



**REPORT C6069 RevB  
APRIL 2016**

**GEOENVIRONMENTAL APPRAISAL**

**of land at  
WOOLTON ROAD, LIVERPOOL**

**prepared for  
REDROW HOMES LIMITED**



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<b>SITE:</b>	WOOLTON ROAD, LIVERPOOL		
<b>PREPARED FOR:</b>	REDROW HOMES LIMITED		
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## **CONTENTS**

### **EXECUTIVE SUMMARY**

<b>1. INTRODUCTION.....</b>	<b>1</b>
<b>2. SITE DETAILS AND DESCRIPTION.....</b>	<b>3</b>
<b>3. ENVIRONMENTAL SETTING .....</b>	<b>4</b>
3.1. Introduction.....	4
3.2. Historical Development.....	4
3.3. Published Geological Information .....	5
3.4. Hydrology and Hydrogeology .....	6
3.5. Landfilling and Waste Management .....	7
3.6. Radon Risk.....	8
3.7. Other .....	9
<b>4. PREVIOUS INVESTIGATION FINDINGS.....</b>	<b>10</b>
<b>5. PRELIMINARY CONCEPTUAL MODEL.....</b>	<b>11</b>
<b>6. FIELDWORK .....</b>	<b>12</b>
6.1. Scope of Investigation .....	12
6.2. Strata Description.....	12
6.3. Exploratory Hole Locations.....	12
6.4. Geotechnical Testing.....	13
6.5. Chemical Testing.....	13
<b>7. GROUND CONDITIONS AND MATERIAL PROPERTIES.....</b>	<b>14</b>
7.1. Strata Profile.....	14
7.2. Material Properties .....	16
7.3. Groundwater.....	17
7.4. Visual / Olfactory Evidence of Contamination.....	17
<b>8. RESULTS OF CHEMICAL TESTING .....</b>	<b>18</b>

8.1.	Assessment Methodology .....	18
8.2.	Soil Analysis .....	18
<b>9.</b>	<b>REVISED CONCEPTUAL MODEL AND GENERIC QUANTITATIVE RISK ASSESSMENT OF POLLUTANT LINKAGES .....</b>	<b>21</b>
<b>10.</b>	<b>CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>22</b>
10.1.	General.....	22
10.2.	Flood Risk .....	22
10.3.	Geotechnical .....	22
10.4.	Asbestos-Containing Materials.....	26
10.5.	Soil and Groundwater Contamination.....	26
10.6.	Ground Gas.....	27
10.7.	Invasive Plants .....	27
10.8.	Disposal of Soils.....	28
<b>11.</b>	<b>REGULATORY APPROVALS.....</b>	<b>29</b>

## **APPENDICES**

### **APPENDIX A FIGURES AND DRAWINGS**

<b>Drawing No.</b>	<b>Title</b>	<b>Scale</b>
C6069 RevB/01	Site Location Plan	1:25,000
C6069 RevB/02	Site Features Plan showing Exploratory Hole Locations	1:2,000
C6069 RevB/03	Preliminary Conceptual Site Model	NTS
C6069 RevB/04	Revised Conceptual Site Model	NTS
C6069 RevB/05	Proposed Development Layout	NTS

NTS: Not to Scale

### **APPENDIX B ENVIROCHECK REPORT**

### **APPENDIX C EXPLORATORY HOLE LOGS**

### **APPENDIX D LABORATORY TEST RESULTS**

### **APPENDIX E SIRIUS GENERIC ASSESSMENT CRITERIA**

## EXECUTIVE SUMMARY

<b>Introduction</b>	<p>Sirius Geotechnical and Environmental Ltd were commissioned by Redrow Homes Limited to undertake a geoenvironmental appraisal of land at Woolton Road, Liverpool.</p> <p>It is understood that Redrow are proposing to develop the site for a residential end use, comprising up to 160 low rise houses with private gardens, associated areas of hardstanding, access roads and public open space.</p>
<b>Site Details</b>	<p>The site comprises undeveloped land, which is roughly rectangular in shape and gently rises in height towards the east and south east.</p> <p>Densely wooded / overgrown vegetated areas are located along the majority of the site perimeter, and within the eastern and central southern site areas. A derelict building is located along the southern site boundary, which appears to have been vandalised and partly burnt out.</p>
<b>Site History</b>	<p>Historically, the majority of the site has remained as undeveloped, partly wooded / vegetated land. It was used as playing fields from approximately 1973.</p> <p>Three un-named buildings were located centrally along the southern boundary, with an associated footpath and track / road, both crossing the site in a north-south orientation up until the 1970's. The three structures, tracks and footpaths were cleared and replaced by the construction of a small pavilion.</p>
<b>Fieldwork</b>	<p>33 trial pits to a maximum depth of 2.30m and 8 window sample boreholes to a maximum depth of 2.50m.</p>
<b>Laboratory Testing</b>	<p>Samples of soil were submitted for analysis of a range of metal, other inorganic and organic components. Geotechnical testing was scheduled on selected samples. All testing was undertaken at accredited laboratories.</p>
<b>Ground Conditions</b>	<p>This investigation has identified topsoil (partly reworked) across the site to depths of between 0.10m and 0.60m bgl. Locally, within the northwest and central southern areas of the site, this was underlain by a variable thickness of made ground to a maximum depth of 1.65m bgl.</p> <p>The topsoil and / or made ground were found to be underlain by strata of the Chester Pebble Beds Formation, typically comprising an upper layer of residual sandstone, recovered as medium dense to very dense sand (locally recovered as firm, medium strength clay), over competent sandstone bedrock.</p>
<b>Ground Stability</b>	<p>Based on the geological setting of the site and the Coal Authority Gazetteer, it is considered that there is a negligible risk of coal mining affecting surface stability at the site.</p> <p>Inspection of historical OS mapping has not revealed any evidence of quarrying/pits beneath, or within close proximity of, the site.</p>
<b>Foundations and Floor Slabs</b>	<p>The most suitable foundation solution is anticipated to comprise spread foundations (strip and trench fill) taken down through the topsoil and / or made ground into the underlying natural ground of adequate strength. It is considered for the proposed development, formations on natural materials are expected to predominantly comprise medium dense to very dense granular residual or competent bedrock.</p> <p>Ground bearing floor slabs could be utilised across the majority of the site except where made ground exceeds 600mm, for example within the northwest of the site, where suspended floor slabs will be required.</p>
<b>Sulphate Class</b>	<p>DS-1 and ACEC-1.</p>
<b>Contamination</b>	<p>No significant contaminant linkages exist for either site end users or controlled waters.</p>

	<p>It is considered that the majority of the reworked topsoil and made ground encountered on site should be suitable for re-use within landscaped areas/gardens, subject to regulatory approval. However, it is recommended that any site-won topsoil and made ground (for use as subsoil) should be stockpiled, sorted (given the local presence of anthropogenic material including concrete, plastic, metal and brick), further tested and assessed, as part of the enabling works, before being approved for re-use.</p> <p>It is also considered that the natural topsoil encountered on site should be suitable for re-use within landscaped areas/gardens, subject to regulatory approval. However, it is recommended that any site won topsoil should be stockpiled, and further tested and assessed, as part of the enabling works, before being approved for re-use.</p> <p>Possible ACMs may be present within the infrastructure of existing buildings on site, which would pose a low risk to construction workers and adjacent site users, providing an appropriate method of removal is undertaken.</p>
<b>Further Works</b>	<p>As part of any future redevelopment works, the existing building on site is expected to be demolished. A pre-demolition asbestos survey will be required prior to commencing demolition works.</p>

**The executive summary is an overview of the key findings and conclusions of the report. There may be other information contained in the body of the report which puts into context the findings of the executive summary. No reliance should be placed on the executive summary in isolation, particularly when deriving design detail/abnormal costs.**

## 1. INTRODUCTION

Sirius Geotechnical and Environmental Ltd (Sirius) were commissioned by Redrow Homes Limited (Redrow) to undertake a geoenvironmental appraisal of land at Woolton Road, Liverpool (the “site”).

It is understood that Redrow are proposing to develop the site for a residential end use, comprising up to 160 low rise houses with private gardens, associated areas of hardstanding, access roads and public open space (POS). A sketch planning layout has been provided to Sirius by Redrow and has been reproduced as Drawing No. C6069 RevB/05 in Appendix A of this report.

The objectives of this appraisal were to:

- Establish the historical development of the site and surrounding area from a review of available plans.
- Establish the environmental setting of the site.
- Investigate near surface soil and groundwater conditions.
- Determine the potential risks posed by any ground contamination and provide recommendations on remedial measures to manage such risks.
- Establish the risks associated with hazardous ground gas, including radon.
- Evaluate whether past mining or other extractive industries could have an influence on the site.
- Provide recommendations for foundations, floor slab and highway / pavement design for the proposed development.

The desk study element of this investigation includes an assessment of information provided by Landmark Information Group (LIG) Envirocheck report, the British Geological Survey (BGS), the Coal Authority gazetteer (CA) and available online information provided by the Environment Agency (EA).

Fieldwork was undertaken between 13<sup>th</sup> and 15<sup>th</sup> August 2014 and comprised the mechanical excavation of 33 trial pits and the drilling of 8 window sample boreholes.

This report presents the factual information available during this appraisal, interpretation of the data obtained and recommendations relevant to the defined objectives.

It has been assumed in the production of this report that the site is to be developed for a residential with gardens end-use. In addition, it is assumed that ground levels will not change significantly from those described in this report. If this is not the case, then amendments to the recommendations made in this report may be required.

Where the report refers to the potential presence of invasive plants (such as Japanese Knotweed) or asbestos-containing materials, such observations are for information only and should be verified by an appropriate specialist.

The comments and opinions presented in this report are based on the findings of the desk study, ground conditions encountered during intrusive investigation works performed by Sirius and the results of tests carried out within one or more laboratories. There may be other conditions prevailing on the site which have not been revealed by this investigation and which have not been taken into account by this report. Responsibility cannot be accepted for any conditions not revealed by this investigation. Any diagram or opinion on the possible configuration of strata, contamination or other spatially variable features between or beyond investigation positions is conjectural and given for guidance only. Confirmation of ground conditions between exploratory holes should be undertaken if deemed necessary. Evaluation of groundwater is based on observations made at the time of the investigation and monitoring visits. It should be noted that groundwater levels and quality may vary due to seasonal and other effects.

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## 2. SITE DETAILS AND DESCRIPTION

**Table 2.1 Current Site Overview**

<b>Location</b>	The site is located off Woolton Road approximately 10km south east of Liverpool City Centre. A site location plan is included as Drawing No. C6069 RevB/01 within Appendix A.
<b>National Grid Reference</b>	341320mE, 386010mN.
<b>Topography and Features</b>	<p>The site comprises undeveloped, partly wooded, disused former recreational land / playing fields. The site is roughly rectangular in shape, and gently rises in height (by approximately 5m - 9m) towards the east and south east.</p> <p>Densely wooded / overgrown vegetated areas are located along the majority of the site perimeter, and within the eastern and central southern site areas. A derelict former building (named as a pavilion on available OS plans), is located along the southern site boundary, which appears to have been vandalised and partly burnt out. Access into the site is granted via a gate to the south of the building.</p>
<b>Approximate Site Area</b>	13.7 hectares.
<b>Site Boundaries</b>	<p>The site is bound by Allerton Road to the west and Woolton Road to the south, with residential properties beyond. Ye Priory Court (a residential development) is located to the north east of the site, and a footpath forms the eastern boundary. A medical centre is located to the south east of the site.</p> <p>The site perimeter is formed by dense vegetation / woodland and a combination of stone walls and / or mesh / herras fencing.</p>
<b>Current Land Use</b>	Disused.
<b>Invasive Plant Species</b>	None noted. An ecological survey should be carried out to confirm if any invasive plant species are present.
<b>Adjacent Land Uses</b>	Residential.

The main site features are shown on Drawing No. C6069 RevB/02 within Appendix A.

### 3. ENVIRONMENTAL SETTING

#### 3.1. Introduction

Published environmental, geological and historical data relating to the site has been reviewed. A summary of relevant information is provided below and a copy of the Envirocheck report is enclosed in Appendix B.

#### 3.2. Historical Development

Table 3.1 presents a summary of the site history as indicated from the various editions of the Ordnance Survey maps from 1849 to 2014. It is not the intention of this report to describe in detail all of the changes that have occurred on or adjacent to the site, only those pertinent to the proposed development.

