

CCG-C-25-15318

**PHASE I GEOENVIRONMENTAL REPORT
FOR LAND AT NO. 16 WOODWARD ROAD
KNOWSLEY INDUSTRIAL PARK
KIRKBY
MERSEYSIDE
L33 2UZ
MARCH 2025**

Prepared for:

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DOCUMENT CONTROL FORM

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1.0 INTRODUCTION

CC GEOTECHNICAL LIMITED (CCG) is providing consultancy services to **MR. D. DONALD** (the *Client*) in connection with the proposed redevelopment of land located within the curtilage of Knowsley Industrial Park, Kirkby, Merseyside, L33.

The layouts and elevations of the proposed development are as illustrated on **UNIT³ DESIGN STUDIO** architectural drawings contained herein.

The proposed development falls within the administrative jurisdiction of **KNOWSLEY METROPOLITAN BOROUGH COUNCIL**.

This Phase I Desk Study was required to research the history of the site in relation to any potential risks to the integrity of the proposed structure, or the health of construction workers and/or future worker / occupants, and if appropriate to enable the planning of an intrusive phase of investigation. It was devised to generally comply with the relevant principles and requirements of a wide range of guidance including BS5930:1999 as amended 2007: "*Code of Practice for Site Investigations*", BS10175: 2011 "*Investigation of Potentially Contaminated Sites - Code of Practice*", and the 'Environment Agency Report '*Land Contamination Risk Management*' (LCRM) procedures, July 2023,

This report should be read in conjunction with the Notes on Limitations, given in Appendix B.

2.0 PURPOSE & AIMS OF THE STUDY

The primary aim of the Phase I Desk Study was to assess whether the site is likely to be affected by contamination to an extent that it may pose a risk to human health and/or the built environment and/or the wider natural environment or is affected by any other natural or man-made features which may impact on the proposed redevelopment.

Specific tasks undertaken to achieve these objectives were as follows:

- Undertaking of a review of available historical mapping, environmental databases, and Environment Agency data
- Undertaking of a site walkover inspection
- Development of Preliminary Conceptual Model
- Development of a Phase 2 intrusive investigation strategy

3.0 SITE DATA

3.1 Site Location

The site is located immediately to the south of public pavements extending along Woodward Road, Kirkby, L33 2UZ as illustrated on **CCG** Drawing No. CCG-C-25-15318-1 and Aerial Palte No. CCG-C-25-15318-2 contained within Appendix A.

The **ORDNANCE SURVEY** coordinates for the approximate site centre are 343417 399494.

3.2 Site Description & Walkover Observations

The site was visited during March 2025 on completion of a review of relevant historical and environmental mapping data (provided in Appendix D).

The site is situated wholly within a commercial / light industrial context, and within the curtilage of Knowsley Industrial Park, it comprises a rectangular shaped parcel of land which extends to the appropriate dimensions of c. 64m x 40m (c. 2566m²), its long axis being on a north – south alignment. It is bound to the north by public pavement extending along Woodward Road. Its remaining boundaries are formed by a development of mixed-use commercial units and associated grounds.

Permanent structures occupying the study site comprise a well-maintained single storey commercial unit constructed of combination of traditional brick and profiled cladded elevations, with site access fronting onto Woodward Road.

The surface topography across the site was seen to be sensibly flat with surface cover comprising hard pavement cover to the front and sides of the existing property, with compacted sand and gravel to the rear.

As illustrated within the appended photographs, it was evident at the time of undertaking a site walkover survey that the rear of the site was

being utilised for the storage of block and mesh fencing, scaffolding tubes, couplings and boards, and large concrete blocks etc.

Given that the site is currently developed for commercial use, it is assumed that buried services (i.e. gas water electricity etc.) are present beneath the site.

There was no visual evidence of the presence of native and/or non-native plant species within, or adjoining, the site boundary.

Access to the site is currently proposed from the Woodward Road frontage to the north.

The information obtained from the visit is summarised in Table 1 hereunder.

Table 1: Summary of Walkover Observations

FEATURE	OBSERVATION
Current Use of Land	Commercial land, fully developed with hard paved surfaces
Context	Commercial context
Topography / Surfaces	The surface topography across the site was seen to be sensibly flat with surface cover comprising locally poorly maintained hard pavement cover to the front and sides of the existing property, with compacted sands and gravel to the rear.
Dimensions	c. 64m x 40m (c. 2560m ²), its long axis being on a north – south alignment
Access	Access to the site is currently proposed from the Woodward Road frontage to the north.
Buildings Adjacent to the Site	Commercial land surrounding
Services	Given that the site is currently developed for commercial land uses, it is assumed that buried services (i.e. gas water electricity etc.) may be present beneath the site.
Material storage	Large stockpiles of block and mesh fencing, scaffolding materials, and large concrete blocks etc.
Waste disposal	None observed
Other potential contamination	Contaminants associated with on site plant and parking facilities
Ecology*	There was no visual evidence of the presence of native and/or non-native plant species within, or adjoining, the site boundary.

*These comments on the ecology are for initial preliminary assessment only and are based on observations undertaken by a person who is a trained ecologist but who has not undertaken a comprehensive Phase I Habitat Survey or similar.

4.0 SITE HISTORY

The history of the site and its immediate surrounds was investigated by consultation with a range of archive resources. Geographical information, historical mapping and environmental data were primarily based on a GroundSure Environmental Report (Reference No. CMAPS-AAG-1212885-4165-180325, dated March 2025), presented in Appendix D.

A summary of the historical mapping data is given hereunder:

Table 2: Historical Map Review

YEAR	SCALE	ON SITE	ADJACENT TO SITE	<250M
1867 1890-1892 1893	1:2,500 1:10,560 1:2,500	Site located within an agricultural context.	Adjoining land set within an agricultural context with associated hedgerow	Surrounding area located within an agricultural context with associated hedgerow, drainage ditches & ponds. 80m SE & S. Ponds 150m NE. Ponds (3nr) 150m SE. Pond 180m S. Farmhouse / outbuilding 120m W Farmhouse (Upper Ashcroft's Farm)
1907 1908	1:10,560 1:2,500	No significant change	No significant change	No significant change
1925-1928 1927	1:10,560 1:2,500	No significant change	No significant change	No significant change
1955-1956	1:10,560	Site lies within the footprint of Kirkby Industrial Estate with associated infrastructure. (Munitions factory) Site shown as developed for commercial / light industrial land uses. 2nr small building occupying the N section of the site	Adjoining land developed for commercial / light industrial land uses. Unspecified structures to the S & W. Railway lines extending on E-W alignment to the N	Surrounding area developed for commercial / light industrial land uses. Series of unspecified earthworks (possibly bunkers) to the S, SE, of the site. Land to the north of nearby rail lines developed for unspecified land uses.
1962 1962 1966	1:1,250 1:2,500 1:10,560	Site fully developed for commercial land uses.	Land to the E, S & W fully developed for commercial land use	Unspecified features to the N of nearby rail line labelled as warehouses. Earthworks to the S & SE not longer shown. Site of fully redeveloped for mixed commercial / light industrial land uses.

1971-1976 1974-1978	1:1,250 1:10,000	No significant change	No significant change	No significant change
1984-1986 1987-1988	1:1,250 1:10,000	No significant change	No significant change	No significant change
1992 1994	1:1,250 1:1,250	No significant change	Land to the E redeveloped for continued commercial land use Additional units constructed on land to the S.	Land c. 100m W cleared of former commercial unit
2001 2003 2010 2025	1:10,000 1:1,250 1:10,000 1:10,000	No significant change	No significant change	No significant change

In addition to the above, a Zetica UXO mapping extract, contained within Appendix D shows that the site was located within an area where c. 15nr bombs per 1000acre or less were dropped by the German Luftwaffe during the Second World War (WWII), thus the risk for unexploded ordinance to be present within the footprint of the site is assessed to be 'Low'.

5.0 ENVIRONMENTAL SETTING

5.1 Documented Geology

The geology of the site was researched by reference to Tonks L.H *et.al* (1938) '*Memoirs of the Geological Survey England and Wales: Explanation of Sheet 84: The Geology of Wigan District*', the **BRITISH GEOLOGICAL SURVEY (BGS)** 1:50, 000 scale Sheet 084 Wigan (2011), and 1:10, 000 scale (Solid and Drift Editions) geological mapping data.

The **BGS** 1:10, 000 Scale Drift Geological map indicate that the site is underlain with artificial made ground deposits, of recent deposition, of an unknown thickness, composition and extent. The underlying natural drift deposits are documented to comprise the Shirdley Hill Sand Formations comprising moderately to well-sorted brown fine to medium grained sands, locally interbedded with peat deposits of post glacial origin (*Pleistocene Epoch - Late Quaternary - Holocene Sub Age*), underlain with impermeable diamictos (*boulder clay*) comprising poorly stratified gravel sand silt and clay deposits of glacial origin (*Pleistocene Epoch - Late Quaternary - Devensian Sub Age*).

The solid geology underlying the site is documented as being the Chester Formation of the Sherwood Sandstone Group, comprising red - brown locally yellow, locally pebbly, fine - to coarse-grained, cross-stratified sandstone with subordinate argillaceous mudstone, siltstones horizons of the Early-Triassic Period (*Mesozoic Era: Olenekian Sub-Age*).

There are no documented geological lines of weakness within, or within a 500m radius of, the site.

The general dip of the solid geology within the surrounding area is seen to be 5°, is a southwesterly direction.

The appended environmental report and the '*Indicative Atlas of Radon in England and Wales*' (Miles. J.C.H *et.al*, 2007) Map 13 '*Northern Welsh Marches and Liverpool*', and the freely available UK Radon Map (www.ukradon.org) shows the site to be situated within an area where less than 1% of the properties within the local area are affected by naturally occurring Radon. Hence, Radon Protection Measures are not required for new structures in contact with the ground.

Geological Information obtained from the GroundSure Environmental Report is presented in Appendix D, and summarised hereunder:

Table 3: Summary of Geological Data from GroundSure Report

GEOLOGY		
Data	Distance	Comments
Artificial Ground	N/A	If present, artificial ground and/or reworked ground deposits associated with the development of the site & its immediate surroundings
Superficial Deposits / Drift Geology	On Site	Shirdley Hill Sand Formation of post glacial origin Diamictos of glacial origin
Permeability of Shirdley Hill Sand Formation / Diamicton	Maximum Permeability	High
	Minimum Permeability	High Low
Bedrock and Solid Geology	On Site	Chester Formation
Permeability of Bedrock: On Site	Maximum Permeability	High
	Minimum Permeability	High
Geological Lines of Weakness	On Site	No records
	<250m	No records
Radon Affected Area	On Site	The appended environmental report and the ' <i>Indicative Atlas of Radon in</i>

		England and Wales' (Miles. J.C.H <i>et al.</i> , 2007) Map 13 'Northern Welsh Marches and Liverpool', and the freely available UK Radon Map (www.ukradon.org) shows the site to be situated within an area where less than 1% of the properties within the local area are affected by naturally occurring Radon
Radon Protection	On Site	Radon Protection Measures are not required for new structures in contact with the ground.
MINING, GROUNDWORKINGS AND NATURAL CAVITIES		
Data	Distance	Comments
BritPits	<500m	No records
Surface ground workings	<250m	42m W Ponds 1890
Underground workings	<500m	No records
Underground mining extents	<500m	No records
Historical Mineral Planning Areas	<500m	No records
Non-coal mining	<1000m	No records
The Coal Authority non-coal mining	<500m	No records
Researched mining	<500m	No records
Mining record office plans	<500m	No records
BGS mine plans	<500m	No records
Coal mining	On site	No records
Brine areas	On site	No records
Gypsum areas	On site	No records
Tin mining	On site	No records
Clay mining	On site	No records
Natural cavities	<500m	No records
Mining cavities	<1000m	No records
Reported recent incidents	<500m	No records
Historical incidents	<500m	No records
National karst database	<500m	No records
HAZARDS		
Data	Distance	Comments
Maximum shrink swell clays	On site	Negligible
Maximum running sands	On site	Very Low / Low
Maximum compressible deposits	On site	Negligible / Very Low
Maximum collapsible deposits	On site	Very Low
Maximum landslides	On site	Very Low
Maximum ground dissolution of soluble rocks	On site	Negligible

5.2 Historical Coal Mining

The appended environmental data, the **BGS** and **COAL AUTHORITY** mapping data, contained within Appendix A, confirms that the site is not underlain by productive coal measures, and therefore a **COAL AUTHORITY** mining report was not procured.

5.3 Hydrology and Hydrogeology

Information on hydrology and hydrogeology obtained from a GroundSure Environmental Report is presented in Appendix D, and summarised hereunder:

Table 4: Summary of Hydrology and Hydrogeological Data from GroundSure Environmental Report

HYDROGEOLOGY AND HYDROLOGY		
Aquifer within Superficial Drift Deposits	On site	Shirdley Hill Sand Formations: Secondary A: Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
Aquifer within Superficial Drift Deposits	On site	Diamicton: Secondary Undifferentiated Aquifer: These are drift deposits with low permeability that have negligible significance for water supply or river base flow
Aquifer within Bedrock Deposits	On site	Chester Formation– Principal Aquifer: Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
Groundwater Abstraction Licences	<1000m	436m SW Status: Historical Licence No: 2569031146 658m SE Status: Historical Licence No: 2569031011 722m SW Status: Active Licence No: 2569031131 756m SE Status: Active Licence No: 2569031089 756m SE Status: Historical Licence No: 2569031089 759m S Status: Active Licence No: 2569031090
Surface Water Abstraction Licences	<1000m	661m E Status: Historical Licence No: 2569031068
Potable Water Abstraction Licences	<1000m	759m S Status: Active Licence No: 2569031090
Source Protection Zones	<500m	On site Type III Total catchment
Source Protection Zones (confined aquifer)	<500m	No records
Water Network (OS Mastermap)	<250m	No records
Surface water features	<250m	1nr record

WFD Surface water body catchments	On Site	On site River Simonswood Brook GB112069060630 Alt / Alt and Crossens
WFD Surface water bodies	<250m	No records
WFD Groundwater bodies	<250m	On Site: Lower Mersey Basin and North Merseyside Permo- Triassic Sandstone Aquifers Overall rating: Poor [2019]
FLOODING		
Risk of Flooding from Rivers and Sea (RoFRaS)	<50m	Medium
Historical Flood Events	<250m	No records
Flood Defences	<250m	No records
Areas Benefitting from Flood Defences	<100m	No records
Flood Storage Areas	<250m	No records
Flood Zone II	<50m	On site: Flood Zone II - (Fluvial /Tidal Models)
Flood Zone III	<50m	On site: Flood Zone III - (Fluvial Models)
Surface water flooding: Highest risk	On Site	1 in 100 year, 0.1m - 0.3m
	<50m	1 in 30 year, 0.1m - 0.3m
Groundwater flooding: Highest risk	On Site	Low
	<50m	Low

For simplified interpretation, the geological succession underlying the site may be regarded as a series of discrete units in terms of their hydrogeological significance, as illustrated hereunder:

Table 5: Hydrogeological Interpretation

UNIT	PROPERTIES	HYDROGEOLOGICAL DESIGNATION
Made / Reworked Ground	If present, likely to be generally granular and permeable and will permit vertical and lateral transmission of groundwater.	Unproductive Aquifer
Shirdley Hill Sand Formations	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers	Secondary A
Diamictons	These are drift deposits with low permeability that have negligible significance for water supply or river base flow	Undifferentiated Aquifer
Kinnerton Sandstone Formation	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers	Principal Aquifer

6.0 FURTHER ENVIRONMENTAL DATA

Environmental data was researched using several sources including Environment Agency Maps and GroundSure Envirosight Report presented in Appendix D and is summarised hereunder in Table 6. This environmental data has been used to carry out a Preliminary Qualitative Risk Assessment (Tier 1) and formulate the preliminary conceptual model as discussed in Section 8.0 of this report.

Table 6: Summary of Environmental Data

POTENTIALLY CONTAMINATIVE USES IDENTIFIED FROM 1:10,000 SCALE MAPPING		
Data	Distance	Comments
Historical industrial land uses	<250m	On site Industrial Estate 1966 On site Unspecified Commercial/Industrial 1956 On site Industrial Estate On site Railway Sidings 1955 – 1978 18m N Railway Sidings 26m N Unspecified Commercial/Industrial 56m N Unspecified Commercial/Industrial 254m N Unspecified Pit
Historical tanks	<250m	79m SW Unspecified Pit 80m SW Unspecified Tank 110m W Tanks 115m W Unspecified Tank 143m SW Unspecified Tank 151m SW Unspecified Tank 155m SW Unspecified Tank 179m SE Unspecified Tank 225m S Unspecified Tank 233m SW Unspecified Tank 234m SW Unspecified Tank 243m NE Tanks 248m NE Tanks
Historical energy features	<250m	12m SE Electricity Substation 21m SE Electricity Substation 108m SW Electricity Substation 147m NE Electricity Substation 206m SW Electricity Substation 225m S Electricity Substation

		228m S Electricity Substation 250m SE Electricity Substation
Historical petrol stations	<250m	No records
Historical garages	<250m	No records
Historical military land	<250m	On site ROF Kirkby - September 1940 - March 1946 / Produced approximately 10% of WW2 ammunition; Approximately 23,000 employees; Filling Factory No.7
Records of Current Industrial Land Use		
Data	Distance	Comments
Recent industrial land uses	<150m	On site K M C Packaging & Business Products Ltd 20m SE Electricity Sub Station 25m SE S I P Building Systems Ltd 34m S Factory 36m S Blok N Mesh UK Ltd 37m W S T L Building Services 50m SE Mast (Telecommunication) 85m W McKenna 95m S Industrial Park 100m NE Pylon 110m SW Electricity Sub Station 139m S Boundary Plant Ltd 142m NE Public Recycling Facility 143m E North West Air Ambulance Charity 150m SW Tank
Current or recent petrol stations	<250m	No records
Electricity cables	<250m	No records
Gas pipelines	<250m	No records
Sites determined as Contaminated Land	<250m	No records
Control of Major Accident Hazards (COMAH)	<250m	On site Archimcya Historical NIHHS Site On site Freeman Chemicals Ltd Historical NIHHS Site 50m N Potter Logistics Ltd Historical NIHHS Site 124m E Syntor Fine Chemicals Limited Historical NIHHS Site / COMAH Lower Tier Operator
Regulated explosive sites	<250m	No records
Hazardous substance storage/usage	<250m	57m E Application reference number: 99/00672/HSC - Application status: Historical Consent 202m N Application reference number: 00/00616/HAZ - Application status: Approved 217m NW Application reference number: 07/00065/HAZ - Application status: Historical Consent 217m NW Application reference number: 06/00470/HAZ - Application status: Approved
Historical licensed industrial activities (IPC)	<250m	No records
Licensed industrial activities (Part A(1))	<250m	No records
Licensed pollutant release (Part A(2)/B)	<250m	129m S North West Fencing Products, / Status: Historical Permit / Permit Type: Part B 173m S Boundary Plant, Bradman Road / Status: Current Permit / Permit Type: Part B 185m SW DAMS International, Marl Road / Status: Revoked / Permit Type: Part B 193m S Boundary Plant Ltd, Hammond Rd / Status: Historical Permit / Permit Type: Part B
Radioactive Substance Authorisations	<250m	No records
Licensed Discharges to controlled waters	<250m	No records
Pollutant release to surface waters (Red list)	<250m	No records
Pollutant release to public sewer	<250m	No records
List 1 Dangerous Substances	<250m	No records
List 2 Dangerous Substances	<250m	151m E Nipa Laboratories Ltd, Woodyard Road
Pollution Incidents (EA/NRW)	<250m	109m E Incident Date: 08/11/2002 - Incident Identification: 119566 193m SW Incident Date: 07/08/2003 - Incident Identification: 179912 222m NE Incident Date: 08/03/2002 - Incident Identification: 62620
Pollution inventory waste transfers	<250m	No records
Pollution inventory radioactive waste	<250m	No records
WASTE AND LANDFILL		
Data	Distance	Comments
Active or recent landfill	<250m	153m W Operator: Knowsley Metropolitan Borough Council. WML Number: 54257 / EPR Reference: 654106
Historical landfill (BGS records)	<250m	No records
Historical landfill (LA/mapping records)	<250m	No records
Historical landfill (EA/NRW records)	<250m	No records
Historical waste sites	<250m	229m SE Vacant Warehouse/Bradman House
Licensed waste sites	<250m	65m W Marl Road / Waste Management licence No: 54257 245m NW Knowsley Rail Transfer Loading Station / Waste Management licence No: 102932

Waste exemptions	<250m	37m W Kirkby Hwrc, Depot Road 100m E Kirkby Hwrc, Depot Road, 138m S Drawell House, Hammond Road 164m SE Hammond Road 177m S .Hammond Road 206m E.
ENVIRONMENTAL DESIGNATIONS		
Data	Distance	Comments
Sites of Special Scientific Interest (SSSI)	<500m	No records
Conserved wetland sites (Ramsar sites)	<500m	No records
Special Areas of Conservation (SAC)	<500m	No records
Special Protection Areas (SPA)	<500m	No records
National Nature Reserves (NNR)	<500m	No records
Local Nature Reserves (LNR)	<500m	No records
Designated Ancient Woodland	<500m	No records
Biosphere Reserves	<500m	No records
Forest Parks	<500m	No records
Marine Conservation Zones	<500m	No records
Green Belt	<500m	350m N Merseyside and Greater Manchester Green Belt West Lancashire
Proposed Ramsar sites	<500m	No records
Possible Special Areas of Conservation (PSAC)	<500m	No records
Potential Special Protection Areas (pSPA)	<500m	No records
Nitrate Sensitive Areas	<500m	No records
Nitrate Vulnerable Zones	<500m	On site ALT NVZ Surface Water 642 Existing
RAILWAY INFRASTRUCTURE AND PROJECTS		
Data	Distance	Comments
Underground railways (London)	<100m	No records
Underground railways (Non-London)	<100m	No records
Railway tunnels	<100m	No records
Historical railway and tunnel features	<100m	On site Railway Sidings 17m N Railway Sidings 18m N Railway Sidings 72m E Railway Sidings 77m E Railway Sidings
Royal Mail tunnels	<100m	No records
Historical railways	<100m	21m NE Razed
Railways	<100m	53m N 55m NE 56m N
Crossrail 2	100m	No records

7.0 PREVIOUS SITE INVESTIGATIONS / REPORTS

Searches and consultations have established that no previous ground investigation works have been undertaken on this site.

8.0 PRELIMINARY QUALITATIVE RISK ASSESSMENT (TIER 1)

8.1 Introduction

The foregoing study has established a long history of industrial use of the site, indicating a potential for the presence of contamination associated with the historic developments on the site and/or immediately adjoining the study site, and hence a preliminary risk assessment was undertaken.

The risk assessment methodologies adopted by **CCG** are based on current available guidance from several sources and are included in Appendix D.

The Tier 1 Risk Assessment and Preliminary Conceptual Model (PCM) were formulated using the information discussed above and based on the following assumptions:

- The rear of an existing commercial at No. 16 Woodward Road, Kirkby, which presently accommodates 4nr business units, is to be extended by to provide a 5th unit, the extension to visually match the existing. It is further proposed that the land to the rear of the site is to be redeveloped by the construction of a new steel framed building forming 2nr additional commercial use units, constructed in cladded elevations under a pitched roof. External works will include hard paving, parking bays, and small areas of soft landscaping.
- Drinking water will be from a mains supply.

In constructing the Preliminary Conceptual Model (PCM), **CCG** applied the guidance contained in Guidance for the Safe Development of Housing on Land Affected by Contamination, R&D: 2008 Volume 1 (*Environment Agency and CIEH*). This recommends use of a Risk Matrix which classifies risk based on the product of Probability of a source being present, and the Consequence of receptors being exposed to the source. Guidance tables setting out the classifications of probability and consequence together with a risk matrix are given in Tables 7 - 10 hereunder. In using this approach **CCG** recommends intrusive investigation of any Risk Classification of “*Moderate*” or above although a precautionary approach is recommended for residential housing developments, irrespective of the Risk Classification.

Table 7: Matrix of consequences against probability to gain a risk classification [CIRIA C552, 2001]

		CONSEQUENCE			
		SEVERE	MEDIUM	MILD	MINOR
Probability	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate / Low Risk
	Likely	High Risk	Moderate Risk	Moderate / Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate / Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate / Low Risk	Low Risk	Very Low Risk	Very Low Risk

Table 8: Classification of Consequence

Classification	Definition	Examples
Severe	Highly elevated concentrations likely to result in “significant harm” to human health as defined by the EPA 1990, Part 2A, if exposure occurs. Equivalent to EA Category 1 pollution incident including persistent and/or extensive effects on water quality; leading to closure of a potable abstraction point; major impact on amenity value or major damage to agriculture or commerce. Major damage to aquatic or other ecosystems, which is likely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long-term maintenance of the population. Catastrophic damage to crops, buildings or property.	Significant harm to humans is defined in circular 01.2006 as death, disease*, serious injury, genetic mutation, birth defects or the impairment of reproductive functions. Major fish kill in surface water from large spillage of contaminants from site. Highly elevated concentrations of List I and II substances present in groundwater close to small potable abstraction (high sensitivity). Explosion, causing building collapse (can also equate to immediate human health risk of buildings are occupied).
Medium	Elevated concentrations which could result in “significant harm” to human health as defined by the EPA 1990, Part 2A if exposure occurs. Equivalent to EA Category 2 pollution incident including significant effect on water quality; notification required to abstractors; reduction in amenity value or significant damage to agriculture or commerce. Significant damage to aquatic or other ecosystems, which is likely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long-term maintenance of the population. Significant damage to crops, buildings or property.	Significant harm to humans is defined in circular 01.2006 as death, disease*, serious injury, genetic mutation, birth defects or the impairment of reproductive functions. Damage to buildings rendering it unsafe to occupy e.g. foundation damage resulting in instability. Ingress of contaminants through plastic potable water pipes.
Mild	Exposure to human health unlikely to lead to “significant harm”. Equivalent to EA Category 3 pollution incident including minimal or short-lived effect on water quality; marginal impact on amenity value, agriculture or commerce. Minor or short-lived damage to aquatic or other ecosystems, which is unlikely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long-term maintenance of the population. Minor damage to crops, buildings or property.	Exposure could lead to slight short-term effects (e.g. mild skin rash). Surface spalling of concrete.
Minor	No measurable effect on humans. Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems. Repairable effects of damage to buildings, structures and services.	The loss of plants in a landscaping scheme. Discoloration of concrete.

Table 9: Classification of Probability Definitions (C552 CIRIA, 2001)

Classification	Definition	Examples
High Likelihood	There is potential contaminant linkage, and an event would appear very likely in the short-term and almost inevitable over the long-term, or there is evidence at the receptor of harm or pollution.	a) Elevated concentrations of toxic contaminants are present in soils in the top 0.5m in a residential garden. b) Ground/groundwater contamination could be present from chemical works, containing a number of UST's, having been in operation on the same site for over 50 years.
Likely	There is potential contaminant linkage, and all the elements are present and in the right place which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short-term and likely over the long-term.	a) Elevated concentrations of toxic contaminants are present in soils at depths of 0.5-1.0m in a residential garden or the top 0.5m in a public open space. b) Ground/groundwater contamination could be present from an industrial site, containing a UST present between 1970 and 1990. The tank is known to be single skin. There is no evidence of leakage although there are no records of integrity tests.
Low Likelihood	There is potential contaminant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a long period such an event would take place and is less likely in the shorter term.	a) Elevated concentrations of toxic contaminants are present in soils at depths of >1m in a residential garden or 0.5-1.0m in a public open space. b) Ground/groundwater contamination could be present on a light industrial unit constructed in the 1990's containing a UST in operation over the last 10 years. The tank is known to be single skin. There is no evidence of leakage although there are no records of integrity tests.
Unlikely	There is potential contaminant linkage, but circumstances are such that it is improbable that an event would occur even in the very long-term.	a) Elevated concentrations of toxic contaminants are present below hardstanding. b) Light industrial units <10 yrs old containing a double-skinned UST with annual integrity testing results available.

Table 10: Description of the Classified Risks

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

8.2 Preliminary Conceptual Model

By application of the risk assessment methodology outlined above, the following PCM was constructed.

Table 11: Preliminary Conceptual Model (PCM)

POLLUTANT LINKAGE	SOURCE	PATHWAY	RECEPTOR	PROBABILITY	CONSEQUENCE	RISK RATING
1	Broad spectrum of heavy metals, aggressive pH, hydrocarbons, PAH's in Made Ground associated with the development of the site and adjoining area	Soil and / or soil dust ingestion	Construction workers Future occupants (adults & children) Offsite receptors	Likely	Medium	Moderate
2	Asbestos containing materials (ACM) in made ground soils associated with the development of the site and adjoining area	Fibre Inhalation	Construction workers Future occupants (adults & children) Offsite receptors	Likely	Severe (ACM)	High
3	Inhalation of vapours associated with potential industrial processes on or offsite	Inhalation	Future occupants (adults & children)	Unlikely	Medium	Moderate
4	Inhalation of ground gases from onsite or offsite sources i.e., made ground deposits associated with the infilling of nearby historical ponds, underlying peat deposits etc.	Inhalation	Future occupants (adults & children)	Unlikely	Medium	Moderate
5	pH & Sulphate attack on concrete	Future building	Future building	Likely	Mild	Moderate

						/ Low
6	Organic contamination associated with onsite plant / car parking facilities etc.	Direct contact with water mains	Potable water supply	Unlikely	Medium	Moderate
7	Explosive residues in soils associated with former land uses as a WWII munition works	Explosion Ingestion	Construction workers Future worker occupants Existing building	Unlikely	Severe	Moderate

8.3 Contaminants of Concern

The contaminants of concern associated with those risks which require intrusive investigation were researched by reference to published industry profiles, and are summarised hereunder:

Table 12: Summary of Contaminants of Concern based on PCM

LINKAGE NO.	METALS	NON-METALS	ORGANICS	GASES	OTHERS
PL1, PL2, PL3, PL5-PL6	Cd, Cr (total & hexavalent), Ni, Cu, Zn, Pb, Hg, Se, Mo, Sb	As, sulphates, sulphides, boron, free cyanide	TPHCWG, PAH's, BTEX, Volatiles (by PID), SOM	-	pH Asbestos
PL4	-	-	-	CH ₄ , CO ₂ , CO, H ₂ S	-
PL1, PL6	-	-	TPHCWG, PAH's, BTEX,	-	-
PL7	Explosive residues	Explosive residues	Explosive residues	-	-
PL1-PL7	Cd, Cr (total), Ni, Cu, Zn, Pb, Hg, Se, Mo, Sb Explosive residues	As, sulphates, sulphides, boron, free cyanide Explosive residues	TPHCWG, BTEX PAH's, Volatiles (by PID), SOM Explosive residues	CH ₄ , CO ₂ , CO, H ₂ S	pH Asbestos

8.4 Summary of Risks

The foregoing analysis has identified a significant number of potential risks, and if present, these could adversely impact on human or environmental receptors, and since no previous site investigation has been undertaken, an intrusive phase of investigation is recommended to determine whether the postulated pollutant linkages are present on site.

9.0 AIMS AND PROPOSED SCOPE OF PHASE II INTRUSIVE INVESTIGATION

Based on the findings above, it is recommended that an intrusive investigation be undertaken. The Phase II Intrusive Investigation should include for exploratory holes to be sunk through made ground into the underlying natural strata.

The primary objectives of a ground investigations are to obtain enough data to reliably ascertain ground conditions on site, and to aid confirmation of the potential pollution linkages identified within the Preliminary Conceptual Model above. Sufficient soil and groundwater/soil leachate contamination data should be obtained to reliably allow the Preliminary Conceptual Model to be tested and refined by the performance of a quantitative risk assessment.

Using the guidance contained in BS10175: 2011 and R&D Technical Report P5-0066/TR: 2000 and taking into account the size of the site, it is proposed that 5nr boreholes be sunk using light dynamic sampling methods to a notional depth of c.5mbgl, or to refusal in rockhead, whichever is the lesser.

Given the documented (BGS) presence of made ground deposits of an unknown composition, thickness and extent, and the potential for the presence of natural peat deposits underlying, it is recommended that 3nr boreholes be utilised for the installation of standpipes, thus enabling a programme of ground gas monitoring to be undertaken. To comply with CIRIA C665 for a "Moderate" risk site, it is proposed that gas monitoring is undertaken as a minimum on 4nr occasions, distributed over a 1-month period.

The prime objective of any intrusive ground investigation is to provide reliable soil / groundwater, or soil leachate, contamination data and to assess the potential risk to human health and sensitive environmental receptors.

The proposed scope of works is summarised in Table 13 hereunder:

Table 13: Proposed Scope of Works

RISK	METHOD OF ASSESSMENT
Is the superficial ground impacted by contamination to the extent it may present a risk to human health?	Using the guidance contained in BS10175: 2011 and R&D Technical Report P5-0066/TR: 2000 it is proposed that 5nr boreholes be sunk using light dynamic sampling methods to a notional depth of c.5mbgl, or to refusal in rockhead, whichever is the lesser. Broad spectrum contamination analyses will be performed on selective subsamples of recovered soil (5nr analyses) to suite in Table 12
What are the geotechnical properties of the ground?	Standard Penetration Test's (SPT's) to be carried out at regular depth increments throughout the boreholes, with HSV tests being carried out in cohesive strata on recovered soils, if encountered. A programme of soil engineering laboratory testing will be carried out. The <i>in-situ</i> tests and soil engineering test data will be used in formulating suitable foundation solutions.
Is the site affected by migrating gas from made ground	Given the documented (BGS) presence of made ground deposits of an unknown composition, thickness and extent, and the potential for the presence of natural peat deposits underlying, it is recommended that 3nr boreholes be utilised for the installation of standpipes, thus enabling a programme of ground gas monitoring to be undertaken. To comply with CIRIA C665 for a " <i>Moderate</i> " risk site, it is proposed that gas monitoring is undertaken as a minimum on 4nr occasions, distributed over a 1-month period.
Does the site pose a risk to the underlying Principal Aquifer?	Soil water samples will be recovered from the standpipes and will be analysed to the suite proposed in Table 11. In the event that water does not accumulate in the standpipes, soil leachate analyses will be undertaken to the suite in Table 12. The results will be assessed against Drinking Water Standards and Environmental Quality Standards.

The layout of the proposed intrusive investigation is as annotated on **CCG** Drawing No. CCG-C-25-15318-3 '*Site Investigation Plan*' contained herein.

To ensure that no borehole position impacts on any buried service, the final positioning of the boreholes will be determined following a review of '*Clients*' buried service drawings.

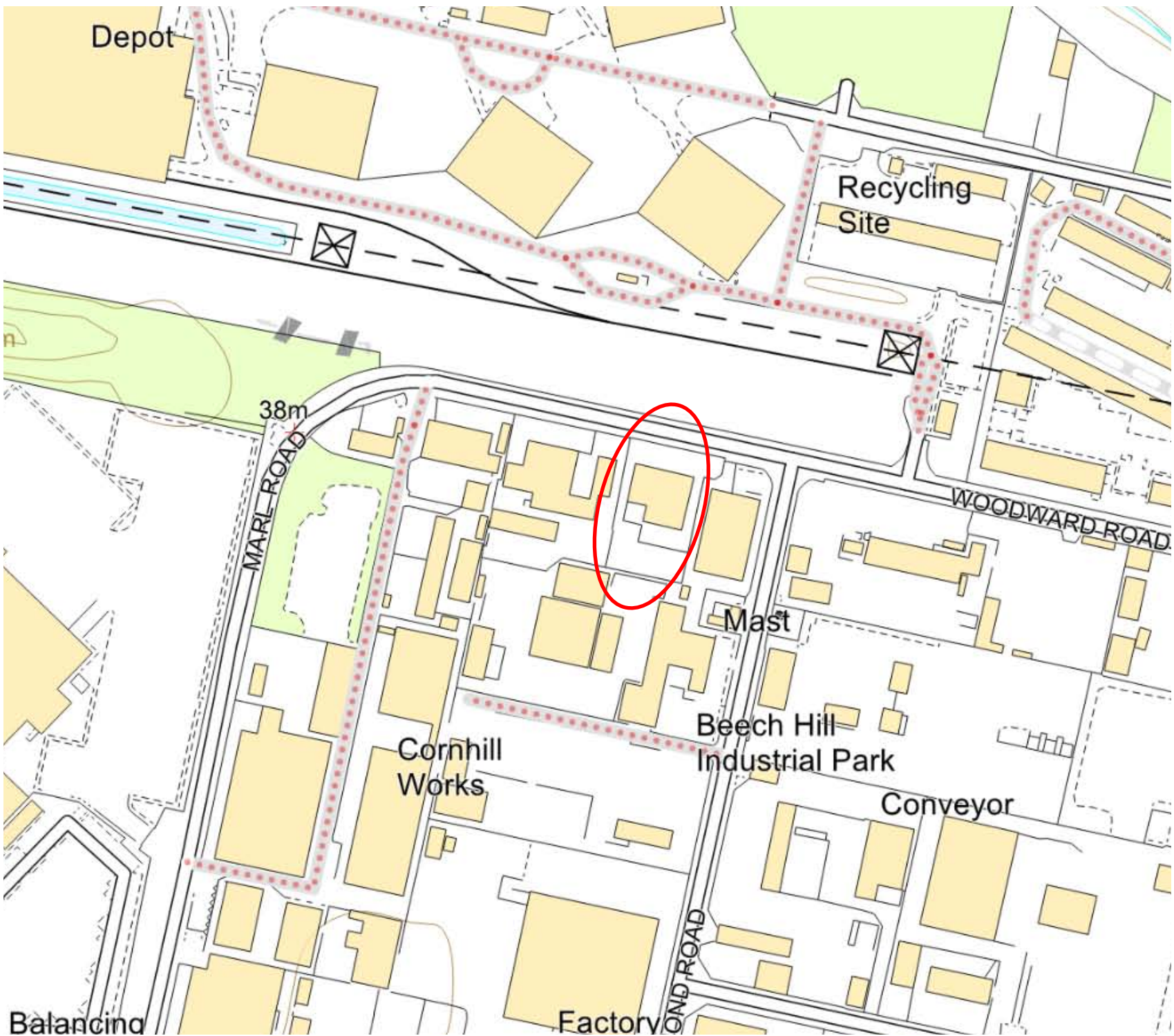
Given that the site is to be redeveloped for commercial use, contamination data obtained as part of the above recommended Phase II intrusive investigation will be based on criteria contained in publication LQM/CIEH S4UL's for Human Health Risk Assessment (2015) (**CCG** Licence No. S4UL3233), applicable to the "*Commercial*" land use scenario. Given this document does not provide criteria for Lead contaminants, it is proposed that Lead results are compared to the C4SL published by DEFRA SP1010 Development of Category 4 Screening Levels for '*Commercial Land*' use.

