Camley Street Natural Park
12 Camley Street
London
N1C 4PW

Supplementary Quantitative
Ground Contamination Risk Assessment

Report Beneficiary:
London Wildlife Trust
Dean Bradley House
Horseferry Road
London
SW1P 2AF

Document Control			
Report Ref	**Date**	**Notes**	
R18-13059	10th August 2018	Final for issue	
Report Section		**Prepared By**	**Approved By**
Factual Section		Stuart Card BA (Hons)	Steven McSwiney BA mod Geol MSc FGS
Quantitative Ground Contamination Risk Assessment		Stuart Card BA (Hons)	Steven McSwiney BA mod Geol MSc FGS

Head Office
Unit 3
The Old Grain Store
Ditchling Common Business Park
Ditchling
West Sussex
BN6 8SG

Northern Office
Suite C2
Dunham House
85-89 Cross Street
Sale
Cheshire
M33 7HH

Tel: 01273 483119
www.ashdownsi.co.uk

Limitations

This report was prepared specifically for the Client's project and may not be appropriate to alternative schemes. The copyright for the report and licence for its use shall remain vested in Ashdown Site Investigation Limited (the Company) who disclaim all responsibility or liability (whether at common law or under the express or implied terms of the Contract between the Company and the Client) for any loss or damage of whatever nature in the event that this report is relied on by a third party, or is issued in circumstances or for projects for which it was not originally commissioned.

The risk assessment presented in this report follows 'source-pathway-receptor' techniques for the determination of whether a site is contaminated. This is standard practice in the UK, being intrinsic to Part 2A of the Environmental Protection Act 1990 as amended.

The report considers the proposed end users as the most sensitive human health receptors. If significant risks to construction workers are identified by the preliminary assessment attention is drawn to this, although it is noted that no assessment of risk from acute exposure has been undertaken in this connection.

This report is not intended to be either an ecological, archaeological or flood risk assessment. An appropriate specialist should be consulted about any concerns that may arise in this regard.

EXECUTIVE SUMMARY

The following presents a summary of the main findings of the supplementary assessment. It is emphasised that no reliance should be placed on any individual point until the whole of the report has been read as other sections of the report may put into context the information contained herein.

It is proposed to demolish the existing pavilion at Camley Natural Park, 12 Camley Street, London and to construct a new visitor centre and café together with enhancement to landscaping areas.

A previous ground investigation had been undertaken for the site, but limited to the extent of the proposed visitors centre. This assessment also takes into account an area to the north west and south east of the previously investigated site.

The preliminary assessment undertaken as part of the previous ground investigation identified that the site had historically been used as a coal shoot and had been subject to historical demolition work; both considered to be potential sources of contamination at the site.

A significant depth of made ground was recorded by the previous phase of the ground investigation and two samples from beneath the existing building recorded the presence of asbestos.

The report recommended that further assessment should be made to determine whether widespread asbestos contamination of the made ground was present or whether asbestos was limited to the made ground soils beneath the existing building.

The report also recommended installing standpipes to assess whether a risk was posed by ground gases; the depth of made ground recorded by the ground investigation having been considered a potential source.

The recent phase of ground investigation undertaken comprised the drilling of four boreholes and the installation of three standpipes (monitored on four occasions) and the excavation of a series of shallow hand dug trial pits.

A supplementary quantitative ground contamination risk assessment has been undertaken using the information gained from both phases of the ground investigation.

No elevated concentrations of heavy metals or PAH compounds were recorded in the made ground soils in comparison to generic soil screening values.

Concentrations of petroleum hydrocarbons within the made ground soils are in excess of the threshold values for the use of PE pipework at the development.

Chrysotile and amosite fibres and debris were recorded in the made grounds soils in the vicinity of the proposed visitors' centre. The made ground soils in this area should be considered to pose an unacceptable risk to end users of the site where such soils remain unremediated in soft landscaped areas.

It is recommended that feedback is obtained on this report from regulators prior to assessing remedial options for the site and to ultimately allow a remediation strategy to be developed for the site taking on board any comments or specific requirements of the local authority.

TABLE OF CONTENTS

FIGURES AND APPENDICES

FIGURES

APPENDIX A

APPENDIX B

APPENDIX C

APPENDIX D

APPENDIX E

APPENDIX F

APPENDIX G

1. INTRODUCTION

It is proposed to demolish the existing pavilion at Camley Natural Park, 12 Camley Street, London and to construct a new visitor centre and café together with enhancement to landscaping areas. A site location plan is included as Appendix A and plans indicating the proposed development layout are presented in Appendix B. The site plans indicate the red line boundary of the site, which is also the extent of the assessment area.

A ground investigation, as presented within a Combined Geotechnical, Preliminary and Quantitative Contamination Risk Assessment and Waste Classification Report[1], has been previously undertaken at the site by Ashdown Site Investigation Ltd.

The preliminary assessment undertaken as part of the ground investigation identified that the site had historically been used as a coal shoot and had been subject to historical demolition work. Both of these activities were considered to be potential sources of contamination at the site.

A limited intrusive ground investigation (comprising the drilling of a dynamic sampler borehole and two foundation inspection pits) was undertaken as part of the ground investigation, limited to the vicinity of the proposed visitors centre. The ground investigation encountered a significant depth of made ground (to a depth of 3.5m in the borehole and to the full depth of the trial pits), typically comprising gravelly sandy clay.

The made ground soils were tested for a range of commonly occurring contaminants (heavy metals, PAH compounds and petroleum hydrocarbons) and screened for the presence of asbestos.

No elevated concentrations of contaminants were identified in the samples tested. The two samples taken from the foundation inspection pits recorded the presence of chrysotile and amosite fibres within the soil matrix.

The quantitative assessment concluded that the presence of asbestos within the made ground soils was considered to pose a significant risk to future end users of the site. The significant depth of the made ground encountered was also considered to be a potential source of elevated concentrations of ground gases.

The report concluded that further works should be undertaken to allow a more detailed assessment of the risk posed to future end users.

The recommendations included the installation of standpipes to determine whether or not a significant risk from ground gases is present that would require some form of protection to be incorporated into the proposed building.

In addition, the report recommended that further assessment should be made to determine whether widespread asbestos contamination of the made ground was present or whether asbestos contamination within the made ground soils was limited to the made ground soils in the immediate are of the existing building where the two samples recording asbestos were obtained.

At the time of the original ground investigation, a contractors' compound was present in the north western part of the site, which prevented access to this area. It is understood from

[1] Ashdown Site Investigation, Report No. R17-12131, dated June 2017.

discussions with the client, that the contractor has been responsible for remediating this area of the site.

Ashdown Site Investigation Limited was requested to provide an estimate for carrying out the recommended additional ground investigation works and providing a supplementary quantitative ground contamination risk assessment of the site by Huntley Cartwright, Victoria House, Harestone Valley Road, Caterham, Surrey, CR3 6HY. The scope of the works allowed for and the terms and conditions under which the works were to be undertaken were set out within the offer letter Q18-7378, dated 15th June 2018. The instruction to proceed was received on behalf of the client, London Wildlife Trust, from the client's agent, Huntley Cartwright, in an email dated 19th June 2018.

The objectives of the works were to:

a) Further investigate the shallow ground across the site;
b) Test supplementary samples of soils for the presence of contaminants identified by the quantitative conceptual model;
c) Undertake gas monitoring at the site; and
d) Develop a supplementary quantitative conceptual model of the site, refining the quantitative model to identify any remaining pollutant linkages.

It should be noted that the red line boundary for the original ground investigation was limited to an area within the northern part of the Camley Street Natural Park. The assessment area for this report is the area shown within the red line on the location plan included as Appendix A.

The relevant factual data (exploratory hole records and laboratory test results) from the previous report are contained with the relevant appendices.

2. SITE CONTEXT

2.1 Site Description

The site comprises an irregular shaped plot of land located within the northern and north eastern part of the wider Camley Street Natural Park, located at Camley Street, London. The area is centred on the approximate Ordnance Survey national grid reference TQ 2995 8351. A site location plan and site plan are presented as Appendix A and Figure 1, respectively.

Access to the site is off Camley Street to the southwest. The park extends further to the southeast and the Grand Union Canal lies to its northeast.

The existing visitors centre comprises a series of wooden prefabricated buildings. A number of mature trees were present near the buildings and the ground around was surfaced with a mixture of woodchip, brick paviors and paving slabs.

The north western part of the site comprised an area of grassland with a raised flowerbed, separating the site from the access road leading to Camley Bridge.

The north eastern part of the site comprises areas of pathways surrounded by mature trees.

2.2 Geological and Hydrogeological Information

The geological and hydrogeological setting for the site, as presented in the preliminary assessment is discussed in the following sections. Further information is presented with the previous report for the site.

2.2.1 Expected Geology and Aquifer Designation

The stratigraphic unit that may be expected to underlie the site is presented in the following table.

Table 1. Expected Strata and Aquifer Designation

Type	Stratum	Aquifer Designation
Bedrock	London Clay Formation	Unproductive Stratum

The London Clay Formation comprises a blue grey silty clay, which tends to weather to brown near to the upper surface. With depth, the clay becomes very stiff/hard, is frequently fissured and can contain some inclusions and beds of weak mudstone and siltstone.

2.2.2 Radon

The site is reported to be within an area where less than 1% of properties are at or above the action level requiring radon gas protection measures to be installed in new buildings. No radon protection measures are reported by the British Geological Survey to be necessary in the construction of new dwellings or extensions.

2.2.3 Groundwater Source Protection Zones

The site does not lie within an Environment Agency Source Protection Zone with regard to the protection of the quality of groundwater that is abstracted for potable supply.

2.2.4 Groundwater and Surface Water Abstraction Licences

The closest groundwater abstraction licence is recorded to lie 336m to the east of the site and is recorded as being for a heat pump.

The closest surface water abstraction licence is recorded to lie 177m to the north west of the site but refers to water use within the Camley Street Nature Park.

2.2.5 Surface Water Features

The nearest recorded significant surface water feature is the Grand Union Canal located adjacent to site to the northeast. The data states that the canal is reported to be "River Quality C".

Two ponds are present within the wider Camley Street Natural Park adjacent to the southern boundary of the site.

2.2.6 Flooding

The site lies within an Environment Agency Flood Zone 1.

The site does not lie within an area where the British Geological Survey report a risk from Groundwater Flooding to be present.

3. GROUND INVESTIGATION

3.1 Introduction

The first phase of the ground investigation comprised the excavation of two hand dug foundation inspection pits and the drilling of a single dynamic sampler borehole. The fieldwork was carried out on 9th May 2017.

The recent phase of the ground investigation comprised the excavation of a series of dynamic sampler boreholes and excavation of a series of hand dug pits. Gas and groundwater monitoring standpipes were installed in selected dynamic sampler boreholes and monitored on subsequent site visits. The fieldwork was carried out on 4th and 11th July 2018.

The exploratory hole locations associated with both phases of the ground investigation are shown on Figure 1.

Descriptions of the strata encountered and comments on groundwater conditions are shown in the exploratory hole records given in Appendix C, together with notes to assist in their interpretation.

3.2 Exploratory Holes

3.2.1 Dynamic Sampler Boreholes

During the first phase of the ground investigation a single borehole (designated BH02) was drilled to a depth of 10m below ground level. As part of the recent ground investigation works, four boreholes, designated BH101 to BH103 and BH103A, were drilled to depths of between 0.6m and 3.0m below ground level. Boreholes BH103 and BH103A were abandoned on concrete obstructions at depths of 1.3m and 0.6m, respectively.

The boreholes were formed by a series of 1.0m long, open ended, hollow steel tubes of up to 100mm diameter, each containing a removable plastic liner. The tubes, progressively reducing in diameter, were driven into the ground by means of a track-mounted drop weight. Each tube was extracted from the ground using a hydraulically operated jack and the enclosed sample was recovered in its plastic liner.

The system enables sub-samples to be taken for detailed examination and laboratory testing.

3.2.2 Foundation Inspection Pits

The first phase of the ground investigation included two pits (designated TP02 and TP03) excavated using hand-tools to depths of 0.34m and 0.55m below ground level, respectively, to enable inspection of the foundations to the existing building.

3.2.3 Hand Dug Trial Pits

The recent ground investigation works included sixteen pits, designated TP101 to TP116, excavated using hand-tools to depths of between 0.25m and 0.50m below ground level to enable disturbed samples of soils to be obtained.

Obstructions were encountered in trial pits TP101 to TP107 at shallow depths (between 0.25m and 0.40m). These positions were located in the north western part of the site, within the area of the former contractors' compound.

3.3 Sampling

Disturbed samples of soil were taken at the depths shown in the exploratory hole records and were collected in plastic liners, plastic bags, plastic tubs or amber jars fitted with gas tight lids.

On collection the amber jars were stored in cool boxes with cooling blocks to maintain temperatures below 4°C until transferred to refrigerators upon return to the office and subsequently forwarded to the external accredited chemical testing laboratory.

3.4 Installations

During the current phase of the ground investigation, gas and groundwater monitoring standpipes were installed to depths of between 1.30m and 3.0m in three boreholes. Descriptions of the installations are shown on the exploratory hole records in Appendix C.

The concentrations of gases and depths to groundwater were recorded within the standpipes on four occasions between 19th July 2018 and 30th July 2018. The readings are presented in Appendix C.

Whilst during the first phase of the ground investigation a gas monitoring standpipe was installed within borehole BH02 to a depth of 3.5m, this standpipe could not be located during the recent ground investigation works.

3.5 Laboratory Testing

Laboratory testing was scheduled by Ashdown Site Investigation Ltd. Results from the laboratory tests from both phases of the ground investigation are provided in Appendix D.

Chemical testing of selected samples was undertaken by a laboratory with recognised (UKAS and MCERTS) accreditation for quality control.

4. GROUND CONDITIONS

4.1 Stratigraphy

4.1.1 Surface Covering

At the time of the initial phase of the ground investigation, exploratory holes TP02, TP03 and BH02 were excavated through a surface cover of wood chippings some 50mm to 150mm in thickness.

During the recent ground investigation works, where surfacing materials were encountered, they comprised either topsoil some 20mm to 100mm in thickness or wood chipping some 20mm in thickness. No surfacing materials were encountered in BH101, TP101, TP102, TP103, TP104 or TP108.

4.1.2 Made Ground

Made ground, generally comprising either gravelly sandy clay or gravelly clayey sand, was recorded to the full depth of the majority of exploratory holes; the single exception being borehole BH02 where the base of the made ground was proven at a depth of 3.5m below ground level.

The gravel fraction comprised variable quantities of brick, concrete, slate, chalk, clay tile, ceramic tile, metal, mortar, glass, shell, flint clinker-like material, ash-like material, wood and plastic.

Obstructions were encountered within the made ground soils at shallow depths in TP101-TP107 in the north west of the site, and at depths of 1.3m and 0.6m in boreholes BH103 and BH103A, respectively. The obstructions within the trial pits TP101-TP107 are likely due to hardcore materials being present in this part of the site associated with the former use of this area of the site as a part of the contractors' compound.

BH103 and BH103A were abandoned on concrete obstructions, potentially associated with the canal wall.

4.1.3 London Clay Formation

Beneath the made ground, borehole BH02 encountered stiff to very stiff clay soils of the London Clay Formation which persisted to the full depth of the borehole at 10.0m below ground level.

4.2 Groundwater Conditions

Each of the exploratory holes was recorded to be dry during the short period of the intrusive works.

