Pell Frischmann

Phase 1 Geo-environmental Desk Study

Edith Neville Primary School and Children's Centre – A CIP Project, Camden

May 2013

R12794/G001A

Submitted by Pell Frischmann

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EXECUTIVE SUMMARY

Redevelopment details Site History The development updainfra Site History The development development infra The development infra T	e subject site is located in Camden, North London. The NGR for the proximate centre of the site is 529751, 183173. The are three proposed development options for the site, all of which ude the redevelopment of the existing primary school and community tre, the construction of new residential properties and the creation of lated community amenity space areas and other associated astructure. The historical maps indicate that the site has been subjected to extensive elopment originally from residential properties, coal depots and open ce areas. The current site layout has been present since the 1970s. ditionally, there is evidence showing a significant amount of industrial vity in the surrounding area. The published 1:50,000 series British Geological Survey map, North don (Sheet 256) indicates that the site is underlain by units of the don Clay Formation. No superficial deposits have been recorded loss the site area. Though not shown on the BGS mapping, it is likely a superficial deposits mantel the solid geology across the majority of site associated with a weathering profile of the London Clay mation. The NGR for the site, and solve the site, all of which which will be supported by the site area of uncontrolled Made Ground will be supported by the site area.
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pres	s considered likely that areas of uncontrolled Made Ground will be
alea	sent across the site associated with the previous development of
Non	Environment Agency (EA) classifies the bedrock beneath the site as n-productive Strata.
	e site is not in a source protection zone (SPZ).
site, thes	ey are several licensed groundwater abstractions within 500m of the however given the underlying geology it is considered unlikely that see abstractions would be at risk from the presence of contaminants on site.
ben feat	e primary hydrological feature is Regents Canal that is present eath the site in a culvert structure. The nearest other surface water ture is the Grand Union Canal located approximately 400m to the th of the site.
Flood Risk The	site is located within Flood Zone 1 and is not prone to flooding.
Ordnance and	site has a history of bombing associated with the Second World War so a detailed risk assessment in accordance with CIRIA C681 is bommended.
Environmental The Sensitivity	site is not located within an environmentally sensitive area.
Regulatory No r Enquiries	regulatory enquiries have been undertaken to date.
Geotechnical hazards from the desk study	Uncontrolled Made Ground Attack of buried concrete by aggressive ground conditions; Shrink / swell of clay; Low strength, compressible ground; Unexploded Ordnance / bomb strikes; and Regents Canal.
Possible •	Metals and other in-organics within Made Ground – future occupiers,

Contaminant linkage of moderate or greater risk level – from desk study

surface waters and construction workers:

- Organic contaminants such as petroleum hydrocarbons or PAHs associated with historic off-site sources of contamination; and
- Asbestos potentially present in uncontrolled Made Ground or building fabric of existing buildings on site due to age.

Conclusions of Phase 1 Study

Based on historic land uses and its current operational use, the overall risk from land contamination at the site is considered to be **low to moderate** for the current development, and **low to moderate** for a redeveloped site, but would need to be confirmed by appropriate intrusive investigation, testing and assessment of the results of the investigation.

It is considered that it is unlikely that the site would be classified as Contaminated Land under Part IIA of the EPA 1995.

Based on the available desk study and walk-over information, the following geotechnical issues need to be addressed in exploratory investigation:

- determine the depth of Made Ground across the site;
- determine the strata and soil strength profile beneath the site; and
- assess the sulphate concentration with depth.

Further Work Requirements

In order to confirm the actual risks to receptors and confirm the ground conditions with respect to potential geotechnical and geo-environmental risks, an appropriate intrusive investigation will need to be undertaken. Based on the current data, this site investigation is proposed to comprise:

- the excavation of trial pits to allow collection of samples for geotechnical and chemical analysis, to assess trench stability, over break potential and "digability";
- cable percussive boreholes to allow collection of samples for geotechnical and chemical analysis of deeper soils and allow in-situ testing (SPTs) to be undertaken to assess compressibility of the clay beneath the site and to allow foundation design, and allow the installation of gas monitoring wells;
- TRL Dynamic Cone Penetration / Mexecone tests to correlate to CBRs for pavement design;
- gas monitoring installations to allow gas concentrations to be monitored;
- · gas concentration monitoring;
- geotechnical testing of soils and rock; and
- · contamination analyses of soil and groundwater.

1. INTRODUCTION

1.1 TERMS OF REFERENCE

In April 2013, Pell Frischmann Consultants Limited (PF) was commissioned by Nicholas Hare Architects LLP to undertake a desk study on two plots of land proposed for redevelopment in Camden, North London. The two plots of land are hereafter referred to collectively as 'the site'. The proposed development is referred to as the Edith Neville Primary School and Community Centre, CIP Project.

The site covers approximately 1.95ha and is split into two parcels of land. The northern parcel of land currently comprises of two land ownership areas; Edith Neville Primary School in the east and the Polygon Road site in the west.

The primary school is predominantly hardstanding areas with some minor soft scaping and the western part of this area is predominantly community green space. The second land area (eastern parcel) adjacent to Purchese Street predominantly comprises an area of open land used as community amenity land.

There are currently three proposed development options for the site that all include the redevelopment of the existing primary school and community centre, the construction of residential properties and the creation of improved public open space areas.

A site location plan (Drawing 53295-G001) and a proposed development sketch design layout are presented in Appendix A.

1.2 OBJECTIVES

The objectives of this Phase 1 study are to assess the readily available information on the likely ground conditions at the site and produce a preliminary qualitative geoenvironmental risk assessment in support of the outline planning application for the proposed development. The desk based preliminary risk assessment will outline any potential risks to the proposed development from potential contamination and geotechnical risks and outline further work requirements.

1.3 SCOPE

The scope of work for this commission comprises:

- desk study research to determine the nature of the site and its surroundings including current and former land uses, geology, hydrogeology, hydrology and geo-environmental data;
- a site walkover survey; and
- a Phase 1 Desk Study report on the findings.

A detailed description of the reporting methodology can be provided upon request.

1.4 INFORMATION SOURCES PROVIDED BY THE CLIENT

 Edith Neville Primary School and Community Centre – a CIP project – Sketch Designs – 25th April 2013 – Nicholas Hare Architects LLP.

2. PRELIMINARY INVESTIGATION (PHASE 1 STUDY)

A number of desk study sources have been used to assemble the following information, including a proprietary environmental data report which has been obtained for the site (dated 1st May 2013) and is presented in Appendix B.

2.1 SITE REFERENCING

The site is currently split into two parcels of land occupying areas to the east of Purchese Street and to the north of Polygon Road. The approximate centre of the site is located at National Grid Reference 529751, 183173.

A site location plan is presented in Appendix A.

2.2 SITE DESCRIPTION AND WALKOVER SURVEY

The site occupies two areas of land which are currently split by Purchese Street. The two land parcels are approximately rectangular in shape and are hereafter referred to as the 'northern' and 'eastern' areas. Both areas make up the current intended planning application area (shown on the site location plan presented in Appendix A).

The northern parcel of land is currently occupied by an area of public open space in the west and the existing Edith Neville Primary School in the east. The site cover comprises a mixture of a grassed areas, hardstanding and buildings. A children's play area is also present in this part of the site.

The eastern parcel of has of a small building in the northern part of the site, however it is predominantly covered by public amenity land; the majority of which is grass covered.

The site is bound to the north by residential properties of Purchese Street and by Sir William Collins Secondary School, to the south and east by residential properties and industrial units associated with St. Pancras Station and to the west by residential properties.

Industrial and commercial land uses are in close proximity to the site e.g. several depots, St. Pancras Station, King's Cross Station and Euston Station are all located within 500m of the site, a gas governor station is located to the west of the site.

For the most part, the land surrounding the site predominantly comprises a mixture of residential properties and industrial sites located at various distances away from the site to the east and north.

Site walk-over photographs are presented in Appendix D and show the current condition of the site.

2.3 SITE HISTORY

Copies of the historic Ordnance Survey maps from 1871 – 2012 are given in the eMapsite GroundSure report in Appendix B. A summary of the pertinent features

of the historical development of the site and the surrounding area is presented in Table 1 below.

Table 1: Land Use History

Map On-site		Off-site
1871 The major	rity of the site	The area surrounding the site primarily
	s what appear to be	comprises terraced residential
terraced r	esidential properties.	properties. A police station is shown
Two publi	c houses are recorded	approximately 50m to the north of the
on the no	rthern land parcel. No	site.
other sign	ificant features are	
shown on	the site.	
	cant changes are	Euston Station is shown approximately
1:10,560 shown to	the site.	400m to the south of the site. St.
		Pancras Station is shown approximately
		100m to the south of the site. Kings
		Cross Station is shown approximately
		to the south of the site. Coal sheds are
		shown to the west of the site. A burial
		ground is shown to the north of the site.
		Railway lines are shown adjacent to the
		eastern boundary of the site. No other
		significant features are shown in the
1874 No signific	ant changes are	area surrounding the site. No significant changes are shown in the
1:1,056 shown to	cant changes are the site.	area surrounding the site.
	cant changes are	A gasworks is shown to the east of the
1:2,500 shown to		site located adjacent to St. Pancras and
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Kings Cross stations. A church is
		shown to the north of the site
1894, 1896 & A chapel	is now shown in the	No significant changes are shown to the
1894 – 1896 west of th	e site. A school is	area surrounding the site.
1:1,056, 1:2,500 & shown in	the northern part of the	
· ·	imilar location to the	
existing p	rimary school. The	
	art of the site is shown	
	r. No other significant	
	are shown to the site.	
	cant changes are	No significant changes are shown to the
1:10,560 shown to 1916 No signific	cant changes are	area surrounding the site. No significant changes are shown to the
1:2,500 shown to		area surrounding the site.
	cant changes are	No significant changes are shown to the
1:10,560 shown to	ū	area surrounding the site.
1938 No signific	cant changes are	No significant changes are shown to the
1:10,560 shown to		area surrounding the site.
	cant changes are	No significant changes are shown to the
1:10,560 shown to		area surrounding the site.
	cant changes are	No significant changes are shown to the
1:10,560 shown to		area surrounding the site.
	ential properties are no own on the western	A furniture works is shown
	of the site.	approximately 150m to the south of the site. Somers Town Goods Depot is
boundary	or trie site.	shown to the south of the site, A coal
		depot and coal shoots are shown to the
		northwest of the site.
1966 – 1968 No signific	cant changes are	No significant changes are shown to the
1:10,560 shown to		area surrounding the site.
	cant changes are	No significant changes are shown to the
1:2,500 shown to	the site.	area surrounding the site.