**Table 3.1 Site History**

Map Dates	On-Site Features	Off-Site Features (only features within 500m that may affect the site are listed)
1849 - 1968	<p>The majority of the site comprises open undeveloped, partly wooded / vegetated land associated with Allerton Priory to the north.</p> <p>Three un-named buildings are present centrally along the southern boundary, with an associated footpath and track / road, both crossing the site in a north-south orientation.</p> <p>An area of landscaped grounds with associated footpaths is shown within the easternmost area of the site.</p>	<p>Site is surrounded by predominantly open agricultural land with occasional residential buildings. Allerton Priory is shown to be located to the north east of the site and several glasshouses are shown to the southeast.</p> <p>The Priory to the north is developed as a school by approximately 1927, with associated playing fields.</p> <p>Three large ponds are denoted approximately 400m to the north west of the site. Two small ponds are shown along the north eastern site boundary and 250m to the south.</p> <p>Two ponds are shown between 1894 and 1928 approximately 210m and 340m to the south west of the site, developed over by residential properties by 1927.</p> <p>Allerton Cemetery is shown from 1928 approximately 400m to the south of the site. Residential development is evident to the west of the site from 1927, and a new school is shown 120m to the northwest by 1960.</p> <p>A drainage feature with associated</p>

		earthworks is shown approximately 240m to the east of the site, in a north-south orientation.
1973 - 2014	<p>The site is shown to be in use as playing fields.</p> <p>The three structures are shown to have been cleared in the south of the site, and replaced by the construction of a small pavilion. The track and footpaths are no longer shown.</p>	<p>The pond to the northeast of the site is no longer shown.</p> <p>The former greenhouses to the south east of the site are shown to be redeveloped with a medical centre.</p> <p>The school to the northeast of the site is shown as a residential development by 2006.</p>

### 3.3. Published Geological Information

A summary of available published geological information is provided in Table 3.2.

**Table 3.2 Geological Summary**

<b>Sources of Information</b>	<p>BGS 1:50,000 scale geological map (Sheet 97 - Runcorn).</p> <p>BGS online lexicon and borehole scans.</p>
<b>Made Ground</b>	None recorded on the published maps but may be locally present given the history of the site.
<b>Drift Geology</b>	None shown to underlie the site.
<b>Solid Geology</b>	Triassic Chester Pebble Beds Formation (CPB Formation), recorded by the BGS to comprise ' <i>sandstone, fine- to coarse-grained, commonly pebbly, with conglomerates and sporadic siltstones; cross-stratified</i> '.
<b>Mining and Quarrying</b>	<p><b>Coal Mining:</b> Based on published geological information and the CA gazetteer, it is considered that there is a negligible risk of coal mining affecting the surface stability of the property.</p> <p><b>Quarries:</b> Inspection of the historical OS maps and geological information has not revealed any evidence of quarrying/pits beneath the site.</p>
<b>BGS Borehole Records</b>	A borehole record located 800m to the east of the site (dated February 1982) indicates topsoil over CPB Formation, proven to a depth of 67.20m below ground level (bgl). The bedrock is described as ' <i>medium grained red sandstone, locally pebbly with some thin bands of micaceous</i> '.

	<p><i>sandstone</i>.</p> <p>A borehole record located 700m to the west (dated December 1989) indicates made ground to a depth of 1.0m bgl, overlying '<i>soft to firm grey/brown silty very sandy clay</i>', to a depth of 3.70m bgl. '<i>Very dense reddish brown weathered pebbly sandstone</i>' was recorded underlying the clay, proven to a depth of 4.90m bgl.</p>
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### 3.4. Hydrology and Hydrogeology

A summary of available information pertaining to hydrology and hydrogeology is present in Tables 3.3 to 3.5.

**Table 3.3 Surface Water Features**

	Presence/location
<b>EA GQA Classified Watercourses</b>	None recorded within 500m of the site.
<b>Unclassified Watercourses</b>	An un-named tertiary river is located 252m to the east of the site. No other unclassified water courses within 500m of the site.
<b>Licensed Surface Water Abstractions</b>	None recorded within 1km of the site.
<b>Surface Water Features</b>	A small pond is located 240m to the south, associated with a nursery. No other features within 500m of the site.
<b>Flood Risk Status</b>	The site is not recorded to be located within an area at risk of flooding from rivers or seas (Zones 2 or 3).

**Table 3.4 Groundwater Occurrence and Abstraction**

	Presence/location
<b>Licensed Abstractions</b>	None recorded within 1km of the site.
<b>Source Protection</b>	None recorded within 500m of the site.

	<b>Presence/location</b>
<b>Zones</b>	
<b>Springs</b>	None recorded on available OS plans within the site.

**Table 3.5 Groundwater Vulnerability Status**

	<b>Environment Agency Classification</b>
<b>Groundwater Classification</b>	<p>Based on the aquifer classification system developed by the EA, the solid geology is classified as a Principal Aquifer.</p> <p>Principal Aquifers are classified as <i>'layers of rock or drift deposits that have high intergranular and/or fracture permeability - they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale'</i>.</p>

### 3.5. Landfilling and Waste Management

**Table 3.6 Waste Management Activities**

	<b>Presence / Location</b>	<b>Comments</b>
<b>Local Authority Recorded Landfills</b>	Three local authority recorded landfills within 1.5km of the site. The two closest records are both located 846m to the north east.	<p>The two records located 846m to the north east are referenced as Woolton Quarry, Liverpool to Merseyside Waste Disposal Authority. No further relevant details are supplied.</p> <p>The third registered landfill is located 959m to the north east, also referenced to Woolton Quarry. The license is currently lapsed / cancelled. Recorded authorised wastes included construction industrial wastes, inert non-hazardous wastes and timber.</p>
<b>Historical</b>	Two historical landfills are recorded within 1.5km of the	The historical landfill is referenced as Woolton Quarry South, and is recorded

	Presence / Location	Comments
<b>Recorded Landfills</b>	site, the closest located 808m to the north east.	to have accepted 'deposited waste including inert waste'. The last input date for one of the two records is December 1983.
<b>Other Licensed Waste Management Facilities</b>	None recorded within 1km of the site.	
<b>Evidence of Landfilling On or Within 250m of Site</b>	None recorded within the site.	A small former pond located along the northeastern site boundary, presumed to have been infilled in approximately 1973.
<b>Walkover Evidence of Fly-Tipping on Site?</b>	None evident.	
<b>Ground Gas Risk Assessment Required?</b>	No.	Subject to the proven absence / presence of gassing sources (i.e. organic rich made ground or natural soils) during the ground investigation.

### 3.6. Radon Risk

To determine whether the site is at risk from radon gas, the BRE Document "BRE 211 - Radon: Guidance on the protective measures for new dwellings" together with the National Radiological Protection Board (NRPB) "Radon Atlas of England and Wales" have been referenced.

These documents, together with a geological assessment contained within the Envirocheck report, which includes information obtained from the Health Protection Agency and British Geological Survey, state that the site lies within an area in which **no radon protective measures are required**.

### **3.7. Other**

A local nature reserve is recorded 35m to the south east and this was designated in March 2012.

#### **4. PREVIOUS INVESTIGATION FINDINGS**

No previous desk study or site investigation reports relating to this site have been made available to Sirius.

## 5. PRELIMINARY CONCEPTUAL MODEL

Based on the desk study, a combined preliminary conceptual site model and conceptual exposure model (CSM) has been developed for the proposed future land use (residential with gardens). This summarises the understanding of surface and sub-surface features, the potential contaminant sources, transport pathways and receptors in order to assess potential contaminant linkages. In assessing the likely contaminants present at the site, reference has been made to the Industry Profile report series issued by the Department of the Environment and other relevant supporting documentation.

A qualitative risk assessment has also been made of the likelihood of any contaminant linkage operating and its potential significance.

The preliminary conceptual model is presented in schematic form in Drawing No. C6069 RevB/03 in Appendix A.

In summary, the preliminary CSM has identified the following potential contaminant linkages which could result in an unacceptable risk to the proposed end-use, denoted as moderate or higher risk on the CSM:

- Ingestion, inhalation of dust and dermal contact with metals, hydrocarbons (including PAH compounds) and asbestos containing materials in any localised areas of made ground and topsoil/shallow subsoil presenting a low to moderate risk of significant contaminant linkage to human health receptors.
- Possible Asbestos Containing Materials (ACMs) within the infrastructure of the existing building on site, posing a **low** risk to construction workers and adjacent site users, **providing an appropriate method of removal is undertaken.**

## **6. FIELDWORK**

### **6.1. Scope of Investigation**

The information contained in this report is limited to areas of land accessible during the investigation within the site boundary, as indicated on the site plan, presented in Appendix A as Drawing No. C6069 RevB/02.

Sirius scoped the intrusive ground investigation using guidance presented in BS 5930:1999+A2:2010, BS10175:2011+A1:2013 and BS EN 1997:2004 and 2007.

The investigation, which was supervised by a Sirius Geoenvironmental Engineer, took place between 13<sup>th</sup> and 15<sup>th</sup> August 2014 and comprised:

- Excavation of 33 trial pits to a maximum depth of 2.30m.
- Drilling of 8 window sample boreholes to a maximum depth of 2.50m.

Permanent monitoring installations for groundwater monitoring were installed in each window sample borehole.

### **6.2. Strata Description**

Detailed descriptions of strata and groundwater observations made during investigation works, together with samples recovered, are presented on the engineer's exploratory hole records in Appendix C.

Standard strata descriptions are compliant with BS EN 1997:2004 and 2007, BS EN ISO 14688:2002 and 2004 and BS EN ISO 14689:2003. The depths of strata on the record sheets are recorded from current ground levels at each location, unless indicated otherwise.

### **6.3. Exploratory Hole Locations**

The exploratory hole locations were based on the findings of the preliminary conceptual site model, in order to target specific areas of interest and achieve a general site coverage. Procedures and principles recommended in CLR4, BS 10175:2011+A1:2013 and BS EN 1997: 2007 were followed when determining exploratory hole locations.

The following table details the exploratory hole rationale:

**Table 6.1 Exploratory Hole Rationale**

Exploratory Hole	Rationale
TP15, TP29, TP31, TP32 and WS8	Targeting area of former development.
TP16 and TP33	Targeting existing building on site.
TP1 - TP14, TP17 - TP28, TP30 and WS1 - WS7.	General site coverage.

Exploratory hole locations are shown on Drawing No. C6069 RevB/02 in Appendix A of this report.

#### **6.4. Geotechnical Testing**

Geotechnical laboratory testing was carried out on selected samples in accordance with techniques outlined in BS 1377:1990 “Methods of Test for Soils for Civil Engineering Purposes” at the laboratory of Professional Soils Laboratory (PSL), a UKAS accredited laboratory.

Geotechnical and geochemical test results are included within Appendix D of this report.

#### **6.5. Chemical Testing**

Selected samples of the topsoil, made ground and natural soils were tested for a range of potential contaminants under subcontract with Derwentside Environmental Testing Services (DETS), a UKAS and MCERTS accredited laboratory.

The potential contaminants of concern identified by the preliminary conceptual site model were selected as the analytes for the samples recovered from the site. The results of soil analysis, as received from the laboratory, are presented in Appendix D of this report.

## 7. GROUND CONDITIONS AND MATERIAL PROPERTIES

### 7.1. Strata Profile

A summary of the strata profile is provided in Table 7.1.

**Table 7.1 Strata Profile**

Strata	Depth Range (Thickness Range)	Description and Comments
Topsoil	Ground Level  (0.20m to 0.60m)	<p>Topsoil / reworked topsoil was recorded across the majority of the site (with the exception of TP32), to depths of between 0.20m and 0.60m bgl. Topsoil was generally recorded as comprising clayey slightly gravelly fine to coarse sand, with roots and rootlets. Gravels included sub-angular to sub-rounded sandstone.</p> <p>Where topsoils were recorded as reworked, these were generally described as including fragments of brick, plastic, ceramics, concrete and coal. Reworked topsoils were encountered within the area of former development to the south of the site (within trial pits TP29, TP30 and TP33), and within the northwest of the site (including TP1 - TP3, TP27, TP28 and WS1).</p>
Made Ground	Ground level to 0.50m (0.40m to 1.65m)	<p>Made ground soils were encountered within the central southern area of the site (within TP29 and TP32), and within the northwest of the site (TP1, TP2, TP28 and WS1). Made ground was deepest within the northwest of the site.</p> <p>Made ground soils were recorded to include reworked natural soils with anthropogenic inclusions. Reworked made ground soils included grey-brown firm gravelly clay and grey clayey gravelly fine to coarse sand, with gravels including brick, sandstone, glass, plastic and concrete. Occasional cobble and boulders of brick, sandstone, metal, wood and plastic were</p>

Strata	Depth Range (Thickness Range)	Description and Comments
		also recorded.
Residual CPB Formation	0.20m to 1.65m (0.10m to 1.55m)	<p>The topsoil and / or made ground was generally found to be underlain by residual strata of the CPB Formation. The exception to this was within exploratory hole locations TP7, TP9, TP14, TP19, TP24 and TP29, where topsoil / made ground was recorded to directly overlie competent sandstone bedrock.</p> <p>Residual soils were recorded to include medium dense to very dense yellow-red-brown, occasionally clayey and/or silty, gravelly fine to coarse sands. Gravels included sub-angular to sub-rounded sandstone. Occasional cobbles and boulders of sandstone were recorded.</p> <p>Firm, medium strength, low plasticity red-brown sandy gravelly clay was recorded within TP26 at a depth of between 0.65m and 0.90m bgl.</p>
CPB Bedrock	0.20m to 2.40m (NR)	<p>Competent sandstone bedrock (representative of the CPB Formation) was recorded within each exploratory hole, at depths of between 0.20m and 2.40m bgl, proven to a maximum depth of 2.50m bgl. Each window sample borehole refused within the sandstone, indicative of weak competent sandstone.</p> <p>The bedrock was recorded as comprising very weak weathered red-brown sandstone, recovered as fine to coarse gravel and cobbles.</p>

NR - not recorded

## **7.2. Material Properties**

### **Made Ground**

Water soluble sulphate ( $\text{SO}_4^{2-}$ ) results obtained from seven samples of made ground / topsoil recorded concentrations of between 14mg/l and 140mg/l, together with pH values of between 5.3 and 7.9.