Standing water depths of between 2.25mm and 2.70m were recorded in the standpipes during the monitoring visits.

It should be noted that water levels within the boreholes may not have equilibrated with the groundwater table at the time the readings were recorded and that groundwater levels should be expected to fluctuate seasonally.

5. SUPPLEMENTARY QUANTITATIVE CONTAMINATION ASSESSMENT

5.1 Introduction

The risk assessment for the site considers the sources of contamination identified, the receptors that may be present in view of the development proposals and the contaminant pathways by which these may be linked.

A complete pollutant linkage is only deemed to exist where all three are present and a site is considered suitable for use where no complete pollutant linkages are identified.

Where a complete pollutant linkage is considered to be present, an assessment of the level of risk associated with the pollutant linkage has been carried out in line with published guidance[2].

The level of risk is determined using the risk matrix presented in the following table. Classifications of probability, consequence and risk are presented in Appendix E.

Table 2. Risk Assessment Matrix

		Probability			
		Very Low	**Low**	**Moderate**	**High**
Consequence	**Very Minor**	Negligible	Very Low	Low	Low/Moderate
	Minor	Very Low	Low	Low/Moderate	Moderate
	Moderate	Low	Low/Moderate	Moderate	High
	Severe	Low/Moderate	Moderate	High	Very High

5.2 Quantitative Conceptual Model

The quantitative conceptual model for the proposed development, generated as part of the previous report is presented in Appendix F.

5.3 Assessment Strategy

As discussed in Section 9.1 of the previous report, the potential sources identified by the preliminary risk assessment could result in contamination being present anywhere on the site.

Asbestos was identified within two samples of the made ground taken from beneath the building (TP02 and TP03) and the report recommended that further assessment should be made to determine whether widespread asbestos contamination of the made ground was present or whether asbestos contamination within the made ground soils was limited to the made ground soils beneath the existing building.

Given that the area included within this assessment, includes an area to the north west and the south east of the original assessment area, selected samples were also taken in these areas and tested for the same range of contaminants as per the original assessment.

[2] Contaminated Land Risk Assessment: A guide to good practice, CIRIA C552, 2001.

In addition, ground gas monitoring standpipes were installed in boreholes BH101 to BH103 and monitored on four occasions to assess whether elevated concentrations of ground gases were present within the made ground present beneath the site.

5.4 Analysis of Contamination Test Results

As with the previous assessment, the results of the laboratory testing carried out on the made ground soils encountered beneath the site have been compared with generic soil screening values (SSVs) comprising the 'Suitable For Use Levels' (S4ULs) calculated as a joint project between LQM and CIEH[3]. In lieu of an S4UL screening value for lead, the Category 4 Screening Level (C4SL) was used, as published within SP1010[4].

In view of the proposed development the assessment has been made against SSVs calculated for the generic 'Public Park' (POS_{park}) land use[5]. The POS_{park} land use is intended to be representative of an open space provided for recreational use. In modelling this land use, the land is assumed to be a relatively large area of predominately grassed open space with no more than 25% of exposed soil. The critical receptor for this land use is considered to be a young female child using the site on a regular basis from birth to age 6.

The assumptions made are considered to be highly conservative given the proposed end use of the site.

For the assessment of risk to controlled waters a qualitative assessment has been undertaken based upon the concentrations of contaminants recorded within the soil samples and the information obtained about the sensitivity of the underlying strata or nearby surface water receptors.

5.4.1 Heavy Metals and PAH compounds

In total 13 samples of made ground taken from across the site were tested for concentrations of heavy metals and polycyclic aromatic hydrocarbon (PAH) compounds.

The following table summarises the soil screening values along with the maximum and minimum concentrations for the heavy metals and PAH compounds tested for.

[3] The LQM/CIEH Suitable 4 Use Levels, 2015.

[4] SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination. Final Project Report, published by DEFRA, 2014.

[5] SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination. Final Project Report, published by DEFRA, 2014.

Table 3. Summary of Test Results and Statistical Analysis for Heavy Metals and PAH Compounds

Contaminant	SSV (mg/kg)	No. of Samples	Minimum Concentration (mg/kg)	Maximum concentration (mg/kg)	Limit of Detection (mg/kg)	No of exceedances
Arsenic	170	13	10	29	< 2	0
Water Soluble Boron	46000	13	<LOD	2.4	< 1	0
Cadmium	555	13	<LOD	0.8	< 0.2	0
Chromium	33000	13	12	41	< 2	0
Hexavalent Chromium	220	13	<LOD	<LOD	< 2	0
Copper	44000	13	16	127	< 4	0
Lead	1300	13	25	423	< 3	0
Mercury	240	13	<LOD	2.9	< 1	0
Nickel	3400	13	11	46	< 3	0
Selenium	1800	13	<LOD	<LOD	< 3	0
Zinc	170000	13	70	369	< 3	0
Naphthalene	1200	13	<LOD	1.13	< 0.1	0
Acenaphthylene	29000	13	<LOD	0.2	< 0.1	0
Acenaphthene	29000	13	<LOD	0.12	< 0.1	0
Fluorene	20000	13	<LOD	0.13	< 0.1	0
Phenanthrene	6200	13	<LOD	2.2	< 0.1	0
Anthracene	150000	13	<LOD	0.67	< 0.1	0
Fluoranthene	6300	13	<LOD	7.25	< 0.1	0
Pyrene	15000	13	<LOD	6.3	< 0.1	0
Benz(a)anthracene	49	13	<LOD	3.84	< 0.1	0
Chrysene	93	13	<LOD	3.57	< 0.1	0
Benzo(b)fluoranthene	13	13	<LOD	5.13	< 0.1	0
Benzo(k)fluoranthene	370	13	<LOD	1.78	< 0.1	0
Benzo(a)pyrene	11	13	<LOD	3.94	< 0.1	0
Indeno(123-cd)pyrene	150	13	<LOD	2.4	< 0.1	0
Dibenz(ah)anthracene	1.1	13	<LOD	0.4	< 0.1	0
Benzo(ghi)perylene	1400	13	<LOD	1.95	< 0.1	0

None of the samples of made ground from either phase of the ground investigation recorded concentrations of heavy metals or PAH compounds in excess of their SSVs.

The concentrations of heavy metals and PAH compounds within the made ground are not considered to pose an unacceptable risk to end users of the site.

At the concentrations recorded, heavy metals or PAH compounds would not be considered to be significantly mobile so as to pose an unacceptable risk to controlled waters beneath the site.

5.4.2 Petroleum Hydrocarbons and BTEX compounds

Two samples of the made ground and one of the undisturbed London Clay Formation were tested for total concentrations of petroleum hydrocarbons, with the results speciated by aromatic and aliphatic equivalent carbon weight fractions. The samples were also tested for concentrations of BTEX compounds.

Ten samples of made ground taken were tested for total concentrations of petroleum hydrocarbons with the results speciated only by equivalent carbon weight fractions. Although full speciation of these results was not undertaken, the results of the testing undertaken can still be compared with the more stringent of the screening values for the respective equivalent carbon weight fraction and, where the concentration recorded is found to be lower, then it can be concluded that no significant risk is present.

The following table lists the screening values for petroleum hydrocarbon equivalent carbon weight fractions calculated for 1% organic content.

Table 4. SSVs for petroleum hydrocarbon equivalent carbon weight fractions

Petroleum Hydrocarbon Fraction	SSV (mg/kg)	Petroleum Hydrocarbon Fraction	SSV (mg/kg)
Aliphatic EC 5-6	95000	Aromatic EC 5-7	76000
Aliphatic EC >6-8	150000	Aromatic EC >7-8	87000
Aliphatic EC >8-10	14000	Aromatic EC >8-10	7200
Aliphatic EC >10-12	21000	Aromatic EC >10-12	9200
Aliphatic EC >12-16	25000	Aromatic EC >12-16	10000
Aliphatic EC >16-35	450000	Aromatic EC >16-21	7600
Aliphatic EC >35-44	450000	Aromatic EC >21-35	7800
		Aromatic EC >35-44	7800

Table 5. Soil Screening Values for BTEX Compounds

BTEX Compound	SSV (mg/kg)
Benzene	87000
Toluene	17000
Ethylbenzene	17000
p-Xylene[1]	17000

[1] Xylene has three structural isomers, the SSV presented is for *p*-Xylene, which has the most conservative SSV.

None of the samples recorded any concentrations of petroleum hydrocarbons or BTEX compounds above the generic SSV. No visual or olfactory evidence of such contamination was noted within the intrusive positions.

There is not considered to be an unacceptable risk to either end users or controlled waters from petroleum hydrocarbon or BTEX compound contamination at the site.

Comparison of the test results with threshold values for the use of PE pipework has been undertaken[6]. The concentrations of petroleum hydrocarbons within several samples exceeded the threshold values for the use of PE pipework. It is therefore strongly recommended that designers consult with the proposed water supply company to ascertain if further laboratory testing and assessment specific to proposed routes of services is required or as to the type of water supply pipe material that may be stipulated to be used in the development (e.g. barrier pipe).

[6] In accordance with Table 3.1 of the Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites, UK Water Industry Research, 2010.

5.4.3 Asbestos

During the first phase of the ground investigation, three samples of made ground were screened for the presence of asbestos. The samples taken at shallow depths from trial pits TP02 and TP03 both recorded the presence of chrysotile asbestos fibres, with the sample from TP03 also recording the presence of amosite fibres.

An additional twenty four samples were screened for asbestos as part of the second phase of the ground investigation.

The following table summarises the samples screened for the presence of asbestos and the associated results.

Table 6. Samples screened for asbestos and laboratory result

Sample	Depth (m)	Asbestos Identified	Result
BH02	0.10	Not Detected	-
TP02	0.20	Yes	Chrysotile Fibres
TP03	0.15	Yes	Chrysotile/Amosite Fibres
BH101	0.20	Not Detected	-
BH102	0.20	Not Detected	-
BH103	0.20	Not Detected	-
TP101	0.20	Not Detected	-
TP102	0.20	Not Detected	-
TP103	0.20	Not Detected	-
TP104	0.20	Not Detected	-
TP105	0.20	Not Detected	-
TP106	0.20	Not Detected	-
TP107	0.20	Not Detected	-
TP108	0.20	Yes	Chrysotile Fibres/Debris
TP108	0.40	Not Detected	-
TP109	0.20	Yes	Amosite Fibres/Debris
TP109	0.20	Not Detected	-
TP110	0.20	Not Detected	-
TP110	0.40	Yes	Chrysotile Fibres
TP111	0.20	Not Detected	-
TP111	0.40	Not Detected	-
TP112	0.40	Yes	Chrysotile Fibres/Amosite Debris
TP113	0.20	Not Detected	-
TP113	0.40	Not Detected	-
TP114	0.20	Not Detected	-
TP115	0.20	Not Detected	-
TP116	0.40	Not Detected	-

The exploratory holes in which asbestos was identified are all located within the area immediately surrounding the area of the visitors centre.

No asbestos was encountered in the north west of the site in the shallow made ground soils above the potential hardcore remaining in situ associated with the former use of this part of the site as a contractor's compound.

No asbestos was encountered in the samples of made ground taken adjacent to the pathway along the north eastern boundary of the site.

It is therefore considered that the made ground in the area around the proposed visitors centre is considered to pose an unacceptable risk to end users where such soils remain unremediated within soft landscaped areas.

It is noted that an asbestos survey of the existing structure and infrastructure[7] was beyond the brief of this report. The risk assessment has been undertaken on the basis that should asbestos be identified within buildings or infrastructure these materials will be removed appropriately by licensed contractors and asbestos materials disposed of in accordance with legal requirements prior to demolition or other works in order to avoid further contamination of the soils at the site.

5.5 Ground Gases

As part of the second phase of the ground investigation, three standpipes were installed and monitored on four occasions. The standpipe installed in BH02 during the first phase of the ground investigation could not be located at the time of the supplementary works.

Peak concentrations of carbon dioxide of up to 2.3% by volume were recorded during the monitoring visits.

No detectable concentrations of methane and no detectable gas flows were recorded from any of the standpipes during any of the monitoring visits.

Atmospheric pressures varied between 1005 and 1015 during the monitoring period. Monitoring was carried out during periods of both rising and falling atmospheric pressure.

Assessment of the results of the monitoring has been carried out in general accordance with the current guidance[8].

The guidance provides a methodology for assessing the risk from ground gases by the calculation of site specific gas screening values (GSV) for each key asphyxiating or explosive gas (carbon dioxide and methane, respectively). These are calculated by multiplying the concentration (percentage/volume) of a gas by a gas flow rate (l/hr).

The initial assessment has been made by calculating GSV using the highest flow rate recorded during any of the visits multiplied by the highest gas concentration recorded during any of the visits. This is considered to represent a highly conservative assessment of the risk posed by ground gases.

Where no detectable gas concentrations or flow rates are recorded, the GSV are calculated assuming values equal to the limit of detection of the instrument are present.

[7] As defined under Section 5(a) of the Control of Asbestos Regulations, 2012.

[8] CIRIA document C665, Assessing risks posed by hazardous ground gases to buildings, 2007.

The following table summarises the calculated GSV:

Table 7. Calculated GSV for Carbon Dioxide and Methane

Gas	GSV
Carbon Dioxide	0.023 x 0.1 = 0.0023
Methane	0.001 x 0.1 = 0.0001

For sites that do not fall within the definition of "typical" 2 storey housing, Table 8.5 of the CIRIA document sets out a series of "Characteristic Situations" for different GSV, with Table 8.6 providing guidance on the degree of protection required for each situation.

The calculated GSV place the site within Characteristic Situation 1. No specific gas protection measures are required for this situation.

It is noted that the guidance suggests that for a site where the generation potential of the source is considered to be "Low" (e.g. made ground within limited degradable material) and the sensitivity of the proposed development is "Low" (in relation to ground gases, the sensitive end users would be a commercial worker at the site) the idealised period and frequency of monitoring would be 6 visits over 2 months.

Although the period of monitoring undertaken is less than that suggested by the guidance, in view of the very low concentrations of gas recorded and in the absence of any flow rates, further monitoring is unlikely to change the assessment that protective measures will not be required within the proposed buildings.

The site is reported to be within an area where less than 1% of properties are at or above the action level requiring radon gas protection measures to be installed in new buildings. No radon protection measures are reported by the British Geological Survey to be necessary in the construction of new dwellings or extensions.

5.6 Supplementary Quantitative Contamination Risk Assessment

5.6.1 Basis of Assessment

The development is to comprise new commercial buildings (a visitors centre and a café) together with areas of soft landscaping where end users can expect to come into contact with the underlying soils and where soil derived dusts may be generated.

The proposed development layout is presented in Appendix B. Should the proposed development plans be altered, a revised risk assessment may be required.

5.6.2 Contamination Sources Identified

The following sources of contamination have been identified by the quantitative contamination risk assessment:

- Made ground soils containing asbestos within the vicinity of the proposed visitors centre.
- Made ground soils containing concentrations of petroleum hydrocarbons above the threshold for the use of PE pipework.

A contamination source plan is included as Figure 2.

5.6.3 Supplementary Quantitative Conceptual Model

The revised quantitative conceptual model for the proposed development is presented in Appendix G.

5.7 Risks to Other Potential Receptors

The following general guidance is given with regard to other potential on site receptors, which may not necessarily be statutory drivers for remedial works.

