water Standards' (2016). The Drinking Water Standards are considered to be highly conservative as they relate to potable water supplies and the point of compliance is the consumer's tap. A summary of results are presented in Table 5.3.

Standard	Determinad	Threshold (µg/l)	Location (µg/l)		
			WS07	WS10	WS13
WFD 2010	Benzo(a)pyrene	0.075	n/t	n/t	0.78
DWS 2016	PAH*	0.1	n/t	n/t	2.88
n/a (revoked)	TPH**	10	n/t	n/t	319
WHO	C16 – C21 Aliphatic	300^{+}	n/t	n/t	17.7
	C21 – C35 Aliphatic	300^{+}	n/t	n/t	134
	C16 – C21 Aromatic	90	n/t	n/t	10.4
	C21 – C35 Aromatic	90	n/t	n/t	64.5

* sum of the concentrations of benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene and indeno(123-cd)pyrene.
** there is currently no prescribed threshold value for TPH; a previous DWS threshold of 10µg/l has since been withdrawn.

Table 5.3 Summary of Laboratory Analysis

The results of the testing indicate slightly elevated concentrations of PAHs. However, given the urban environment and historic surrounding land uses the concentrations recorded are probably background concentrations and are unlikely to require any remedial action. However, this should be reassessed after any post demolition investigations.

5.8 Ground Gases and Vapours

The investigation did not encounter significant putrescible material within the shallow soils encountered on the site but did encounter olfactory evidence of hydrocarbon contamination. Furthermore, it is considered that the cohesive London Clay soils beneath the site would reduce the potential for migration of gases and vapours onto the site from off-site sources, thereby reducing the potential risk to end users of the development.

A ground gas monitoring visit was undertaken on 17th September 2020 within standpipes installed in WS01, WS07, WS10 and WS13. During the monitoring methane concentrations was recorded at 0.0%. Carbon dioxide concentrations ranged between 0% and 7.5% with oxygen concentrations ranging between 14.9% and 21.7%. Borehole gas flow was recorded as 0.1l/hr. A maximum VOC concentration of 1.6ppm was recorded. Atmospheric pressure was recorded at 1029mb during the duration of the monitoring visit. A summary of the results is shown in Table 3.2. For the full results, refer to Appendix E.

On the basis of the gas data collected and the preliminary gas assessment presented in Appendix C, the results preliminarily correspond to Characteristic Situation 1 (BS8485 and CIRIA). It should be noted that carbon dioxide concentrations marginally in excess of 5.0% were recorded, but in the absence of a valid source of ground gas generation and only low measured flows an increase in the Characteristic Situation is not warranted at this stage. In line with best practice additional visits would be required to fully characterise the site.

5.9 Waste Disposal

5.9.1 Reuse of Material

In accordance with CL:AIRE Code of Practice (2011) materials are only considered waste if 'they are discarded, intended to be discarded or required to be discarded by the holder'.

The Code of Practice therefore allows soils to be reused on site where the following criteria are met:

- A risk to the environment, controlled or human health does not result from the reusing the excavated materials;
- The materials are suitable for use (without any further processing) geotechnically and geochemically;
- There is certainty of use; and
- The quantity that is absolutely necessary (and no more) is used.

In order to comply with the Code of Practice, a material management plan that confirms the above criteria are met has to be prepared. The material management plan must be reviewed by a 'Qualified Person' who then issues a declaration to the Environment Agency. Geo-Environmental can provide this service should it be required.

Where materials do not meet the required criteria, it may be possible to treat them under an environmental permit so that they may be re-used on site. In addition, where material is discarded as waste, it may still be possible to reuse the waste on site under a standard rules environmental permit or a U1 waste exemption.

However, strict limits on the volumes that can be reused apply in these cases.

Where materials do not meet the required criteria, it may be possible to treat them under an environmental permit so that they may be re-used on site.

5.9.2 Disposal to Landfill

Under current legislation, where wastes are to be disposed of to landfill they may, depending on their classification, require pre-treatment. Pre-treatment shall comprise a chemical, physical (including sorting), thermal or biological process. The pre-treatment is required to change the characteristics of the waste, reduce its volume, reduce its hazardous nature, and facilitate its handling and enhance its recovery.

Other materials disposed of from site as part of the development of the site may require disposal separately. All materials containing dangerous substances e.g. tar or bitumen, asbestos, mercury, hydrocarbons, PCBs and asbestos are likely to be classified as Hazardous Waste and therefore susceptible to the relevant legislative controls.

5.9.3 Waste Classification

The following information is provided for preliminary guidance purposes, as different facilities or operators may have differing acceptance criteria and Waste Acceptance Criteria (WAC) analysis may be required to confirm the exact classification.

The chemical test results were initially assessed using the Atkins CatWaste tool, which indicated that the Made Ground soils at four locations had potentially hazardous properties based on the lead concentrations.

In addition to the above, four samples of Made Ground soils were submitted to the laboratory for Waste Acceptance Criteria (WAC) testing. The results indicated that the Made Ground soils tested would likely be suitable for disposal at a landfill licenced to accept stable non-reactive hazardous waste on account of elevated pH, Total Organic Carbon and antimony within the leachate.

Natural uncontaminated soil arisings of the Langley Silt Formation, Kempton Park Gravel and London Clay Formation are likely to be classified as ‘inert’ waste. However, if there is any visual or olfactory evidence of contamination encountered during works, further testing will be required to confirm this assessment.

Notwithstanding the above, confirmation of the above assessments should be sought from the receiving landfill facility.

5.10 Discovery Strategy

Whilst an intrusive investigation has been undertaken on the site, it remains possible that unexpected soil conditions may be encountered during the process of construction.

Examples may include oily pockets within the soil, pockets of cement boarding or fibrous materials within the soil, black ashy materials, soils exhibiting strong odours, brightly coloured materials and former structures or brickwork.

Should previously undiscovered conditions be encountered during construction by the ground workers, this should be reported to the site manager immediately in order that any necessary inspection may be made.

Records should be kept, and samples submitted for analysis where conditions encountered are not as anticipated. The results of any such testing should be sent to the authorities for consultation.

Depending on the type, nature and extent of any such 'discovery', it may be necessary to halt works in that location until such time as the assessment has been completed. This should be reviewed on a 'discovery' specific basis and in conjunction with regulatory consultation.

As a general guide, where such unexpected conditions are encountered the following approach is recommended:

- All discoveries are to be reported to the Site Manager immediately and works at that location are to halt until further notice;
- The Site Manager is to report any such discoveries to the Client and the Environmental Consultant;
- Following notification from the Site Manager, the Environmental Consultant shall discuss the discovery with the Local Authority and if considered necessary, arrange to meet an Officer on site to view the discovery;
- The Environmental Consultant shall attend the site to record the location, extent and nature of the discovery and implement an appropriate sampling and analysis regime, taking due account of the type and nature of the discovery, known and probable land uses in that area of the site;
- Where remedial action is required, regulatory consultation and approval will be sought;
- A record will be produced by the Environmental Consultant and held on site (with copies held by the Environmental Consultant, Client and Local Authority), detailing the discovery, assessment works undertaken, findings thereof, confirmation either of no action required or detailing the remedial action taken and validation thereof.

The process is shown overleaf.

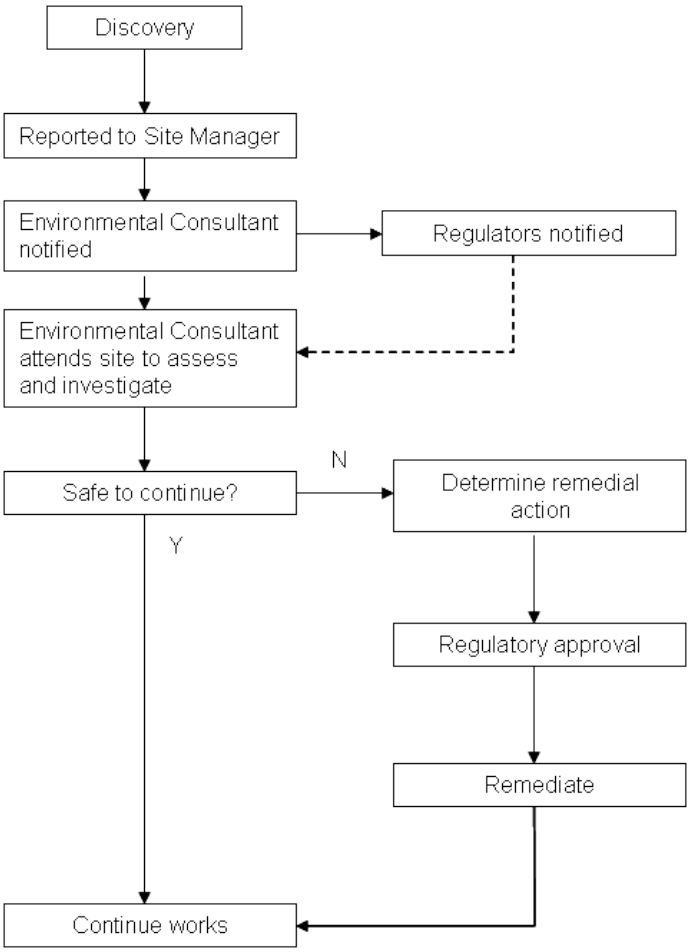


Chart 1 Discovery Strategy Process

A copy of the discovery strategy should be lodged on site, and provisions made to ensure that all workers are made aware of their responsibility to observe, report, and act on any potentially suspicious or contaminated materials they may encounter.

Caveat

The data collected from the investigations have been used to provide an interpretation of the geo-environmental conditions pertaining to the site. The recommendations and opinions expressed in this report are based on the data obtained.

Geo-Environmental Service Limited takes no responsibility for conditions that either have not been revealed in the available records, or that occurs between or under points of physical investigation. Whilst every effort has been made to interpret the conditions, such information is only indicative and liability cannot be accepted for its accuracy.

Information contained in this report is intended for the use of the client and their agents, and Geo-Environmental Services Limited can take no responsibility for the use of this information by any third party for uses other than that described in this report.

It should be noted that in particular the concentrations and levels of mobile liquid and gaseous materials are likely to vary with time. The results obtained may therefore only be representative of the conditions at the time of sampling. Such reservations have been indicated in the text where such conditions are considered to apply.

Geo-Environmental Services Limited does not indemnify any third parties such as the vendor against any dispute or claim arising from any finding or result of this investigation or any claim or dispute arising as a result of any decisions made thereof.

FIGURES

Project Title:	**Phase 1 Cambridge Road**	**Title :**	**Figure 1 - Site Location Plan**
Location :	**Cambridge Road, Kingston upon Thames**	**Scale:**	**1:5000**
Project No. :	**GE18530**	**Engineer:**	**JT**
Client :	**Cambridge Road (RBK) LLP**		

Geo-Environmental

Legend Key

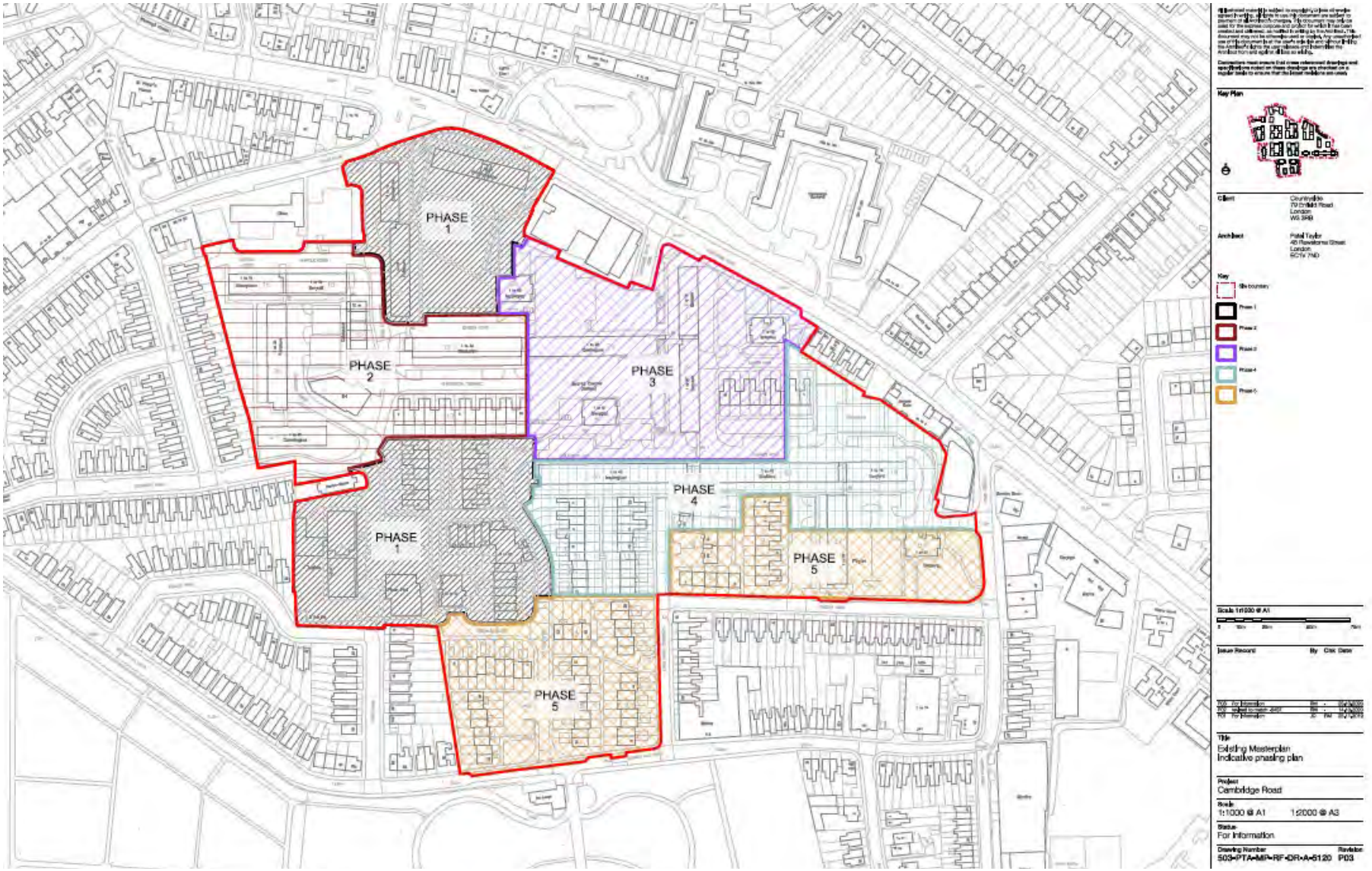
Project Bounds - Project Bounds

Project Title:	**Phase 1 Cambridge Road**	**Title :**	**Figure 2 - Exploratory Hole Location Plan**
Location :	**Cambridge Road, Kingston upon Thames**	**Scale:**	**1:2000**
Project No. :	**GE18530**	**Engineer:**	**JT**
Client :	**Cambridge Road (RBK) LLP**		

Geo-Environmental

Legend Key

- Locations By Type - IP
- Locations By Type - WLS



Project:	Cambridge Road, Kingston Upon Thames			**Title**	Masterplan v2
Client:	Cambridge Road (RBK) LLP			**Geo-Environmental Services Ltd** **Unit 7 Danworth Farm, Cuckfield Road** **Hurstpierpoint, West Sussex BN6 9GL** **+44(0)1273 832972 www.gesl.net**	Geo-Environmental
Ref No:	GE18350	**Revision:**	v1		
Drawn:	KB	**Date:**	28/10/2020		
Figure:	3	**Scale:**	Not To Scale		

APPENDIX A

Exploratory Hole Logs and Cross Sections

Geo-Environmental	Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net	Borehole Log	Borehole No. **WS01** Sheet 1 of 1

Project Name:	Phase 1 Cambridge Road	Project No. GE18530	Co-ords: 519148E - 169036N	Hole Type WLS
Location:	Cambridge Road, Kingston upon Thames		Level: 12.59	Scale 1:25
Client:	Cambridge Road (RBK) LLP		Dates: 08/09/2020	Logged By JK

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.50	ES					Brown silty gravelly sand with frequent brick and concrete and occasional rootlets and tarmacadam. TOPSOIL
		0.80	ES		0.70	11.88		Brown silty gravelly clay with frequent brick, concrete, and carbonaceous inclusions. MADE GROUND
		1.50	ES					
		2.00 2.00	PP	4.0kg/cm2 HVP=74	1.70	10.88		Orangish brown and brown mottled sandy CLAY with occasional rootlets. LANGLEY SILT MEMBER *... Rare roots (4mm) at 1.9m bgl.*
		2.30 2.30	PP	3.5kg/cm2 HVP=84				
					2.50	10.09		Light brown and brown mottled clayey fine to medium SAND with rare fine to medium sub-angular to sub-rounded flint gravel. KEMPTON PARK GRAVEL
					2.85	9.74		Brown and grey mottled silty CLAY with occasional calcareous inclusions. LONDON CLAY
		3.00 3.00	PP	3.2kg/cm2 HVP=82	3.00	9.59		End of Borehole at 3.00m

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	

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Unit 7, Danworth Farm
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BN6 9GL
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Borehole Log

Borehole No.
WS02
Sheet 1 of 1

Project Name:	Phase 1 Cambridge Road	Project No. GE18530	Co-ords: 519165E - 168959N	Hole Type WLS
Location:	Cambridge Road, Kingston upon Thames		Level: 13.68	Scale 1:25
Client:	Cambridge Road (RBK) LLP		Dates: 08/09/2020	Logged By JK

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.15	ES					Brown and light greyish brown gravelly silty sand with occasional rootlets and roots (1-2mm). Gravel comprises fine to medium sub-angular to sub-rounded flint and brick. TOPSOIL
					0.60	13.08		Brick and concrete. MADE GROUND
					0.80	12.88		End of Borehole at 0.80m

Casing		Water Strikes (mbgl)		Chiselling (mbgl)	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to

Remarks

Black pipe (40mm) at 0.60m bgl. Hand pit refused on brick and concrete at 0.80m bgl.