These results indicate a design sulphate class of DS-1 and an ACEC class of AC-1, in accordance with BRE Special Digest 1 (2005) for the design of buried concrete, based on brownfield site designation and mobile groundwater conditions.

### **Residual CPB Formation**

Water soluble sulphate ( $\text{SO}_4^{2-}$ ) results obtained from three samples of residual CPB Formation soils recorded concentrations of <10mg/l, together with pH conditions of between 6.3 and 6.9.

These results indicate a design sulphate class of DS-1 and an ACEC class of AC-1, in accordance with BRE Special Digest 1 (2005) for the design of buried concrete, based on brownfield site designation and mobile groundwater conditions.

One Atterberg limit determination undertaken on a sample of cohesive residual CPB Formation obtained from TP26 at a depth of 0.70m bgl revealed a liquid limit of 31%, a plastic limit of 16% and a plasticity index of 15%. This data indicates the cohesive material to be of low plasticity. Calculation of the modified plasticity index indicates this sample to have a low volume change potential.

The Consistency Index (Ic) of the sample obtained from TP26 at a depth of 0.70m bgl indicates an Ic value of 1.33, indicative of very stiff cohesive soils.

Three uncorrected SPT N values recorded within the granular residual CPB Formation ranged between 18 and >50, indicating generally medium dense to very dense soils.

Particle size distribution tests (PSDs) were undertaken on selected samples of the granular CPB Formation. The graphical representations are included within the geotechnical laboratory results within Appendix D.

California Bearing Ratio (CBR) testing was undertaken on a disturbed sample of the granular residual soils, following re-compaction in the laboratory using a 2.5kg rammer. The results of laboratory CBR testing are summarised in Table 7.2.

**Table 7.2 Summary of CBR Testing**

<b>Sample Ref.</b>	<b>Depth (m bgl)</b>	<b>Moisture Content (%)</b>	<b>Bulk Density (Mg/m<sup>3</sup>)</b>	<b>Dry Density (Mg/m<sup>3</sup>)</b>	<b>CBR Value Top (%)</b>	<b>CBR Value Bottom (%)</b>
TP5	0.50-1.0	11	2.03	1.83	59	71

### **CPB Formation**

Six SPTs undertaken within the sandstone bedrock returned uncorrected 'N' values >50 blows. The SPT N values indicate very weak to weak rock.

### **7.3. Groundwater**

No groundwater strikes were encountered during the recent ground investigation.

### **7.4. Visual / Olfactory Evidence of Contamination**

During our works, there was no olfactory or visual evidence of hydrocarbon or similar contamination.

Made ground consisting of brick and concrete was locally encountered. Such soils can contain elevated concentrations of metals, asbestos and PAHs.

## 8. RESULTS OF CHEMICAL TESTING

### 8.1. Assessment Methodology

The laboratory test data for the relevant soil strata were reviewed for completeness and consistency.

For each potential contaminant of concern, analytical data for soil samples were evaluated against the relevant Generic Assessment Criteria (GAC). If one or more samples recorded contaminant concentrations that exceeded that GAC, then consideration was given to statistical analysis of data in accordance with the "Planning Scenario" approach described in CL:AIRE & CIEH (2008)<sup>1</sup>. On this occasion statistical analysis has not been undertaken as the contaminants of concern are all below the respective GACs.

### 8.2. Soil Analysis

Results of chemical analysis are presented in full in Appendix D.

For this site, measured values were compared to Generic Assessment Criteria (GAC) derived for a residential with homegrown produce end use. Source data for all GACs are provided in Appendix E.

The chemical analysis results and screening criteria are summarised in Table 8.1.

**Table 8.1 Summary of Total Soil Concentrations**

Determinand	No. of Samples Tested	Range of Results (mg/kg unless specified)	US95	GAC (1% SOM)	No. of Samples >GAC	Samples Exceeding GAC
<b>Metals</b>						
Inorganic Arsenic	7	5.7 - 15	NA	37	0	
Cadmium	7	0.4 - 0.8	NA	11	0	
Chromium (III)	7	19 - 52	NA	910	0	
Lead	7	45 - 160	NA	200	0	
Inorganic Mercury	7	<0.05 - 0.31	NA	40	0	
Selenium	7	<0.5	NA	250	0	
Copper	7	9.2 - 56	NA	200	0	

<sup>1</sup> CL:AIRE & CIEH "Guidance on Comparing Soil Contamination Data with a Critical Concentration", May 2008.

Determinand	No. of Samples Tested	Range of Results (mg/kg unless specified)	US95	GAC (1% SOM)	No. of Samples >GAC	Samples Exceeding GAC
Nickel	7	12 - 31	NA	180	0	
Zinc	7	29 - 120	NA	450	0	
<b>Inorganics</b>						
pH	10	5.3 - 7.9	NA	<5 - >9	0	
Total Sulphate	7	300 - 600	NA	2400	0	
Water Sol. Sulphate	10	<0.01 - 0.14	NA	0.5 g/l	0	
<b>Speciated PAH</b>						
Acenaphthene	7	<0.1 - 0.1	NA	200	0	
Anthracene	7	<0.1 - 0.2	NA	2300	0	
Acenaphthylene	7	<0.1 - 0.1	NA	170	0	
Benzo(a)anthracene	7	<0.1 - 0.8	NA	<i>b(a)p*</i>	0	
Benzo(b)fluoranthene	7	<0.1 - 0.9	NA	<i>b(a)p*</i>	0	
Benzo(k)fluoranthene	7	<0.1 - 0.3	NA	<i>b(a)p*</i>	0	
Benzo(g,h,i)perylene	7	<0.1	NA	<i>b(a)p*</i>	0	
Benzo(a)pyrene	7	<0.1 - 0.6	NA	2.1	0	
Chrysene	7	<0.1 - 0.6	NA	<i>b(a)p*</i>	0	
Dibenzo(a,h)anthracene	7	<0.1	NA	<i>b(a)p*</i>	0	
Fluoranthene	7	<0.1 - 1.2	NA	280	0	
Fluorene	7	<0.1	NA	170	0	
Indeno(1,2,3-cd)pyrene	7	<0.1	NA	<i>b(a)p*</i>	0	
Naphthalene	7	<0.1	NA	1.0	0	
Pyrene	7	<0.1 - 1.2	NA	620	0	
Phenanthrene	7	<0.1 - 0.8	NA	95	0	
<b>Speciated TPH</b>						
Aliphatic EC 5-6	3	<0.01	NA	24	0	
Aliphatic EC >6-8	3	<0.01	NA	53	0	
Aliphatic EC >8-10	3	<0.01	NA	13	0	
Aliphatic EC >10-12	3	<1.5	NA	62	0	
Aliphatic EC >12-16	3	<1.2	NA	510	0	
Aliphatic EC >16-35	3	<13.4	NA	41000	0	
Aromatic EC 5-7	3	<0.01	NA	53	0	
Aromatic EC >7-8	3	<0.01	NA	100	0	
Aromatic EC >8-10	3	<0.01	NA	20	0	
Aromatic EC >10-12	3	<0.9	NA	63	0	
Aromatic EC >12-16	3	<0.5	NA	140	0	
Aromatic EC >16-21	3	<0.6	NA	260	0	
Aromatic EC >21-35	3	<1.4	NA	1100	0	
<b>Others</b>						
Phenol	7	<0.3	NA	110	0	
Asbestos	7	NAD	NA	No fibres present	0	

Determinand	No. of Samples Tested	Range of Results (mg/kg unless specified)	US95	GAC (1% SOM)	No. of Samples >GAC	Samples Exceeding GAC
TOC	7	0.9 - 2.9	NA	3 w/w%	0	

Table based on a Residential with Homegrown Produce end use.

US95 - 95<sup>th</sup> percentile estimate of the mean value; GAC - generic assessment criterion; NA - not applicable.

\* assessed using benzo(a)pyrene as a surrogate marker.

### *Metals and Metalloids*

No metals recorded concentrations above the relevant GAC.

### *Other Inorganic Analytes*

No inorganics recorded concentrations above the relevant GAC.

### *Organics*

No organics recorded concentrations above the relevant GAC.

## **9. REVISED CONCEPTUAL MODEL AND GENERIC QUANTITATIVE RISK ASSESSMENT OF POLLUTANT LINKAGES**

The preliminary combined conceptual site model and conceptual exposure model, developed from the desk study information and presented in Section 5, has been revised in light of the ground investigation and the chemical analysis results presented above.

The revised conceptual model has been developed for the proposed future land use (residential with gardens). This summarises the understanding of surface and sub-surface features, the potential contaminant sources, transport pathways and receptors.

The revised conceptual model is presented in schematic form in Appendix A, Drawing No. C6069 RevB/04. In summary, the revised CSM has not identified any potential contaminant linkages which could result in an unacceptable risk to the proposed end-use.

Possible ACMs may be present within the infrastructure of existing buildings on site, which would pose a low risk to construction workers and adjacent site users, providing an appropriate method of removal is undertaken.

## **10. CONCLUSIONS AND RECOMMENDATIONS**

### **10.1. General**

This geoenvironmental appraisal has been performed for land at Woolton Road, Liverpool.

It has been assumed in the production of this report that the site is to be developed for a residential with gardens end use. In addition, it has been assumed that ground levels will not change significantly from those described in this report. If this is not the case, then amendments to the interpretation and conclusions in this report may be required.

### **10.2. Flood Risk**

The site is not recorded by the EA to be located within an area at risk of flooding (Zone 2 or 3).

### **10.3. Geotechnical**

#### **Mining and Quarrying**

It is considered that there is a negligible risk of coal mining affecting surface stability at the site.

Inspection of historical OS mapping has not revealed any evidence of quarrying/pits beneath, or within close proximity of, the site. However, the possibility of encountering unrecorded localised quarrying/pitting cannot be entirely discounted, albeit considered unlikely. It is recommended that excavations are examined for evidence of backfilled quarries/pits. If a backfilled quarry/pit is suspected, advice should be sought from a suitably qualified engineer.

#### **Foundations**

This investigation has identified topsoil (partly reworked) across the site to depths of between 0.10m and 0.60m bgl, which in turn was locally underlain by a variable thickness of reworked made ground to a maximum depth of 1.65m bgl. Made ground was encountered within the northwest, and central southern areas of the site.

The topsoil and / or made ground were found to be underlain by strata of the CPB Formation, typically comprising an upper layer of residual sandstone, recovered as medium dense to very dense sand (locally recovered as firm, medium strength clay), over competent sandstone bedrock.

The topsoil and made ground are considered unsuitable to support structural loads associated with this development owing to the possibility of bearing capacity failure and excessive total/differential settlements. It is therefore recommended that the most suitable foundation solution would comprise spread foundations (strip and trench fill) taken down through the topsoil and / or made ground into the underlying natural ground of adequate strength. It is considered for the proposed development, formations on natural materials are expected to predominantly comprise medium dense to very dense granular residual CPB Formation and / or competent CPB Formation bedrock. As indicated by TP26, thin clay soils may be encountered within foundation excavations within the residual CPB Formation. If encountered, the foundation excavation should be extended through these soils.

Based on a minimum recorded SPT N value of 18 for the natural residual sandstone, a minimum angle of shearing resistance ( $\Phi'$ ) of  $32^\circ$  can be assumed. For preliminary foundation design a 0.60m wide strip footing at a minimum depth of 0.50m bgl, could support a design loading of 100kN/m run and limit settlements to 25mm.

The above calculations are based on theoretical foundations. It is recommended that foundation settlements are reviewed by the design engineer when final loading arrangements and foundation sizes are known.