As a minimum and in accordance with industry best practice all ground-workers should be issued with the appropriate PPE and should be instructed in safe working methods, particularly in view of the potential for asbestos to be encountered within the made ground soils.

As a precautionary measure instruction should be given in the recognition of potentially hazardous materials, including oily and odorous soil and water and discoloured or fibrous substances. Any oil-like substances contacting the skin must be washed off immediately using an appropriate cleanser. Operatives should be warned to avoid contact between hands and mouth before washing. The consumption of food and smoking must be confined to designated clean areas. Suitable welfare (washing) facilities should be provided. These precautions should be taken in addition to anything highlighted by a site-specific risk assessment which should be undertaken by any contractor prior to commencing work.

All site personnel should be appropriately briefed on what actions to take in the event that evidence of significant contamination is identified or suspected.

Particular attention should be paid to minimising dust arising from soils and appropriate precautions in this regard should include damping down of soils when in dry conditions. Should

any suspected asbestos containing materials be encountered, they should be left in-situ and appropriate advice sought immediately.

All site personnel should be appropriately briefed on what actions to take in the event that evidence of significant contamination is identified or suspected.

5.8 Recommendations

As complete pollutant linkages relating to end users have been identified at the site, it is considered that remedial measures will be required as part of the proposed development.

It is recommended that feedback is obtained from the regulator on this report prior to developing remedial options for the site.

5.9 Handling and Disposal of Waste

5.9.1 Waste Management – Legislative Framework

Waste is defined as "any substance or object which the holder discards or intends to discard"[9]. Soils excavated during construction works are therefore generally considered to be waste[10].

If a material is waste then an Environmental Permit[11] will be required to lawfully deposit or re-use the material unless it is "uncontaminated soil and other naturally occurring material excavated in the course of construction activities where it is certain that the material will be used for the purposes of construction in its natural state on the site from which it was excavated". Such materials are excluded from the Waste Framework Directive (WFD).

Guidance published by CL:AIRE[12] provides a framework for demonstrating how excavated materials arising from development sites may be considered as non-waste and can therefore be re-used on their site of origin, or elsewhere.

Soils and other materials taken for disposal should be handled, transferred and disposed of as controlled waste in accordance with current waste management[13,14] and duty of care regulations[15] and comply with current codes of practice[16]. Waste transfer notes detailing the site address, the waste type, details of the haulage contractor and full details of the disposal site must be kept by the waste producer.

Specifically, the disposal of any asbestos containing materials should be undertaken by appropriately trained personnel. The disposal of such material and other hazardous waste should be undertaken in accordance with the Hazardous Waste Regulations 2005[17].

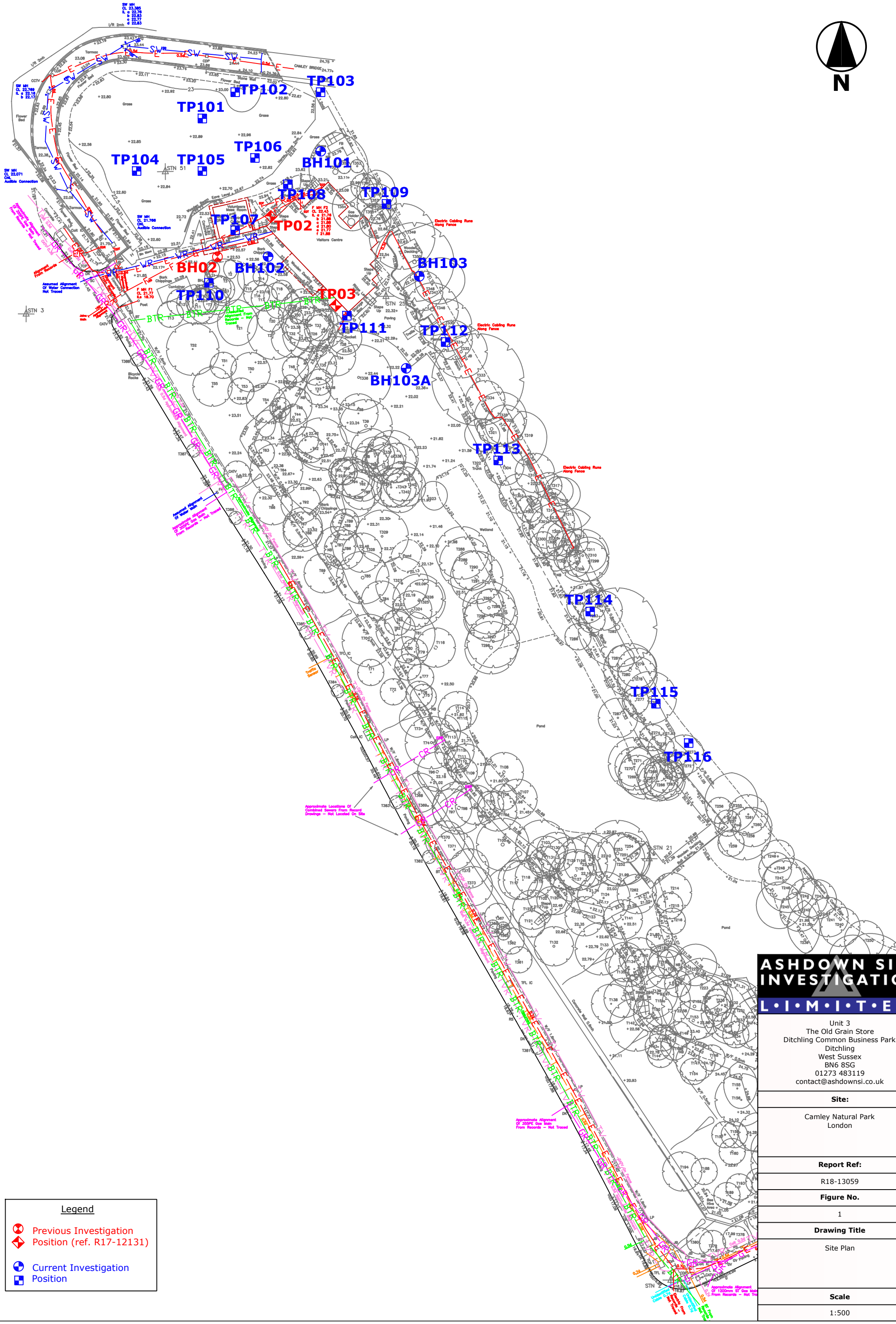
[9] 2008 Waste Framework Directive (Directive 2008/98/EC)
[10] Guidance on the legal definition of waste and its application, Environment Agency, 2012 https://www.gov.uk/government/publications/legal-definition-of-waste-guidance/decide-if-a-material-is-waste-or-not
[11] Environmental Permitting (England and Wales) Regulations 2010
[12] CL:AIRE, The Definition of Waste: Development Industry Code of Practice, Version 2, March 2011
[13] The Waste (England and Wales) Regulation 2011
[14] Section 34, Environmental Protection Act 1990
[15] The Environmental Protection (Duty of Care) Regulations 1991
[16] Waste Duty of Care Code of Practice, Dept. for Environment Food & Rural Affairs, March 2016
[17] Hazardous Waste (England and Wales) Regulations 2005

It is a legal requirement (as discussed within the Waste Duty of Care Code of Practice) to correctly assess and classify waste. Characterisation of the waste in full accordance with current guidance[18] was beyond the scope of this assessment.

Ashdown Site Investigation Ltd.

[18] As discussed in BS EN 14899:2005 Characterisation of waste

FIGURES



ASHDOWN SITE INVESTIGATION
L•I•M•I•T•E•D

Unit 3
The Old Grain Store
Ditchling Common Business Park
Ditchling
West Sussex
BN6 8SG
01273 483119
contact@ashdownsi.co.uk

Site:

Camley Natural Park
London

Report Ref:

R18-13059

Figure No.

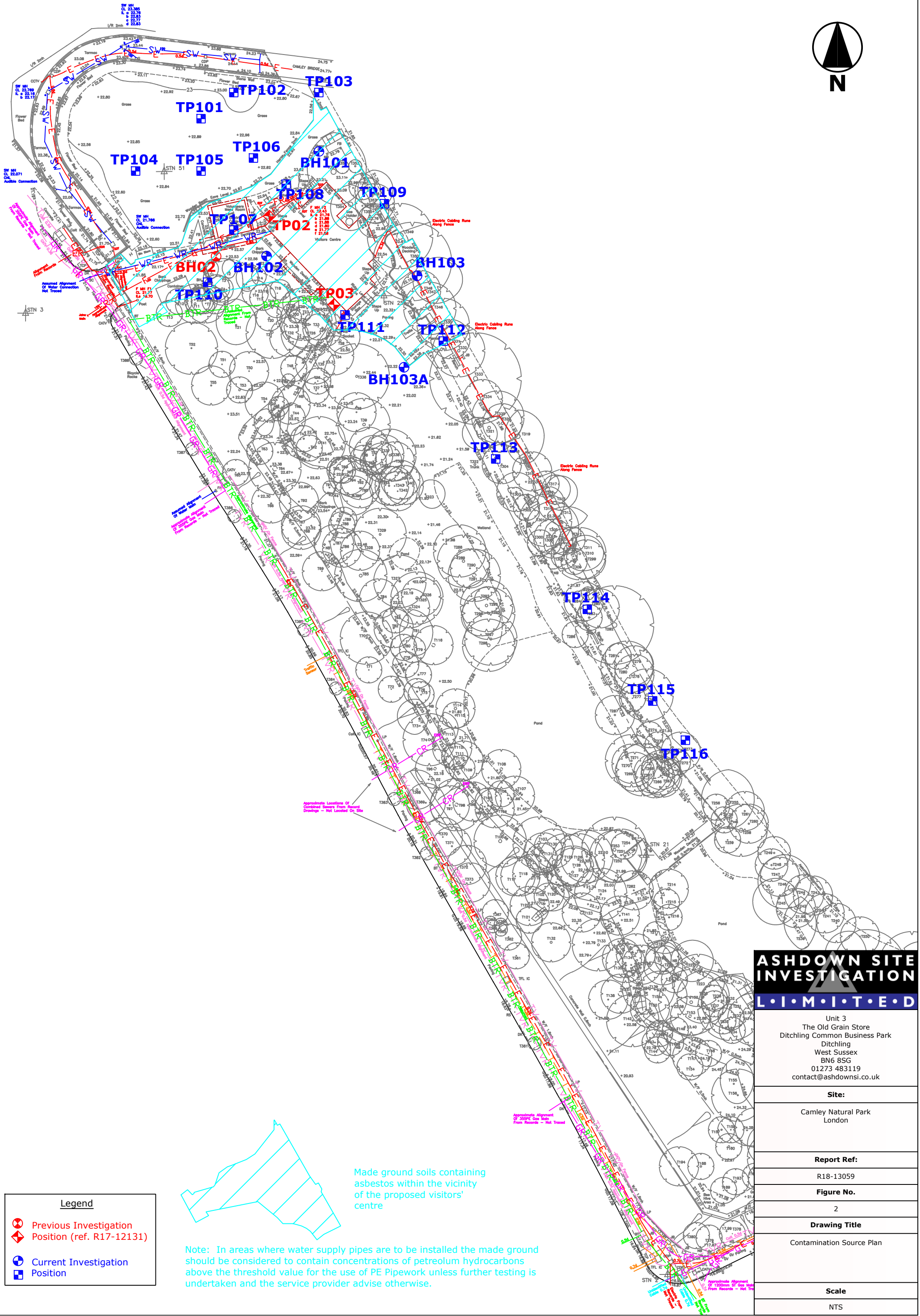
1

Drawing Title

Site Plan

Scale

1:500



ASHDOWN SITE INVESTIGATION LIMITED

Unit 3
The Old Grain Store
Ditchling Common Business Park
Ditchling
West Sussex
BN6 8SG
01273 483119
contact@ashdownsi.co.uk

Site:

Camley Natural Park
London

Report Ref:

R18-13059

Figure No.

2

Drawing Title

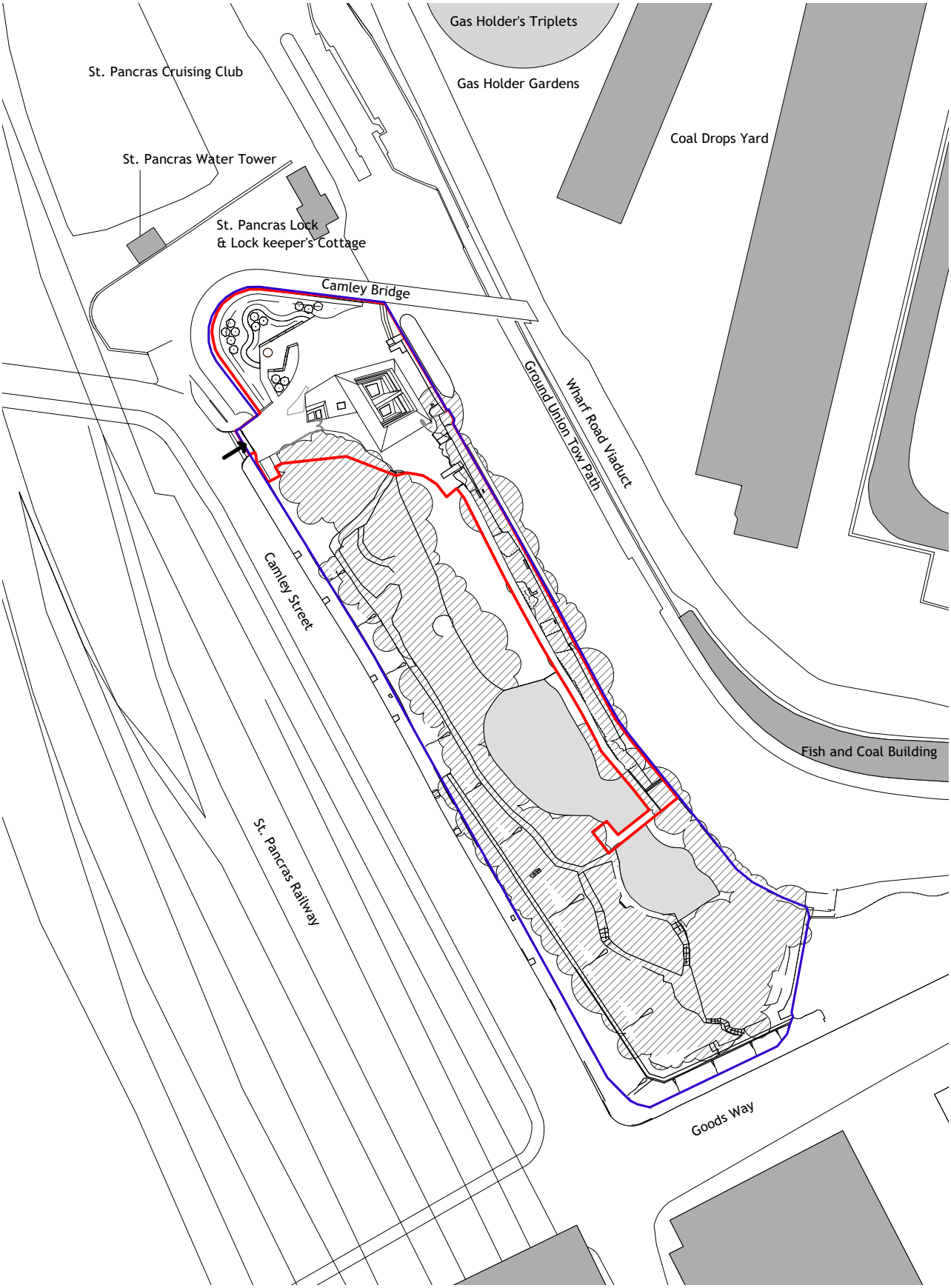
Contamination Source Plan

Scale

NTS

APPENDIX A

Site Location Plan



P01 20.10.17 Issued for Planning

N

erectarchitecture.