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Geo-Environmental	Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net	**Borehole Log**	Borehole No. **WS02a** Sheet 1 of 1

Project Name:	Phase 1 Cambridge Road	Project No. GE18530	Co-ords:	519166E - 168959N	Hole Type WLS
Location:	Cambridge Road, Kingston upon Thames		Level:	13.62	Scale 1:25
Client:	Cambridge Road (RBK) LLP		Dates:	08/09/2020	Logged By JK

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.50	ES		0.20	13.42		Brown gravelly silty sand with frequent rootlets and occasional brick. Gravel comprises fine to medium sub-angular to sub-rounded flint. MADE GROUND
					0.70	12.92		Brown gravelly silty sand with occasional carbonaceous inclusions, brick, chalk and metal, and rare glass. Gravel comprises fine to medium sub-angular to sub-rounded flint. MADE GROUND
					0.80	12.82		Concrete (intact). MADE GROUND End of Borehole at 0.80m

Casing		Water Strikes (mbgl)		Chiselling (mbgl)	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to

Remarks

Refused on concrete at 0.80mbgl.

Geo-Environmental	Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net	Borehole Log	Borehole No. **WS03** Sheet 1 of 1

Project Name:	Phase 1 Cambridge Road	Project No. GE18530	Co-ords: 519115E - 168953N	Hole Type WLS
Location:	Cambridge Road, Kingston upon Thames		Level: 12.61	Scale 1:25
Client:	Cambridge Road (RBK) LLP		Dates: 08/09/2020	Logged By JK

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.15	ES		0.25	12.36		Dark brown gravelly sandy silt with frequent rootlets. Gravel comprises fine to medium sub-angular to sub-rounded flint. TOPSOIL
		0.60	ES		0.80	11.81		Brown and dark brown gravelly silty sand with abundant brick and concrete. MADE GROUND
		1.00 1.00	PP	2.0kg/cm2 HVP=80	1.15	11.46		Brown and orangish brown mottled sandy CLAY with rare fine to medium sub-angular to sub-rounded flint gravel. LANGLEY SILT MEMBER
		1.50 1.50	PP	2.5kg/cm2 HVP=78				Brown and grey mottled silty CLAY with occasional calcareous inclusions. LONDON CLAY *... Rare root (1mm) at 1.50m bgl.*
		2.00 2.00	PP	2.0kg/cm2 HVP=70				
		2.50 2.50	PP	2.5kg/cm2 HVP=77				
		3.00 3.00	PP	2.2kg/cm2 HVP=74	3.00	9.61		End of Borehole at 3.00m

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	

Geo-Environmental	Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net	Borehole Log	Borehole No. **WS04** Sheet 1 of 1

Project Name:	Phase 1 Cambridge Road	Project No. GE18530	Co-ords: 519096E - 168980N	Hole Type WLS
Location:	Cambridge Road, Kingston upon Thames		Level: 12.04	Scale 1:25
Client:	Cambridge Road (RBK) LLP		Dates: 08/09/2020	Logged By JK

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20	11.84		Brown sandy silt with frequent rootlets and occasional flint gravel. TOPSOIL
		0.50	ES					Brown clayey sand with abundant brick and occasional carbonaceous inclusions. MADE GROUND
					0.70	11.34		Reworked brown clayey sand with rare carbonaceous inclusions. MADE GROUND
		1.00	ES					
					1.10	10.94		
		1.20	ES					Brown, dark orangish brown and grey mottled sandy CLAY. LANGLEY SILT MEMBER
					1.40	10.64		
		1.50 1.50	PP	2.8kg/cm2 HVP=46				Orangish brown and grey mottled sandy CLAY. LANGLEY SILT MEMBER
					1.75	10.29		
		2.00 2.00	PP	1.0kg/cm2 HVP=22				Orangish brown clayey fine to medium SAND with rare fine to medium sub-angular to sub-rounded flint gravel. KEMPTON PARK GRAVEL
					2.10	9.94		Brown and grey mottled sandy silty CLAY with occasional calcareous inclusions. LONDON CLAY
		2.50 2.50	PP	3.0kg/cm2 HVP=92				
		3.00 3.00	PP	2.5kg/cm2 HVP=78	3.00	9.04		End of Borehole at 3.00m

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	

Geo-Environmental
Unit 7, Danworth Farm
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Borehole Log

Borehole No. **WS05**
Sheet 1 of 1

Project Name:	Phase 1 Cambridge Road	Project No. GE18530	Co-ords: 519066E - 168988N	Hole Type WLS
Location:	Cambridge Road, Kingston upon Thames		Level: 11.43	Scale 1:25
Client:	Cambridge Road (RBK) LLP		Dates: 08/09/2020	Logged By JK

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.15	ES		0.20	11.23		Orangish brown clayey silty sand with frequent rootlets. TOPSOIL
		0.60	ES					Brown clayey silty gravelly sand with occasional rootlets. Gravel comprises fine to medium sub-angular to sub-rounded flint and occasional brick. MADE GROUND
					0.80	10.63		Brown and orangish brown mottled gravelly sandy CLAY with occasional carbonaceous specks. Gravel comprises fine to medium sub-angular to sub-rounded flint. LANGLEY SILT MEMBER
		1.50	ES		1.55	9.88		Brown and orangish brown mottled sandy CLAY. LANGLEY SILT MEMBER
		1.60 1.60	PP	2.8kg/cm2 HVP=44	1.75	9.68		Brown and light orangish brown mottled clayey fine to medium SAND. KEMPTON PARK GRAVEL
								... Rare roots (1-2mm) between 1.75m and 2.20mbgl.
					2.10	9.33		Brown, orangish brown and grey mottled silty CLAY with occasional calcareous inclusions KEMPTON PARK GRAVEL
		2.50 2.50	PP	2.5kg/cm2 HVP=74				
	▼							
		3.00 3.00	PP	2.5kg/cm2 HVP=71	3.05	8.38		Brown flint GRAVEL. Gravel comprises medium to coarse sub-angular to sub-rounded flint. KEMPTON PARK GRAVEL
					3.40	8.03		Brown and grey mottled silty CLAY. LONDON CLAY
		3.50 3.50	PP	2.8kg/cm2 HVP=71				
		4.00 4.00	PP	2.5kg/cm2 HVP=73	4.00	7.43		End of Borehole at 4.00m

Casing		Water Strikes (mbgl)		Chiselling (mbgl)	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to
		2.90	2.90		

Remarks
Backfilled with arisings on completion.

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Borehole Log

Borehole No. **WS06**
Sheet 1 of 1

Project Name:	Phase 1 Cambridge Road	Project No. GE18530	Co-ords: 519071E - 168950N	Hole Type WLS
Location:	Cambridge Road, Kingston upon Thames		Level: 11.58	Scale 1:25
Client:	Cambridge Road (RBK) LLP		Dates: 09/09/2020	Logged By JK

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.15	ES					Brown silty sand with frequent rootlets and rare brick. TOPSOIL
					0.30	11.28		
		0.50	ES					Brown and orangish brown mottled sandy clay with occasional brick and tarmacadam, and rare flint gravel. MADE GROUND
		1.50	ES					
					1.60	9.98		Orangish brown and brown sandy CLAY MADE GROUND
					1.80	9.78		Void. Dry. Concrete base. MADE GROUND
					2.15	9.43		End of Borehole at 2.15m

Casing		Water Strikes (mbgl)		Chiselling (mbgl)	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to

Remarks
Void encountered between 1.80m and 2.15m. Hole abandoned.

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Geo-Environmental	Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net	Borehole Log	Borehole No. **WS07** Sheet 1 of 1

Project Name:	Phase 1 Cambridge Road	Project No. GE18530	Co-ords: 519031E - 169013N	Hole Type WLS
Location:	Cambridge Road, Kingston upon Thames		Level: 10.84	Scale 1:25
Client:	Cambridge Road (RBK) LLP		Dates: 09/09/2020	Logged By JK

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.10	10.74		Concrete. MADE GROUND
					0.25	10.58		Light brown gravelly sand with abundant brick. MADE GROUND
		0.50	ES					Dark brown and brown silty gravelly sandy clay with occasional roots (1-2mm). Gravel comprises fine to medium sub-angular to sub-rounded flint and rare brick. MADE GROUND
					0.85	9.98		Greyish brown and dark orangish brown mottled clayey gravelly fine to medium SAND. Gravel comprises fine to medium sub-angular to sub-rounded flint. LANGLEY SILT MEMBER
		1.00	ES					
					1.40	9.44		Orangish brown silty gravelly fine to medium SAND. Gravel comprises fine to medium sub-angular to sub-rounded flint. KEMPTON PARK GRAVEL *... Occasional roots (1-2mm) at 1.50m bgl.*
					2.15	8.68		Brown and grey mottled silty CLAY with frequent rootlets, roots (1-2mm), occasional calcareous inclusions. LONDON CLAY
		2.50 2.50	PP	2.2kg/cm2 HVP=62				
		3.00 3.00	PP	2.5kg/cm2 HVP=78	3.00	7.84		End of Borehole at 3.00m

Casing		Water Strikes (mbgl)		Chiselling (mbgl)	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to

Remarks

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Geo-Environmental
Unit 7, Danworth Farm
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Borehole Log

Borehole No.
WS08
Sheet 1 of 1

Project Name:	Phase 1 Cambridge Road	Project No. GE18530	Co-ords: 519045E - 169052N	Hole Type WLS
Location:	Cambridge Road, Kingston upon Thames		Level: 10.51	Scale 1:25
Client:	Cambridge Road (RBK) LLP		Dates: 09/09/2020	Logged By JK

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.40	ES					Brown gravelly silty sand with frequent rootlets and brick, and rare carbonaceous inclusions. Gravel comprises fine to medium sub-angular to sub-rounded flint. TOPSOIL
					0.80	9.71		End of Borehole at 0.80m

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Casing		Water Strikes (mbgl)		Chiselling (mbgl)	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to

Remarks
Hole moved due to yellow pipe encountered at base of hand pit.

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Geo-Environmental	Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net	**Borehole Log**	Borehole No. **WS08a** Sheet 1 of 1

Project Name:	Phase 1 Cambridge Road	Project No. GE18530	Co-ords: 519041E - 169053N	Hole Type WLS
Location:	Cambridge Road, Kingston upon Thames		Level: 10.34	Scale 1:25
Client:	Cambridge Road (RBK) LLP		Dates: 09/09/2020	Logged By JK

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.50	9.84		Brown silty sand with frequent rootlets and occasional flint gravel and carbonaceous inclusions. TOPSOIL
		0.70	ES					
					0.85	9.49		Brown silty sand with frequent rootlets and occasional flint gravel and brick. MADE GROUND
		1.00	ES					
		1.00	PP	3.2kg/cm2				Orangish brown sandy gravelly CLAY. Gravel comprises fine to medium sub-angular to sub-rounded flint. LANGLEY SILT MEMBER
					1.25	9.09		Light brown and orangish brown mottled silty fine to medium SAND with rare fine to medium sub-angular to sub-rounded flint gravel. KEMPTON PARK GRAVEL
		1.60	PP	2.0kg/cm2	1.55	8.79		Brown and grey mottled silty CLAY with occasional calcareous inclusions. LONDON CLAY
		1.60		HVP=68				
		2.00	PP	3.0kg/cm2				
		2.00		HVP=120				
		2.50	PP	2.2kg/cm2				
		2.50		HVP=78				
		3.00	PP	2.5kg/cm2	3.00	7.34		End of Borehole at 3.00m
		3.00		HVP=77				

1 2 3 4 5

Casing		Water Strikes (mbgl)		Chiselling (mbgl)	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to

Remarks

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Geo-Environmental
Unit 7, Danworth Farm
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BN6 9GL
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Borehole Log

Borehole No. **WS09**
Sheet 1 of 1

Project Name:	Phase 1 Cambridge Road	Project No. GE18530	Co-ords: 519103E - 169031N	Hole Type WLS
Location:	Cambridge Road, Kingston upon Thames		Level: 11.12	Scale 1:25
Client:	Cambridge Road (RBK) LLP		Dates: 08/09/2020	Logged By JK

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.20	ES		0.35	10.77		Dark brown sandy silt with frequent rootlets. TOPSOIL
		0.60	ES					Brown clayey silty sand with rare brick. MADE GROUND
		1.00	ES		0.95	10.17		
		1.20 1.20	PP	3.0kg/cm2 HVP=60				Orangish brown and light greyish brown mottled sandy CLAY with rare fine to medium sub-angular to sub-rounded flint gravel. LANGLEY SILT MEMBER
		1.50 1.50	PP	2.2kg/cm2 HVP=56	1.45	9.67		Brown and grey mottled sandy silty CLAY with occasional calcareous inclusions and ferruginous inclusions. LONDON CLAY
		2.00 2.00	PP	2.8kg/cm2 HVP=82				
		2.50 2.50	PP	2.8kg/cm2 HVP=78				
		3.00 3.00	PP	2.8kg/cm2 HVP=86				
		3.50 3.50	PP	2.0kg/cm2 HVP=74				
		4.00 4.00	PP	2.5kg/cm2 HVP=66	4.00	7.12		End of Borehole at 4.00m

1 2 3 4 5

Casing		Water Strikes (mbgl)		Chiselling (mbgl)	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to

Remarks

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Geo-Environmental	Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net	Borehole Log	Borehole No. **WS10** Sheet 1 of 1

Project Name:	Phase 1 Cambridge Road	Project No. GE18530	Co-ords: 519090E - 169214N	Hole Type WLS
Location:	Cambridge Road, Kingston upon Thames		Level: 11.52	Scale 1:25
Client:	Cambridge Road (RBK) LLP		Dates: 09/09/2020	Logged By JK

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.15	ES		0.25	11.27		Brown silty sand with frequent rootlets, occasional brick and flint gravel. TOPSOIL
		1.00	ES					Brown silty gravelly sand with abundant brick. MADE GROUND
		1.80	ES		1.45	10.07		Brown gravelly sandy clay with frequent carbonaceous inclusions, occasional brick and rare glass. MADE GROUND
								... Rare roots (1-3mm) at 1.90m bgl.
					2.05	9.47		Orangish brown and grey mottled gravelly sandy CLAY. Gravel comprises fine to medium sub-angular to sub-rounded flint. KEMPTON PARK GRAVEL
					2.40	9.12		Brown and grey mottled clayey fine to medium SAND with rare fine to medium sub-angular to sub-rounded flint gravel. KEMPTON PARK GRAVEL
					2.75	8.77		Brown and grey mottled silty CLAY with frequent roots (1-4mm) to 2.90m bgl, and occasional calcareous inclusions. LONDON CLAY
		3.00 3.00	PP	2.8kg/cm2 HVP=74				
		3.50 3.50	PP	2.5kg/cm2 HVP=68				
		4.00 4.00	PP	2.5kg/cm2 HVP=77	4.00	7.52		End of Borehole at 4.00m

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	

Geo-Environmental	Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net	Borehole Log	Borehole No. **WS11** Sheet 1 of 1

Project Name:	Phase 1 Cambridge Road	Project No. GE18530	Co-ords: 519089E - 169186N	Hole Type WLS
Location:	Cambridge Road, Kingston upon Thames		Level: 10.49	Scale 1:25
Client:	Cambridge Road (RBK) LLP		Dates: 09/09/2020	Logged By JK