It is anticipated that bedrock will be locally encountered at founding depth across parts of the site. If foundation excavations encounter bedrock, all of the foundation should be deepened to this stratum in order to limit the potential for unacceptable differential settlements. A design bearing pressure of 200kN/m<sup>2</sup> could be assumed for the CPB Formation (at least extremely to very weak sandstone), assuming a 0.60m wide strip foundation. Should higher allowable bearing pressures be required, confirmatory testing should be undertaken.

It is recommended that if foundations are to bear upon a mix of residual soils and bedrock, the settlement performance between foundation types should be calculated / assessed. Reinforcement of foundations to cater for potential differential settlement of the residual and competent bedrock should be anticipated.

### **General Foundation Considerations**

The natural cohesive soils have been found to be of low volume change potential in accordance with NHBC Standards Chapter 4.2. Foundations placed into natural in situ clay soils should be a minimum of 750mm deep, deepened within the zone of influence of existing or proposed trees in accordance with NHBC guidance. A tree survey was beyond the scope of this investigation but

should be undertaken to enable production of a detailed plot specific foundation schedule. The removal of trees during development of the site may cause heave of cohesive soils and heave protection measures should be adopted in foundation design where appropriate.

Foundations should be taken below a line drawn up at 45° from the base of any existing or proposed services.

The layout of foundations should consider any relic foundations, substructures or other potential obstructions on site.

If greater structural loads are anticipated alternative foundation solutions may be required.

It should be noted that any groundwater encountered may have an adverse affect on foundation construction and performance, particularly in winter months (such as softening / loosening of founding materials / instability of excavation walls etc). This should be considered when designing foundations.

## **Floors**

In accordance with NHBC Standards 2010 (Chapters 4.2, 4.6 and 5.1), and based on proven ground conditions it is considered that ground bearing floor slabs could be utilised across the majority of the site. It is recommended as a minimum the topsoil is removed from beneath the floor plan area of each plot and the floor constructed upon a layer of well compacted, clean, inert hardcore.

Where made ground exceeds 600mm, for example within the northwest of the site, suspended floor slabs may be required. Locally suspended floor slabs may also be required where soil swelling may occur (i.e. within the zone of influence of existing or proposed trees or hedges) or where the ground has insufficient bearing capacity.

## **Sulphate Attack**

Based on the samples tested, a Design Sulphate Class of DS-1 and an ACEC Class of AC-1 should be used for buried concrete structures in contact with both made ground and natural ground.

## **Soakaways**

Based upon proven ground conditions, soakaway drainage may be viable at the site. This would be subject to confirmatory soakaway infiltration testing in accordance with BRE 365 once development levels/layout etc have been designed and approved.

It should be borne in mind that water levels are likely to fluctuate with seasonal/rainfall and may therefore be substantially higher at wetter times of year and subsequently reduce the capacity of soakaways.

## **Groundworks, Excavation Stability and Groundwater Dewatering**

Excavations into the underlying natural soils should be assumed to be unstable. No man entry into unsupported excavations should be allowed without an appropriate risk assessment. Reference to CIRIA report 97 (1983) should be made to establish suitable means of support or battering of excavation sides.

Based on the results of this investigation, significant groundwater seepages or inflows within shallow excavations (<2.50m) are considered unlikely across the majority of the site. However, if groundwater is encountered at shallow depth it should be possible to deal with these seepages through normal site pumping practices for any shallow excavations open for short periods of time.

It is recommended that an adequate drainage system for surface water be installed by a competent contractor in order to prevent surface water ponding or collecting both during and post construction, as this may lead to deterioration of the founding stratum.

It is recommended that in order to reduce the possibility of softening or swelling of cohesive soils at the base of foundation trenches, it should be suitably blinded with concrete.

Competent bedrock strata are anticipated at shallow depth across the majority of the site. For deep excavations, competent bedrock may require breaking-out using heavy mechanical plant. Hydraulic breakers may be required along foundation trenches to avoid over break of the competent sandstone rock.

## **Pavements and Highways**

Based on a visual examination of the topsoil and made ground, a preliminary CBR value of <2.5% is suggested. Highways Agency document HD25 Interim Advice Note 73/06 Revision 1 (2009) states that where a subgrade has a CBR lower than 2.5%, it is considered unsuitable support for a

pavement foundation since it would tend to deform under construction traffic, and must be improved.

For preliminary design, and based on visual examination of the soil and limited laboratory testing, a CBR value 5% is suggested for natural granular soils.

It is recommended that in-situ CBR testing is carried out following completion of the enabling works, when final site levels will be known. All road design should be discussed with the relevant local authority if highways are to be subject to a Section 38 agreement.

#### **10.4. Asbestos-Containing Materials**

Asbestos-containing materials were not observed within the soils encountered during this investigation. However, the possibility of asbestos sheeting, used as shuttering, and/or fragments of asbestos-containing materials within made ground or fill materials beneath concrete slabs cannot be entirely discounted. If encountered, advice should be sought from an appropriately qualified asbestos specialist and an appropriate strategy developed for the safe removal/disposal of the material.

As part of any future redevelopment works, the existing building on site is expected to be demolished. A pre-demolition asbestos survey will be required prior to commencing demolition works.

#### **10.5. Soil and Groundwater Contamination**

##### **Risk Evaluation for the Proposed Land Use (residential with gardens)**

The revised conceptual site model confirms that no significant contaminant linkages exist for either site end users or controlled waters.

##### *Utilities*

It is recommended that the results of the chemical testing and details of the proposed remedial works are provided to the appropriate utility companies to determine the necessity for service protection.

##### *Construction and Maintenance Workers*

Contamination may pose a short-term (acute) or long-term (chronic) risk to workers during construction and maintenance. The potential risks must be specifically assessed as part of the

health and safety evaluation for the works to be performed in accordance with prevailing legislation. Site practices must conform to the specific legislative requirements and follow appropriate guidance (e.g., HSE, 1991; CIRIA, 1996).

## **Outline Remediation Requirements**

It is considered that the majority of the reworked topsoil and made ground encountered on site may be suitable for re-use within landscaped areas/gardens, subject to regulatory approval. However, it is recommended that any site-won topsoil and made ground (for use as subsoil) should be stockpiled, sorted (given the local presence of anthropogenic material including concrete, plastic, metal and brick) and further tested and assessed, as part of the enabling works, before being approved for re-use.

At this stage, based on the laboratory test results and visual assessment, it is thought that the natural topsoil material encountered on site is likely to be suitable for re-use within landscaped areas/gardens, subject to regulatory approval. However, it is recommended that any site won topsoil should be stockpiled, and further tested and assessed, as part of the enabling works, before being approved for re-use.

It is remotely possible that areas of more significant contamination, not identified to date, may be encountered on site during excavation and construction works. If any areas of noxious, odorous, brightly coloured, fibrous, liquid etc contamination are encountered, further advice should be sought from a suitably qualified consultant. A contingency should be included for disposal / treatment of any, as yet, unproven contamination.

Any soils removed from site should be undertaken in accordance with the current Duty of Care Regulations, the EC Landfill Directive and the EA Technical Guidance Document WM3, dated 2015. Chemical results should be forwarded to suitably licensed soil treatment centres and / or landfill operators to determine disposal costs/options.

### **10.6. Ground Gas**

Radon protection measures are not currently required for the proposed development on this site.

### **10.7. Invasive Plants**

Invasive plant species were not observed on this site at the time of investigation.

It is recommended that the absence of invasive plant species is confirmed by a qualified consultant ecologist and their advice taken on appropriate treatment. The treatment of any invasive species should take place in advance of the proposed construction works.

#### **10.8. Disposal of Soils**

Any materials removed from site should be undertaken in accordance with the current Duty of Care requirements and the EA Technical Guidance Document WM3, dated 2015. The waste may also be subject to Waste Acceptance Criteria (WAC) testing. In light of the new regulations it is recommended that discussion with landfill operators takes place at an early stage.

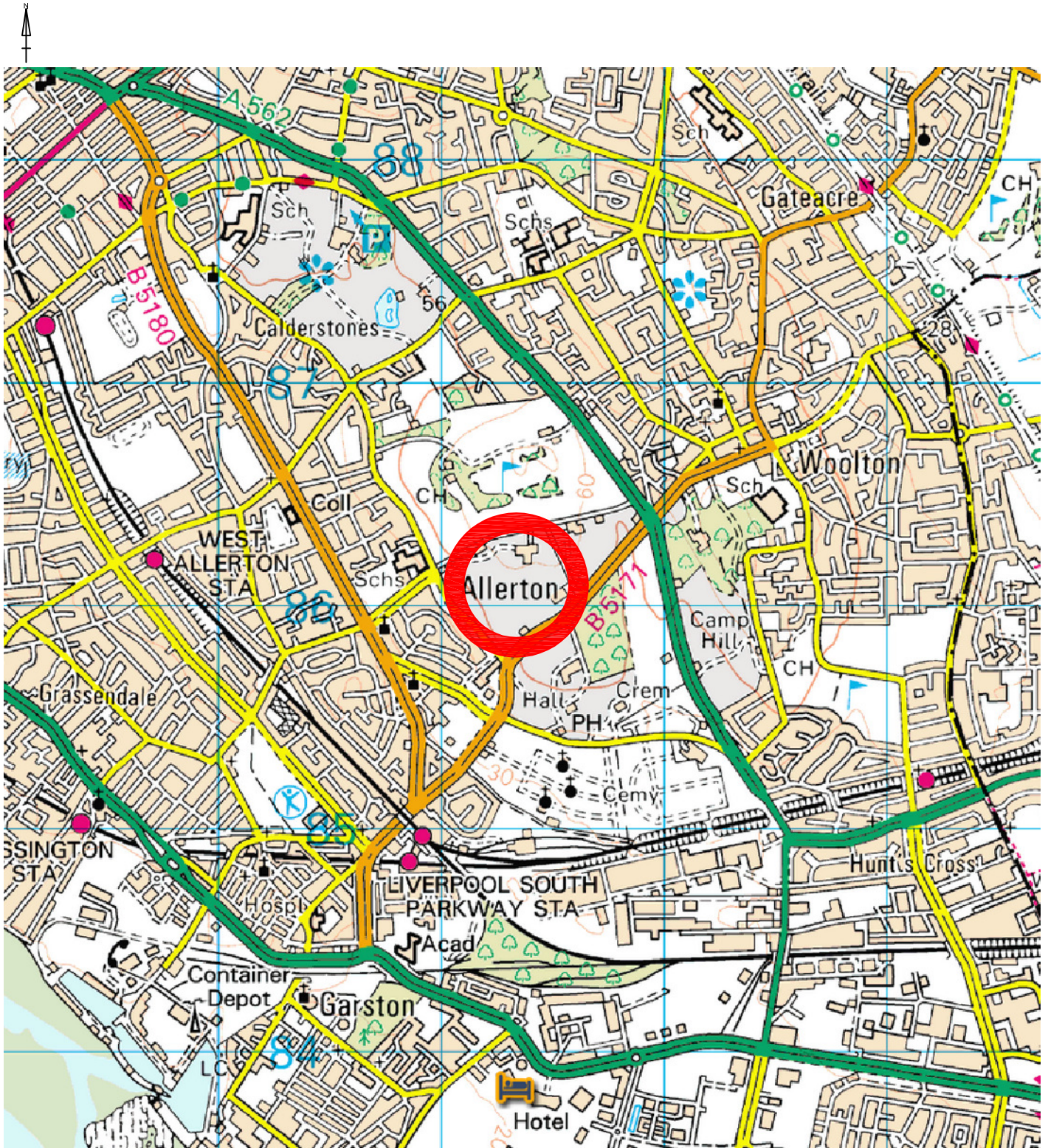
## **11. REGULATORY APPROVALS**

The conclusions and recommendations presented above are considered reasonable based on the findings of the site investigation. However, these cannot be guaranteed to gain regulatory approval and, therefore, the report should be passed to the appropriate regulatory authorities and/or other organisations for their comment and approval prior to undertaking any works on site.