22b Regent Studios, 8 Andrews Rd, London E8 4QN, t.020 72546336

client London Wildlife Trust

project Camley Street Natural Park

title Site Location Plan

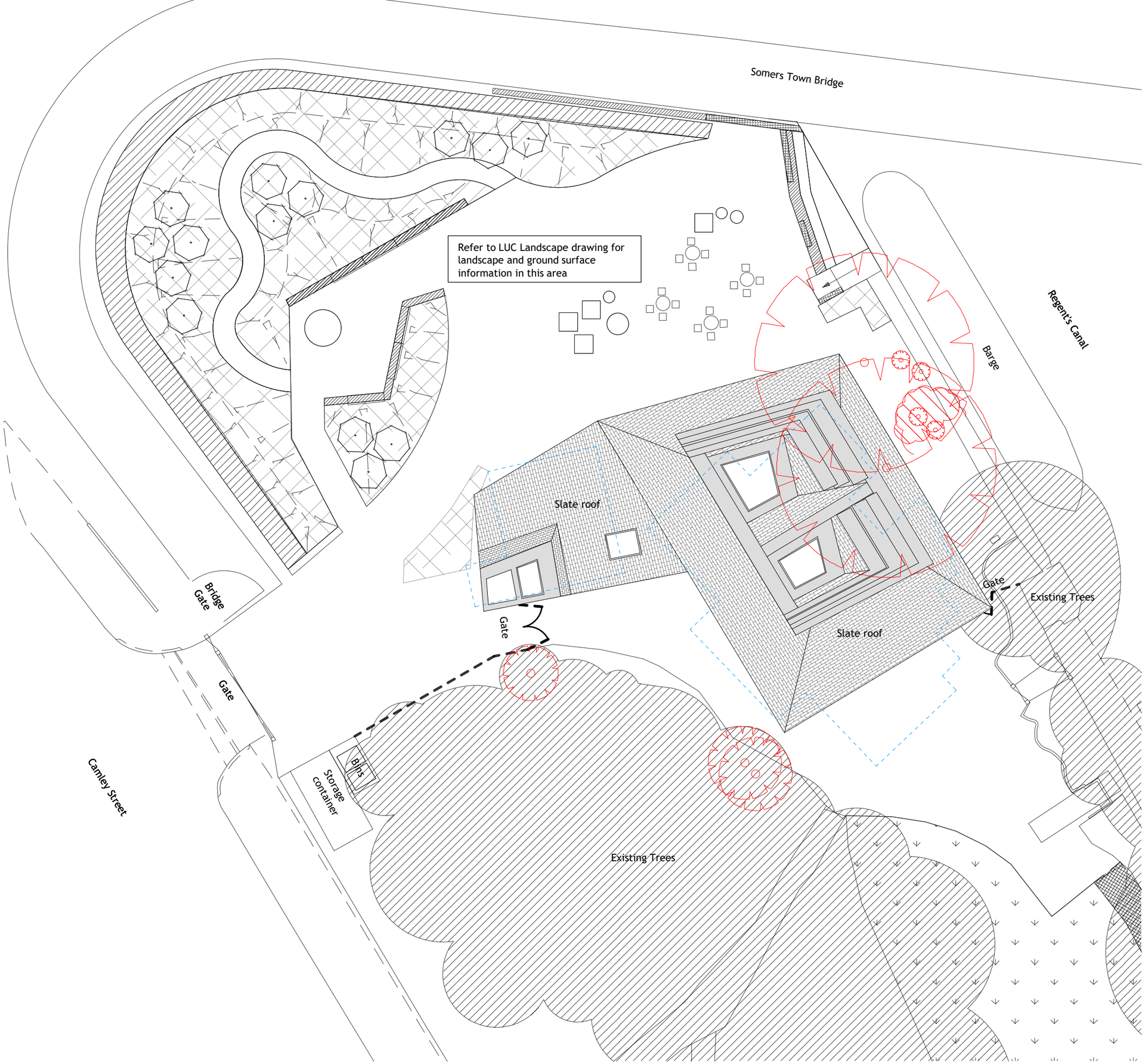
scale/date 1:1250 at A4 20.10.17

drwg no 342- LOC01-P01

0m 5m 10m 20m 30m 40m 50m 75m 1:1250

APPENDIX B

Proposed Development Layout



Outline of existing visitor's centre

Trees to be removed

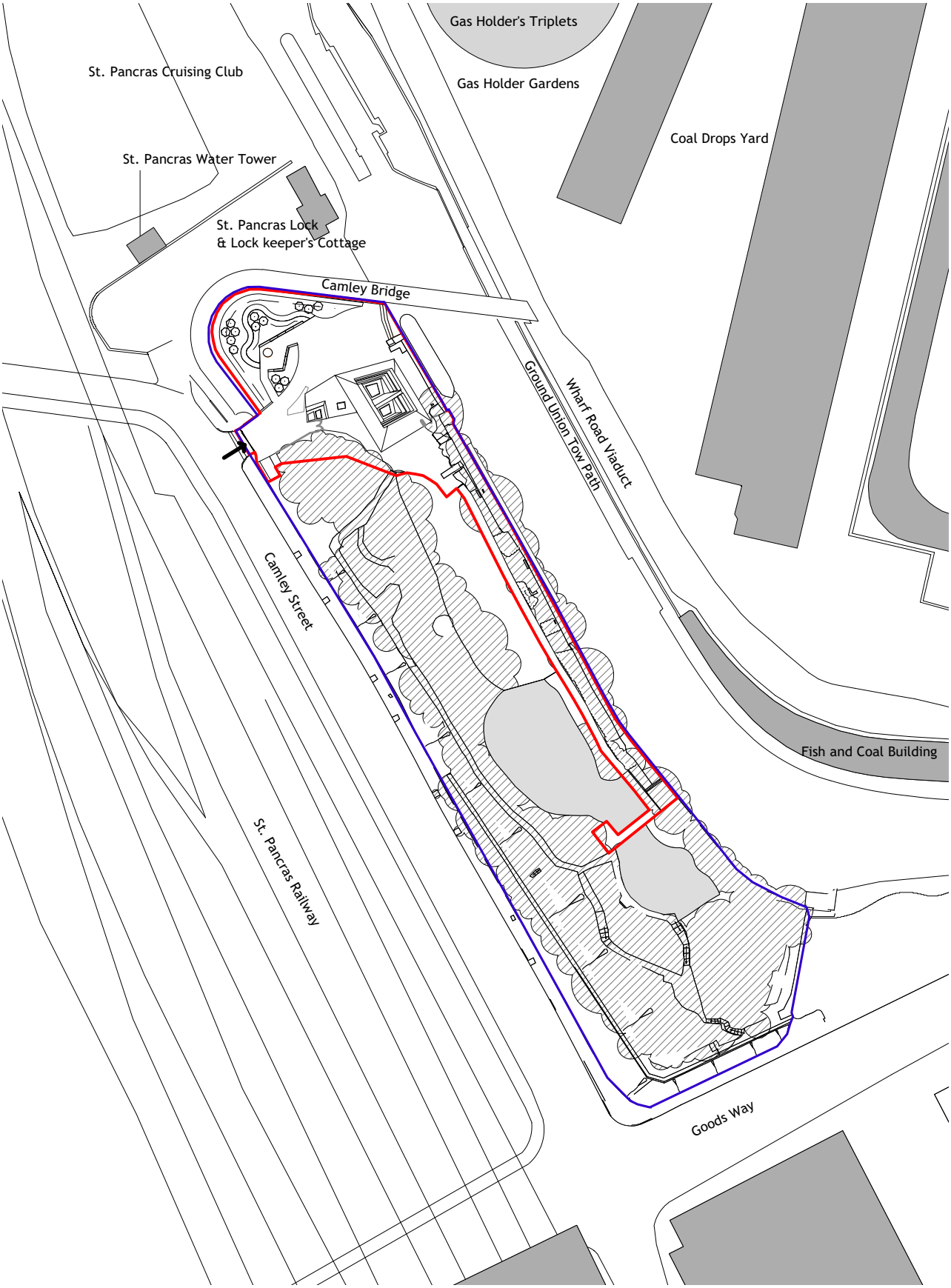
N

P01 20.10.17 Issued for Planning

erectarchitecture.
22b Regent Studios, 8 Andrews Rd, London E8 4QN, t.020 72546336

client London Wildlife Trust
project Camley Street Natural Park
title Proposed Site Plan
scale/date 1:200 at A3 20.10.17
drwg no 342- GA00 -P01

0m 1m 5m 1:200



P01 20.10.17 Issued for Planning

N

erectarchitecture.

22b Regent Studios, 8 Andrews Rd, London E8 4QN, t.020 72546336

client London Wildlife Trust

project Camley Street Natural Park

title Site Location Plan

scale/date 1:1250 at A4 20.10.17

drwg no 342- LOC01-P01

0m 5m 10m 20m 30m 40m 50m 75m 1:1250

APPENDIX C

Exploratory Hole Notes
Exploratory Hole Records
Gas Concentration and Groundwater Monitoring Results

NOTES FOR THE INTERPRETATION OF EXPLORATORY HOLE RECORDS

1 Symbols and abbreviations

Samples

U 'Undisturbed' Sample: - 100mm diameter by 450mm long. The number of blows to drive in the sampling tube is shown after the test index letter in the SPT column.
Uo Sample not obtained.
U* Full penetration of sample not obtained.
Pi Piston Sample: 'Undisturbed' sample 100mm diameter by 600mm long.
D Disturbed Sample.
R Root Sample.
B Bulk Disturbed Sample.
W Water Sample.
J Jar Sample (sample taken in amber glass jar fitted with gas tight lid)
T Tub Sample
Vi Vial Sample

In situ Testing

S Standard penetration test (SPT): Using the split spoon sampler.

C Standard Penetration Test (SPT): using a solid cone instead of the sampler - conducted usually in coarse grained soils or weak rocks.

V Shear Vane Test: Undrained shear strength (cohesion) (kN/m^2) shown within the Vane/Pen Test and N Value column.

H Hand penetrometer Test: Undrained shear strength (cohesion) (kN/m^2) shown within the Vane/Pen Test and N Value column.

P Perth Penetrometer Test: Number of blows for 300mm penetration shown under Vane/Pen Test and N Value column.

Excavation Method

CP Cable Percussion Borehole
WLS Dynamic Sampler Borehole using windowless sampler tubes
WS Dynamic Sampler Borehole using window sampler tubes
TP Trial Pit excavated using mechanic excavator
HDP Trial Pit excavated using hand tools

2 Soil Description

Description and classification of soils has been carried out using as a general basis the British Standard Geotechnical investigation and testing – Identification and classification of soil, Part 1 Identification and description (BS EN ISO 14688-1:2002+A1:2013) and Part 2 Principles of classification (BS EN 14688-2:2004+A1:2013) as well as the BS5930:2015 code of Practice for Ground Investigations.

3 Rock Description

Description and classification of rocks has been carried out using as a general basis the British Standard Geotechnical investigation and testing – Identification and classification of rock, Part 1 Identification and classification (BS EN ISO 14689-1:2003) as well as the BS5930:2015 code of Practice for Ground Investigations.

4 Chalk Description

Chalk description is based on BS EN ISO 14688, BS EN ISO 14689 and BS5930. The classification of chalk generally follows the guidance offered by the Construction Industry Research and Information Association (CIRIA) C574, 'Engineering in Chalk'. This is based on assessment of chalk density, discontinuity and aperture spacing, and the proportion of intact chalk to silt of chalk. See additional chalk classification notes.

ASHDOWN SITE INVESTIGATION
L•I•M•I•T•E•D
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural Park, 12 Camley Street, London

Job Number: R17-12131

Start Date: 09/05/2017

End Date: 09/05/2017

Borehole Number: **BH02**

Standpipe	Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Dynamic Probe Blows/100mm 0 5 10 15 20 25 30	Legend	Depth	Stratum Description
							0.00	Wood Chippings
	J T	0.20					0.10	MADE GROUND: Brown gravelly sandy clay. Gravel is angular to subangular, fine to coarse brick, clay tile, ceramic tile, metal, glass, shell, clinker-like material and flint.
	D	0.25						
	J T	1.10						
	D	1.30					1.50	MADE GROUND: Black/grey gravelly silty clay, with a slight organic odour. Gravel is angular to subangular, fine to coarse, brick, flint, chalk, and occasional slate.
	J T	1.70						
	D	1.80						
	J T	2.70						
	D	2.80						
	J T	3.60					3.50	Very stiff orange brown mottled grey slightly sandy silty CLAY. (London Clay Formation)
	D	3.65						
	H	3.80		170				
	V	4.00		>130				
							4.30	Very stiff grey mottled orange slightly gravelly silty CLAY. Gravel is angular to subangular, fine to coarse claystone. (London Clay Formation) with nodules of claystone between 4.50m and 5.0m
	H	4.60		250				
	J T	4.60						
	D	4.65						
	V	5.00		>130			5.00	Continued on next sheet

Remarks

Groundwater: Borehole dry on completion.

Stability: Borehole collapsed to 8.00m on completion

Notes: Standpipe installed to 3.50m depth; 3.50m to 1.50m slotted pipe with gravel surround; 1.50m to ground level plain pipe with bentonite seal; completed with gas tap/end cap and security cover concreted flush with the ground surface.

Excavation Method: WLS

Borehole Diameter: Various

Made By: PM

ASHDOWN SITE INVESTIGATION
L•I•M•I•T•E•D
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural Park, 12 Camley Street, London

Job Number: R17-12131

Start Date: 09/05/2017

End Date: 09/05/2017

Borehole Number: **BH02**

Standpipe	Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Dynamic Probe Blows/100mm 0 5 10 15 20 25 30	Legend	Depth	Stratum Description
								Very stiff orange brown mottled grey silty CLAY. (London Clay Formation
	H	5.50		>250				
								becoming brown and grey mottled and fissured below 5.60m depth.
	D	5.80						
	D	6.25						
	J T	6.30						with selenite crystals and occasional shell fragments below 6.30m depth.
	H	6.50		>251				
	D	6.80						
	H	6.80		>251				
								with a thin layer of weak orange claystone at 7.30m depth.
	D	7.50						
	H	7.60		>251				
	J T	7.80						
	H	8.70		>251				
	D	8.80						
	D	9.30						becoming grey below 9.20m
	H	9.50		>251				
	D	9.80						
	H	9.80		>251				
							10.00	End of borehole at 10.00m

Remarks

Groundwater: Borehole dry on completion.

Stability: Borehole collapsed to 8.00m on completion

Notes: Standpipe installed to 3.50m depth; 3.50m to 1.50m slotted pipe with gravel surround; 1.50m to ground level plain pipe with bentonite seal; completed with gas tap/end cap and security cover concreted flush with the ground surface.