Мар	On-site	Off-site
1971 – 73 1:10,000	The majority of the site is shown as public open space. The school is present in its current layout in the northern part of the site. No other significant changes are shown to the site.	No significant changes are shown to the area surrounding the site.
1976 – 1977 1:1,250	Part of Euston Air Terminal is shown in the southern part of the site. A playground associated with the primary school is shown in the northern part of the site. No other significant changes are shown to the site.	Euston Air Terminal is shown adjacent to the southern part of the site. A Secondary School is shown adjacent to the north of the site. No other significant changes are shown to the area surrounding the site.
1982 – 1986 1:1,250	Euston Air Terminal is no longer recorded on site. No other significant changes are shown to the site.	Euston Air Terminal is no longer shown to the south of the site. No other significant changes are shown to the area surrounding the site.
1988 – 1992 1:1,250 1989 – 1994	No significant changes are shown to the site. No significant changes are	No significant changes are shown to the area surrounding the site. No significant changes are shown to the
1:10,000 1991 – 1993 1:1,250	shown to the site. No significant changes are shown to the site.	area surrounding the site. No significant changes are shown to the area surrounding the site.
2002 1:10,000 2012	No significant changes are shown to the site. No significant changes are	No significant changes are shown to the area surrounding the site. No significant changes are shown to the
1:10,000 2012	shown to the site. No significant changes are	area surrounding the site. No significant changes are shown to the
1:1,250	shown to the site.	area surrounding the site.

It can be seen that the site and the surrounding area have undergone significant development since the earliest available mapping. The site itself has a history of being utilised for residential properties and associated infrastructure following which the site has remained largely in its current layout since approximately the early 1970s.

The surrounding area has been increasingly industrialised over the years. Railway stations (Euston, St. Pancras and Kings Cross stations are all located within 500m of the site), railway lines, gas works and other industrial uses associated with the rail industry have all been present within 500m of the southern and eastern boundaries of the site.

2.4 UNEXPLODED ORDNANCE

In general accordance with CIRIA report C681 (Stone *et al* 2009) a non-UXO specialist screening exercise has been carried out for the site. Information on the London Blitz obtained from http://bombsight.org shows that a High Explosive Bomb is recorded as having struck on or adjacent to the western boundary of the northern area of the site. A number of other locations close by are recorded to have been struck by a large number of explosive devices. Given the local geology and history the site is considered to be located in a high risk area and further action to mitigate against this risk is considered essential.

The next stage would be to commission a preliminary UXO risk assessment in accordance with CIRIA C681, Chapter 5.

An extract from the website showing the bomb strikes is presented in Appendix C.

2.5 GEOLOGY

The general geology of the site area is shown on the 1:50,000 geological map of North London (Sheet 256 – an extract of which is presented in the GroundSure Report in Appendix B). The mapping indicates that the site is directly underlain by units of the London Clay Formation predominantly comprising clay with occasional interbedded units of silt and sand.

2.6 GROUND STABILITY & MINING / MINERAL EXTRACTION

Table 2 records the natural ground subsidence hazards reported in the GroundSure report.

Natural Ground Subsidence Hazard	Hazard rating
Shrink-swell clays	Moderate
Landslides	Very Low
Ground Dissolution of Soluble Rocks	Null to Negligible
Compressible Deposits	Negligible
Collapsible Deposits	Very Low
Running Sands	Negligible

Table 2: Natural Ground Subsidence Hazards

This indicates that the site is unlikely to experience problems due to natural ground subsidence, with the exception of shrinkage / swelling in clays, which records a moderate hazard rating. The GroundSure report records the following notes with respect to shrink/swelling in clay deposits:

"Ground conditions predominantly high plasticity. Do not plant or remove trees or shrubs near to buildings without expert advice about their effect and management. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a probable increase in construction cost to reduce potential shrink/swell problems. For existing property, there is a probable increase in insurance risk during droughts or where vegetation with high moisture demands is present."

The site is not within areas of recorded coal or non-coal mining. The apparent lack of superficial gravel deposits indicates the site is unlikely to be associated with presence of former sand and gravel pits. Whilst the London Clay Formation could provide a potential source of clay for brick manufacture there is no evidence on the historical plans of any brick pits or brick and tile works having existed in the site area or in the vicinity of the site.

2.7 HYDROGEOLOGY

The aquifer designations given in the table below are based on the Environment Agency interactive aquifer designation map. Additional information on the hydraulic characteristics of the geological units has been abstracted from Allen *et al* (1997) and Jones *et al* (2000).

Table 3: Hydraulic Characteristics of Strata

Stratum	Aquifer Designation	Hydraulic Characteristics
London Clay Formation	Non-productive strata	Dominated by low permeability clay. Unlikely to be any significant permeability.

Reference to the Environment Agency web site shows that no groundwater bodies in the vicinity of the site have been given a current quantitative quality.

The site is not within a Source Protection Zone (SPZ).

There are four licensed groundwater abstractions located within 1000m of the site. The nearest license is located 434m to the southeast of the site at Bidborough House and relates to the abstraction of groundwater for a single heat pump. Two of the four licenses are operated at this property. The remaining two licenses are operated at Kings Cross Concrete Plant approximately 800m to the north of the site and relate to the abstraction of groundwater for 'General Use Relating to Secondary Category (High Loss)' purposes.

There are no recorded potable water abstractions within 1000m of the site.

The majority of the site is covered by soils of low leaching potential.

2.8 HYDROLOGY & FLOODING

The surface water features in the vicinity of the site are listed in the table below.

Table 4: Surface Water Features

Feature	Location Relative to Site		
Regents Canal (extended culvert)	Passes through the northern site area		
Grand Union Canal	287m northeast of the site.		

It is known that Regents Canal is present within a culvert beneath the northern parcel of land at the site. No details are currently available with regard to the current make up of the culvert. The presence of this culvert is relevant regarding its potential to be a receptor for any contamination that may be present on site and also a conduit for migration off-site of any potential contaminants. The presence this culvert with regard to risks from contamination and potential geotechnical risks is discussed in further detail in Section 3 of this report.

Consideration of the presence of watercourses for drainage purposes is beyond the scope of this report.

There are three licensed surface water abstractions within 1000m of the site. The nearest two of these licenses relate to the abstraction of water from 'Thames surface water – non tidal' for 'make –up and top-up' purposes at Camley Street Nature Park. The remaining license relates to the abstraction of water from Regents Canal for 'non-evaporative cooling' purposes.

No further consideration of flood risk is undertaken in this report. Specialist flood risk advice should be sought with regards to drainage and flooding.

2.9 WASTE MANAGEMENT & HAZARDOUS SUBSTANCES

The GroundSure report has not identified any current or historic waste management sites on the site.

The following waste management sites are recorded in the vicinity of the site (Table 5).

Table 5: Waste Management Sites

Site Name	Details		
7 – 9 St. Pancras Way, Camden (Other Waste Site)	Scapyard located 369m to the northwest of the site (operational as far as is known). The license was issued in 1997 and is currently recorded as operational.		
St. Pancras Metals (Environment Agency licensed waste site, non-operational waste treatment site)	St. Pancras Metals, 86 St. Pancras Road, Camden 12m to the northwest of the site. The license was issued in 1992 and is recorded as may not be working (license suspended).		
Kings Cross Waste Transfer Station	Waste Transfer Station 225m to the northeast of the site, 1 Camley Street operated by Shanks & McEwan, The license was originally issued in 1992 and allows the transfer of household, commercial and industrial waste. The license is recorded as surrendered.		
Waste Transfer Station	2 Camley Street, Kings Cross, 232m to the northwest of the site operated by Rutland Waste Disposal. The license was originally issued in 1992 and allowed the transfer of household, commercial & industrial non-hazardous waste. The license is recorded as surrendered.		
British Rail Goods Yard	York Way, Kings Cross, 304m to the east of the site. The licence was originally issued in 1985 and allowed the transfer of inert waste. The license is recorded as lapsed/cancelled/defunct/not applicable/surrendered.		
Goods Depot	Kings Cross Goods Depot, Goods Way, Kings Cross. The license was originally issued in 1993 and allowed the transfer of household, commercial & industrial waste. The license is recorded as surrendered.		

There are a number of industrial processes operating in the surrounding area. As long as these have been operated in accordance with any applicable licence, no impact on the site is envisaged.

2.10 PREVIOUS EVIDENCE OF KNOWN CONTAMINATION EVENTS

The GroundSure report has no details of any previously recorded pollution incidents within 1000m of the site.

2.11 BR 211 GUIDANCE ON RADON

Reference to the Annex A maps in BR 211 (Scivyer 2007), based on the HPA Indicative Atlas of Radon in England and Wales (Miles *et al* 2007) indicates that no radon protection is required for new dwellings at this location in line with current guidance.

3. PRELIMINARY RISK ASSESSMENT

3.1 PRELIMINARY CONCEPTUAL MODEL

The findings of the Phase 1 investigation indicate that the site comprises two parcels of land, separated by Purchese Street. The eastern parcel comprises entirely of open land currently used as public amenity land and the northern parcel comprises the existing Edith Neville Primary School and another area of public amenity land.