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10	ES					Brown silty sand with frequent rootlets. TOPSOIL
					0.25	10.24		
		0.60	ES					Brown silty sand with abundant concrete, plastic and metal, and occasional ceramic and glass. MADE GROUND
					0.80	9.69		
		1.00 1.00	PP	2.2kg/cm2 HVP=54				Light orangish brown and greyish brown mottled sandy CLAY with occasional roots (1mm). LANGLEY SILT MEMBER
					1.05	9.44		Brown and dark orangish brown mottled clayey gravelly fine to medium SAND. Gravel comprises fine to medium sub-angular to sub-rounded flint. KEMPTON PARK GRAVEL
					1.65	8.84		Brown and grey mottled silty CLAY with occasional calcareous inclusions. LONDON CLAY
		2.00 2.00	PP	2.8kg/cm2 HVP=82				
		2.50 2.50	PP	2.2kg/cm2 HVP=66				
		3.00 3.00	PP	2.0kg/cm2 HVP=82	3.00	7.49		End of Borehole at 3.00m

1 2 3 4 5

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	

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Geo-Environmental
Unit 7, Danworth Farm
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Borehole Log

Borehole No. **WS12**
Sheet 1 of 1

Project Name:	Phase 1 Cambridge Road	Project No. GE18530	Co-ords:	519093E - 169153N	Hole Type WLS
Location:	Cambridge Road, Kingston upon Thames		Level:	9.88	Scale 1:25
Client:	Cambridge Road (RBK) LLP		Dates:	09/09/2020	Logged By JK

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.15	ES					Brown silty sand with frequent rootlets. TOPSOIL
					0.30	9.58		
		0.50	ES					Orangish brown and grey mottled clayey gravelly fine to medium SAND with frequent roots (1-50mm). Gravel comprises fine to medium sub-angular to sub-rounded flint. LANGLEY SILT MEMBER
		1.00 1.00	PP	2.0kg/cm2 HVP=74	0.95	8.93		Brown and grey mottled silty CLAY with occasional calcareous inclusions and roots (1-2mm) to 1.0m. LONDON CLAY
		1.50 1.50	PP	2.2kg/cm2 HVP=74				
		2.00 2.00	PP	2.2kg/cm2 HVP=72				
		2.50 2.50	PP	2.0kg/cm2 HVP=74				
		3.00 3.00	PP	3.2kg/cm2 HVP=98	3.00	6.88		End of Borehole at 3.00m

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Casing		Water Strikes (mbgl)		Chiselling (mbgl)	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to

Remarks

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Geo-Environmental	Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net	Borehole Log	Borehole No. **WS13** Sheet 1 of 1

Project Name:	Phase 1 Cambridge Road	Project No. GE18530	Co-ords: 519119E - 169136N	Hole Type WLS
Location:	Cambridge Road, Kingston upon Thames		Level: 10.36	Scale 1:25
Client:	Cambridge Road (RBK) LLP		Dates: 10/09/2020	Logged By JK

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.15	ES					Brown silty sand with frequent rootlets and occasional flint gravel ceramic. TOPSOIL
					0.50	9.86		
		0.70	ES					Reworked orangish brown and brown mottled clayey sand with occasional flint cobbles and roots (1-2mm). MADE GROUND
					0.80	9.56		
								Orangish brown clayey gravelly fine to medium SAND. Gravel comprises fine to medium sub-angular to sub-rounded flint. KEMPTON PARK GRAVEL
					1.40	8.96		
		1.50 1.50	PP	1.8kg/cm2 HVP=66				Brown and grey mottled silty CLAY with occasional calcareous inclusions and roots (1-2mm) to 2.00m bgl. LONDON CLAY
		2.00 2.00	PP	2.2kg/cm2 HVP=83				
		2.50 2.50	PP	2.2kg/cm2 HVP=70				
		3.00 3.00	PP	2.8kg/cm2 HVP=90				*... Rare roots (1mm) at 2.90m bgl.*
					3.40	6.96		*... Occasional selenite crystals at 3.30m bgl.*
		3.50 3.50	PP	2.5kg/cm2 HVP=76				Brown silty CLAY with occasional selenite crystals. LONDON CLAY
		4.00 4.00	PP	3.2kg/cm2 HVP=104	4.00	6.36		End of Borehole at 4.00m

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	

Geo-Environmental

Trial Pit Log

Trialpit No
WS14
Sheet 1 of 1

Project Name: Phase 1 Cambridge Road	Project No. GE18530	Co-ords: 519152.13 - 169158.35 Level: 12.52	Date 10/09/2020
Location: Cambridge Road, Kingston upon Thames		Dimensions (m): Depth 0.90	Scale 1:10
Client: Cambridge Road (RBK) LLP			Logged JK

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20	ES		0.30	12.22		Brown silty sand with frequent rootlets and occasional roots (1-3mm) and int gravel. TOPSOIL
	0.50	ES		0.70	11.82		Brown gravelly silty sand with frequent concrete and brick, occasional polystyrene and plastic, yellow sand inclusions, and rare fibrous board (asbestos?). MADE GROUND
	0.80	ES		0.90	11.62		Light brown clayey silty fine to medium SAND. LANGLEY SILT MEMBER
							End of pit at 0.90 m

Remarks: WS not possible due to access.

Stability:

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Geo-Environmental	Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net	**Borehole Log**	Borehole No. **WS15** Sheet 1 of 1

Project Name:	Phase 1 Cambridge Road	Project No. GE18530	Co-ords: 519127E - 169172N	Hole Type WLS
Location:	Cambridge Road, Kingston upon Thames		Level: 11.61	Scale 1:25
Client:	Cambridge Road (RBK) LLP		Dates: 09/09/2020	Logged By JK

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10	ES		0.20	11.41		Brown silty sand with frequent rootlets. TOPSOIL
		0.70	ES					Brown gravelly clayey sand with abundant blocks, concrete and tarmacadam. MADE GROUND
		1.50	ES		1.40	10.21		Reworked brown and dark brown mottled clayey sand with rare carbonaceous inclusions. MADE GROUND
					1.80	9.81		Orangish brown and brown mottled clayey fine to medium SAND. KEMPTON PARK GRAVEL
					2.60	9.01		Brown and grey mottled silty CLAY with occasional calcareous inclusions. LONDON CLAY
		3.00 3.00	PP	3.0kg/cm2 HVP=83	3.00	8.61		End of Borehole at 3.00m

Casing		Water Strikes (mbgl)		Chiselling (mbgl)	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to

Remarks

Black cable encountered at 0.85m bgl. Hand pit extended and WS continued.

AGS

Geo-Environmental	Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net	Borehole Log	Borehole No. **WS16** Sheet 1 of 1

Project Name:	Phase 1 Cambridge Road	Project No. GE18530	Co-ords: 519123E - 169186N	Hole Type WLS
Location:	Cambridge Road, Kingston upon Thames		Level: 11.91	Scale 1:25
Client:	Cambridge Road (RBK) LLP		Dates: 09/09/2020	Logged By JK

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.20	ES		0.30	11.60		Light brown silty sand with frequent rootlets and flint gravel. TOPSOIL
		0.50	ES		1.10	10.80		Dark greyish brown silty gravelly sand with occasional concrete, brick and metal. MADE GROUND
		1.50	ES		2.10	9.80		Brown and dark brown mottled sandy clay with abundant carbonaceous inclusions and occasional brick. MADE GROUND
		3.00 3.00	PP	2.5kg/cm2 HVP=96	2.85 3.00	9.06 8.90		Orangish brown and grey mottled gravelly fine to medium SAND. Gravel comprises fine to medium sub-angular to sub-rounded flint. KEMPTON PARK GRAVEL Brown and grey mottled silty CLAY. LONDON CLAY End of Borehole at 3.00m

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	

Geo-Environmental	Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net	**Borehole Log**	Borehole No. **WS17** Sheet 1 of 1

Project Name:	Phase 1 Cambridge Road	Project No. GE18530	Co-ords: 519113E - 169169N	Hole Type WLS
Location:	Cambridge Road, Kingston upon Thames		Level: 10.87	Scale 1:25
Client:	Cambridge Road (RBK) LLP		Dates: 10/09/2020	Logged By JK

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10	ES		0.15	10.72		Brown silty sand with frequent rootlets and occasional flint gravel. TOPSOIL
		0.40	ES					Brown and dark brown gravelly silty sand with frequent brick, concrete and ceramic pipe, and rare glass. MADE GROUND
		0.85	ES		0.75	10.12		Brown silty sand with occasional brick and flint gravel. MADE GROUND
					0.95	9.92		Brown and orangish brown mottled gravelly clayey fine to medium SAND. Gravel comprises fine to medium sub-angular to sub-rounded flint. LANGLEY SILT MEMBER
					1.45	9.42		Orangish brown and brown mottled clayey sandy GRAVEL. Gravel comprises fine to medium sub-angular to sub-rounded flint. KEMPTON PARK GRAVEL
					1.75	9.12		Dark grey and brown mottled clayey gravelly fine to medium SAND with a slight organic odour. KEMPTON PARK GRAVEL
		2.00 2.00	PP	1.8kg/cm2 HVP=88	1.95	8.92		Light orange and grey mottled sandy CLAY. KEMPTON PARK GRAVEL
		2.50 2.50	PP	1.8kg/cm2 HVP=70	2.30	8.57		Brown and grey mottled silty CLAY with occasional roots (1-3mm) to 3.30m bgl. LONDON CLAY
		3.00 3.00	PP	2.0kg/cm2 HVP=62				
		3.50 3.50	PP	1.8kg/cm2 HVP=68				
		4.00 4.00	PP	2.8kg/cm2 HVP=86	4.00	6.87		End of Borehole at 4.00m

Casing		Water Strikes (mbgl)		Chiselling (mbgl)	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to

Remarks

Collapsed to 2.85m bgl.

AGS

Geo-Environmental	Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net	Borehole Log	Borehole No. **WS18** Sheet 1 of 1

Project Name:	Phase 1 Cambridge Road	Project No. GE18530	Co-ords: 519119E - 169156N	Hole Type WLS
Location:	Cambridge Road, Kingston upon Thames		Level: 10.80	Scale 1:25
Client:	Cambridge Road (RBK) LLP		Dates: 10/09/2020	Logged By JK

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.25	10.55		Brown silty sand with frequent rootlets and occasional flint gravel. TOPSOIL
		0.35	ES					
					0.50	10.30		Brown silty sand with frequent brick and occasional carbonaceous inclusions and flint gravel. MADE GROUND
		0.70	ES					
					0.90	9.90		Brown silty clayey sand with occasional brick and carbonaceous inclusions. MADE GROUND
					1.25	9.55		Brown sandy gravelly CLAY. Gravel comprises fine to medium sub-angular to sub-rounded flint. LANGLEY SILT MEMBER
					1.75	9.05		Brown slightly clayey fine to medium SAND with rare fine to medium sub-angular to sub-rounded flint gravel. KEMPTON PARK GRAVEL
		2.00 2.00	PP	3.0kg/cm2 HVP=83				Brown and grey mottled silty CLAY with occasional calcareous inclusions and roots (1-3mm) to 1.90m bgl. LONDON CLAY
		2.50 2.50	PP	2.0kg/cm2 HVP=70				
		3.00 3.00	PP	2.0kg/cm2 HVP=84	3.00	7.80		End of Borehole at 3.00m

1 2 3 4 5

Casing		Water Strikes (mbgl)		Chiselling (mbgl)	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to

Remarks

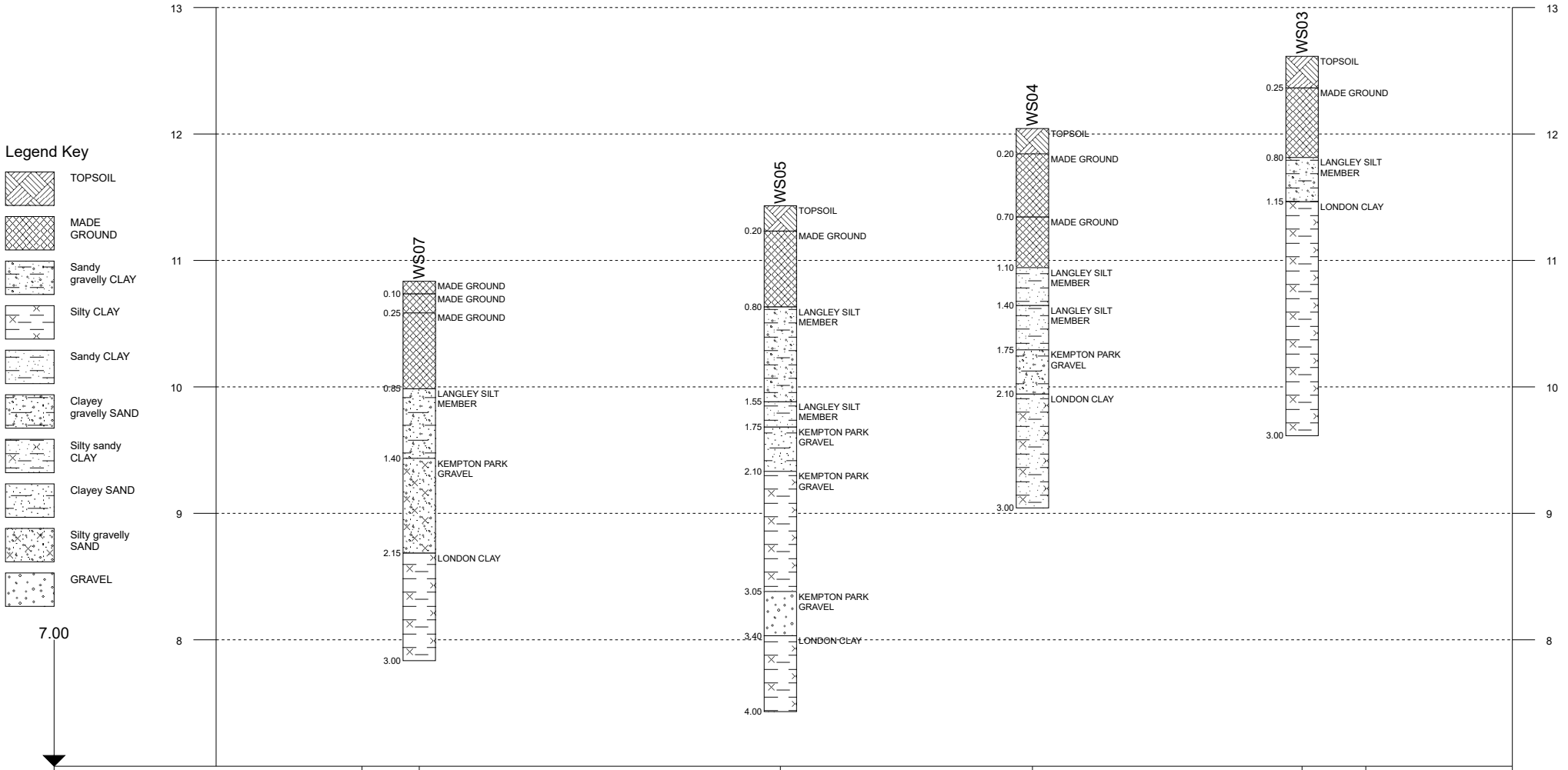
Collapsed to 2.70mbgl.