Excavation Method: WLS

Borehole Diameter: Various

Made By: PM

ASHDOWN SITE INVESTIGATION LIMITED
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural Park, 12 Camley Street, London

Job Number: R17-12131

Start Date: 09/05/2017

End Date: 09/05/2017

Trial Pit Number: **TP02**

Samples and In Situ Testing				Legend	Depth/ Reduced Level	Stratum Description
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result			
					0.00	Woodchippings
D*	0.20				0.05	MADE GROUND: firm brown gravelly silty sandy clay. Gravel is angular to sub angular, fine to coarse brick, clay tile, ceramic tile, metal, glass, shell, clinker-like material and flint.
J T	0.20					
D	0.32				0.34	with crushed concrete, brick and flint material existing beneath structure to a depth of 0.30m.
J T	0.32					
						End of trial pit at 0.34m

Remarks

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: * Samples taken of crushed material beneath structure.

Excavation Method:	HDP
Pit Length:	n/a
Pit Width:	n/a
Made By:	PM

ASHDOWN SITE INVESTIGATION
L•I•M•I•T•E•D
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural Park, 12 Camley Street, London

Job Number: R17-12131

Start Date: 09/05/2017

End Date: 09/05/2017

Trial Pit Number: **TP03**

Samples and In Situ Testing				Legend	Depth/ Reduced Level	Stratum Description
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result			
					0.00	Woodchippings.
D*	0.15					
J T	0.15				0.25	MADE GROUND: Brown firm gravelly silty sandy clay. Gravel is angular to sub angular, fine to coarse brick, clay tile, ceramic tile, metal, glass, shell, clinker-like material and flint.
D	0.35				0.40	with crushed brick, concrete and flint material beneath existing structure to a depth of 0.40m.
J T	0.35					End of trial pit at 0.40m

Remarks

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: * Samples taken of crushed material beneath structure.

Excavation Method: HDP

Pit Length: n/a

Pit Width: n/a

Made By: PM

ASHDOWN SITE INVESTIGATION LIMITED
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural park, 12 Camley Street, London

Job Number: R18-13059

Start Date: 11/07/2018

End Date: 11/07/2018

Borehole Number: **BH101**

Standpipe	Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Dynamic Probe Blows/100mm 0 5 10 15 20 25 30	Legend	Depth	Stratum Description
	J T	0.20					0.00	MADE GROUND: Brown grey very gravelly sandy clay. Gravel is angular to subrounded fine to coarse concrete, brick, flint, ash-like material, charcoal-like material and wood. Sand is fine to coarse.
	J T	0.80					0.70	MADE GROUND: Orange brown sandy clay. Sand is fine to coarse.
							0.90	MADE GROUND: Brown, grey, and orange very gravelly sandy clay. Gravel is angular to subrounded fine to coarse brick, mortar, charcoal-like material, ash-like material, concrete and flint. Sand is fine to coarse.
	J T	1.75						band of charcoal-like material and ash-like material. between 1.30m and 1.80m depth.
	J T	2.60					2.70	MADE GROUND: Black grey slightly gravelly sandy CLAY. Gravel is angular to subrounded fine to coarse brick and chalk.
							3.00	End of borehole at 3.00m

Remarks

Groundwater: Borehole dry on completion.

Stability: Borehole stable on completion.

Notes: Standpipe installed to 3.00m depth; 3.00m to 1.00m slotted pipe with gravel surround; 1.00m to ground level plain pipe with bentonite seal; completed with gas tap and security cover concreted flush with ground surface.

Excavation Method: WLS

Borehole Diameter: Various

Made By: MR

ASHDOWN SITE INVESTIGATION
L•I•M•I•T•E•D
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural park, 12 Camley Street, London

Job Number: R18-13059

Start Date: 11/07/2018

End Date: 11/07/2018

Borehole Number: **BH102**

Standpipe	Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Dynamic Probe Blows/100mm 0 5 10 15 20 25 30	Legend	Depth	Stratum Description
							0.00	Topsoil
	J T	0.20					0.10	MADE GROUND: Brown grey sandy slightly clayey angular to subrounded fine to coarse gravel of brick, flint, clinker-like material, charcoal-like material and chalk.
	J T	0.70						becoming light brown below 1.30m depth.
	J T	1.70					1.50	MADE GROUND: Black grey gravelly sandy clay. Gravel is angular to subrounded fine to medium brick, flint, charcoal-like material, clinker-like material, chalk, concrete, wood, glass and ash-like material. Sand is fine to coarse.
	J T	2.70						becoming slightly gravelly below 2.50m depth.
							3.00	End of borehole at 3.00m

Remarks

Groundwater: Borehole dry on completion.

Stability: Borehole stable on completion.

Notes: Standpipe installed to 3.00m depth; 3.00m to 1.00m slotted pipe with gravel surround; 1.00m to ground level plain pipe with bentonite seal; completed with gas tap and security cover concreted flush with ground surface.

Excavation Method: WLS

Borehole Diameter: Various

Made By: MR

ASHDOWN SITE INVESTIGATION
L•I•M•I•T•E•D
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural park, 12 Camley Street, London

Job Number: R18-13059

Start Date: 11/07/2018

End Date: 11/07/2018

Borehole Number: **BH103**

Standpipe	Sample/ Test Type	Samples and In Situ Testing: Depth From (m)	Depth To (m)	Test Result	Dynamic Probe: Blows/100mm 0 5 10 15 20 25 30	Legend	Depth	Stratum Description
							0.00	Topsoil.
	J T	0.20					0.05	MADE GROUND: Brown and dark grey sandy slightly clayey angular to subrounded fine to coarse brick, charcoal-like material, clinker-like material, wood, glass, concrete and flint.
	J T	0.70						
							1.30	End of borehole at 1.30m

Remarks

Groundwater: Borehole dry on completion.

Stability: Borehole stable on completion.

Notes: No further progress below 1.30m depth - obstruction.
Standpipe installed to 1.30m depth; 1.30m to 0.30m slotted pipe with gravel surround; 0.30m to ground level plain pipe with bentonite seal; completed with gas tap and security cover concreted flush with ground surface.

Excavation Method: WLS

Borehole Diameter: Various

Made By: MR

ASHDOWN SITE INVESTIGATION LIMITED
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural park, 12 Camley Street, London

Job Number: R18-13059

Start Date: 11/07/2018

End Date: 11/07/2018

Borehole Number: **BH103A**

Standpipe	Samples and In Situ Testing: Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Dynamic Probe: Blows/100mm 0 5 10 15 20 25 30	Legend	Depth	Stratum Description
							0.00	Topsoil.
	J T	0.30					0.10	MADE GROUND: Grey brown gravelly sandy clay. Gravel is angular to subrounded fine to coarse brick, flint, tile, chalk, concrete and clinker-like material. Sand is fine to coarse.
							0.60	End of borehole at 0.60m

Remarks

Groundwater: Borehole dry on completion.

Stability: Borehole stable on completion.

Notes: No further progress below 0.60m depth - obstruction.

Excavation Method: WLS

Borehole Diameter: Various

Made By: MR

ASHDOWN SITE INVESTIGATION
L•I•M•I•T•E•D
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural park, 12 Camley Street, London

Job Number: R18-13059

Start Date: 04/07/2018

End Date: 04/07/2018

Trial Pit Number: **TP101**

Samples and In Situ Testing				Legend	Depth/ Reduced Level	Stratum Description
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result			
					0.00	MADE GROUND: Light brown grey gravelly fine to coarse sand. Gravel is angular to subrounded fine to coarse brick, concrete, glass, clinker-like material, plastic and flint.
J T	0.20				0.25	End of trial pit at 0.25m

Remarks

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: No further progress below 0.25m depth - obstruction.

Excavation Method:	HDP
Pit Length:	n/a
Pit Width:	n/a
Made By:	MR

ASHDOWN SITE INVESTIGATION LIMITED
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural park, 12 Camley Street, London

Job Number: R18-13059

Start Date: 04/07/2018

End Date: 04/07/2018

Trial Pit Number: **TP102**

Samples and In Situ Testing				Legend	Depth/ Reduced Level	Stratum Description
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result			
					0.00	MADE GROUND: Light brown grey gravelly fine to coarse sand. Gravel is angular to subrounded fine to coarse brick, concrete, glass, clinker-like material, plastic and flint.
J T	0.20					
J T	0.40				0.40	End of trial pit at 0.40m

Remarks

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: No further progress below 0.40m depth - obstruction.

Excavation Method:	HDP
Pit Length:	n/a
Pit Width:	n/a
Made By:	MR

ASHDOWN SITE INVESTIGATION
L•I•M•I•T•E•D
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural park, 12 Camley Street, London

Job Number: R18-13059

Start Date: 04/07/2018

End Date: 04/07/2018

Trial Pit Number: **TP103**

Samples and In Situ Testing				Legend	Depth/ Reduced Level	Stratum Description
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result			
					0.00	MADE GROUND: Light brown grey gravelly fine to coarse sand. Gravel is angular to subrounded fine to coarse brick, concrete, glass, clinker-like material, plastic and flint.
J T	0.20				0.25	End of trial pit at 0.25m

Remarks

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: No further progress below 0.25m depth - obstruction.

Excavation Method: HDP

Pit Length: n/a

Pit Width: n/a

Made By:

ASHDOWN SITE INVESTIGATION
L•I•M•I•T•E•D
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural park, 12 Camley Street, London

Job Number: R18-13059

Start Date: 04/07/2018

End Date: 04/07/2018

Trial Pit Number: **TP104**

Samples and In Situ Testing				Legend	Depth/ Reduced Level	Stratum Description
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result			
					0.00	MADE GROUND: Light brown grey gravelly fine to coarse sand. Gravel is angular to subrounded fine to coarse brick, concrete, glass, clinker-like material, plastic and flint.
J T	0.20				0.25	End of trial pit at 0.25m

Remarks

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: No further progress below 0.25m depth - obstruction.

Excavation Method:	HDP
Pit Length:	n/a
Pit Width:	n/a
Made By:	MR

ASHDOWN SITE INVESTIGATION LIMITED
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural park, 12 Camley Street, London

Job Number: R18-13059

Start Date: 04/07/2018

End Date: 04/07/2018

Borehole Number: **TP105**

Standpipe	Samples and In Situ Testing: Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Dynamic Probe: Blows/100mm 0 5 10 15 20 25 30	Legend	Depth	Stratum Description
							0.00	Topsoil.
	J T	0.20					0.02	MADE GROUND: Light brown grey gravelly fine to coarse sand. Gravel is angular to subrounded fine to coarse brick, concrete, glass, clinker-like material, plastic and flint.
							0.30	End of borehole at 0.30m

Remarks

Groundwater: Trial pit dry on completion.

Stability: n/a

Notes: No further progress below 0.30m depth - obstruction.

Excavation Method: WLS

Borehole Diameter: Various

Made By: MR

ASHDOWN SITE INVESTIGATION
L•I•M•I•T•E•D
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural park, 12 Camley Street, London

Job Number: R18-13059

Start Date: 04/07/2018

End Date: 04/07/2018

Trial Pit Number: **TP106**

Samples and In Situ Testing				Legend	Depth/ Reduced Level	Stratum Description
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result			
					0.00	Topsoil.
J T	0.20				0.02	MADE GROUND: Light brown grey gravelly fine to coarse sand. Gravel is angular to subrounded fine to coarse brick, concrete, clinker-like material, plastic and flint.
					0.25	End of trial pit at 0.25m

Remarks

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: No further progress below 0.25m depth - obstruction.

Excavation Method: HDP

Pit Length: n/a

Pit Width: n/a

Made By: MR

ASHDOWN SITE INVESTIGATION LIMITED
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural park, 12 Camley Street, London

Job Number: R18-13059

Start Date: 04/07/2018

End Date: 04/07/2018

Borehole Number: **TP107**

Standpipe	Samples and In Situ Testing: Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result	Dynamic Probe: Blows/100mm 0 5 10 15 20 25 30	Legend	Depth	Stratum Description
							0.00	Topsoil.
	J T	0.20					0.02	MADE GROUND: Dark brown slightly gravelly very sandy clay. Gravel is angular to subrounded fine to coarse wood, brick, concrete and charcoal-like material and roots.
	J T	0.40					0.30	End of borehole at 0.30m

Remarks

Groundwater: Trial pit dry on completion.

Stability: n/a

Notes: No further progress below 0.30m depth - concrete obstruction.

Excavation Method: WLS

Borehole Diameter: Various

Made By: MR

ASHDOWN SITE INVESTIGATION LIMITED
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural park, 12 Camley Street, London

Job Number: R18-13059

Start Date: 04/07/2018

End Date: 04/07/2018

Trial Pit Number: **TP108**

Samples and In Situ Testing				Legend	Depth/ Reduced Level	Stratum Description
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result			
					0.00	MADE GROUND: Brown grey gravelly fine to coarse sand. Gravel is angular to subrounded fine to coarse brick, concrete, glass, clinker-like material, plastic, flint, tile and roots. Sand is fine to coarse.
J T	0.20					
J T	0.40					
					0.50	End of trial pit at 0.50m

Remarks

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: n/a

Excavation Method:	HDP
Pit Length:	n/a
Pit Width:	n/a
Made By:	MR

ASHDOWN SITE INVESTIGATION L•I•M•I•T•E•D
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural park, 12 Camley Street, London

Job Number: R18-13059

Start Date: 04/07/2018

End Date: 04/07/2018

Trial Pit Number: **TP109**

Samples and In Situ Testing				Legend	Depth/ Reduced Level	Stratum Description
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result			
					0.00	Wood chippings.
J T	0.20				0.02	MADE GROUND: Brown slightly gravelly clayey fine to coarse sand. Gravel is angular to subrounded fine to coarse gravel of brick, concrete and flint.
J T	0.40					
					0.50	End of trial pit at 0.50m

Remarks

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: n/a

Excavation Method: HDP

Pit Length: n/a

Pit Width: n/a

Made By: MR

ASHDOWN SITE INVESTIGATION L•I•M•I•T•E•D
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural park, 12 Camley Street, London

Job Number: R18-13059

Start Date: 04/07/2018

End Date: 04/07/2018

Trial Pit Number: **TP110**

Samples and In Situ Testing				Legend	Depth/ Reduced Level	Stratum Description
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result			
					0.00	Wood chippings.
J T	0.20				0.02	MADE GROUND: Dark brown slightly gravelly clayey sand. Gravel is angular to subrounded fine to coarse brick, concrete, charcoal-like material ,wood and roots.
J T	0.40					
					0.50	End of trial pit at 0.50m

Remarks

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: n/a

Excavation Method: HDP

Pit Length: n/a

Pit Width: n/a

Made By: MR

ASHDOWN SITE INVESTIGATION L•I•M•I•T•E•D
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural park, 12 Camley Street, London

Job Number: R18-13059

Start Date: 04/07/2018

End Date: 04/07/2018

Trial Pit Number: **TP111**

Samples and In Situ Testing				Legend	Depth/ Reduced Level	Stratum Description
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result			
					0.00	Wood chippings.
J T	0.20				0.02	MADE GROUND: Dark brown slightly gravelly clayey fine to coarse sand. Gravel is angular to subrounded fine to coarse brick, concrete, charcoal-like material, wood and roots.
J T	0.40					
					0.50	End of trial pit at 0.50m

Remarks

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: n/a

Excavation Method: HDP

Pit Length: n/a

Pit Width: n/a

Made By: MR

ASHDOWN SITE INVESTIGATION L•I•M•I•T•E•D
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural park, 12 Camley Street, London