# APPENDIX A

## FIGURES AND DRAWINGS



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#### NOTES

 Site Location

#### REVISION

0	For Information
A	>>
B	>>
C	>>
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FAX: 0113 264 9962



#### CLIENT

Redrow Homes Limited

#### SITE

Woolton Road  
Liverpool

#### DRAWING TITLE

Site Location Plan

#### DRAWING NO.

C6069 RevB/01

#### DRAWN BY

DT

#### DATE

April 2016

#### REVISION NO.

0

#### APPROVED BY

GH



#### SCALE

1:25,000

A4



# NOTES

-  Window Sample Borehole Location
-  Trial Pit Location

## REVISION

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B	>>
C	>>
D	>>

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## CLIENT

**Redrow Homes  
Limited**

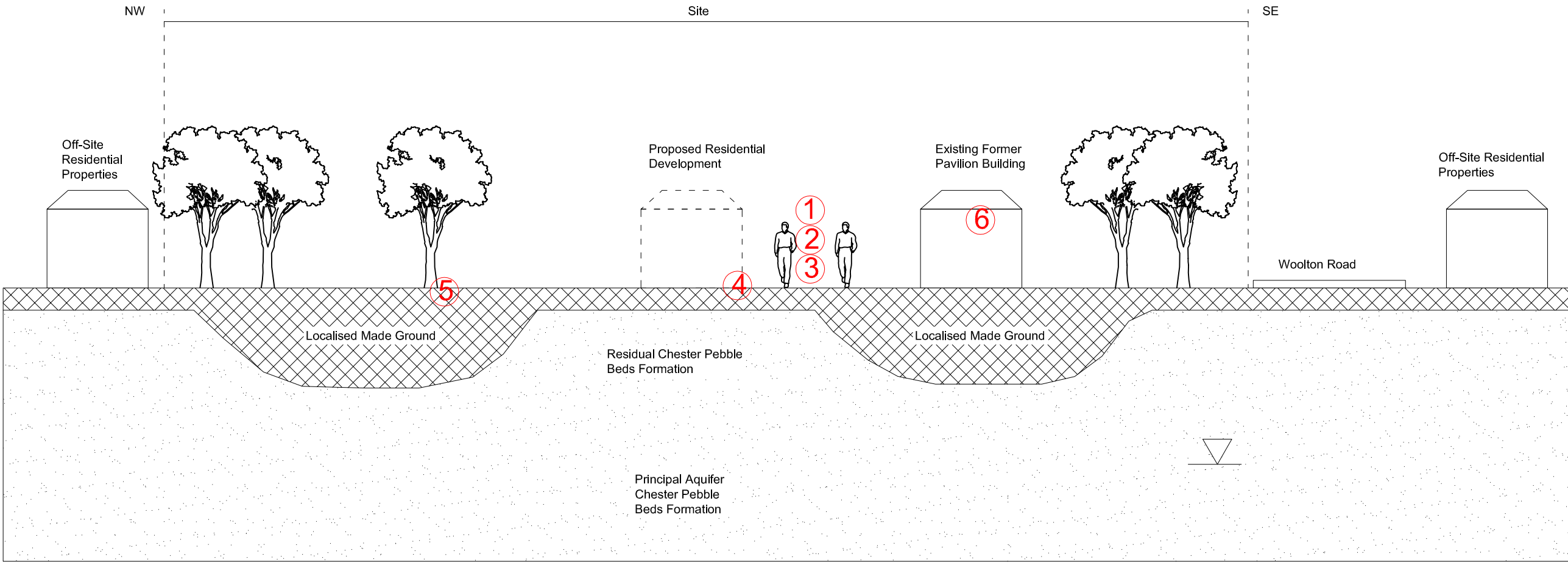
## SITE

**Woolton Road  
Liverpool**

## DRAWING TITLE

**Site Features Plan  
showing Exploratory Hole  
Locations**

DRAWING NO. C6069 RevB/02		REVISION NO. 0	
DRAWN BY DT		APPROVED BY GH	
DATE April 2016	SCALE 1:2000	PAPER SIZE A3	




Contamination Sources	Contamination Pathways	Potential Receptors	Risk of Significant Contaminant Linkage
Ingestion, inhalation of dust and dermal contact with potential heavy metals, hydrocarbons (including PAHs) and asbestos containing materials in topsoil, any localised made ground and / or shallow soils.	1 Direct and indirect ingestion 2 Dermal contact 3 Inhalation of contaminated particles 4 Sulphate attack 5 Plant uptake	Future site users, adjacent site users and construction workers  Built environment Plant growth	Low to moderate  Low to moderate Low to moderate
Possible asbestos containing materials within the infrastructure of the existing buildings on site.	6 Inhalation of contaminated particles	Future site users, adjacent site users and construction workers	Low, assuming an appropriate method of removal is undertaken.

NOTES

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CLIENT

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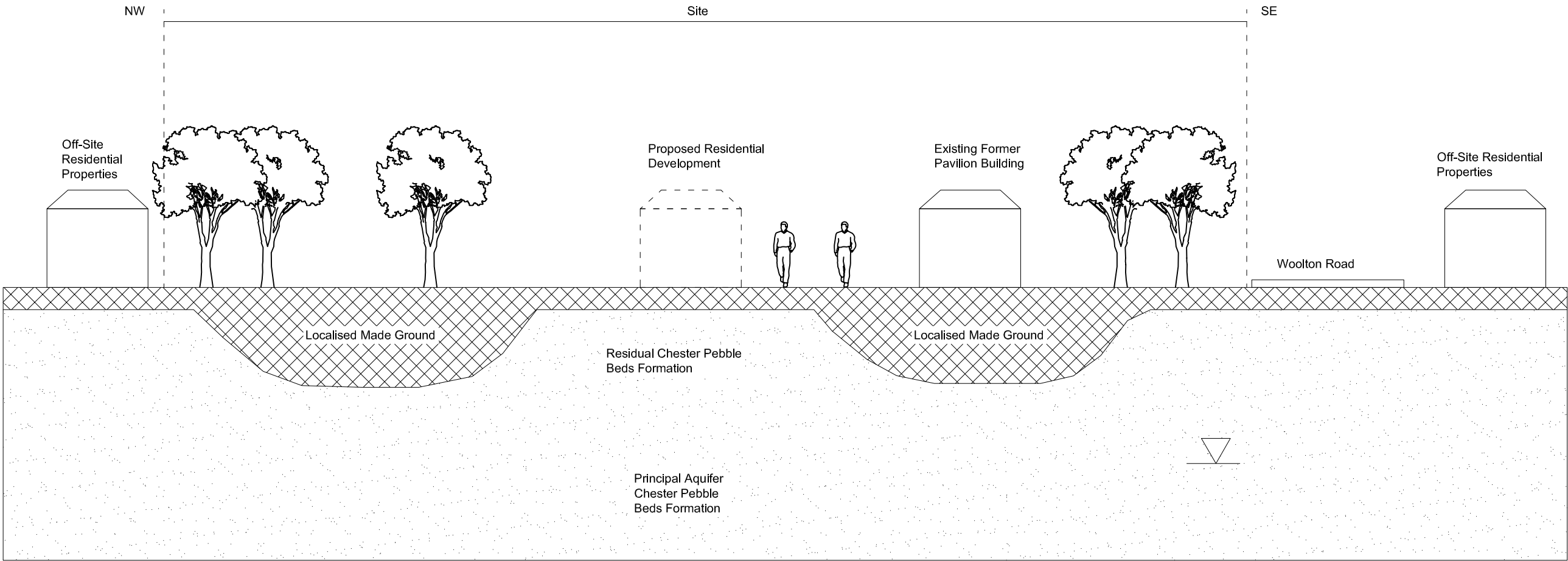
SITE

Woolton Road,  
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DRAWING TITLE

Preliminary Conceptual  
Site Model

DRAWING NO. C6069 RevB/03	REVISION NO. 0	
DRAWN BY DT	APPROVED BY GH	
DATE April 2016	SCALE NTS	PAPER SIZE A3



The revised conceptual site model has not identified any potential contaminant linkages which could result in an unacceptable risk to the proposed end-use. Possible asbestos containing materials may be present within the infrastructure of existing buildings on site, which would pose a low risk to construction workers and adjacent site users, providing an appropriate method of removal is undertaken.

NOTES

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CLIENT

Redrow Homes Limited

SITE

Woolton Road  
Liverpool

DRAWING TITLE

Revised Conceptual Site  
Model

DRAWING NO. C6069 RevB/04		REVISION NO. 0	
DRAWN BY DT		APPROVED BY GH	
DATE April 2016	SCALE NTS		PAPER SIZE A3



#### NOTES

Proposed development layout  
reproduced from drawing ref.  
REDM2039 Sk007 Masterplan  
Sketch RevB, as provided by  
client, dated April 2016.

#### REVISION

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#### CLIENT

**Redrow Homes  
Limited**

#### SITE

**Woolton Road  
Liverpool**

#### DRAWING TITLE

**Proposed Development  
Layout**

DRAWING NO. C6069 RevB/05		REVISION NO. 0	
DRAWN BY DT		APPROVED BY GH	
DATE April 2016	SCALE NTS		PAPER SIZE A3



APPENDIX B

ENVIROCHECK REPORT



# Envirocheck<sup>®</sup> Report:

## Datasheet

### Order Details:

**Order Number:**

58469453\_1\_1

**Customer Reference:**

C6069/RIH

**National Grid Reference:**

341320, 386010

**Slice:**

A

**Site Area (Ha):**

13.67

**Search Buffer (m):**

1000

### Site Details:

Site at 341280, 386030

### Client Details:

P Coulson  
Sirius Geotechnical & Environmental Ltd  
4245 Park Approach  
Thorpe Park  
Leeds  
LS15 8GB

Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	4
Hazardous Substances	-
Geological	6
Industrial Land Use	12
Sensitive Land Use	15
Data Currency	16
Data Suppliers	22
Useful Contacts	23

## Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination. For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.

In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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## Report Version v47.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
<b>Agency &amp; Hydrological</b>					
Contaminated Land Register Entries and Notices					
Discharge Consents					
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 1			1	1
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 1			Yes	
Pollution Incidents to Controlled Waters	pg 1			1	3
Prosecutions Relating to Authorised Processes					
Prosecutions Relating to Controlled Waters					
Registered Radioactive Substances					
River Quality					
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 2				(*2)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 2	Yes	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 2	Yes	n/a	n/a	n/a
Superficial Aquifer Designations			n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
Detailed River Network Lines					n/a
Detailed River Network Offline Drainage	pg 2			Yes	n/a

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
<b>Waste</b>					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 4				2
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Recorded Landfill Sites	pg 4				2
Registered Landfill Sites	pg 5				1
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
<b>Hazardous Substances</b>					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
<b>Geological</b>					
BGS 1:625,000 Solid Geology	pg 6	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 6	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 9				8
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
Brine Compensation Area			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 11	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 11	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 11		Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 11		Yes	n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
<b>Industrial Land Use</b>					
Contemporary Trade Directory Entries	pg 12		1	12	21
Fuel Station Entries	pg 14				1
<b>Sensitive Land Use</b>					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves	pg 15		1		
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 15				1
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	<b>Local Authority Pollution Prevention and Controls</b> Name: Springwood Crematorium Location: Springwood Avenue, Allerton, LIVERPOOL, Merseyside, L18 9SZ Authority: Liverpool City Council, Liverpool Environmental Health & Trading Standards Division Permit Reference: PPC 41/04 (EP/VAR/02/2010) Dated: 25th February 1992 Process Type: Local Authority Air Pollution Control Description: PG5/2 Crematoria <b>Status: Authorised</b> Positional Accuracy: Manually positioned to the address or location	A7NE (SE)	464	1	341795 385548
2	<b>Local Authority Pollution Prevention and Controls</b> Name: Bp Express (Booker Avenue) Location: Booker Avenue, Greenhill Road, LIVERPOOL, Merseyside, L18 9SD Authority: Liverpool City Council, Liverpool Environmental Health & Trading Standards Division Permit Reference: PPC 1460/1/98 Dated: 9th September 1998 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station <b>Status: Authorisation revokedRevoked</b> Positional Accuracy: Automatically positioned to the address	A13SW (W)	991	1	340083 386368
	<b>Nearest Surface Water Feature</b>	A11SW (SE)	252	-	341626 385691
3	<b>Pollution Incidents to Controlled Waters</b> Property Type: Not Given Location: Merseyside Authority: Environment Agency, North West Region Pollutant: Not Given Note: Not Supplied Incident Date: 27th April 1992 Incident Reference: 92440054 Catchment Area: Mersey - Tidal Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NW (SE)	305	2	341600 385600
4	<b>Pollution Incidents to Controlled Waters</b> Property Type: Water Company Sewage: Foul Sewer Location: Stream At Rear Of , 174 Stamfordham Drive Authority: Environment Agency, North West Region Pollutant: Other Sewage Note: Smells; Unknown Tributary; Sewage Incident Date: 25th November 1997 Incident Reference: 97741954 Catchment Area: Mersey - Tidal Receiving Water: Freshwater Stream/River Cause of Incident: Blocked Sewer Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A6SW (SW)	742	2	340800 385200
4	<b>Pollution Incidents to Controlled Waters</b> Property Type: Miscellaneous Premises: Other Location: Stream At Rear Of , 174 Stamfordham Drive Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Unknown Note: Unknown Stream; Not Known Incident Date: 11th November 1997 Incident Reference: 97741897 Catchment Area: Mersey - Tidal Receiving Water: Freshwater Stream/River Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A6SW (SW)	742	2	340805 385195
4	<b>Pollution Incidents to Controlled Waters</b> Property Type: Other Location: Stamfordham Drive , LIVERPOOL Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Inert Suspended Solids Note: Unknown Tributary Mersey; Silt/Worms Incident Date: 29th July 1997 Incident Reference: 97741386 Catchment Area: Mersey - Tidal Receiving Water: Freshwater Stream/River Cause of Incident: High Flow Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A6SW (SW)	746	2	340800 385195