AGS

Project Id: GE18530
Project Title: Phase 1 Cambridge Road
Location: Cambridge Road, Kingston upon Thames
Client: Cambridge Road (RBK) LLP

Title: Section line 1
Vertical Scale: 1:46
Horizontal Scale: 1:682
Engineer: JT

Geo-Environmental

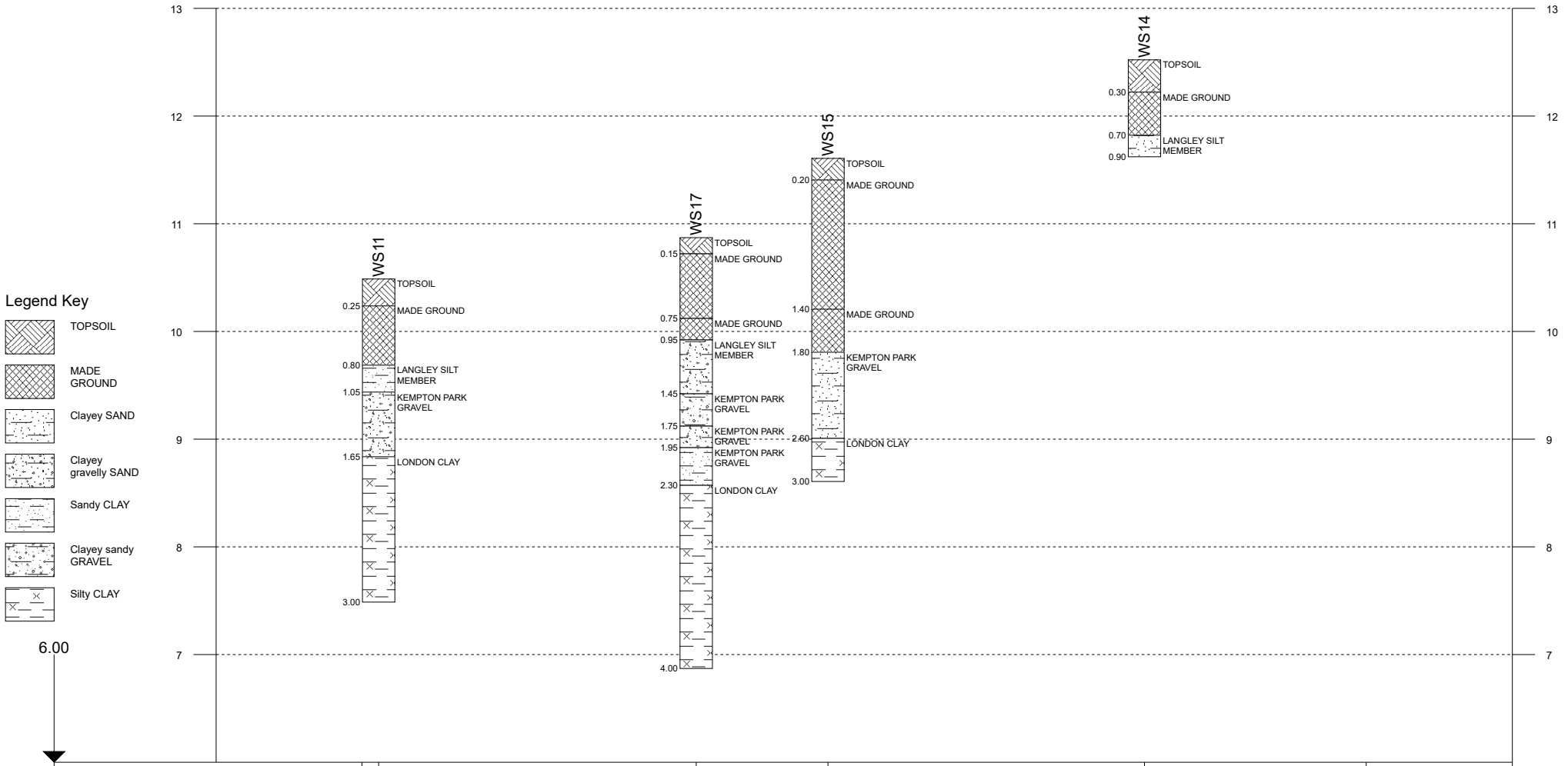


Chainage (m)	0.00	6.72	49.05	78.59	110.20	117.67			
Offset (m)	1.10	1.12	9.77	1.11					
Elevation (mAOD)	10.84	11.43	12.04	12.61					

Project Id: GE18530
Project Title: Phase 1 Cambridge Road
Location: Cambridge Road, Kingston upon Thames
Client: Cambridge Road (RBK) LLP

Title: Section line 2
Vertical Scale: 1:54
Horizontal Scale: 1:525
Engineer: JT

Geo-Environmental

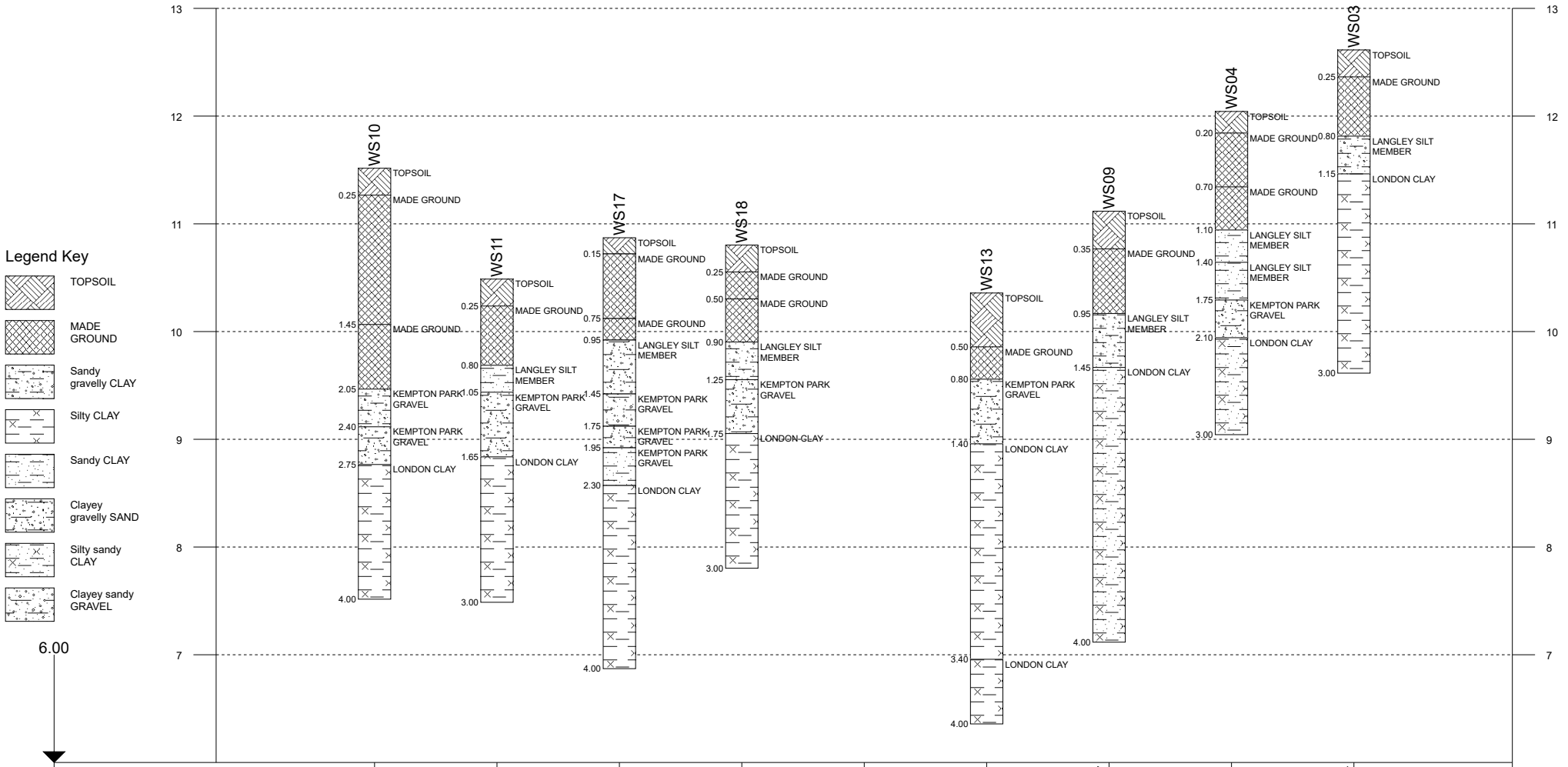


Chainage (m)	0.00	1.51	30.16	42.05	70.61	90.62
Offset (m)	1.39		7.93	0.42	3.50	
Elevation (mAOD)	10.49		10.87	11.61	12.52	

Project Id: GE18530
Project Title: Phase 1 Cambridge Road
Location: Cambridge Road, Kingston upon Thames
Client: Cambridge Road (RBK) LLP

Title: Section line 3
Vertical Scale: 1:54
Horizontal Scale: Not to scale
Engineer: JT

Geo-Environmental



Chainage (m)	12.37	40.83	59.17	72.61	73.26	92.91	195.57	246.31	274.94
Offset (m)	7.08	10.27	12.70	18.18	7.93	15.82	7.44	18.40	1.16
Elevation (mAOD)	11.52	10.49	10.87	10.80	9.88	10.36	11.12	12.04	12.61

Geo-Environmental

APPENDIX B

Geochemical Laboratory Test Results

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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	20-29855
Issue:	1
Date of Issue:	22/09/2020
Contact:	Katie Brayne
Customer Details:	GESL Unit 7 Danworth Farm Hurstpierpoint West SussexBN6 9GL
Quotation No:	Q19-01488
Order No:	3006
Customer Reference:	GE18530
Date Received:	10/09/2020
Date Approved:	22/09/2020
Details:	Phase 1 Cambridge Road
Approved by:	

Mike Varley, Technical Manager

Sample Summary

Report No.: 20-29855, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
213955	WS01 1 0.50	08/09/2020	15/09/2020		
213956	WS01 2 0.80	08/09/2020	15/09/2020	Silty clayey loam	
213957	WS01 3 1.50	08/09/2020	15/09/2020		
213958	WS02 1 0.15	08/09/2020	15/09/2020	Silty loam	
213959	WS02a 1 0.50	08/09/2020	15/09/2020	Silty loam	
213960	WS03 1 0.15	08/09/2020	15/09/2020		
213961	WS03 2 0.60	08/09/2020	15/09/2020	Silty loam	
213962	WS04 1 0.50	08/09/2020	15/09/2020	Sandy silty loam	
213963	WS04 2 1.00	08/09/2020	15/09/2020		
213964	WS04 3 1.20	08/09/2020	15/09/2020		
213965	WS05 1 0.15	08/09/2020	15/09/2020		
213966	WS05 2 0.60	08/09/2020	15/09/2020	Silty loam	
213967	WS05 3 1.50	08/09/2020	15/09/2020	Silty loam	
213968	WS06 1 0.15	08/09/2020	15/09/2020	Silty loam	
213969	WS06 2 0.50	09/09/2020	15/09/2020	Silty clayey loam	
213970	WS06 3 1.50	09/09/2020	15/09/2020		
213971	WS07 1 0.50	09/09/2020	15/09/2020	Sandy silty loam	
213972	WS07 2 1.00	09/09/2020	15/09/2020		
213973	WS08 1 0.40	09/09/2020	15/09/2020	Silty loam	
213974	WS08a 1 0.70	09/09/2020	15/09/2020	Silty loam	
213975	WS08a 2 1.00	09/09/2020	15/09/2020	Sandy silty loam	
213976	WS09 1 0.20	09/09/2020	15/09/2020	Silty loam	
213977	WS09 2 0.60	09/09/2020	15/09/2020		
213978	WS09 3 1.00	09/09/2020	15/09/2020	Silty clayey loam	
213979	WS10 1 0.15	09/09/2020	15/09/2020		
213980	WS10 2 1.00	09/09/2020	15/09/2020	Silty clayey loam	
213981	WS10 3 1.80	09/09/2020	15/09/2020		
213982	WS11 2 0.10	09/09/2020	15/09/2020		
213983	WS11 1 0.60	09/09/2020	15/09/2020	Silty loam	
213984	WS12 1 0.15	09/09/2020	15/09/2020	Silty loam	
213985	WS12 2 0.50	09/09/2020	15/09/2020		
213986	WS13 1 0.15	10/09/2020	15/09/2020		
213987	WS13 2 0.70	10/09/2020	15/09/2020	Sandy clayey loam	
213988	WS14 1 0.20	10/09/2020	15/09/2020		
213989	WS14 2 0.50	10/09/2020	15/09/2020	Sandy silty loam	
213990	WS14 3 0.80	10/09/2020	15/09/2020		
213991	WS15 2 0.70	09/09/2020	15/09/2020	Silty loam	
213992	WS15 3 1.50	09/09/2020	15/09/2020		
213993	WS16 1 0.20	09/09/2020	15/09/2020	Silty loam	
213994	WS16 2 0.50	09/09/2020	15/09/2020	Silty loam	
213995	WS16 3 1.50	09/09/2020	15/09/2020		
213996	WS17 3 0.10	10/09/2020	15/09/2020		
213997	WS17 1 0.40	10/09/2020	15/09/2020	Silty loam	
213998	WS17 2 0.85	10/09/2020	15/09/2020		
213999	WS18 1 0.35	10/09/2020	15/09/2020	Silty loam	
214000	WS18 2 0.70	10/09/2020	15/09/2020		

Results Summary

Report No.: 20-29855, issue number 1

				ELAB Reference	213956	213958	213959	213961
				Customer Reference	2	1	1	2
				Sample ID				
				Sample Type	SOIL	SOIL	SOIL	SOIL
				Sample Location	WS01	WS02	WS02a	WS03
				Sample Depth (m)	0.80	0.15	0.50	0.60
				Sampling Date	08/09/2020	08/09/2020	08/09/2020	08/09/2020
Determinand	**Codes**	**Units**	**LOD**				
Soil sample preparation parameters							
Material removed	N	%	0.1	< 0.1	23.9	22.6	33.1
Description of Inert material removed	N		0	None	Stones	Stones	Stones
Metals							
Arsenic	M	mg/kg	1	19.9	25.1	37.7	25.7
Beryllium	U	mg/kg	1	1.3	1.8	2.5	1.3
Cadmium	M	mg/kg	0.5	< 0.5	12.9	3.6	23.8
Chromium	M	mg/kg	5	52.5	90.9	56.4	120
Copper	M	mg/kg	5	31.4	217	197	287
Lead	M	mg/kg	5	201	717	1600	581
Mercury	M	mg/kg	0.5	< 0.5	5.5	2.1	7.3
Nickel	M	mg/kg	5	35.7	48.9	45.3	54.4
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	1.3
Vanadium	M	mg/kg	5	78.7	68.4	76.2	57.8
Zinc	M	mg/kg	5	152	848	1130	1010
Anions							
Water Soluble Chloride	M	mg/kg	40	< 40	< 40	< 40	< 40
Water Soluble Sulphate	M	g/l	0.02	0.30	0.03	< 0.02	0.05
Inorganics							
Elemental Sulphur	M	mg/kg	20	< 20	< 20	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2	< 2	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1	< 1.0	4.8	3.2	12.6
Acid Soluble Sulphate (SO4)	U	%	0.02	0.14	0.09	0.12	0.11
Water Soluble Boron	N	mg/kg	0.5	2.0	1.4	1.3	2.0
Miscellaneous							
Acid Neutralisation Capacity	N	mol/kg	0.1	n/t	n/t	< 0.1	n/t
Loss On Ignition (450°C)	M	%	0.01	n/t	n/t	6.82	n/t
pH	M	pH units	0.1	8.3	7.6	8.0	7.8
Total Organic Carbon	N	%	0.01	0.94	3.7	4.5	4.0
Organics							
>C8-C10 BCB	N	mg/kg	1	< 1.0	n/t	n/t	n/t
>C10-C12 BCB	N	mg/kg	1	< 1.0	n/t	n/t	n/t
>C12-C16 BCB	N	mg/kg	1	< 1.0	n/t	n/t	n/t
>C16-C21 BCB	N	mg/kg	1	3.3	n/t	n/t	n/t
Diesel Range Organics (>C10-C25)	N	mg/kg	1	4	n/t	n/t	n/t
Petrol Range Organics (>C6-C10)	N	mg/kg	0.01	0.03	n/t	n/t	n/t
Phenols							
Total Phenols	N	mg/kg	6	< 6	< 6	< 6	< 6

Results Summary

Report No.: 20-29855, issue number 1

			ELAB Reference	213956	213958	213959	213961
			Customer Reference	2	1	1	2
			Sample ID				
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sample Location	WS01	WS02	WS02a	WS03
			Sample Depth (m)	0.80	0.15	0.50	0.60
			Sampling Date	08/09/2020	08/09/2020	08/09/2020	08/09/2020
Determinand	**Codes**	**Units**	**LOD**				
Polyaromatic hydrocarbons							
Naphthalene	M	mg/kg	0.1	< 0.1	0.3	0.3	0.3
Acenaphthylene	M	mg/kg	0.1	< 0.1	0.4	0.3	0.5
Acenaphthene	M	mg/kg	0.1	< 0.1	0.1	0.1	0.4
Fluorene	M	mg/kg	0.1	0.1	< 0.1	< 0.1	0.3
Phenanthrene	M	mg/kg	0.1	0.3	1.5	1.8	4.4
Anthracene	M	mg/kg	0.1	0.2	0.5	0.5	1.5
Fluoranthene	M	mg/kg	0.1	1.1	4.0	4.8	12.4
Pyrene	M	mg/kg	0.1	1.0	3.5	4.2	11.2
Benzo(a)anthracene	M	mg/kg	0.1	0.7	2.1	2.6	7.8
Chrysene	M	mg/kg	0.1	0.8	2.6	3.1	8.6
Benzo(b)fluoranthene	M	mg/kg	0.1	1.1	2.9	3.7	8.1
Benzo(k)fluoranthene	M	mg/kg	0.1	1.1	2.8	4.0	7.8
Benzo(a)pyrene	M	mg/kg	0.1	0.8	2.5	3.1	8.1
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	0.6	2.2	2.4	6.5
Dibenzo(a,h)anthracene	M	mg/kg	0.1	0.1	0.6	0.5	1.6
Benzo[g,h,i]perylene	M	mg/kg	0.1	0.5	2.0	2.2	5.2
Total PAH(16)	M	mg/kg	0.4	8.7	28.1	33.9	84.7
Total PAH (Including Coronene GC-FID)	N	mg/kg	2	n/t	n/t	35	n/t
BTEX							
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Total BTEX	N	mg/kg	0.01	n/t	n/t	< 0.01	n/t
TPH CWG							
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	M	mg/kg	1	< 1.0	< 1.0	< 1.0	3.1
>C16-C21 Aliphatic	M	mg/kg	1	< 1.0	1.1	< 1.0	6.1
>C21-C35 Aliphatic	M	mg/kg	1	4.9	14.6	7.8	22.2
>C35-C40 Aliphatic	M	mg/kg	1	1.4	4.0	3.6	7.8
Total aliphatic hydrocarbons (>C5 - C40)	N	mg/kg	1	6.9	20.4	12.8	40.0
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	1.0
>C10-C12 Aromatic	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	M	mg/kg	1	1.1	2.1	2.0	6.3
>C16-C21 Aromatic	M	mg/kg	1	2.8	17.0	17.3	52.0
>C21-C35 Aromatic	M	mg/kg	1	16.2	99.5	77.3	255
>C35-C40 Aromatic	M	mg/kg	1	4.2	10.5	8.8	30.2
Total aromatic hydrocarbons (>C5 - C40)	N	mg/kg	1	25.0	130	107	345
Total petroleum hydrocarbons (>C5 - C40)	N	mg/kg	1	32.0	151	119	385
Total Petroleum Hydrocarbons							
Mineral Oil	M	mg/kg	5	n/t	n/t	^ 119	n/t
PCB (ICES 7 congeners)							
PCB (Total of 7 Congeners)	M	mg/kg	0.03	n/t	n/t	< 0.03	n/t

Tests marked N are not UKAS accredited.