APPENDIX A: DRAWINGS:

25-15318– SITE LOCATION PLAN

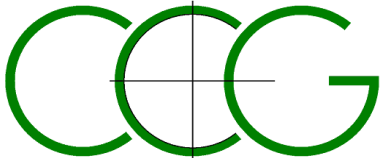
25-15318– AERIAL PLATE

ARCHITECTURAL DRAWINGS



DO NOT SCALE

Notes: Study Site



CC GEOTECHNICAL LIMITED
UNIT 1 DELTIC WAY
KNOWSLEY INDUSTRIAL ESTATE
LIVERPOOL
L33 7BA
0151 545 2750

Client:
MR. D. DONALD

Project:
Woodward Road, Kirkby, L33

Title:
Site Location

Scale:
NTS

Issue:
01

Drawn by:
DG

Date:
March 2025

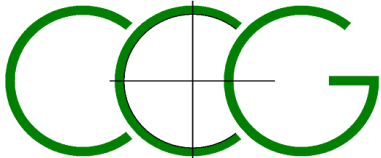
Project No.
CCG-C-25-15318

Drawing No.
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Notes: Study Site



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LIVERPOOL
L33 7BA
0151 545 2750

Client:
MR. D. DONALD

Project:
Woodward Road, Kirkby, L33

Title:
Aerial Photograph

Scale:
NTS

Issue:
01

Drawn by:
DG

Date:
March 2025

Project No.
CCG-C-25-15318

Drawing No.
02



WOODWARD ROAD 38.4m

WS01/s

WS02

WS03

WS04/s

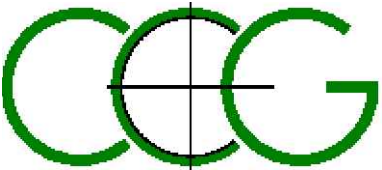
WS05/s

1

4

El Sub Sta

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Client		Mr. D. Donald		
Site		No.16 Woodward Road, Kirby, L33 2UZ		
Drawing		Ground Investigation Layout		
Job No.	Dwg. No.	Rev. No.	Scale@A3	Date
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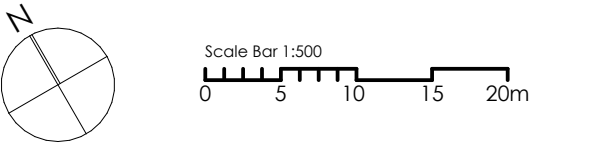


01 Site Plan Existing
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NOTES

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REV	DATE	DRN	
STATUS		STAGE 3 - PLANNING	



CLIENT	HARTLEY INVESTMENTS
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PROJECT NUMBER	241003
PROJECT	WOODWARD ROAD
SITE LOCATION	16 Woodward Road, Kirkby, L33 7U2

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Liverpool,
L1 0BP

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w: www.unit3-designstudio.com

DRAWING No.	241003-U3L-XX-GF-DR-A-00002		
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DATE - 12/12/2024		DRAWN - TH	CHECKED - AF

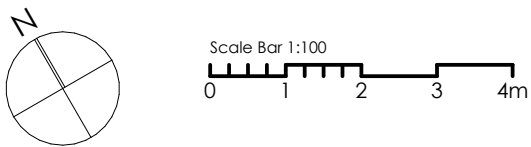


1 Proposed Ground Floor
1:100

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DRAWING No.	241003-U3L-01-GF-DR-A-1003		
DRAWING NAME	Proposed Ground Floor Plan Main Building		
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DATE - 12/12/2024	DRAWN - TH	CHECKED - AF	



01 Site Plan Proposed
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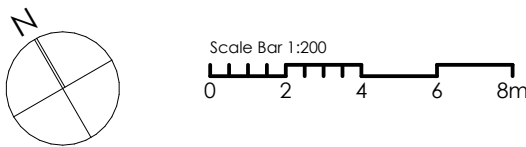
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MATERIALS KEY

- TARMAC
- COLOURED TARMAC TO DENOTE PARKING SPACE
- GENERAL NATIVE PLANTING

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STATUS	STAGE 3 - PLANNING		



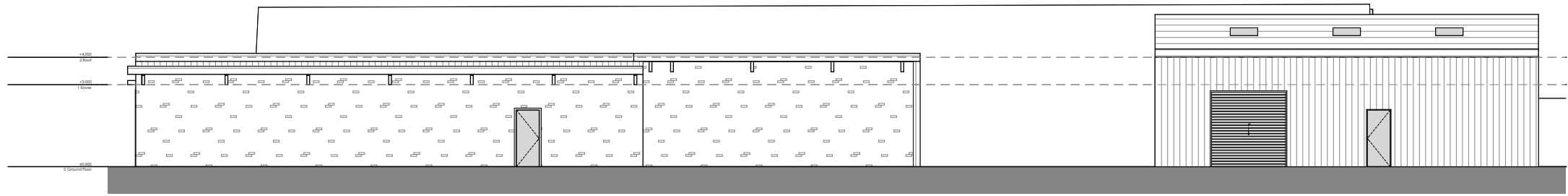
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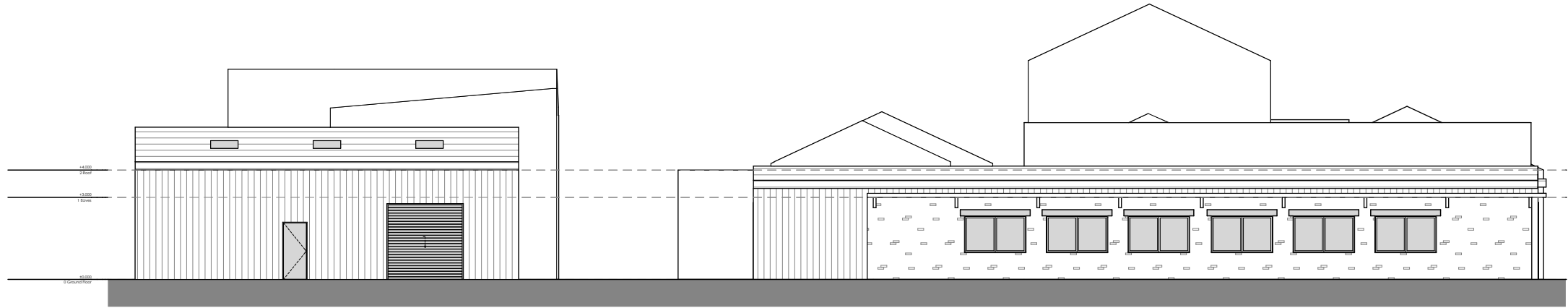
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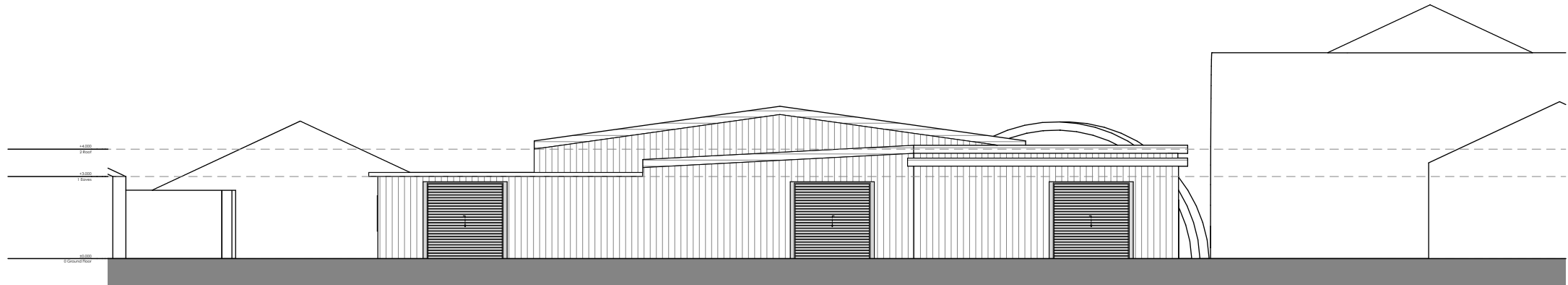
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1:200



2
- Site Elevation
1:200



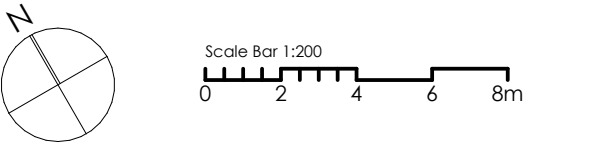
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- Site Elevation
1:200

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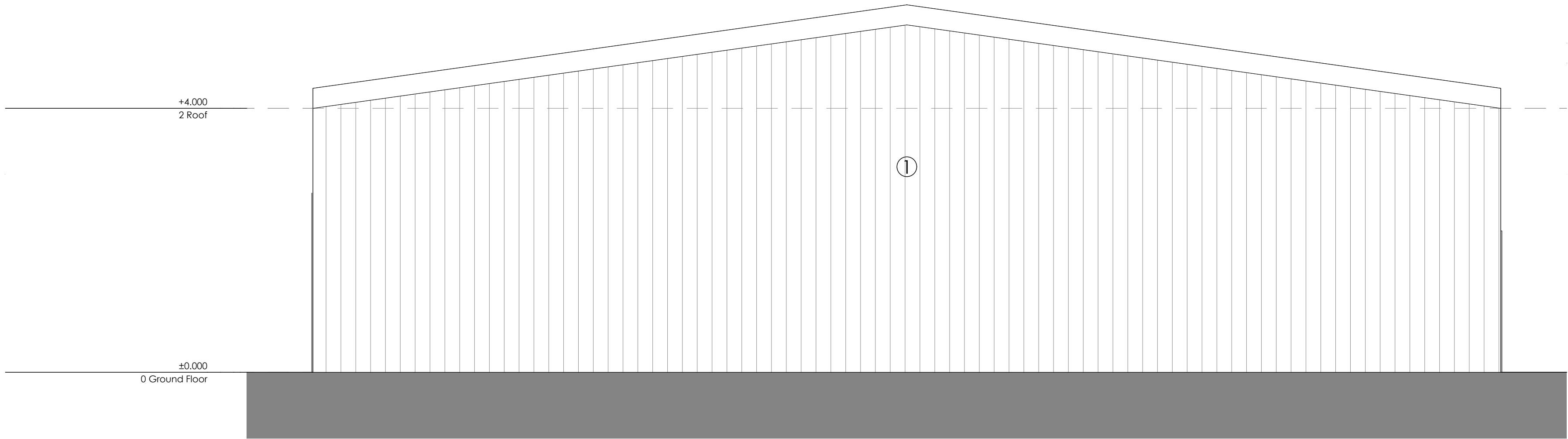
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DATE - 12/12/2024	DRAWN - TH	CHECKED - AF	

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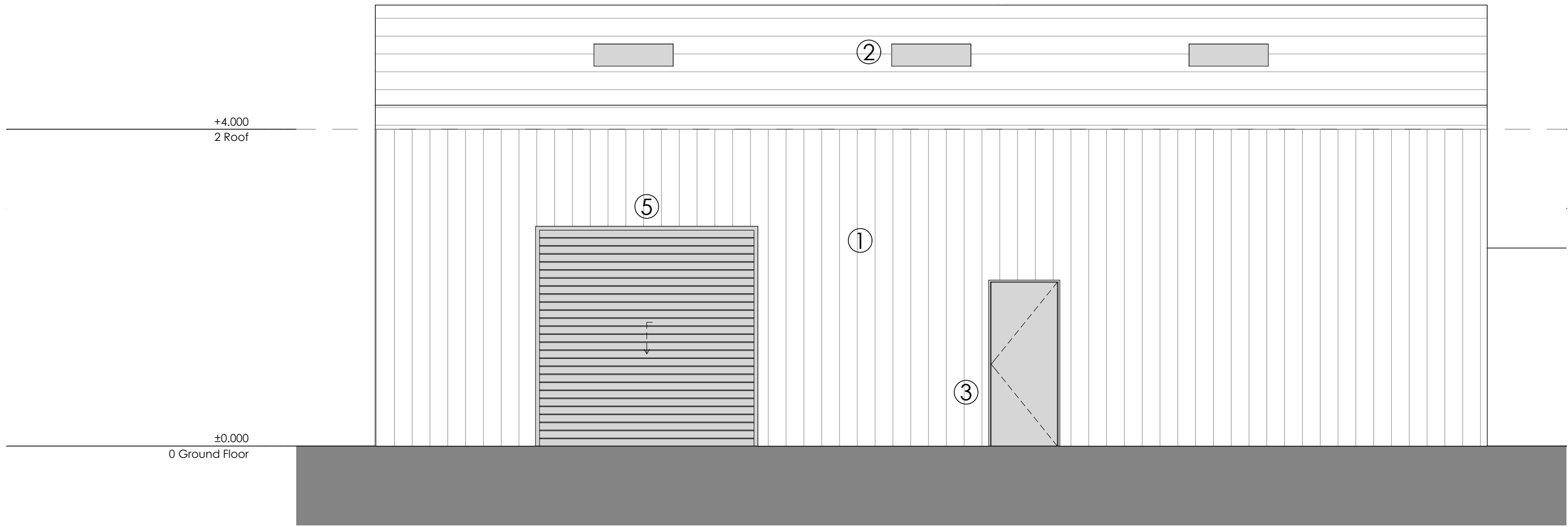
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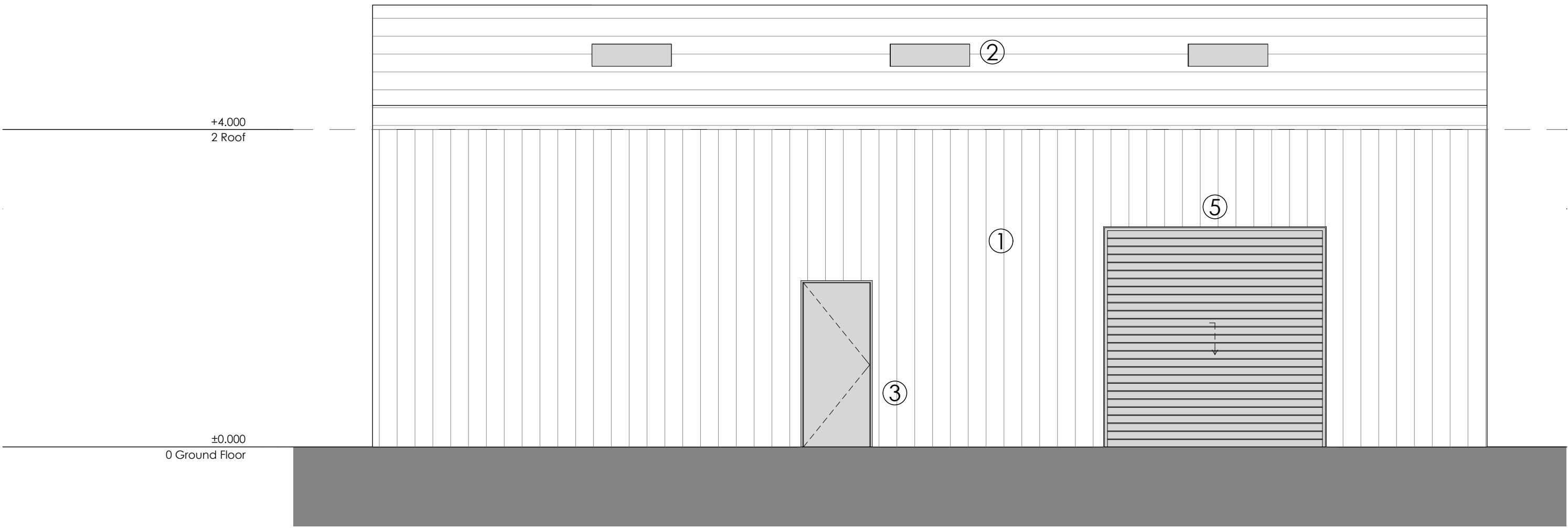
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② POLYCARBONATE ROOFLIGHTS
③ ALUMINIUM ACCESS DOOR
④ ALUMINIUM FRAMED WINDOWS
⑤ SECTIONAL DOOR / ROLLER SHUTTER



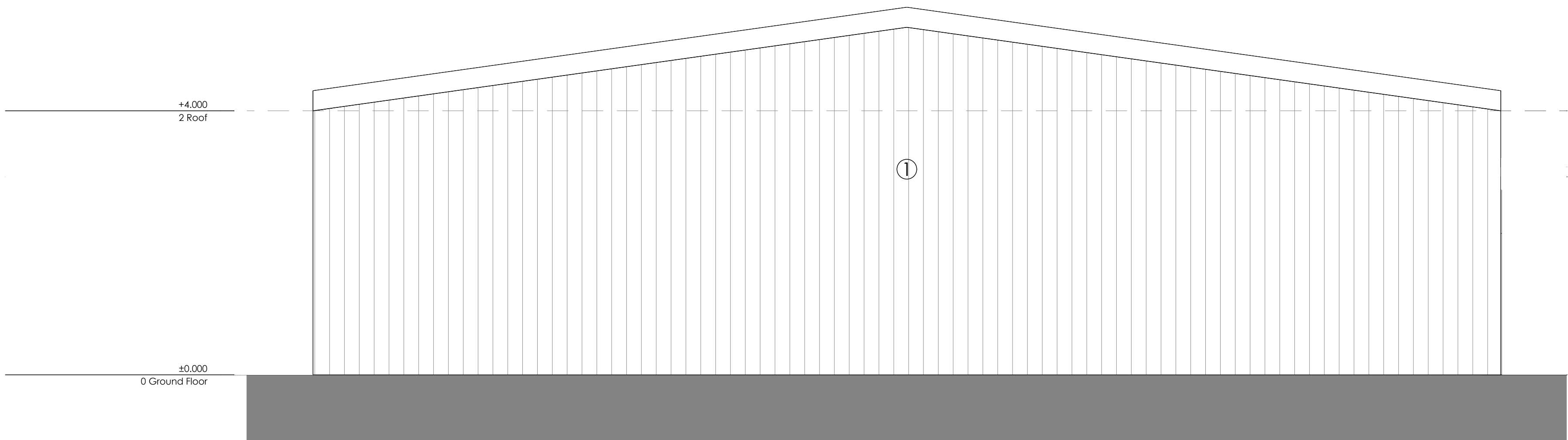
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2 Side Elevation (E-02)
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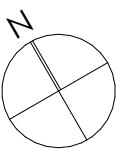


3 Side Elevation (E-02)
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4 Rear Elevation (E-01)
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REV	DATE	TH	First Issue
01 - WP	Work in Progress	TH	First Issue
STATUS		STAGE 3 - PLANNING	



Scale Bar 1:50
0 0.5 1 1.5 2m

CLIENT	HARTLEY INVESTMENTS
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PROJECT NUMBER	241003
PROJECT	WOODWARD ROAD
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REVISION	01 - WP	SCALE - 1:50	SHEET SIZE - A1
DATE - 12/12/2024	DRAWN - TH	CHECKED - AF	

APPENDIX B: NOTES ON LIMITATIONS

Notes on Limitations For Geoenvironmental and Geotechnical Consultancy Services

General

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The findings and opinions provided in this document are made in good faith and are subject to the limitations imposed by employing site assessment methods and techniques, appropriate to the time of investigation and within the limitations and constraints defined in this document.

The findings and opinions are relevant to the dates when the assessment was undertaken, but should not necessarily be relied upon to represent conditions at a substantially later date. In particular, seasonal groundwater levels, with the effects of precipitation, may affect the conditions found during the investigation. The report should be read in conjunction with the further Notes on Limitations included in Appendix A.

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Phase I Environmental Audits / Desk Studies

The work undertaken to provide the basis of a Phase 1 Desk Study report comprises a study of available documented information from a variety of sources (including the client), together with (where appropriate) a brief walk over inspection of the site and meetings and discussions with relevant authorities and other interested parties. The opinions given in a Desk Study report have been dictated by finite data on which they are based and are relevant only to the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in the report, CC GEOTECHNICAL LTD reserves the right to review such information and to modify the opinions accordingly.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

Factual Ground Investigations

The investigation of the site has been carried out in accordance with the scope and specification instructed by the Client. No interpretations of the data generated by the investigation have been provided or implied. The exploratory holes undertaken in this commission, investigate only a small volume of the ground in relation to the size of the site, and can only provide a general indication of site conditions. Conditions may exist on the site which have not been detected by the works undertaken. Furthermore, the number of sampling points and the methods of sampling and testing do not preclude the existence of localised "hotspots" or more widespread contamination where concentrations may be significantly higher than those actually encountered.

Interpretative Phase II Environmental Audits

The investigation of the site has been carried out with the intention of providing sufficient information concerning the type and degree of contamination, and ground and groundwater conditions to allow a reasonable risk assessment to be made. The objectives of the investigation have been limited to establishing the risks associated to potential human targets, building materials, the environment (including adjacent land), and surface and groundwater.

The amount of exploratory work and chemical testing undertaken may have been restricted by factors including inter alia the Clients budget, the available timescale, access to all parts of the site, the existence of buried services etc., and where this is the case, a more comprehensive investigation may be required if the site is to be redeveloped, since a number of important engineering and environmental issues may need further assessment.

For those reasons, if costs have been included in relation to site remediation these must be considered as tentative only and must, in any event, be confirmed by a qualified quantity surveyor.

It must be borne in mind, that the exploratory holes undertaken, investigate only a small volume of the ground in relation to the size of the site, and can only provide a general indication of site conditions. The opinions provided and recommendations given in this report are based on the ground conditions apparent at the site of each of the exploratory holes. There may be ground conditions present on the site which have not been disclosed by this investigation, and which have therefore not been taken into account in this report. The number of sampling points and the methods of sampling and testing do not preclude the existence of localised "hotspots" or more widespread contamination where concentrations may be significantly higher than those actually encountered. The findings of the investigation are valid for the time of investigation and the passage of time may result in changes to the contamination status of the site, and a reassessment of the site may be required where significant time has elapsed.

Geoenvironmental Ground Investigations

The investigation of the site has been carried out within the constraints of Client budget, available timeframe, access to all parts of the site, the existence of buried services and a more comprehensive investigation may be required to provide sufficient information regarding the type and degree of contamination, geotechnical characteristics, and ground and groundwater conditions, to formulate a reasonable assessment of the environmental risks together with engineering and development implications.

If costs have been included in relation to the site remediation, these must be confirmed by a qualified quantity surveyor.

The exploratory holes undertaken, investigate only a small volume of the ground in relation to the size of the site, and can only provide a general indication of the site conditions. The opinions provided and recommendations given in this report are based on the ground conditions apparent at the site of each of the exploratory holes. There may be ground conditions present on the site which have not been disclosed by this investigation, and which have therefore not been taken into account in this report. The findings of the investigation are valid for the time of investigation and the passage of time may result in changes to the contamination status of the site, and a reassessment of the site may be required where significant time has elapsed.

The comments made on groundwater conditions are based on observations made at the time that site work was carried out. It should be noted that groundwater levels will vary owing to seasonal, tidal, weather, or other effects.

The risk assessment and opinions provided, inter alia, take into consideration currently available guidance relating to acceptable contamination concentrations and no liability can be accepted for the retrospective effects of any future changes or amendments to these values.

**APPENDIX C: CURRENT CONTAMINATED LAND GUIDANCE / LEGISLATION & RISK ASSESSMENT
METHODOLOGIES**

CURRENT CONTAMINATED LAND LEGISLATION / GUIDANCE & ENVIRONMENTAL RISK ASSESSMENT METHODOLOGY

LEGISLATION OVERVIEW

This report includes hazard identification and risk assessment in line with the risk-based methods referred to in relevant UK legislation and guidance. Government environmental policy is based upon a "suitable for use approach". When considering the current use of land, Part IIA of the Environment Protection Act 1990 (EPA 1990) provides the regulatory regime, which was introduced by Section 57 of the Environment Act 1995, which came into force in England on 1 April 2000. The main objective of introducing the Part IIA regime is to provide an improved system for the identification and remediation of land where contamination is causing unacceptable risks to human health, or the wider environment given the current use and circumstances of the land.

Part IIA provides a statutory definition of contaminated land under Section 78A(2) as:

"any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, on, or under the land, that:

Significant harm is being caused or there is a significant possibility of such harm being caused;
or
Pollution of controlled waters is being, or is likely to be, caused."

Part IIA provides a statutory definition of the pollution of controlled waters under Section 78A(9) as:

"the entry into controlled waters of **any** poisonous, noxious or polluting matter or **any** solid waste matter".

To assist in establishing if there is a "significant possibility of significant harm" there must be a "significant pollutant linkage" for potential harm to exist. That means there must be a source(s) of contamination, sensitive receptors present and a connection or pathway between the two. This combination of source-pathway-receptor is termed a "pollutant linkage or SPR linkage."

Part IIA of The Environmental Protection Act 1990 is supported by a substantial quantity of guidance and other Regulations, especially DEFRA Circular 01/2006 Contaminated Land (this replaces DETR Circular 02/2000). Part IIA defines the duties of Local Authorities in dealing with it. Except for situations of very high pollution risk, Part IIA places contaminated land responsibility on the planning and redevelopment process. In situations where there is very high pollution risk direct action from the Local Authority is usually necessary. Planning Policy Statement 23 (PPS23) provides guidance on the planning process and requires that sites which have been developed shall not be capable of being determined "contaminated land" under Part IIA.

The criteria for assessing levels of pollutants and hence determining whether a site represents a hazard are based on a range of techniques, models, and guidance. Within this context it is relevant to note that Government objectives are:

- (a) to identify and remove unacceptable risks to human health and the environment;
- (b) to seek to bring damaged land back into beneficial use;
- (c) to seek to ensure that the cost burdens faced by individuals, companies and society are proportionate, manageable, and economically sustainable.

These three objectives underlie the "suitable for use" approach to remediation of contaminated land. The "suitable for use" approach focuses on the risks caused by land contamination. The approach recognises that the risks presented by any given level of contamination will vary greatly according to the use of the land and a wide range of other factors, such as the underlying geology of the site. Risks therefore should be assessed on a site-by-site basis.

The "suitable for use" approach then consists of three elements:

- (a) ensuring that land is suitable for its current use - in other words, identifying any land where contamination is causing unacceptable risks to human health and the environment, assessed on the basis of the current use and circumstances of the land, and returning such land to a condition where such risks no longer arise; the contaminated land regime provides the regulatory mechanisms to achieve this;
- (b) ensuring that land is made suitable for any new use, as planning permission is given for that new use - in other words, assessing the potential risks from contamination, on the basis of the proposed future use and circumstances, before official permission is given for the development and, where necessary to avoid unacceptable risks to human health and the environment, remediating the land before the new use commences; this is the role of the town and country planning and building control regimes; and
- (c) limiting requirements for remediation to the work necessary to prevent unacceptable risks to human health or the environment in relation to the current use or future use of the land for which planning permission is being sought - in other words, recognising that the risks from contaminated land can be satisfactorily assessed only in the context of specific uses of the land (whether current or proposed), and that any attempt to guess what might be needed at some time in the future for other uses is likely to result either in premature work (thereby running the risk of distorting social, economic and environmental priorities) or in unnecessary work (thereby wasting resources).

The mere presence of pollutants does not therefore necessarily warrant action, and consideration must be given to the scale of risk involved for the current and proposed end use of the site.

RISK ASSESSMENT METHODOLOGY

Current practice recommends that the determination of potential liabilities that could arise from land contamination be carried out using the process of risk assessment, whereby "risk" is defined as:

- “(a) The probability, or frequency, or occurrence of a defined hazard; and
- (b) The magnitude (including the seriousness) of the consequences.”

The UK’s approach to the assessment of environmental risk is set out in by the Department of the Environment (2000) publication “A Guide to Risk Assessment and Risk Management for Environmental Protection.” This established an iterative, systematic staged process which comprises:

- (a) Hazard identification
- (b) Hazard assessment
- (c) Risk estimation
- (d) Risk evaluation
- (e) Risk Assessment

At each stage during the investigation process the above steps are repeated as more detailed information becomes available for the site.

CLR11- ‘Model Procedures for the Management of Land Contamination’, a document published by the Department for Environment, Food and Rural Affairs (DEFRA) and the Environment Agency (EA) outlines a tiered approach to the assessment of risks posed by contaminated land, as summarised hereunder:

Tier 1: Preliminary Risk Assessment

A Preliminary Risk Assessment is usually undertaken as part of a desk study, outlines potential risks posed by potential contamination to all receptors by defining plausible “pollution linkages” and developing a preliminary conceptual model (PCM). The purpose of this model is to define all possible complete pollution linkages, where the requisite source – pathway – target elements are present, and these elements being defined as:

- a contaminant (source) is a hazardous substance or agent, present at levels that have the potential to cause harm or damage a receptor
- a pathway is the means by or through which a contaminant meets, or otherwise affects, the receptor
- a receptor (target) is an entity (human being, aquatic environment, flora, and fauna etc) that is vulnerable to the adverse effects of the contaminant

This relationship is termed a “pollution linkage”. It should be recognised that for a health or environmental risk to exist, all three elements of the relationship or linkage must be present, i.e.

- if there is no contaminant, or contaminant present at levels below those considered to be harmful or damaging to a receptor, then there can be no adverse effect on a receptor
- if there is no receptor present that can be adversely affected by a contaminant, no harm or damage can arise
- even where both a contaminant and a receptor are present, no harm or damage will occur if there is no pathway by or through which a linkage between the two can be established

The absence of one or more of each component (source, pathway, receptor) would prevent a pollutant linkage being established and there would be no significant environmental risk.

The PCM is subject to continual refinement as additional data becomes available. As part of a Phase I Investigation (Desk Study and site walk over) a PCM is formed. Based on the PCM, potential pollutant linkages can be assessed. If the PCM and hazard assessment indicate that a pollution linkage is not of significance, then no further assessment or action is required due to this linkage. For each significant and possible linkage, a risk assessment is carried out. The linkages which potentially pose significant risks may require a variety of responses ranging from immediate remedial action or risk management or, more commonly, further investigation and risk assessment. This next stage is usually termed a Phase II Main Site Investigation and should provide additional data to allow refinement of the PCM and assess the level of risk from each pollutant linkage. Risk assessment will usually include Tier 2 Generic Quantitative Risk Assessment and / or, if necessary, a Tier 3 Detailed Quantitative Risk Assessment.

Tier 2: Generic Quantitative Risk Assessment (GQRA)

GQRA requires an intrusive investigation to characterise the site assisting in the re-assessment of the source-pathway receptor linkage. The conceptual model should be refined accordingly.

Upon completion of an intrusive investigation, it must be decided whether Generic Assessment Criteria (GAC) are suitable for assessing the risk posed by potential contamination at the site. If GAC are deemed unacceptable for risk assessment purposes or cannot be developed a Tier 3 Detailed Quantitative Risk Assessment (DQRA) is required.

If GQRA reveals that unacceptable risks are not present, then no further action is required. If GQRA identifies a possibility of risk, a decision must be made whether further work is required or necessary for the purposes of risk assessment. If further risk assessment is deemed not suitable not required, an Options Appraisal should be undertaken. If further risk assessment is required, the scope nature of further risk assessment must be decided – it is possible that a Tier 3 DQRA will be undertaken in this scenario.

Tier 3: Detailed Quantitative Risk Assessment (DQRA)

DQRA is used when pollutant linkages require further assessment. DQRA is often undertaken for pollutant linkages where GAC are unavailable or inappropriate for or more conservative than the actual circumstances of the site. Site specific data is used to create Site Specific Assessment Criteria (SSAC) and enable a more accurate assessment of the risks. Further investigation may or may not be required to formulate SSAC depending on the site-specific conditions and information already obtained.

If DQRA reveals that unacceptable risks are not present, then no further action is required. If DQRA identifies a possibility of risk, a decision must be made whether further work is required or necessary for the purposes of risk assessment. If further risk assessment is deemed not suitable not

required, an Options Appraisal should be undertaken. If further risk assessment is required, the scope and nature of further risk assessment must be decided at this point.

NOTE: A Tier 1 Preliminary Risk Assessment is undertaken as part of a Desk Study Report and a Preliminary Conceptual Model is developed for all pollutant linkages. However, the methodologies for assessing the risks to human health, risks to controlled waters and risk posed by ground gas using quantitative techniques vary considerably, therefore GQRA and DQRA for human health, controlled waters and ground gas must be undertaken separately. The risk assessment methodologies where quantitative assessment is used for risks to human health, risks to controlled waters and risks posed by ground gas, if relevant, are described hereunder.

BACKGROUND INFORMATION, CURRENT GUIDANCE AND RISK ASSESSMENT METHODOLOGY FOR RISKS POSED TO HUMAN HEALTH

Background

In March 2002, the Department for Environment, Food and Rural Affairs (DEFRA) and the EA published the Contaminated Land Exposure Assessment (CLEA) Model and a series of related reports. These were designed to provide a scientifically based framework for the assessment of chronic risks to human health from contaminated land. These reports (CLR7-10) together with associated "SGV" documents have since been withdrawn (August 2008) and the following documents have been published as revised guidance to the CLEA assessment:

Environment Agency : 2008: Updated Technical Background to the CLEA model Science Report SC050021/SR3

Environment Agency : 2008: Human Health Toxicological Assessment of Contaminants in Soil SC050021/SR2

Additional guidance on statistical assessment replacing CLR 7 is provided in:

CL:AIRE :2008 Guidance on Comparing Data with a Critical Concentration

Other guidance/software used in spatial / statistical assessment is provided in:

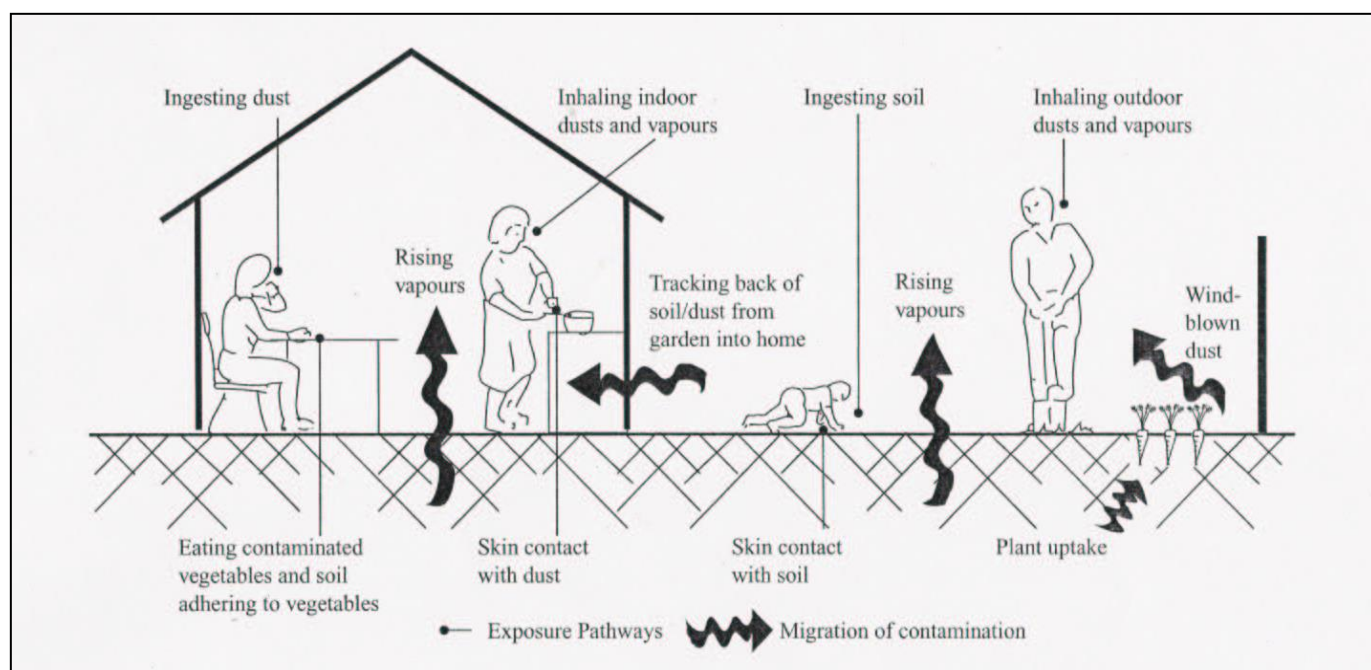
USEPA 2006: Data Quality Assessment: Statistical Methods for Practitioners

Spatial Analysis and Decision Assistance (SADA) – The University of Tennessee

A different approach to the statistical appraisal of data is required depending on whether the assessment of risk is to assess whether land is Contaminated Land in accordance with regulations, or whether the assessment is to determine whether the site is suitable for new development in according with Planning guidance. This is discussed further in CL:AIRE :2008 "Guidance on Comparing Data with a Critical Concentration".

A program for the derivation of GAC's based on the above guidance is provided by the Environment Agency and is entitled "CLEA Software Version 1.04".

The CLEA model has been developed to calculate an estimated tolerable daily soil intake (TDSI) for site users given a set 'default' exposure pathway. Ten human exposure pathways are covered in the CLEA model as presented below:



Ingestion

ingestion of outdoor soil

ingestion of indoor dust

ingestion of home grown produce

ingestion of soil attached to home grown produce

Dermal Contact

dermal contact with outdoor soil
dermal contact with indoor dust

Inhalation

inhalation of outdoor dust
inhalation of indoor dust
inhalation of outdoor soil vapour
inhalation of indoor soil vapour

It should be noted that there is other potential exposure pathways on some sites not included in the CLEA model e.g., certain organic compounds can pass through plastic water pipes into drinking water supply.

Where contaminated water is present at a depth less than 2.00mbgl and there is a potential risk of inhalation of vapours (only when volatile compounds are present) the risk from inhalation of vapours from soil water will be assessed using a UK compliant version of BP Risc v4.02.