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Water Abstractions</b> Operator: Toleman Holding Company Limited Licence Number: 2569030007 Permit Version: Not Supplied Location: Borehole, Edwards Lane, Speke, LIVERPOOL Authority: Environment Agency, North West Region Abstraction: Cooling & Manufacturing Abstraction Type: Not Supplied Source: Groundwater Daily Rate (m3): 686 Yearly Rate (m3): 134662 Details: Additional Purpose: Cooling; Licence Status: Revoked Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A4SE (SE)	1858	2	342600 384400
	<b>Water Abstractions</b> Operator: A Clegg & Sons Ltd Licence Number: 2569028005 Permit Version: Not Supplied Location: Borehole, Gateacre, LIVERPOOL Authority: Environment Agency, North West Region Abstraction: Manufacturing Abstraction Type: Not Supplied Source: Groundwater Daily Rate (m3): 227 Yearly Rate (m3): 27276 Details: Licence Status: Revoked Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(NE)	1925	2	342700 387700
	<b>Groundwater Vulnerability</b> Soil Classification: Soils of High Leaching Potential (U) - Soil information for restored mineral workings and urban areas is based on fewer observations than elsewhere. A worst case vulnerability classification (H) assumed, until proved otherwise Map Sheet: Sheet 16 West Cheshire Scale: 1:100,000	A11NW (SW)	0	2	341316 386012
	<b>Drift Deposits</b> None				
	<b>Bedrock Aquifer Designations</b> Aquifer Designation: Principal Aquifer	A11NW (SW)	0	3	341316 386012
	<b>Superficial Aquifer Designations</b> No Data Available				
	<b>Extreme Flooding from Rivers or Sea without Defences</b> None				
	<b>Flooding from Rivers or Sea without Defences</b> None				
	<b>Areas Benefiting from Flood Defences</b> None				
	<b>Flood Water Storage Areas</b> None				
	<b>Flood Defences</b> None				
	<b>Detailed River Network Lines</b> None				
5	<b>Detailed River Network Offline Drainage</b> River Type: Tertiary River Hydrographic Area: D011	A11NE (E)	252	2	341834 386032
6	<b>Detailed River Network Offline Drainage</b> River Type: Tertiary River Hydrographic Area: D011	A11NE (E)	265	2	341838 385995
7	<b>Detailed River Network Offline Drainage</b> River Type: Tertiary River Hydrographic Area: D011	A11NE (E)	265	2	341837 386003



## Agency & Hydrological

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
8	<b>Detailed River Network Offline Drainage</b> River Type: Tertiary River Hydrographic Area: D011	A11SE (E)	290	2	341859 385897
9	<b>Detailed River Network Offline Drainage</b> River Type: Tertiary River Hydrographic Area: D011	A11SE (E)	348	2	341885 385800
10	<b>Detailed River Network Offline Drainage</b> River Type: Tertiary River Hydrographic Area: D011	A7NE (SE)	499	2	341906 385584

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
11	<b>Historical Landfill Sites</b> Licence Holder: Not Supplied Location: Liverpool, Merseyside Name: Woolton Quarry South Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD16927 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste: Deposited Waste included Inert Waste Type: EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: GDO M184	A16NW (NE)	808	2	341998 386827
12	<b>Historical Landfill Sites</b> Licence Holder: Wimpey and Company Location: Woolton, Merseyside Name: Woolton Quarry (North) Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD16924 First Input Date: 17th September 1979 Last Input Date: 31st December 1983 Specified Waste: Deposited Waste included Inert Waste Type: EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: 077/02, GDO M084	A15NE (NE)	846	2	341916 386914
	<b>Local Authority Landfill Coverage</b> Name: Merseyside Waste Disposal Authority - Has supplied landfill data		0	4	341316 386012
	<b>Local Authority Landfill Coverage</b> Name: Liverpool City Council - Has no landfill data to supply		0	1	341316 386012
13	<b>Local Authority Recorded Landfill Sites</b> Location: Woolton Quarry, Liverpool Reference: L018 Authority: Merseyside Waste Disposal Authority <b>Last Reported Status:</b> Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Moderate	A15NE (NE)	846	4	341913 386916
14	<b>Local Authority Recorded Landfill Sites</b> Location: Woolton Quarry South, Liverpool Reference: L031 Authority: Merseyside Waste Disposal Authority <b>Last Reported Status:</b> Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Moderate	A15NE (NE)	846	4	341913 386916

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
15	<b>Registered Landfill Sites</b> Licence Holder: Ian Glen Ltd Licence Reference: 077/02 Site Location: Woolton Quarry, Quarry Street, Woolton, Liverpool, Merseyside, L18 Licence Easting: 342000 Licence Northing: 387000 Operator Location: As Site Address Authority: Environment Agency - North West Region, South Area Site Category: Landfill Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source: No known restriction on source of waste Restrictions: Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st September 1979 Preceded By: Not Given Licence: Superseded By: Not Given Licence: Positional Accuracy: Manually positioned to the road within the address or location Boundary Accuracy: Not Applicable Authorised Waste: Construction Ind. Wastes Inert Non-Haz. Waste Timber @ < 10 % Per Load Prohibited Waste: Inflammable Waste Liquid/Sludge Wastes Notifiable Wastes Putrescible Waste	A20SW (NE)	959	2	342000 387000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS 1:625,000 Solid Geology</b> Description: Permian and Triassic sandstones, undifferentiated, including Bunter and Keuper	A11NW (SW)	0	3	341316 386012
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: <15 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel: <15 mg/kg Concentration:	A11NW (SW)	0	5	341316 386012
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: <15 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel: <15 mg/kg Concentration:	A11NW (S)	0	5	341316 386000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: <15 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel: <15 mg/kg Concentration:	A10NE (W)	43	5	341000 386012
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: <15 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel: <15 mg/kg Concentration:	A10NE (W)	68	5	341000 386000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: 15 - 25 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 90 - 120 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel: 15 - 30 mg/kg Concentration:	A10SE (SW)	137	5	341000 385856
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: <15 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 90 - 120 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel: 15 - 30 mg/kg Concentration:	A10SE (SW)	148	5	341012 385836

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: 15 - 25 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 90 - 120 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel: 15 - 30 mg/kg Concentration:	A10NW (W)	157	5	340902 386000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: <15 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 90 - 120 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel: 15 - 30 mg/kg Concentration:	A11NE (E)	254	5	341838 386000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: 15 - 25 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 90 - 120 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel: 15 - 30 mg/kg Concentration:	A12NW (E)	414	5	342000 386012
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: <15 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel: <15 mg/kg Concentration:	A12NW (E)	414	5	342000 386121
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: <15 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 90 - 120 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel: 15 - 30 mg/kg Concentration:	A15SE (NE)	420	5	341765 386515
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic: 15 - 25 mg/kg Concentration: Cadmium: <1.8 mg/kg Concentration: Chromium: 90 - 120 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel: 15 - 30 mg/kg Concentration:	A12NW (E)	425	5	342000 386000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel <15 mg/kg Concentration:	A12NW (E)	538	5	342112 386000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 90 - 120 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	A16SW (NE)	582	5	342000 386533
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel <15 mg/kg Concentration:	A15NE (NE)	729	5	341858 386818
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 90 - 120 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	A7SW (S)	744	5	341316 385000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 90 - 120 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	A19SW (N)	803	5	341316 387000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 90 - 120 mg/kg Concentration: Lead Concentration: 150 - 300 mg/kg Nickel 15 - 30 mg/kg Concentration:	A6SE (S)	807	5	341000 385000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic 15 - 25 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 90 - 120 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel 15 - 30 mg/kg Concentration:	A18SE (N)	812	5	341000 387000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel <15 mg/kg Concentration:	A19SW (N)	859	5	341630 387000
	<b>BGS Estimated Soil Chemistry</b> Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic <15 mg/kg Concentration: Cadmium <1.8 mg/kg Concentration: Chromium 60 - 90 mg/kg Concentration: Lead Concentration: <150 mg/kg Nickel <15 mg/kg Concentration:	A20SW (NE)	959	5	342000 387000
16	<b>BGS Recorded Mineral Sites</b> Site Name: Woolton Quarries Location: Quarry Street, Woolton, Liverpool, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 8561 Type: Opencast <b>Status: Ceased</b> Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Triassic Geology: Chester Pebble Beds Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A16NW (NE)	847	3	342070 386825
17	<b>BGS Recorded Mineral Sites</b> Site Name: Holly Farm Sand Pit Location: , Garston, Liverpool Source: British Geological Survey, National Geoscience Information Service Reference: 91063 Type: Opencast <b>Status: Ceased</b> Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Triassic Geology: Chester Pebble Beds Formation Commodity: Sand Positional Accuracy: Located by supplier to within 10m	A6SW (SW)	887	3	340840 384992
18	<b>BGS Recorded Mineral Sites</b> Site Name: Woolton Quarries Location: Quarry Street, Woolton, Liverpool, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 149221 Type: Opencast <b>Status: Ceased</b> Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Triassic Geology: Chester Pebble Beds Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A16NW (NE)	899	3	342090 386875

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
19	<b>BGS Recorded Mineral Sites</b> Site Name: Woolton No 2 Location: Quarry Street, Woolton, Liverpool, Merseyside Source: British Geological Survey, National Geoscience Information Service Reference: 10973 Type: Opencast <b>Status: Ceased</b> Operator: Morrison & Sons, Ltd. Operator Location: Morrison & Sons, Ltd., Grange Terrace, Wavertree, Liverpool, Lancashire Periodic Type: Triassic Geology: Chester Pebble Beds Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A15NE (NE)	920	3	341950 386980
20	<b>BGS Recorded Mineral Sites</b> Site Name: Woolton Quarries Location: Quarry Street, Woolton, Liverpool, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 149220 Type: Opencast <b>Status: Ceased</b> Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Triassic Geology: Chester Pebble Beds Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A16NW (NE)	933	3	342070 386930
21	<b>BGS Recorded Mineral Sites</b> Site Name: Folly Vale Location: Vale Road, Woolton, Liverpool, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 149223 Type: Opencast <b>Status: Ceased</b> Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Triassic Geology: Chester Pebble Beds Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A19SW (N)	945	3	341425 387100
22	<b>BGS Recorded Mineral Sites</b> Site Name: Hill Foot Villa Location: , Allerton, Liverpool Source: British Geological Survey, National Geoscience Information Service Reference: 91044 Type: Opencast <b>Status: Ceased</b> Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Triassic Geology: Chester Pebble Beds Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A8NE (E)	948	3	342435 385557
23	<b>BGS Recorded Mineral Sites</b> Site Name: Woolton Quarries Location: Quarry Street, Woolton, Liverpool, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 149222 Type: Opencast <b>Status: Ceased</b> Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Triassic Geology: Chester Pebble Beds Formation Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A20SW (NE)	962	3	342015 386995
	<b>BGS Measured Urban Soil Chemistry</b> No data available				
	<b>BGS Urban Soil Chemistry Averages</b> No data available				
	<b>Coal Mining Affected Areas</b> In an area that might not be affected by coal mining				
	<b>Non Coal Mining Areas of Great Britain</b> No Hazard				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<b>Potential for Collapsible Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NW (SW)	0	3	341316 386012
	<b>Potential for Compressible Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NW (SW)	0	3	341316 386012
	<b>Potential for Ground Dissolution Stability Hazards</b> No Hazard				
	<b>Potential for Landslide Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NW (SW)	0	3	341316 386012
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NW (SW)	0	3	341316 386012
	<b>Potential for Running Sand Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	136	3	341013 385836
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NW (SW)	0	3	341316 386012
	<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	136	3	341013 385836
	<b>Radon Potential - Radon Protection Measures</b> Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A11NW (SW)	0	3	341316 386012
	<b>Radon Potential - Radon Affected Areas</b> Affected Area: The property is in a lower probability radon area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A11NW (SW)	0	3	341316 386012