Results Summary

Report No.: 20-29855, issue number 1

			ELAB Reference	213962	213966	213967
			Customer Reference	1	2	3
			Sample ID			
			Sample Type	SOIL	SOIL	SOIL
			Sample Location	WS04	WS05	WS05
			Sample Depth (m)	0.50	0.60	1.50
			Sampling Date	08/09/2020	08/09/2020	08/09/2020
Determinand	**Codes**	**Units**	**LOD**			
Soil sample preparation parameters						
Material removed	N	%	0.1	46.4	22.3	< 0.1
Description of Inert material removed	N		0	Stones,brick,concrete	Stones,brick,concrete	None
Metals						
Arsenic	M	mg/kg	1	21.2	22.1	13.4
Beryllium	U	mg/kg	1	1.4	1.4	1.0
Cadmium	M	mg/kg	0.5	1.1	0.8	< 0.5
Chromium	M	mg/kg	5	35.2	43.4	43.0
Copper	M	mg/kg	5	51.2	64.2	22.0
Lead	M	mg/kg	5	397	712	49.1
Mercury	M	mg/kg	0.5	1.3	0.8	< 0.5
Nickel	M	mg/kg	5	24.2	28.4	23.8
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	5	52.2	63.4	61.2
Zinc	M	mg/kg	5	253	352	95.4
Anions						
Water Soluble Chloride	M	mg/kg	40	< 40	< 40	< 40
Water Soluble Sulphate	M	g/l	0.02	0.03	< 0.02	< 0.02
Inorganics						
Elemental Sulphur	M	mg/kg	20	< 20	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1	1.3	1.0	< 1.0
Acid Soluble Sulphate (SO4)	U	%	0.02	0.13	0.08	0.04
Water Soluble Boron	N	mg/kg	0.5	0.5	0.6	0.7
Miscellaneous						
Acid Neutralisation Capacity	N	mol/kg	0.1	n/t	n/t	n/t
Loss On Ignition (450°C)	M	%	0.01	n/t	n/t	n/t
pH	M	pH units	0.1	8.5	8.3	7.9
Total Organic Carbon	N	%	0.01	1.8	2.0	0.41
Organics						
>C8-C10 BCB	N	mg/kg	1	n/t	n/t	< 1.0
>C10-C12 BCB	N	mg/kg	1	n/t	n/t	< 1.0
>C12-C16 BCB	N	mg/kg	1	n/t	n/t	< 1.0
>C16-C21 BCB	N	mg/kg	1	n/t	n/t	< 1.0
Diesel Range Organics (>C10-C25)	N	mg/kg	1	n/t	n/t	< 1
Petrol Range Organics (>C6-C10)	N	mg/kg	0.01	n/t	n/t	0.15
Phenols						
Total Phenols	N	mg/kg	6	< 6	< 6	< 6

Results Summary

Report No.: 20-29855, issue number 1

			ELAB Reference	213962	213966	213967
			Customer Reference	1	2	3
			Sample ID			
			Sample Type	SOIL	SOIL	SOIL
			Sample Location	WS04	WS05	WS05
			Sample Depth (m)	0.50	0.60	1.50
			Sampling Date	08/09/2020	08/09/2020	08/09/2020
Determinand	**Codes**	**Units**	**LOD**			
Polyaromatic hydrocarbons						
Naphthalene	M	mg/kg	0.1	0.2	0.2	< 0.1
Acenaphthylene	M	mg/kg	0.1	0.2	0.5	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	0.2	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	0.8	2.4	< 0.1
Anthracene	M	mg/kg	0.1	0.2	0.8	< 0.1
Fluoranthene	M	mg/kg	0.1	2.4	6.9	< 0.1
Pyrene	M	mg/kg	0.1	2.1	6.2	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	1.4	3.9	< 0.1
Chrysene	M	mg/kg	0.1	1.7	4.2	< 0.1
Benzo(b)fluoranthene	M	mg/kg	0.1	2.1	5.1	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	2.1	4.0	< 0.1
Benzo(a)pyrene	M	mg/kg	0.1	1.8	4.8	< 0.1
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	1.6	3.6	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	0.3	0.9	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	1.5	3.2	< 0.1
Total PAH(16)	M	mg/kg	0.4	18.4	47.0	< 0.4
Total PAH (Including Coronene GC-FID)	N	mg/kg	2	n/t	n/t	n/t
BTEX						
Benzene	M	ug/kg	10	< 10.0	< 10.0	15.8
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0
MTBE	N	ug/kg	10	< 10.0	< 10.0	< 10.0
Total BTEX	N	mg/kg	0.01	n/t	n/t	n/t
TPH CWG						
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	M	mg/kg	1	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	M	mg/kg	1	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	M	mg/kg	1	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic	M	mg/kg	1	3.3	8.7	5.2
>C35-C40 Aliphatic	M	mg/kg	1	1.9	3.1	1.7
Total aliphatic hydrocarbons (>C5 - C40)	N	mg/kg	1	5.8	13.3	7.4
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	0.02
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	M	mg/kg	1	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	M	mg/kg	1	< 1.0	2.3	< 1.0
>C16-C21 Aromatic	M	mg/kg	1	5.0	20.2	1.3
>C21-C35 Aromatic	M	mg/kg	1	27.4	95.4	25.4
>C35-C40 Aromatic	M	mg/kg	1	4.9	18.3	9.0
Total aromatic hydrocarbons (>C5 - C40)	N	mg/kg	1	39.1	137	37.4
Total petroleum hydrocarbons (>C5 - C40)	N	mg/kg	1	44.9	151	44.8
Total Petroleum Hydrocarbons						
Mineral Oil	M	mg/kg	5	n/t	n/t	n/t
PCB (ICES 7 congeners)						
PCB (Total of 7 Congeners)	M	mg/kg	0.03	n/t	n/t	n/t

Tests marked N are not UKAS accredited.

Results Summary

Report No.: 20-29855, issue number 1

				ELAB Reference	213968	213969	213971	213973	213974
				Customer Reference	1	2	1	1	1
				Sample ID					
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	WS06	WS06	WS07	WS08	WS08a
				Sample Depth (m)	0.15	0.50	0.50	0.40	0.70
				Sampling Date	08/09/2020	09/09/2020	09/09/2020	09/09/2020	09/09/2020
Determinand	**Codes**	**Units**	**LOD**						
Soil sample preparation parameters									
Material removed	N	%	0.1		< 0.1	< 0.1	< 0.1	< 0.1	22.0
Description of Inert material removed	N		0		None	None	None	None	Stones
Metals									
Arsenic	M	mg/kg	1		13.6	n/t	24.2	20.8	16.0
Beryllium	U	mg/kg	1		< 1.0	n/t	1.5	1.2	1.1
Cadmium	M	mg/kg	0.5		22.1	n/t	0.6	7.6	12.7
Chromium	M	mg/kg	5		117	n/t	38.7	79.5	95.0
Copper	M	mg/kg	5		250	n/t	63.5	163	184
Lead	M	mg/kg	5		478	n/t	307	833	593
Mercury	M	mg/kg	0.5		9.0	n/t	0.8	3.4	5.1
Nickel	M	mg/kg	5		43.1	n/t	27.3	37.7	35.4
Selenium	M	mg/kg	1		1.2	n/t	< 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	5		47.8	n/t	66.8	70.9	59.0
Zinc	M	mg/kg	5		949	n/t	216	615	658
Anions									
Water Soluble Chloride	M	mg/kg	40		< 40	n/t	< 40	< 40	< 40
Water Soluble Sulphate	M	g/l	0.02		< 0.02	n/t	< 0.02	< 0.02	< 0.02
Inorganics									
Elemental Sulphur	M	mg/kg	20		< 20	n/t	< 20	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8		< 0.8	n/t	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2		< 2	n/t	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1		9.7	n/t	< 1.0	1.9	4.7
Acid Soluble Sulphate (SO4)	U	%	0.02		0.10	n/t	0.05	0.07	0.07
Water Soluble Boron	N	mg/kg	0.5		1.3	n/t	0.9	0.9	1.3
Miscellaneous									
Acid Neutralisation Capacity	N	mol/kg	0.1		n/t	< 0.1	n/t	n/t	n/t
Loss On Ignition (450°C)	M	%	0.01		n/t	2.81	n/t	n/t	n/t
pH	M	pH units	0.1		7.3	8.1	8.0	8.1	7.8
Total Organic Carbon	N	%	0.01		3.7	0.44	1.5	1.5	1.6
Organics									
>C8-C10 BCB	N	mg/kg	1		n/t	n/t	n/t	< 1.0	n/t
>C10-C12 BCB	N	mg/kg	1		n/t	n/t	n/t	< 1.0	n/t
>C12-C16 BCB	N	mg/kg	1		n/t	n/t	n/t	< 1.0	n/t
>C16-C21 BCB	N	mg/kg	1		n/t	n/t	n/t	3.2	n/t
Diesel Range Organics (>C10-C25)	N	mg/kg	1		n/t	n/t	n/t	3	n/t
Petrol Range Organics (>C6-C10)	N	mg/kg	0.01		n/t	n/t	n/t	< 0.01	n/t
Phenols									
Total Phenols	N	mg/kg	6		< 6	n/t	< 6	< 6	< 6

Results Summary

Report No.: 20-29855, issue number 1

				ELAB Reference	213968	213969	213971	213973	213974
				Customer Reference	1	2	1	1	1
				Sample ID					
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	WS06	WS06	WS07	WS08	WS08a
				Sample Depth (m)	0.15	0.50	0.50	0.40	0.70
				Sampling Date	08/09/2020	09/09/2020	09/09/2020	09/09/2020	09/09/2020
Determinand	**Codes**	**Units**	**LOD**						
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	0.1	n/t	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	0.4	n/t	0.1	0.2	0.2
Acenaphthene	M	mg/kg	0.1	< 0.1	n/t	< 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	n/t	< 0.1	< 0.1	0.1
Phenanthrene	M	mg/kg	0.1	1.3	n/t	0.9	0.4	0.4
Anthracene	M	mg/kg	0.1	0.4	n/t	0.2	0.1	0.1
Fluoranthene	M	mg/kg	0.1	4.4	n/t	2.5	1.4	1.3
Pyrene	M	mg/kg	0.1	3.8	n/t	2.1	1.2	1.1
Benzo(a)anthracene	M	mg/kg	0.1	2.3	n/t	1.1	0.8	0.7
Chrysene	M	mg/kg	0.1	2.8	n/t	1.5	0.9	0.8
Benzo(b)fluoranthene	M	mg/kg	0.1	3.0	n/t	2.1	1.1	1.1
Benzo(k)fluoranthene	M	mg/kg	0.1	3.0	n/t	2.0	1.1	1.0
Benzo(a)pyrene	M	mg/kg	0.1	2.8	n/t	1.6	0.9	0.9
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	2.2	n/t	1.3	0.8	0.8
Dibenzo(a,h)anthracene	M	mg/kg	0.1	0.6	n/t	0.3	0.2	0.3
Benzo[g,h,i]perylene	M	mg/kg	0.1	2.2	n/t	1.1	0.8	0.9
Total PAH(16)	M	mg/kg	0.4	29.4	n/t	17.0	10.2	9.9
Total PAH (Including Coronene GC-FID)	N	mg/kg	2	n/t	20	n/t	n/t	n/t
BTEX									
Benzene	M	ug/kg	10	< 10.0	n/t	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	n/t	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	n/t	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	n/t	< 10.0	< 10.0	< 10.0
MTBE	N	ug/kg	10	< 10.0	n/t	< 10.0	< 10.0	< 10.0
Total BTEX	N	mg/kg	0.01	n/t	< 0.01	n/t	n/t	n/t
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	n/t	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	n/t	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	n/t	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	M	mg/kg	1	< 1.0	n/t	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	M	mg/kg	1	< 1.0	n/t	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	M	mg/kg	1	< 1.0	n/t	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic	M	mg/kg	1	7.3	n/t	3.7	12.2	5.5
>C35-C40 Aliphatic	M	mg/kg	1	2.8	n/t	1.5	2.4	1.5
Total aliphatic hydrocarbons (>C5 - C40)	N	mg/kg	1	11.6	n/t	5.7	16.0	7.7
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	n/t	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	n/t	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	n/t	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	M	mg/kg	1	< 1.0	n/t	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	M	mg/kg	1	1.8	n/t	1.0	1.8	< 1.0
>C16-C21 Aromatic	M	mg/kg	1	10.4	n/t	4.1	9.0	2.2
>C21-C35 Aromatic	M	mg/kg	1	61.8	n/t	23.3	65.5	18.6
>C35-C40 Aromatic	M	mg/kg	1	7.2	n/t	4.8	10.3	3.7
Total aromatic hydrocarbons (>C5 - C40)	N	mg/kg	1	82.4	n/t	33.9	87.6	26.2
Total petroleum hydrocarbons (>C5 - C40)	N	mg/kg	1	94.0	n/t	39.6	104	33.9
Total Petroleum Hydrocarbons									
Mineral Oil	M	mg/kg	5	n/t	^ 205	n/t	n/t	n/t
PCB (ICES 7 congeners)									
PCB (Total of 7 Congeners)	M	mg/kg	0.03	n/t	< 0.03	n/t	n/t	n/t

Tests marked N are not UKAS accredited.