Job Number: R18-13059

Start Date: 04/07/2018

End Date: 04/07/2018

Trial Pit Number: **TP112**

Samples and In Situ Testing				Legend	Depth/ Reduced Level	Stratum Description
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result			
					0.00	Topsoil.
J T	0.20				0.02	MADE GROUND: Dark brown slightly gravelly clayey fine to coarse sand. Gravel is angular to subrounded fine to coarse brick, concrete, charcoal-like material, wood and roots.
J T	0.40					
					0.50	End of trial pit at 0.50m

Remarks

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: n/a

Excavation Method: HDP

Pit Length: n/a

Pit Width: n/a

Made By: MR

ASHDOWN SITE INVESTIGATION
L•I•M•I•T•E•D
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural park, 12 Camley Street, London

Job Number: R18-13059

Start Date: 04/07/2018

End Date: 04/07/2018

Trial Pit Number: **TP113**

Samples and In Situ Testing				Legend	Depth/ Reduced Level	Stratum Description
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result			
					0.00	Wood chippings.
J T	0.20				0.02	MADE GROUND: Dark brown slightly gravelly very sandy clay. Gravel is angular to subrounded fine to coarse brick, concrete, charcoal-like material and wood. Sand is fine to coarse.
J T	0.40					
					0.50	End of trial pit at 0.50m

Remarks

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: n/a

Excavation Method:	HDP
Pit Length:	n/a
Pit Width:	n/a
Made By:	MR

ASHDOWN SITE INVESTIGATION
L•I•M•I•T•E•D
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural park, 12 Camley Street, London

Job Number: R18-13059

Start Date: 04/07/2018

End Date: 04/07/2018

Trial Pit Number: **TP114**

Samples and In Situ Testing				Legend	Depth/ Reduced Level	Stratum Description
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result			
					0.00	Topsoil.
J T	0.20				0.05	MADE GROUND: Brown slightly gravelly sandy clay. Gravel is angular to subrounded fine to coarse brick, concrete, glass and flint. Sand is fine to coarse.
J T	0.40					
					0.50	End of trial pit at 0.50m

Remarks

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: n/a

Excavation Method: HDP

Pit Length: n/a

Pit Width: n/a

Made By: MR

ASHDOWN SITE INVESTIGATION L•I•M•I•T•E•D
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural park, 12 Camley Street, London

Job Number: R18-13059

Start Date: 04/07/2018

End Date: 04/07/2018

Trial Pit Number: **TP115**

Samples and In Situ Testing				Legend	Depth/ Reduced Level	Stratum Description
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result			
					0.00	Topsoil.
J T	0.20				0.02	MADE GROUND: Dark brown gravelly sandy clay. Gravel is angular to subrounded fine to coarse brick, concrete, clinker-like material, flint and roots. Sand is fine to coarse.
J T	0.40					
					0.50	End of trial pit at 0.50m

Remarks

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: n/a

Excavation Method: HDP

Pit Length: n/a

Pit Width: n/a

Made By: MR

ASHDOWN SITE INVESTIGATION L•I•M•I•T•E•D
E-mail: contact@ashdownsi.co.uk
Web: www.ashdownsi.co.uk
Tel: 01273 483119

Site Name: Camley Street Natural park, 12 Camley Street, London

Job Number: R18-13059

Start Date: 04/07/2018

End Date: 04/07/2018

Trial Pit Number: **TP116**

Samples and In Situ Testing				Legend	Depth/ Reduced Level	Stratum Description
Sample/ Test Type	Depth From (m)	Depth To (m)	Test Result			
					0.00	Topsoil
J T	0.20				0.02	MADE GROUND: Brown slightly gravelly sandy clay. Gravel is angular to subrounded fine to coarse brick, concrete, glass and flint. Sand is fine to coarse.
J T	0.40					
					0.50	End of trial pit at 0.50m

Remarks

Groundwater: Trial pit dry on completion.

Stability: Trial pit stable on completion.

Notes: n/a

Excavation Method: HDP

Pit Length: n/a

Pit Width: n/a

Made By: MR

Gas Concentrations and Groundwater Monitoring Results

Site Name:	Camley Natural Park, 12 Camley Street, London, N12 4PW
Report Ref:	R18-13059

Position	Date	Time	Gas Pressure (mb)	Emission Rate (l/hr)	Atmospheric Pressure	Atmospheric Trend	Standpipe Depth (m)	Standing Water Depth (m bgl)	Methane (%)				Carbon Dioxide (%)				Oxygen (%)				H_2S (ppm)	CO (ppm)
									Seconds				Seconds				Seconds					
									15	30	45	60	15	30	45	60	15	30	45	60		
BH101	19/07/18	09:20	0	0.0	1015	Falling	3.00	2.25	0.0	0.0	0.0	0.0	0.9	0.9	0.8	0.8	20.0	20.0	20.0	20.0	0	0
BH102	19/07/18	09:15	0	0.0	1015	Falling	1.25	Dry	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	19.4	19.5	19.5	19.5	0	0
BH103	19/07/18	09:10	0	0.0	1015	Falling	3.00	2.70	0.0	0.0	0.0	0.0	1.9	2.1	2.1	2.2	19.0	18.7	18.7	18.7	0	0
BH101	23/07/18	08:35	0	0.0	1012	Rising	1.25	Dry	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	19.9	19.9	19.9	19.9	0	0
BH102	23/07/18	08:40	0	0.0	1012	Rising	3.00	2.55	0.0	0.0	0.0	0.0	2.1	2.2	2.2	2.2	19.8	19.8	19.8	19.8	0	0
BH103	23/07/18	08:45	0	0.0	1012	Rising	3.00	2.25	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	20.2	20.2	20.2	20.2	0	0
BH101	27/07/18	10:00	0	0.0	1007	Falling	3.00	2.65	0.0	0.0	0.0	0.0	1.6	1.6	1.6	1.6	19.6	19.6	19.6	19.6	0	0
BH102	27/07/18	10:05	0	0.0	1007	Falling	1.25	Dry	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	19.8	19.8	19.8	19.8	0	0
BH103	27/07/18	10:10	0	0.0	1007	Falling	3.00	2.45	0.0	0.0	0.0	0.0	1.9	1.9	1.9	1.9	19.2	19.2	19.2	19.2	0	0
BH101	30/07/18	09:45	0	0.0	1005	Falling	3.00	2.55	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	20.1	20.1	20.1	20.1	0	0
BH102	30/07/18	09:50	0	0.0	1005	Falling	1.25	Dry	0.0	0.0	0.0	0.0	1.9	2.3	2.3	2.3	18.7	18.7	18.7	18.7	0	0
BH103	30/07/18	09:55	0	0.0	1005	Falling	3.00	2.45	0.0	0.0	0.0	0.0	0.8	1.7	2.1	2.1	20.6	18.9	19.0	19.0	0	0

APPENDIX D

Contamination Test Results

Alex Bewick
Ashdown Site Investigations Ltd
The Old Dairy
Swanborough Farm
Swanborough
Lewes
East Sussex
BN7 3PF

QTS Environmental Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410
russell.jarvis@qtsenvironmental.com

QTS Environmental Report No: 17-58872

Site Reference:	Camley Street Natural Park, 12 Camley Street, London
Project / Job Ref:	R17-12131
Order No:	P17-4817
Sample Receipt Date:	12/05/2017
Sample Scheduled Date:	12/05/2017
Report Issue Number:	1
Reporting Date:	18/05/2017

Authorised by:

Kevin Old
Associate Director of Laboratory

Authorised by:

Russell Jarvis
Associate Director of Client Services

QTSE is the trading name of DETS Ltd, company registration number 03705645

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate						
QTS Environmental Report No: 17-58872	**Date Sampled**	09/05/17	09/05/17	09/05/17	09/05/17	09/05/17
Ashdown Site Investigations Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Camley Street Natural Park, 12 Camley Street, London	**TP / BH No**	BH02	BH02	BH02	TP02	TP03
Project / Job Ref: R17-12131	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: P17-4817	**Depth (m)**	0.10	1.70	3.60	0.20	0.15
Reporting Date: 18/05/2017	**QTSE Sample No**	268367	268368	268369	268370	268371

Determinand	Unit	RL	Accreditation					
Asbestos Screen [S]	N/a	N/a	**ISO17025**	Not Detected			Detected	Detected
Sample Matrix [S]	Material Type	N/a	NONE				Fibre bundles present	Fibre bundles present
Asbestos Type [S]	PLM Result	N/a	**ISO17025**				Chrysotile	Chrysotile Amosite
pH	pH Units	N/a	**MCERTS**	7.3	7.8	7.7	7.2	7.4
Total Sulphate as SO_4	mg/kg	< 200	NONE				6739	7895
Total Sulphate as SO_4	%	< 0.02	NONE				0.67	0.79
Organic Matter	%	< 0.1	**MCERTS**	5.8	1.3	0.1	3.6	5.2
Arsenic (As)	mg/kg	< 2	**MCERTS**	22	13	14	16	15
W/S Boron	mg/kg	< 1	NONE	2.2	2	< 1	< 1	2.4
Cadmium (Cd)	mg/kg	< 0.2	**MCERTS**	0.5	0.2	< 0.2	0.4	0.4
Chromium (Cr)	mg/kg	< 2	**MCERTS**	27	12	41	31	27
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	**MCERTS**	60	67	20	63	70
Lead (Pb)	mg/kg	< 3	**MCERTS**	336	423	25	156	211
Mercury (Hg)	mg/kg	< 1	NONE	< 1	2.9	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	**MCERTS**	21	12	46	16	15
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	**MCERTS**	268	70	72	226	278

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30^{O}C
Analysis carried out on the dried sample is corrected for the stone content

The samples have been examined to identify the presence of asbestiform minerals by polarising light microscopy and dispersion staining technique to In-House Procedures QTSE600 Determination of Asbestos in Bulk Materials; Asbestos in Soils/Sediments (fibre screening and identification)

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

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

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

Asbestos Analyst: Javeed Malik

RL: Reporting Limit

Pinch Test: Where pinch test is positive it is reported "Loose Fibres - PT" with type(s).

Subcontracted analysis [S]

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate - Speciated PAHs						
QTS Environmental Report No: 17-58872	**Date Sampled**	09/05/17	09/05/17	09/05/17	09/05/17	09/05/17
Ashdown Site Investigations Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Camley Street Natural Park, 12 Camley Street, London	**TP / BH No**	BH02	BH02	BH02	TP02	TP03
Project / Job Ref: R17-12131	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: P17-4817	**Depth (m)**	0.10	1.70	3.60	0.20	0.15
Reporting Date: 18/05/2017	**QTSE Sample No**	268367	268368	268369	268370	268371

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	0.13	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	1.07	< 0.1	< 0.1	0.60	0.50
Anthracene	mg/kg	< 0.1	MCERTS	0.21	< 0.1	< 0.1	0.15	0.12
Fluoranthene	mg/kg	< 0.1	MCERTS	2.15	< 0.1	< 0.1	1.26	1.17
Pyrene	mg/kg	< 0.1	MCERTS	1.84	< 0.1	< 0.1	1.17	1.07
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	1.01	< 0.1	< 0.1	0.60	0.65
Chrysene	mg/kg	< 0.1	MCERTS	0.98	< 0.1	< 0.1	0.66	0.68
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	1.50	< 0.1	< 0.1	0.81	0.92
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.46	< 0.1	< 0.1	0.31	0.36
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.92	< 0.1	< 0.1	0.51	0.63
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.58	< 0.1	< 0.1	0.34	0.41
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.35	< 0.1	< 0.1	0.31	0.39
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	11.2	< 1.6	< 1.6	6.7	6.9

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30^{O}C

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Soil Analysis Certificate - EPH Banded (Type F)						
QTS Environmental Report No: 17-58872	**Date Sampled**	09/05/17	09/05/17			
Ashdown Site Investigations Ltd	**Time Sampled**	None Supplied	None Supplied			
Site Reference: Camley Street Natural Park, 12 Camley Street, London	**TP / BH No**	TP02	TP03			
Project / Job Ref: R17-12131	**Additional Refs**	None Supplied	None Supplied			
Order No: P17-4817	**Depth (m)**	0.20	0.15			
Reporting Date: 18/05/2017	**QTSE Sample No**	268370	268371			

Determinand	Unit	RL	Accreditation					
EPH (>C8 - C10)	mg/kg	< 1	MCERTS	< 1	< 1			
EPH (>C10 - C12)	mg/kg	< 1	MCERTS	< 1	< 1			
EPH (>C12 - C16)	mg/kg	< 1	MCERTS	< 1	< 1			
EPH (>C16 - C21)	mg/kg	< 1	MCERTS	13	8			
EPH (>C21 - C40)	mg/kg	< 6	MCERTS	242	114			
EPH (C8 - C40)	mg/kg	< 6	MCERTS	255	122			

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30^{o}C

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Soil Analysis Certificate - TPH CWG Banded							
QTS Environmental Report No: 17-58872	**Date Sampled**	09/05/17	09/05/17	09/05/17		
Ashdown Site Investigations Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied		
Site Reference: Camley Street Natural Park, 12 Camley Street, London	**TP / BH No**	BH02	BH02	BH02		
Project / Job Ref: R17-12131	**Additional Refs**	None Supplied	None Supplied	None Supplied		
Order No: P17-4817	**Depth (m)**	0.10	1.70	3.60		
Reporting Date: 18/05/2017	**QTSE Sample No**	268367	268368	268369		

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01		
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05		
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2		
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2		
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3		
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3		
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10		
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	< 21		
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01		
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05		
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2		
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2		
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	2	< 2	< 2		
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	11	< 3	< 3		
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	49	< 10	< 10		
Aromatic (C5 - C35)	mg/kg	< 21	NONE	62	< 21	< 21		
Total >C5 - C35	mg/kg	< 42	NONE	62	< 42	< 42		

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30^{O}C

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate - BTEX / MTBE						
QTS Environmental Report No: 17-58872	Date Sampled	09/05/17	09/05/17	09/05/17		
Ashdown Site Investigations Ltd	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: Camley Street Natural Park, 12 Camley Street, London	TP / BH No	BH02	BH02	BH02		
Project / Job Ref: R17-12131	Additional Refs	None Supplied	None Supplied	None Supplied		
Order No: P17-4817	Depth (m)	0.10	1.70	3.60		
Reporting Date: 18/05/2017	QTSE Sample No	268367	268368	268369		

Determinand	Unit	RL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2		
Toluene	ug/kg	< 5	MCERTS	9	< 5	< 5		
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2		
p & m-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2		
o-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2		
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5		

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Waste Acceptance Criteria Analytical Certificate - BS EN 12457/2

QTS Environmental Report No: 17-58872	**Date Sampled**	09/05/17	
Ashdown Site Investigations Ltd	**Time Sampled**	None Supplied	
Site Reference: Camley Street Natural Park, 12 Camley Street, London	**TP / BH No**	BH02	
Project / Job Ref: R17-12131	**Additional Refs**	None Supplied	
Order No: P17-4817	**Depth (m)**	0.10	
Reporting Date: 18/05/2017	**QTSE Sample No**	268367	