The presence and/or significance of each of the above exposure pathways are dependent on the type of land use being considered and the nature of the contaminant under scrutiny. Accordingly, the CLEA model considers for principal 'default' land use types and makes a series of 'default' assumptions about human exposure frequency, duration and critical human target groups for each land use considered:

residential
allotments
commercial / industrial land use

The above land use categories defined in the CLEA are detailed below:

Residential: This generic scenario assumes a typical residential property consisting of a two-storey house built on a ground-bearing slab with a private garden consisting of lawn, flowerbeds, and a small fruit and vegetable patch. The occupants are assumed to be parents with young children, who make regular use of the garden area.

Allotments: This generic scenario assumes a plot of open space (about 250 m²), commonly made available by the local authority to tenants to grow fruit and vegetables for their own consumption. There are usually several plots to a site and the overall site area may cover more than a hectare. The tenants are assumed to be parents or grandparents and that young children make occasional accompanied visits to the plot.

Commercial/Industrial: There are many kinds of workplace and work-related activities. This generic scenario assumes a typical commercial or light industrial property consisting of a three-storey building at which employees spend most time indoors and are involved in office based or relatively light physical work.

Human Health Risk Assessment Methodology

Assessment of risk for the protection of human health is undertaken using the methodology as outlined previously, and summarised hereunder:

Tier 1 Preliminary Risk Assessment
Tier 2 Generic Quantitative Risk Assessment
Tier 3 Detailed Quantitative Risk Assessment

The Tier 1 Preliminary Risk Assessment is undertaken as part of the desk study report and includes the development of a Preliminary Conceptual Model. Tier 2 and Tier 3 Quantitative Risk Assessments are undertaken to develop and refine the Preliminary Conceptual Model aiding a more detailed assessment of the risk posed by contaminants revealed by site investigation and soil / soil water chemical analyses.

The methods used by CC GEOTECHNICAL LTD to derive assessment criteria, to statistically analyse chemical data and to compare chemical data to the derived assessment criteria are discussed hereunder.

Derivation of Generic Assessment Criteria (GAC) and Site-Specific Assessment Criteria (SSAC)

GAC's are derived based on the proposed land use and the associated applicable exposure pathways. It should be noted that there are difficulties in establishing soil concentrations of contaminants beyond which risks from exposure to these contaminants would be 'unacceptable' and the GAC value does not necessarily equate to the level for "significant possibility of significant harm" as defined in Part IIA of The Environmental Protection Act (1990) to determine whether land is "contaminated." This ultimately requires detailed 'toxicological' information of the health effects of individual contaminants and a scientific judgement on what constitutes an 'unacceptable' risk. The primary purpose of the CLEA derived GAC's are as 'minimal risk thresholds' for the assessment of human health risks in relation to land use.

Minimal risk thresholds calculated using generic input parameters for each of the above land uses are termed Generic Assessment Criteria (GAC) and are used for Generic Quantitative Risk Assessment (GQRA). However, further assessment may be required taking into consideration site specific factors such as the way the land is used, the soil type, the building characteristics, and the exact nature of the receptor, to determine whether there is a significant possibility of risk to human health to site users. Such an assessment is known as a Detailed Quantitative Risk Assessment (DQRA) and the resultant threshold concentrations are known as Site Specific Assessment Criteria (SSAC). Such assessments should be conducted with the agreement of the local authority (or the Environment Agency) since it is the authority that determines whether land is Contaminated Land or whether Planning Permission for a new development may be granted.

For the purposes of this report, assessment criteria have been derived in accordance with current guidance based on the conceptual model for the proposed land use using the CLEA v1.04 software. These criteria are not intended to indicate whether the site may be contaminated land, nor do they replace any published soil guideline values. However, the values are intended to provide guidance for the local authority on whether the site may be considered uncontaminated. If, based on the site's proposed future use, the site would be considered by the local authority to be uncontaminated and therefore, on the basis of soil concentrations, fit for purpose, then no further risk assessment based on soil concentrations and the risk to human health would be necessary. However, should these criteria be exceeded, or the conceptual site model vary from the model used in the risk assessment to derive these values then the risk assessment should be updated accordingly.

For contaminants routinely analysed where inhalation is a significant pathway (naphthalene, phenanthrene, Aromatic EC5-EC7, Aromatic EC7-EC8, Aromatic EC8-EC10, Aromatic EC10-EC12, Aromatic EC12-EC16, Aliphatic EC5-EC6, Aliphatic EC8-EC10, Aliphatic EC10-EC12, Aliphatic EC12-EC16), plots of the GAC as a function of Soil Organic Matter (SOM) are used to determine if they pose a potential risk to human health, which are presented hereunder. Where there is an exceedance further assessment may be undertaken.

Statistical Assessment of Soil Contamination Data & Comparison of Contamination Data to Threshold Values

In any site investigation only a small fraction of the soil on the site is analysed. Therefore, the mean derived from the contamination data for a contaminant may not be the same as the true mean for the contaminant distribution on the site. To improve the reliability of any assessment a statistical analysis is undertaken in line with the CL:AIRE document "Guidance on Comparing Soil Contamination Data with a Critical Concentration".

Statistical assessment of soil data is undertaken using programs based on the guidance in the CL:AIRE document or the USEPA software ProUCL v4.0.

Where the number of results in a dataset is less than four, a statistical assessment is not undertaken, and the assessment is performed by comparison of the maximum value(s) with a Health Criteria Value (HCV), such as Generic Assessment Criteria value(s).

For the Planning situation, the regulator needs to check whether the concentration of contaminants is low compared to the HCV. This decision is based on whether there is at least a 95% confidence level that the true mean of the dataset is lower than the HCV.

For the Part IIA scenario the regulator needs to determine whether the concentration of contaminants is greater than the HCV. This decision is based on whether there is at least a 95% confidence level that the true mean of the dataset is higher than the HCV. However, the regulator may proceed with determination if there is just a 51% probability, "on the balance of probabilities".

The Outlier Test used in the statistical assessment may not be able identify separate populations if numerous populations are present. To ensure that this is not the case a spatial assessment of the data will be undertaken using SADA.

If the screening levels are exceeded, then more sophisticated quantitative risk assessment or remedial action may be undertaken. The benefits of undertaking a quantitative risk assessment must be weighed against the likelihood that it will bring about cost savings in the proposed remediation.

BACKGROUND INFORMATION, CURRENT GUIDANCE AND RISK ASSESSMENT METHODOLOGY FOR RISKS POSED TO CONTROLLED WATER

Definition of Controlled Waters

The term 'controlled waters' is defined in Section 104 of the Water Resources Act 1991 as:

"Territorial Waters...which extend seawards for three miles..., coastal waters..., inland freshwaters, waters in any relevant lake or pond or of so much of any relevant river or watercourse as is above the freshwater limit, and ground waters, that is to say, any waters contained in underground strata."

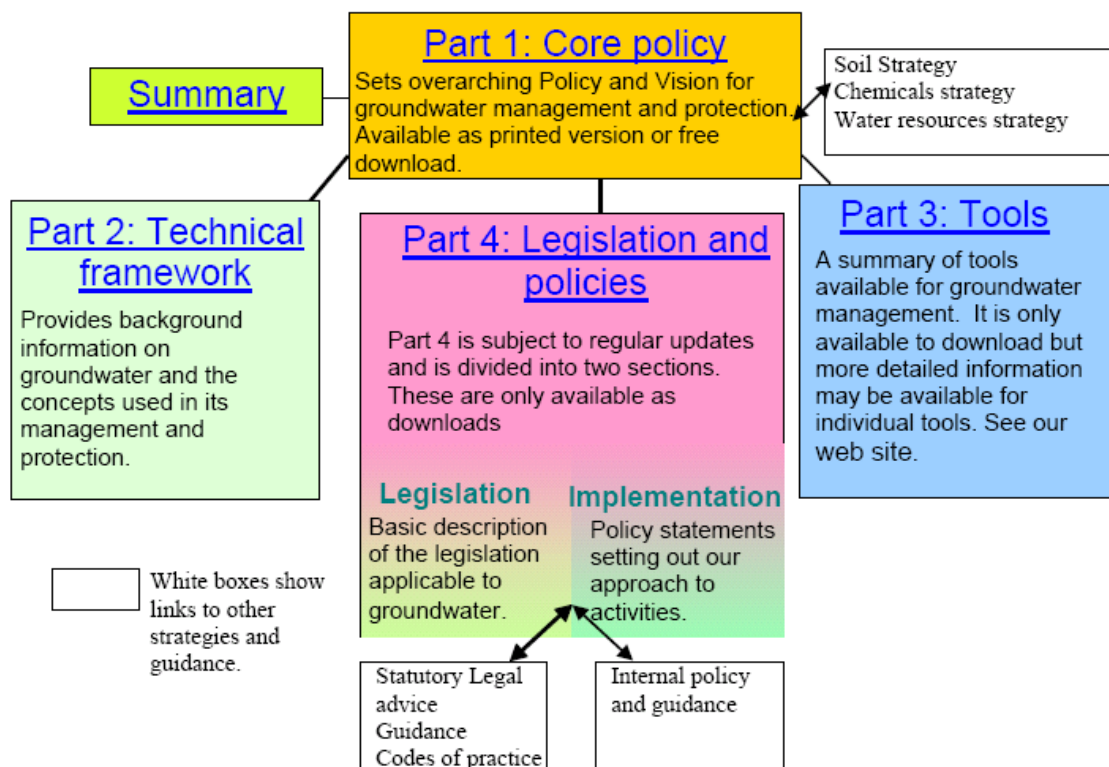
Note that the definition of groundwater under the Water Resources Act 1991 includes all water within underground strata (including soil / pore water in the unsaturated zone). The definition of groundwater under the Groundwater Directive however is limited to water in the saturated zone. For the purposes of Part IIA of the Environmental Protection Act 1990, the Environment Agency recommends that the groundwater within the saturated zone only is considered as the receptor (rather than soil / pore water).

Environment Agency Guidance

Legislation and guidance surrounding the protection of controlled waters in the UK is abundant and can be complex. The Environment Agency's overall position on groundwater is "To protect and manage groundwater resources for present and future generation in ways that are appropriate for the risks that we identify" (Groundwater Protection : Policy and Practice GP3, 2006). In brief, the core objectives of the existing legislation serve to enforce this position.

In 1992, the National Rivers Authority published their Policy and Practice for the Protection of Groundwater (PPPG), this document was influential as it provided a focus for key developments such as Source Protection Zones (SPZs) and Groundwater Vulnerability Maps. The Policy was then revised in 1998, since which there have been substantial changes in legislation, driven by Europe. Key European Directives relating to groundwater include the Groundwater Directive (80/68/EEC) and the Water Framework Directive (2000/60/EC). Aspects of these directives are controlled by primary UK legislation such as the Water Resources Act 1991. Further to legislative changes, gaps identified in the 1998 PPPG required addressing. These changes are reflected in the forthcoming Environment Agency Policy document entitled Groundwater Protection : Policy and Practice (GP3), a draft version of which was available for public consultation (Parts 1 to 3) ending July 2006 with Part 4 issued in March 2008. Part 4 includes a section on key groundwater legislation and the Environment Agency's interpretation of it.

The following gives a breakdown of the structure of the document (taken from the Environment Agency GP3 draft consultation document, 2006)



Controlled Water Risk Assessment Methodology

The risk posed to controlled water is assessed by CC GEOTECHNICAL in accordance with current guidance as outlined hereunder.

In order for a developer of a potentially contaminated site to fulfil their obligations under the legislation, a site assessment would be required to be undertaken in order to identify any potential risks to controlled waters and to derive suitable clean-up criteria if necessary to ensure the protection of controlled waters. The general approach for Groundwater Protection is detailed further in Part 3 of GP3.

When assessing groundwater impact the Environment Agency advocate the application of their framework methodology "Remedial Targets Methodology – Hydrogeological Risk Assessment for Land Contamination" Environment Agency (2006). The methodology has four levels of assessment as described below:

Level 1 considers whether contaminant concentrations in "pore water" in contaminated soil are enough to impact on the receptor, ignoring dilution, dispersion, and attenuation along the pathway. The "pore water" concentration is determined from:

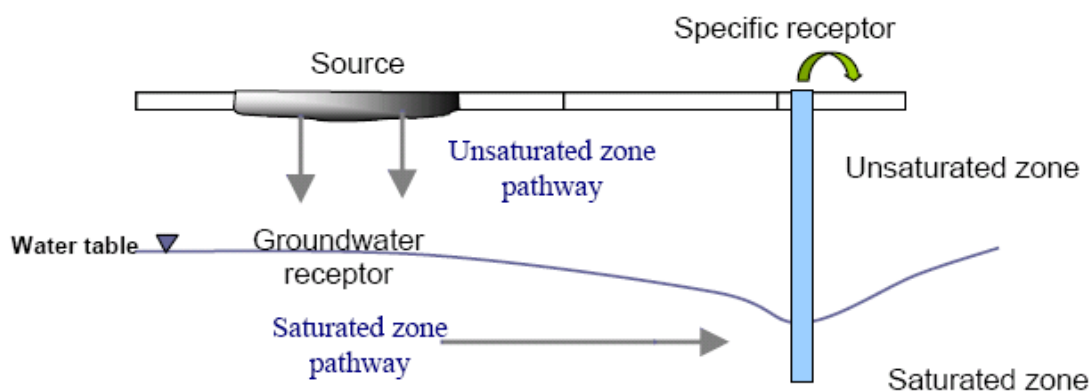
- measured "pore water" concentrations or perched water quality
- ii) soil leaching tests
- iii) theoretical calculations based on soil/water partitioning equations

Level 2 considers dilution by the receiving groundwater or surface water body and whether this is enough to reduce contaminant concentrations to acceptable levels. The remedial target is defined as the target concentration multiplied by a dilution factor (DF).

Levels 3 and 4 consider whether natural attenuation (including dispersion, retardation, and degradation) of the contaminant as it moves through the unsaturated and saturated zones to the receptor are enough to reduce contaminant concentrations to acceptable levels. The remedial target is defined as target concentration multiplied by a dilution factor (DF) and attenuation factor (AF). In Level 3 simple analytical models are used to calculate the significance of attenuation. The Environment Agency has released a "Remedial targets worksheet v3.1" to carry out basic calculations using a conservative approach up to Level 3 using basic principles assuming a simple migration of contaminants from the source zone into the aquifer receptor. Level 4 assessment uses more sophisticated numerical models and allows for the introduction of additional geological horizons and is used mainly to determine whether soil contaminants will reach their target within a specified timeframe. Use of such software should only be used once agreement has been obtained from the Environment Agency.

Three main stages apply to any risk assessment of controlled waters, these are:

1. Risk Screening (Tier 1 Preliminary Risk Assessment): The understanding of the Conceptual Site Model (CSM) is the key to assessing any site. Using a robust CSM, potential pathways or receptors may be screened out from any further assessment at an early stage. For example, if the pathway through the unsaturated zone is blocked by the presence of a significant thickness of low permeability clay. A greater understanding of the CSM is achieved with each tier of risk assessment. An example of a basic CSM is given below (taken from the Environment Agency GP3 draft consultation document, 2006):



2. Generic Hydrogeological Risk Assessment (EA Remedial Targets Methodology Level 1): When undertaking the Generic Hydrogeological Risk Assessment (EA Remedial Targets Methodology Tier 1), comparison of chemical analytical results is made with screening criteria. Published values of screening criteria with which chemical test results can be compared are published in the following guidance:

Water Supply (Water Quality) Regulations 2000

The Private Water Supplies Regulations 1991

Environmental Quality Standards for surface waters based on The EC Dangerous Substances Directive (76/464/EEC and Daughter Directives)

The Surface Waters (Abstraction for Drinking Water Classification) Regulations 1996

World Health Organisation Drinking Water Standards 2004

Should the Level 1 assessment indicate threshold levels to be exceeded, then there are three alternative ways in which to proceed:

To devise suitable remedial solutions

To carry out more investigation, sampling, and analysis

To conduct a site specific Detailed Quantitative Risk Assessment (DQRA) to determine if the materials are suitable for their proposed use, or devise site specific clean-up level

3. Detailed Quantitative Risk Assessment (EA Remedial Targets Methodology Levels 2 to 4): The decision to carry out a DQRA will be dependant on the extent and implications of the initial qualitative and generic assessment. The scope of any such assessment will be accurately defined by the outcomes of the previous levels of assessment. The conceptual model will be sufficiently refined by this stage that only certain contaminants of concern, certain pathways and certain receptors will require further assessment, the remainder having been screened out.

Additional site-specific data is normally required for this stage of assessment, as explained above, more processes that are capable of affecting contaminant concentrations are considered (such as dilution and attenuation).

Remediation criteria, if derived, will therefore be specific to each site and will be based on a detailed assessment of the potential impact at the identified receptor or compliance point. A greater level of confidence can be placed on the predicted impact on the compliance point following a DQRA.

BACKGROUND INFORMATION, CURRENT GUIDANCE AND RISK ASSESSMENT METHODOLOGY FOR RISKS POSED BY GROUND GAS

Origin of Ground and Landfill Gases

When carrying out a ground gas risk assessment, the origin or source of the gases is important as potential risks will vary depending on the source. This Appendix relates to the risk of the two main ground gases of concern; methane and carbon dioxide and does not apply to other ground gases (e.g., radon or vapours from hydrocarbon spills). Methane and carbon dioxide are major constituents of landfill gas but can also occur from a variety of anthropogenic and natural sources, as summarised in Table 5 below:

Gas	Source	Comments
Landfill Gas	Anaerobic decomposition of degradable waste within landfill sites. Typically, 60% methane and 40% carbon dioxide during methanogenic phase.	Composition varies over time, particularly in early stages. Contains a range of minor constituents (particularly carbon monoxide and hydrogen sulphide).
Landfill Associated Gases	- Anaerobic degradation of leachate external to the site; - Degassing of dissolved gases in groundwater; - Evolution of gases following interaction between leachate and groundwater	Can result in secondary (external) production of methane or carbon dioxide.
Made Ground	Anaerobic degradation of organic components	Very variable depending on source
Sewer Gas, Cess Pits	Anaerobic degradation of organic components of sewage producing methane and carbon dioxide.	Often characterised by hydrogen sulphide odour.
Mains Gas	Leakage from underground pipework or storage tanks. Mainly methane but often contains higher alkanes.	An odourise is added to permit detection of leaks. Typically, 90% CH ₄ , but 1 to 27% C ₂ -C ₄ alkanes, May

Gas	Source	Comments
		also contain other trace gases e.g., CO, helium, and CO ₂ (from degradation of CH ₄ in the ground).
Other Anthropogenic Sources	- Degradation of leaked or spilled hydrocarbons or other industrial chemicals; - Anaerobic degradation of organic contaminants in groundwaters (e.g., silage liquor); - Reactions between monitoring well construction components and environment; - Burial grounds/cemeteries.	Hydrocarbon spillages often have an 'oily' odour. Fuel spillages common – Petrol or Diesel and can contain a wide range of VOC's. Can degrade to produce methane / carbon dioxide.
Alluvium / Marsh / Peat Gas	Anaerobic microbial degradation of organic material (usually waterlogged vegetation / peat). Often associated with the presence of alluvial deposits or dredging's.	
Geogenic Gas	Natural seepages of carbon dioxide and hydrocarbon gases derived from geologic sources such as coal seams and deep oil / gas source formations. Can be present in solution in groundwaters.	Methane most common but can contain carbon dioxide and higher alkanes.
Mine Gases	Various types. Most common is "fire damp" with high methane, produced by the desorption of gas trapped in coal. "Black damp" (Scythe gas) with high carbon dioxide and denser than air. "White damp" is high in carbon monoxide.	Methane most common. Can contain higher alkanes, carbon dioxide and carbon monoxide. Often low in oxygen.
Natural Shallow Ground Gas	Various types - high carbon dioxide formed by subsurface aerobic activity leading to depleted oxygen and elevated carbon dioxide; - chemical degradation of rocks (e.g., carbonates) producing carbon dioxide; - carbon dioxide production in root zone of soils by plants.	Gases can be emitted from ground under falling barometric pressure conditions.

Table 5. Potential Sources of Ground Gases

This Appendix does not provide guidance for the assessment of risk when other gases are present due to 'Other Sources' from the above table (particularly organic compounds such as BTEX and VOC's or for the risk from radon or hydrogen sulphide).

To determine the origin of the gas a range of factors must be considered together, including;

1. Proximity of likely sources
2. Ground conditions (geology, hydrogeology, anthropogenic pathways etc)
3. Properties of gases present including:
 - Chemical composition
 - Physical properties
 - Ratios of components e.g., methane : carbon dioxide
4. Timeframe of activities such as infilling periods, capping works, installation of gas control systems etc

Identification of the originating source may be problematic given that there may be more than one source present and trace gas analysis may be required. Identification of the sources of the gases encountered during monitoring is usually carried out through a process of eliminating the most unlikely potential sources (given the site setting) and selecting those which are most likely.

Hazards Associated with Presence of Methane

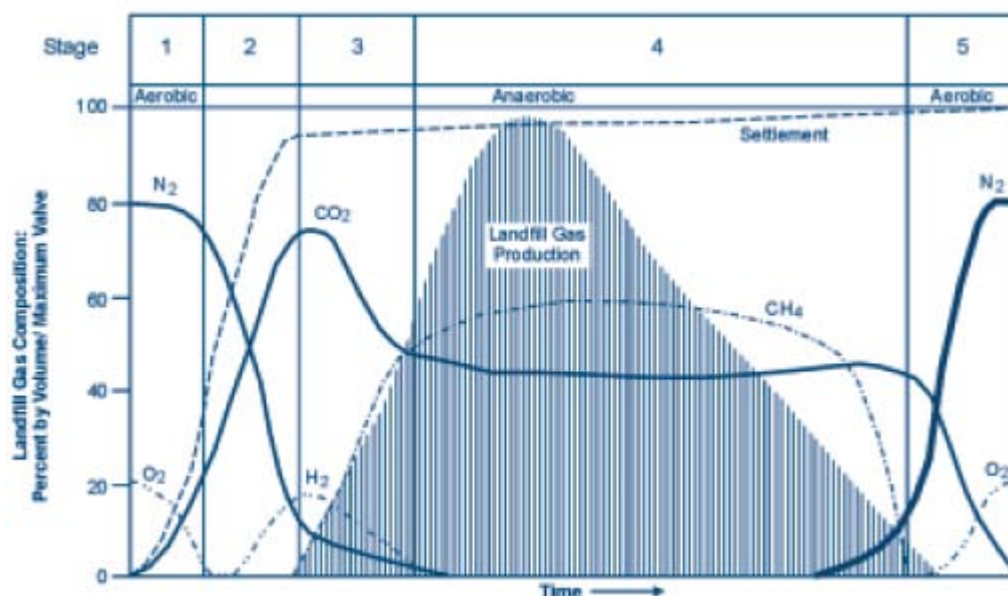
Methane gas is combustible and potentially explosive. When the concentration of methane in air is between the limits of 5.0%v/v and 15.0%v/v an explosive mixture is formed. The Lower Explosive Limit (LEL) of methane is 5.0%v/v, which is equivalent to 100% LEL. The 15.0%v/v limit is known as the Upper Explosive Limit (UEL), but concentrations above this level cannot be assumed to represent safe concentrations. Further, the LEL and UEL will vary (up and down) depending upon the proportion of other gases (including oxygen). However, the fact that methane is a colourless, odourless gas means that there is no simple indicator of the presence of the gas until such a time as explosive limits are reached, and an incident occurs. Methane is lighter than air and has a low toxicity. However, at high concentrations it can result in asphyxiation due to oxygen displacement.

Hazards Associated with Presence of Carbon Dioxide

Carbon dioxide is a colourless, odourless gas, which, although non-flammable, is both toxic and an asphyxiant. As carbon dioxide is denser than air, it will collect in low points and depressions. The UK Health & Safety Executive (HSE) has published information relating to concentrations of carbon dioxide that humans may be exposed to, which uses concentrations contained in the Control of Substances Hazardous to Health Regulations 2002 (as amended). These are the Long-Term Occupational Exposure Limit (LTOEL, 8-hour period) and the Short-Term Occupational Exposure Limit (STOEL, 15-minute period), which are 0.5% and 1.5% carbon dioxide, respectively.

Parameters Influencing the Rate of Ground Gas Production

The figure below is taken from EA guidance document LFTGN 03 illustrates typical ground gas generation curves from biodegradable materials:



The production of methane and carbon dioxide at a landfill site may be expected to be considerable and ongoing. Concentrations of methane will eventually decrease, followed by concentrations of carbon dioxide, but the duration and rate of gas production can vary markedly between sites. Five distinct phases of gas production occur during the process which are, in order of event as marked above, as follows:

1. An aerobic phase involving oxygen depletion and temperature increase through aerobic respiration;
2. The establishment of anaerobic conditions and the evolution of carbon dioxide and hydrogen through acidogenic activity;
3. Commencement of methanogenic activity; the establishment of populations of methanogenic bacteria;
4. A phase of stable methanogenic activity, which may go on for many tens of years;
5. A phase of decreasing methanogenic activity, representing depletion of the organic material and a return to aerobic conditions.

The time scale for the return to the normal ground gas concentrations will be highly variable, depending upon the types and quantities of materials present. In addition, the optimum parameters influencing the rate of decomposition and ground gas production within the ground at a site are as follows:

High water content with adequate rainfall and water infiltration to provide moisture content between approximately 20 to 26%;
 Conditions that either are or are very close to anaerobic;
 High proportion of biodegradable materials;
 A pH between 6.5 and 8.5, ideally verging slightly on the acidic between pH 6 to 7;
 Temperature between 25°C and 55°C;
 The ratio of the biochemical and chemical oxygen demands (BOD:COD);
 High permeability;
 Small particle size, as finer subsurface materials possess a greater surface area to provide a growing 'face' for the micro-organisms, but high fines levels reduce permeability and reduces decomposition rate.

For this reason, it is vital that sources of methane and carbon dioxide are identified prior to the commencement of any work on a construction site, and that the ground gas regime is characterised at the worst temporal conditions a site may experience. From this, a risk assessment is carried out to identify the risk at the site from ground gases so that suitable protection measures can be designed and incorporated into a development to prevent a dangerous build-up of gas occurring.

Factors Influencing the Migration and Behaviour of Ground Gases

There are many factors that influence the migration of ground gases which can affect the risk from a gassing source:

driving force – pressure differential along a pathway, diffusion and dissolved in solution;
 meteorological conditions – short term and seasonal conditions including atmospheric pressure changes (e.g., rapidly falling pressure causes gas to expand increasing emission rates), rainfall, frozen ground and thawing, temperature;
 geological and groundwater conditions – these can have the over riding influence on the direction/pathways and quantity of migrating gas;
 anthropogenic influences – man-made pathways include mine shafts, service runs/drains, foundation piles, underground voids/pits/basements, foundation/building design/construction

Current Guidance

Previous versions of Building Regulations Approved Document C provided statutory guidance stating that consideration should be given to appropriate action and / or specific solutions in situations where methane concentration exceeded 1%v/v or carbon dioxide concentrations exceeded 5%v/v. The latest Building Regulations Approved Document C (DoE 2004) no longer endorses this approach and recommends the use of a risk-based approach to interpreting a gas monitoring survey. This is in line with current EA guidance for landfill gas (LFTGN 03, 2004) which recommends the use of a structured risk-based approach like that outlined in CLR 11. On this basis, recent guidance has been produced in 2006 and 2007 with the aim of providing up to date advice in relation to residential and commercial development. The guidance does not address issues associated with gas derived from landfills, for this refer to "Guidance on the Management of Landfill Gas" (Environment Agency 2004) for an overview.

Recent guidance relevant to gas assessments for residential and commercial development includes;

Wilson et al. (CIRIA C665, December 2007) "Assessing Risks Posed by Hazardous Ground Gases for Buildings."

This document provides up to date advice on all aspects of ground gas risk assessment such as investigation, monitoring programmes, data collection and interpretation. The guidance presents separate methodologies for the characterisation of:

All development types except low rise housing with gardens (Situation A)

Low rise housing with gardens (Situation B)

Boyle and Witherington (NHBC / RSK Group, Report 10627-R01(04) January 2007) "Guidance on the Evaluation of Development Proposals on Sites where Methane and Carbon Dioxide are Present."

This document presents the "Traffic Lights System" detailed below and is relevant only for low rise properties (e.g., bungalows and town houses) that have a ventilated sub-floor void (i.e., Situation B as described in CIRIA C665).

British Standard (BS 8485, December 2007) "Code of Practice for the Characterization and Remediation from Ground Gas in Affected Developments"

This document provides an overview of gas characterisation and assessment. The Standard is intended to be used by designers of gas protection measures and regulators involved in the assessment of design solutions.

Further guidance, Wilson, and Card (CIEH) "Ground Gas Handbook for Designers and Regulators" providing practical guidance on ground gas assessments and the design and evaluation of protection measures, is expected to be published in March 2009.

Each of these documents continues to highlight the importance of, and give further guidance towards, carrying out a tiered risk-based decision-making process in accord with government policy on dealing with contamination from historic or natural sources and highlight the importance of the Conceptual Model in site characterisation.

Ground Gas Risk Assessment Methodology

Assessment of risk posed by ground gas is undertaken using the methodology as outlined previously, and summarised hereunder:

Tier 1 Preliminary Risk Assessment

Tier 2 Generic Quantitative Risk Assessment

Tier 3 Detailed Quantitative Risk Assessment

The methodology used in each of the above assessments with concern to ground gas is discussed hereunder.

Tier 1 Preliminary Risk Assessment

All potential sources of methane and carbon dioxide are identified in the Preliminary Conceptual Model and the generation potential determined. The background information discussed earlier is referred to in order to determine the potential for a source to generate ground gas.

CIRIA C665 provides idealised monitoring frequency / period dependant upon generation potential of gas source and sensitivity of the proposed land use as below:

Idealised Frequency and Period of Monitoring (after Table 5.5a and 5.5b, CIRIA C665)

		Generation Potential of Source				
		Very Low	Low	Moderate	High	Very High
Sensitivity of Development	Low (Commercial)	4/1	6/2	6/3	12/6	12/12
	Moderate (Flats)	6/2	6/3	9/6	12/12	24/24
	High (Residential with Gardens)	6/3	9/6	12/6	24/12	24/24

Notes

1. First number is the number of readings and the second is the minimum period in months (e.g., 6/2 – six sets of readings over two months).
2. At least two sets of readings must be at low (preferably under 1,000 mb) and falling pressure.

The monitoring programme is decided using the above table prior to the intrusive site investigation. However, if the intrusive investigation reveals that the potential source is better or worse than anticipated the monitoring programme should be modified accordingly. For example, if the made ground contains no evidence of organic material and comprises entirely granular brick fill, the potential for that made ground to generate ground gas is reduced considerably.

Tier 2 Generic Quantitative Risk Assessment

Generic Quantitative Risk Assessment is undertaken upon completion of the required gas monitoring period.

All three current guidance documents propose that both ground gas concentrations and flow rates are used to calculate the limiting gas well gas volume flow rates for methane and carbon dioxide, based on the ground gas conditions monitored for during the worse-case temporal conditions. This limiting gas well volume flow rate is termed the Gas Screening Value (GSV, note that this was termed borehole gas volume flow), and is calculated as follows:

$$GSV (l/hr) = [\text{gas well gas concentration (\%v/v)}] \times [\text{gas well flow rate (l/hr)}]$$

GSV's are compared to typical max concentrations and limiting gas screening values derived for either Situation A - All development except low rise housing with gardens, or Situation B low rise housing with gardens (NHBC Traffic Light System). Table 8.5 from CIRIA C665 is used for comparison of gas screening values for "Situation A Developments" and is presented hereunder:

Characteristic Situation (CIRIA R149)	Comparable Partners in Technology gas Regime (see Box 8.2)	Risk Classification	Gas Screening Value (CH ₄ or CO ₂) (l/hr) ¹	Additional Factors	Typical Source of Generation
1	A	Very low risk	<0.07	Typically, methane ≤ 1% and/or carbon dioxide ≤ 5%. Otherwise consider increase to Situation 2	Natural soils with low organic content "Typical" made ground
2	B	Low risk	<0.7	Borehole air flow rate not to exceed 70l/hr. Otherwise consider increase to characteristic Situation 3	Natural soil, high peat/organic content. "Typical" made ground
3	C	Moderate risk	<3.5		Old landfill, inert waste, mineworking flooded
4	D	Moderate to high risk	<15	Quantitative risk assessment required to evaluate scope of protective measures.	Mineworking susceptible to flooding, completed landfill (WMP 26B criteria)
5	E	High risk	<70		Mineworking unflooded inactive with shallow workings near surface
6	F	Very high risk	>70		Recent landfill site

Table 8.5 from CIRIA C665 Modified Wilson and Card Classification

Table 8.7 is used for comparison of gas screening values for "Situation B Developments" and is presented hereunder:

Traffic Light	Methane ¹		Carbon Dioxide ²	
	Typical max concentration ³ (% by volume)	Gas screening value ^{2,4} (litres/hour)	Typical concentration ³ (% max by volume)	Gas screening value ^{2,4} (litres/hour)
Green				
Amber 1	1	0.13	5	0.78
Amber 2	5	0.63	10	1.60
Red	20	1.60	30	3.10

Notes:

- The worst-case ground gas regime identified on the site, either methane or carbon dioxide, at the worst-case temporal conditions that the site may be expected to encounter will be the decoder as to what Traffic Light is allocated;
- Borehole Gas Volume Flow Rate, in litres per hour as defined in Wilson and Card (1999), is the borehole flow rate multiplied by the concentration in the air stream of the gas being considered;
- The Typical Maximum Concentration can be exceeded in certain circumstances should the Conceptual Site Model indicate it is safe to do so;
- The Gas Screening Value thresholds should not generally be exceeded without the completion of a detailed ground gas risk assessment considering site-specific conditions.

Table 8.7 from CIRIA C665 - NHBC Traffic light system for 150 mm void

Dependant on the outcome of the assessment of risk posed by ground gas it is determined whether gas protection measures are required for the proposed development, and or whether a detailed quantitative risk assessment is required for the site.

Selection & Design of Protective Measures

Table 8.6 and Box 8.4 of CIRIA C665 contain information on the detailed design of protection measures and were initially intended for the purposes of determining then level of protection measures a development requires. These tables and related text include some useful information on the design of gas protection measures, however BS8485:2007, which supersedes the guidance included within CIRIA C665, is used for selection of gas protection measures.

BS8485: 2007 uses a scoring system dependant on the Characteristic Situation / NHBC Traffic Light and proposed end use of the site. The scoring system is summarised in BS8485:2007 Table 2 as presented hereunder:

Characteristic gas	NHBC traffic	Required gas protection
--------------------	--------------	-------------------------

situation, CS	light	Non-managed property e.g., private housing	Public building (a)	Commercial buildings	Industrial buildings (b)
1	Green	0	0	0	0
2	Amber 1	3	3	2	1 (c)
3	Amber 2	4	3	2	2
4	Red	6 (d)	5(d)	4	3
5			6(e)	5	4
6				7	6

NOTE Traffic light indications are taken from NHBC Report no.:10627-RO1 (04) and are mainly applicable to low-rise residential housing¹. These are for comparative purposes but the boundaries between the traffic light indications and CS values do not coincide.

a) Public buildings include, for example, managed apartments, schools, and hospitals.
b) Industrial buildings are generally open and well ventilated. However, areas such as office pods might require a separate assessment and may be classified as commercial buildings and require a different scope of gas protection to the main building.
c) Maximum methane concentration 20% otherwise consider and increase to CS3.
d) Residential building on higher traffic light/CS sites is not recommended unless the type of construction or site circumstances allow additional levels of protection to be incorporated, e.g., high-performance ventilation or pathway intervention measures, and an associated sustainable system of management of maintenance of the gas control system, e.g., in institutional and/or fully serviced contractual situations.
e) Consideration of issues such as ease of evacuation and how false alarms will be handled are needed when completing the design specification of any gas protection scheme

¹ The NHBC guidance and CIRIA C665 guidance refers to low rise housing (which is up to three storeys without lifts) that is constructed with a 150mm ventilated sub-floor void.

BS8485:2007 Table 2 Required gas protection by characteristic gas situation and type of building

Once a score is assigned, a combination of protection systems / elements is chosen from BS8485:2007 Table 3 shown below:

PROTECTION ELEMENT/SYSTEM		SCORE	COMMENTS
a) Venting/dilution (See Annex A BS8485)			
Passive sub floor ventilation (venting layer can be a clear void or formed using gravel, geocomposites, polystyrene void formers, etc.)A Subfloor ventilation with active abstraction/pressurization (venting layer can be a clear void or formed using gravel, geocomposites, polystyrene void formers, etc.)A Ventilated car park (basement or undercroft)	Very good performance	2.5	Ventilation performance in accordance with Annex A (BS8485)
	Good performance	1	If passive ventilation is poor this is generally unacceptable, and some form of active system will be required.
		2.5	There must be robust management systems in place to ensure the continued maintenance of any ventilation system. Active ventilation can always be designed to meet good performance.
		4	Mechanically assisted systems come in two forms: extraction and positive pressurization.
b) Barriers			
Floor slabs			
Block and beam floor slab		0	It is good practice to install ventilation in all foundation systems to effect pressure relief as a minimum. Breaches in floor slabs such as joints must be effectively sealed against gas ingress in order to maintain these performances.
Reinforced concrete ground bearing slab		0.5	
Reinforced concrete ground bearing foundation raft with limited-service penetrations that are cast into slab		1.5	
Reinforced concrete cast in situ suspended floor slab with minimal service penetrations and water bars around all slab penetrations and at joints		1.5	
Fully tanked basement		2	
c) Membranes			
Taped and sealed membrane to reasonable levels of workmanship/in line with current good practice with validation B,C		0.5	The performance of membranes is heavily dependent on the quality of design of the installation, resistance to damage after installation, and the integrity of joints.
Proprietary gas resistant membrane to reasonable levels of workmanship /in line with good practice under independent inspection (CQA)B,C		1	
Proprietary gas resistant membrane installed to reasonable levels of workmanship/in line with current good practice under CQA with integrity testing and independent validation		2	
d) Monitoring and detection (not applicable to non-managed property, or in isolation)			
Intermittent monitoring using handheld equipment		0.5	Where fitted, permanent monitoring systems ought to be installed in the underfloor venting/dilution system in the first instance but can also be provided within the occupied space as a fail safe.
Permanent monitoring and alarm system A	Installed in the underfloor venting/dilution system	2	
	Installed in the building	1	
e) Pathway Intervention			
Pathway intervention		-	This can consist of site protection measures for off-site or on-site sources (see Annex A, BS8485)
NOTE In practice the choice of materials might well rely on factors such as construction method and the risk of damage after installation. It is important to ensure that the chosen combination gives an appropriate level of protection			
It is possible to test ventilation systems by installing monitoring probes for post installation validation. If a 1 200g DPM material is to function as a gas barrier it should be installed according to BRE 212 /BRE 414 being taped and sealed to all penetrations			

Polymeric Materials > 1200 g (proportional to thickness) but their physical properties mean that they are more robust and resistant to damage.