It is understood from the available data that Regents Canal is present within a culvert beneath the centre of the northern parcel of land at the site. At this stage the depth to the top of the culvert is not known. The nearest other surface water feature is the Grand Union Canal located approximately 500m to the north east of the site. There are no other identified surface water features within the vicinity of the site.

The natural soils comprise units of the London Clay (clays within interbedded sands and silts). No superficial deposits or Made Ground are recorded on the site. However, it is likely given the previous development history of both parcels of land that some unrecorded Made Ground will be present at the site.

The units beneath the site are classified as Non-productive Strata by the Environment Agency. The site is not located within a Source Protection Zone. However, there are several ground and surface water abstraction license recorded within 1000m of the site. The nearest licenses relate to the abstraction of groundwater for heating purposes. No potable water abstractions are located within the vicinity of the site.

No previous site investigation records have been provided to Pell Frischmann for the purpose of this study. As such, no information on the current chemistry of the soils at and surrounding the site is available at this time.

There are three proposed development layouts for the site, generally comprising:

- Construction of new residential properties;
- Redevelopment of the existing primary school and community centre; and
- Creation of updated public amenity space.

3.2 PRELMINARY CONCEPTUAL EXPOSURE MODEL

The **exposure model** is used for geo-environmental hazard identification and for establishing potential contaminant linkages in line with the Statutory Guidance to Part 2A of the Environmental Protection Act 1990, also known as a 'potential pollution linkages' in the Model Procedures of CLR11 (DEFRA and Environment Agency, 2004).

This is based on the contaminant-pathway-receptor linkage approach.

3.2.1 Potential Contaminants of Concern

For the purpose of this assessment the potential contaminants of concern have been separated according to whether they are likely to have originated from onsite or off-site sources.

Potential On-site Contaminants

- Made Ground possibly including metals, metalloids, asbestos, PAH and petroleum hydrocarbons;
- PAH and petroleum hydrocarbons in the southern part of the site associated with the coal shoots historically located in this area;
- PCBs associated with former transformers.
- Elevated metals within natural soils.
- Unexploded Ordnance bomb maps record the site as being struck by a high explosive device during the blitz

Potential Off-site Contaminants

- General PAH and petroleum hydrocarbon particulate fall out associated with the gas works to the east of the site;
- Hydrocarbon fuels, lubricant and chlorinated solvents associated with the workshops.

3.2.2 Potential Receptors

- Humans (neighbours, site end users).
- Development end use (buildings, utilities and landscaping).
- Surface water: Regents Canal on site beneath the northern parcel of land.
- Ecology: the drainage ditch to the north and west of the site is a known newt habitat.
- It should be noted that health and safety risks to site preparation and construction workers have not been assessed during these works and will need to be considered separately.

3.2.3 Summary of Potential Contaminant Linkages

Table 7 lists the plausible contaminant linkages which have been identified. These are considered as potentially unacceptable risks in line with guidelines published in CLR 11 and additional risk assessment is required.

Linkages has been assessed in general accordance with guidance in CIRIA Report C552 (Rudland *et al* 2001) but with the addition of a 'no linkage' category.

It should be noted that whilst the risk assessment process undertaken in this report may identify potential risks to site demolition and redevelopment workers, consideration of occupational health and safety issues is beyond the scope of this report and need to be considered separately in the Construction Phase Health and Safety Plan.

Table 6 below represents a key to the qualitative assessment of risk presented in Table 7 overleaf.

		Consequence			
	product	Severe	Medium	Mild	Minor
	High Likelihood	Very high risk	High risk	Moderate risk	Low risk
illity	Likely	High risk	Moderate risk	Low risk	Very low risk
Probability	Low Likelihood	Moderate risk	Low risk	Low risk	Very low risk
	Unlikely	Low risk	Very low risk	Very low risk	Very low risk
	No Linkage		No r	isk	

^{*}key to Table 7

Table6: Exposure Model – Preliminary Risk Assessment of Source-Pathway-Receptor Contaminant Linkages

Source(s)	Possible Pathway(s)	Receptor(s)	Probability	Consequence	Risk Level	Comments
Metals, Metalloids and other inorganic contaminants	Ingestion, inhalation or direct contact. Inhalation of fugitive dust. Root uptake. Leaching through unsaturated zone. Surface run-off, base flow from contaminated groundwater.	End users of the site. Neighbours. Ecosystems. Landscape planting. Groundwater and possible abstractors. Aquatic ecosystems. Surface water and possible abstractors.	Likely	Medium	Moderate	The area surrounding has been subject to significant previous development. No Made Ground has been recorded on the site, however given the history it is likely that the site has been subject to a certain amount of previous filling. Given the surrounding industrial uses it is considered likely that inorganic contaminants may be present within the Made Ground that may pose a risk to future site users. Future investigation is considered prudent given the proposed future use of the site. Whilst contamination of the groundwater is unlikely to be considered a significant issue, there is possibility that the groundwater may provide base flow to local surface water courses i.e. Regents Canal. Construction workers and site neighbours may be at risk from the emission of fugitive dusts particularly during the construction process. These risks can be controlled through appropriate means during the construction.

Source(s)	Possible Pathway(s)	Receptor(s)	Probability	Consequence	Risk Level	Comments
Organic contaminants such as petroleum hydrocarbons and PAHs associated with surrounding historical land uses.	Ingestion, inhalation or direct contact. Inhalation of fugitive dust. Root uptake. Leaching through unsaturated zone. Surface run-off, base flow from contaminated groundwater.	End users of the site. Neighbours. Ecosystems. Landscape planting. Groundwater and possible abstractors. Aquatic ecosystems. Surface water and possible abstractors.	High	Medium	High	The area surrounding has been subject to significant previous development. No Made Ground has been recorded on the site, however given the history it is likely that the site has been subject to a certain amount of previous filling. Given the surrounding industrial uses it is considered likely that organic contaminants may be present within the Made Ground that may pose a risk to future site users. Future investigation is considered prudent given the proposed future use of the site. The eastern parcel of land was historically used as a coal depot as such; it is highly likely that any Made Ground present across this area would contain organic contaminants associated with the coal industry. Whilst contamination of the groundwater is unlikely to be considered a significant issue, there is possibility that the groundwater may provide base flow to local surface water courses i.e. Regents Canal. Construction workers and site neighbours may be at risk from the emission of fugitive dusts particularly during the construction process. These risks can be controlled through appropriate means during the construction.
Sulfates present in the Made ground and Oxford Clay.	Direct contact with dissolved sulfates.	Buried concrete.	Low	Medium	Low	Natural strata are not considered to be sulphate bearing, however uncontrolled Made Ground used to build up site levels during previous development of the area may pose a risk of sulphates being present.
Organic chemicals in the Made Ground,	Direct contact or contact with vapours.	Plastic etc. building products (degradation).	Likely	Medium	Moderate	No previous site investigations have been undertaken at the site. Potential contamination sources have been identified during the desk study. Polymer, rubber, mastic etc. Pipes, cables and other building products can be attacked by organic chemicals, which can also pass into the potable water supply.
Asbestos fibres from insulation	Fugitive dust.	End users of the site.	Likely	Severe	High	Whilst no Made Ground has been formally identified on site during the desk study, it is considered that uncontrolled sources of Made Ground would have

Source(s)	Possible Pathway(s)	Receptor(s)	Probability	Consequence	Risk Level	Comments		
or asbestos- containing materials in the Made Ground		Neighbours.	Likely	Severe	High	been used to build up site levels during the previous development of the site. Given the age of the previous development of the site and surrounding area it is considered likely that asbestos may be present within the Made Ground present across the site. Asbestos screening undertaken as part of the ground further ground investigation is considered prudent.		
Asbestos fibres from insulation or asbestos-		End users of the site.	Likely	Severe	High	Given the age of the buildings present on site, it is considered likely that asbestos will be present within the building fabric. A pre-demolition asbestos		
containing materials in the buildings.	Fugitive dust.	Neighbours.	Likely	Severe	High	survey will be required across the site to ensure that appropriate mitigation measures are set out prior to the redevelopment of the site.		
Elevated		End users of new buildings (asphyxiation or explosion).						
concentrations of ground gases (methane & carbon dioxide)	Migration through soils or groundwater to	Users of off-site properties (asphyxiation or explosion).	Low	Medium	Low	The main risk from potential ground gases is likely to be posed by biodegradable matter within any uncontrolled Made Ground present on the site. No previous site investigation information is currently available for the site, given the change in use it is considered prudent to undertake an amount of gas monitoring in order to full define risks prior to redevelopment of the site.		
from biodegradable matter in the Made Ground.	indoor air.	New buildings (damage by explosion).						No potential areas of filled land have been identified at the site. As such, off-site migration of ground gases is considered unlikely to be a problem.
	Neighbour properties by explosion							
Radon	Migration through soils or groundwater to indoor air.	End users of new buildings.	N/A	No linkage	No linkage	BR 211 (2007) radon report indicates no precautions are required.		