Results Summary

Report No.: 20-29855, issue number 1

				ELAB Reference	213975	213976	213978	213980
				Customer Reference	2	1	3	2
				Sample ID				
				Sample Type	SOIL	SOIL	SOIL	SOIL
				Sample Location	WS08a	WS09	WS09	WS10
				Sample Depth (m)	1.00	0.20	1.00	1.00
				Sampling Date	09/09/2020	09/09/2020	09/09/2020	09/09/2020
Determinand	**Codes**	**Units**	**LOD**					
Soil sample preparation parameters								
Material removed	N	%	0.1		47.2	48.6	< 0.1	20.5
Description of Inert material removed	N		0		Stones	Stones	None	Stones,clinker
Metals								
Arsenic	M	mg/kg	1		9.7	31.1	22.4	25.7
Beryllium	U	mg/kg	1		< 1.0	2.4	1.3	1.9
Cadmium	M	mg/kg	0.5		< 0.5	1.3	< 0.5	0.6
Chromium	M	mg/kg	5		30.8	34.3	53.4	56.3
Copper	M	mg/kg	5		13.6	111	21.6	79.8
Lead	M	mg/kg	5		29.1	910	54.3	561
Mercury	M	mg/kg	0.5		< 0.5	1.4	< 0.5	1.3
Nickel	M	mg/kg	5		18.5	33.2	31.6	39.7
Selenium	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	5		42.1	61.8	79.9	86.7
Zinc	M	mg/kg	5		48.8	1280	120	336
Anions								
Water Soluble Chloride	M	mg/kg	40		< 40	< 40	< 40	< 40
Water Soluble Sulphate	M	g/l	0.02		< 0.02	< 0.02	< 0.02	< 0.02
Inorganics								
Elemental Sulphur	M	mg/kg	20		< 20	< 20	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8		< 0.8	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2		< 2	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1		1.8	2.3	1.0	< 1.0
Acid Soluble Sulphate (SO4)	U	%	0.02		0.03	0.08	0.04	0.08
Water Soluble Boron	N	mg/kg	0.5		0.7	1.1	0.7	1.3
Miscellaneous								
Acid Neutralisation Capacity	N	mol/kg	0.1		n/t	n/t	n/t	n/t
Loss On Ignition (450°C)	M	%	0.01		n/t	n/t	n/t	n/t
pH	M	pH units	0.1		8.1	7.4	7.6	8.2
Total Organic Carbon	N	%	0.01		0.16	5.7	0.40	1.8
Organics								
>C8-C10 BCB	N	mg/kg	1		n/t	n/t	< 1.0	< 1.0
>C10-C12 BCB	N	mg/kg	1		n/t	n/t	< 1.0	< 1.0
>C12-C16 BCB	N	mg/kg	1		n/t	n/t	< 1.0	1.0
>C16-C21 BCB	N	mg/kg	1		n/t	n/t	< 1.0	6.6
Diesel Range Organics (>C10-C25)	N	mg/kg	1		n/t	n/t	< 1	8
Petrol Range Organics (>C6-C10)	N	mg/kg	0.01		n/t	n/t	0.26	0.07
Phenols								
Total Phenols	N	mg/kg	6		< 6	< 6	< 6	< 6

Results Summary

Report No.: 20-29855, issue number 1

			ELAB Reference	213975	213976	213978	213980
			Customer Reference	2	1	3	2
			Sample ID				
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sample Location	WS08a	WS09	WS09	WS10
			Sample Depth (m)	1.00	0.20	1.00	1.00
			Sampling Date	09/09/2020	09/09/2020	09/09/2020	09/09/2020
Determinand	**Codes**	**Units**	**LOD**				
Polyaromatic hydrocarbons							
Naphthalene	M	mg/kg	0.1	< 0.1	0.7	< 0.1	0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	2.5	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	0.4	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	0.8	< 0.1	0.3
Phenanthrene	M	mg/kg	0.1	< 0.1	13.7	< 0.1	0.6
Anthracene	M	mg/kg	0.1	< 0.1	2.9	< 0.1	0.2
Fluoranthene	M	mg/kg	0.1	< 0.1	29.8	< 0.1	2.0
Pyrene	M	mg/kg	0.1	< 0.1	24.7	< 0.1	1.7
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	13.8	< 0.1	1.0
Chrysene	M	mg/kg	0.1	< 0.1	13.6	< 0.1	1.2
Benzo(b)fluoranthene	M	mg/kg	0.1	< 0.1	13.3	< 0.1	1.3
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	12.0	< 0.1	1.4
Benzo(a)pyrene	M	mg/kg	0.1	< 0.1	14.1	< 0.1	1.2
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	< 0.1	10.4	< 0.1	1.0
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	2.4	< 0.1	0.3
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	8.9	< 0.1	0.8
Total PAH(16)	M	mg/kg	0.4	< 0.4	164	< 0.4	13.1
Total PAH (Including Coronene GC-FID)	N	mg/kg	2	n/t	n/t	n/t	n/t
BTEX							
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Total BTEX	N	mg/kg	0.01	n/t	n/t	n/t	n/t
TPH CWG							
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic	M	mg/kg	1	5.7	11.1	7.4	5.4
>C35-C40 Aliphatic	M	mg/kg	1	1.4	4.1	1.4	1.9
Total aliphatic hydrocarbons (>C5 - C40)	N	mg/kg	1	7.7	16.6	9.3	8.4
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	M	mg/kg	1	< 1.0	2.7	< 1.0	1.5
>C16-C21 Aromatic	M	mg/kg	1	1.0	27.4	1.1	6.4
>C21-C35 Aromatic	M	mg/kg	1	23.9	115	22.9	34.1
>C35-C40 Aromatic	M	mg/kg	1	8.4	14.3	8.4	6.5
Total aromatic hydrocarbons (>C5 - C40)	N	mg/kg	1	35.0	161	34.1	49.4
Total petroleum hydrocarbons (>C5 - C40)	N	mg/kg	1	42.7	178	43.4	57.8
Total Petroleum Hydrocarbons							
Mineral Oil	M	mg/kg	5	n/t	n/t	n/t	n/t
PCB (ICES 7 congeners)							
PCB (Total of 7 Congeners)	M	mg/kg	0.03	n/t	n/t	n/t	n/t

Results Summary

Report No.: 20-29855, issue number 1

				ELAB Reference	213983	213984	213987	213989	213991
				Customer Reference	1	1	2	2	2
				Sample ID					
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	WS11	WS12	WS13	WS14	WS15
				Sample Depth (m)	0.60	0.15	0.70	0.50	0.70
				Sampling Date	09/09/2020	09/09/2020	10/09/2020	10/09/2020	09/09/2020
Determinand	**Codes**	**Units**	**LOD**						
Soil sample preparation parameters									
Material removed	N	%	0.1		40.3	< 0.1	< 0.1	22.6	47.7
Description of Inert material removed	N		0		Stones	None	None	Stones	Stones
Metals									
Arsenic	M	mg/kg	1		26.6	15.6	21.2	21.4	21.4
Beryllium	U	mg/kg	1		1.6	1.1	1.4	1.0	1.8
Cadmium	M	mg/kg	0.5		2.8	< 0.5	< 0.5	0.9	7.1
Chromium	M	mg/kg	5		48.7	43.2	54.1	47.3	63.5
Copper	M	mg/kg	5		115	29.0	18.6	45.7	135
Lead	M	mg/kg	5		412	98.9	23.3	450	584
Mercury	M	mg/kg	0.5		0.9	< 0.5	< 0.5	< 0.5	3.4
Nickel	M	mg/kg	5		38.9	21.5	45.8	32.2	42.1
Selenium	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	5		60.1	64.1	82.6	64.3	63.7
Zinc	M	mg/kg	5		532	104	69.1	262	623
Anions									
Water Soluble Chloride	M	mg/kg	40		< 40	< 40	< 40	< 40	< 40
Water Soluble Sulphate	M	g/l	0.02		0.07	< 0.02	< 0.02	0.05	0.02
Inorganics									
Elemental Sulphur	M	mg/kg	20		< 20	< 20	< 20	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8		< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2		< 2	< 2	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1		1.2	< 1.0	< 1.0	< 1.0	1.8
Acid Soluble Sulphate (SO4)	U	%	0.02		0.19	0.04	0.04	0.12	0.16
Water Soluble Boron	N	mg/kg	0.5		0.6	0.5	0.7	0.8	0.8
Miscellaneous									
Acid Neutralisation Capacity	N	mol/kg	0.1		n/t	n/t	n/t	< 0.1	n/t
Loss On Ignition (450°C)	M	%	0.01		n/t	n/t	n/t	2.44	n/t
pH	M	pH units	0.1		8.9	6.6	7.8	9.5	8.4
Total Organic Carbon	N	%	0.01		2.2	1.0	0.29	1.5	4.9
Organics									
>C8-C10 BCB	N	mg/kg	1		n/t	n/t	< 1.0	n/t	n/t
>C10-C12 BCB	N	mg/kg	1		n/t	n/t	< 1.0	n/t	n/t
>C12-C16 BCB	N	mg/kg	1		n/t	n/t	< 1.0	n/t	n/t
>C16-C21 BCB	N	mg/kg	1		n/t	n/t	< 1.0	n/t	n/t
Diesel Range Organics (>C10-C25)	N	mg/kg	1		n/t	n/t	< 1	n/t	n/t
Petrol Range Organics (>C6-C10)	N	mg/kg	0.01		n/t	n/t	0.16	n/t	n/t
Phenols									
Total Phenols	N	mg/kg	6		< 6	< 6	< 6	< 6	< 6

Tests marked N are not UKAS accredited.

Results Summary

Report No.: 20-29855, issue number 1

				ELAB Reference	213983	213984	213987	213989	213991
				Customer Reference	1	1	2	2	2
				Sample ID					
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	WS11	WS12	WS13	WS14	WS15
				Sample Depth (m)	0.60	0.15	0.70	0.50	0.70
				Sampling Date	09/09/2020	09/09/2020	10/09/2020	10/09/2020	09/09/2020
Determinand	**Codes**	**Units**	**LOD**						
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	0.1	< 0.1	< 0.1	< 0.1	0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1
Fluorene	M	mg/kg	0.1	0.2	0.1	< 0.1	0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	0.6	< 0.1	< 0.1	0.1	0.8
Anthracene	M	mg/kg	0.1	0.2	< 0.1	< 0.1	0.1	0.3
Fluoranthene	M	mg/kg	0.1	2.0	< 0.1	< 0.1	0.6	2.1
Pyrene	M	mg/kg	0.1	1.8	< 0.1	< 0.1	0.7	1.9
Benzo(a)anthracene	M	mg/kg	0.1	1.1	< 0.1	< 0.1	0.4	1.3
Chrysene	M	mg/kg	0.1	1.1	< 0.1	< 0.1	0.5	1.2
Benzo(b)fluoranthene	M	mg/kg	0.1	1.4	< 0.1	< 0.1	1.0	1.9
Benzo(k)fluoranthene	M	mg/kg	0.1	1.2	< 0.1	< 0.1	0.8	1.5
Benzo(a)pyrene	M	mg/kg	0.1	1.1	< 0.1	< 0.1	0.6	1.4
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	0.8	< 0.1	< 0.1	0.6	1.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	0.2	< 0.1	< 0.1	0.2	0.3
Benzo[g,h,i]perylene	M	mg/kg	0.1	0.7	< 0.1	< 0.1	0.6	1.0
Total PAH(16)	M	mg/kg	0.4	12.8	0.5	< 0.4	6.4	15.1
Total PAH (Including Coronene GC-FID)	N	mg/kg	2	n/t	n/t	n/t	7	n/t
BTEX									
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Total BTEX	N	mg/kg	0.01	n/t	n/t	n/t	< 0.01	n/t
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	M	mg/kg	1	< 1.0	< 1.0	< 1.0	5.9	< 1.0
>C21-C35 Aliphatic	M	mg/kg	1	6.8	4.3	2.8	38.4	7.8
>C35-C40 Aliphatic	M	mg/kg	1	2.1	1.3	< 1.0	8.4	3.4
Total aliphatic hydrocarbons (>C5 - C40)	N	mg/kg	1	10.4	6.0	4.1	53.5	12.7
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	M	mg/kg	1	1.2	< 1.0	< 1.0	1.6	4.4
>C16-C21 Aromatic	M	mg/kg	1	4.9	< 1.0	< 1.0	18.0	25.3
>C21-C35 Aromatic	M	mg/kg	1	44.5	15.9	7.5	173	82.8
>C35-C40 Aromatic	M	mg/kg	1	8.4	5.2	2.4	50.3	11.2
Total aromatic hydrocarbons (>C5 - C40)	N	mg/kg	1	60.0	23.4	11.8	244	125
Total petroleum hydrocarbons (>C5 - C40)	N	mg/kg	1	70.3	29.4	15.9	298	137
Total Petroleum Hydrocarbons									
Mineral Oil	M	mg/kg	5	n/t	n/t	n/t	^ 256	n/t
PCB (ICES 7 congeners)									
PCB (Total of 7 Congeners)	M	mg/kg	0.03	n/t	n/t	n/t	0.20	n/t

Tests marked N are not UKAS accredited.

Results Summary

Report No.: 20-29855, issue number 1

				ELAB Reference	213993	213994	213997	213999
				Customer Reference	1	2	1	1
				Sample ID				
				Sample Type	SOIL	SOIL	SOIL	SOIL
				Sample Location	WS16	WS16	WS17	WS18
				Sample Depth (m)	0.20	0.50	0.40	0.35
				Sampling Date	09/09/2020	09/09/2020	10/09/2020	10/09/2020
Determinand	**Codes**	**Units**	**LOD**				
Soil sample preparation parameters							
Material removed	N	%	0.1	< 0.1	21.7	21.0	32.5
Description of Inert material removed	N		0	None	Stones,clinker	Stones,clinker	Stones,clinker
Metals							
Arsenic	M	mg/kg	1	26.2	40.6	65.2	17.5
Beryllium	U	mg/kg	1	1.3	2.7	4.2	1.3
Cadmium	M	mg/kg	0.5	10.0	2.7	1.2	0.8
Chromium	M	mg/kg	5	83.2	54.3	47.7	35.6
Copper	M	mg/kg	5	185	218	312	66.4
Lead	M	mg/kg	5	335	2060	1170	648
Mercury	M	mg/kg	0.5	4.6	3.1	3.0	1.0
Nickel	M	mg/kg	5	38.8	47.8	57.6	23.4
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	5	65.5	71.8	96.7	53.4
Zinc	M	mg/kg	5	557	1330	824	308
Anions							
Water Soluble Chloride	M	mg/kg	40	< 40	< 40	< 40	< 40
Water Soluble Sulphate	M	g/l	0.02	< 0.02	< 0.02	< 0.02	0.07
Inorganics							
Elemental Sulphur	M	mg/kg	20	< 20	< 20	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2	< 2	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1	3.6	2.7	1.3	1.4
Acid Soluble Sulphate (SO4)	U	%	0.02	0.07	0.13	0.13	0.13
Water Soluble Boron	N	mg/kg	0.5	1.1	1.4	0.9	0.6
Miscellaneous							
Acid Neutralisation Capacity	N	mol/kg	0.1	n/t	n/t	n/t	< 0.1
Loss On Ignition (450°C)	M	%	0.01	n/t	n/t	n/t	4.36
pH	M	pH units	0.1	7.3	7.8	7.8	9.4
Total Organic Carbon	N	%	0.01	2.9	5.4	7.4	3.4
Organics							
>C8-C10 BCB	N	mg/kg	1	n/t	n/t	n/t	n/t
>C10-C12 BCB	N	mg/kg	1	n/t	n/t	n/t	n/t
>C12-C16 BCB	N	mg/kg	1	n/t	n/t	n/t	n/t
>C16-C21 BCB	N	mg/kg	1	n/t	n/t	n/t	n/t
Diesel Range Organics (>C10-C25)	N	mg/kg	1	n/t	n/t	n/t	n/t
Petrol Range Organics (>C6-C10)	N	mg/kg	0.01	n/t	n/t	n/t	n/t
Phenols							
Total Phenols	N	mg/kg	6	< 6	< 6	< 6	< 6

Results Summary

Report No.: 20-29855, issue number 1

			ELAB Reference	213993	213994	213997	213999
			Customer Reference	1	2	1	1
			Sample ID				
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sample Location	WS16	WS16	WS17	WS18
			Sample Depth (m)	0.20	0.50	0.40	0.35
			Sampling Date	09/09/2020	09/09/2020	10/09/2020	10/09/2020
Determinand	**Codes**	**Units**	**LOD**				
Polyaromatic hydrocarbons							
Naphthalene	M	mg/kg	0.1	< 0.1	0.2	0.3	0.2
Acenaphthylene	M	mg/kg	0.1	0.2	0.2	0.2	0.5
Acenaphthene	M	mg/kg	0.1	< 0.1	0.2	0.1	0.1
Fluorene	M	mg/kg	0.1	0.2	0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	0.6	2.9	1.5	1.1
Anthracene	M	mg/kg	0.1	0.2	0.4	0.4	0.5
Fluoranthene	M	mg/kg	0.1	1.6	5.3	4.2	2.9
Pyrene	M	mg/kg	0.1	1.4	4.5	3.5	2.8
Benzo(a)anthracene	M	mg/kg	0.1	0.9	2.2	2.2	2.0
Chrysene	M	mg/kg	0.1	1.1	3.1	2.6	2.3
Benzo(b)fluoranthene	M	mg/kg	0.1	1.7	3.6	2.8	3.4
Benzo(k)fluoranthene	M	mg/kg	0.1	1.4	2.8	2.6	2.9
Benzo(a)pyrene	M	mg/kg	0.1	1.1	3.1	2.6	3.6
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	1.0	2.6	2.0	3.8
Dibenzo(a,h)anthracene	M	mg/kg	0.1	0.3	0.6	0.5	0.8
Benzo[g,h,i]perylene	M	mg/kg	0.1	1.0	2.2	1.8	3.1
Total PAH(16)	M	mg/kg	0.4	12.6	33.9	27.5	30.2
Total PAH (Including Coronene GC-FID)	N	mg/kg	2	n/t	n/t	n/t	31
BTEX							
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Total BTEX	N	mg/kg	0.01	n/t	n/t	n/t	< 0.01
TPH CWG							
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	M	mg/kg	1	< 1.0	1.4	< 1.0	< 1.0
>C21-C35 Aliphatic	M	mg/kg	1	6.3	11.5	5.0	4.5
>C35-C40 Aliphatic	M	mg/kg	1	2.1	5.4	2.6	1.9
Total aliphatic hydrocarbons (>C5 - C40)	N	mg/kg	1	9.5	19.2	8.4	7.2
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	M	mg/kg	1	1.6	2.8	1.3	1.2
>C16-C21 Aromatic	M	mg/kg	1	7.8	35.6	7.7	5.9
>C21-C35 Aromatic	M	mg/kg	1	46.3	165	43.5	33.0
>C35-C40 Aromatic	M	mg/kg	1	7.6	19.3	6.8	4.5
Total aromatic hydrocarbons (>C5 - C40)	N	mg/kg	1	64.3	224	60.2	45.5
Total petroleum hydrocarbons (>C5 - C40)	N	mg/kg	1	73.7	243	68.5	52.7
Total Petroleum Hydrocarbons							
Mineral Oil	M	mg/kg	5	n/t	n/t	n/t	^ 78
PCB (ICES 7 congeners)							
PCB (Total of 7 Congeners)	M	mg/kg	0.03	n/t	n/t	n/t	< 0.03

Tests marked N are not UKAS accredited.