BS8485:2007 Table 3 Solution Scores

Where the gas situation is 4 or more (and for NHBC Red situations) the site requires a comprehensive risk assessment to confirm the scope of protection measures. These are higher risk sites and reliance on Table 2 and 3 alone is not enough.

For a site which is impacted by migratory gases from an off-site source, the development may be protected by imposing pathway intervention methods, which if successfully validated, could also remove the need for further analysis. It is essential that the gas regime in these circumstances has been fully characterised and that the only source impacting the site is located off site and that the pathway is clearly defined, and its interception equally proven before construction commences. Pathway intervention methods may include vertical membrane installations, venting trenches, rows of stone columns, activated trenches and various proprietary systems. These systems are particularly relevant to domestic housing where there is limited scope for foundation type solutions.

CURRENT GUIDANCE ON REMEDIATION

When risk assessment of the site has been completed and it indicates that remedial works are required, the main guidance in managing this process is set out in the DEFRA/EA publication CLR11 (2004) "Model Procedures for the Management of Land Contamination." The stages of managing remediation are as follows:

- (a) Options Appraisal and develop Remediation Strategy;
- (b) Develop Implementation Plan and Verification Plan;
- (c) Remediation, Verification and Monitoring.

The Remediation Strategy sets out the remediation targets, identifies technically feasible remedial solutions and presents an evaluation of the options so that these can be assessed enabling that the most suitable solution is adopted. An outline of the proposed remedial method should be presented. Agreement should be sought of the appropriate statutory bodies for the Remediation Strategy before proceeding to the next stage.

The Implementation Plan is a detailed method statement setting out how the remediation is to be carried out including stating how the site will be managed, welfare procedures, health, and safety considerations together with practical measures such as details of temporary works, programme of works, waste management licences and regulatory consents required. Agreement should again be sought of the appropriate statutory bodies for this Plan.

The Verification Plan sets out the requirements for gathering data to demonstrate that the remediation has met the required remediation objectives and criteria. The Verification Plan presents the requirements for a wide range of issues including the level of supervision, sampling and testing regimes for treated materials, waste and imported materials, required monitoring works during and post remediation, how compliance with all licenses and consents will be checked etc. Agreement should again be sought of the appropriate statutory bodies for the Verification Plan. On completion of the remediation a Verification Report should be produced to provide a complete record of all remediation activities on site and the data collected as required in the Verification Plan. The Verification Report should demonstrate that the remediation has met the remedial targets to show that the site is suitable for the proposed use.

APPENDIX D: COMMERCIAL ENVIRONMENTAL DATA

Woodward Road, Kirkby, L33 7UZ

Order Details

Date: 18/03/2025
Your ref: CMAPS-AAG-1212885-4165-180325
Our Ref: CMAPS-AAG-1212885-4165-180325EDRGEO

Site Details

Location: 343417 399494
Area: 0.26 ha
Authority: [Knowsley Metropolitan Borough Council](#) ↗



[Summary of findings](#)

[p. 2 >](#) [Aerial image](#)

[p. 9 >](#)

[OS MasterMap site plan](#)

[p.14 >](#) [Insight User Guide](#) ↗

Contact us with any questions at:

info@groundsure.com ↗

01273 257 755

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	5	2	2	11	-
16 >	1.2 >	Historical tanks >	0	0	17	30	-
18 >	1.3 >	Historical energy features >	0	2	7	25	-
20	1.4	Historical petrol stations	0	0	0	0	-
20	1.5	Historical garages	0	0	0	0	-
20 >	1.6 >	Historical military land >	1	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
22 >	2.1 >	Historical industrial land uses >	6	2	3	13	-
23 >	2.2 >	Historical tanks >	0	0	22	45	-
26 >	2.3 >	Historical energy features >	0	3	11	45	-
28	2.4	Historical petrol stations	0	0	0	0	-
29	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
30 >	3.1 >	Active or recent landfill >	0	0	1	0	-
31	3.2	Historical landfill (BGS records)	0	0	0	0	-
31	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
31	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
31 >	3.5 >	Historical waste sites >	0	0	1	2	-
32 >	3.6 >	Licensed waste sites >	0	0	4	12	-
37 >	3.7 >	Waste exemptions >	0	1	11	39	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
42 >	4.1 >	Recent industrial land uses >	1	6	33	-	-
45	4.2	Current or recent petrol stations	0	0	0	0	-
45	4.3	Electricity cables	0	0	0	0	-
46	4.4	Gas pipelines	0	0	0	0	-
46	4.5	Sites determined as Contaminated Land	0	0	0	0	-



46 >	4.6 >	Control of Major Accident Hazards (COMAH) >	2	0	2	1	-
47	4.7	Regulated explosive sites	0	0	0	0	-
47 >	4.8 >	Hazardous substance storage/usage >	0	0	4	5	-
48 >	4.9 >	Historical licensed industrial activities (IPC) >	0	0	0	38	-
53 >	4.10 >	Licensed industrial activities (Part A(1)) >	0	0	0	59	-
62 >	4.11 >	Licensed pollutant release (Part A(2)/B) >	0	0	4	0	-
63	4.12	Radioactive Substance Authorisations	0	0	0	0	-
63 >	4.13 >	Licensed Discharges to controlled waters >	0	0	0	2	-
64	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
64	4.15	Pollutant release to public sewer	0	0	0	0	-
64 >	4.16 >	List 1 Dangerous Substances >	0	0	0	2	-
65 >	4.17 >	List 2 Dangerous Substances >	0	0	3	1	-
65 >	4.18 >	Pollution Incidents (EA/NRW) >	0	0	3	4	-
66	4.19	Pollution inventory substances	0	0	0	0	-
66 >	4.20 >	Pollution inventory waste transfers >	0	0	0	1	-
69	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology >	On site	0-50m	50-250m	250-500m	500-2000m
70 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
72 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
74 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
75	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
75	5.5	Groundwater vulnerability- local information	None (within 0m)				
76 >	5.6 >	Groundwater abstractions >	0	0	0	3	38
86 >	5.7 >	Surface water abstractions >	0	0	0	0	5
88 >	5.8 >	Potable abstractions >	0	0	0	0	2
88 >	5.9 >	Source Protection Zones >	1	0	0	0	-
89	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
90	6.1	Water Network (OS MasterMap)	0	0	0	-	-



90 >	6.2 >	Surface water features >	0	0	1	-	-
91 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
91 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
92 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding >	On site	0-50m	50-250m	250-500m	500-2000m
93 >	7.1 >	Risk of flooding from rivers and the sea >	Medium (within 50m)				
94	7.2	Historical Flood Events	0	0	0	-	-
94	7.3	Flood Defences	0	0	0	-	-
94	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
94	7.5	Flood Storage Areas	0	0	0	-	-
95 >	7.6 >	Flood Zone 2 >	Identified (within 50m)				
96 >	7.7 >	Flood Zone 3 >	Identified (within 50m)				
Page	Section	Surface water flooding >					
97 >	8.1 >	Surface water flooding >	1 in 30 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding >					
99 >	9.1 >	Groundwater flooding >	Low (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
100	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
101	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
101	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
101	10.4	Special Protection Areas (SPA)	0	0	0	0	0
101	10.5	National Nature Reserves (NNR)	0	0	0	0	0
102 >	10.6 >	Local Nature Reserves (LNR) >	0	0	0	0	1
102	10.7	Designated Ancient Woodland	0	0	0	0	0
102	10.8	Biosphere Reserves	0	0	0	0	0
102	10.9	Forest Parks	0	0	0	0	0
103	10.10	Marine Conservation Zones	0	0	0	0	0
103 >	10.11 >	Green Belt >	0	0	0	1	2
103	10.12	Proposed Ramsar sites	0	0	0	0	0



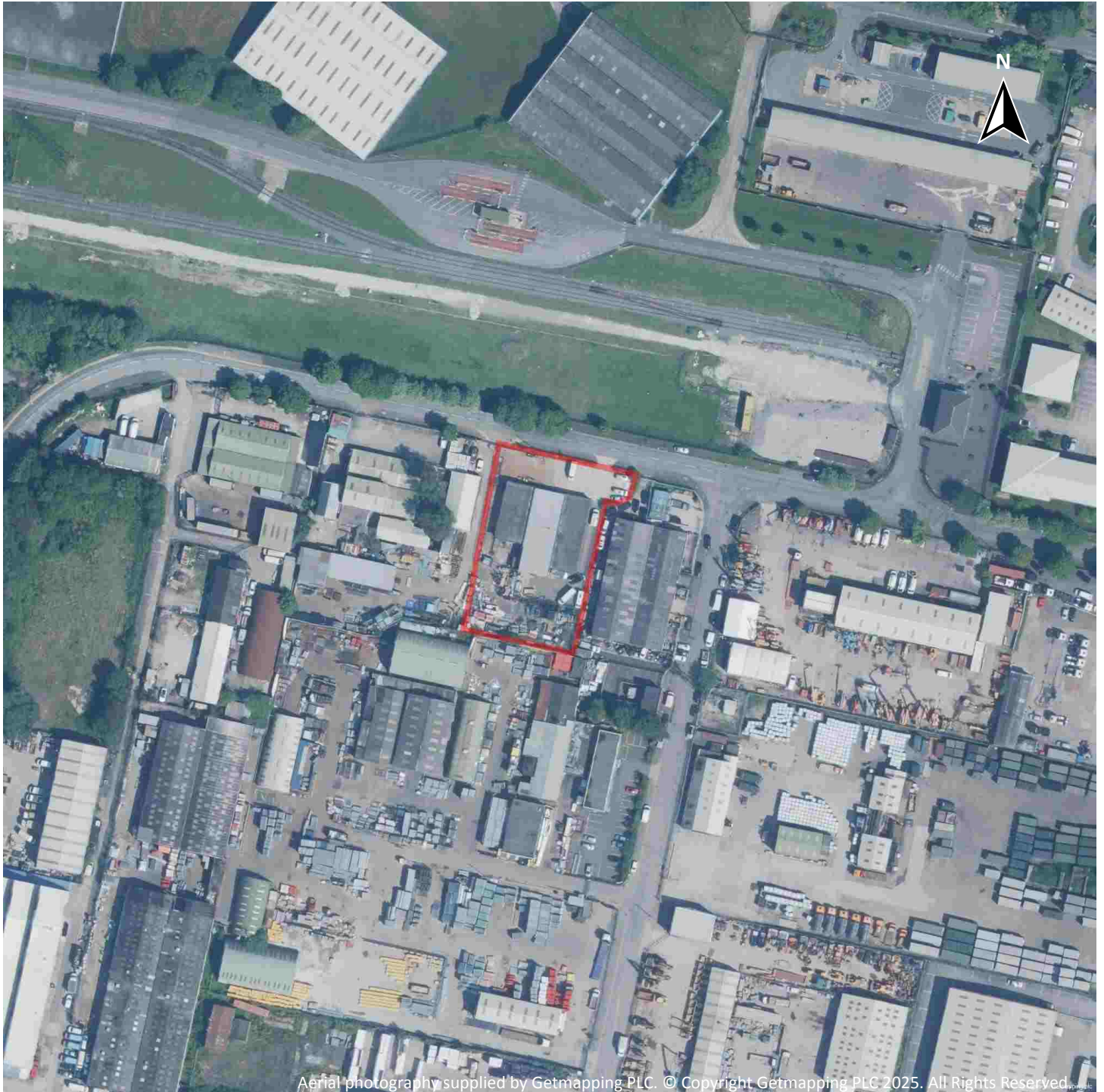
103	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
104	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
104	10.15	Nitrate Sensitive Areas	0	0	0	0	0
104 >	10.16 >	<u>Nitrate Vulnerable Zones ></u>	1	0	0	0	1
105	10.17	SSSI Impact Risk Zones	0	-	-	-	-
105	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
106	11.1	World Heritage Sites	0	0	0	-	-
106	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
106	11.3	National Parks	0	0	0	-	-
106	11.4	Listed Buildings	0	0	0	-	-
107	11.5	Conservation Areas	0	0	0	-	-
107	11.6	Scheduled Ancient Monuments	0	0	0	-	-
107	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	<u>Agricultural designations ></u>	On site	0-50m	50-250m	250-500m	500-2000m
108 >	12.1 >	<u>Agricultural Land Classification ></u>	Urban (within 250m)				
109	12.2	Open Access Land	0	0	0	-	-
109	12.3	Tree Felling Licences	0	0	0	-	-
109	12.4	Environmental Stewardship Schemes	0	0	0	-	-
109	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	<u>Habitat designations ></u>	On site	0-50m	50-250m	250-500m	500-2000m
110 >	13.1 >	<u>Priority Habitat Inventory ></u>	0	0	1	-	-
111	13.2	Habitat Networks	0	0	0	-	-
111	13.3	Open Mosaic Habitat	0	0	0	-	-
111	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	<u>Geology 1:10,000 scale ></u>	On site	0-50m	50-250m	250-500m	500-2000m
112 >	14.1 >	<u>10k Availability ></u>	Identified (within 500m)				
113	14.2	Artificial and made ground (10k)	0	0	0	0	-
114	14.3	Superficial geology (10k)	0	0	0	0	-

114	14.4	Landslip (10k)	0	0	0	0	-
115	14.5	Bedrock geology (10k)	0	0	0	0	-
115	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
116 >	15.1 >	50k Availability >	Identified (within 500m)				
117 >	15.2 >	Artificial and made ground (50k) >	1	0	0	0	-
118 >	15.3 >	Artificial ground permeability (50k) >	1	0	-	-	-
119 >	15.4 >	Superficial geology (50k) >	1	0	3	2	-
120 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
120	15.6	Landslip (50k)	0	0	0	0	-
120	15.7	Landslip permeability (50k)	None (within 50m)				
121 >	15.8 >	Bedrock geology (50k) >	1	0	0	1	-
122 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
122	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
123 >	16.1 >	BGS Boreholes >	0	0	44	-	-
Page	Section	Natural ground subsidence >					
126 >	17.1 >	Shrink swell clays >	Negligible (within 50m)				
127 >	17.2 >	Running sands >	Low (within 50m)				
129 >	17.3 >	Compressible deposits >	Very low (within 50m)				
131 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
132 >	17.5 >	Landslides >	Very low (within 50m)				
133 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
135	18.1	BritPits	0	0	0	0	-
136 >	18.2 >	Surface ground workings >	0	1	0	-	-
136	18.3	Underground workings	0	0	0	0	0
136	18.4	Underground mining extents	0	0	0	0	-
136	18.5	Historical Mineral Planning Areas	0	0	0	0	-

137	18.6	Non-coal mining	0	0	0	0	0
137	18.7	JPB mining areas	None (within 0m)				
137	18.8	The Coal Authority non-coal mining	0	0	0	0	-
137	18.9	Researched mining	0	0	0	0	-
138	18.10	Mining record office plans	0	0	0	0	-
138	18.11	BGS mine plans	0	0	0	0	-
138	18.12	Coal mining	None (within 0m)				
138	18.13	Brine areas	None (within 0m)				
138	18.14	Gypsum areas	None (within 0m)				
139	18.15	Tin mining	None (within 0m)				
139	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
140	19.1	Natural cavities	0	0	0	0	-
140	19.2	Mining cavities	0	0	0	0	0
140	19.3	Reported recent incidents	0	0	0	0	-
140	19.4	Historical incidents	0	0	0	0	-
Page	Section	Radon >					
142 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
144 >	21.1 >	BGS Estimated Background Soil Chemistry >	2	0	-	-	-
144	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
144	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects >	On site	0-50m	50-250m	250-500m	500-2000m
145	22.1	Underground railways (London)	0	0	0	-	-
145	22.2	Underground railways (Non-London)	0	0	0	-	-
146	22.3	Railway tunnels	0	0	0	-	-
146 >	22.4 >	Historical railway and tunnel features >	3	2	22	-	-
147	22.5	Royal Mail tunnels	0	0	0	-	-
147 >	22.6 >	Historical railways >	0	1	0	-	-

148 >	22.7 >	Railways >	0	0	3	-	-
148	22.8	Crossrail 2	0	0	0	0	-
148	22.9	HS2	0	0	0	0	-

Recent aerial photograph



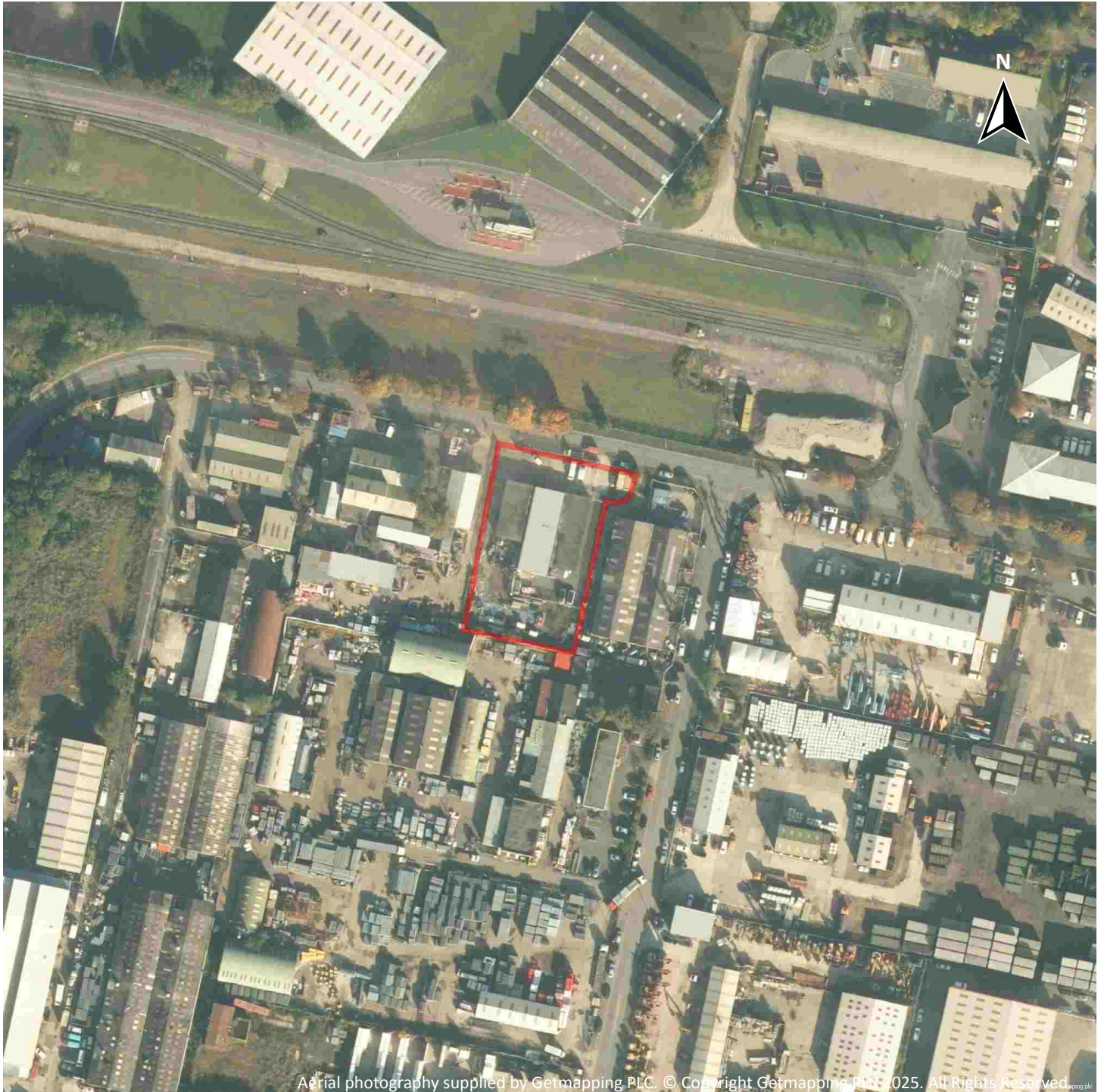
Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2025. All Rights Reserved.

Capture Date: 20/05/2023

Site Area: 0.26ha



Recent site history - 2022 aerial photograph



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Capture Date: 18/10/2022

Site Area: 0.26ha



Recent site history - 2015 aerial photograph



Capture Date: 11/06/2015

Site Area: 0.26ha



Recent site history - 2001 aerial photograph



Capture Date: 01/05/2001

Site Area: 0.26ha



Recent site history - 2000 aerial photograph



Capture Date: 21/07/2000

Site Area: 0.26ha



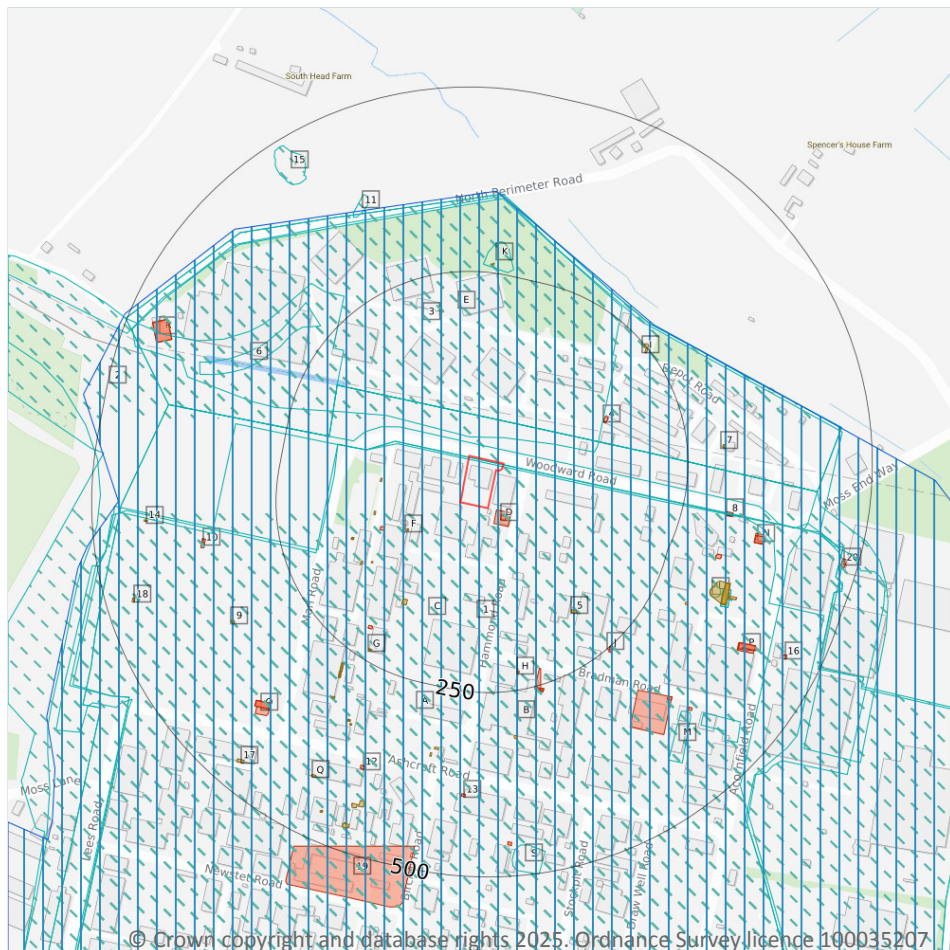
OS MasterMap site plan



Site Area: 0.26ha



1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical military land

1.1 Historical industrial land uses

Records within 500m

20

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15](#) >

ID	Location	Land use	Dates present	Group ID
A	On site	Industrial Estate	1966	918975



ID	Location	Land use	Dates present	Group ID
A	On site	Unspecified Commercial/Industrial	1956	925687
B	On site	Industrial Estate	1988	955430
B	On site	Industrial Estate	1978	992608
C	On site	Railway Sidings	1955 - 1978	2405268
2	18m N	Railway Sidings	1956	994428
3	26m N	Unspecified Commercial/Industrial	1988	930560
E	56m N	Unspecified Commercial/Industrial	1956	894867
E	56m N	Unspecified Commercial/Industrial	1966 - 1978	1000682
K	254m N	Unspecified Pit	1966	830663
6	267m NW	Cuttings	1966	808024
L	321m SE	Unspecified Tank	1988	974276
L	321m SE	Unspecified Tank	1978	981654
L	337m SE	Unspecified Tanks	1966 - 1978	884154
L	337m SE	Unspecified Tanks	1988	909096
11	358m NW	Marl Pit	1928	857265
M	380m SE	Unspecified Heap	1978	843737
M	403m SE	Unspecified Heaps	1978	837901
15	435m NW	Unspecified Pit	1890 - 1907	864145
S	459m S	Unspecified Heap	1966	843735

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

47

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)



ID	Location	Land use	Dates present	Group ID
F	79m SW	Unspecified Tank	1986	155787
F	79m SW	Unspecified Tank	1971	144479
F	80m SW	Unspecified Tank	1994	138510
F	110m W	Tanks	1971	108574
F	115m W	Unspecified Tank	1971	114871
F	143m SW	Unspecified Tank	1971	114872
C	151m SW	Unspecified Tank	1971 - 1994	137082
F	152m SW	Unspecified Tank	1971 - 1986	142705
F	153m SW	Unspecified Tank	1994	152542
F	155m SW	Unspecified Tank	1971	114869
5	179m SE	Unspecified Tank	1984 - 1994	141485
H	225m S	Unspecified Tank	1971	114809
G	233m SW	Unspecified Tank	1994	131537
G	233m SW	Unspecified Tank	1986	131344
G	234m SW	Unspecified Tank	1971	136693
I	243m NE	Tanks	1976	108528
I	248m NE	Tanks	1976	108527
K	260m N	Tanks	1962	108529
G	270m SW	Tanks	1986	151226
G	270m SW	Tanks	1971	129499
G	281m SW	Tanks	1971	126556
G	282m SW	Tanks	1994	148913
L	297m SE	Unspecified Tank	1994	114797
7	298m E	Unspecified Tank	1962 - 1976	135883
B	310m S	Unspecified Tank	1971 - 1994	127423
G	314m SW	Unspecified Tank	1971 - 1986	141717
L	321m SE	Tanks	1971 - 1984	136521
G	331m SW	Unspecified Tank	1986	141535



ID	Location	Land use	Dates present	Group ID
G	331m SW	Unspecified Tank	1994	154048
G	331m SW	Unspecified Tank	1971	134253
A	331m S	Unspecified Tank	1971	114873
G	335m SW	Unspecified Tank	1962	137534
G	335m SW	Unspecified Tank	1962	143697
L	338m E	Tanks	1962	137211
L	338m SE	Tanks	1962	132489
A	340m S	Unspecified Tank	1971	114874
9	346m SW	Unspecified Tank	1971	114870
L	348m SE	Unspecified Tank	1971 - 1984	128132
Q	419m SW	Tanks	1971 - 1994	150744
14	425m W	Tanks	1985	108570
Q	426m S	Tanks	1971 - 1986	156243
Q	433m S	Tanks	1971 - 1986	150610
17	456m SW	Unspecified Tank	1971 - 1986	152659
Q	458m SW	Unspecified Tank	1986	136464
Q	459m SW	Unspecified Tank	1971	138798
18	460m W	Tanks	1962	136587
Q	462m S	Tanks	1971 - 1994	128033

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

34

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)



ID	Location	Land use	Dates present	Group ID
D	12m SE	Electricity Substation	1986 - 1994	89096
D	21m SE	Electricity Substation	1971	74348
F	108m SW	Electricity Substation	1986 - 1994	75687
4	147m NE	Electricity Substation	1976 - 1994	87760
G	206m SW	Electricity Substation	1986 - 1994	70661
H	225m S	Electricity Substation	1986	67750
H	228m S	Electricity Substation	1971	79985
J	250m SE	Electricity Substation	1994	91197
J	250m SE	Electricity Substation	1971 - 1992	70211
H	251m S	Electricity Substation	1986	90405
H	255m S	Electricity Substation	1992	76777
H	255m S	Electricity Substation	1984	86758
8	308m E	Electricity Substation	1992 - 1994	85361
L	313m E	Electricity Substation	1992 - 1994	83245
M	320m SE	Electricity Substation	1971	84418
10	349m W	Electricity Substation	1971 - 1994	84811
M	353m SE	Electricity Substation	1971	89202
N	355m E	Electricity Substation	1994	74019
N	356m E	Electricity Substation	1971 - 1992	84145
O	375m SW	Electricity Substation	1986	84026
O	375m SW	Electricity Substation	1971	92077
O	376m SW	Electricity Substation	1994	74104
12	380m S	Electricity Substation	1971 - 1994	82541
M	384m SE	Electricity Substation	1971	66230
P	386m SE	Electricity Substation	1984 - 1992	84033
P	386m SE	Electricity Substation	1994	78666
P	387m SE	Electricity Substation	1971	91147
13	389m S	Electricity Substation	1971	67749



ID	Location	Land use	Dates present	Group ID
R	433m NW	Electricity Substation	1993	80339
R	433m NW	Electricity Substation	1984 - 1985	79005
16	447m SE	Electricity Substation	1971 - 1994	87646
S	453m S	Electricity Substation	1971 - 1994	85552
19	469m S	Electricity Substation	1994	84595
20	478m E	Electricity Substation	1971 - 1994	84197

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m

0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

1

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

Features are displayed on the Past land use map on [page 15 >](#)

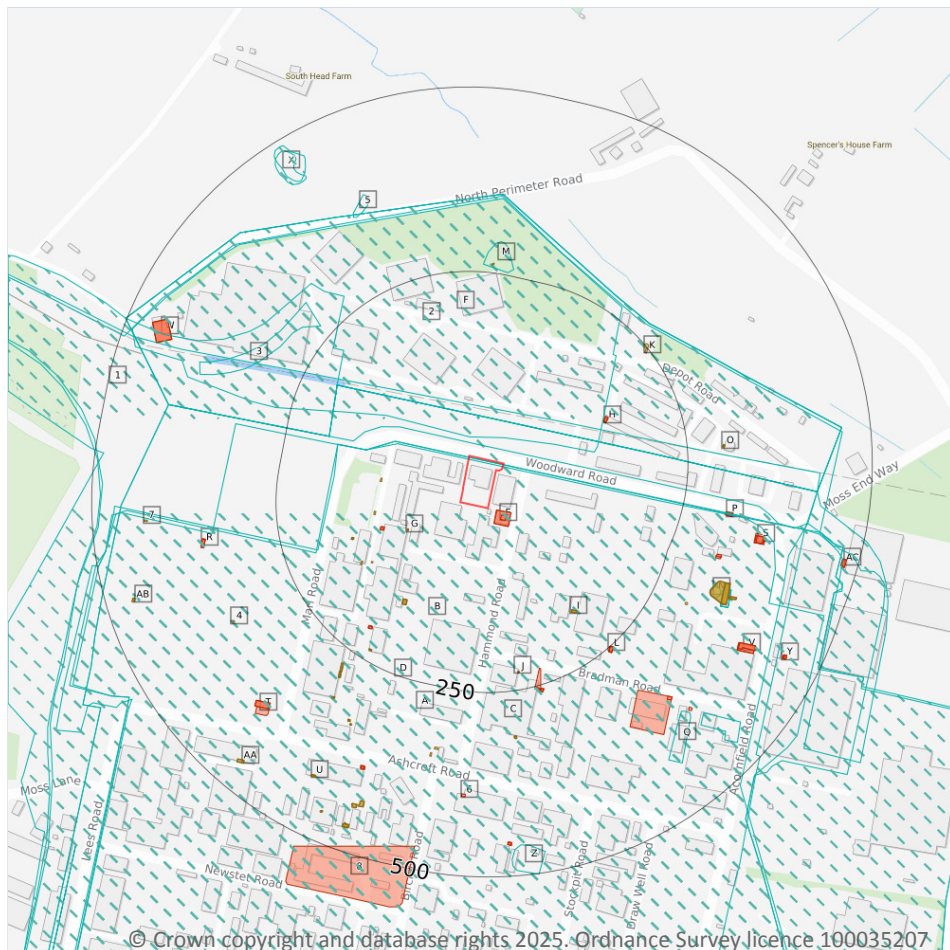


ID	Location	Site Name	Date of Operation	Activities
1	On site	ROF Kirkby	September 1940 - March 1946	Produced approximately 10% of WW2 ammunition; Approximately 23,000 employees; Filling Factory No.7

This data is sourced from Ordnance Survey / Groundsure / other sources.