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
24	<b>Contemporary Trade Directory Entries</b> Name: Alpha Cleaning Services Ltd Location: 69, Springwood Avenue, Garston, Liverpool, L19 4TU Classification: Cleaning Services - Commercial <b>Status:</b> Inactive Positional Accuracy: Automatically positioned to the address	A10SE (SW)	248	-	341032 385660
25	<b>Contemporary Trade Directory Entries</b> Name: Allerton Cemetery Location: Woolton Road, Allerton, Liverpool, L19 5NH Classification: Cemeteries & Crematoria <b>Status:</b> Inactive Positional Accuracy: Automatically positioned to the address	A7NW (SE)	343	-	341586 385531
26	<b>Contemporary Trade Directory Entries</b> Name: Aigburth Guttering Specialists Location: 41, Chalfont Road, Liverpool, L18 9UR Classification: Fascias and Soffits <b>Status:</b> Inactive Positional Accuracy: Automatically positioned to the address	A14SW (NW)	370	-	340729 386323
27	<b>Contemporary Trade Directory Entries</b> Name: Stain Busters Location: 22, Ambleside Road, Allerton, Liverpool, Merseyside, L18 9XT Classification: Carpet, Curtain & Upholstery Cleaners <b>Status:</b> Inactive Positional Accuracy: Automatically positioned to the address	A10NW (W)	380	-	340671 386198
27	<b>Contemporary Trade Directory Entries</b> Name: Stainbusters Location: 22, Ambleside Road, Allerton, Liverpool, Merseyside, L18 9XT Classification: Carpet, Curtain & Upholstery Cleaners <b>Status:</b> Active Positional Accuracy: Automatically positioned to the address	A10NW (W)	380	-	340671 386198
27	<b>Contemporary Trade Directory Entries</b> Name: G A P Cleaning Services Ltd Location: 22, Ambleside Road, Allerton, Liverpool, L18 9XT Classification: Carpet, Curtain & Upholstery Cleaners <b>Status:</b> Active Positional Accuracy: Automatically positioned to the address	A10NW (W)	380	-	340671 386198
28	<b>Contemporary Trade Directory Entries</b> Name: Allerton Cemetery Location: 192, Woolton Road, Garston, Liverpool, L19 5NF Classification: Cemeteries & Crematoria <b>Status:</b> Active Positional Accuracy: Automatically positioned to the address	A6NE (S)	390	-	341239 385362
28	<b>Contemporary Trade Directory Entries</b> Name: Allerton Cemetery Location: 192, Woolton Road, Garston, LIVERPOOL, L19 5NF Classification: Cemeteries & Crematoria <b>Status:</b> Inactive Positional Accuracy: Automatically positioned to the address	A6NE (S)	390	-	341239 385362
29	<b>Contemporary Trade Directory Entries</b> Name: Microwave Services Allerton Location: 444, Allerton Road, Allerton, Liverpool, L18 9UU Classification: Domestic Appliances - Servicing, Repairs & Parts <b>Status:</b> Active Positional Accuracy: Automatically positioned to the address	A14SW (NW)	438	-	340760 386481
29	<b>Contemporary Trade Directory Entries</b> Name: Carpet Cleaning Centre Location: 444, Allerton Road, Allerton, Liverpool, L18 9UU Classification: Carpet, Curtain & Upholstery Cleaners <b>Status:</b> Inactive Positional Accuracy: Automatically positioned to the address	A14SW (NW)	438	-	340760 386481
30	<b>Contemporary Trade Directory Entries</b> Name: Springwood Crematorium Location: Springwood Av, Woolton, Liverpool, L25 7UN Classification: Cemeteries & Crematoria <b>Status:</b> Inactive Positional Accuracy: Manually positioned to the address or location	A7NE (SE)	461	-	341786 385546
30	<b>Contemporary Trade Directory Entries</b> Name: Springwood Crematorium Location: Springwood Av, Woolton, Liverpool, Merseyside, L25 7UN Classification: Cemeteries & Crematoria <b>Status:</b> Inactive Positional Accuracy: Manually positioned to the address or location	A7NE (SE)	461	-	341786 385546

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
31	<b>Contemporary Trade Directory Entries</b> Name: Wingray Autos Ltd Location: Woolton Garage, Menlove Avenue, Liverpool, L25 7SB Classification: Car Dealers <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A15SE (NE)	494	-	341932 386478
32	<b>Contemporary Trade Directory Entries</b> Name: Dusta Divas Location: 25, Hurstlyn Road, Liverpool, L18 9TX Classification: Cleaning Services - Domestic <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address	A9NE (W)	631	-	340412 386120
33	<b>Contemporary Trade Directory Entries</b> Name: Tesco Petrol Location: Allerton Road, Woolton, Liverpool, Merseyside, L25 7SF Classification: Petrol Filling Stations <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address	A16NW (NE)	661	-	341995 386649
34	<b>Contemporary Trade Directory Entries</b> Name: Errew Ltd Location: 24, Heath Road, Liverpool, L19 4UF Classification: Safes & Vaults - Suppliers & Installers <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address	A9SE (W)	665	-	340432 385807
35	<b>Contemporary Trade Directory Entries</b> Name: Artdeco Location: 33, Rodick Street, Liverpool, Merseyside, L25 7SL Classification: Cosmetic Manufacturers <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address	A15NE (NE)	704	-	341960 386728
36	<b>Contemporary Trade Directory Entries</b> Name: Dolly Char Location: Kinsale Dr, Allerton, Liverpool, Merseyside, L19 5PH Classification: Cleaning Services - Domestic <b>Status: Active</b> Positional Accuracy: Manually positioned to the road within the address or location	A6SW (S)	805	-	340955 385022
36	<b>Contemporary Trade Directory Entries</b> Name: Dolly Char Location: Kinsale Dr, Liverpool, Merseyside, L19 5PH Classification: Cleaning Services - Domestic <b>Status: Inactive</b> Positional Accuracy: Manually positioned to the road within the address or location	A6SW (S)	808	-	340976 385009
37	<b>Contemporary Trade Directory Entries</b> Name: Springwood Crematorium Location: Springwood Av, Woolton, Liverpool, Merseyside, L25 7UN Classification: Cemeteries & Crematoria <b>Status: Active</b> Positional Accuracy: Manually positioned within the geographical locality	A8NW (SE)	806	-	342102 385348
38	<b>Contemporary Trade Directory Entries</b> Name: Walton Location: 13a, Quarry Street, Liverpool, L25 6EY Classification: Blacksmiths & Forgemasters <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address	A16NW (NE)	822	-	342167 386707
38	<b>Contemporary Trade Directory Entries</b> Name: Woolton Village Furnishings Location: 74, Allerton Road, Woolton, Liverpool, L25 7RG Classification: Furniture - Reproduction <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address	A16NW (NE)	861	-	342212 386715
38	<b>Contemporary Trade Directory Entries</b> Name: Bespoke Fire Surrounds Of Woolton Ltd Location: 74, Allerton Road, Woolton, Liverpool, L25 7RG Classification: Fireplaces & Mantelpieces <b>Status: Active</b> Positional Accuracy: Automatically positioned to the address	A16NW (NE)	861	-	342212 386715
39	<b>Contemporary Trade Directory Entries</b> Name: Pathblaster Location: 17, Stonehouse Mews, Yew Tree Road, Allerton, Liverpool, L18 3JN Classification: Cleaning Services - Domestic <b>Status: Inactive</b> Positional Accuracy: Automatically positioned to the address	A18SW (N)	883	-	340918 387056

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
40	<b>Contemporary Trade Directory Entries</b> Name: Krisp & Kleen Location: 57, Allerton Road, Woolton, Liverpool, L25 7RE Classification: Laundries & Launderettes <b>Status:</b> Active Positional Accuracy: Automatically positioned to the address	A16NW (NE)	887	-	342253 386707
40	<b>Contemporary Trade Directory Entries</b> Name: Adak Location: 57A Allerton Rd, Woolton, Liverpool, L25 7RE Classification: Laundries & Launderettes <b>Status:</b> Inactive Positional Accuracy: Manually positioned to the road within the address or location	A16NW (NE)	892	-	342248 386721
40	<b>Contemporary Trade Directory Entries</b> Name: B D S Location: 60a, Allerton Road, Woolton, Liverpool, L25 7RG Classification: Painting & Decorating Supplies <b>Status:</b> Active Positional Accuracy: Automatically positioned to the address	A16NW (NE)	909	-	342254 386740
41	<b>Contemporary Trade Directory Entries</b> Name: Liverpool Dairy Products Location: School Lane, Woolton, Liverpool, L25 7UA Classification: Dairies <b>Status:</b> Active Positional Accuracy: Automatically positioned to the address	A12SE (E)	894	-	342463 385849
41	<b>Contemporary Trade Directory Entries</b> Name: Handleys Cooperative Dairy Location: School Lane, Woolton, Liverpool, L25 7UA Classification: Dairies <b>Status:</b> Active Positional Accuracy: Automatically positioned to the address	A12SE (E)	894	-	342463 385849
42	<b>Contemporary Trade Directory Entries</b> Name: Village Cleaners Location: 40, Allerton Road, Woolton, Liverpool, L25 7RG Classification: Dry Cleaners <b>Status:</b> Inactive Positional Accuracy: Automatically positioned to the address	A16NW (NE)	963	-	342302 386767
42	<b>Contemporary Trade Directory Entries</b> Name: Village Cleaners Location: 40, Allerton Road, Woolton, Liverpool, L25 7RG Classification: Dry Cleaners <b>Status:</b> Inactive Positional Accuracy: Automatically positioned to the address	A16NW (NE)	963	-	342302 386767
43	<b>Contemporary Trade Directory Entries</b> Name: Booker Self Serve Location: 100, Booker Avenue, Liverpool, Merseyside, L18 9SD Classification: Petrol Filling Stations <b>Status:</b> Inactive Positional Accuracy: Automatically positioned to the address	A13SW (W)	991	-	340083 386368
44	<b>Contemporary Trade Directory Entries</b> Name: Bodytec Location: 3, Herald Avenue, Liverpool, Merseyside, L24 9GG Classification: Commercial Vehicle Bodybuilders & Repairers <b>Status:</b> Inactive Positional Accuracy: Automatically positioned to the address	A3NW (S)	996	-	341539 384773
44	<b>Contemporary Trade Directory Entries</b> Name: Tinsley Location: 3, Herald Avenue, Liverpool, Merseyside, L24 9GG Classification: Road Haulage Services <b>Status:</b> Inactive Positional Accuracy: Automatically positioned to the address	A3NW (S)	996	-	341539 384773
45	<b>Fuel Station Entries</b> Name: Booker Self Serve Location: Booker Avenue, Greenhill Road, West Allerton, LIVERPOOL, Merseyside, L18 9SD Brand: Obsolete Premises Type: Not Applicable <b>Status:</b> Obsolete Positional Accuracy: Automatically positioned to the address	A13SW (W)	991	-	340083 386368

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
46	<b>Local Nature Reserves</b> Name: Allerton (Eric Hardy) Multiple Area: N Area (m2): 193414.27 Source: Natural England Designation Date: 28th March 2012	A11SW (SE)	35	8	341460 385840
47	<b>Nitrate Vulnerable Zones</b> Name: Not Supplied Description: Surface Water Source: Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	A12NW (E)	728	9	342300 386250

Agency & Hydrological	Version	Update Cycle
<b>Contaminated Land Register Entries and Notices</b> Knowsley Metropolitan Borough Council - Department of Planning and Development Liverpool City Council - Liverpool Environmental Health & Trading Standards Division Halton Borough Council - Environmental Health Department Ellesmere Port And Neston Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Wirral Borough Council - Environmental Health Division Cheshire West and Chester Council - Environmental Health Department	April 2013 February 2013 January 2013 March 2008  November 2012 November 2013	Annual Rolling Update Annual Rolling Update Annual Rolling Update Not Applicable  Annual Rolling Update Annually
<b>Discharge Consents</b> Environment Agency - North West Region	May 2014	Quarterly
<b>Enforcement and Prohibition Notices</b> Environment Agency - North West Region	March 2013	As notified
<b>Integrated Pollution Controls</b> Environment Agency - North West Region	October 2008	Not Applicable
<b>Integrated Pollution Prevention And Control</b> Environment Agency - North West Region	May 2014	Quarterly
<b>Local Authority Integrated Pollution Prevention And Control</b> Liverpool City Council - Liverpool Environmental Health & Trading Standards Division Halton Borough Council - Environmental Health Department Knowsley Metropolitan Borough Council - Environmental Health and Consumer Protection Division Wirral Borough Council - Environmental Health Division Ellesmere Port And Neston Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Cheshire West and Chester Council - Environmental Health Department	December 2013 February 2013 June 2013  June 2014 May 2009  October 2013	Monthly Annual Rolling Update Annual Rolling Update  Annual Rolling Update Not Applicable  Annually
<b>Local Authority Pollution Prevention and Controls</b> Liverpool City Council - Liverpool Environmental Health & Trading Standards Division Halton Borough Council - Environmental Health Department Knowsley Metropolitan Borough Council - Environmental Health and Consumer Protection Division Wirral Borough Council - Environmental Health Division Ellesmere Port And Neston Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Cheshire West and Chester Council - Environmental Health Department	December 2013 February 2013 June 2013  June 2014 May 2009  October 2013	Monthly Annual Rolling Update Annual Rolling Update  Annual Rolling Update Not Applicable  Annually
<b>Local Authority Pollution Prevention and Control Enforcements</b> Liverpool City Council - Liverpool Environmental Health & Trading Standards Division Halton Borough Council - Environmental Health Department Knowsley Metropolitan Borough Council - Environmental Health and Consumer Protection Division Wirral Borough Council - Environmental Health Division Ellesmere Port And Neston Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Cheshire West and Chester Council - Environmental Health Department	December 2013 February 2013 June 2013  June 2014 May 2009  October 2013	Monthly Annual Rolling Update Annual Rolling Update  Annual Rolling Update Not Applicable  Annually
<b>Nearest Surface Water Feature</b> Ordnance Survey	July 2012	Quarterly
<b>Pollution Incidents to Controlled Waters</b> Environment Agency - North West Region	January 2000	Not Applicable
<b>Prosecutions Relating to Authorised Processes</b> Environment Agency - North West Region	March 2013	As notified
<b>Prosecutions Relating to Controlled Waters</b> Environment Agency - North West Region	March 2013	As notified
<b>Registered Radioactive Substances</b> Environment Agency - North West Region	May 2014	Quarterly
<b>River Quality</b> Environment Agency - Head Office	November 2001	Not Applicable