Results Summary

Report No.: 20-29855, issue number 1

WAC Analysis								
Elab Ref:	213999					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	10/09/2020					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	WS18 1							
Depth (m)	0.35							
Site:	Phase 1 Cambridge Road							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		3.40	3	5	6
Loss on Ignition		M	%		4.4	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC		M	mg/kg		78	500	--	--
Total (of 17) PAHs		N	mg/kg		31.0	100	--	--
pH		M			9.4	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	0.013		0.13	0.5	2	25
Barium		N	0.011		0.11	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	0.016		0.16	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	0.002		< 0.05	0.4	10	40
Lead		N	0.012		0.12	0.5	10	50
Antimony		N	0.005		0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	0.016		0.16	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	11		114.00	1000	20000	50000
Total Dissolved Solids		N	97		974.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	19.600		196.00	500	800	1000
Leach Test Information								
pH		N	7.9					
Conductivity (uS/cm)		N	145					
Dry mass of test portion (g)			100.000					
Dry Matter (%)			88					
Moisture (%)			14					
Eluent Volume (ml)			940					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

Results Summary

Report No.: 20-29855, issue number 1

WAC Analysis								
Elab Ref:	213989					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	10/09/2020					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	WS14 2							
Depth (m)	0.5							
Site:	Phase 1 Cambridge Road							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		1.50	3	5	6
Loss on Ignition		M	%		2.4	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		0.20	1	--	--
TPH Total WAC		M	mg/kg		256	500	--	--
Total (of 17) PAHs		N	mg/kg		7.0	100	--	--
pH		M			9.5	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	0.012		0.12	0.5	2	25
Barium		N	< 0.005		< 0.05	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	0.016		0.16	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	0.002		< 0.05	0.4	10	40
Lead		N	0.004		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	0.008		0.08	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	9		88.30	1000	20000	50000
Total Dissolved Solids		N	82		819.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	17.800		178.00	500	800	1000
Leach Test Information								
pH		N	7.8					
Conductivity (uS/cm)		N	122					
Dry mass of test portion (g)			100.000					
Dry Matter (%)			95					
Moisture (%)			6					
Eluent Volume (ml)			950					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

Results Summary

Report No.: 20-29855, issue number 1

WAC Analysis								
Elab Ref:	213969					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	09/09/2020					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	WS06 2							
Depth (m)	0.5							
Site:	Phase 1 Cambridge Road							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		0.44	3	5	6
Loss on Ignition		M	%		2.8	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC		M	mg/kg		205	500	--	--
Total (of 17) PAHs		N	mg/kg		20.0	100	--	--
pH		M			8.1	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	0.007		0.07	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	0.013		0.13	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	0.021		0.21	0.5	10	30
Nickel		N	0.001		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	< 0.005		< 0.05	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	5		49.30	1000	20000	50000
Total Dissolved Solids		N	77		765.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	15.300		153.00	500	800	1000
Leach Test Information								
pH		N	7.9					
Conductivity (uS/cm)		N	114					
Dry mass of test portion (g)			100.000					
Dry Matter (%)			78					
Moisture (%)			28					
Eluent Volume (ml)			918					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

Results Summary

Report No.: 20-29855, issue number 1

WAC Analysis								
Elab Ref:	213959					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	08/09/2020					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	WS02a 1							
Depth (m)	0.5							
Site:	Phase 1 Cambridge Road							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		4.50	3	5	6
Loss on Ignition		M	%		6.8	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC		M	mg/kg		119	500	--	--
Total (of 17) PAHs		N	mg/kg		35.0	100	--	--
pH		M			8.0	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	0.025		0.25	0.5	2	25
Barium		N	0.013		0.13	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	0.016		0.16	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	0.002		< 0.05	0.4	10	40
Lead		N	0.029		0.29	0.5	10	50
Antimony		N	0.014		0.14	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	0.012		0.12	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	9		87.40	1000	20000	50000
Total Dissolved Solids		N	86		860.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	15.300		153.00	500	800	1000
Leach Test Information								
pH		N	7.8					
Conductivity (uS/cm)		N	128					
Dry mass of test portion (g)			100.000					
Dry Matter (%)			87					
Moisture (%)			15					
Eluent Volume (ml)			940					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

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Results Summary

Report No.: 20-29855, issue number 1

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #)
in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
213956	0.80	WS01 2	Brown Soil, Stones, Clinker	No asbestos detected	n/t	n/t	n/t	n/t
213958	0.15	WS02 1	Brown Soil, Stones, Clinker, Plant Material	No asbestos detected	n/t	n/t	n/t	n/t
213959	0.50	WS02a 1	Brown Soil, Stones, Clinker, Brick, Glass, China	No asbestos detected	n/t	n/t	n/t	n/t
213961	0.60	WS03 2	Brown Soil, Stones, Clinker, Glass, Plant Material	No asbestos detected	n/t	n/t	n/t	n/t
213962	0.50	WS04 1	Brown Soil, Stones, Clinker, Brick, Concrete	No asbestos detected	n/t	n/t	n/t	n/t
213966	0.60	WS05 2	Brown Soil, Stones, Clinker, Brick, Slate, Concrete	No asbestos detected	n/t	n/t	n/t	n/t
213967	1.50	WS05 3	Brown Soil, Stones, Clinker	No asbestos detected	n/t	n/t	n/t	n/t
213968	0.15	WS06 1	Brown Soil, Stones, Clinker, Plant Material	No asbestos detected	n/t	n/t	n/t	n/t
213971	0.50	WS07 1	Brown Soil, Stones, Clinker	No asbestos detected	n/t	n/t	n/t	n/t
213973	0.40	WS08 1	Brown Soil, Stones, Clinker, Brick	No asbestos detected	n/t	n/t	n/t	n/t
213974	0.70	WS08a 1	Brown Soil, Stones, Clinker, Concrete	No asbestos detected	n/t	n/t	n/t	n/t
213975	1.00	WS08a 2	Brown Soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
213976	0.20	WS09 1	Brown Soil, Stones, Clinker, Plant Material	No asbestos detected	n/t	n/t	n/t	n/t
213978	1.00	WS09 3	Brown Soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
213980	1.00	WS10 2	Brown Soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
213983	0.60	WS11 1	Brown Soil, Stones, Clinker, Brick, Concrete	No asbestos detected	n/t	n/t	n/t	n/t
213984	0.15	WS12 1	Brown sandy soil, stones, organics	No asbestos detected	n/t	n/t	n/t	n/t
213987	0.70	WS13 2	Brown sandy soil, stones	No asbestos detected	n/t	n/t	n/t	n/t
213989	0.50	WS14 2	Brown sandy soil, stones, concrete, clinker	Amosite (A.I.B)	n/t	n/t	n/t	n/t
213991	0.70	WS15 2	Brown sandy soil, stones, concrete, brick, clinker	No asbestos detected	n/t	n/t	n/t	n/t
213993	0.20	WS16 1	Brown sandy soil, stones, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
213994	0.50	WS16 2	Brown sandy soil, stones, concrete, brick, clinker	No asbestos detected	n/t	n/t	n/t	n/t
213997	0.40	WS17 1	Brown sandy soil, stones, concrete, brick, clinker, glass	No asbestos detected	n/t	n/t	n/t	n/t
213999	0.35	WS18 1	Brown sandy soil, stones, concrete, brick, clinker, bone	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 20-29855, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
Petrol range organics in soil	N	As submitted sample	17/09/2020		GC-MS
Sulphide	N	As submitted sample	18/09/2020	109	Colorimetry
Hexavalent chromium	N	As submitted sample	16/09/2020	110	Colorimetry
Acid Soluble Sulphate	U	Air dried sample	17/09/2020	115	Ion Chromatography
Phenols in solids	N	As submitted sample	16/09/2020	121	HPLC
Elemental Sulphur	M	Air dried sample	16/09/2020	122	HPLC
PAH (GC-FID)	M	As submitted sample	16/09/2020	133	GC-FID
Water soluble anions	M	Air dried sample	16/09/2020	172	Ion Chromatography
Low range Aliphatic hydrocarbons soil	N	As submitted sample	16/09/2020	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	16/09/2020	181	GC-MS
Water soluble boron	N	Air dried sample	16/09/2020	202	Colorimetry
Total cyanide	M	As submitted sample	16/09/2020	204	Colorimetry
Basic carbon banding in soil	N	As submitted sample	16/09/2020	218	GC-FID
Diesel range organics in soil	N	As submitted sample	17/09/2020	257	GC-FID
TPH CWG soil by gc-gc	M	As submitted sample	15/09/2020	271	
Asbestos identification	U	Air dried sample	18/09/2020	280	Microscopy
Aqua regia extractable metals	M	Air dried sample	16/09/2020	300	ICPMS
Leachate					
Arsenic	N		18/09/2020	301	ICPMS
Cadmium	N		18/09/2020	301	ICPMS
Chromium	N		18/09/2020	301	ICPMS
Lead	N		18/09/2020	301	ICPMS
Nickel	N		18/09/2020	301	ICPMS
Copper	N		18/09/2020	301	ICPMS
Zinc	N		18/09/2020	301	ICPMS
Mercury	N		18/09/2020	301	ICPMS
Selenium	N		18/09/2020	301	ICPMS
Antimony	N		18/09/2020	301	ICPMS
Barium	N		18/09/2020	301	ICPMS
Molybdenum	N		18/09/2020	301	ICPMS
pH Value	N		18/09/2020	113	Electrometric
Electrical Conductivity	N		18/09/2020	136	Probe
Dissolved Organic Carbon	N		18/09/2020	102	TOC analyser
Chloride	N		18/09/2020	131	Ion Chromatography
Fluoride	N		18/09/2020	131	Ion Chromatography
Sulphate	N		18/09/2020	131	Ion Chromatography
Total Dissolved Solids	N		18/09/2020	144	Gravimetric
Phenol index	N		18/09/2020	121	HPLC
WAC Solids analysis	N				
pH Value	M	Air dried sample	16/09/2020	113	Electrometric
Total Organic Carbon	N	Air dried sample	17/09/2020	210	IR
Loss on Ignition	M	Air dried sample	18/09/2020	129	Gravimetric
Acid Neutralization Capacity to pH 7	N	Air dried sample	16/09/2020	NEN 737	Electrometric
Total BTEX	M	As submitted sample	16/09/2020	181	GCMS
Mineral Oil	M	As submitted sample	16/09/2020	117	GCFID
Total PCBs (7 congeners)	M	Air dried sample	17/09/2020	120	GCMS
Total PAH (17)	N	As submitted sample	17/09/2020	133	GCFID

Tests marked N are not UKAS accredited

Report Information

Report No.: 20-29855, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.

Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.

ELAB are unable to provide an interpretation or opinion on the content of this report.

The results relate only to the sample received.

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month

All water samples will be retained for 7 days following the date of the test report

Charges may apply to extended sample storage

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UKAS TESTING 2683

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	20-30001
Issue:	1
Date of Issue:	30/09/2020
Contact:	Katie Brayne
Customer Details:	GESL Unit 7 Danworth Farm Hurstpierpoint West SussexBN6 9GL
Quotation No:	Q19-01488
Order No:	3040
Customer Reference:	GE18530
Date Received:	21/09/2020
Date Approved:	30/09/2020
Details:	Phase 1 Cambridge Road
Approved by:	

Mike Varley, Technical Manager

Sample Summary

Report No.: 20-30001, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
214777	WS07 W 2.06	17/09/2020	23/09/2020		
214778	WS10 W 2.35	17/09/2020	23/09/2020		
214779	WS13 W 0.97	17/09/2020	23/09/2020		

Results Summary

Report No.: 20-30001, issue number 1

			ELAB Reference	214777	214778	214779
			Customer Reference	W	W	W
			Sample ID			
			Sample Type	WATER	WATER	WATER
			Sample Location	WS07	WS10	WS13
			Sample Depth (m)	2.06	2.35	0.97
			Sampling Date	17/09/2020	17/09/2020	17/09/2020
Determinand	**Codes**	**Units**	**LOD**			
Dissolved Metals						
Arsenic	U	ug/l	5	< 5	< 5	< 5
Boron	N	ug/l	5	426	414	199
Barium	U	ug/l	5	55	58	24
Beryllium	U	ug/l	5	< 5	< 5	< 5
Cadmium	U	ug/l	1	< 1	< 1	< 1
Chromium	U	ug/l	5	< 5	< 5	< 5
Copper	U	ug/l	5	< 5	6	< 5
Mercury	U	ug/l	0.1	< 0.1	< 0.1	< 0.1
Nickel	U	ug/l	5	13	9	42
Lead	U	ug/l	1	< 1	< 1	< 1
Selenium	U	ug/l	5	< 5	< 5	< 5
Vanadium	N	ug/l	5	< 5	< 5	< 5
Zinc	U	ug/l	5	< 5	18	9
Anions						
Chloride	U	mg/l	0.5	213	67.6	213
Sulphate	U	mg/l	0.5	411	263	473
Inorganics						
Elemental Sulphur	N	mg/l	0.1	< 0.1	< 0.1	< 0.1
Hexavalent Chromium	U	ug/l	100	< 100	< 100	< 100
Sulphide	N	mg/l	0.1	0.1	< 0.1	0.1
Miscellaneous						
Dissolved organic carbon	N	mg/l	1.5	5.1	9.2	8.1
pH	U	pH units	0.1	7.3	7.3	6.9
Phenols						
Phenol	N	ug/l	1	< 1	< 1	< 1
M,P-Cresol	N	ug/l	1	< 1	< 1	< 1
O-Cresol	N	ug/l	1	< 1	< 1	< 1
3,4-Dimethylphenol	N	ug/l	1	< 1	< 1	< 1
2,3-Dimethylphenol	N	ug/l	1	< 1	< 1	< 1
2,3,5-trimethylphenol	N	ug/l	1	< 1	< 1	< 1
Total Monohydric Phenols	N	ug/l	1	< 1	< 1	< 1