2 Past land use - un-grouped



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features

2.1 Historical industrial land uses

Records within 500m

24

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 22](#) >

ID	Location	Land Use	Date	Group ID
A	On site	Industrial Estate	1966	918975
A	On site	Unspecified Commercial/Industrial	1956	925687
B	On site	Railway Sidings	1966	2405268

ID	Location	Land Use	Date	Group ID
C	On site	Industrial Estate	1978	992608
C	On site	Industrial Estate	1988	955430
D	On site	Railway Sidings	1978	2405268
1	18m N	Railway Sidings	1956	994428
2	26m N	Unspecified Commercial/Industrial	1988	930560
F	56m N	Unspecified Commercial/Industrial	1966	1000682
F	56m N	Unspecified Commercial/Industrial	1978	1000682
F	56m N	Unspecified Commercial/Industrial	1956	894867
M	254m N	Unspecified Pit	1966	830663
3	267m NW	Cuttings	1966	808024
N	321m SE	Unspecified Tank	1978	981654
N	321m SE	Unspecified Tank	1988	974276
N	337m SE	Unspecified Tanks	1966	884154
N	337m SE	Unspecified Tanks	1978	884154
N	337m SE	Unspecified Tanks	1988	909096
5	358m NW	Marl Pit	1928	857265
Q	380m SE	Unspecified Heap	1978	843737
Q	403m SE	Unspecified Heaps	1978	837901
X	435m NW	Unspecified Pit	1907	864145
X	437m NW	Unspecified Pit	1890	864145
Z	459m S	Unspecified Heap	1966	843735

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

67

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 22 >](#)



ID	Location	Land Use	Date	Group ID
G	79m SW	Unspecified Tank	1986	155787
G	79m SW	Unspecified Tank	1971	144479
G	80m SW	Unspecified Tank	1994	138510
G	110m W	Tanks	1971	108574
G	115m W	Unspecified Tank	1971	114871
G	143m SW	Unspecified Tank	1971	114872
B	151m SW	Unspecified Tank	1994	137082
B	151m SW	Unspecified Tank	1986	137082
B	151m SW	Unspecified Tank	1971	137082
G	152m SW	Unspecified Tank	1986	142705
G	153m SW	Unspecified Tank	1971	142705
G	153m SW	Unspecified Tank	1994	152542
G	155m SW	Unspecified Tank	1971	114869
I	179m SE	Unspecified Tank	1984	141485
I	179m SE	Unspecified Tank	1992	141485
I	179m SE	Unspecified Tank	1994	141485
J	225m S	Unspecified Tank	1971	114809
D	233m SW	Unspecified Tank	1994	131537
D	233m SW	Unspecified Tank	1986	131344
D	234m SW	Unspecified Tank	1971	136693
K	243m NE	Tanks	1976	108528
K	248m NE	Tanks	1976	108527
M	260m N	Tanks	1962	108529
D	270m SW	Tanks	1986	151226
D	270m SW	Tanks	1971	129499
D	281m SW	Tanks	1971	126556
D	282m SW	Tanks	1994	148913
N	297m SE	Unspecified Tank	1994	114797



ID	Location	Land Use	Date	Group ID
O	298m E	Unspecified Tank	1962	135883
O	298m E	Unspecified Tank	1976	135883
O	298m E	Unspecified Tank	1962	135883
C	310m S	Unspecified Tank	1994	127423
C	312m S	Unspecified Tank	1986	127423
C	312m S	Unspecified Tank	1971	127423
D	314m SW	Unspecified Tank	1986	141717
D	314m SW	Unspecified Tank	1971	141717
N	321m SE	Tanks	1984	136521
N	322m SE	Tanks	1971	136521
D	331m SW	Unspecified Tank	1986	141535
D	331m SW	Unspecified Tank	1994	154048
D	331m SW	Unspecified Tank	1971	134253
A	331m S	Unspecified Tank	1971	114873
D	335m SW	Unspecified Tank	1962	137534
D	335m SW	Unspecified Tank	1962	143697
N	338m E	Tanks	1962	137211
N	338m SE	Tanks	1962	132489
A	340m S	Unspecified Tank	1971	114874
4	346m SW	Unspecified Tank	1971	114870
N	348m SE	Unspecified Tank	1984	128132
N	349m SE	Unspecified Tank	1971	128132
U	419m SW	Tanks	1994	150744
U	419m SW	Tanks	1986	150744
U	420m SW	Tanks	1971	150744
7	425m W	Tanks	1985	108570
U	426m S	Tanks	1986	156243
U	426m S	Tanks	1971	156243



ID	Location	Land Use	Date	Group ID
U	433m S	Tanks	1986	150610
U	434m S	Tanks	1971	150610
AA	456m SW	Unspecified Tank	1986	152659
AA	457m SW	Unspecified Tank	1971	152659
U	458m SW	Unspecified Tank	1986	136464
U	459m SW	Unspecified Tank	1971	138798
AB	460m W	Tanks	1962	136587
AB	461m W	Tanks	1962	136587
U	462m S	Tanks	1994	128033
U	462m S	Tanks	1986	128033
U	463m S	Tanks	1971	128033

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	59
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Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 22 >](#)

ID	Location	Land Use	Date	Group ID
E	12m SE	Electricity Substation	1994	89096
E	13m SE	Electricity Substation	1986	89096
E	21m SE	Electricity Substation	1971	74348
G	108m SW	Electricity Substation	1986	75687
G	110m SW	Electricity Substation	1994	75687
H	147m NE	Electricity Substation	1994	87760
H	147m NE	Electricity Substation	1976	87760
D	206m SW	Electricity Substation	1994	70661
D	207m SW	Electricity Substation	1986	70661



ID	Location	Land Use	Date	Group ID
J	225m S	Electricity Substation	1986	67750
J	228m S	Electricity Substation	1971	79985
L	250m SE	Electricity Substation	1994	91197
L	250m SE	Electricity Substation	1984	70211
L	250m SE	Electricity Substation	1992	70211
L	250m SE	Electricity Substation	1971	70211
J	251m S	Electricity Substation	1986	90405
J	255m S	Electricity Substation	1971	79985
J	255m S	Electricity Substation	1984	86758
J	255m S	Electricity Substation	1992	76777
P	308m E	Electricity Substation	1992	85361
P	309m E	Electricity Substation	1994	85361
N	313m E	Electricity Substation	1992	83245
N	314m E	Electricity Substation	1994	83245
Q	320m SE	Electricity Substation	1971	84418
R	349m W	Electricity Substation	1986	84811
R	350m W	Electricity Substation	1971	84811
R	350m W	Electricity Substation	1994	84811
Q	353m SE	Electricity Substation	1971	89202
S	355m E	Electricity Substation	1994	74019
S	356m E	Electricity Substation	1984	84145
S	356m E	Electricity Substation	1992	84145
S	358m E	Electricity Substation	1971	84145
T	375m SW	Electricity Substation	1986	84026
T	375m SW	Electricity Substation	1971	92077
T	376m SW	Electricity Substation	1994	74104
U	380m S	Electricity Substation	1994	82541
U	381m S	Electricity Substation	1986	82541



ID	Location	Land Use	Date	Group ID
U	381m S	Electricity Substation	1971	82541
Q	384m SE	Electricity Substation	1971	66230
V	386m SE	Electricity Substation	1984	84033
V	386m SE	Electricity Substation	1992	84033
V	386m SE	Electricity Substation	1994	78666
V	387m SE	Electricity Substation	1971	91147
6	389m S	Electricity Substation	1971	67749
W	433m NW	Electricity Substation	1993	80339
W	433m NW	Electricity Substation	1984	79005
W	433m NW	Electricity Substation	1985	79005
Y	447m SE	Electricity Substation	1984	87646
Y	447m SE	Electricity Substation	1992	87646
Y	448m SE	Electricity Substation	1994	87646
Y	449m SE	Electricity Substation	1971	87646
Z	453m S	Electricity Substation	1986	85552
Z	454m S	Electricity Substation	1994	85552
Z	454m S	Electricity Substation	1971	85552
8	469m S	Electricity Substation	1994	84595
AC	478m E	Electricity Substation	1984	84197
AC	478m E	Electricity Substation	1992	84197
AC	478m E	Electricity Substation	1994	84197
AC	479m E	Electricity Substation	1971	84197

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0
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Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m

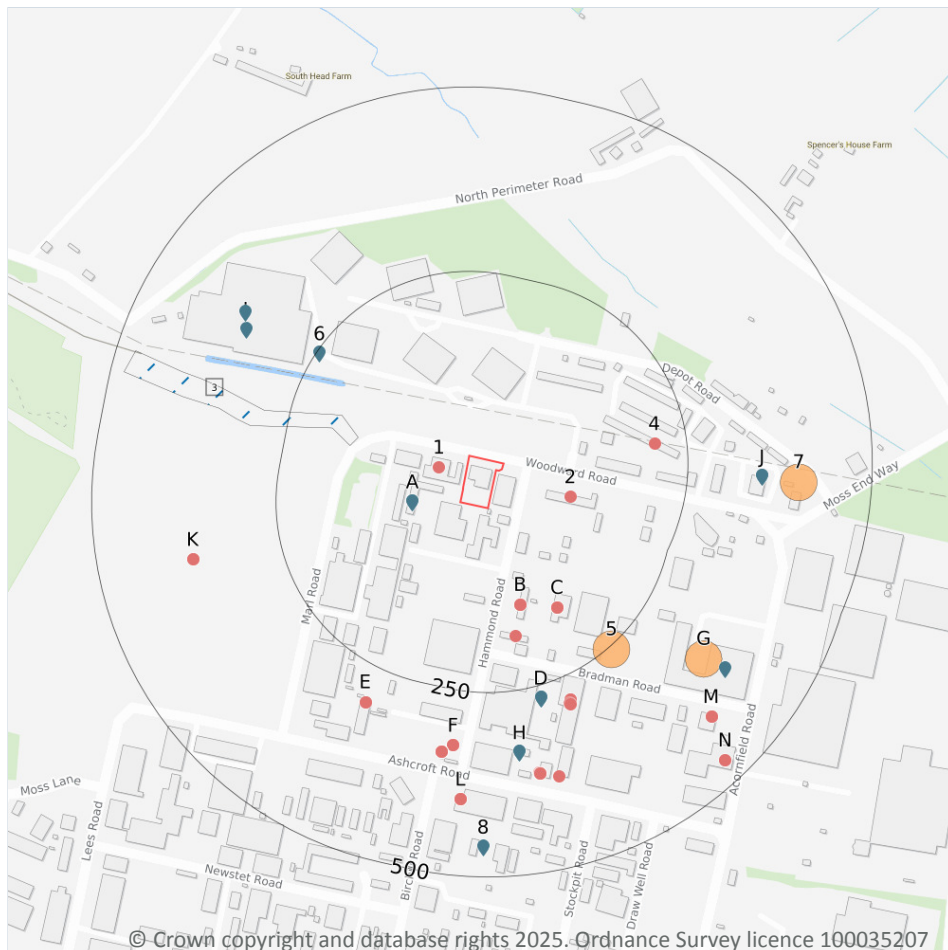
0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Active or recent landfill
- Historical waste sites
- Licensed waste sites
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

1

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

Features are displayed on the Waste and landfill map on [page 30](#) >

ID	Location	Details	
3	153m W	Operator: Knowsley Metropolitan Borough Council Site Address: Knowsley Metropolitan Borough Council, Land/premises At, Marl Roadw/woodward Road, Simonswood, Kirkby, Merseyside, L33 7UH	WML Number: 54257 EPR Reference: 654106 Landfill type: A05: Landfill taking Non-Biodegradable Wastes Status: Closure IPPC Reference: - EPR Number: EA/EPR/KP3197CA



This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m

0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m

0

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m

0

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m

3

Waste site records derived from Local Authority planning records and high detail historical mapping.

Features are displayed on the Waste and landfill map on [page 30](#) >

ID	Location	Address	Further Details	Date
5	229m SE	Site Address: Vacant Warehouse/Bradman House, Bradman Road, Knowsley Industrial Park, Liverpool, Merseyside, L33 7UR	Type of Site: Waste Treatment/Transfer Operation Facility Planning application reference: 13/00384/FUL Description: Scheme comprises change of use of vacant unit (use class B8) to form a healthcare waste treatment and transfer operation (use class sui generis) facilitating the treatment and temporary storage of waste prior to being transferred off-site for re-cycling together with external alteration to parts of external building & associated works. Data source: Historic Planning Application Data Type: Point	13/12/2013
G	332m SE	Site Address: SRCL Limited, Acornfield Road/Bradman Road, Knowsley Industrial Park, Liverpool, Merseyside, L33 7UR, N.WEST	Type of Site: Waste Management Facility Planning application reference: 22/00295/SO Description: Scheme comprises screening opinion for the change of use, alterations and refurbishment to existing waste management facility. Data source: Historic Planning Application Data Type: Point	12/05/2022
7	376m E	Site Address: Depot Road, Knowsley Industrial Park North, LIVERPOOL, Merseyside, L33 7B	Type of Site: Waste Recycling Centre Planning application reference: 09/00376/FUL Description: Scheme comprises construction of new householder waste recycling centre. Works will include construction of new link road. Construction - black top surfacing, white lining site works. An application (ref: 09/00376/FUL) for detailed planning permissions granted by Knowsley B.C. Detailed plans have been approved. Veolia Environmental services has been awarded the main contract. Data source: Historic Planning Application Data Type: Point	28/03/2011

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m	16
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Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

Features are displayed on the Waste and landfill map on [page 30 >](#)



ID	Location	Details		
A	65m W	Site Name: Marl Road Site Address: Marl Roadw/woodward Road, Simonswood, Kirkby, Merseyside, L33 7UH Correspondence Address: Po Box 26, Archway Road, Huyton, Knowsley, Merseyside, L36 9FB	Type of Site: Landfill taking Non-Biodegradable Wastes Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: KNO001 EPR reference: - Operator: Knowsley M B C Waste Management licence No: 54257 Annual Tonnage: 100000	Issue Date: 24/06/1992 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
A	65m W	Site Name: Marl Road/wood Ward Road Inert Landfill Site Address: Land/premises At, Marl Roadw/woodward Road, Simonswood, Kirkby, Merseyside, L33 7UH Correspondence Address: -	Type of Site: Landfill taking Non-Biodegradable Wastes Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: KNO001 EPR reference: EA/EPR/KP3197CA/A001 Operator: Knowsley Metropolitan Borough Council Waste Management licence No: 54257 Annual Tonnage: 100000	Issue Date: 24/06/1992 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Closure
A	65m W	Site Name: Marl Road/wood Ward Road Inert Landfill Site Address: Land/premises At, Marl Roadw/woodward Road, Simonswood, Kirkby, Merseyside, L33 7UH Correspondence Address: -	Type of Site: Landfill taking Non-Biodegradable Wastes Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 656974 EPR reference: EA/EPR/KP3197CA Operator: Knowsley Metropolitan Borough Council Waste Management licence No: 54257 Annual Tonnage: 100000	Issue Date: 24/06/1992 Effective Date: 24/06/1992 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Closure
6	245m NW	Site Name: Knowsley Rail Transfer Loading Station Site Address: Knowsley Rail T L S, Woodward Road, Knowsley Industrial Park, Liverpool, Merseyside, L33 7UZ Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 659014 EPR reference: EA/EPR/ZP3892EE Operator: Suez Recycling And Recovery Uk Ltd Waste Management licence No: 102932 Annual Tonnage: 500000	Issue Date: 12/03/2012 Effective Date: 12/03/2012 Modified: 12/03/2012 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued



ID	Location	Details		
D	268m S	Site Name: Rentokil, Bradman Road Site Address: Knowsley Industrial Park North, Bradman Road, Knowsley, Merseyside, L33 7UR Correspondence Address: Rentokil Initial Corporate Head Office, Felcourt, East Grinstead, West Sussex, RH19 2JY	Type of Site: Special Waste Transfer Station Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: REN001 EPR reference: - Operator: Rentokil Ltd Waste Management licence No: 54261 Annual Tonnage: 5000	Issue Date: 09/10/1992 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
D	268m S	Site Name: Rentokil, Bradman Road Site Address: Knowsley Industrial Park North, Bradman Road, Knowsley, Merseyside, L33 7UR Correspondence Address: Felcourt, East Grinstead, West Sussex, RH1 2JY	Type of Site: Special Waste Transfer Station Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: REN001 EPR reference: - Operator: Rentokil Group Plc Waste Management licence No: 54261 Annual Tonnage: 0	Issue Date: 09/10/1992 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
D	268m S	Site Name: Rentokil Initial U K Ltd Site Address: Rentokil Initial U K Ltd, Bradman Road, Knowsley Ind Park, Liverpool, Merseyside, L33 7UR Correspondence Address: -	Type of Site: Special Waste Transfer Station Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 643907 EPR reference: EA/EPR/TP3997CR Operator: Rentokil Initial 1927 Plc Waste Management licence No: 54261 Annual Tonnage: 0	Issue Date: 09/10/1992 Effective Date: 09/10/1992 Modified: - Surrendered Date: 09/10/1992 Expiry Date: - Cancelled Date: - Status: Surrendered
H	335m S	Site Name: Unit 1 Prestige Complex Site Address: Aschroft Road, Knowsley Industrial Park, Kirkby, Merseyside, L33 7TW Correspondence Address: -	Type of Site: Vehicle Depollution Facility 5000 tps Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TRI031 EPR reference: EA/EPR/BB3906SS/A001 Operator: Triton (North West) Limited Waste Management licence No: 401692 Annual Tonnage: 4999	Issue Date: 18/09/2014 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued



ID	Location	Details		
H	335m S	Site Name: Unit 1 Prestige Complex Site Address: Aschroft Road, Knowsley Industrial Park, Kirkby, Merseyside, L33 7TW Correspondence Address: -	Type of Site: Vehicle Depollution Facility 5000 tps Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 628084 EPR reference: EA/EPR/BB3906SS Operator: Triton (North West) Limited Waste Management licence No: 401692 Annual Tonnage: 4999	Issue Date: 18/09/2014 Effective Date: 18/09/2014 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
I	348m NW	Site Name: Marl Road Site Address: Marl Roadw/woodward Road, Simonswood, Kirkby, Merseyside, L33 7UH Correspondence Address: Contract Services Dept, Stretton Way, Huyton Industrial Estate, Huyon, Merseyside, L36 6JF	Type of Site: Landfill taking Non- Biodegradeable Wastes Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: KNO001 EPR reference: - Operator: Knowsley M B C Waste Management licence No: 54257 Annual Tonnage: 0	Issue Date: 24/06/1992 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
J	351m E	Site Name: Kirkby W R C Site Address: Depot Road, Kirkby, Knowsley Ind. Est, Merseyside, L33 3AR Correspondence Address: Port Of Liverpool Building, 2nd Floor, Pier Head, Liverpool, Merseyside, L3 1BY	Type of Site: Household, Commercial & Industrial Waste T Stn Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: KIR003 EPR reference: - Operator: Mersey Waste Holdings Ltd Waste Management licence No: 54268 Annual Tonnage: 0	Issue Date: 21/08/1995 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
J	351m E	Site Name: Kirkby H W R C Site Address: Kirkby H W R C, Depot Road, Knowsley Industrial Park, Knowsley, Merseyside, L33 3AR Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 640926 EPR reference: EA/EPR/EP3691LR Operator: Veolia Es Merseyside & Halton Limited Waste Management licence No: 54268 Annual Tonnage: 0	Issue Date: 21/08/1995 Effective Date: 21/08/1995 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Surrendered



ID	Location	Details		
J	351m E	Site Name: Kirkby Household Waste Recycling Centre Site Address: Kirkby H W R C, Depot Road, Knowsley Industrial Park, Knowsley, Merseyside, L33 3AR Correspondence Address: -	Type of Site: 75kte Non-hazardous & hazardous HWA Site Size: >= 25000 tonnes 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 631513 EPR reference: EA/EPR/DB3833AU Operator: Veolia Es Merseyside & Halton Limited Waste Management licence No: 103676 Annual Tonnage: 74999	Issue Date: 15/12/2011 Effective Date: 15/12/2011 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
I	361m NW	Site Name: Knowsley Rail Transfer Loading Station Site Address: Knowsley Rail T L S, Woodward Road, Knowsley Industrial Park, Liverpool, Merseyside, L33 7UZ Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SIT734 EPR reference: EA/EPR/ZP3892EE/A001 Operator: Sita U K Ltd Waste Management licence No: 102932 Annual Tonnage: 500000	Issue Date: 12/03/2012 Effective Date: - Modified: - Surrendered Date: 0 Expiry Date: - Cancelled Date: - Status: Issued
G	389m SE	Site Name: SRCL Knowsley Treatment and Transfer Station Site Address: SRCL Knowsley Treatment and Transfer Station, Bradman Road, Knowsley Industrial Park, Merseyside, L33 7UR Correspondence Address: -	Type of Site: Clinical Waste Transfer Station Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 649954 EPR reference: EA/EPR/KP3436NL Operator: Srcl Limited Waste Management licence No: 400611 Annual Tonnage: 8760	Issue Date: 04/10/2022 Effective Date: 13/10/2022 Modified: 22/12/2023 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
8	460m S	Site Name: Unit 9 Lodge Works Site Address: Kirkby Skips Limited, Birchill Road, Kirkby Industrial Estate, Liverpool, Merseyside, L33 7TD Correspondence Address: -	Type of Site: 75kte HCI Waste TS Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: 627250 EPR reference: EA/EPR/WE8737AB Operator: Lh Waste Removal And Grab Hire Ltd Waste Management licence No: 120748 Annual Tonnage: 0	Issue Date: 23/06/2023 Effective Date: 23/06/2023 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued



This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m	51
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Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on [page 30 >](#)

ID	Location	Site	Reference	Category	Sub-Category	Description
1	37m W	Kirkby Hwrc, Depot Road, Knowsley Industrial Park, Kirkby, L33 7uz	WEX308873	Storing waste exemption	Not on a farm	Storage of waste in a secure place
2	100m E	Kirkby Hwrc, Depot Road, Knowsley Industrial Park, Kirkby, L33 7uz	WEX175403	Storing waste exemption	Not on a farm	Storage of waste in a secure place
B	138m S	Drawell House, Hammond Road, Knowsley Industrial Park, Liverpool, L33 7ul	WEX099972	Treating waste exemption	Not on a farm	Recovery of scrap metal
B	138m S	Drawell House, Hammond Road, Knowsley Industrial Park, Liverpool, L33 7ul	WEX099972	Storing waste exemption	Not on a farm	Storage of waste in a secure place
B	138m S	Drawell House, Hammond Road, Knowsley Industrial Park, Liverpool, L33 7ul	WEX099972	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
B	138m S	Drawell House, Hammond Road, Knowsley Industrial Park, Liverpool, L33 7ul	WEX099972	Storing waste exemption	Not on a farm	Storage of waste in secure containers
C	164m SE	. Hammond Road Liverpool L33 7ul	EPR/TE5258A U/A001	Storing waste exemption	Non-agricultural waste only	Storage of waste in a secure place
C	164m SE	. Hammond Road Liverpool L33 7ul	EPR/TE5258A U/A001	Treating waste exemption	Non-agricultural waste only	Preparatory treatments (baling, sorting, shredding etc)
C	164m SE	. Hammond Road Liverpool L33 7ul	EPR/TE5258A U/A001	Treating waste exemption	Non-agricultural waste only	Sorting mixed waste



ID	Location	Site	Reference	Category	Sub-Category	Description
C	164m SE	. Hammond Road Liverpool L33 7ul	EPR/TE5258A U/A001	Treating waste exemption	Non-agricultural waste only	Recovery of scrap metal
B	177m S	. Hammond Road Liverpool L33 7ul	EPR/HF0734ZE /A001	Treating waste exemption	Non-agricultural waste only	Preparatory treatments (baling, sorting, shredding etc)
4	206m E	-	WEX370890	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
D	283m S	Unit 1, Bradman Road, Kirkby Industrial Estate, Knowsley, L33 7ur	WEX287646	Treating waste exemption	Not on a farm	Sorting mixed waste
D	283m S	Unit 1, Bradman Road, Kirkby Industrial Estate, Knowsley, L33 7ur	WEX416822	Treating waste exemption	Not on a farm	Sorting mixed waste
D	287m S	Unit 1 Bradman House Bradman Road Kirkby Merseyside L33 7ur	EPR/MF0807X Q/A001	Treating waste exemption	Non-agricultural waste only	Sorting mixed waste
D	289m S	Unit 1 Bradman House, Bradman Road, Kirkby Industrial Estate, Merseyside, L33 7ur	WEX125264	Treating waste exemption	Not on a farm	Sorting mixed waste
E	301m SW	-	WEX415569	Storing waste exemption	Not on a farm	Storage of waste in a secure place
E	301m SW	-	WEX415569	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
F	326m S	Drawell House Hammond Road Liverpool Merseyside L33 7ul	EPR/CH0079X C/A001	Treating waste exemption	Non-agricultural waste only	Recovery of scrap metal
F	326m S	Drawell House Hammond Road Liverpool Merseyside L33 7ul	EPR/CH0079X C/A001	Storing waste exemption	Non-agricultural waste only	Storage of waste in secure containers
F	326m S	Drawell House Hammond Road Liverpool Merseyside L33 7ul	EPR/CH0079X C/A001	Storing waste exemption	Non-agricultural waste only	Storage of waste in a secure place



ID	Location	Site	Reference	Category	Sub-Category	Description
F	326m S	Drawell House Hammond Road Liverpool Merseyside L33 7ul	EPR/CH0079X C/A001	Treating waste exemption	Non-agricultural waste only	Preparatory treatments (baling, sorting, shredding etc)
F	337m S	-	WEX314340	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
F	337m S	-	WEX314340	Storing waste exemption	Not on a farm	Storage of waste in secure containers
F	337m S	-	WEX314340	Storing waste exemption	Not on a farm	Storage of waste in a secure place
F	337m S	-	WEX314340	Treating waste exemption	Not on a farm	Recovery of scrap metal
F	337m S	Hammond Road, Knowsley Industrial Park, Liverpool, L33 7ul	WEX185888	Storing waste exemption	Not on a farm	Storage of waste in a secure place
F	337m S	Hammond Road, Knowsley Industrial Park, Liverpool, L33 7ul	WEX185888	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
F	337m S	Hammond Road, Knowsley Industrial Park, Liverpool, L33 7ul	WEX185888	Storing waste exemption	Not on a farm	Storage of waste in secure containers
F	337m S	Hammond Road, Knowsley Industrial Park, Liverpool, L33 7ul	WEX185888	Treating waste exemption	Not on a farm	Recovery of scrap metal
F	337m S	Hammond Road, Knowsley Industrial Park, Liverpool, L33 7ul	WEX021667	Treating waste exemption	Not on a farm	Recovery of scrap metal
F	337m S	Hammond Road, Knowsley Industrial Park, Liverpool, L33 7ul	WEX021667	Storing waste exemption	Not on a farm	Storage of waste in secure containers
F	337m S	Hammond Road, Knowsley Industrial Park, Liverpool, L33 7ul	WEX021667	Storing waste exemption	Not on a farm	Storage of waste in a secure place
F	337m S	Hammond Road, Knowsley Industrial Park, Liverpool, L33 7ul	WEX021667	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
H	366m S	Unit 1 2 Ashcroft Road L33 7tw	EPR/NH0811A A/A001	Treating waste exemption	Non-agricultural waste only	Mechanical treatment of end-of-life tyres



ID	Location	Site	Reference	Category	Sub-Category	Description
H	367m S	Able Clearance Recycling, Ashcroft Road, Knowlsey Industrial Estate, Kirkby, L337tw	WEX082476	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
H	367m S	Able Clearance Recycling, Ashcroft Road, Knowlsey Industrial Estate, Kirkby, L337tw	WEX082476	Treating waste exemption	Not on a farm	Sorting mixed waste
H	367m S	Able Clearance Recycling, Ashcroft Road, Knowlsey Industrial Estate, Kirkby, L337tw	WEX082476	Treating waste exemption	Not on a farm	Manual treatment of waste
H	367m S	Able Clearance Recycling, Ashcroft Road, Knowlsey Industrial Estate, Kirkby, L337tw	WEX082476	Treating waste exemption	Not on a farm	Recovery of scrap metal
K	372m W	Unit 5/e Cornhill Works Marl Road Liverpool L33 7uh	EPR/JF0005EU /A001	Using waste exemption	Non-agricultural waste only	Use of waste in construction
K	372m W	Unit 5/e Cornhill Works Marl Road Liverpool L33 7uh	EPR/JF0005EU /A001	Treating waste exemption	Non-agricultural waste only	Screening and blending of waste
H	377m S	Pride Point, Knowlsey Business Park, Unit 1 Ashcroft Road, Kirkby, L33 7tw	EA/EPR/VP394 4CH/A001	Treating waste exemption	Not on a farm	Repair or refurbishment of WEEE
L	397m S	-	WEX299537	Storing waste exemption	Not on a farm	Storage of waste in a secure place
L	397m S	-	WEX299537	Disposing of waste exemption	Not on a farm	Burning waste in the open
L	397m S	-	WEX299537	Treating waste exemption	Not on a farm	Recovery of scrap metal
L	397m S	-	WEX299537	Treating waste exemption	Not on a farm	Sorting mixed waste
M	414m SE	Unit 3, Bradman Road, Knowlsey Industrial Park, Liverpool, L33 7ur	WEX087988	Storing waste exemption	Not on a farm	Storage of waste in a secure place

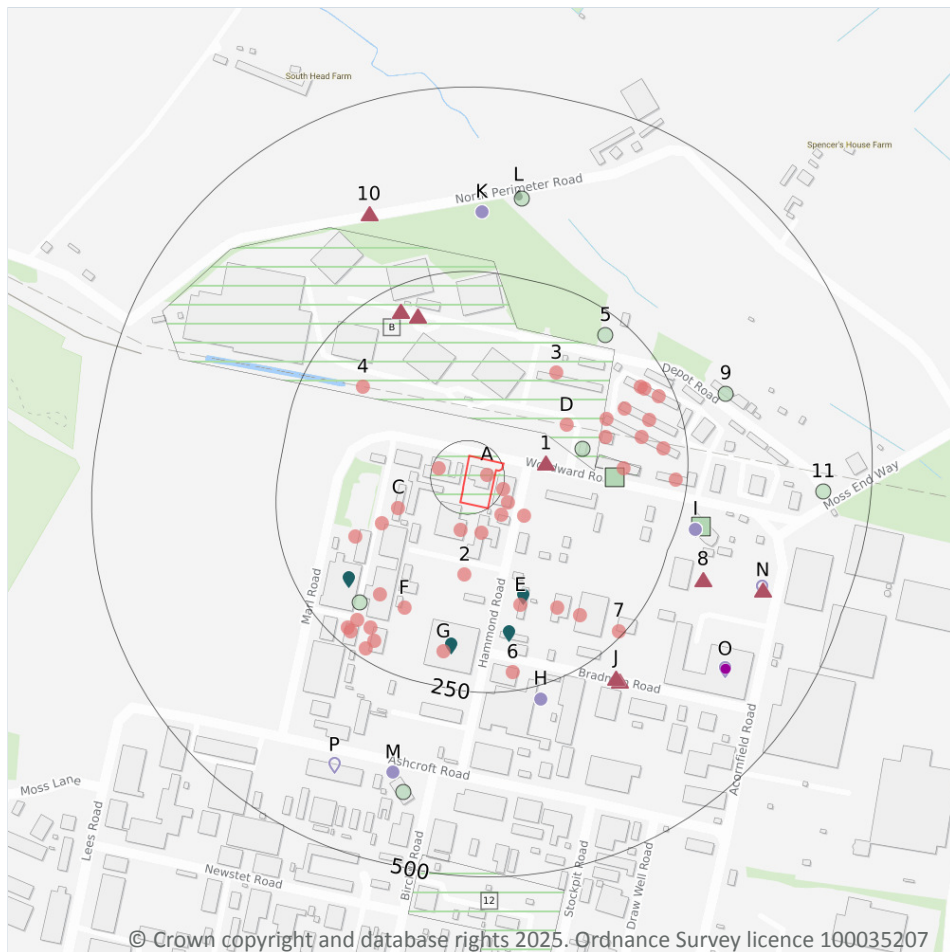


ID	Location	Site	Reference	Category	Sub-Category	Description
M	414m SE	Unit 3, Bradman Road, Knowsley Industrial Park, Liverpool, L33 7ur	WEX087988	Treating waste exemption	Not on a farm	Recovery of scrap metal
M	414m SE	Unit 3, Bradman Road, Knowsley Industrial Park, Liverpool, L33 7ur	WEX087988	Using waste exemption	Not on a farm	Use of depolluted end-of-life vehicles for vehicle parts
N	470m SE	Security House, Step Up Security Services Ltd, Acornfield Road, Knowsley Industrial Park, Liverpool, L33 7pa	WEX102906	Using waste exemption	Not on a farm	Use of waste to manufacture finished goods
N	470m SE	Security House, Step Up Security Services Ltd, Acornfield Road, Knowsley Industrial Park, Liverpool, L33 7pa	WEX244831	Using waste exemption	Not on a farm	Use of waste to manufacture finished goods

This data is sourced from the Environment Agency and Natural Resources Wales.



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- Control of Major Accident Hazards
- ▲ Hazardous substance storage/usage
- Historical licensed industrial activities
- ⬮ Part A(1) industrial activities
- Licensed pollutant release (Part A(2)/B)
- Licensed Discharges to controlled waters
- List 1 Dangerous Substances
- List 2 Dangerous Substances
- Pollution Incidents (EA/NRW)
- Pollution inventory waste transfers

4.1 Recent industrial land uses

Records within 250m

40

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 42](#) >

ID	Location	Company	Address	Activity	Category
A	On site	K M C Packaging & Business Products Ltd	Kmc Packaging 16a, Woodward Road, Knowsley Industrial Park, Kirkby, Merseyside, L33 7UZ	Packaging	Industrial Products
A	15m E	Artist in Lead	Unit 3, Hammond Road, Knowsley Industrial Park, Kirkby, Merseyside, L33 7UZ	Glass	Industrial Products



ID	Location	Company	Address	Activity	Category
A	20m SE	Electricity Sub Station	Merseyside, L33	Electrical Features	Infrastructure and Facilities
A	25m SE	S I P Building Systems Ltd	D B Polymer UK Ltd 1-1a, Hammond Road, Knowsley Industrial Park, Kirkby, Merseyside, L33 7UZ	General Construction Supplies	Industrial Products
A	34m S	Factory	Merseyside, L33	Unspecified Works Or Factories	Industrial Features
A	36m S	Blok N Mesh UK Ltd	Hammond Road, Knowsley Industrial Park, Kirkby, Merseyside, L33 7UL	Fences, Gates and Railings	Industrial Products
A	37m W	S T L Building Services	8, Woodward Road, Knowsley Industrial Park, Kirkby, Merseyside, L33 7UZ	General Construction Supplies	Industrial Products
A	50m SE	Mast (Telecommunication)	Merseyside, L33	Telecommunications Features	Infrastructure and Facilities
C	85m W	McKenna	9a Cornhill Works, Marl Road, Knowsley Industrial Park, Kirkby, Merseyside, L33 7UH	Civil Engineers	Engineering Services
2	95m S	Industrial Park	Merseyside, L33	Business Parks and Industrial Estates	Industrial Features
D	100m NE	Pylon	Merseyside, L33	Electrical Features	Infrastructure and Facilities
C	110m SW	Electricity Sub Station	Merseyside, L33	Electrical Features	Infrastructure and Facilities
E	139m S	Boundry Plant Ltd	Boundary Plant (Hire and Sales) Store and Office, Hammond Road, Knowsley Industrial Park, Kirkby, Merseyside, L33 7UL	Construction and Tool Hire	Hire Services
3	142m NE	Public Recycling Facility	Merseyside, L33	Recycling Centres	Infrastructure and Facilities
D	143m E	North West Air Ambulance Charity	Stanley Building, North Mersey Business Park, Knowsley Industrial Park, Kirkby, Merseyside, L33 7UY	Ambulance and Medical Transportation Services	Health Support Services
C	150m SW	Tank	Merseyside, L33	Tanks (Generic)	Industrial Features
D	152m NE	Electricity Sub Station	Merseyside, L33	Electrical Features	Infrastructure and Facilities



ID	Location	Company	Address	Activity	Category
F	162m SW	Tank	Merseyside, L33	Tanks (Generic)	Industrial Features
D	163m E	K Rend Ltd	Edward House North Mersey Business Centre, Woodward Road, Knowsley Industrial Park, Liverpool, Merseyside, L33 7UY	Construction Completion Services	Construction Services
E	164m SE	M P E	M P E (Liverpool) Ltd, Hammond Road, Knowsley Industrial Park, Kirkby, Merseyside, L33 7UL	Air and Water Filtration	Industrial Products
F	166m SW	Tint Wizard	Unit 4 Marl Road Business Centre, Marl Road, Knowsley Industrial Park, Liverpool, Merseyside, L33 7UH	Industrial Coatings and Finishings	Industrial Products
4	172m NW	Pylon	Merseyside, L33	Electrical Features	Infrastructure and Facilities
D	180m NE	K Daly Flooring Ltd	Ksscc 57, North Mersey Business Park, Knowsley Industrial Park, Kirkby, Merseyside, L33 7UY	Construction Completion Services	Construction Services
D	191m E	Bluesat Solutions Ltd	North Mersey Business Centre, Woodward Road, Knowsley Industrial Park, Liverpool, Merseyside, L33 7UY	Radar and Telecommunications Equipment	Industrial Products
E	192m SE	Tank	Merseyside, L33	Tanks (Generic)	Industrial Features
G	203m S	Factory	Merseyside, L33	Unspecified Works Or Factories	Industrial Features
D	206m E	M & B Bargains	M and B Bargains 53, North Mersey Business Park, Knowsley Industrial Park, Kirkby, Merseyside, L33 7UY	Container and Storage	Transport, Storage and Delivery
F	208m SW	Electricity Sub Station	Merseyside, L33	Electrical Features	Infrastructure and Facilities
F	212m SW	Works	Merseyside, L33	Unspecified Works Or Factories	Industrial Features
D	213m NE	Marton Electronics Ltd	Marton Electronics 92, North Mersey Business Park, Knowsley Industrial Park, Kirkby, Merseyside, L33 7UY	Electronic Equipment	Industrial Products
D	216m NE	Klenz Ltd	91, North Mersey Business Park, Knowsley Industrial Park, Kirkby, Merseyside, L33 7UY	Clothing, Components and Accessories	Consumer Products
D	217m E	Print Media Ltd	36, North Mersey Business Park, Knowsley Industrial Park, Kirkby, Merseyside, L33 7UY	Published Goods	Industrial Products



ID	Location	Company	Address	Activity	Category
F	221m SW	Merseyside Castings & Engineering Co	Unit 3 Cornhill Works, Marl Road, Knowsley Industrial Park, Liverpool, Merseyside, L33 7UH	Special Purpose Machinery and Equipment	Industrial Products
6	225m S	Total Scaffolding Ltd	Unit 1 Bradman Road, Knowsley Industrial Park, Liverpool, Merseyside, L33 7UR	Construction and Tool Hire	Hire Services
F	228m SW	P R Plastics Ltd	2a Cornhill Works, Marl Road, Knowsley Industrial Park, Kirkby, Merseyside, L33 7UH	General Construction Supplies	Industrial Products
F	229m SW	T G L Developments	Unit 2 Cornhill Works, Marl Road, Knowsley Industrial Park, Liverpool, Merseyside, L33 7UH	Metals Manufacturers, Fabricators and Stockholders	Industrial Products
D	229m NE	Underwater Vision	West Lancs Plastering 88, North Mersey Business Park, Knowsley Industrial Park, Kirkby, Merseyside, L33 7UY	Industrial Engineers	Engineering Services
D	234m E	Anti-pest Environmental Services	119-120, North Mersey Business Park, Knowsley Industrial Park, Kirkby, Merseyside, L33 7UY	Pest and Vermin Control	Contract Services
F	236m SW	Tank	Merseyside, L33	Tanks (Generic)	Industrial Features
7	243m SE	Sovereign Transport Services	Krol Corlett Properties Ltd, Bradman Road, Knowsley Industrial Park, Kirkby, Merseyside, L33 7UR	Distribution and Haulage	Transport, Storage and Delivery

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0
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Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0
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High voltage underground electricity transmission cables.

This data is sourced from National Grid.