3.3 GEOTECHNICAL HAZARD IDENTIFICATION

The desk study research findings have been used to develop a preliminary list of geotechnical hazards to inform the required scope of intrusive investigation works for managing the identified geotechnical risks. Potential geotechnical hazards are listed below:

- Uncontrolled Made Ground risk of excessive settlement (creep and inundation settlement or differential settlement of foundations, roads, sports pitches and infrastructure elements).
- Attack on buried concrete by aggressive ground conditions the development site may contain unknown Made Ground and potentially sulfate bearing soils.
- Shrink / swell of clay risk of settlement / heave of foundations when located within the influence of trees and vegetation.
- Low strength, compressible natural ground risk of excessive settlement of foundations and infrastructure elements.
- Unexploded Ordnance / bomb strikes the site and surroundings were extensively bombed during the Second World War. A bomb strike is recorded on the western boundary of the site. Previous bomb craters may have been subject to infilling in an uncontrolled manner. Unexploded Ordnance primarily poses a risk to the construction workers and will require further investigation prior to commencement of the redevelopment of the site.
- Regents Canal Regents Canal is present within a culvert beneath the
 northern part of the site. It is likely that this will be a significant structure that
 will require further investigation, as its location and depth may pose a
 constraint to the foundations of the proposed development. At this stage it is
 not known whether any easements exist on the site regarding the presence
 of the canal.
- Underground obstructions potential for deeper areas of Made ground associated with former foundations and potential infilled basements may require breaking out prior to construction of development or may give rise to excessive settlement related to previously uncontrolled method of infilling.
- Potential for other tunnels to be close to the surface i.e. tube tunnels, storm drainage. May pose a constraint to the development

4. DESK STUDY CONCLUSIONS

Table 7 is a summary of the geo-environmental risks identified by the desk study assessment. The overall risk associated with the proposed development of the site has been designated using qualitative judgement.

The following potential contamination risks have been identified as medium to high following the assessment of the available information:

- Moderate risk of inorganic contaminants being present across the site associated with any uncontrolled made Ground associated with the previous development of the site;
- High risk of organic contaminants being present in the eastern part of the site associated with the historic use as a coal depot;
- High risk of asbestos associated with any uncontrolled Made Ground or possibility of use within the building fabric of the existing buildings on site.

Based on historic land uses, information obtained during the site walkover, location and its current operational use, the overall risk from land contamination at the site is considered to be **moderate** for the current development, and **low to moderate** for a re-developed site, but would need to be confirmed by appropriate intrusive investigation, testing and assessment of the results of the investigation.

It is considered that it is unlikely that the site would be classified as Contaminated Land under Part IIA of the EPA 1990.

In terms of geotechnical risk for the site, the main concerns are likely to be shrinking and swelling within the London Clay Formation associated with the effect of heave due to the presence of historic or proposed trees and also uncontrolled Made Ground and underground obstructions associated within the previous development of the site.

The site has been subject to significant previous development; as such it is likely that there will be uncontrolled thicknesses of Made Ground associated with basements, previous foundations or site raising / levelling to create development platforms. Buried or covered remnant railway tracks or sleepers may be present within the Made Ground in the eastern parcel of land associated with the former coal depot in this area.

A large culverted canal is located beneath the northern part of the site that may pose a significant risk to foundation requirements for the proposed development. Further investigation will need to be undertaken to ascertain the location, depth and construction of the culvert.

Any excavated arisings destined for disposal will require sampling and analysis to classify the soils in accordance with the Hazardous Waste Regulations and the Landfill Regulations, prior to disposal.

5. RECOMMENDATIONS FOR FURTHER WORK

In order to confirm the actual risks to receptors and to confirm the ground conditions with respect to potential geotechnical and geo-environmental risks, an appropriate intrusive investigation will need to be undertaken. Prior to the proposed development being progressed based on the current information this ground investigation is proposed to comprise:

- the excavation of trial pits to allow collection of samples for geotechnical and chemical analysis, to assess trench stability, over break potential and "digability";
- cable percussive boreholes to allow collection of samples for geotechnical and chemical analysis of deeper soils and allow in-situ testing to be undertaken to assess the strength profile of the clay beneath the site, and allow the installation of gas monitoring wells;
- TRL Dynamic Cone Penetration tests to correlate to CBRs for pavement design;
- gas monitoring of wells installed during the ground investigation;
- groundwater level monitoring;
- geotechnical testing of soil samples; and
- contamination analyses of soil samples.

The findings would be used to inform the preparation of a Phase 2 geoenvironmental report and to generate engineering advice for the proposed development works. Any conditions imposed by the planning authority could be accounted for by the works set out above.

As a result of the size of the site, and the varying end-uses, phasing of the ground investigation work and subsequent risk assessment may be appropriate.

6. UNCERTAINTIES AND LIMITATIONS

This report details the findings of work carried out in May 2013. The report has been prepared by Pell Frischmann on the basis of available information obtained during the study period. Although every reasonable effort has been made to gather all relevant information, all potential environmental constraints or liabilities associated with the site may not have been revealed.

The report has been prepared for the exclusive benefit of London Borough of Camden and those parties designated by them for the purpose of providing geotechnical and geo-environmental recommendations for the site. The report contents should only be used in that context. Furthermore, new information, changed practices or new legislation may necessitate revised interpretation of the report after the date of its submission.

Information provided by third parties has been used in good faith and is taken at face value; however, Pell Frischmann cannot guarantee its accuracy or completeness.

The work has been carried out in general accordance with recognised best practice as detailed in guidance documents such as the CLR 11 Model Procedures (Environment Agency 2004), BS5930:1999 +A2:2010 and BS10175:2011. Important aspects of the risk assessment process are transparency and justification. The rationale behind the assessments can be provided upon request. Unless otherwise stated, no assessment has been made for the presence of radioactive substances or unexploded ordnance.

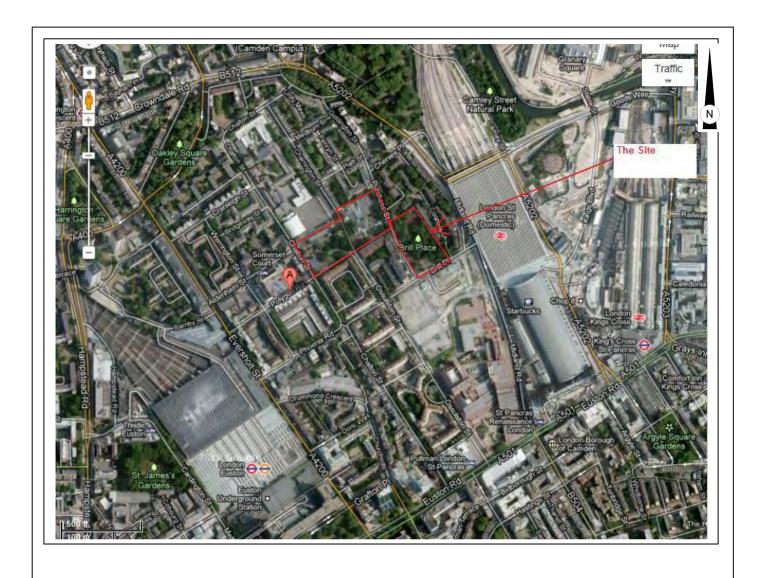
The preliminary risk assessment process may identify potential risks to site demolition and redevelopment workers. However, consideration of occupational health and safety issues is beyond the scope of this report.

Notwithstanding any site observations concerning the presence or otherwise of archaeological sites, asbestos-containing materials or invasive weeds such as Japanese knotweed, this report does not constitute a formal survey of these potential hazards.

Any site boundary line depicted on plans does not imply legal ownership of land.

APPENDIX A

DRAWINGS



Client: London Borough of Camden	Pall Fricchmann
Site: Edith Neville Primary School	
Drawing No: A12794/D001A	Pell Frischmann Burrator House Penninsula Park
Title: Site Location Plan	Rydon Lane
Scale: NTS	Exeter EX2 7NT

APPENDIX B GROUNDSURE REPORT



EmapSite Masdar House, , Eversley, RG27 0RP GroundSure Reference:

EMS-203746_296431

Your Reference:

EMS_203746_296431

Report Date: Report Delivery

Client Email:

1 May 2013

Method:

Email - pdf

method:

sales@emapsite.com

GroundSure EnviroInsight

Address: ,

Dear Sir/Madam,

Thank you for placing your order with emapsite. Please find enclosed the GroundSure EnviroInsight as requested

If you would like further assistance regarding this report then please contact the emapsite customer services team on 0118 9736883 quoting the above report reference number.

Yours faithfully,

emapsite customer services team

Enc.

GroundSure EnviroInsight





GroundSure EnviroInsight

Address: ,

Date: 1 May 2013

GroundSure Reference: EMS-203746_296431

Your Reference: EMS_203746_296431

Client: EmapSite



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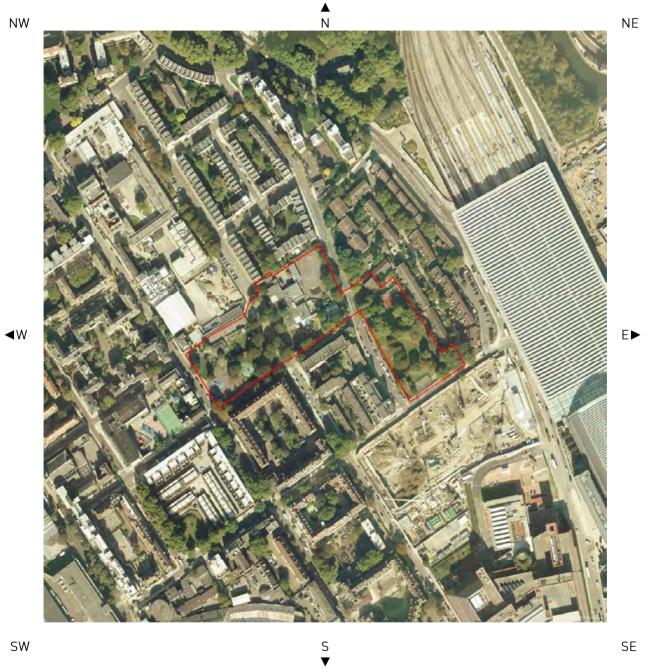


Report Reference: EMS-203746_296431





Aerial Photograph of Study Site



Aerial photography supplied by Getmapping PLC.
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Site Name: ,