Agency & Hydrological	Version	Update Cycle
<b>River Quality Biology Sampling Points</b> Environment Agency - Head Office	July 2012	Annually
<b>River Quality Chemistry Sampling Points</b> Environment Agency - Head Office	July 2012	Annually
<b>Substantiated Pollution Incident Register</b> Environment Agency - North West Region - South Area	May 2014	Quarterly
<b>Water Abstractions</b> Environment Agency - North West Region	April 2014	Quarterly
<b>Water Industry Act Referrals</b> Environment Agency - North West Region	May 2014	Quarterly
<b>Groundwater Vulnerability</b> Environment Agency - Head Office	January 2011	Not Applicable
<b>Drift Deposits</b> Environment Agency - Head Office	January 1999	Not Applicable
<b>Bedrock Aquifer Designations</b> British Geological Survey - National Geoscience Information Service	October 2012	Annually
<b>Superficial Aquifer Designations</b> British Geological Survey - National Geoscience Information Service	October 2012	Annually
<b>Source Protection Zones</b> Environment Agency - Head Office	April 2014	Quarterly
<b>Extreme Flooding from Rivers or Sea without Defences</b> Environment Agency - Head Office	May 2014	Quarterly
<b>Flooding from Rivers or Sea without Defences</b> Environment Agency - Head Office	May 2014	Quarterly
<b>Areas Benefiting from Flood Defences</b> Environment Agency - Head Office	May 2014	Quarterly
<b>Flood Water Storage Areas</b> Environment Agency - Head Office	May 2014	Quarterly
<b>Flood Defences</b> Environment Agency - Head Office	February 2014	Quarterly
<b>Detailed River Network Lines</b> Environment Agency - Head Office	March 2012	Annually
<b>Detailed River Network Offline Drainage</b> Environment Agency - Head Office	March 2012	Annually

Waste	Version	Update Cycle
<b>BGS Recorded Landfill Sites</b> British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
<b>Historical Landfill Sites</b> Environment Agency - North West Region - South Area	May 2014	Quarterly
<b>Integrated Pollution Control Registered Waste Sites</b> Environment Agency - North West Region	October 2008	Not Applicable
<b>Licensed Waste Management Facilities (Landfill Boundaries)</b> Environment Agency - North West Region - South Area	February 2014	Quarterly
<b>Licensed Waste Management Facilities (Locations)</b> Environment Agency - North West Region - South Area	May 2014	Quarterly
<b>Local Authority Landfill Coverage</b> Ellesmere Port And Neston Borough Council (now part of Cheshire West and Chester Council) - Planning Department Halton Borough Council - Environmental Health Department Knowsley Metropolitan Borough Council Liverpool City Council - Liverpool Environmental Health & Trading Standards Division Merseyside Waste Disposal Authority Wirral Borough Council	May 2000 May 2000 May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable
<b>Local Authority Recorded Landfill Sites</b> Ellesmere Port And Neston Borough Council (now part of Cheshire West and Chester Council) - Planning Department Halton Borough Council - Environmental Health Department Knowsley Metropolitan Borough Council Liverpool City Council - Liverpool Environmental Health & Trading Standards Division Merseyside Waste Disposal Authority Wirral Borough Council	May 2000 May 2000 May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable
<b>Registered Landfill Sites</b> Environment Agency - North West Region - South Area	March 2003	Not Applicable
<b>Registered Waste Transfer Sites</b> Environment Agency - North West Region - South Area	March 2003	Not Applicable
<b>Registered Waste Treatment or Disposal Sites</b> Environment Agency - North West Region - South Area	March 2003	Not Applicable

Hazardous Substances	Version	Update Cycle
<b>Control of Major Accident Hazards Sites (COMAH)</b> Health and Safety Executive	March 2014	Bi-Annually
<b>Explosive Sites</b> Health and Safety Executive	November 2013	Bi-Annually
<b>Notification of Installations Handling Hazardous Substances (NIHHS)</b> Health and Safety Executive	November 2000	Not Applicable
<b>Planning Hazardous Substance Enforcements</b> Halton Borough Council Ellesmere Port And Neston Borough Council (now part of Cheshire West and Chester Council) - Planning Department Liverpool City Council Knowsley Metropolitan Borough Council Wirral Borough Council Cheshire West and Chester Council - Planning Department	April 2014 December 2008  December 2012 July 2013 November 2012 October 2013	Annual Rolling Update Not Applicable  Annual Rolling Update Annual Rolling Update Annual Rolling Update Annually
<b>Planning Hazardous Substance Consents</b> Halton Borough Council Ellesmere Port And Neston Borough Council (now part of Cheshire West and Chester Council) - Planning Department Liverpool City Council Knowsley Metropolitan Borough Council Wirral Borough Council Cheshire West and Chester Council - Planning Department	April 2014 December 2008  December 2012 July 2013 November 2012 October 2013	Annual Rolling Update Not Applicable  Annual Rolling Update Annual Rolling Update Annual Rolling Update Annually

Geological	Version	Update Cycle
<b>BGS 1:625,000 Solid Geology</b> British Geological Survey - National Geoscience Information Service	August 1996	Not Applicable
<b>BGS Estimated Soil Chemistry</b> British Geological Survey - National Geoscience Information Service	January 2010	Annually
<b>BGS Recorded Mineral Sites</b> British Geological Survey - National Geoscience Information Service	April 2014	Bi-Annually
<b>Brine Compensation Area</b> Cheshire Brine Subsidence Compensation Board	August 2011	Not Applicable
<b>Coal Mining Affected Areas</b> The Coal Authority - Mining Report Service	December 2013	As notified
<b>Mining Instability</b> Ove Arup & Partners	October 2000	Not Applicable
<b>Non Coal Mining Areas of Great Britain</b> British Geological Survey - National Geoscience Information Service	February 2011	Not Applicable
<b>Potential for Collapsible Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	Annually
<b>Potential for Compressible Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	Annually
<b>Potential for Ground Dissolution Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	Annually
<b>Potential for Landslide Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	Annually
<b>Potential for Running Sand Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	Annually
<b>Potential for Shrinking or Swelling Clay Ground Stability Hazards</b> British Geological Survey - National Geoscience Information Service	October 2013	Annually
<b>Radon Potential - Radon Affected Areas</b> British Geological Survey - National Geoscience Information Service	July 2011	Annually
<b>Radon Potential - Radon Protection Measures</b> British Geological Survey - National Geoscience Information Service	July 2011	Annually
Industrial Land Use	Version	Update Cycle
<b>Contemporary Trade Directory Entries</b> Thomson Directories	May 2014	Quarterly
<b>Fuel Station Entries</b> Catalist Ltd - Experian	March 2014	Quarterly

Sensitive Land Use	Version	Update Cycle
<b>Areas of Adopted Green Belt</b> Ellesmere Port And Neston Borough Council (now part of Cheshire West and Chester Council) - Planning Department Halton Borough Council Knowsley Metropolitan Borough Council Liverpool City Council Wirral Borough Council	May 2014  May 2014 May 2014 May 2014 May 2014	As notified  As notified As notified As notified As notified
<b>Areas of Unadopted Green Belt</b> Ellesmere Port And Neston Borough Council (now part of Cheshire West and Chester Council) - Planning Department Halton Borough Council Knowsley Metropolitan Borough Council Liverpool City Council Wirral Borough Council	May 2014  May 2014 May 2014 May 2014 May 2014	As notified  As notified As notified As notified As notified
<b>Areas of Outstanding Natural Beauty</b> Natural England	January 2014	Bi-Annually
<b>Environmentally Sensitive Areas</b> Natural England	July 2013	Annually
<b>Forest Parks</b> Forestry Commission	April 1997	Not Applicable
<b>Local Nature Reserves</b> Natural England	March 2014	Bi-Annually
<b>Marine Nature Reserves</b> Natural England	July 2013	Bi-Annually
<b>National Nature Reserves</b> Natural England	March 2014	Bi-Annually
<b>National Parks</b> Natural England	January 2014	Bi-Annually
<b>Nitrate Sensitive Areas</b> Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	February 2012	Not Applicable
<b>Nitrate Vulnerable Zones</b> Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	July 2014	Annually
<b>Ramsar Sites</b> Natural England	March 2014	Bi-Annually
<b>Sites of Special Scientific Interest</b> Natural England	March 2014	Bi-Annually
<b>Special Areas of Conservation</b> Natural England	March 2014	Bi-Annually
<b>Special Protection Areas</b> Natural England	March 2014	Bi-Annually

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	
Centre for Ecology and Hydrology	
Countryside Council for Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	

Contact	Name and Address	Contact Details
1	<b>Liverpool City Council - Liverpool Environmental Health &amp; Trading Standards Division</b> Millenium House, 60 Victoria Street, Liverpool, Merseyside, L1 6LD	Telephone: 0151 233 3000 Email: <a href="mailto:environmental.health@liverpool.gov.uk">environmental.health@liverpool.gov.uk</a> Website: <a href="http://www.liverpool.gov.uk">www.liverpool.gov.uk</a>
2	<b>Environment Agency - National Customer Contact Centre (NCCC)</b> PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 08708 506 506 Email: <a href="mailto:enquiries@environment-agency.gov.uk">enquiries@environment-agency.gov.uk</a>
3	<b>British Geological Survey - Enquiry Service</b> British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: <a href="mailto:enquiries@bgs.ac.uk">enquiries@bgs.ac.uk</a> Website: <a href="http://www.bgs.ac.uk">www.bgs.ac.uk</a>
4	<b>Merseyside Waste Disposal Authority</b> 2nd Floor, North House, 17 North John Street, Liverpool, Merseyside, L2 5QY	Telephone: 0151 2551444 Fax: 0151 2271848 Email: <a href="mailto:enquiries@merseysidewda.gov.uk">enquiries@merseysidewda.gov.uk</a>
5	<b>Landmark Information Group Limited</b> Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: <a href="mailto:customerservices@landmark.co.uk">customerservices@landmark.co.uk</a> Website: <a href="http://www.landmarkinfo.co.uk">www.landmarkinfo.co.uk</a>
6	<b>Knowsley Metropolitan Borough Council</b> Archway Road, Huyton, Liverpool, Merseyside, L36 9YU	Telephone: 0151 489 6000 Fax: 0151 443 2298 Website: <a href="http://www.knowsley.gov.uk">www.knowsley.gov.uk</a>
7	<b>Liverpool City Council</b> 5th floor, Steers House, Canning Place, Liverpool, Merseyside, L1 8JA	Telephone: 0151 227 3911 Fax: 0151 709 1481 Website: <a href="http://www.liverpool.gov.uk">www.liverpool.gov.uk</a>
8	<b>Natural England</b> Suite D, Unex House, Bourges Boulevard, Peterborough, Cambridgeshire, PE1 1NG	Telephone: 0845 600 3078 Email: <a href="mailto:enquiries@naturalengland.org.uk">enquiries@naturalengland.org.uk</a> Website: <a href="http://www.naturalengland.org.uk">www.naturalengland.org.uk</a>
9	<b>Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)</b> Government Buildings, Otley Road, Lawnswood, Leeds, West Yorkshire, LS16 5QT	Telephone: 0113 2613333 Fax: 0113 230 0879
-	<b>Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards</b> Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: <a href="mailto:radon@phe.gov.uk">radon@phe.gov.uk</a> Website: <a href="http://www.ukradon.org">www.ukradon.org</a>
-	<b>Landmark Information Group Limited</b> Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: <a href="mailto:customerservices@landmarkinfo.co.uk">customerservices@landmarkinfo.co.uk</a> Website: <a href="http://www.landmarkinfo.co.uk">www.landmarkinfo.co.uk</a>

Please note that the Environment Agency / SEPA have a charging policy in place for enquiries.