4.4 Gas pipelines

Records within 500m	0
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High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0
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Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	5
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Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

Features are displayed on the Current industrial land use map on [page 42 >](#)

ID	Location	Company	Address	Operational status	Tier
A	On site	Archimcya	Archimcya, Woodward Road, Kirkby, L33 7UZ	Historical NIHHS Site	-
A	On site	Freeman Chemicals Ltd	Freeman Chemicals Ltd, Faraday Road, Knowsley, L33 7UZ	Historical NIHHS Site	-
B	50m N	Potter Logistics Ltd	Potter Logistics Ltd, Knowsley Rail Freight Terminal, Woodward Road, Knowsley Industrial Park, Liverpool, Merseyside, L33 7UZ	Historical NIHHS Site	-
D	124m E	Syntor Fine Chemicals Limited	Syntor Fine Chemicals Limited, Knowsley, Knowsley Industrial Estate, Woodward Road, Kirkby, Merseyside, L33 7UG	Historical COMAH Site	COMAH Lower Tier Operator
12	478m S	Baker Hughes Limited	Baker Hughes Limited, Liverpool, Knowsley Industrial Park, Kirkby Bank Road, Liverpool, Merseyside, L33 7SY	Current COMAH Site	COMAH Lower Tier Operator

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m

0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m

9

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

Features are displayed on the Current industrial land use map on [page 42 >](#)

ID	Location	Details	
1	57m E	Application reference number: 99/00672/HSC Application status: Historical Consent Application date: 04/10/1999 Address: Archimica Ltd., Woodward Road, Knowsley Industrial Park, Kirkby, Knowsley, L33 7UZ	Details: Claim For Deemed Consent For The Storage Of Various Hazardous Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
B	202m N	Application reference number: 00/00616/HAZ Application status: Approved Application date: 18/10/2000 Address: Henry Diaper & Co Ltd, Lees Road, Liverpool, Merseyside, England, L33 7SE	Details: Application For Hazardous Substances Consent For Storage Of Category 2 (toxics), Category 3 (oxydising) And Category 6 (flammable) Substances Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
B	217m NW	Application reference number: 07/00065/HAZ Application status: Historical Consent Application date: 25/01/2007 Address: The Potter Group, Knowsley Rail Freight Terminal, Land Bounded By North Perimeter Road And Woodward Road, Knowsley Industrial Park, Kirkby, Knowsley, L33 7UZ	Details: Application to increase storage levels of various substances ranging from 'very toxic' to 'any classification' approved under existing consent 06/00470/HAZ Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
B	217m NW	Application reference number: 06/00470/HAZ Application status: Approved Application date: 13/06/2006 Address: The Potter Group, Knowsley Rail Freight Terminal, Woodward Road, Knowsley Industrial Estate, Kirkby, Merseyside, England, L33 7UZ	Details: Storage of various substances ranging from 'very toxic' to 'any classification'. Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
J	288m SE	Application reference number: 02/00761/HAZ Application status: Historical Consent Application date: 02/10/2002 Address: Bradman Manufacturing Ltd, Bradman Road, Knowsley Industrial Park, Kirkby, Knowsley, L33 7UR	Details: Application For Part A Substances (arsenic trioxide and arsenic (v) acid) Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified



ID	Location	Details	
J	295m SE	Application reference number: 02/00043/HAZ Application status: Historical Consent Application date: No Details Address: Bradman Manufacturing Ltd, Bradman House, 6 Bradman Road, Knowsley Industrial Park, Kirkby, Knowsley, L33 7UR	Details: Application For Hazardous Substances Consent For Part A Substances (arsenic Trioxide) Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
8	307m SE	Application reference number: 14/00544/HAZ Application status: Pending Application date: 30/07/2014 Address: Syntor Fine Chemicals, Acornfield Road, Knowsley Industrial Park, Kirkby, Knowsley, L33 7UG	Details: Hazardous Substances consent for storage of substances falling within the following categories; very toxic, toxic, flammable, highly flammable, dangerous to environment and reacts violently with water Enforcement: No Details Date of enforcement: No Details Comment: No Details
10	355m NW	Application reference number: 06/00470/HAZ Application status: Pending Application date: 13/06/2006 Address: Knowsley Rail Freight Terminal, Land Bounded By North Perimeter Road And Woodward Road, Knowsley Industrial Park, Kirkby, Knowsley, L33 7UZ	Details: Application For Hazardous Substances Consent For The Storage Of Various Substances Ranging From 'very Toxic' To 'any Classification' Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
N	389m E	Application reference number: 09/00546/HAZ Application status: Approved Application date: 15/12/2009 Address: Syntor Fine Chemicals Ltd, Knowsley Industrial Park, Acornfield Road/Woodward Road, Kirkby, Liverpool, Merseyside, England, L33 7UG	Details: Storage of very toxic, toxic, flammable, highly flammable, dangerous to the environment and reacts violently with water. Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m

38

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

Features are displayed on the Current industrial land use map on [page 42 >](#)

ID	Location	Details	
H	268m S	Operator: Bradman Road Manufacturing Ltd Address: Bradman Road, Knowsley Industrial Park, Liverpool, L33 7UR Process: Inorganic Chemical Processes Permit Number: AQ2664	Original Permit Number: IPCAPP Date Approved: 6-6-1995 Effective Date: 13-6-1995 Status: Superseded By Variation



ID	Location	Details	
H	268m S	Operator: Bradman Road Manufacturing Ltd Address: Bradman Road, Knowsley Industrial Park, Liverpool, L33 7UR Process: Inorganic Chemical Processes Permit Number: AV6043	Original Permit Number: IPCMINVAR Date Approved: 20-5-1996 Effective Date: 21-5-1996 Status: Superseded By Variation
H	268m S	Operator: Bradman Road Manufacturing Ltd Address: Bradman Road, Knowsley Industrial Park, Liverpool, L33 7UR Process: Inorganic Chemical Processes Permit Number: BA1559	Original Permit Number: IPCMINVAR Date Approved: 28-11-1997 Effective Date: 5-12-1997 Status: Superseded By Variation
H	268m S	Operator: Bradman Road Manufacturing Ltd Address: Bradman Road, Knowsley Industrial Park, Liverpool, L33 7UR Process: Inorganic Chemical Processes Permit Number: BE2107	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation
H	268m S	Operator: Bradman Road Manufacturing Ltd Address: Bradman Road, Knowsley Industrial Park, Liverpool, L33 7UR Process: Inorganic Chemical Processes Permit Number: BL3749	Original Permit Number: IPCMINVAR Date Approved: 6-9-2001 Effective Date: 10-9-2001 Status: Superseded By Variation
H	268m S	Operator: Bradman Road Manufacturing Ltd Address: Bradman Road, Knowsley Industrial Park, Liverpool, L33 7UR Process: Inorganic Chemical Processes Permit Number: BU1741	Original Permit Number: IPCMAJVAR Date Approved: 1-9-2003 Effective Date: 5-9-2003 Status: Revoked
I	275m E	Operator: Organic Intermediates Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Manufacture And Use Of Organic Chemicals Permit Number: BC3145	Original Permit Number: IPCMINVAR Date Approved: - Effective Date: - Status: Refused
I	275m E	Operator: Organic Intermediates Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Manufacture And Use Of Organic Chemicals Permit Number: AH1471	Original Permit Number: IPCAPP Date Approved: 21-4-1993 Effective Date: 21-4-1993 Status: Superseded By Variation
I	275m E	Operator: Organic Intermediates Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Manufacture And Use Of Organic Chemicals Permit Number: AK9216	Original Permit Number: IPCMINVAR Date Approved: 9-12-1993 Effective Date: 9-12-1993 Status: Superseded By Variation
I	275m E	Operator: Archimica Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Processes Involving Halogens Permit Number: AL8231	Original Permit Number: IPCAIRAPP Date Approved: 15-9-1994 Effective Date: 22-9-1994 Status: Superseded By Variation



ID	Location	Details	
I	275m E	Operator: Organic Intermediates Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Manufacture And Use Of Organic Chemicals Permit Number: AN1106	Original Permit Number: IPCAPP Date Approved: 11-7-1994 Effective Date: 18-7-1994 Status: Superseded By Variation
I	275m E	Operator: Archimica Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Processes Involving Halogens Permit Number: AO5328	Original Permit Number: IPCAIRAPP Date Approved: 2-11-1994 Effective Date: 9-11-1994 Status: Superseded By Variation
I	275m E	Operator: Organic Intermediates Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Manufacture And Use Of Organic Chemicals Permit Number: AQ2125	Original Permit Number: IPCMINVAR Date Approved: 21-2-1995 Effective Date: 23-2-1995 Status: Superseded By Variation
I	275m E	Operator: Organic Intermediates Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Manufacture And Use Of Organic Chemicals Permit Number: AQ8131	Original Permit Number: IPCMINVAR Date Approved: 18-4-1995 Effective Date: 25-4-1995 Status: Superseded By Variation
I	275m E	Operator: Organic Intermediates Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Manufacture And Use Of Organic Chemicals Permit Number: AR0713	Original Permit Number: IPCMINVAR Date Approved: 4-5-1995 Effective Date: 10-5-1995 Status: Superseded By Variation
I	275m E	Operator: Archimica Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Processes Involving Halogens Permit Number: AS2220	Original Permit Number: IPCMINVAR Date Approved: 1-8-1995 Effective Date: 7-8-1995 Status: Superseded By Variation
I	275m E	Operator: Organic Intermediates Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Manufacture And Use Of Organic Chemicals Permit Number: AT5500	Original Permit Number: IPCMINVAR Date Approved: 21-9-1995 Effective Date: 25-9-1995 Status: Superseded By Variation
I	275m E	Operator: Organic Intermediates Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Manufacture And Use Of Organic Chemicals Permit Number: AX6346	Original Permit Number: IPCMINVAR Date Approved: 13-1-1997 Effective Date: 20-1-1997 Status: Superseded By Variation
I	275m E	Operator: Organic Intermediates Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Manufacture And Use Of Organic Chemicals Permit Number: AY3016	Original Permit Number: IPCMINVAR Date Approved: 30-4-1997 Effective Date: 7-5-1997 Status: Superseded By Variation



ID	Location	Details	
I	275m E	Operator: Archimica Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Processes Involving Halogens Permit Number: BC7779	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Revoked
I	275m E	Operator: Archimica Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Processes Involving Halogens Permit Number: BD1822	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Revoked
I	275m E	Operator: Organic Intermediates Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Manufacture And Use Of Organic Chemicals Permit Number: BD2985	Original Permit Number: IPCMINVAR Date Approved: 25-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation
I	275m E	Operator: Organic Intermediates Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Manufacture And Use Of Organic Chemicals Permit Number: BD9068	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation
I	275m E	Operator: Organic Intermediates Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Manufacture And Use Of Organic Chemicals Permit Number: BE7001	Original Permit Number: IPCMINVAR Date Approved: 20-11-1998 Effective Date: 20-11-1998 Status: Superseded By Variation
I	275m E	Operator: Organic Intermediates Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Manufacture And Use Of Organic Chemicals Permit Number: BE7931	Original Permit Number: IPCMAJVAR Date Approved: 17-2-1999 Effective Date: 19-2-1999 Status: Superseded By Variation
I	275m E	Operator: Organic Intermediates Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Manufacture And Use Of Organic Chemicals Permit Number: BS7226	Original Permit Number: IPCMINVAR Date Approved: 31-3-2003 Effective Date: 1-4-2003 Status: Revoked - Now Ippc
I	275m E	Operator: Organic Intermediates Ltd Address: Woodward Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7UZ Process: Manufacture And Use Of Organic Chemicals Permit Number: BS7269	Original Permit Number: IPCMINVAR Date Approved: 31-3-2003 Effective Date: 1-4-2003 Status: Revoked - Now Ippc
K	331m N	Operator: Baker Petrolite Ltd Address: Kirkby Bank Road, Knowsley Industrial Park (north), Liverpool, Merseyside, L33 7SY Process: Manufacture And Use Of Organic Chemicals Permit Number: AK5946	Original Permit Number: IPCAPP Date Approved: 3-2-1994 Effective Date: 7-2-1994 Status: Superseded By Variation



ID	Location	Details	
K	331m N	Operator: Baker Petrolite Ltd Address: Kirkby Bank Road, Knowsley Industrial Park (north), Liverpool, Merseyside, L33 7SY Process: Manufacture And Use Of Organic Chemicals Permit Number: AS6870	Original Permit Number: IPCAIRAPP Date Approved: 23-11-1995 Effective Date: 28-11-1995 Status: Superseded By Variation
K	331m N	Operator: Baker Petrolite Ltd Address: Kirkby Bank Road, Knowsley Industrial Park (north), Liverpool, Merseyside, L33 7SY Process: Manufacture And Use Of Organic Chemicals Permit Number: AV0541	Original Permit Number: IPCMINVAR Date Approved: 6-3-1996 Effective Date: 13-3-1996 Status: Superseded By Variation
K	331m N	Operator: Baker Petrolite Ltd Address: Kirkby Bank Road, Knowsley Industrial Park (north), Liverpool, Merseyside, L33 7SY Process: Manufacture And Use Of Organic Chemicals Permit Number: BB3760	Original Permit Number: IPCMINVAR Date Approved: 8-6-1998 Effective Date: 8-6-1998 Status: Superseded By Variation
K	331m N	Operator: Baker Petrolite Ltd Address: Kirkby Bank Road, Knowsley Industrial Park (north), Liverpool, Merseyside, L33 7SY Process: Manufacture And Use Of Organic Chemicals Permit Number: BD5321	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Revoked - Now Ippc
K	331m N	Operator: Baker Petrolite Ltd Address: Kirkby Bank Road, Knowsley Industrial Park (north), Liverpool, Merseyside, L33 7SY Process: Manufacture And Use Of Organic Chemicals Permit Number: BE4886	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Revoked - Now Ippc
M	378m S	Operator: Kidde Products Ltd Address: Ashcroft Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7TS Process: Inorganic Chemical Processes Permit Number: AI3755	Original Permit Number: IPCAPP Date Approved: 26-7-1993 Effective Date: 26-7-1993 Status: Superseded By Variation
M	378m S	Operator: Kidde Products Ltd Address: Ashcroft Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7TS Process: Inorganic Chemical Processes Permit Number: AO0229	Original Permit Number: IPCAIRAPP Date Approved: 1-11-1994 Effective Date: 8-11-1994 Status: Superseded By Variation
M	378m S	Operator: Kidde Products Ltd Address: Ashcroft Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7TS Process: Inorganic Chemical Processes Permit Number: AR5235	Original Permit Number: IPCMINVAR Date Approved: 6-6-1995 Effective Date: 13-6-1995 Status: Superseded By Variation
M	378m S	Operator: Kidde Products Ltd Address: Ashcroft Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7TS Process: Inorganic Chemical Processes Permit Number: BC9321	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Revoked



ID	Location	Details	
M	378m S	Operator: Kidde Products Ltd Address: Ashcroft Road, Knowsley Industrial Park North, Liverpool, Merseyside, L33 7TS Process: Inorganic Chemical Processes Permit Number: BD1547	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Revoked - Now Ippc

This data is sourced from the Environment Agency and Natural Resources Wales.

4.10 Licensed industrial activities (Part A(1))

Records within 500m	59
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Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on [page 42 >](#)

ID	Location	Details	
I	275m E	Operator: SYNTOR FINE CHEMICALS LIMITED Installation Name: Kirkby Intermediates Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: BU4376IS Original Permit Number: BU4376IS	EPR Reference: EPR/BU4376IS Issue Date: 14/07/2011 Effective Date: 14/07/2011 Last date noted as effective: 29/10/2024 Status: Surrendered
I	275m E	Operator: SYNTOR FINE CHEMICALS LIMITED Installation Name: Kirkby Intermediates Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: BU4376IS Original Permit Number: BU4376IS	EPR Reference: EPR/BU4376IS Issue Date: 14/07/2011 Effective Date: 14/07/2011 Last date noted as effective: 29/10/2024 Status: Surrendered
I	275m E	Operator: SYNTOR FINE CHEMICALS LIMITED Installation Name: Kirkby Intermediates Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: BU4376IS Original Permit Number: BU4376IS	EPR Reference: EPR/BU4376IS Issue Date: 14/07/2011 Effective Date: 14/07/2011 Last date noted as effective: 29/10/2024 Status: Surrendered
I	275m E	Operator: ORGANIC INTERMEDIATES LTD Installation Name: - Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: BU4376 Original Permit Number: BU4376	EPR Reference: - Issue Date: 17/12/2003 Effective Date: 17/12/2003 Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS

ID	Location	Details	
I	275m E	Operator: ORGANIC INTERMEDIATES LTD Installation Name: - Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: BU4376 Original Permit Number: BU4376	EPR Reference: - Issue Date: 17/12/2003 Effective Date: 17/12/2003 Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
I	275m E	Operator: ORGANIC INTERMEDIATES LTD Installation Name: - Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: BU4376 Original Permit Number: BU4376	EPR Reference: - Issue Date: 17/12/2003 Effective Date: 17/12/2003 Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
I	275m E	Operator: SYNTOR FINE CHEMICALS LTD Installation Name: ORGANIC INTERMEDIATES LTD Process: ORGANIC CHEMICALS; DYES AND PIGMENTS Permit Number: UP3634MC Original Permit Number: BU4376IS	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 03/10/2007 Status: DETERMINATION
I	275m E	Operator: SYNTOR FINE CHEMICALS LTD Installation Name: ORGANIC INTERMEDIATES LTD Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: UP3634MC Original Permit Number: BU4376IS	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 03/10/2007 Status: DETERMINATION
I	275m E	Operator: SYNTOR FINE CHEMICALS LTD Installation Name: ORGANIC INTERMEDIATES LTD Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: UP3634MC Original Permit Number: BU4376IS	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 03/10/2007 Status: DETERMINATION
I	275m E	Operator: SYNTOR FINE CHEMICALS LTD Installation Name: ORGANIC INTERMEDIATES LTD Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: UP3634MC Original Permit Number: BU4376IS	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 03/10/2007 Status: DETERMINATION
I	275m E	Operator: SYNTOR FINE CHEMICALS LTD Installation Name: ORGANIC INTERMEDIATES LTD Process: ORGANIC CHEMICALS; ANY OTHER ORGANIC COMPOUNDS (NOT DESCRIBED 4.1 A(1)(A)) Permit Number: UP3634MC Original Permit Number: BU4376IS	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 03/10/2007 Status: DETERMINATION



ID	Location	Details	
I	275m E	Operator: Syntor Fine Chemicals Ltd Installation Name: ORGANIC INTERMEDIATES LTD Process: ORGANIC CHEMICALS; ANY OTHER ORGANIC COMPOUNDS (NOT DESCRIBED 4.1 A(1)(A)) Permit Number: JP3933BA Original Permit Number: BU4376IS	EPR Reference: - Issue Date: 24/06/2005 Effective Date: 24/06/2005 Last date noted as effective: 21/03/2023 Status: Superseded
I	275m E	Operator: Syntor Fine Chemicals Ltd Installation Name: ORGANIC INTERMEDIATES LTD Process: ORGANIC CHEMICALS; DYES AND PIGMENTS Permit Number: JP3933BA Original Permit Number: BU4376IS	EPR Reference: - Issue Date: 24/06/2005 Effective Date: 24/06/2005 Last date noted as effective: 21/03/2023 Status: Superseded
I	275m E	Operator: Syntor Fine Chemicals Ltd Installation Name: ORGANIC INTERMEDIATES LTD Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: JP3933BA Original Permit Number: BU4376IS	EPR Reference: - Issue Date: 24/06/2005 Effective Date: 24/06/2005 Last date noted as effective: 21/03/2023 Status: Superseded
I	275m E	Operator: Syntor Fine Chemicals Ltd Installation Name: ORGANIC INTERMEDIATES LTD Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: JP3933BA Original Permit Number: BU4376IS	EPR Reference: - Issue Date: 24/06/2005 Effective Date: 24/06/2005 Last date noted as effective: 21/03/2023 Status: Superseded
I	275m E	Operator: Syntor Fine Chemicals Ltd Installation Name: ORGANIC INTERMEDIATES LTD Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: JP3933BA Original Permit Number: BU4376IS	EPR Reference: - Issue Date: 24/06/2005 Effective Date: 24/06/2005 Last date noted as effective: 21/03/2023 Status: Superseded
N	387m E	Operator: SYNTOR FINE CHEMICALS LIMITED Installation Name: Kirkby Intermediates Process: ORGANIC CHEMICALS; DYES AND PIGMENTS Permit Number: BU4376IS Original Permit Number: BU4376IS	EPR Reference: EPR/BU4376IS Issue Date: 14/07/2011 Effective Date: 14/07/2011 Last date noted as effective: 29/10/2024 Status: Surrendered
N	387m E	Operator: SYNTOR FINE CHEMICALS LIMITED Installation Name: Kirkby Intermediates Process: ORGANIC CHEMICALS; ANY OTHER ORGANIC COMPOUNDS (NOT DESCRIBED 4.1 A(1)(A)) Permit Number: BU4376IS Original Permit Number: BU4376IS	EPR Reference: EPR/BU4376IS Issue Date: 14/07/2011 Effective Date: 14/07/2011 Last date noted as effective: 29/10/2024 Status: Surrendered
N	387m E	Operator: Syntor Fine Chemicals Ltd Installation Name: Kirkby Intermediates Process: ORGANIC CHEMICALS; DYES AND PIGMENTS Permit Number: CP3235XQ Original Permit Number: BU4376IS	EPR Reference: - Issue Date: 04/02/2009 Effective Date: 04/02/2009 Last date noted as effective: 21/03/2023 Status: Superseded



ID	Location	Details	
N	387m E	Operator: Syntor Fine Chemicals Ltd Installation Name: Kirkby Intermediates Process: ORGANIC CHEMICALS; ANY OTHER ORGANIC COMPOUNDS (NOT DESCRIBED 4.1 A(1)(A)) Permit Number: TP3633HM Original Permit Number: BU4376IS	EPR Reference: - Issue Date: - Effective Date: 14/07/2011 Last date noted as effective: 21/03/2023 Status: Surrender Effective
N	387m E	Operator: Syntor Fine Chemicals Ltd Installation Name: Kirkby Intermediates Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: TP3633HM Original Permit Number: BU4376IS	EPR Reference: - Issue Date: - Effective Date: 14/07/2011 Last date noted as effective: 21/03/2023 Status: Surrender Effective
N	387m E	Operator: Syntor Fine Chemicals Ltd Installation Name: Kirkby Intermediates Process: ORGANIC CHEMICALS; DYES AND PIGMENTS Permit Number: CP3633TQ Original Permit Number: BU4376IS	EPR Reference: - Issue Date: 22/03/2010 Effective Date: 22/03/2010 Last date noted as effective: 21/03/2023 Status: Superseded
N	387m E	Operator: Syntor Fine Chemicals Ltd Installation Name: Kirkby Intermediates Process: ORGANIC CHEMICALS; ANY OTHER ORGANIC COMPOUNDS (NOT DESCRIBED 4.1 A(1)(A)) Permit Number: CP3235XQ Original Permit Number: BU4376IS	EPR Reference: - Issue Date: 04/02/2009 Effective Date: 04/02/2009 Last date noted as effective: 21/03/2023 Status: Superseded
N	387m E	Operator: Syntor Fine Chemicals Ltd Installation Name: Kirkby Intermediates Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: CP3235XQ Original Permit Number: BU4376IS	EPR Reference: - Issue Date: 04/02/2009 Effective Date: 04/02/2009 Last date noted as effective: 21/03/2023 Status: Superseded
N	387m E	Operator: Syntor Fine Chemicals Ltd Installation Name: Kirkby Intermediates Process: ORGANIC CHEMICALS; ANY OTHER ORGANIC COMPOUNDS (NOT DESCRIBED 4.1 A(1)(A)) Permit Number: CP3633TQ Original Permit Number: BU4376IS	EPR Reference: - Issue Date: 22/03/2010 Effective Date: 22/03/2010 Last date noted as effective: 21/03/2023 Status: Superseded
N	387m E	Operator: Syntor Fine Chemicals Ltd Installation Name: Kirkby Intermediates Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: CP3633TQ Original Permit Number: BU4376IS	EPR Reference: - Issue Date: 22/03/2010 Effective Date: 22/03/2010 Last date noted as effective: 21/03/2023 Status: Superseded



ID	Location	Details	
N	387m E	Operator: Syntor Fine Chemicals Ltd Installation Name: Kirkby Intermediates Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: CP3633TQ Original Permit Number: BU4376IS	EPR Reference: - Issue Date: 22/03/2010 Effective Date: 22/03/2010 Last date noted as effective: 21/03/2023 Status: Superseded
N	387m E	Operator: Syntor Fine Chemicals Ltd Installation Name: Kirkby Intermediates Process: ORGANIC CHEMICALS; DYES AND PIGMENTS Permit Number: TP3633HM Original Permit Number: BU4376IS	EPR Reference: - Issue Date: - Effective Date: 14/07/2011 Last date noted as effective: 21/03/2023 Status: Surrender Effective
N	387m E	Operator: Syntor Fine Chemicals Ltd Installation Name: Kirkby Intermediates Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: CP3235XQ Original Permit Number: BU4376IS	EPR Reference: - Issue Date: 04/02/2009 Effective Date: 04/02/2009 Last date noted as effective: 21/03/2023 Status: Superseded
N	387m E	Operator: Syntor Fine Chemicals Ltd Installation Name: Kirkby Intermediates Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: CP3235XQ Original Permit Number: BU4376IS	EPR Reference: - Issue Date: 04/02/2009 Effective Date: 04/02/2009 Last date noted as effective: 21/03/2023 Status: Superseded
N	387m E	Operator: Syntor Fine Chemicals Ltd Installation Name: Kirkby Intermediates Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: CP3633TQ Original Permit Number: BU4376IS	EPR Reference: - Issue Date: 22/03/2010 Effective Date: 22/03/2010 Last date noted as effective: 21/03/2023 Status: Superseded
N	387m E	Operator: Syntor Fine Chemicals Ltd Installation Name: Kirkby Intermediates Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: TP3633HM Original Permit Number: BU4376IS	EPR Reference: - Issue Date: - Effective Date: 14/07/2011 Last date noted as effective: 21/03/2023 Status: Surrender Effective
N	387m E	Operator: Syntor Fine Chemicals Ltd Installation Name: Kirkby Intermediates Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: TP3633HM Original Permit Number: BU4376IS	EPR Reference: - Issue Date: - Effective Date: 14/07/2011 Last date noted as effective: 21/03/2023 Status: Surrender Effective



ID	Location	Details	
O	389m SE	Operator: SRCL LIMITED Installation Name: SRCL Knowsley Treatment and Transfer Station Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: KP3436NL Original Permit Number: KP3436NL	EPR Reference: EPR/KP3436NL Issue Date: 13/10/2022 Effective Date: 13/10/2022 Last date noted as effective: 23/11/2023 Status: Effective
O	389m SE	Operator: SRCL LIMITED Installation Name: SRCL Knowsley Treatment and Transfer Station Process: ASSOCIATED PROCESS Permit Number: KP3436NL Original Permit Number: KP3436NL	EPR Reference: EPR/KP3436NL Issue Date: 13/10/2022 Effective Date: 13/10/2022 Last date noted as effective: 23/11/2023 Status: Effective
O	389m SE	Operator: SRCL LIMITED Installation Name: SRCL Knowsley Treatment and Transfer Station Process: TEMPORARY STORAGE OF HAZ WASTE NOT UNDER S 5.2 PENDING ACTIVITIES LISTED IN S 5.1, 5.2, 5.3 AND PARAGRAPH (B) OF THIS SECTION WITH A TOTAL CAPACITY > 50 TONNES, EXCL TEMP STORAGE WHERE GENERATED Permit Number: KP3436NL Original Permit Number: KP3436NL	EPR Reference: EPR/KP3436NL Issue Date: 13/10/2022 Effective Date: 13/10/2022 Last date noted as effective: 23/11/2023 Status: Effective
O	389m SE	Operator: SRCL Limited Installation Name: SRCL Knowsley Treatment and Transfer Station Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: DP3040QM Original Permit Number: KP3436NL	EPR Reference: - Issue Date: 04/10/2022 Effective Date: 13/10/2022 Last date noted as effective: 21/03/2023 Status: Effective
O	389m SE	Operator: SRCL Limited Installation Name: SRCL Knowsley Treatment and Transfer Station Process: TEMPORARY STORAGE OF HAZ WASTE NOT UNDER S 5.2 PENDING ACTIVITIES LISTED IN S 5.1, 5.2, 5.3 AND PARAGRAPH (B) OF THIS SECTION WITH A TOTAL CAPACITY > 50 TONNES, EXCL TEMP STORAGE WHERE GENERATED Permit Number: DP3040QM Original Permit Number: KP3436NL	EPR Reference: - Issue Date: 04/10/2022 Effective Date: 13/10/2022 Last date noted as effective: 21/03/2023 Status: Effective

ID	Location	Details	
O	389m SE	Operator: SRCL Limited Installation Name: SRCL Knowsley Treatment and Transfer Station Process: ASSOCIATED PROCESS Permit Number: DP3040QM Original Permit Number: KP3436NL	EPR Reference: - Issue Date: 04/10/2022 Effective Date: 13/10/2022 Last date noted as effective: 21/03/2023 Status: Effective
O	389m SE	Operator: SRCL Limited Installation Name: SRCL Knowsley Treatment and Transfer Station Process: ASSOCIATED PROCESS Permit Number: NP3537RN Original Permit Number: KP3436NL	EPR Reference: - Issue Date: 09/06/2016 Effective Date: 09/06/2016 Last date noted as effective: 21/03/2023 Status: Superseded
O	389m SE	Operator: SRCL Limited Installation Name: SRCL Knowsley Treatment and Transfer Station Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: NP3537RN Original Permit Number: KP3436NL	EPR Reference: - Issue Date: 09/06/2016 Effective Date: 09/06/2016 Last date noted as effective: 21/03/2023 Status: Superseded
O	389m SE	Operator: SRCL Limited Installation Name: Knowsley Treatment and Transfer Station - EPR/KP3436NL Process: ASSOCIATED PROCESS Permit Number: NP3439DS Original Permit Number: KP3436NL	EPR Reference: - Issue Date: 09/08/2016 Effective Date: 09/08/2016 Last date noted as effective: 21/03/2023 Status: Superseded
O	389m SE	Operator: SRCL Limited Installation Name: Knowsley Treatment and Transfer Station - EPR/KP3436NL Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: NP3439DS Original Permit Number: KP3436NL	EPR Reference: - Issue Date: 09/08/2016 Effective Date: 09/08/2016 Last date noted as effective: 21/03/2023 Status: Superseded
O	389m SE	Operator: SRCL Limited Installation Name: SRCL Knowsley Treatment and Transfer Station Process: ASSOCIATED PROCESS Permit Number: TP3537QR Original Permit Number: KP3436NL	EPR Reference: - Issue Date: 21/05/2019 Effective Date: 21/05/2019 Last date noted as effective: 21/03/2023 Status: Superseded



ID	Location	Details	
O	389m SE	Operator: SRCL Limited Installation Name: Knowsley Treatment and Transfer Station - EPR/KP3436NL Process: TEMPORARY STORAGE OF HAZ WASTE NOT UNDER S 5.2 PENDING ACTIVITIES LISTED IN S 5.1, 5.2, 5.3 AND PARAGRAPH (B) OF THIS SECTION WITH A TOTAL CAPACITY > 50 TONNES, EXCL TEMP STORAGE WHERE GENERATED Permit Number: NP3439DS Original Permit Number: KP3436NL	EPR Reference: - Issue Date: 09/08/2016 Effective Date: 09/08/2016 Last date noted as effective: 21/03/2023 Status: Superseded
O	389m SE	Operator: SRCL Limited Installation Name: SRCL Knowsley Treatment and Transfer Station Process: TEMPORARY STORAGE OF HAZ WASTE NOT UNDER S 5.2 PENDING ACTIVITIES LISTED IN S 5.1, 5.2, 5.3 AND PARAGRAPH (B) OF THIS SECTION WITH A TOTAL CAPACITY > 50 TONNES, EXCL TEMP STORAGE WHERE GENERATED Permit Number: NP3537RN Original Permit Number: KP3436NL	EPR Reference: - Issue Date: 09/06/2016 Effective Date: 09/06/2016 Last date noted as effective: 21/03/2023 Status: Superseded
O	389m SE	Operator: SRCL Limited Installation Name: SRCL Knowsley Treatment and Transfer Station Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: TP3537QR Original Permit Number: KP3436NL	EPR Reference: - Issue Date: 21/05/2019 Effective Date: 21/05/2019 Last date noted as effective: 21/03/2023 Status: Superseded
O	389m SE	Operator: SRCL Limited Installation Name: SRCL Knowsley Treatment and Transfer Station Process: TEMPORARY STORAGE OF HAZ WASTE NOT UNDER S 5.2 PENDING ACTIVITIES LISTED IN S 5.1, 5.2, 5.3 AND PARAGRAPH (B) OF THIS SECTION WITH A TOTAL CAPACITY > 50 TONNES, EXCL TEMP STORAGE WHERE GENERATED Permit Number: TP3537QR Original Permit Number: KP3436NL	EPR Reference: - Issue Date: 21/05/2019 Effective Date: 21/05/2019 Last date noted as effective: 21/03/2023 Status: Superseded
O	389m SE	Operator: SRCL LIMITED Installation Name: SRCL Knowsley Treatment and Transfer Station Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: KP3436NL Original Permit Number: KP3436NL	EPR Reference: EPR/KP3436NL Issue Date: 04/10/2022 Effective Date: 13/10/2022 Last date noted as effective: 29/10/2024 Status: Effective



ID	Location	Details	
O	389m SE	Operator: SRCL LIMITED Installation Name: SRCL Knowsley Treatment and Transfer Station Process: DISPOSAL OR RECOVERY OF HAZ WASTE WITH CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING REPACKAGING PRIOR TO SUBMISSION TO ANY OF THE OTHER ACTIVITIES LISTED IN THIS SECTION OR IN SECTION 5.1 Permit Number: KP3436NL Original Permit Number: KP3436NL	EPR Reference: EPR/KP3436NL Issue Date: 04/10/2022 Effective Date: 13/10/2022 Last date noted as effective: 29/10/2024 Status: Effective
O	389m SE	Operator: SRCL LIMITED Installation Name: SRCL Knowsley Treatment and Transfer Station Process: TEMPORARY STORAGE OF HAZ WASTE NOT UNDER S5.2 PENDING ACTIVITIES LISTED IN S5.1, 5.2, 5.3 AND PARAGRAPH (B) OF THIS SECTION WITH A TOTAL CAPACITY > 50 TONNES, EXCL TEMP STORAGE WHERE GENERATED Permit Number: KP3436NL Original Permit Number: KP3436NL	EPR Reference: EPR/KP3436NL Issue Date: 04/10/2022 Effective Date: 13/10/2022 Last date noted as effective: 29/10/2024 Status: Effective
O	389m SE	Operator: SRCL LIMITED Installation Name: SRCL Knowsley Treatment and Transfer Station Process: DIRECTLY ASSOCIATED ACTIVITY (INCLUDED) Permit Number: KP3436NL Original Permit Number: KP3436NL	EPR Reference: EPR/KP3436NL Issue Date: 04/10/2022 Effective Date: 13/10/2022 Last date noted as effective: 29/10/2024 Status: Effective
O	389m SE	Operator: SRCL LIMITED Installation Name: SRCL Knowsley Treatment and Transfer Station Process: DIRECTLY ASSOCIATED ACTIVITY (INCLUDED) Permit Number: KP3436NL Original Permit Number: KP3436NL	EPR Reference: EPR/KP3436NL Issue Date: 04/10/2022 Effective Date: 13/10/2022 Last date noted as effective: 29/10/2024 Status: Effective
O	389m SE	Operator: SRCL LIMITED Installation Name: SRCL Knowsley Treatment and Transfer Station Process: DIRECTLY ASSOCIATED ACTIVITY (INCLUDED) Permit Number: KP3436NL Original Permit Number: KP3436NL	EPR Reference: EPR/KP3436NL Issue Date: 04/10/2022 Effective Date: 13/10/2022 Last date noted as effective: 29/10/2024 Status: Effective
O	389m SE	Operator: SRCL LIMITED Installation Name: SRCL Knowsley Treatment and Transfer Station Process: DIRECTLY ASSOCIATED ACTIVITY (INCLUDED) Permit Number: KP3436NL Original Permit Number: KP3436NL	EPR Reference: EPR/KP3436NL Issue Date: 04/10/2022 Effective Date: 13/10/2022 Last date noted as effective: 29/10/2024 Status: Effective

ID	Location	Details	
O	389m SE	Operator: SRCL LIMITED Installation Name: SRCL Knowsley Treatment and Transfer Station Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: KP3436NL Original Permit Number: KP3436NL	EPR Reference: EPR/KP3436NL Issue Date: 04/10/2022 Effective Date: 13/10/2022 Last date noted as effective: 29/10/2024 Status: Effective
O	389m SE	Operator: SRCL LIMITED Installation Name: SRCL Knowsley Treatment and Transfer Station Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: KP3436NL Original Permit Number: KP3436NL	EPR Reference: EPR/KP3436NL Issue Date: 04/10/2022 Effective Date: 13/10/2022 Last date noted as effective: 29/10/2024 Status: Effective
P	395m SW	Operator: KIDDE PRODUCTS LIMITED Installation Name: Kirkby Firefighting Allophanate Plant Process: CARBON DISULPHIDE OR AMMONIA; AMMONIA RELEASE TO AIR (ANY CHEMICAL MANUFACTURE NOT REFRIDGERANT USE) Permit Number: BU5518IU Original Permit Number: BU5518IU	EPR Reference: EPR/BU5518IU Issue Date: 14/02/2014 Effective Date: 14/02/2014 Last date noted as effective: 29/10/2024 Status: Surrendered
P	395m SW	Operator: Kidde Products Ltd Installation Name: Kirkby Firefighting Allophanate Plant Process: CARBON DISULPHIDE OR AMMONIA; AMMONIA RELEASE TO AIR (ANY CHEMICAL MANUFACTURE NOT REFRIDGERANT USE) Permit Number: KP3839EK Original Permit Number: BU5518IU	EPR Reference: - Issue Date: - Effective Date: 14/02/2014 Last date noted as effective: 21/03/2023 Status: Surrender Effective

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m

4

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on [page 42 >](#)



ID	Location	Address	Details	
E	129m S	North West Fencing Products, Bradman Road, Knowsley Industrial Estate, Kirkby, L33 7UR	Process: Use of Bulk Cement Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
E	173m S	Boundary Plant, Bradman Road, Knowsley Industrial Park, Kirkby, L33 7YB	Process: Respraying of Road Vehicles Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
F	185m SW	DAMS International, Marl Road, Knowsley Industrial Park, Kirkby, L33 7UH	Process: Combustion & Incineration Status: Revoked Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
G	193m S	Boundary Plant Ltd, Hammond Rd, Liverpool, L33 7UL	Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	0
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Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

Records within 500m	2
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Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on [page 42](#) >

ID	Location	Address	Details	
L	360m N	KNOWSLEYRAILTRANSFERLOADING STN,WOODWARDROAD,KNOWSLEY INDUSTRIALPARK,LIVERPOOL, MERSEYSIDE,L337UZ	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: EPRCB3995VZ Permit Version: 1 Receiving Water: 2 OUTLETS 2 WATERCOURSES	Status: REVOKED UNDER EPR 2010 Issue date: 14/09/2015 Effective Date: 14/09/2015 Revocation Date: 13/06/2016



ID	Location	Address	Details	
L	360m N	KNOWSLEYRAILTRANSFERLOADING STN,WOODWARDROAD,KNOWSLEY INDUSTRIALPARK,LIVERPOOL,ME RSEYSIDE,L337UZ	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: EPRCB3995VZ Permit Version: 1 Receiving Water: 2 OUTLETS 2 WATERCOURSES	Status: REVOKED UNDER EPR 2010 Issue date: 14/09/2015 Effective Date: 14/09/2015 Revocation Date: 13/06/2016

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0
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Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to public sewer

Records within 500m	0
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Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 List 1 Dangerous Substances

Records within 500m	2
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Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

Features are displayed on the Current industrial land use map on [page 42 >](#)

ID	Location	Name	Status	Receiving Water	Authorised Substances
I	280m E	Syntor Fine Chemicals, Knowsley Industrial L33 7uz	Active	Stw Partcons	Hexachlorocyclohexane, para-para-DDT, Pentachlorophenol, Aldrin, Dieldrin, Endrin, Isodrin, Hexachlorobenzene, Hexachlorobutadiene, Total DDT
I	280m E	Syntor Fine Chemicals, Knowsley Industrial L33 7uz	Active	Stw Partcons	Mercury (other), Cadmium, Carbon tetrachloride, Chloroform, 1,2-dichloroethane, Trichloroethylene, Perchloroethylene, Trichlorobenzene

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 2 Dangerous Substances

Records within 500m	4
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Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

Features are displayed on the Current industrial land use map on [page 42 >](#)

ID	Location	Name	Status	Receiving Water	Authorised Substances
D	151m E	Nipa Laboratories Ltd, Woodyard Road	Not Active	River Alt	Toluene
D	151m E	Archimica Ltd, Knowsley Industrial Park	Not Active	-	Toluene
D	151m E	Organic Intermediates, Knowsley Industrial	Not Active	-	Toluene, Xylene
I	280m E	Syntor Fine Chemicals, Knowsley Industrial L33 7uz	Active	-	Toluene, Xylene

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m	7
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Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on [page 42 >](#)

ID	Location	Details	
D	109m E	Incident Date: 08/11/2002 Incident Identification: 119566 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant)
F	193m SW	Incident Date: 07/08/2003 Incident Identification: 179912 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
5	222m NE	Incident Date: 08/03/2002 Incident Identification: 62620 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Other Animal Matter	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

ID	Location	Details	
9	316m E	Incident Date: 07/08/2001 Incident Identification: 22482 Pollutant: Inorganic Chemicals/Products Pollutant Description: Other Inorganic Chemical or Product	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
L	356m N	Incident Date: 18/03/2002 Incident Identification: 64817 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
M	400m S	Incident Date: 18/08/2003 Incident Identification: 182970 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Chemical Odour	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
11	435m E	Incident Date: 17/07/2002 Incident Identification: 92300 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Other General Biodegradable Material or Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution inventory substances

Records within 500m

0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.20 Pollution inventory waste transfers

Records within 500m

1

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

Features are displayed on the Current industrial land use map on [page 42 >](#)



ID: O, Location: 389m SE, Permit: KP3436NL
 Operator: Srcl Limited
 Activity: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT
 Address: SRCL Knowsley Treatment and Transfer Station Bradman Road L33 7UR
 Sector: Waste Treatment, Sub-sector: Hazardous Waste
 Releases:

Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
D1	Deposit into or onto land (eg landfill, etc.)	876.77	Absolute Value	18 01 04	wastes whose collection and disposal is not subject to special requirements in order to prevent infection (for example dressings, plaster casts, linen, disposable clothing, diapers)	No
D10	Incineration on Land	5.62	Absolute Value	18 01 04	wastes whose collection and disposal is not subject to special requirements in order to prevent infection (for example dressings, plaster casts, linen, disposable clothing, diapers)	No
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	8.68	Absolute Value	18 01 04	wastes whose collection and disposal is not subject to special requirements in order to prevent infection (for example dressings, plaster casts, linen, disposable clothing, diapers)	No
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	296.83	Absolute Value	18 01 04	wastes whose collection and disposal is not subject to special requirements in order to prevent infection (for example dressings, plaster casts, linen, disposable clothing, diapers)	No
D10	Incineration on Land	86.92	Absolute Value	18 01 09	medicines other than those mentioned in 18 01 08	No
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	101.64	Absolute Value	18 01 09	medicines other than those mentioned in 18 01 08	No
D10	Incineration on Land	17.62	Absolute Value	18 02 03	wastes whose collection and disposal is not subject to special requirements in order to prevent infection	No



Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
D10	Incineration on Land	14.44	Absolute Value	18 02 08	medicines other than those mentioned in 18 02 07	No
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	7681	Absolute Value	19 02 10	combustible wastes other than those mentioned in 19 02 08 and 19 02 09	No
R1	Use principally as a fuel or other means to generate energy	2241.62	Absolute Value	19 02 10	combustible wastes other than those mentioned in 19 02 08 and 19 02 09	No
D10	Incineration on Land	8.75	Absolute Value	20 01 32	medicines other than those mentioned in 20 01 31	No
D10	Incineration on Land	5.17	Absolute Value	20 01 99	other fractions not otherwise specified	No
D1	Deposit into or onto land (eg landfill, etc.)	234.28	Absolute Value	18 01 03	wastes whose collection and disposal is subject to special requirements in order to prevent infection	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numberes D1 to D12 (eg evaporation, drying, calcination, etc.)	45.7	Absolute Value	18 01 03	wastes whose collection and disposal is subject to special requirements in order to prevent infection	Yes
D10	Incineration on Land	1444.68	Absolute Value	18 01 03	wastes whose collection and disposal is subject to special requirements in order to prevent infection	Yes
D10	Incineration on Land	99.1	Absolute Value	18 01 08	cytotoxic and cytostatic medicines	Yes
D10	Incineration on Land	27.15	Absolute Value	18 02 02	wastes whose collection and disposal is subject to special requirements in order to prevent infection	Yes

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.