Determinand	**Unit**	**MDL**		**Landfill Waste Acceptance Criteria Limits**		
				Inert Waste Landfill	**Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
TOC[MU]	%	< 0.1	3.4	**3%**	5%	6%
Loss on Ignition	%	< 0.01	12.90	--	--	**10%**
BTEX[MU]	mg/kg	< 0.05	< 0.05	6	--	--
Sum of PCBs	mg/kg	< 0.1	< 0.1	1	--	--
Mineral Oil[MU]	mg/kg	< 10	< 10	500	--	--
Total PAH[MU]	mg/kg	< 1.7	11.2	100	--	--
pH[MU]	pH Units	N/a	7.3	--	>6	--
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	1.9	--	To be evaluated	To be evaluated

Eluate Analysis	**10:1 mg/l**			**Cumulative 10:1 mg/kg**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)**		
Arsenic[U]	0.01			0.1	0.5	2	25
Barium[U]	0.03			0.3	20	100	300
Cadmium[U]	< 0.0005			< 0.005	0.04	1	5
Chromium[U]	< 0.005			< 0.05	0.5	10	70
Copper[U]	0.02			0.2	2	50	100
Mercury[U]	< 0.0005			< 0.01	0.01	0.2	2
Molybdenum[U]	0.006			0.06	0.5	10	30
Nickel[U]	< 0.007			< 0.07	0.4	10	40
Lead[U]	0.036			0.36	0.5	10	50
Antimony[U]	< 0.005			< 0.05	0.06	0.7	5
Selenium[U]	< 0.005			< 0.05	0.1	0.5	7
Zinc[U]	0.020			0.20	4	50	200
Chloride[U]	11			108	800	15000	25000
Fluoride[U]	< 0.5			< 5	10	150	500
Sulphate[U]	32			322	1000	20000	50000
TDS	179			1789	4000	60000	100000
Phenol Index	< 0.01			< 0.1	1	-	-
DOC	18.5			185	500	800	1000
Leach Test Information							
Sample Mass (kg)	0.11						
Dry Matter (%)	82.9						
Moisture (%)	20.6						
Stage 1							
Volume Eluate L10 (litres)	0.88						

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and QTS Environmental cannot be held responsible for any discrepencies with current legislation
M Denotes MCERTS accredited test
U Denotes ISO17025 accredited test

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate - Sample Descriptions	
QTS Environmental Report No: 17-58872	
Ashdown Site Investigations Ltd	
Site Reference: Camley Street Natural Park, 12 Camley Street, London	
Project / Job Ref: R17-12131	
Order No: P17-4817	
Reporting Date: 18/05/2017	

QTSE Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
268367	BH02	None Supplied	0.10	17.1	Brown sandy clay with stones and brick
268368	BH02	None Supplied	1.70	13.6	Black sandy clay with brick
268369	BH02	None Supplied	3.60	19	Brown clay
268370	TP02	None Supplied	0.20	6.2	Grey sandy gravel with stones and concrete
268371	TP03	None Supplied	0.15	7.8	Grey sandy gravel with stones and concrete

Moisture content is part of procedure E003 & is not an accredited test
Insufficient Sample I/S
Unsuitable Sample U/S

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Soil Analysis Certificate - Methodology & Miscellaneous Information

QTS Environmental Report No: 17-58872
Ashdown Site Investigations Ltd
Site Reference: Camley Street Natural Park, 12 Camley Street, London
Project / Job Ref: R17-12131
Order No: P17-4817
Reporting Date: 18/05/2017

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

D Dried
AR As Received

Pete Millis
Ashdown Site Investigations Ltd
Unit 3 The Grain Store
Ditchling Common Business Park
Ditchling Common
West Sussex
BN6 8SG

DETS Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410
russell.jarvis@qtsenvironmental.com

4480

DETS Report No: 18-78723

Site Reference:	Camley Street Natural Park, Camley Street, London
Project / Job Ref:	R18-13059
Order No:	P18-6379
Sample Receipt Date:	13/07/2018
Sample Scheduled Date:	13/07/2018
Report Issue Number:	1
Reporting Date:	20/07/2018

Authorised by:

Kevin Old
Associate Director of Laboratory

Authorised by:

Russell Jarvis
Associate Director of Client Services

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate							
DETS Report No: 18-78723	**Date Sampled**	04/07/18	04/07/18	04/07/18	04/07/18	04/07/18
Ashdown Site Investigations Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Camley Street Natural Park, Camley Street, London	**TP / BH No**	TP113	TP113	TP114	TP115	TP116
Project / Job Ref: R18-13059	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: P18-6379	**Depth (m)**	0.20	0.40	0.20	0.20	0.40
Reporting Date: 20/07/2018	**QTSE Sample No**	347133	347134	347135	347136	347137

Determinand	**Unit**	**RL**	**Accreditation**					
Asbestos Screen (S)	N/a	N/a	**ISO17025**	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
pH	pH Units	N/a	**MCERTS**	7.8				8.7
Total Sulphate as SO_4	mg/kg	< 200	NONE	850				523
Total Sulphate as SO_4	%	< 0.02	NONE	0.09				0.05
Organic Matter	%	< 0.1	**MCERTS**	6.9				2.4
Arsenic (As)	mg/kg	< 2	**MCERTS**	21				11
W/S Boron	mg/kg	< 1	NONE	1.5				< 1
Cadmium (Cd)	mg/kg	< 0.2	**MCERTS**	0.4				0.3
Chromium (Cr)	mg/kg	< 2	**MCERTS**	31				19
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2				< 2
Copper (Cu)	mg/kg	< 4	**MCERTS**	42				35
Lead (Pb)	mg/kg	< 3	**MCERTS**	162				166
Mercury (Hg)	mg/kg	< 1	NONE	< 1				< 1
Nickel (Ni)	mg/kg	< 3	**MCERTS**	13				14
Selenium (Se)	mg/kg	< 3	NONE	< 3				< 3
Zinc (Zn)	mg/kg	< 3	**MCERTS**	118				431

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30^{O}C
Subcontracted analysis (S)

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate - Speciated PAHs							
DETS Report No: 18-78723	Date Sampled	04/07/18	04/07/18			
Ashdown Site Investigations Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Camley Street Natural Park, Camley Street, London	TP / BH No	TP113	TP116			
Project / Job Ref: R18-13059	Additional Refs	None Supplied	None Supplied			
Order No: P18-6379	Depth (m)	0.20	0.40			
Reporting Date: 20/07/2018	QTSE Sample No	347133	347137			

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	0.22	0.23			
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Phenanthrene	mg/kg	< 0.1	MCERTS	0.72	0.83			
Anthracene	mg/kg	< 0.1	MCERTS	0.17	0.22			
Fluoranthene	mg/kg	< 0.1	MCERTS	1.50	1.65			
Pyrene	mg/kg	< 0.1	MCERTS	1.31	1.39			
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.90	0.84			
Chrysene	mg/kg	< 0.1	MCERTS	0.84	0.83			
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	1.27	1.07			
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.46	0.45			
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.95	0.82			
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.72	0.60			
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.61	0.52			
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	9.7	9.4			

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30^{O}C

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate - EPH Banded (Type F)							
DETS Report No: 18-78723	**Date Sampled**	04/07/18	04/07/18			
Ashdown Site Investigations Ltd	**Time Sampled**	None Supplied	None Supplied			
Site Reference: Camley Street Natural Park, Camley Street, London	**TP / BH No**	TP113	TP116			
Project / Job Ref: R18-13059	**Additional Refs**	None Supplied	None Supplied			
Order No: P18-6379	**Depth (m)**	0.20	0.40			
Reporting Date: 20/07/2018	**QTSE Sample No**	347133	347137			

Determinand	Unit	RL	Accreditation					
EPH (>C8 - C10)	mg/kg	< 1	MCERTS	< 1	< 1			
EPH (>C10 - C12)	mg/kg	< 1	MCERTS	< 1	< 1			
EPH (>C12 - C16)	mg/kg	< 1	MCERTS	17	3			
EPH (>C16 - C21)	mg/kg	< 1	MCERTS	54	17			
EPH (>C21 - C40)	mg/kg	< 6	MCERTS	424	116			
EPH (C8 - C40)	mg/kg	< 6	MCERTS	495	137			

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30^{O}C

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 18-78723	
Ashdown Site Investigations Ltd	
Site Reference: Camley Street Natural Park, Camley Street, London	
Project / Job Ref: R18-13059	
Order No: P18-6379	
Reporting Date: 20/07/2018	

QTSE Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
347133	TP113	None Supplied	0.20	12.6	Brown sandy clay with vegetation and brick
347137	TP116	None Supplied	0.40	7	Brown sandy clay with stones

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

Insufficient Sample I/S

Unsuitable Sample U/S

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 18-78723
Ashdown Site Investigations Ltd
Site Reference: Camley Street Natural Park, Camley Street, London
Project / Job Ref: R18-13059
Order No: P18-6379
Reporting Date: 20/07/2018

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

D Dried
AR As Received

Alex Bewick
Ashdown Site Investigations Ltd
Unit 3 The Grain Store
Ditchling Common Business Park
Ditchling Common
West Sussex
BN6 8SG

DETS Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410
russell.jarvis@qtsenvironmental.com

DETS Report No: 18-78724

Site Reference:	Camley Street Natural Park, Camley Street, London
Project / Job Ref:	R18-13059
Order No:	P18-6367
Sample Receipt Date:	13/07/2018
Sample Scheduled Date:	13/07/2018
Report Issue Number:	1
Reporting Date:	20/07/2018

Authorised by:

Kevin Old
Associate Director of Laboratory

Authorised by:

Russell Jarvis
Associate Director of Client Services

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate							
DETS Report No: 18-78724	**Date Sampled**	04/07/18	04/07/18	04/07/18	04/07/18	04/07/18
Ashdown Site Investigations Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Camley Street Natural Park, Camley Street, London	**TP / BH No**	TP101	TP102	TP103	TP104	TP105
Project / Job Ref: R18-13059	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: P18-6367	**Depth (m)**	0.20	0.20	0.20	0.20	0.20
Reporting Date: 20/07/2018	**QTSE Sample No**	347138	347139	347140	347141	347142

Determinand	**Unit**	**RL**	**Accreditation**					
Asbestos Screen (S)	N/a	N/a	**ISO17025**	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Sample Matrix (S)	Material Type	N/a	NONE					
Asbestos Type (S)	PLM Result	N/a	**ISO17025**					
pH	pH Units	N/a	**MCERTS**				7.8	
Total Sulphate as SO_4	mg/kg	< 200	NONE				2799	
Total Sulphate as SO_4	%	< 0.02	NONE				0.28	
Organic Matter	%	< 0.1	**MCERTS**				3.1	
Arsenic (As)	mg/kg	< 2	**MCERTS**				14	
W/S Boron	mg/kg	< 1	NONE				< 1	
Cadmium (Cd)	mg/kg	< 0.2	**MCERTS**				< 0.2	
Chromium (Cr)	mg/kg	< 2	**MCERTS**				34	
Chromium (hexavalent)	mg/kg	< 2	NONE				< 2	
Copper (Cu)	mg/kg	< 4	**MCERTS**				19	
Lead (Pb)	mg/kg	< 3	**MCERTS**				92	
Mercury (Hg)	mg/kg	< 1	NONE				< 1	
Nickel (Ni)	mg/kg	< 3	**MCERTS**				18	
Selenium (Se)	mg/kg	< 3	NONE				< 3	
Zinc (Zn)	mg/kg	< 3	**MCERTS**				98	

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30^{O}C
Subcontracted analysis (S)

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate								
DETS Report No: 18-78724	**Date Sampled**	04/07/18	04/07/18	04/07/18	04/07/18	04/07/18
Ashdown Site Investigations Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Camley Street Natural Park, Camley Street, London	**TP / BH No**	TP106	TP107	TP108	TP108	TP109
Project / Job Ref: R18-13059	**Additional Refs**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: P18-6367	**Depth (m)**	0.20	0.20	0.20	0.40	0.20
Reporting Date: 20/07/2018	**QTSE Sample No**	347143	347144	347145	347146	347147

Determinand	Unit	RL	Accreditation					
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Detected	Not Detected	Not Detected
Sample Matrix (S)	Material Type	N/a	NONE			Loose fibrous asbestos debris		
Asbestos Type (S)	PLM Result	N/a	ISO17025			Chrysotile		
pH	pH Units	N/a	MCERTS				8.0	
Total Sulphate as SO_4	mg/kg	< 200	NONE				2110	
Total Sulphate as SO_4	%	< 0.02	NONE				0.21	
Organic Matter	%	< 0.1	MCERTS				4	
Arsenic (As)	mg/kg	< 2	MCERTS				10	
W/S Boron	mg/kg	< 1	NONE				< 1	
Cadmium (Cd)	mg/kg	< 0.2	MCERTS				< 0.2	
Chromium (Cr)	mg/kg	< 2	MCERTS				21	
Chromium (hexavalent)	mg/kg	< 2	NONE				< 2	
Copper (Cu)	mg/kg	< 4	MCERTS				22	
Lead (Pb)	mg/kg	< 3	MCERTS				69	
Mercury (Hg)	mg/kg	< 1	NONE				< 1	
Nickel (Ni)	mg/kg	< 3	MCERTS				13	
Selenium (Se)	mg/kg	< 3	NONE				< 3	
Zinc (Zn)	mg/kg	< 3	MCERTS				73	

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30^{O}C
Subcontracted analysis (S)

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate								
DETS Report No: 18-78724	Date Sampled	04/07/18	04/07/18	04/07/18	04/07/18	04/07/18
Ashdown Site Investigations Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Camley Street Natural Park, Camley Street, London	TP / BH No	TP109	TP110	TP110	TP111	TP111
Project / Job Ref: R18-13059	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: P18-6367	Depth (m)	0.40	0.20	0.40	0.20	0.40
Reporting Date: 20/07/2018	QTSE Sample No	347148	347149	347150	347151	347152

Determinand	Unit	RL	Accreditation					
Asbestos Screen (S)	N/a	N/a	ISO17025	Detected	Not Detected	Detected	Not Detected	Not Detected
Sample Matrix (S)	Material Type	N/a	NONE	Loose fibrous asbestos debris		Fibres bundle in soil		
Asbestos Type (S)	PLM Result	N/a	ISO17025	Amosite		Chrysotile		
pH	pH Units	N/a	MCERTS			6.6		
Total Sulphate as SO_4	mg/kg	< 200	NONE			1444		
Total Sulphate as SO_4	%	< 0.02	NONE			0.14		
Organic Matter	%	< 0.1	MCERTS			6.4		
Arsenic (As)	mg/kg	< 2	MCERTS			15		
W/S Boron	mg/kg	< 1	NONE			1.1		
Cadmium (Cd)	mg/kg	< 0.2	MCERTS			0.2		
Chromium (Cr)	mg/kg	< 2	MCERTS			17		
Chromium (hexavalent)	mg/kg	< 2	NONE			< 2		
Copper (Cu)	mg/kg	< 4	MCERTS			39		
Lead (Pb)	mg/kg	< 3	MCERTS			251		
Mercury (Hg)	mg/kg	< 1	NONE			< 1		
Nickel (Ni)	mg/kg	< 3	MCERTS			11		
Selenium (Se)	mg/kg	< 3	NONE			< 3		
Zinc (Zn)	mg/kg	< 3	MCERTS			93		

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30^{O}C
Subcontracted analysis (S)

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate							
DETS Report No: 18-78724	Date Sampled	04/07/18					
Ashdown Site Investigations Ltd	Time Sampled	None Supplied					
Site Reference: Camley Street Natural Park, Camley Street, London	TP / BH No	TP112					
Project / Job Ref: R18-13059	Additional Refs	None Supplied					
Order No: P18-6367	Depth (m)	0.40					
Reporting Date: 20/07/2018	QTSE Sample No	347153					