Grid Reference: 529751,183173

Size of Site: 1.95 ha





Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Report Section	Nı	umber of i	records fou	nd within	(X) m of th	e study site boundary
Environmental Permits, Incidents and Registers	on-site	0-50	51-250	251- 500	501- 1000	1000- 1500
1.1 Industrial Sites Holding Environmental Permits and/or						
Authorisations						
Records of historic IPC Authorisations	0	0	0	0	-	_
Records of Part A(1) and IPPC Authorised Activities	0	0	0	0	-	-
Records of Water Industry Referrals (potentially harmful discharges to the public sewer)	0	0	0	0	-	-
Records of Red List Discharge Consents (potentially harmful discharges to controlled waters)	0	0	0	0	-	-
Records of List 1 Dangerous Substances Inventory sites	0	0	0	0	-	-
Records of List 2 Dangerous Substances Inventory sites	0	0	0	0	-	-
Records of Part A(2) and Part B Activities and Enforcements	0	0	5	4	-	-
Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	17	-	-
Records of Licensed Discharge Consents	0	0	0	1	=	=
Records of Planning Hazardous Substance Consents and Enforcements	0	0	1	0		
1.2 Records of COMAH and NIHHS sites	0	0	1	0	=	=
1.3 Environment Agency Recorded Pollution Incidents						
National Incidents Recording System, List 2	0	0	0	-	-	-
National Incidents Recording System, List 1	0	0	0	-	-	-
1.4 Sites Determined as Contaminated Land under Part IIA EPA 1990	0	0	0	0	-	=
2. Landfill and Other Waste Sites	on-site	0-50	51-250	251- 500	501- 1000	1000- 1500
2.1 Landfill Sites						
Environment Agency Registered Landfill Sites	0	0	0	0	0	-
Landfill Data – Operational Landfill Sites	0	0	0	0	0	-
Environment Agency Historic Landfill Sites	0	0	0	0	0	0
Landfill Data - Non-Operational Landfill Sites	0	0	0	0	0	-
BGS/DoE Landfill Site Survey	0	0	0	0	0	0
GroundSure Local Authority Landfill Sites Data	0	0	0	0	0	0
2.2 Landfill and Other Waste Sites Findings						
Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	1	-	-
Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	5	1	-	-
Environment Agency Licensed Waste Sites	0	0	3	1	5	2





3. Current Land Uses	on-site	0-50	51-250	251 - 500	501- 1000	1000-1500
3.1 Current Industrial Sites Data	0	1	15	-	-	-
3.2 Records of Petrol and Fuel Sites	0	0	1	3	-	-
3.3 Underground High Pressure Oil and Gas Pipelines	0	0	0	0	-	=

4. Geology	Description
4.1 Are there any records of Artificial Ground and Made Ground present beneath the study site? st	No
4.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site? *	No
4.3 For records of Bedrock and Solid Geology beneath the study site $\!\!\!\!\!^*$ see the detailed findings section.	
Source: Scale: 1:50,000 BCS Shoot 256	

Source: Scale: 1:50,000 BGS Sheet 256

^{*} This includes an automatically generated 50m buffer zone around the site.

5. Hydrogeology and Hydrology	on-site	0-50	51-250	251- 500	501- 1000	1001- 2000	
5.1 Are there any records of Productive Strata in the Superficial Geology within 500m of the study site?				Yes			
5.2 Are there any records of Productive Strata in the Bedrock Geology within 500m of the study site?				Yes			
5.3 Groundwater Abstraction Licences (within 2000m of the study site).	roundwater Abstraction Licences (within 2000m of the study 0 0						
5.4 Surface Water Abstraction Licences (within 2000m of the study site).	0	0	0	2	1	2	
${\bf 5.5}$ Potable Water Abstraction Licences (within 2000m of the study site).	0	0	0	0	0	16	
5.6 Are there any Source Protection Zones within 500m of the stud	y site?				No		
5.7 River Quality	on-site	0-50	51-250	251-500	501-1000	1001-1500	
Is there any Environment Agency information on river quality within 1500m of the study site?	No	No	No	No	No	Yes	
5.8 Detailed River Network entries within 500m of the site	1	0	0	4	-	-	
5.9 Surface water features within 250m of the study site	No	No	No	-	-	-	
6. Flooding							
6.1 Are there any Environment Agency indicative Zone 2 floodplains study site?	s within 250r	n of the			No		
6.2 Are there any Environment Agency indicative Zone 3 floodplains study site?	s within 250r	n of the			No		
6.3 Are there any Flood Defences within 250m of the study site?					No		
6.4 Are there any areas benefiting from Flood Defences within 250r	n of the stud	y site?			No		
6.5 Are there any areas used for Flood Storage within 250m of the	study site?				No		
$\ensuremath{\text{6.6}}$ What is the maximum BGS Groundwater Flooding susceptibility study site?	within 50m o	of the		N	egligible		
6.7 What is the BGS confidence rating for the Groundwater Flooding	ty areas?		Not	Applicable			
7. Designated Environmentally Sensitive Sites	on-site	0-50	51-250	251- 500	501- 1000	1001- 2000	
7.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0	

0

0

7.2 Records of National Nature Reserves (NNR)

0





7.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
7.3 Records of Local Nature Reserves (LNR)	0	0	1	0	0	1
7.4 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
7.5 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
7.6 Records of Ramsar sites	0	0	0	0	0	0
7.7 Records of World Heritage Sites	0	0	0	0	0	0
7.8 Records of Environmentally Sensitive Areas	0	0	0	0	0	0
7.9 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
7.10 Records of National Parks	0	0	0	0	0	0
7.11 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
7.12 Records of Nitrate Vulnerable Zones	0	0	0	0	0	0
7.13 Records of Ancient Woodlands	0	0	0	0	0	0

8. Natural Hazards

8.1 What is the maximum risk of natural ground subsidence?

Moderate

9. Mining

9.1 Are there any coal mining areas within 75m of the study site?

No

9.2 What is the risk of subsidence relating to shallow mining within 150m of the study site?

Negligible

9.3 Are there any brine affected areas within 75m of the study site?

No





Using this Report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between GroundSure and the Client. The document contains the following sections:

1. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

2. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

3. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure underground oil and gas pipelines.

4. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

5. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licenses, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

6. Flooding

Provides information on surface water flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

7. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

8. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence.

9. Mining

Provides information on areas of coal and shallow mining.





10. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, GroundSure provide a free Technical Helpline (08444 159000) for further information and guidance.

Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier "A" on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

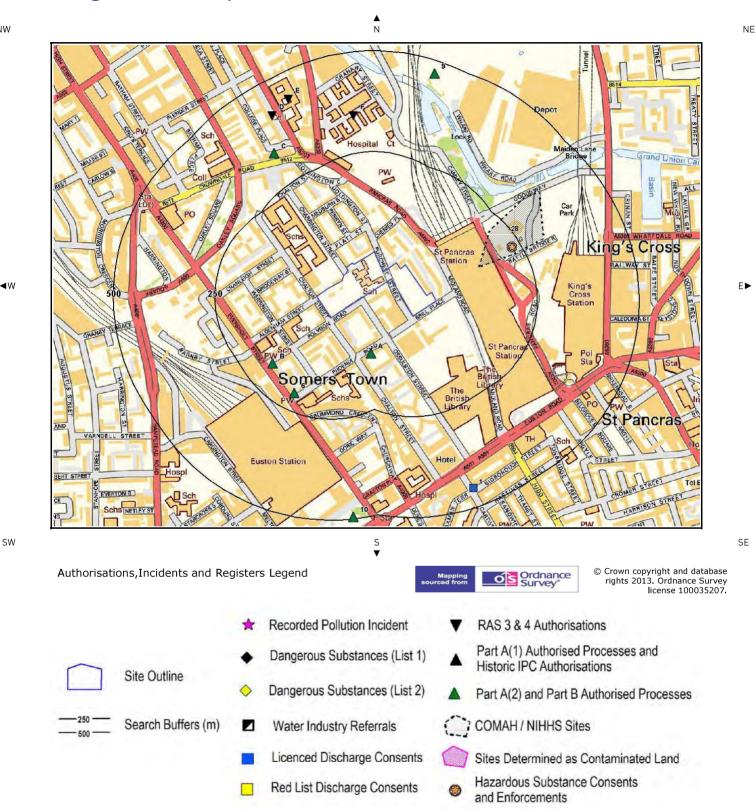
All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.



NW



1. Environmental Permits, Incidents and Registers Map



Report Reference: EMS-203746_296431





1.Environmental Permits, Incidents and Registers

1.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency and Local Authorities reveal the following information:

	(
Database searched and no data found.	
Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:	
Database searched and no data found.	
2	
Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within the study site:	500m of
Database searched and no data found.	
Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) w 500m of the study site:	ithin
Database searched and no data found.	
Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:	
Database searched and no data found.	
Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:	
Database searched and no data found.	
Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:	

The following Part A(2) and Part B Activities are represented as points on the Authorisations, Incidents and Registers map:

ID	Distance	Direction	NGR	Details	
2A	129.0	SE	529744, 183006	Address: Stephie's Dry Cleaner ,52 Phoenix Road, NW1 1ES	Enforcement: No Enforcement Notified
				Process: Dry Cleaner Status: Historic	Date of Enforcement: No Enforcement Notified
				Permit Type: Part B	Comment: No Enforcement Notified
3A	129.0	SE	529744, 183006	Address: Stephie's Dry Cleaner ,52 Phoenix Road, NW1 1ES Process: Dry Cleaner Status: Historic Permit Type: Part B	Enforcement: Enforcement Notified Date of Enforcement: 20090119 Comment: Non - payment of the annual subsistence fee.