4.21 Pollution inventory radioactive waste

Records within 500m

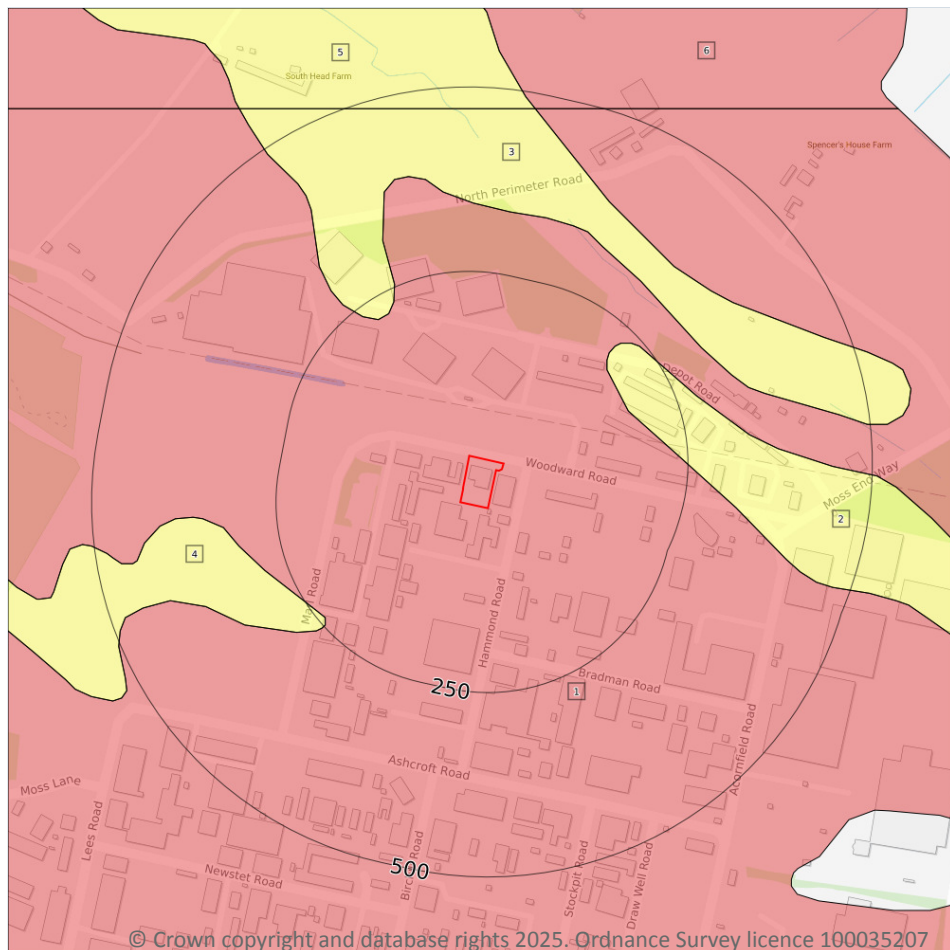
0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.



5 Hydrogeology - Superficial aquifer



- Site Outline**
- Search buffers in metres (m)**
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive
 - Unknown

5.1 Superficial aquifer

Records within 500m

6

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on [page 70 >](#)

ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	183m NE	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

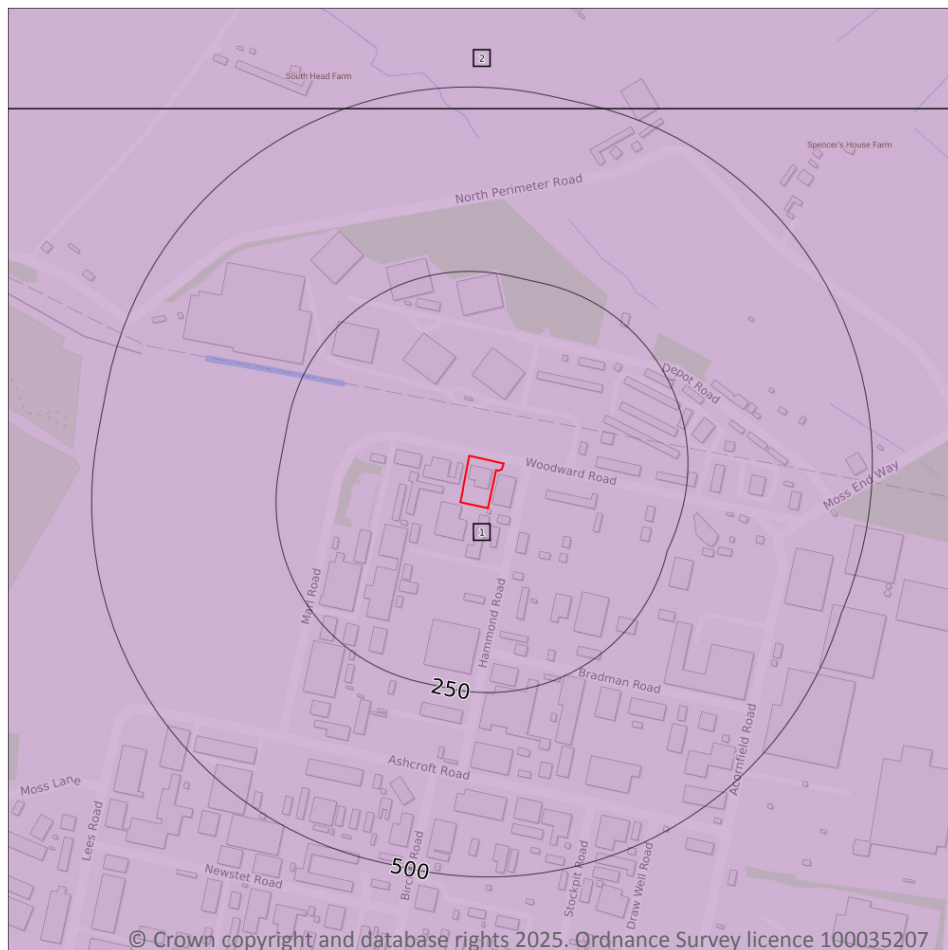


ID	Location	Designation	Description
3	221m NW	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
4	241m SW	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
5	471m N	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
6	479m N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Bedrock aquifer



- Site Outline**
- Search buffers in metres (m)**
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive

5.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on [page 72 >](#)

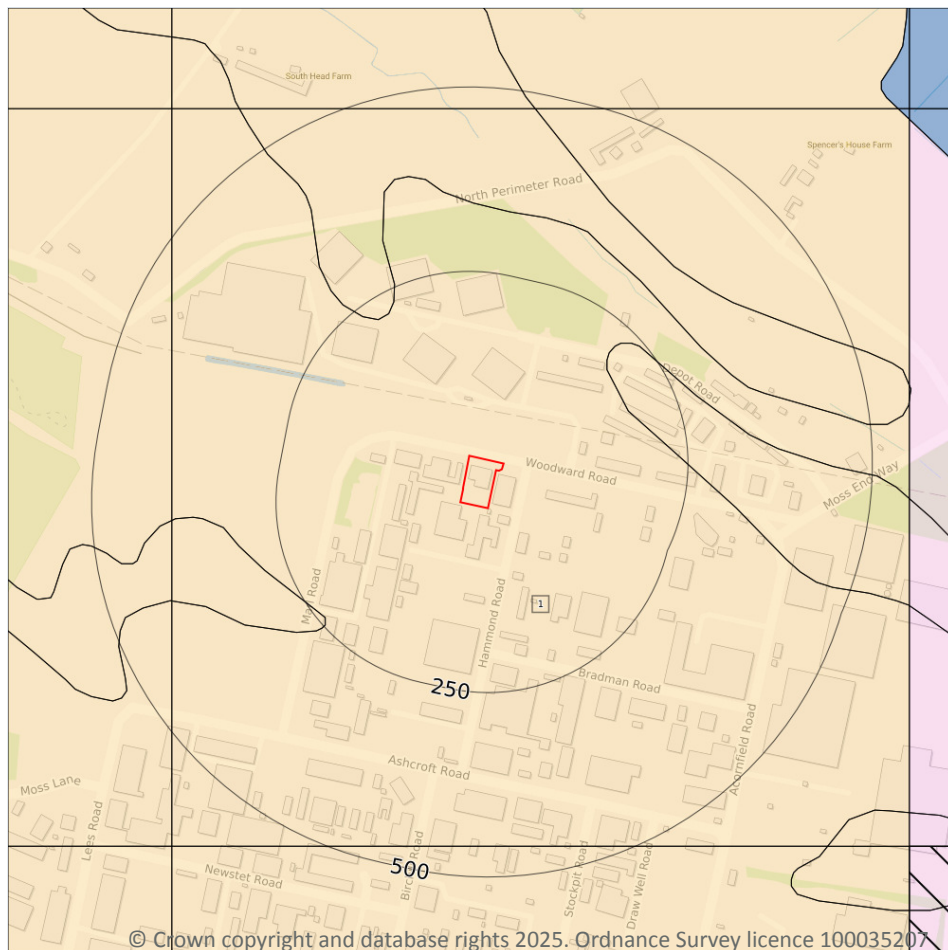
ID	Location	Designation	Description
1	On site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
2	471m N	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers



This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Groundwater vulnerability



— Site Outline

Search buffers in metres (m)

Superficial vulnerability

- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability

- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m

1

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on [page 74](#) >

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Principal Flow mechanism: Mixed

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0
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This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

5.5 Groundwater vulnerability- local information

Records on site	0
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This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk ↗.

This data is sourced from the British Geological Survey and the Environment Agency.

Abstractions and Source Protection Zones



- Site Outline
- Search buffers in metres (m)**
- Source Protection Zone 1
Inner catchment
- Source Protection Zone 2
Outer catchment
- Source Protection Zone 3
Total catchment
- Source Protection Zone 4
Zone of Special Interest
- Source Protection Zone 1c
Inner catchment - confined aquifer
- Source Protection Zone 2c
Outer catchment - confined aquifer
- Source Protection Zone 3c
Total catchment - confined aquifer
- Drinking water abstraction licences
Polygon features
- Drinking water abstraction licences
Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m

41

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on [page 76 >](#)

ID	Location	Details	
A	436m SW	Status: Historical Licence No: 2569031146 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: SONAE BOREHOLE, KNOWSLEY, MERSEYSIDE Data Type: Point Name: Sonae (UK) Limited Easting: 342984 Northing: 399310	Annual Volume (m ³): 129600 Max Daily Volume (m ³): 356.53 Original Application No: - Original Start Date: 17/10/2008 Expiry Date: 31/03/2016 Issue No: 1 Version Start Date: 17/10/2008 Version End Date: -
A	436m SW	Status: Historical Licence No: 2569031146 Details: Process Water Direct Source: Ground Water - North West Region Point: SONAE BOREHOLE, KNOWSLEY, MERSEYSIDE Data Type: Point Name: Sonae (UK) Limited Easting: 342984 Northing: 399310	Annual Volume (m ³): 129600 Max Daily Volume (m ³): 356.53 Original Application No: - Original Start Date: 17/10/2008 Expiry Date: 31/03/2016 Issue No: 1 Version Start Date: 17/10/2008 Version End Date: -
A	436m SW	Status: Historical Licence No: 2569031146 Details: Dust Suppression Direct Source: Ground Water - North West Region Point: SONAE BOREHOLE, KNOWSLEY, MERSEYSIDE Data Type: Point Name: Sonae (UK) Limited Easting: 342984 Northing: 399310	Annual Volume (m ³): 129600 Max Daily Volume (m ³): 356.53 Original Application No: - Original Start Date: 17/10/2008 Expiry Date: 31/03/2016 Issue No: 1 Version Start Date: 17/10/2008 Version End Date: -
B	658m SE	Status: Historical Licence No: 2569031011 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE AT KIRKBY INDUSTRIAL ESTATE KIRKBY, MERSEYSIDE" Data Type: Point Name: PILKINGTON BROTHERS LTD Easting: 343900 Northing: 399000	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 28/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 28/01/1966 Version End Date: -
B	658m SE	Status: Historical Licence No: 2569031011 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT KIRKBY INDUSTRIAL ESTATE KIRKBY, MERSEYSIDE" Data Type: Point Name: PILKINGTON BROTHERS LTD Easting: 343900 Northing: 399000	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 28/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 28/01/1966 Version End Date: -



ID	Location	Details	
B	658m SE	Status: Historical Licence No: 2569031011 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT KIRKBY INDUSTRIAL ESTATE KIRKBY, MERSEYSIDE Data Type: Point Name: PILKINGTON BROTHERS LTD Easting: 343900 Northing: 399000	Annual Volume (m ³): 1591135 Max Daily Volume (m ³): 5237.11 Original Application No: - Original Start Date: 28/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 28/01/1966 Version End Date: -
B	658m SE	Status: Historical Licence No: 2569031011 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT KIRKBY INDUSTRIAL ESTATE KIRKBY, MERSEYSIDE Data Type: Point Name: PILKINGTON BROTHERS LTD Easting: 343900 Northing: 399000	Annual Volume (m ³): 1591135 Max Daily Volume (m ³): 5237.11 Original Application No: - Original Start Date: 28/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 28/01/1966 Version End Date: -
-	722m SW	Status: Active Licence No: 2569031131 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT KIRKBY 2 Data Type: Point Name: Liverpool Football Club & Athletic Grounds Limited Easting: 342734 Northing: 399168	Annual Volume (m ³): 150000 Max Daily Volume (m ³): 792 Original Application No: NPS/WR/027992 Original Start Date: 28/09/1999 Expiry Date: - Issue No: 3 Version Start Date: 19/11/2019 Version End Date: -
-	756m SE	Status: Active Licence No: 2569031089 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT KIRKBY Data Type: Point Name: AMES GOLDSMITH UK LTD Easting: 343800 Northing: 398800	Annual Volume (m ³): 90920 Max Daily Volume (m ³): 340.95 Original Application No: NPS/WR/023235 Original Start Date: 01/07/1988 Expiry Date: - Issue No: 102 Version Start Date: 26/07/2016 Version End Date: -



ID	Location	Details	
-	756m SE	Status: Historical Licence No: 2569031089 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT KIRKBY Data Type: Point Name: AMES GOLDSMITH UK LTD Easting: 343800 Northing: 398800	Annual Volume (m ³): 90920 Max Daily Volume (m ³): 340.95 Original Application No: - Original Start Date: 01/07/1988 Expiry Date: - Issue No: 101 Version Start Date: 10/11/2006 Version End Date: -
-	759m S	Status: Active Licence No: 2569031090 Details: Boiler Feed Direct Source: Ground Water - North West Region Point: BOREHOLE AT KIRKBY INDUSTRIAL ESTATE Data Type: Point Name: Baker Hughes Limited Easting: 343400 Northing: 398700	Annual Volume (m ³): 250030 Max Daily Volume (m ³): 818.28 Original Application No: NPS/WR/006045 Original Start Date: 20/01/1989 Expiry Date: - Issue No: 101 Version Start Date: 18/03/2011 Version End Date: -
-	759m S	Status: Active Licence No: 2569031090 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE AT KIRKBY INDUSTRIAL ESTATE Data Type: Point Name: Baker Hughes Limited Easting: 343400 Northing: 398700	Annual Volume (m ³): 250030 Max Daily Volume (m ³): 818.28 Original Application No: NPS/WR/006045 Original Start Date: 20/01/1989 Expiry Date: - Issue No: 101 Version Start Date: 18/03/2011 Version End Date: -
-	759m S	Status: Active Licence No: 2569031090 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT KIRKBY INDUSTRIAL ESTATE Data Type: Point Name: Baker Hughes Limited Easting: 343400 Northing: 398700	Annual Volume (m ³): 250030 Max Daily Volume (m ³): 818.28 Original Application No: NPS/WR/006045 Original Start Date: 20/01/1989 Expiry Date: - Issue No: 101 Version Start Date: 18/03/2011 Version End Date: -



ID	Location	Details	
-	1276m SW	Status: Active Licence No: 2569031131 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT KIRKBY Data Type: Point Name: Liverpool Football Club & Athletic Grounds Limited Easting: 342445 Northing: 398610	Annual Volume (m ³): 150000 Max Daily Volume (m ³): 792 Original Application No: NPS/WR/027992 Original Start Date: 28/09/1999 Expiry Date: - Issue No: 3 Version Start Date: 19/11/2019 Version End Date: -
-	1276m SW	Status: Active Licence No: 2569031131 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT KIRKBY Data Type: Point Name: Liverpool Football Club & Athletic Grounds Limited Easting: 342445 Northing: 398610	Annual Volume (m ³): 150000 Max Daily Volume (m ³): 792 Original Application No: NPS/WR/027992 Original Start Date: 28/09/1999 Expiry Date: - Issue No: 3 Version Start Date: 19/11/2019 Version End Date: -
-	1276m SW	Status: Historical Licence No: 2569031131 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT KIRKBY Data Type: Point Name: Liverpool Football Club & Athletic Grounds Limited Easting: 342445 Northing: 398610	Annual Volume (m ³): 150000 Max Daily Volume (m ³): 432 Original Application No: - Original Start Date: 28/09/1999 Expiry Date: - Issue No: 2 Version Start Date: 23/10/2014 Version End Date: -
-	1276m SW	Status: Historical Licence No: 2569031131 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT KIRKBY Data Type: Point Name: Liverpool Football Club & Athletic Grounds Limited Easting: 342445 Northing: 398610	Annual Volume (m ³): 150000 Max Daily Volume (m ³): 792 Original Application No: - Original Start Date: 28/09/1999 Expiry Date: - Issue No: 3 Version Start Date: 19/11/2019 Version End Date: -

ID	Location	Details	
-	1276m SW	Status: Historical Licence No: 2569031131 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT KIRKBY Data Type: Point Name: Liverpool Football Club & Athletic Grounds Limited Easting: 342445 Northing: 398610	Annual Volume (m ³): 150000 Max Daily Volume (m ³): 792 Original Application No: - Original Start Date: 28/09/1999 Expiry Date: - Issue No: 3 Version Start Date: 19/11/2019 Version End Date: -
-	1293m SW	Status: Historical Licence No: 2569031131 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: "BOREHOLE ""B""AT KIRKBY" Data Type: Point Name: LIVERPOOL FOOTBALL CLUB SOCCER ACADEMY Easting: 342460 Northing: 398570	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 1 Version Start Date: 28/09/1999 Version End Date: -
-	1293m SW	Status: Historical Licence No: 2569031131 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE ""B""AT KIRKBY" Data Type: Point Name: LIVERPOOL FOOTBALL CLUB SOCCER ACADEMY Easting: 342460 Northing: 398570	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 1 Version Start Date: 28/09/1999 Version End Date: -
-	1293m SW	Status: Historical Licence No: 2569031131 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE "B"AT KIRKBY Data Type: Point Name: LIVERPOOL FOOTBALL CLUB SOCCER ACADEMY Easting: 342460 Northing: 398570	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 1 Version Start Date: 28/09/1999 Version End Date: -

ID	Location	Details	
-	1293m SW	Status: Historical Licence No: 2569031131 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE "B" AT KIRKBY Data Type: Point Name: LIVERPOOL FOOTBALL CLUB SOCCER ACADEMY Easting: 342460 Northing: 398570	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 1 Version Start Date: 28/09/1999 Version End Date: -
-	1293m SW	Status: Historical Licence No: 2569031131 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE B AT KIRKBY Data Type: Point Name: LIVERPOOL FOOTBALL CLUB SOCCER ACADEMY Easting: 342460 Northing: 398570	Annual Volume (m ³): 150000 Max Daily Volume (m ³): 600 Original Application No: - Original Start Date: 28/09/1999 Expiry Date: - Issue No: 1 Version Start Date: 28/09/1999 Version End Date: -
-	1293m SW	Status: Historical Licence No: 2569031131 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE B AT KIRKBY Data Type: Point Name: LIVERPOOL FOOTBALL CLUB SOCCER ACADEMY Easting: 342460 Northing: 398570	Annual Volume (m ³): 150000 Max Daily Volume (m ³): 600 Original Application No: - Original Start Date: 28/09/1999 Expiry Date: - Issue No: 1 Version Start Date: 28/09/1999 Version End Date: -
-	1293m SW	Status: Historical Licence No: 2569031131 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE A AT KIRKBY Data Type: Point Name: LIVERPOOL FOOTBALL CLUB SOCCER ACADEMY Easting: 342450 Northing: 398580	Annual Volume (m ³): 150000 Max Daily Volume (m ³): 600 Original Application No: - Original Start Date: 28/09/1999 Expiry Date: - Issue No: 1 Version Start Date: 28/09/1999 Version End Date: -
-	1293m SW	Status: Historical Licence No: 2569031131 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE ""A"" AT KIRKBY" Data Type: Point Name: LIVERPOOL FOOTBALL CLUB SOCCER ACADEMY Easting: 342450 Northing: 398580	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 1 Version Start Date: 28/09/1999 Version End Date: -



ID	Location	Details	
-	1293m SW	Status: Historical Licence No: 2569031131 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: "BOREHOLE ""A""AT KIRKBY" Data Type: Point Name: LIVERPOOL FOOTBALL CLUB SOCCER ACADEMY Easting: 342450 Northing: 398580	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 1 Version Start Date: 28/09/1999 Version End Date: -
-	1293m SW	Status: Historical Licence No: 2569031131 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE "A"AT KIRKBY Data Type: Point Name: LIVERPOOL FOOTBALL CLUB SOCCER ACADEMY Easting: 342450 Northing: 398580	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 1 Version Start Date: 28/09/1999 Version End Date: -
-	1293m SW	Status: Historical Licence No: 2569031131 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE "A"AT KIRKBY Data Type: Point Name: LIVERPOOL FOOTBALL CLUB SOCCER ACADEMY Easting: 342450 Northing: 398580	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 1 Version Start Date: 28/09/1999 Version End Date: -
-	1293m SW	Status: Historical Licence No: 2569031131 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE A AT KIRKBY Data Type: Point Name: LIVERPOOL FOOTBALL CLUB SOCCER ACADEMY Easting: 342450 Northing: 398580	Annual Volume (m ³): 150000 Max Daily Volume (m ³): 600 Original Application No: - Original Start Date: 28/09/1999 Expiry Date: - Issue No: 1 Version Start Date: 28/09/1999 Version End Date: -
-	1374m N	Status: Historical Licence No: 2569031137 Details: Dust Suppression Direct Source: Ground Water - North West Region Point: PERMO TRIASSIC SANDSTONE AT SIMONSWOOD Data Type: Point Name: CITY CENTRE COMMERCIALS LTD Easting: 343750 Northing: 400860	Annual Volume (m ³): 7000 Max Daily Volume (m ³): 39 Original Application No: - Original Start Date: 09/10/2001 Expiry Date: - Issue No: 1 Version Start Date: 01/04/2008 Version End Date: -



ID	Location	Details	
-	1478m N	Status: Active Licence No: 2569031122 Details: Dust Suppression Direct Source: Ground Water - North West Region Point: UNDERGROUND STRATA IN SIMONSWOOD LIVERPOOL Data Type: Point Name: Simonswood Properties Limited Easting: 343820 Northing: 400950	Annual Volume (m ³): 12000 Max Daily Volume (m ³): 100 Original Application No: NPS/WR/030055 Original Start Date: 12/08/1996 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2021 Version End Date: -
-	1484m N	Status: Active Licence No: 2569031095 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT STOPGATE LANE, SIMONSWOOD, KIRKBY Data Type: Point Name: Simonswood Properties Limited Easting: 343600 Northing: 401000	Annual Volume (m ³): 4546 Max Daily Volume (m ³): 113.65 Original Application No: NPS/WR/030056 Original Start Date: 04/11/1991 Expiry Date: - Issue No: 102 Version Start Date: 18/12/2018 Version End Date: -
-	1484m N	Status: Historical Licence No: 2569031095 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: "BOREHOLE AT STOPGATE LANE,SIMONSWOOD KIRKBY" Data Type: Point Name: EAGERSIGNAL LTD. Easting: 343600 Northing: 401000	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/11/1991 Expiry Date: - Issue No: 101 Version Start Date: 01/12/1999 Version End Date: -
-	1484m N	Status: Historical Licence No: 2569031095 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT STOPGATE LANE,SIMONSWOOD KIRKBY Data Type: Point Name: EAGERSIGNAL LTD. Easting: 343600 Northing: 401000	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/11/1991 Expiry Date: - Issue No: 101 Version Start Date: 01/12/1999 Version End Date: -



ID	Location	Details	
-	1522m N	Status: Historical Licence No: 2569031122 Details: Dust suppression Direct Source: Ground Water - North West Region Point: UNDERGROUND STRATA IN SIMONSWOOD LIVERPOOL Data Type: Point Name: S J DOYLE & COMPANY DEMOLITION LTD Easting: 343800 Northing: 401000	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 12/08/1996 Expiry Date: - Issue No: 100 Version Start Date: 12/08/1996 Version End Date: -
-	1522m N	Status: Historical Licence No: 2569031122 Details: Dust Suppression Direct Source: Ground Water - North West Region Point: UNDERGROUND STRATA IN SIMONSWOOD LIVERPOOL Data Type: Point Name: Simonswood Properties Limited Easting: 343800 Northing: 401000	Annual Volume (m ³): 12000 Max Daily Volume (m ³): 100 Original Application No: - Original Start Date: 12/08/1996 Expiry Date: - Issue No: 101 Version Start Date: 18/12/2018 Version End Date: -
-	1640m N	Status: Active Licence No: NW/069/0031/008 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE - SHERWOOD SANDTONE - SIMONSWOOD Data Type: Point Name: United Utilities Water Ltd Easting: 343580 Northing: 401160	Annual Volume (m ³): 1464000 Max Daily Volume (m ³): 8000 Original Application No: NPS/WR/010887 Original Start Date: 09/11/2017 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 26/11/2018 Version End Date: -
-	1802m N	Status: Active Licence No: 2569031093 Details: Dust Suppression Direct Source: Ground Water - North West Region Point: BOREHOLE AT NEWBRIDGE FARM, SIMONSWOOD Data Type: Point Name: R DRAPER LTD Easting: 344100 Northing: 401200	Annual Volume (m ³): 36368 Max Daily Volume (m ³): 100 Original Application No: C2813 FV2 Original Start Date: 12/06/1991 Expiry Date: - Issue No: 101 Version Start Date: 12/12/2005 Version End Date: -



ID	Location	Details	
-	1802m N	Status: Active Licence No: 2569031093 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT NEWBRIDGE FARM, SIMONSWOOD Data Type: Point Name: R DRAPER LTD Easting: 344100 Northing: 401200	Annual Volume (m ³): 36368 Max Daily Volume (m ³): 100 Original Application No: C2813 FV2 Original Start Date: 12/06/1991 Expiry Date: - Issue No: 101 Version Start Date: 12/12/2005 Version End Date: -
-	1802m N	Status: Historical Licence No: 2569031093 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT NEWBRIDGE FARM, SIMONSWOOD" Data Type: Point Name: R DRAPER LTD Easting: 344100 Northing: 401200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 12/06/1991 Expiry Date: - Issue No: 100 Version Start Date: 02/08/1996 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m

5

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on [page 76 >](#)

ID	Location	Details	
-	661m E	Status: Historical Licence No: 2569031068 Details: Spray Irrigation - Direct Direct Source: Surface, Non-Tidal - North West Region Point: UNNAMED TRIB OF SIMONSWOOD BRK AT KIRKBY Data Type: Line Name: BERRY BROS FARMS LTD Easting: 344100 Northing: 399400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 14/06/1984 Expiry Date: - Issue No: 100 Version Start Date: 14/06/1984 Version End Date: -



ID	Location	Details	
-	661m E	Status: Historical Licence No: 2569031068 Details: Spray Irrigation - Direct Direct Source: Surface, Non-Tidal - North West Region Point: UNNAMED TRIBUTARY OF SIMONSWOOD BROOK AT KIRKBY Data Type: Line Name: BERRY BROS FARMS LTD Easting: 344100 Northing: 399400	Annual Volume (m ³): 45460 Max Daily Volume (m ³): 1000.12 Original Application No: 2668 Original Start Date: 14/06/1984 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2021 Version End Date: -
-	1873m N	Status: Historical Licence No: 2569031048 Details: Spray Irrigation - Direct Direct Source: "Surface, Non-Tidal - North West Region" Point: "SIMONSWOOD BRK AT DAIRY FARM, RAINFORD, ST HELENS," Data Type: Line Name: B HEYES & SON Easting: 343500 Northing: 401400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 14/08/1980 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1990 Version End Date: -
-	1873m N	Status: Historical Licence No: 2569031048 Details: Spray Irrigation - Direct Direct Source: Surface, Non-Tidal - North West Region Point: SIMONSWOOD BRK AT DAIRY FARM, RAINFORD, ST HELENS Data Type: Line Name: B HEYES & SON Easting: 343500 Northing: 401400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 14/08/1980 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1990 Version End Date: -
-	1873m N	Status: Historical Licence No: 2569031048 Details: Spray Irrigation - Direct Direct Source: Surface, Non-Tidal - North West Region Point: SIMONSWOOD BROOK AT DAIRY FARM RAINFORD ST HELENS Data Type: Line Name: B HEYES & SON Easting: 343500 Northing: 401400	Annual Volume (m ³): 100157.472 Max Daily Volume (m ³): 654.624 Original Application No: - Original Start Date: 14/08/1980 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1990 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.



5.8 Potable abstractions

Records within 2000m

2

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on [page 76 >](#)

ID	Location	Details	
-	759m S	Status: Active Licence No: 2569031090 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE AT KIRKBY INDUSTRIAL ESTATE Data Type: Point Name: Baker Hughes Limited Easting: 343400 Northing: 398700	Annual Volume (m ³): 250030 Max Daily Volume (m ³): 818.28 Original Application No: NPS/WR/006045 Original Start Date: 20/01/1989 Expiry Date: - Issue No: 101 Version Start Date: 18/03/2011 Version End Date: -
-	1640m N	Status: Active Licence No: NW/069/0031/008 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE - SHERWOOD SANDTONE - SIMONSWOOD Data Type: Point Name: United Utilities Water Ltd Easting: 343580 Northing: 401160	Annual Volume (m ³): 1464000 Max Daily Volume (m ³): 8000 Original Application No: NPS/WR/010887 Original Start Date: 09/11/2017 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 26/11/2018 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.9 Source Protection Zones

Records within 500m

1

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

Features are displayed on the Abstractions and Source Protection Zones map on [page 76 >](#)

ID	Location	Type	Description
1	On site	3	Total catchment

This data is sourced from the Environment Agency and Natural Resources Wales.



5.10 Source Protection Zones (confined aquifer)

Records within 500m

0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.



6 Hydrology



- Site Outline
- Search buffers in metres (m)
- Water Network (OS MasterMap)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- ⋯ WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m

0

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

1

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.



Features are displayed on the Hydrology map on [page 90 >](#)

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1
------------------------	----------

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on [page 90 >](#)

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	On site	River	Simonswood Brook	GB112069060630	Alt	Alt and Crossens

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

Records identified	1
---------------------------	----------

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on [page 90 >](#)

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	1866m N	River	Simonswood Brook	GB112069060630 ↗	Moderate	Fail	Moderate	2019

This data is sourced from the Environment Agency and Natural Resources Wales.

6.5 WFD Groundwater bodies

Records on site

1

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on [page 90](#) >

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	On site	Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers	GB41201G101700 ↗	Poor	Poor	Poor	2019

This data is sourced from the Environment Agency and Natural Resources Wales.



7 River and coastal flooding



— Site Outline

Search buffers in metres (m)

River and coastal flooding:

High

Medium

Low

Very Low

Historical Flood Events

Areas Used for Flood Storage

Areas Benefiting from Flood Defences

Flood Defences

7.1 Risk of flooding from rivers and the sea

Records within 50m

2

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

Features are displayed on the River and coastal flooding map on [page 93](#) >

Distance	Flood risk category
On site	Medium
0 - 50m	Medium

This data is sourced from the Environment Agency and Natural Resources Wales.

7.2 Historical Flood Events

Records within 250m	0
----------------------------	----------

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m	0
----------------------------	----------

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.4 Areas Benefiting from Flood Defences

Records within 250m	0
----------------------------	----------

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.5 Flood Storage Areas

Records within 250m	0
----------------------------	----------

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.



River and coastal flooding - Flood Zones



- Site Outline
- Search buffers in metres (m)
- Flood zone 2
- Flood zone 3

7.6 Flood Zone 2

Records within 50m

1

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

Features are displayed on the River and coastal flooding map on [page 93](#) >

Location	Type
On site	Zone 2 - (Fluvial /Tidal Models)

This data is sourced from the Environment Agency and Natural Resources Wales.

7.7 Flood Zone 3

Records within 50m

1

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

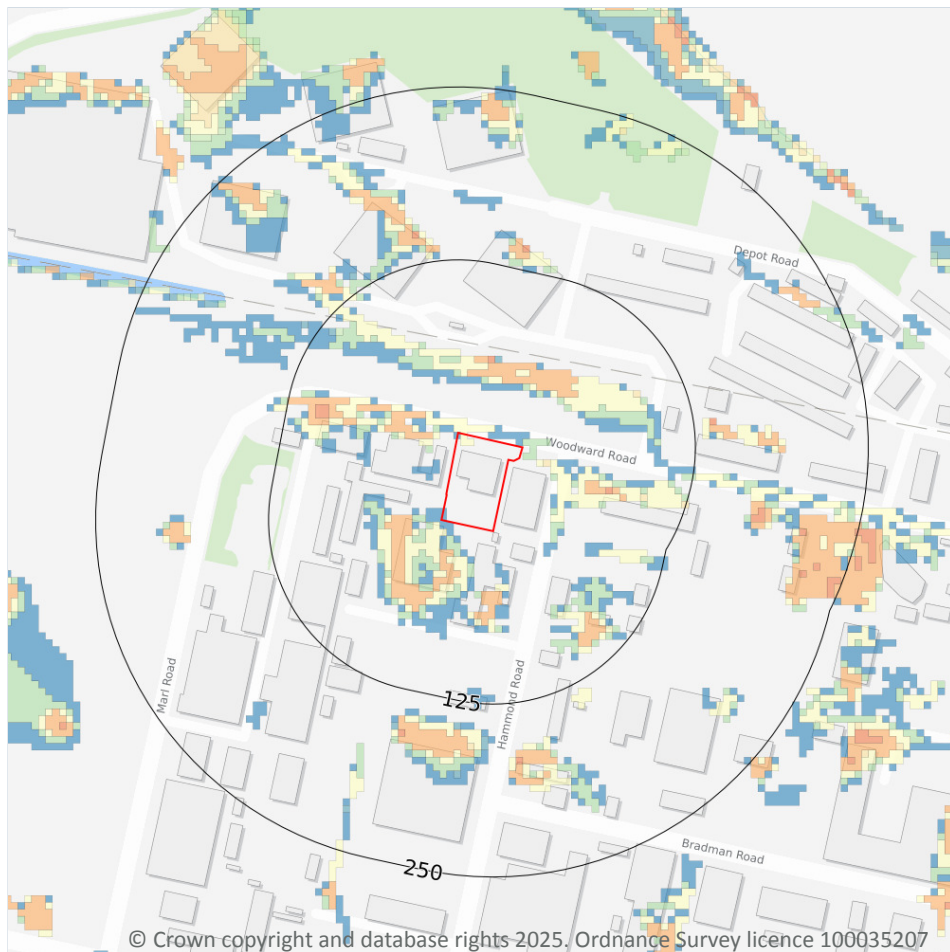
Features are displayed on the River and coastal flooding map on [page 93](#) >

Location	Type
On site	Zone 3 - (Fluvial Models)

This data is sourced from the Environment Agency and Natural Resources Wales.