Determinand	Unit	RL	Accreditation					
Asbestos Screen (S)	N/a	N/a	ISO17025	Detected				
Sample Matrix (S)	Material Type	N/a	NONE	Fibre bundles of Chrysotile and Amosite in loose fibrous asbestos debris				
Asbestos Type (S)	PLM Result	N/a	ISO17025	Chrysotile Amosite				
pH	pH Units	N/a	MCERTS					
Total Sulphate as SO_4	mg/kg	< 200	NONE					
Total Sulphate as SO_4	%	< 0.02	NONE					
Organic Matter	%	< 0.1	MCERTS					
Arsenic (As)	mg/kg	< 2	MCERTS					
W/S Boron	mg/kg	< 1	NONE					
Cadmium (Cd)	mg/kg	< 0.2	MCERTS					
Chromium (Cr)	mg/kg	< 2	MCERTS					
Chromium (hexavalent)	mg/kg	< 2	NONE					
Copper (Cu)	mg/kg	< 4	MCERTS					
Lead (Pb)	mg/kg	< 3	MCERTS					
Mercury (Hg)	mg/kg	< 1	NONE					
Nickel (Ni)	mg/kg	< 3	MCERTS					
Selenium (Se)	mg/kg	< 3	NONE					
Zinc (Zn)	mg/kg	< 3	MCERTS					

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30^{O}C
Subcontracted analysis (S)

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate - Speciated PAHs							
DETS Report No: 18-78724	Date Sampled	04/07/18	04/07/18	04/07/18		
Ashdown Site Investigations Ltd	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: Camley Street Natural Park, Camley Street, London	TP / BH No	TP104	TP108	TP110		
Project / Job Ref: R18-13059	Additional Refs	None Supplied	None Supplied	None Supplied		
Order No: P18-6367	Depth (m)	0.20	0.40	0.40		
Reporting Date: 20/07/2018	QTSE Sample No	347141	347146	347150		

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	0.12	1.13		
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.11		
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.13		
Phenanthrene	mg/kg	< 0.1	MCERTS	0.28	0.64	1.69		
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	0.17	0.26		
Fluoranthene	mg/kg	< 0.1	MCERTS	0.61	1.43	2.22		
Pyrene	mg/kg	< 0.1	MCERTS	0.53	1.24	1.93		
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.35	0.73	0.97		
Chrysene	mg/kg	< 0.1	MCERTS	0.36	0.76	1.08		
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.48	1.04	1.30		
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.20	0.36	0.40		
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.36	0.81	0.84		
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.29	0.62	0.62		
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.26	0.52	0.47		
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	3.7	8.4	13.1		

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30^{O}C

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate - EPH Banded (Type F)							
DETS Report No: 18-78724	**Date Sampled**	04/07/18	04/07/18	04/07/18		
Ashdown Site Investigations Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied		
Site Reference: Camley Street Natural Park, Camley Street, London	**TP / BH No**	TP104	TP108	TP110		
Project / Job Ref: R18-13059	**Additional Refs**	None Supplied	None Supplied	None Supplied		
Order No: P18-6367	**Depth (m)**	0.20	0.40	0.40		
Reporting Date: 20/07/2018	**QTSE Sample No**	347141	347146	347150		

Determinand	Unit	RL	Accreditation					
EPH (>C8 - C10)	mg/kg	< 1	MCERTS	< 1	< 1	15		
EPH (>C10 - C12)	mg/kg	< 1	MCERTS	< 1	< 1	14		
EPH (>C12 - C16)	mg/kg	< 1	MCERTS	1	2	42		
EPH (>C16 - C21)	mg/kg	< 1	MCERTS	21	24	71		
EPH (>C21 - C40)	mg/kg	< 6	MCERTS	209	251	204		
EPH (C8 - C40)	mg/kg	< 6	MCERTS	231	277	346		

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30^{O}C

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 18-78724	
Ashdown Site Investigations Ltd	
Site Reference: Camley Street Natural Park, Camley Street, London	
Project / Job Ref: R18-13059	
Order No: P18-6367	
Reporting Date: 20/07/2018	

QTSE Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
347141	TP104	None Supplied	0.20	4.4	Light grey sandy clay with stones and concrete
347146	TP108	None Supplied	0.40	3.2	Brown sandy clay with stones and stones
347150	TP110	None Supplied	0.40	10.2	Brown sandy clay with stones and brick

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

Insufficient Sample I/S

Unsuitable Sample U/S

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 18-78724
Ashdown Site Investigations Ltd
Site Reference: Camley Street Natural Park, Camley Street, London
Project / Job Ref: R18-13059
Order No: P18-6367
Reporting Date: 20/07/2018

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

D Dried
AR As Received

Alex Bewick
Ashdown Site Investigations Ltd
Unit 3 The Grain Store
Ditchling Common Business Park
Ditchling Common
West Sussex
BN6 8SG

DETS Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410
russell.jarvis@qtsenvironmental.com

DETS Report No: 18-78726

Site Reference:	Camley Street Natural Park, Camley Street, London
Project / Job Ref:	R18-13059
Order No:	P18-6412
Sample Receipt Date:	13/07/2018
Sample Scheduled Date:	13/07/2018
Report Issue Number:	1
Reporting Date:	20/07/2018

Authorised by:

Kevin Old
Associate Director of Laboratory

Authorised by:

Russell Jarvis
Associate Director of Client Services

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate							
DETS Report No: 18-78726	Date Sampled	11/07/18	11/07/18	11/07/18		
Ashdown Site Investigations Ltd	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: Camley Street Natural Park, Camley Street, London	TP / BH No	BH101	BH102	BH103		
Project / Job Ref: R18-13059	Additional Refs	None Supplied	None Supplied	None Supplied		
Order No: P18-6412	Depth (m)	0.20	0.20	0.20		
Reporting Date: 20/07/2018	QTSE Sample No	347157	347158	347159		

Determinand	Unit	RL	Accreditation					
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected		
pH	pH Units	N/a	MCERTS	7.9	7.9	7.6		
Total Sulphate as SO_4	mg/kg	< 200	NONE	1265	1693	737		
Total Sulphate as SO_4	%	< 0.02	NONE	0.13	0.17	0.07		
Organic Matter	%	< 0.1	MCERTS	1.1	0.9	1.3		
Arsenic (As)	mg/kg	< 2	MCERTS	10	10	29		
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	1		
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.2	< 0.2	0.8		
Chromium (Cr)	mg/kg	< 2	MCERTS	19	20	33		
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2		
Copper (Cu)	mg/kg	< 4	MCERTS	28	16	127		
Lead (Pb)	mg/kg	< 3	MCERTS	106	65	276		
Mercury (Hg)	mg/kg	< 1	NONE	< 1	< 1	< 1		
Nickel (Ni)	mg/kg	< 3	MCERTS	14	12	32		
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3	< 3		
Zinc (Zn)	mg/kg	< 3	MCERTS	138	109	369		

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30^{O}C
Subcontracted analysis (S)

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate - Speciated PAHs							
DETS Report No: 18-78726	Date Sampled	11/07/18	11/07/18	11/07/18		
Ashdown Site Investigations Ltd	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: Camley Street Natural Park, Camley Street, London	TP / BH No	BH101	BH102	BH103		
Project / Job Ref: R18-13059	Additional Refs	None Supplied	None Supplied	None Supplied		
Order No: P18-6412	Depth (m)	0.20	0.20	0.20		
Reporting Date: 20/07/2018	QTSE Sample No	347157	347158	347159		

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	0.23	0.14	0.54		
Acenaphthylene	mg/kg	< 0.1	MCERTS	0.20	< 0.1	0.16		
Acenaphthene	mg/kg	< 0.1	MCERTS	0.12	< 0.1	< 0.1		
Fluorene	mg/kg	< 0.1	MCERTS	0.12	< 0.1	< 0.1		
Phenanthrene	mg/kg	< 0.1	MCERTS	2.20	0.35	1.29		
Anthracene	mg/kg	< 0.1	MCERTS	0.67	< 0.1	0.31		
Fluoranthene	mg/kg	< 0.1	MCERTS	7.25	0.76	2.45		
Pyrene	mg/kg	< 0.1	MCERTS	6.30	0.66	2.11		
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	3.84	0.45	1.38		
Chrysene	mg/kg	< 0.1	MCERTS	3.57	0.44	1.41		
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	5.13	0.66	2.10		
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	1.78	0.24	0.82		
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	3.94	0.47	1.67		
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	2.40	0.32	1.48		
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	0.40	< 0.1	0.19		
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	1.95	0.30	1.24		
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	40.1	4.8	17.2		

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30^{O}C

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate - EPH Banded (Type F)							
DETS Report No: 18-78726	**Date Sampled**	11/07/18	11/07/18	11/07/18		
Ashdown Site Investigations Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied		
Site Reference: Camley Street Natural Park, Camley Street, London	**TP / BH No**	BH101	BH102	BH103		
Project / Job Ref: R18-13059	**Additional Refs**	None Supplied	None Supplied	None Supplied		
Order No: P18-6412	**Depth (m)**	0.20	0.20	0.20		
Reporting Date: 20/07/2018	**QTSE Sample No**	347157	347158	347159		

Determinand	Unit	RL	Accreditation					
EPH (>C8 - C10)	mg/kg	< 1	MCERTS	< 1	< 1	2		
EPH (>C10 - C12)	mg/kg	< 1	MCERTS	1	< 1	3		
EPH (>C12 - C16)	mg/kg	< 1	MCERTS	5	3	11		
EPH (>C16 - C21)	mg/kg	< 1	MCERTS	39	17	57		
EPH (>C21 - C40)	mg/kg	< 6	MCERTS	223	154	265		
EPH (C8 - C40)	mg/kg	< 6	MCERTS	268	174	338		

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30^{O}C

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 18-78726	
Ashdown Site Investigations Ltd	
Site Reference: Camley Street Natural Park, Camley Street, London	
Project / Job Ref: R18-13059	
Order No: P18-6412	
Reporting Date: 20/07/2018	

QTSE Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
347157	BH101	None Supplied	0.20	5.7	Brown sandy clay with stones and brick
347158	BH102	None Supplied	0.20	6.7	Brown sandy clay with brick and concrete
347159	BH103	None Supplied	0.20	13.7	Brown sandy clay with stones and brick

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

Insufficient Sample I/S

Unsuitable Sample U/S

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 18-78726
Ashdown Site Investigations Ltd
Site Reference: Camley Street Natural Park, Camley Street, London
Project / Job Ref: R18-13059
Order No: P18-6412
Reporting Date: 20/07/2018

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

D Dried
AR As Received

APPENDIX E

Classification of Probability, Consequence and Risk

Probability of risk being realised	
Classification	Definition
High	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term or there is evidence at the receptor of harm or pollution.
Moderate	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place and is less likely in the shorter term.
Very Low	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

Consequence of risk being realised		
Classification	Category	Definition
Severe	Human Health	Short term (acute) risk to human health likely to result in "significant harm" as defined by the Environment Protection Act 1990, Part IIA.
	Controlled Waters	Short term risk of pollution (note: Water Resources Act contains no scope for considering significance of pollution) of sensitive water resource.
	Property	Catastrophic damage to buildings/property.
	Ecological Systems	A short term risk to a particular ecosystem or organisation forming part of such ecosystem.
Moderate	Human Health	Chronic damage to Human Health.
	Controlled Waters	Pollution of sensitive water resources (note: Water Resources Act contains no scope for considering significance of pollution).
	Ecological System	A significant change in a particular ecosystem or organism forming part of such ecosystem.
Minor	Controlled Waters	Pollution of non-sensitive water resources.
	Property	Significant damage to crops, buildings, structures and services.
	Ecological Systems	Damage to sensitive buildings/structures/services or the environment.
Very Minor	Human Health	Non-permanent health effects to human health (easily prevented by means such as personal protective clothing, etc).
	Property	Easily repairable effects of damage to buildings, structures and services.
	Project	Harm, although not necessarily significant harm, which may result in a financial loss or expenditure to resolve.

Risk classification definitions	
Very High	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the long term.
Moderate	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low	It is possible that harm could arise to a designated receptor from an identified hazard, but there is a low likelihood of this hazard occurring and if realised, harm would at worst normally be mild.
Very Low	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.

APPENDIX F

Quantitative Conceptual Model

Table 12. Quantitative Conceptual Model

Sources Identified	Contaminants	Receptor	Potential Pathways	Pathway Present?	Probability	Consequence	Overall Assessment of Risk	Pollutant Linkage Present?
Made Ground beneath the site	Asbestos Potential ground gases	Human Health (End Users)	Dermal contact with soil and dust (indoor & outdoor).	No	Contaminants do not pose a risk via these pathways			No
			Ingestion of soil and indoor dust.	No				No
			Consumption of home-grown produce and attached soil.	No				No
			Inhalation of soil dust (indoor and outdoor).	Yes	Low	Moderate	Low/ Moderate	Yes
			Contamination of incoming services.	No	Contaminants do not pose a risk via these pathways			No
			Inhalation of soil vapours.	No				No
			Inhalation of soil gases/Risk of explosion.	Yes	Low	Minor	Low	Yes
		Groundwater	Migration to groundwater.	No	Contaminants do not pose a risk via this pathway			No

APPENDIX G

Supplementary Quantitative Conceptual Model

Camley Street Natural Park, 12 Camley Street, London				Quantitative Conceptual Model		R18-13059	
Source	**Receptor**	**Contaminants**	**Pathway**	**Complete Linkage Present?**	**Probability**	**Consequence**	**Risk**
Made ground soils containing asbestos within the vicinity of the proposed visitors' centre	End Users	Asbestos	Dermal contact with soil and dust (indoor & outdoor)	Identified contaminant do not pose a risk via this pathway			N/A
			Ingestion of soil and indoor dust	Identified contaminant do not pose a risk via this pathway			N/A
			Consumption of home-grown produce and attached soil	No private gardens proposed			N/A
			Inhalation of soil dust (indoor and outdoor)	Yes	P3: Moderate	C2: Minor	Low/Moderate
			Inhalation of soil vapours	Identified contaminant do not pose a risk via this pathway			N/A
			Inhalation of soil gases/ Risk of explosion	Identified contaminant do not pose a risk via this pathway			N/A
	End Users (via Water Supply Pipework)		Contamination of incoming services	Identified contaminant do not pose a risk via this pathway			N/A
	Groundwater		Migration to groundwater	Identified contaminant do not pose a risk via this pathway			N/A
Made ground soils containing concentrations of petroleum hydrocarbons above the threshold for the use of PE pipework	End Users		Dermal contact with soil and dust (indoor & outdoor)	Not Applicable			N/A
			Ingestion of soil and indoor dust	Not Applicable			N/A
			Consumption of home-grown produce and attached soil	Not Applicable			N/A
			Inhalation of soil dust (indoor and outdoor)	Not Applicable			N/A
			Inhalation of soil vapours	Not Applicable			N/A
			Inhalation of soil gases/ Risk of explosion	Not Applicable			N/A
	End Users (via Water Supply Pipework)	Petroleum Hydrocarbons	Contamination of incoming services	Yes	P3: Moderate	C3: Moderate	Moderate
	Groundwater		Migration to groundwater	Not Applicable			N/A