Report Reference: EMS-203746_296431





4B	184.0	SW	529501, 182981	Address: City Centre Dry Cleaners , 118 Eversholt Street, NW1 1BP	Enforcement: No Enforcement Notified
			102901	Process: Dry Cleaner	Date of Enforcement: No Enforcemen
				Status: Current	Notified
				Permit Type: Part B	Comment: No Enforcement Notified
5B	184.0	CW	F20F01		
20	184.0	SW	529501,	Address: City Centre Dry Cleaners , 118	Enforcement: No Enforcement
			182981	Eversholt Street, NW1 1BP	Notified
				Process: Dry Cleaner	Date of Enforcement: No Enforcement
				Status: Historic	Notified
		~		Permit Type: Part B	Comment: No Enforcement Notified
6	208.0	SW	529555,	Address: Avis Rent-a-Car Ltd, 88 Eversholt	Enforcement: No Enforcement
			182907	Street, London, NW1 1BP	Notified
				Process: Petrol Station	Date of Enforcement: No Enforcemen
				Status: Current	Notified
				Permit Type: Part B	Comment: No Enforcement Notified
7C	332.0	NW	529505,	Address: Crowndale Dry Cleaners, 2	Enforcement: No Enforcement
			183502	Crowndale Road, NW1 1TT	Notified
				Process: Dry Cleaner	Date of Enforcement: No Enforcemen
				Status: Current	Notified
				Permit Type: Part B	Comment: No Enforcement Notified
8C	332.0	NW	529505,	Address: Crowndale Dry Cleaners , 2	Enforcement: No Enforcement
			183502	Crowndale Road, NW1 1TT	Notified
				Process: Dry Cleaner	Date of Enforcement: No Enforcemen
				Status: Historic	Notified
				Permit Type: Part B	Comment: No Enforcement Notified
9	465.0	N	529900,	Address: Galliford Roadstone Kings Cross	Enforcement: No Enforcement
			183700	Depot, Goodsway, Islington N1 0AU	Notified
				Process: Recycling/including Vegetable	Date of Enforcement: No Enforcement
				Matter/composting Process	Notified
				Status: Historic	Comment: No Enforcement Notified
				Permit Type: Part B	
10	498.0	S	529700,	Address: Cyma, Euston Rd, Euston Square,	Enforcement: No Enforcement
			182600	NW1 8AJ	Notified
				Process: Petrol Vapour Recovery Process	Date of Enforcement: No Enforcemen
				Status: Historic	Notified
				Permit Type: Part B	Comment: No Enforcement Notified

Records of Category 3 or 4 Radioactive Substance Licences within 500m of the study site:

17

The following RAS Licence (3 or 4) records are represented as points on the Authorisations, Incidents and Registers map:

ID	Distance [m]	Direction	Address Operator Type		Type	Permission Number	Dates	Status
30F	345.0	N	London School Of Hygiene And Tropical Medicine, Nutrition Research Unit, St Pancras Hospital, 4 St Pancras Way, London, NW1 0PT	London School Of Hygiene And Tropical Medicine	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AC4503	Date of Approval:3 1/3/1991 Effective from:31/3 /1991 Last date of update:20 13-01-23	Revoked/ cancelled
31D	418.0	NW	Royal Veterinary College, Royal College Street, London, NW1 OTU	Royal Veterinar y College	Keeping And Use Of Radioactive Materials (was Rsa60 Section 1).	AE5268	Date of Approval: 5 /8/2008 Effective from: 5/8/ 2008 Last date of update: 20 13-01-23	Effective
32D	418.0	NW	Royal Veterinary College, Royal College Street, London, NW1 OTU	Royal Veterinar y College	Keeping And Use Of Radioactive Materials (was Rsa60 Section 1).	AE5268	Date of Approval:2 4/5/2006 Effective from:24/5 /2006 Last date of update:20 13-01-23	Supersed ed By Variation





33D	418.0	NW	Royal Veterinary College, Royal College Street, London, NW1 0TU	Royal Veterinar y College	Keeping And Use Of Radioactive Materials (was Rsa60 Section 1).	AE5268	Date of Approval:3 1/3/1991 Effective from:31/3 /1991 Last date of update:20 13-01-23	Supersed ed By Variation
34D	418.0	NW	Royal Veterinary College, Royal College Street, London, NW1 0TU	Royal Veterinar y College	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AE5241	Date of Approval:3 1/3/1991 Effective from:31/3 /1991 Last date of	Revoked/ cancelled
35D	418.0	NW	Royal Veterinary College, Royal College Street, London, NW1 0TU	Royal Veterinar y College	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AE5250	update:20 13-01-23 Date of Approval:3 1/3/1991 Effective from:31/3 /1991 Last date of update:20	Revoked/ cancelled
36D	418.0	NW	Proxima Concepts, Royal College Street, London, NW1 0TU	Proxima Concepts	Keeping And Use Of Radioactive Materials (was Rsa60 Section 1).	BR9600	13-01-23 Date of Approval:5 /9/2002 Effective from:5/9/ 2002 Last date of update:20	Effective
37D	418.0	NW	Proxima Concepts, Royal College Street, London, NW1 0TU	Proxima Concepts	Disposal Of Radioactive Waste (was Rsa60 Section 6).	BR9618	13-01-23 Date of Approval:5 /9/2002 Effective from:3/10 /2002 Last date of update:20 13-01-23	Effective
38D	418.0	NW	Gene Expression Technologies Ltd (dissolved), Royal College Street, London, NW1 0TU	Gene Expressi on Technolo gies Ltd (dissolve d)	Disposal Of Radioactive Waste (was Rsa60 Section 6).	BT4460	Date of Approval: 2 5/11/2002 Effective from: 23/1 2/2002 Last date of update: 20 13-01-23	Revoked/ cancelled
39D	418.0	NW	Gene Expression Technologies Ltd (dissolved), Royal College Street, London, NW1 0TU	Gene Expressi on Technolo gies Ltd (dissolve d)	Keeping And Use Of Radioactive Materials (was Rsa60 Section 1).	BT4478	Date of Approval: 2 5/11/2002 Effective from: 25/1 1/2002 Last date of update: 20 13-01-23	Revoked/ cancelled
40D	418.0	NW	Spirogen Ltd, London Bioscience Innovation Centre,2 Royal College Street, London, NW1 0TU	Spirogen Ltd	Keeping And Use Of Radioactive Materials (was Rsa60 Section 1).	CA5052	Date of Approval:2 0/12/2006 Effective from:20/1 2/2006 Last date of update:20 13-01-23	Revoked/ cancelled





41D	418.0	NW	Spirogen Ltd, London Bioscience Innovation Centre, 2 Royal College Street, London, NW1 0TU	Spirogen Ltd	Disposal Of Radioactive Waste (was Rsa60 Section 6).	CA5079	Date of Approval:2 0/12/2006 Effective from:20/1 2/2006 Last date of update:20 13-01-23	Revoked/ cancelled
42E	436.0	NW	Royal Veterinary College, University Of London, Royal College Street, London, NW1 0TU	Royal Veterinar y College	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AQ1510	Date of Approval:1 1/11/2005 Effective from:9/12 /2005 Last date of update:20 13-01-23	Supersed ed By Variation
43E	436.0	NW	Royal Veterinary College, University Of London, Royal College Street, London, NW1 0TU	Royal Veterinar y College	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AQ1510	Date of Approval:2 7/1/2009 Effective from:24/2 /2009 Last date of update:20 13-01-23	Effective
44E	436.0	NW	Royal Veterinary College, University Of London, Royal College Street, London, NW1 0TU	Royal Veterinar y College	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AQ1510	Date of Approval:1 /12/2003 Effective from:1/1/ 2004 Last date of update:20 13-01-23	Supersed ed By Variation
45E	436.0	NW	Royal Veterinary College, University Of London, Royal College Street, London, NW1 0TU	Royal Veterinar y College	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AQ1510	Date of Approval:9 /6/2000 Effective from:12/6 /2000 Last date of update:20 13-01-23	Supersed ed By Variation
46E	436.0	NW	Royal Veterinary College, University Of London, Royal College Street, London, NW1 0TU	Royal Veterinar y College	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AQ1510	Date of Approval:2 8/3/1995 Effective from:25/4 /1995 Last date of update:20 13-01-23	Supersec ed By Variation

Records of Licensed Discharge Consents within 500m of the study site:

The following Licensed Discharge Consents records are represented as points on the Authorisations, Incidents and Registers map:

ID	Distance	Direction	NGR	Details	
1	453.0	S	529996, 182673	Address: Bidborough House, 20 Mabledon Place, London, London, WC1H 9BF Effluent Type: Trade Discharges - Cooling Water	Receiving Water: Gw Via Re-inject Borehole Status: New Consent (wra 91, S88 & Sched 10 As Ameroled By Env Act
				Permit Number: NPSWQD005471 Permit Version: 1	1995) Issue date: 20/2/2009 Effective Date: 20/2/2009 Revocation Date: -

Report Reference: EMS-203746_296431

1





Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site: 1

The following records are represented as polygons on the Industrial Sites and Processes map.

ID	Distance [m]	Direction	Application Reference Number	Application Status	Application Date	Address	Details	Details of Enforcement Action
47 G	227.0	NE	PL/920132 6	Approved	29/06/199 3	St. Pancras Holder Station, Battle Bridge Road, Camden Town, London NW1 2TP	Storage of natural gas.	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement

1.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site:

1

The following COMAH & NIHHS Authorisation records provided by the Health and Safety Executive are represented as polygons or buffered points on the Authorisations, Incidents and Registers map:

ID	Distance	Direction	NGR	Address	Type	Update
28	134.0	NE	530100, 183300	british gas,st pancras holder station,battlebridge road	NIHHS	2001
-				1000		

1.3 Environment Agency Recorded Pollution Incidents

Records of National Incidents Recording System, List 2 within 250m of the study site:

0

Database searched and no data found.

Records of National Incidents Recording System, List 1 within 250m of the study site:

0

Database searched and no data found.