Results Summary

Report No.: 20-30001, issue number 1

ELAB Reference				214777	214778	214779
Customer Reference				W	W	W
Sample ID						
Sample Type				WATER	WATER	WATER
Sample Location				WS07	WS10	WS13
Sample Depth (m)				2.06	2.35	0.97
Sampling Date				17/09/2020	17/09/2020	17/09/2020
Determinand	**Codes**	**Units**	**LOD**			
Polyaromatic hydrocarbons						
Naphthalene GCMS	N	ug/l	0.01	n/t	n/t	0.06
Acenaphthylene GCMS	N	ug/l	0.01	n/t	n/t	0.08
Acenaphthene GCMS	N	ug/l	0.01	n/t	n/t	0.05
Fluorene GCMS	N	ug/l	0.01	n/t	n/t	0.04
Phenanthrene GCMS	N	ug/l	0.01	n/t	n/t	0.52
Anthracene GCMS	N	ug/l	0.01	n/t	n/t	0.14
Fluoranthene GCMS	N	ug/l	0.01	n/t	n/t	1.46
Pyrene GCMS	N	ug/l	0.01	n/t	n/t	1.22
Benzo (a) anthracene GCMS	N	ug/l	0.01	n/t	n/t	0.71
Chrysene GCMS	N	ug/l	0.01	n/t	n/t	0.72
Benzo (b) fluoranthene GCMS	N	ug/l	0.01	n/t	n/t	0.86
Benzo (k) fluoranthene GCMS	N	ug/l	0.01	n/t	n/t	0.80
Benzo (a) pyrene GCMS	N	ug/l	0.01	n/t	n/t	0.78
Indeno (1,2,3-cd) pyrene GCMS	N	ug/l	0.01	n/t	n/t	0.44
Dibenzo(a,h)anthracene GCMS	N	ug/l	0.01	n/t	n/t	0.18
Benzo(ghi)perylene GCMS	N	ug/l	0.01	n/t	n/t	0.61
Total PAH(16) GCMS	N	ug/l	0.01	n/t	n/t	8.68
TPH CWG						
>C5-C6 Aliphatic	N	ug/l	1	n/t	n/t	< 1.0
>C6-C8 Aliphatic	N	ug/l	1	n/t	n/t	< 1.0
>C8-C10 Aliphatic	N	ug/l	5	n/t	n/t	41.8
>C10-C12 Aliphatic	N	ug/l	5	n/t	n/t	32.8
>C12-C16 Aliphatic	N	ug/l	5	n/t	n/t	17.2
>C16-C21 Aliphatic	N	ug/l	5	n/t	n/t	17.7
>C21-C35 Aliphatic	N	ug/l	5	n/t	n/t	134
>C35-C40 Aliphatic	N	ug/l	5	n/t	n/t	< 5.0
Total (>C5-C40) Aliphatic	N	ug/l	5	n/t	n/t	244
>C5-C7 Aromatic	N	ug/l	1	n/t	n/t	< 1.0
>C7-C8 Aromatic	N	ug/l	1	n/t	n/t	< 1.0
>C8-C10 Aromatic	N	ug/l	5	n/t	n/t	< 5.0
>C10-C12 Aromatic	N	ug/l	5	n/t	n/t	< 5.0
>C12-C16 Aromatic	N	ug/l	5	n/t	n/t	< 5.0
>C16-C21 Aromatic	N	ug/l	5	n/t	n/t	10.4
>C21-C35 Aromatic	N	ug/l	5	n/t	n/t	64.5
>C35-C40 Aromatic	N	ug/l	5	n/t	n/t	< 5.0
Total (>C5-C40) Aromatic	N	ug/l	5	n/t	n/t	74.9
Total (>C5-C40) Ali/Aro	N	ug/l	5	n/t	n/t	319

Method Summary

Report No.: 20-30001, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Water					
Aliphatic/Aromatic hydrocarbons in water	N		30/09/2020		GC-FID
Aromatic hydrocarbons in water	N		30/09/2020		GC-FID
Phenols in waters	N		24/09/2020		HPLC
Dissolved organic carbon	N		25/09/2020	102	IR
pH of waters	U		24/09/2020	113	Electromeric
Chromium Hexavalent in waters	U		24/09/2020	123	Colorimetry
Sulphide in water	N		29/09/2020	134	Colorimetry
PAHs and/or PCBs in waters	N		29/09/2020	135	GC-MS
Low range Aliphatic hydrocarbons water	N		25/09/2020	200	GC-MS
Low range Aromatic hydrocarbons water	N		25/09/2020	200	GC-MS
Elemental Sulphur by HPLC in waters	N		25/09/2020	206	HPLC
Aliphatic hydrocarbons in water	N		29/09/2020	215	GC-FID
Aromatic hydrocarbons in water	N		29/09/2020	215	GC-FID
Anions	U		24/09/2020	270	Ion Chromatography
Dissolved metals by ICP in waters	U		24/09/2020	301	ICPMS

Tests marked N are not UKAS accredited

Report Information

Report No.: 20-30001, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.

Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.

ELAB are unable to provide an interpretation or opinion on the content of this report.

The results relate only to the sample received.

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month

All water samples will be retained for 7 days following the date of the test report

Charges may apply to extended sample storage

Geo-Environmental

APPENDIX C

Groundwater and Groundgas Monitoring

Geo-Environmental

Project Details

Project Name	Phase 1 Cambridge Road
Location	Kingston upon Thames
Project No.	GE18530
Client	Countryside Properties LLP
Date	17/09/2020
Weather	Clear and sunny.
Monitoring Visit No.	1
Engineer	
Katie Brayne	katie@gesl.net
Lucy Holford	lucy.holford@gesl.net
Equipment Used	[ ] GFM 430 [X] GA2000 [X] Tiger 1 [ ] Tiger 2 [X] Dipmeter
Stability Parameters for Water Sampling Required (DO, pH, Temp, Cond)	[ ] Yes [ ] No

Monitoring Results

Results

Exploratory Hole	WS01
Atmospheric Pressure (mb)	1029
Steady Flow (l/hr)	0.00
VOC (ppm)	0.10

Gas Concentrations

	Methane	*Carbon*	*Oxygen*	*CH4*	*CO2*	*CH4*	*CO2*	*CS Lim.*	*CS Conc.*	*CH4 GSV*	*CH4*	*CO2 GSV*	*CO2*

Time (s)	(%)	dioxide (%)	(%)	GSV/Qhgs	GSV/Qhgs	(BS8485 & C665)	(BS8485 & C665)	Value Check	Check	(NHBC)	Conc. (NHBC)	(NHBC)	Conc. (NHBC)
0	0.00	0.00	21.50	0.0	0.0	CS1	CS1	Pass	Pass	Green	Green	Green	Green
10	0.00	0.00	21.50	0.0	0.0	CS1	CS1	Pass	Pass	Green	Green	Green	Green
20	0.00	3.30	18.90	0.0	0.0	CS1	CS1	Pass	Pass	Green	Green	Green	Green
30	0.00	3.60	16.40	0.0	0.0	CS1	CS1	Pass	Pass	Green	Green	Green	Green
60	0.00	3.50	16.30	0.0	0.0	CS1	CS1	Pass	Pass	Green	Green	Green	Green
90	0.00	3.40	16.60	0.0	0.0	CS1	CS1	Pass	Pass	Green	Green	Green	Green
120	0.00	2.60	17.40	0.0	0.0	CS1	CS1	Pass	Pass	Green	Green	Green	Green
180	0.00	2.00	18.30	0.0	0.0	CS1	CS1	Pass	Pass	Green	Green	Green	Green

Water Level (mbgl)	000
Remarks	Dry.

Exploratory Hole	WS07
Atmospheric Pressure (mb)	1029
Steady Flow (l/hr)	0.10
VOC (ppm)	0.20

Gas Concentrations

Time (s)	Methane (%)	Carbon dioxide (%)	Oxygen (%)	CH4 GSV/Qhgs	CO2 GSV/Qhgs	CH4 (BS8485 & C665)	CO2 (BS8485 & C665)	CS Lim. Value Check	CS Conc. Check	CH4 GSV (NHBC)	CH4 Conc. (NHBC)	CO2 GSV (NHBC)	CO2 Conc. (NHBC)
0	0.00	0.00	21.60	0.0	0.0	CS1	CS1	Pass	Pass	Green	Green	Green	Green
10	0.00	0.20	21.00	0.0	0.0002	CS1	CS1	Pass	Pass	Green	Green	Green	Green
20	0.00	4.20	18.10	0.0	0.0042	CS1	CS1	Pass	Pass	Green	Green	Green	Green
30	0.00	4.30	17.60	0.0	0.0043	CS1	CS1	Pass	Pass	Green	Green	Green	Green
60	0.00	4.40	17.40	0.0	0.0044	CS1	CS1	Pass	Pass	Green	Green	Green	Green
90	0.00	4.40	17.50	0.0	0.0044	CS1	CS1	Pass	Pass	Green	Green	Green	Green
120	0.00	4.30	17.60	0.0	0.0043	CS1	CS1	Pass	Pass	Green	Green	Green	Green

180	0.00	4.10	17.70	0.0	0.0041	CS1	CS1	Pass	Pass	Green	Green	Green	Green

Water Level (mbgl) 2.06

(1 record)

Water Samples

Sample Reference	*Depth*	*Time Taken*	*Sample Containers*
WS07	2.50	09:09	

Remarks: Not enough water for 1Lt glass bottle

Exploratory Hole: WS10

Atmospheric Pressure (mb): 1029

Steady Flow (l/hr): 0.00

VOC (ppm): 0.10

Gas Concentrations

Time (s)	*Methane (%)*	*Carbon dioxide (%)*	*Oxygen (%)*	*CH4 GSV/Qhgs*	*CO2 GSV/Qhgs*	*CH4 (BS8485 & C665)*	*CO2 (BS8485 & C665)*	*CS Lim. Value Check*	*CS Conc. Check*	*CH4 GSV (NHBC)*	*CH4 Conc. (NHBC)*	*CO2 GSV (NHBC)*	*CO2 Conc. (NHBC)*
0	0.0	0.0	21.7	0.0	0.0	CS1	CS1	Pass	Pass	Green	Green	Green	Green
10	0.0	0.6	21.4	0.0	0.0	CS1	CS1	Pass	Pass	Green	Green	Green	Green
20	0.0	7.2	16.3	0.0	0.0	CS1	CS1	Pass	CO2>CS1 Limit	Green	Green	Green	Amber 1
30	0.0	7.4	15.2	0.0	0.0	CS1	CS1	Pass	CO2>CS1 Limit	Green	Green	Green	Amber 1
60	0.0	7.4	15.0	0.0	0.0	CS1	CS1	Pass	CO2>CS1 Limit	Green	Green	Green	Amber 1
90	0.0	7.50	14.90	0.0	0.0	CS1	CS1	Pass	CO2>CS1 Limit	Green	Green	Green	Amber 1
120	0.0	7.5	15.0	0.0	0.0	CS1	CS1	Pass	CO2>CS1 Limit	Green	Green	Green	Amber 1
180	0.0	7.3	15.2	0.0	0.0	CS1	CS1	Pass	CO2>CS1 Limit	Green	Green	Green	Amber 1

Water Level (mbgl) 2.35

(1 record)

Water Samples

Sample Reference	*Depth*	*Time Taken*	*Sample Containers*
WS10	2.90	09:26	

Remarks: Not enough water for 1Lt glass bottle.

Exploratory Hole: WS13

Atmospheric Pressure (mb): 1029

Steady Flow (l/hr): 0.0

VOC (ppm): 1.60

Gas Concentrations

Time (s)	*Methane (%)*	*Carbon dioxide (%)*	*Oxygen (%)*	*CH4 GSV/Qhgs*	*CO2 GSV/Qhgs*	*CH4 (BS8485 & C665)*	*CO2 (BS8485 & C665)*	*CS Lim. Value Check*	*CS Conc. Check*	*CH4 GSV (NHBC)*	*CH4 Conc. (NHBC)*	*CO2 GSV (NHBC)*	*CO2 Conc. (NHBC)*
0	0.0	0.0	21.4	0.0	0.0	CS1	CS1	Pass	Pass	Green	Green	Green	Green
10	0.0	0.3	21.3	0.0	0.0	CS1	CS1	Pass	Pass	Green	Green	Green	Green
20	0.0	2.1	19.7	0.0	0.0	CS1	CS1	Pass	Pass	Green	Green	Green	Green
30	0.0	2.1	19.4	0.0	0.0	CS1	CS1	Pass	Pass	Green	Green	Green	Green
60	0.0	2.2	19.2	0.0	0.0	CS1	CS1	Pass	Pass	Green	Green	Green	Green
90	0	0	0	0.0	0.0	CS1	CS1	Pass	Pass	Green	Green	Green	Green
120	0	0	0	0.0	0.0	CS1	CS1	Pass	Pass	Green	Green	Green	Green
180	0	0	0	0.0	0.0	CS1	CS1	Pass	Pass	Green	Green	Green	Green

Water Level (mbgl): 0. 97

(1 record)

Water Samples

Sample Reference	*Depth*	*Time Taken*	*Sample Containers*
WS13	2.90	10:00	

Remarks: Gas monitor sucked water at 1 minute.

Geo-Environmental

APPENDIX D

CatWaste

ATKINS CatWasteSoil

Classification Assessment Tool of Soil Wastes - Hazard Summary Sheet

Site Name	Cambridge Road
Location	Kingston Upon Thames
Site ID	GE18530
Job Number	
Date	10/6/2020
User Name	katie.brayne@gesl.net
Company Name	Geo-Environmental Services Limited

Hole ID	Sample Depth	Hazardous Waste Y/N	HP1	HP2	HP3	HP4	HP5	HP6	HP7	HP8	HP9
WS01	0.80	N	No	No	No	No	No	No	No	No	No
WS02	0.15	N	No	No	No	No	No	No	No	No	No
WS02a	0.50	Y	No	No	No	No	No	No	No	No	No
WS03	0.60	N	No	No	No	No	No	No	No	No	No
WS04	0.50	N	No	No	No	No	No	No	No	No	No
WS05	0.60	N	No	No	No	No	No	No	No	No	No
WS05	1.50	N	No	No	No	No	No	No	No	No	No
WS06	0.15	N	No	No	No	No	No	No	No	No	No
WS06	0.50	N	No	No	No	No	No	No	No	No	No
WS07	0.50	N	No	No	No	No	No	No	No	No	No
WS08	0.40	N	No	No	No	No	No	No	No	No	No
WS08a	0.70	N	No	No	No	No	No	No	No	No	No
WS08a	1.00	N	No	No	No	No	No	No	No	No	No
WS09	0.20	Y	No	No	No	No	No	No	No	No	No
WS09	1.00	N	No	No	No	No	No	No	No	No	No
WS10	1.00	N	No	No	No	No	No	No	No	No	No
WS11	0.60	N	No	No	No	No	No	No	No	No	No
WS12	0.15	N	No	No	No	No	No	No	No	No	No
WS13	0.70	N	No	No	No	No	No	No	No	No	No
WS14	0.50	N	No	No	No	No	No	No	No	No	No
WS15	0.70	N	No	No	No	No	No	No	No	No	No
WS16	0.20	N	No	No	No	No	No	No	No	No	No
WS16	0.50	Y	No	No	No	No	No	No	No	No	No
WS17	0.40	Y	No	No	No	No	No	No	No	No	No
WS18	0.35	N	No	No	No	No	No	No	No	No	No

ATKINS CatWasteSoil

Site Name	Cambridge Road
Location	Kingston Upon Thames
Site ID	GE18530
Job Number	
Date	10/6/2020
User Name	katie.brayne@gesl.net
Company Name	Geo-Environmental Services Limited

Hole ID	Sample Depth	Hazardous Waste Y/N	HP10	HP11	HP12	HP13	HP14	HP15	HP16
WS01	0.80	N	No	No	No	No	No	No	No
WS02	0.15	N	No	No	No	No	No	No	No
WS02a	0.50	Y	No	No	No	No	Yes	No	No
WS03	0.60	N	No	No	No	No	No	No	No
WS04	0.50	N	No	No	No	No	No	No	No
WS05	0.60	N	No	No	No	No	No	No	No
WS05	1.50	N	No	No	No	No	No	No	No
WS06	0.15	N	No	No	No	No	No	No	No
WS06	0.50	N	No	No	No	No	No	No	No
WS07	0.50	N	No	No	No	No	No	No	No
WS08	0.40	N	No	No	No	No	No	No	No
WS08a	0.70	N	No	No	No	No	No	No	No
WS08a	1.00	N	No	No	No	No	No	No	No
WS09	0.20	Y	No	No	No	No	Yes	No	No
WS09	1.00	N	No	No	No	No	No	No	No
WS10	1.00	N	No	No	No	No	No	No	No
WS11	0.60	N	No	No	No	No	No	No	No
WS12	0.15	N	No	No	No	No	No	No	No
WS13	0.70	N	No	No	No	No	No	No	No
WS14	0.50	N	No	No	No	No	No	No	No
WS15	0.70	N	No	No	No	No	No	No	No
WS16	0.20	N	No	No	No	No	No	No	No
WS16	0.50	Y	No	No	No	No	Yes	No	No
WS17	0.40	Y	No	No	No	No	Yes	No	No
WS18	0.35	N	No	No	No	No	No	No	No

The Design Team

ACD Environmental
Arboricultural consultant

Architecture in Perspective
Visualisation artist

AWA Consulting
MEP engineer

Base Models
Physical modelmaker

Barton Willmore
Planning consultant
Environmental Impact Assessment
Townscape Impact Assessment

Countryside Properties
Developer

CTP Consulting
Structural & Civil engineer

David Bonnett Associates
Access and Inclusive Design consultant

Ensafe
Air Quality consultants

GIA
Daylight / Sunlight / RoL consultant

Greengage Environmental
Ecology and biodiversity consultant

Hodkinson Consulting
Sustainability / Energy consultant

H+H Fire
Fire consultant

Markides
Transport consultant

Patel Taylor
Architect / Landscape Architect

Pipers
Physical modelmaker

Realm
Visualisation and verified views

Royal Borough of Kingston Upon Thames
Project Joint Venture partner

Soundings
Community engagement consultant

SRE
Wind and microclimate consultant

Terence O'Rourke
Archaeology and heritage consultant

ULL Property
Viability consultant

WYG
Noise and vibration