1.4 Sites Determined as Contaminated Land under Part IIA EPA 1990

How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site?

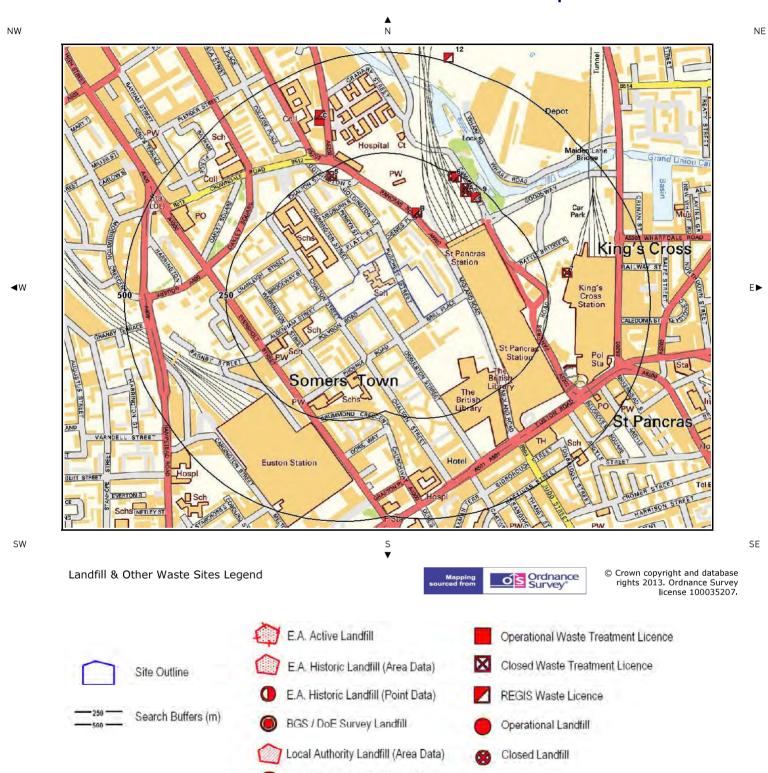
(

Database searched and no data found.





2. Landfill and Other Waste Sites Map



Local Authority Landfill (Point Data)





2. Landfill and Other Waste Sites

2.1 Landfill Sites

0
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0
0

2.2 Other Waste Sites

Records of operational waste treatment, transfer or disposal sites within 500m of the study site:

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance	Direction	NGR	Det	ails
1C	369.0	NW	529590,	Site Address: 7-9 St Pancras Way,	Record Date: 01-Jun-1997
			183590	CAMDEN, London, NW1 0PB	Transfer Date:
				Landfill Licence: G15AAJAL	Modification Date:
				EA Reference: EAWML80302	Status: Operational as far as is known
				Waste Type: Difficult	Category: SCRAPYARD
				Rating: Difficult Scrapyard	Regulator: EA - Thames Region - North
				Known Restrictions: No known restriction	East Area (Isleworth)
				on source of waste	Size: Very Small (<10,000 tonnes/year)

Records of non-operational waste treatment, transfer or disposal sites within 500m of the study site:

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

Report Reference: EMS-203746_296431

1





ID	Distance	Direction	NGR	Deta	ails
2B	128.0	NE	529830, 183360	Site Address: St Pancras Metals, 86 Pancras Road, CAMDEN, London, NW1 1WJ Landfill Licence: 176APXAL EA Reference: EAWML80335 Waste Type: Difficult Waste Description: - Known Restrictions: No known restriction on source of waste	Record Date:01-Nov-1992 Transfer Date: Modification Date: Status: May not be working (licence suspended) Category: SCRAPYARD Regulator: EA - Thames Region - Nort East Area (Isleworth) Size: Very Small (<10,000 tonnes/yea
3A	219.0	NE	529950, 183410	Site Address: Kings Cross Transfer Station, 1 Camley Street, CAMDEN, London, NW1 1UU Landfill Licence: 176ALPAL EA Reference: EAWML80329 Waste Type: Putrescible Waste Description: Putrescible Known Restrictions: No known restriction on source of waste	Record Date:01-Mar-1985 Transfer Date: Modification Date: 01-Feb-1993 Status: Licence has completion certifica Category: TRANSFER Regulator: EA - Thames Region - Nort East Area (Isleworth) Size: Large (< 250,000 tonnes/year)
4A	228.0	NE	529950, 183420	Site Address: 1 Camley Street, CAMDEN, London, NW1 Landfill Licence: 176AGFAL EA Reference: - Waste Type: Non-Hazardous Waste Description: Non-Hazardous Known Restrictions: No known restriction on source of waste	Record Date:01-Nov-1981 Transfer Date: Modification Date: Status: Licence lapsed/cancelled/defunct/not applicable/surrendered Category: TRANSFER Regulator: EA - Thames Region - Nort East Area (Isleworth) Size: Medium (< 75,000 tonnes/year
5	232.0	NW	529620, 183450	Site Address: 2 Camley Street, KINGS CROSS, London, NW1 Landfill Licence: 176APFAL EA Reference: - Waste Type: Non-Hazardous Waste Description: Non-Hazardous Known Restrictions: No known restriction on source of waste	Record Date:01-Dec-1986 Transfer Date: Modification Date: Status: Record superseded Category: TRANSFER Regulator: EA - Thames Region - Nort East Area (Isleworth) Size: Medium (< 75,000 tonnes/year
6	241.0	N	529920, 183450	Site Address: 2 Camley Street, KINGS CROSS, London, NW1 Landfill Licence: 176APWAL EA Reference: EAWML80327 Waste Type: Non-Hazardous Waste Description: Non-Hazardous Known Restrictions: No known restriction on source of waste	Record Date:01-Feb-1992 Transfer Date: Modification Date: 01-Jul-1997 Status: Licence has completion certification Category: TRANSFER Regulator: EA - Thames Region - Norte East Area (Isleworth) Size: Large (< 250,000 tonnes/year
7	304.0	E	530200, 183210	Site Address: BR Goods Yard, York Way, KINGS CROSS, London, N1 Landfill Licence: 176ALVAL EA Reference: - Waste Type: Inert Waste Description: Inert Known Restrictions: No known restriction on source of waste	Record Date:01-May-1985 Transfer Date: Modification Date: Status: Licence lapsed/cancelled/defunct/not applicable/surrendered Category: TRANSFER Regulator: EA - Thames Region - Nort East Area (Hatfield-London N) Size: Medium (< 75,000 tonnes/year

Records of Environment Agency licensed waste sites within 1500m of the study site:

11

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance	Direction	NGR	Details			
8B	129.0	NE	529829,	Site Address: Ronald Hall, St Pancras	Issue Date: 20/11/1992		
			183362	Metals, 86, Pancras Road, London, NW1	Effective Date: -		
				1WJ	Modified: -		
				Type: Metal Recycling Site (mixed	Surrendered Date: -		
				MRS's)	Expiry Date: -		
				Size: < 25000 tonnes	Cancelled Date: -		
				Regis Licence Number: SAI006	Status: Issued		
				EPR reference: EA/EPR/AP3691NW/A001	Site Name: St Pancras Metals, N W 1		
				Operator: Hall Ronald Herbert Charles	Correspondence Address: -, -		
				Waste Management licence No: 80335			
				Annual Tonnage: 2080.0			

emapsite™



9	226.0	NE	529975, 183399	Site Address: Shanks & McEwan (Southern) Ltd, Kings Cross Transfer Station, 1, Camley Street, Camden, London, NW1 1UU Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Regis Licence Number: SHA005 EPR reference: EA/EPR/AP3091NU/S002 Operator: Shanks Waste Services Ltd Waste Management licence No: 80329 Annual Tonnage: 52326.0	Issue Date: 16/02/1993 Effective Date: - Modified: - Surrendered Date: 06/03/2001 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Shanks & McEwan, King's Cross Correspondence Address: -, -
10A	243.0	NE	529928, 183449	Site Address: P. Donaghy, 2, Camley Street, Kings Cross, London, NW1 Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Regis Licence Number: RUT001 EPR reference: EA/EPR/WP3791NW/S004 Operator: Rutland (Waste Disposal) Ltd Waste Management licence No: 80327	Issue Date: 17/02/1992 Effective Date: - Modified: 15/07/1997 Surrendered Date: 0- Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Rutland (Waste Disposal) Ltd Kings Cross Correspondence Address: -, -
11C	382.0	NW	529591, 183605	Annual Tonnage: 25000.0 Site Address: - Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Regis Licence Number: ARB001 EPR reference: EA/EPR/EP3491NW/A001 Operator: Arbuckle William David Waste Management licence No: 80302 Annual Tonnage: 1014.0	Issue Date: 05/06/1997 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Arbuckle, St Pancras Way Correspondence Address: -, -
12	511.0	N	529908, 183746	Site Address: Nick Dean, Kings Cross Goods Depot, Goods Way, Kings Cross, London, NW1 Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Regis Licence Number: GRS001 EPR reference: EA/EPR/EP3991NL/S005 Operator: GRS (Roadstone) Ltd Waste Management licence No: 80299 Annual Tonnage: 196000.0	Issue Date: 30/03/1993 Effective Date: - Modified: 18/09/1997 Surrendered Date: 15/10/2002 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: GRS (Roadstone), Kings Cros
Not shown	695.0	N	529843, 183948	Site Address: Murphy Ltd, British Rail Goods Yard, off, York Way, Kings Cross, London, NW1 Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Regis Licence Number: MUR002 EPR reference: EA/EPR/VP3591NC/S002 Operator: Murphy Ltd Waste Management licence No: 80310 Annual Tonnage: 7592.0	Issue Date: 04/09/1995 Effective Date: - Modified: - Surrendered Date: 06/08/2002 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Murphy,Goods Way, Kings Cross Correspondence Address: -, -
Not shown	695.0	N	529843, 183948	Site Address: Murphy Ltd, British Rail Goods Yard, off York Way, Kings Cross, London, NW1 Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Regis Licence Number: MUR002 EPR reference: - Operator: Murphy Limited Waste Management licence No: 80310 Annual Tonnage: 0.0	Issue Date: 04/09/1995 Effective Date: - Modified: - Surrendered Date: 06/08/2002 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: "Murphy,Goods Way, Kings Cross" Correspondence Address: Murphy Limited, 2 Ashley House, Ashley Road, London, N17 9LZ
Not shown	756.0	N	529900, 184000	Site Address: R Wiles, 12 Engineers Cottages, York Way, London, N1 0BA Type: Metal Recycling Site (mixed MRS's) Size: Unknown Regis Licence Number: YOR001 EPR reference: - Operator: York Way Metals Ltd Waste Management licence No: 80341 Annual Tonnage: 10400.0	Issue Date: 11/11/1996 Effective Date: - Modified: - Surrendered Date: 29/10/1999 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: "York Way Metals, N1" Correspondence Address: York Way Metals Ltd, 1-2 Engineers Cottages, Yorl Way, London, N1 0BA



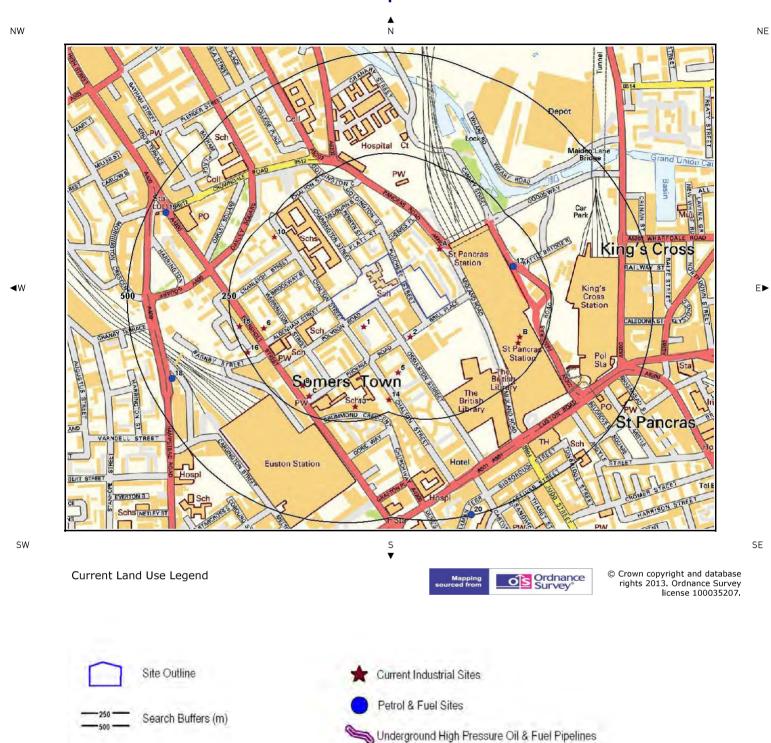


Not	756.0	N	529900,	Site Address: R Wiles, 12 Engineers	Issue Date: 11/11/1996
shown			184000	Cottages, York Way, London, N1 0BA	Effective Date: -
				Type: Metal Recycling Site (mixed	Modified: -
				MRS's)	Surrendered Date: 29/10/1999
				Size: < 25000 tonnes	Expiry Date: -
				Regis Licence Number: YOR001	Cancelled Date: -
				EPR reference: EA/EPR/RP3591NK/S003	Status: Surrendered
				Operator: York Way Metals Ltd	Site Name: York Way Metals, N1
				Waste Management licence No: 80341	Correspondence Address: -, -
				Annual Tonnage: 10974.0	
Not	1294.0	NW	528667,	Site Address: -	Issue Date: 15/10/1994
shown			184035	Type: Household Waste Amenity Site	Effective Date: -
				Size: < 25000 tonnes	Modified: -
				Regis Licence Number: CAM003	Surrendered Date: 25/07/1997
				EPR reference: EA/EPR/UP3697NB/S002	Expiry Date: -
				Operator: Camden London Borough	Cancelled Date: -
				Council	Status: Surrendered
				Waste Management licence No: 80482	Site Name: Jamestown Road CA Site
				Annual Tonnage: 20000.0	Correspondence Address: -, -
Not	1294.0	NW	528667,	Site Address: -	Issue Date: 15/10/1994
shown			184035	Type: Household Waste Amenity Site	Effective Date: -
				Size: Unknown	Modified: -
				Regis Licence Number: CAM003	Surrendered Date: 25/07/1997
				EPR reference: -	Expiry Date: -
				Operator: Camden London Borough	Cancelled Date: -
				Council	Status: Surrendered
				Waste Management licence No: 80482	Site Name: Jamestown Road Ca Site
				Annual Tonnage: 0.0	Correspondence Address: Camden LE
					Council, Town Hall Extension, Argyle
					Street, London, WC1H 8EQ





3. Current Land Use Map







3. Current Land Uses

3.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site:

16

The following records are represented as points on the Current Land Uses map.

ID	Distance	Direction	Company	Address	Activity	Category
1	39.0	SE	Electricity Sub Station	NW1	Electrical	Infrastructure
					Features	and Facilities
2	62.0	SW	Electricity Sub Station	NW1	Electrical	Infrastructure
					Features	and Facilities
3 A	67.0	NE	Frame Emporium Ltd	125-127, Pancras Road, London,	Glass	Industrial
				NW1 1UN		Products
4A	67.0	NE	Radiator Cover's	121, Pancras Road, London, NW1	Fireplaces and	Consumer
				1UN	Mantelpieces	Products
5	153.0	SW	Electricity Sub Station	NW1	Electrical	Infrastructure
					Features	and Facilities
6	180.0	SW	Electricity Sub Station	NW1	Electrical	Infrastructure
					Features	and Facilities
7B	191.0	SE	London St Pancras	N1C	Railway	Public
			Station (Terminus)		Stations,	Transport,
					Junctions and	Stations and
					Halts	Infrastructure
8	192.0	SW	Portrait & Wedding	106, Eversholt Street, London, NW1	Office and Shop	Industrial
			Photography	1BP	Equipment	Products
9B	194.0	SE	Eurostar Business	42, St. Pancras International	Railway	Transport,
			Traveller Ticket Office	Station, Pancras Road, Regent's	Companies and	Storage and
				Park, London, NW1 2QL	Information	Delivery
10	206.0	NW	Safestore Ltd	155, Chalton Street, London, NW1	Container and	Transport,
				1NR	Storage	Storage and
						Delivery
11	206.0	SW	Avis Rent A Car	88, Eversholt Street, London, NW1	Vehicle Hire and	Hire Services
C				1BP	Rental	
12	206.0	SW	Budget Rent A Car	88, Eversholt Street, London, NW1	Vehicle Hire and	Hire Services
C				1BP	Rental	
13	215.0	S	Depot	NW1	Container and	Transport,
					Storage	Storage and
					~ !	Delivery
14	222.0	SW	Hunts of London Ltd	73, Chalton Street, London, NW1	Clothing,	Consumer
				1HY	Components	Products
	224.0	147	Turing his Water C	402 Evenelalt Charact Land 1994	and Accessories	Facility and a
15	234.0	W	Troup by Waters &	183, Eversholt Street, London, NW1	Civil Engineers	Engineering
-10	244.0	CW	Anders	1BU	El tod I	Services
16	244.0	SW	Electricity Sub Station	NW1	Electrical	Infrastructure
					Features	and Facilities

3.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site:

4

The following petrol or fuel site records provided by Catalist are represented as points on the Current Land Use map:

ID	Distance	Direction	NGR	Company	Address	LPG	Status
17	180.0	NE	530060,	Unbranded	Bradkings Cross, 8,	Not Applicable	Obsolete
			183229		Pancras Road, Pancras		
					Road, Kings Cross,		
					London, Greater London,		
					NW1 2SY		
18	437.0	SW	529220,	BP	Euston Filling Station,	No	Closed
			182952		142, Hampstead Road,		
					Hampstead Road,		
					Regents Park, London,		
					Greater London, NW1		
					2PT		





19	458.0	NW	529205, 183363	Obsolete	St Georges Service Station, 47, Mornington Crescent, Mornington Crescent, Regents Park, London, Greater London, NW1 7RB	Not Applicable	Obsolete
20	498.0	S	529956, 182615	Obsolete	St Pancras Service Station, 141-151, Euston Road, Euston Road, St Pancras, London, Greater London, NW1 2AU	Not Applicable	Obsolete

3.3 Underground High Pressure Oil and Gas Pipelines

Records of high pressure underground pipelines within 500m of the study site:

0

Database searched and no data found.





4. Geology

4.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

4.2 Superficial Ground and Drift Geology

Database searched and no data found. The database has been searched on site, including a 50m buffer.

4.3 Bedrock and Solid Geology

The database has been searched on site, including a 50m buffer.

LEX Code	Description	Rock Type				
LC-CLSS	LONDON CLAY FORMATION	CLAY, SILT AND SAND				
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)						

For more detailed geological and ground stability data please refer to the "GroundSure GeoInsight". Available from our website.



NW



ΝF

5a. Hydrogeology - Aquifer Within Superficial Geology

King's Cross St Pancras **Euston Station** SW SE © Crown copyright and database rights 2013. Ordnance Survey Aquifer Within Superficial Geology Legend license 100035207. Principal Aquifer Secondary Aquifer - Undifferentiated Layers Site Outline Secondary (A) Aquifer - Permeable Layers Unproductive Search Buffers (m) Secondary (B) Aquifer - Lower Permeability Layers Unknown (lakes and landslip)