8 Surface water flooding



— Site Outline

Search buffers in metres (m)

1 in 1000 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site

1 in 100 year, 0.1m - 0.3m

Highest risk within 50m

1 in 30 year, 0.1m - 0.3m

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on [page 97 >](#)

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Between 0.1m and 0.3m
1 in 250 year	Between 0.1m and 0.3m
1 in 100 year	Between 0.1m and 0.3m
1 in 30 year	Negligible

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

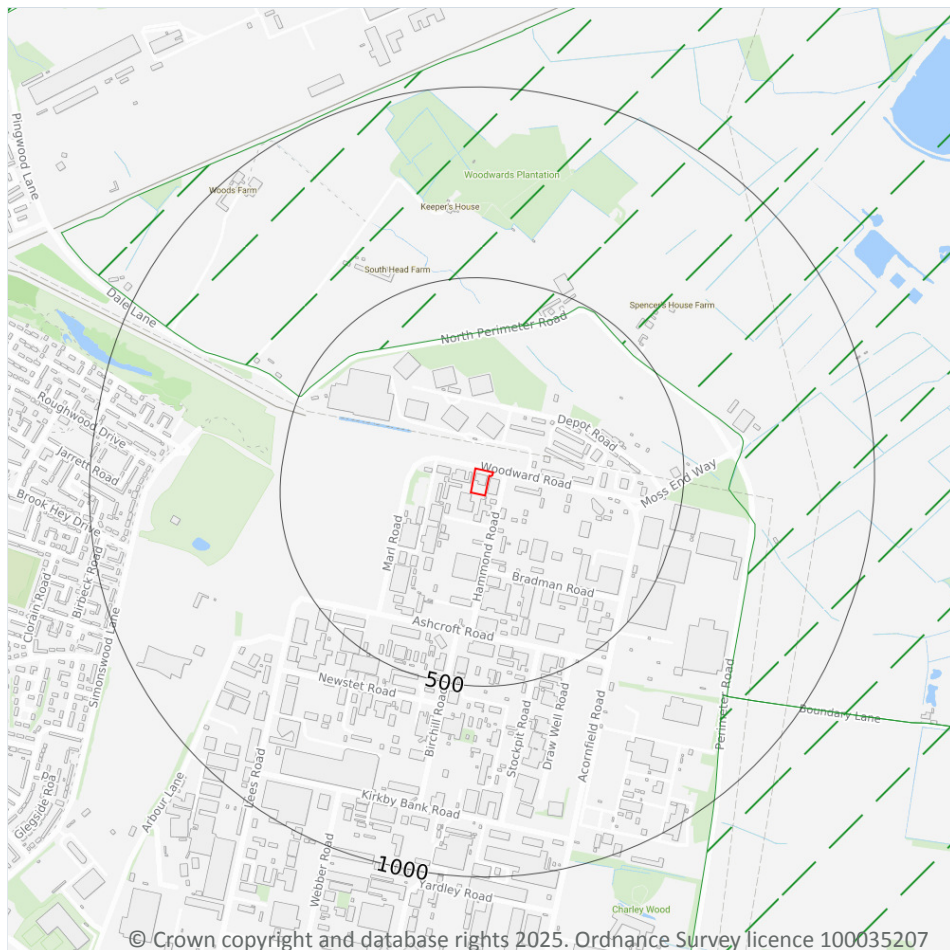
Low

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on [page 99](#) >

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- + Local Nature Reserves (LNR)
- Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m**0**

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m**0**

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m**0**

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m**0**

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m

1

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

Features are displayed on the Environmental designations map on [page 100 >](#)

ID	Location	Name	Data source
-	1442m S	Acornfield Plantation	Natural England

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m

0

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m

0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.9 Forest Parks

Records within 2000m

0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.



10.10 Marine Conservation Zones

Records within 2000m

0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m

3

Areas designated to prevent urban sprawl by keeping land permanently open.

Features are displayed on the Environmental designations map on [page 100](#) >

ID	Location	Name	Local Authority name
1	350m N	Merseyside and Greater Manchester Green Belt	West Lancashire
2	815m SE	Merseyside and Greater Manchester Green Belt	Knowsley
-	1954m E	Merseyside and Greater Manchester Green Belt	St. Helens

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m

0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.



10.14 Potential Special Protection Areas (pSPA)

Records within 2000m**0**

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m**0**

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m**2**

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
On site	ALT NVZ	Surface Water	642	Existing
642m E	ALT NVZ	Surface Water	642	Existing

This data is sourced from Natural England and Natural Resources Wales.



SSSI Impact Zones and Units

10.17 SSSI Impact Risk Zones

Records on site

0

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m

0

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

This data is sourced from Natural England and Natural Resources Wales.



11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m

0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m

0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m

0

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.



This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m

0

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m

0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.7 Registered Parks and Gardens

Records within 250m

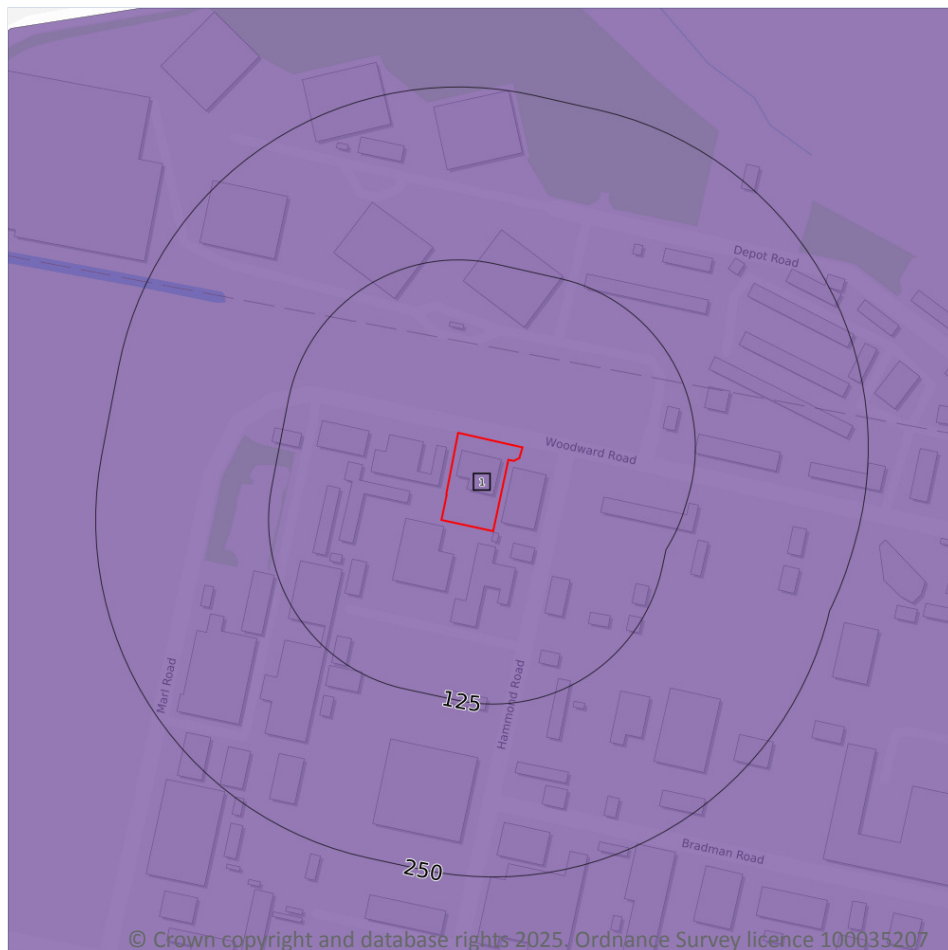
0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.



12 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m

1

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on [page 108](#) >

ID	Location	Classification	Description
1	On site	Urban	Non-agricultural/no quality assigned

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m

0

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m

0

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m

0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.

13 Habitat designations



- Site Outline
- Search buffers in metres (m)
- Priority Habitat Inventory
- Open Mosaic Habitat
- Limestone Pavement Orders
- Habitat Networks
- Primary Habitat
- Restorable Habitat
- Associated Habitats
- Habitat Restoration-Creation
- Network Enhancement Zone 1
- Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m

1

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

Features are displayed on the Habitat designations map on [page 110](#) >

ID	Location	Main Habitat	Other habitats
1	218m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.



13.2 Habitat Networks

Records within 250m

0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m

0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m

0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

1

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on [page 112](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	No coverage	No coverage	No coverage	NoCov

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Artificial and made ground

14.2 Artificial and made ground (10k)

Records within 500m

0

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m

0

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock

14.5 Bedrock geology (10k)

Records within 500m

0

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

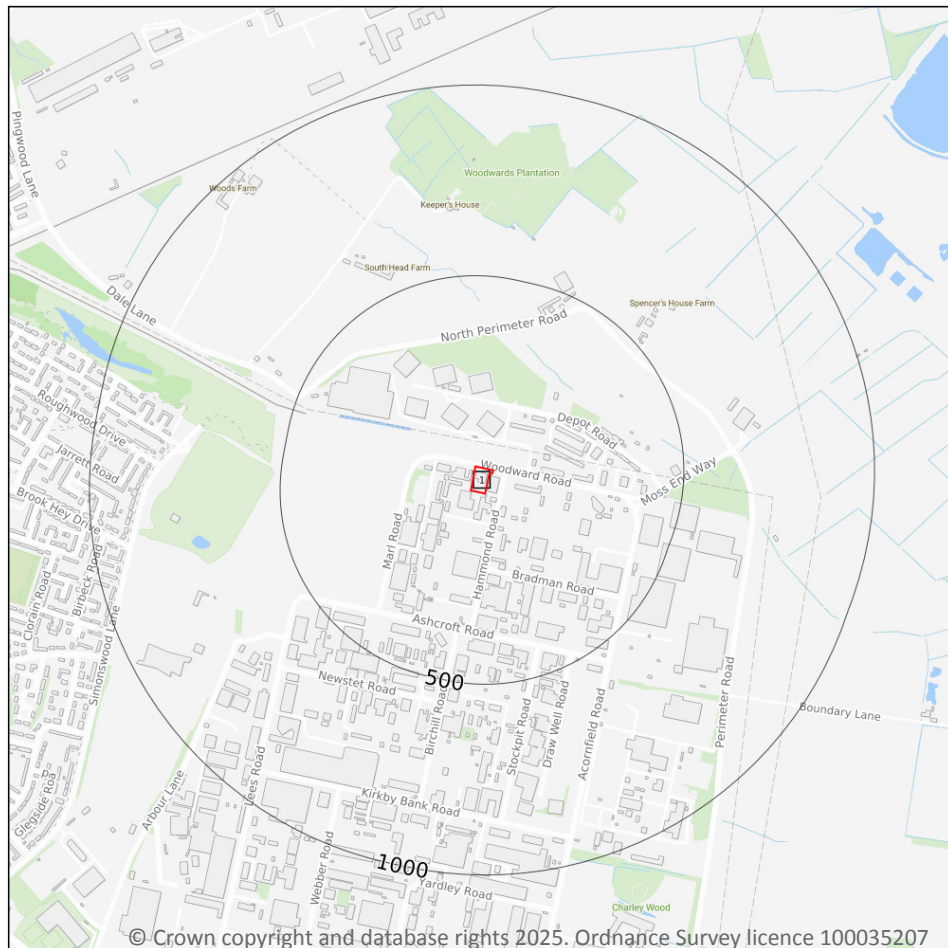
0

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline
Search buffers in metres (m)

☐ Geological map tile

15.1 50k Availability

Records within 500m

1

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

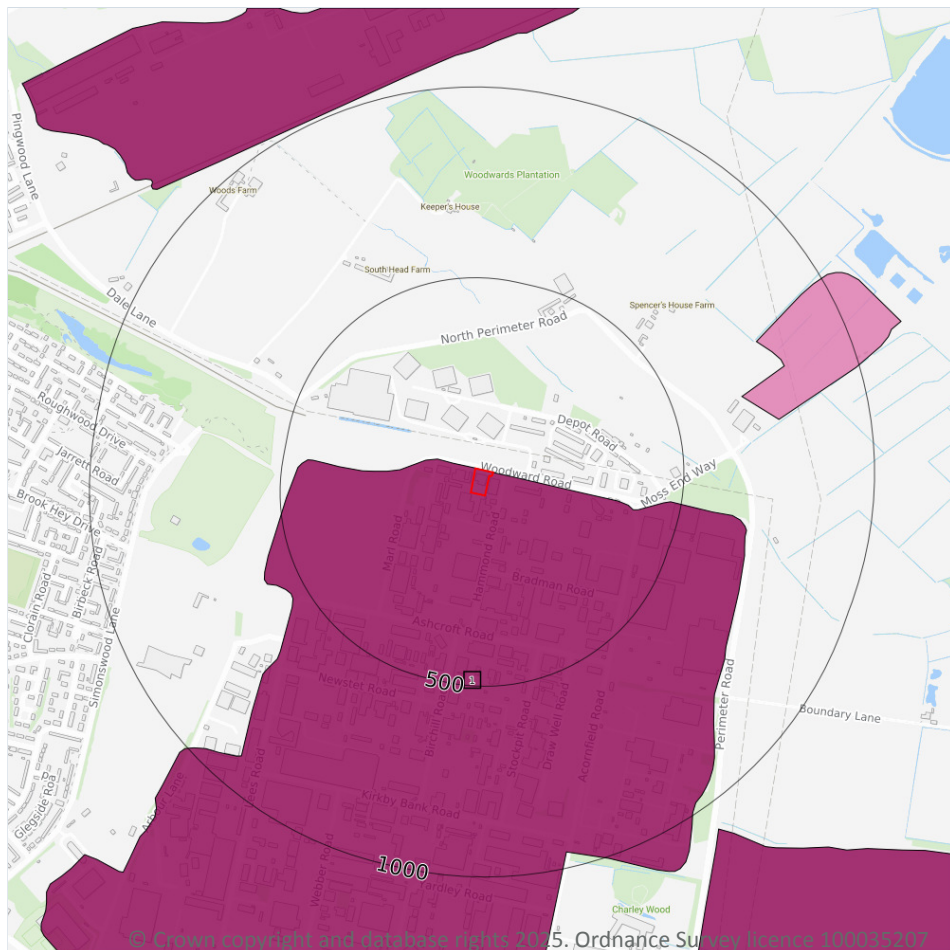
Features are displayed on the Geology 1:50,000 scale - Availability map on [page 116](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	EW084_wigan_v4

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Artificial and made ground



- Site Outline
- Search buffers in metres (m)
- Made ground
 - Worked ground
 - Infilled ground
 - Disturbed ground
 - Landscaped ground

15.2 Artificial and made ground (50k)

Records within 500m

1

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on [page 117](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.



15.3 Artificial ground permeability (50k)

Records within 50m

1

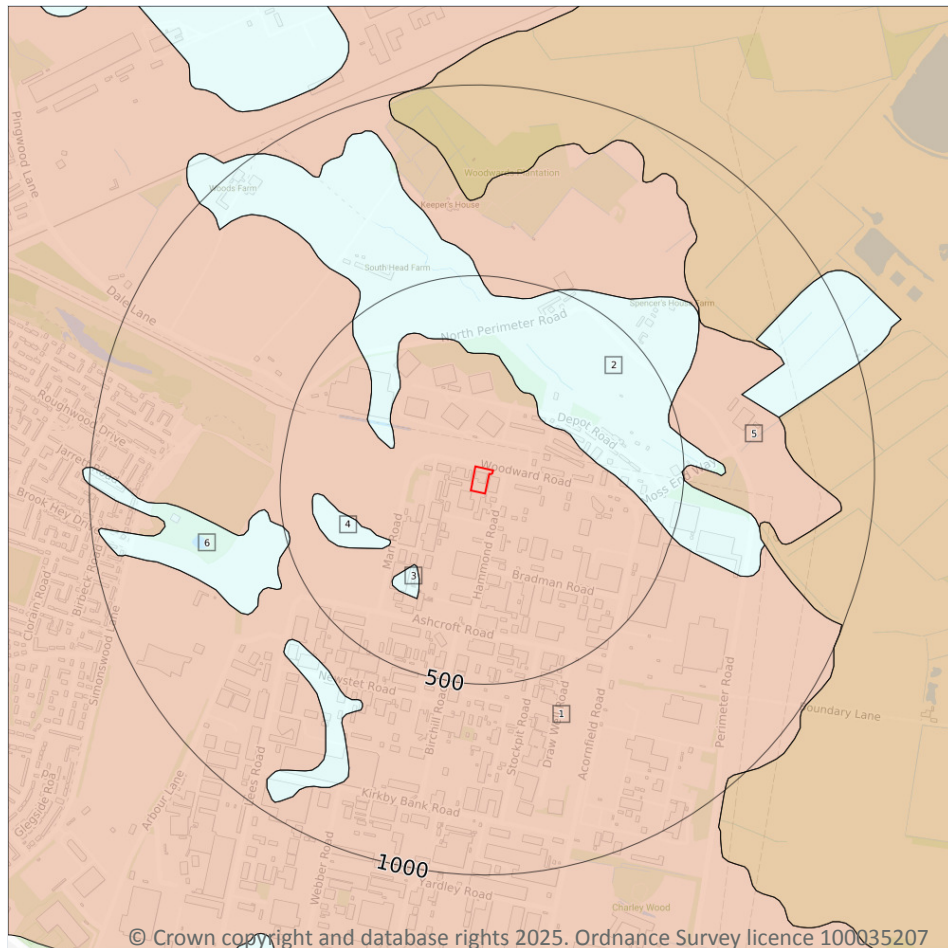
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Mixed	Very High	Low

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m

6

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on [page 119](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	SSA-S	SHIRDLEY HILL SAND FORMATION	SAND
2	184m NE	TILLD-DMTN	TILL, DEVANSIAN	DIAMICTON
3	244m SW	TILLD-DMTN	TILL, DEVANSIAN	DIAMICTON
4	249m SW	TILLD-DMTN	TILL, DEVANSIAN	DIAMICTON



ID	Location	LEX Code	Description	Rock description
5	477m E	SSA-S	SHIRDLEY HILL SAND FORMATION	SAND
6	491m W	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m

1

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Intergranular	High	High

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m

0

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

Records within 50m

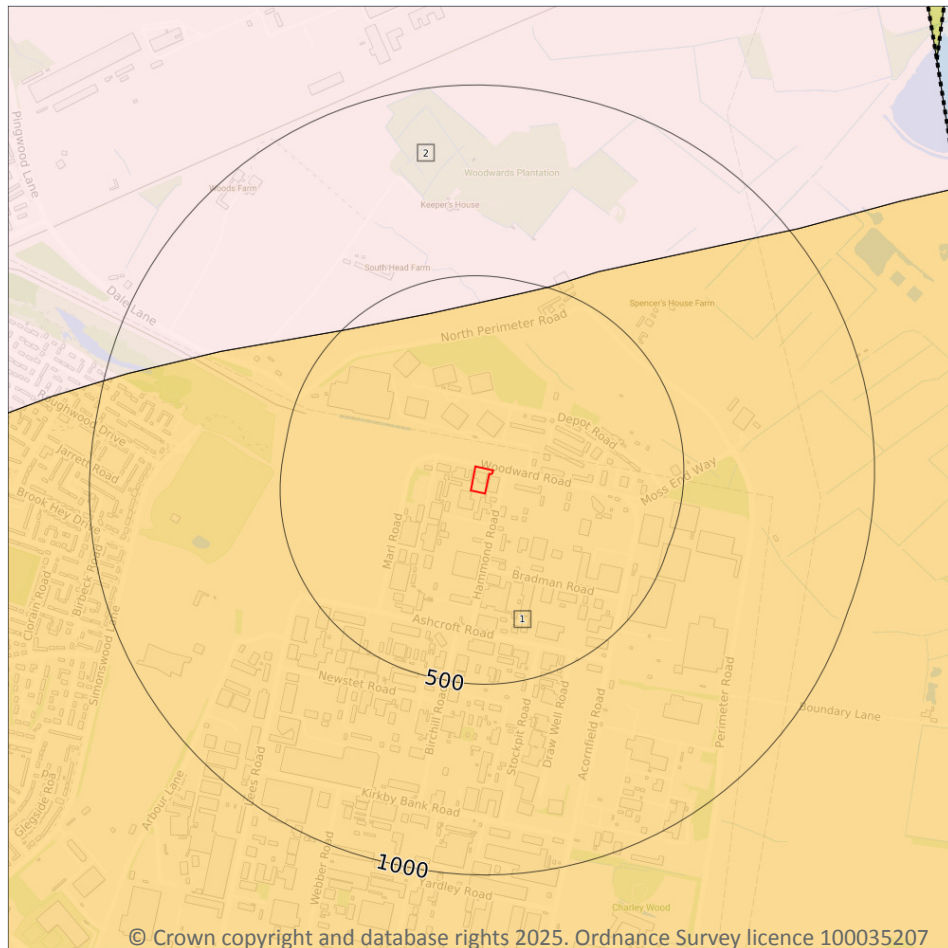
0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

.... Bedrock faults and other linear features (50k)

Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m

2

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 121](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	CHES-SDST	CHESTER FORMATION - SANDSTONE	OLENEKIAN
2	417m N	WLSF-SDST	WILMSLOW SANDSTONE FORMATION - SANDSTONE	-

This data is sourced from the British Geological Survey.



15.9 Bedrock permeability (50k)

Records within 50m**1**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Mixed	High	Moderate

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

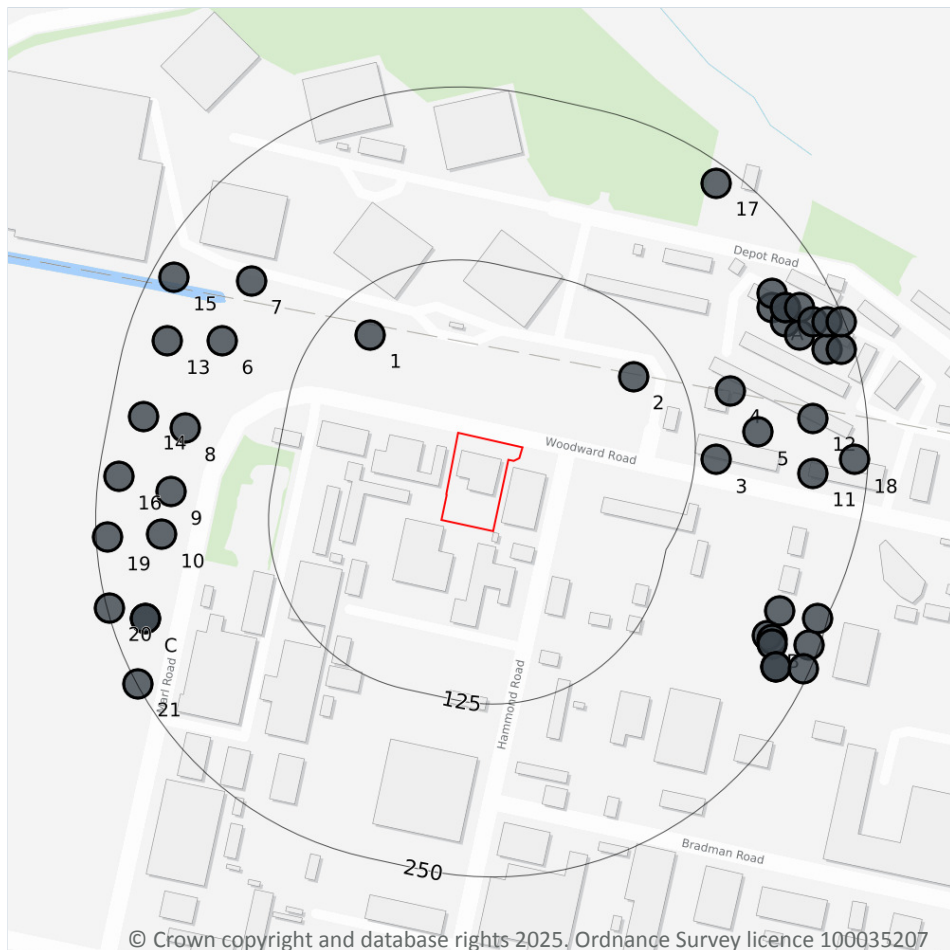
Records within 500m**0**

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline
Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

16.1 BGS Boreholes

Records within 250m

44

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

Features are displayed on the Boreholes map on [page 123 >](#)

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	95m NW	343340 399600	MERSEYSIDE COUNCIL 4	-	Y	N/A
2	95m NE	343530 399570	MERSEYSIDE COUNCIL 5	-	Y	N/A
3	141m E	343590 399510	KNOWSLEY INDUSTRIAL PARK NORTH 9	-	Y	N/A

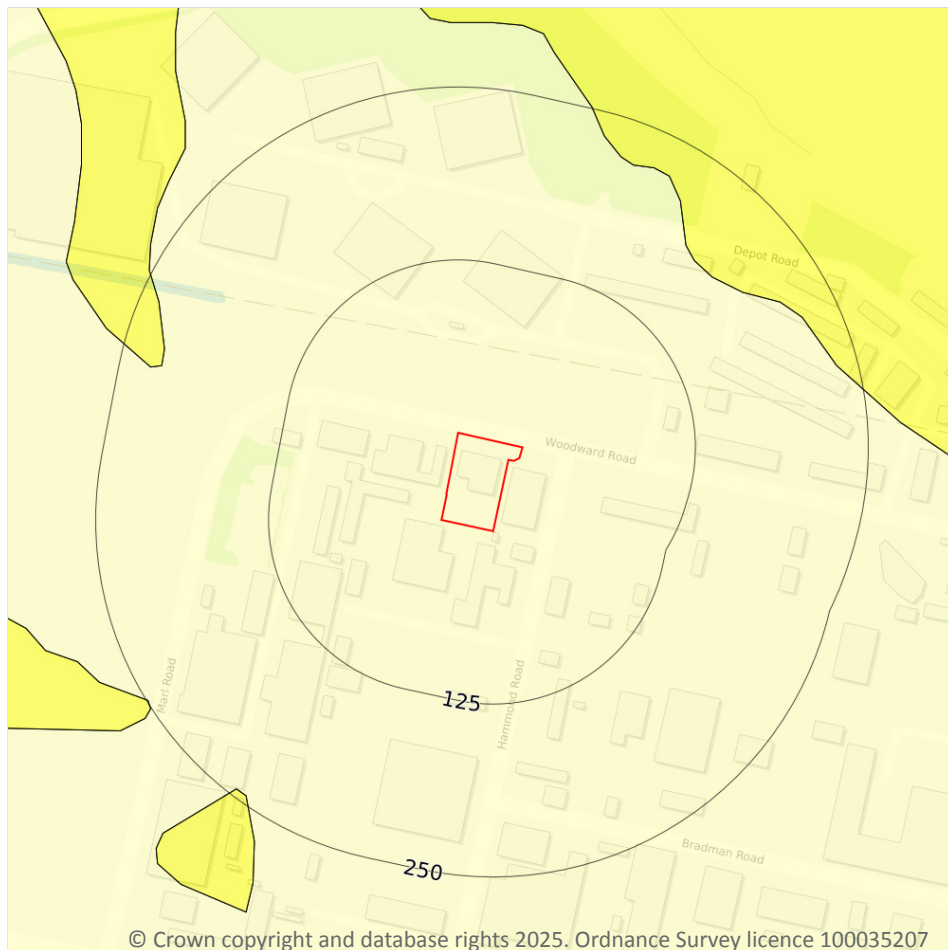
ID	Location	Grid reference	Name	Length	Confidential	Web link
4	156m E	343600 399560	KNOWSLEY INDUSTRIAL PARK NORTH 8	-	Y	N/A
5	171m E	343620 399530	KNOWSLEY INDUSTRIAL PARK NORTH 10	-	Y	N/A
6	183m NW	343233 399596	STAMFORD PARK 28	-	Y	N/A
7	185m NW	343254 399639	STAMFORD PARK 17	-	Y	N/A
8	194m W	343206 399533	STAMFORD PARK 37	-	Y	N/A
9	196m W	343196 399487	STAMFORD PARK 45	-	Y	N/A
10	203m W	343189 399456	STAMFORD PARK 52	-	Y	N/A
A	207m NE	343630 399620	NORTH MERSEY BUSINESS CENTRE 1	-	Y	N/A
A	211m NE	343640 399610	NORTH MERSEY BUSINESS CENTRE 3	-	Y	N/A
11	211m E	343660 399500	KNOWSLEY INDUSTRIAL PARK NORTH 12	-	Y	N/A
12	211m E	343660 399540	KNOWSLEY INDUSTRIAL PARK NORTH 11	-	Y	N/A
A	212m NE	343630 399630	NORTH MERSEY BUSINESS CENTRE TP 6	-	Y	N/A
B	212m SE	343627 399383	Syntor Knowsley Part 2a EWS502B	-	Y	N/A
B	215m SE	343636 399401	Syntor Knowsley Part 2a EWS501	-	Y	N/A
A	215m NE	343640 399620	NORTH MERSEY BUSINESS CENTRE TP 5	-	Y	N/A
A	215m NE	343640 399620	NORTH MERSEY BUSINESS CENTRE B	-	Y	N/A
A	216m NE	343650 399600	NORTH MERSEY BUSINESS CENTRE TP 4	-	Y	N/A
B	216m SE	343630 399380	Syntor Knowsley Part 2a EWS502	-	Y	N/A
B	217m SE	343630 399377	Syntor Knowsley Part 2a EWS502A	-	Y	N/A
13	221m NW	343193 399596	STAMFORD PARK 27	-	Y	N/A
A	224m NE	343650 399620	NORTH MERSEY BUSINESS CENTRE 2	-	Y	N/A
14	225m W	343176 399541	STAMFORD PARK 36	-	Y	N/A
C	226m SW	343177 399395	STAMFORD PARK 59	-	Y	N/A
C	226m SW	343177 399395	STAMFORD PARK 59A	-	Y	N/A
B	227m SE	343633 399360	Syntor Knowsley Part 2a EWS503	-	Y	N/A
B	227m SE	343633 399360	Syntor Knowsley Part 2a EWS503A	-	Y	N/A
A	229m NE	343660 399610	NORTH MERSEY BUSINESS CENTRE 4	-	Y	N/A
A	231m E	343670 399590	NORTH MERSEY BUSINESS CENTRE 6	-	Y	N/A

ID	Location	Grid reference	Name	Length	Confidential	Web link
15	234m NW	343198 399642	STAMFORD PARK 16	-	Y	N/A
16	235m W	343158 399498	STAMFORD PARK 44	-	Y	N/A
17	237m NE	343590 399710	MERSEYSIDE COUNCIL 9	-	Y	N/A
A	238m NE	343670 399610	NORTH MERSEY BUSINESS CENTRE TP 3	-	Y	N/A
18	240m E	343690 399510	KNOWSLEY INDUSTRIAL PARK NORTH 13	-	Y	N/A
A	241m E	343680 399590	NORTH MERSEY BUSINESS CENTRE TP 2	-	Y	N/A
19	242m W	343150 399454	STAMFORD PARK 51	-	Y	N/A
B	243m SE	343657 399376	Syntor Knowsley Part 2a EWS505	-	Y	N/A
B	243m E	343663 399395	Syntor Knowsley Part 2a EWS504	-	Y	N/A
B	245m SE	343653 399359	Syntor Knowsley Part 2a EWS506	-	Y	N/A
A	248m NE	343680 399610	NORTH MERSEY BUSINESS CENTRE 5	-	Y	N/A
20	249m W	343151 399403	STAMFORD PARK 58	-	Y	N/A
21	249m SW	343172 399348	STAMFORD PARK 66	-	Y	N/A

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.1 Shrink swell clays

Records within 50m

1

The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

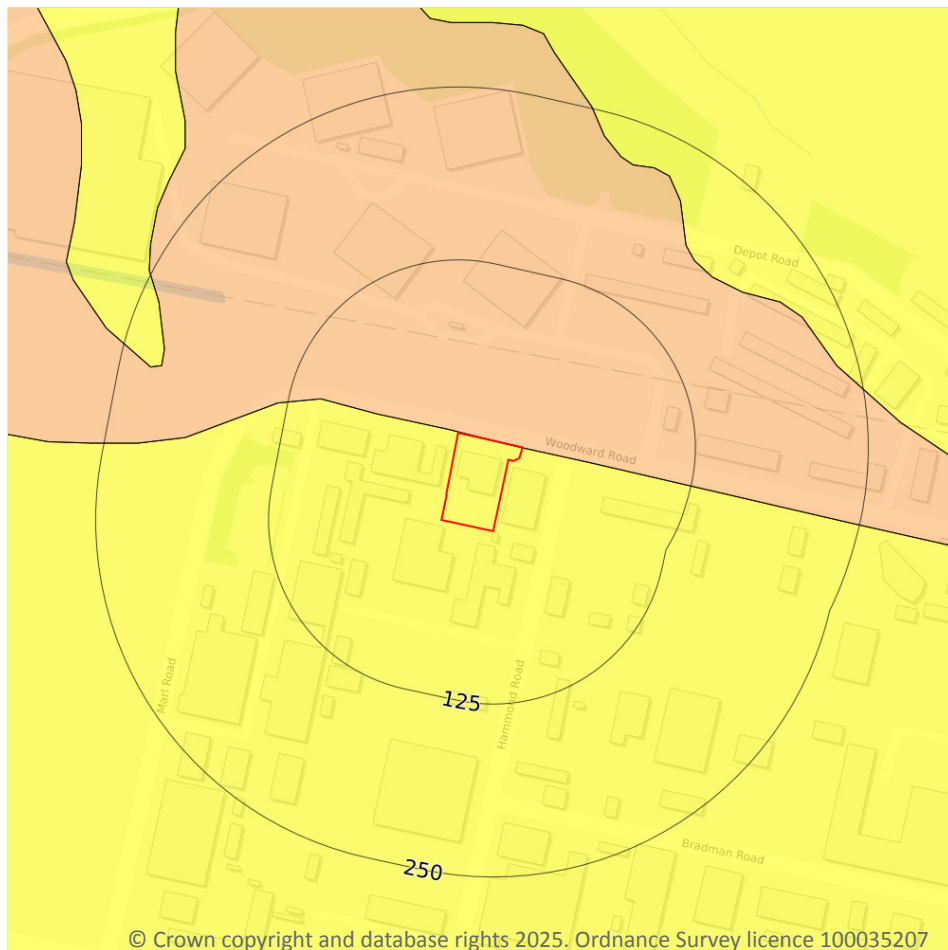
Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 126 >](#)

Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



— Site Outline
Search buffers in metres (m)

- ☐ No data
- ☐ Negligible
- ☐ Very low
- ☐ Low
- ☐ Moderate
- ☐ High

17.2 Running sands

Records within 50m

2

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on [page 127 >](#)

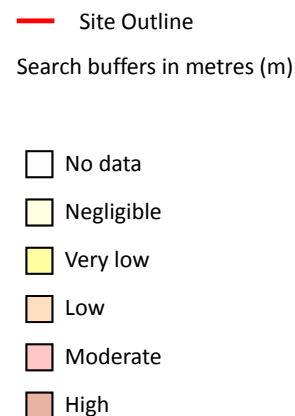
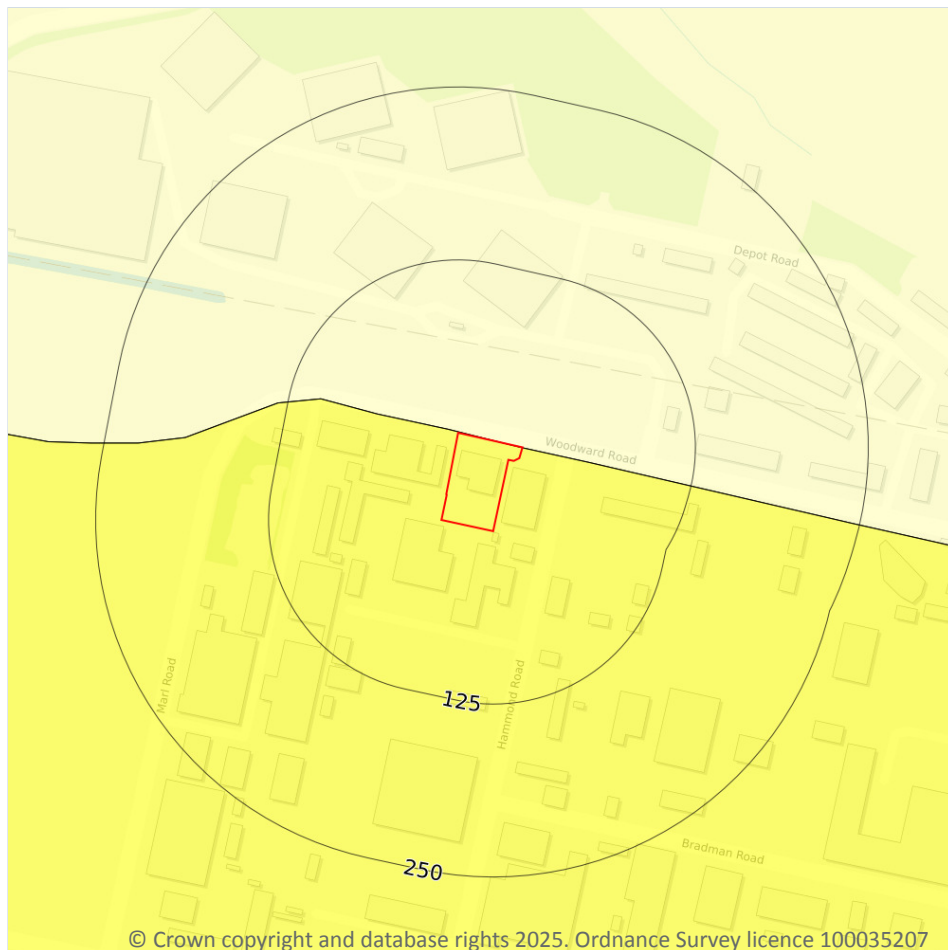
Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

Location	Hazard rating	Details
On site	Low	Running sand conditions may be present. Constraints may apply to land uses involving excavation or the addition or removal of water.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



17.3 Compressible deposits

Records within 50m

2

The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

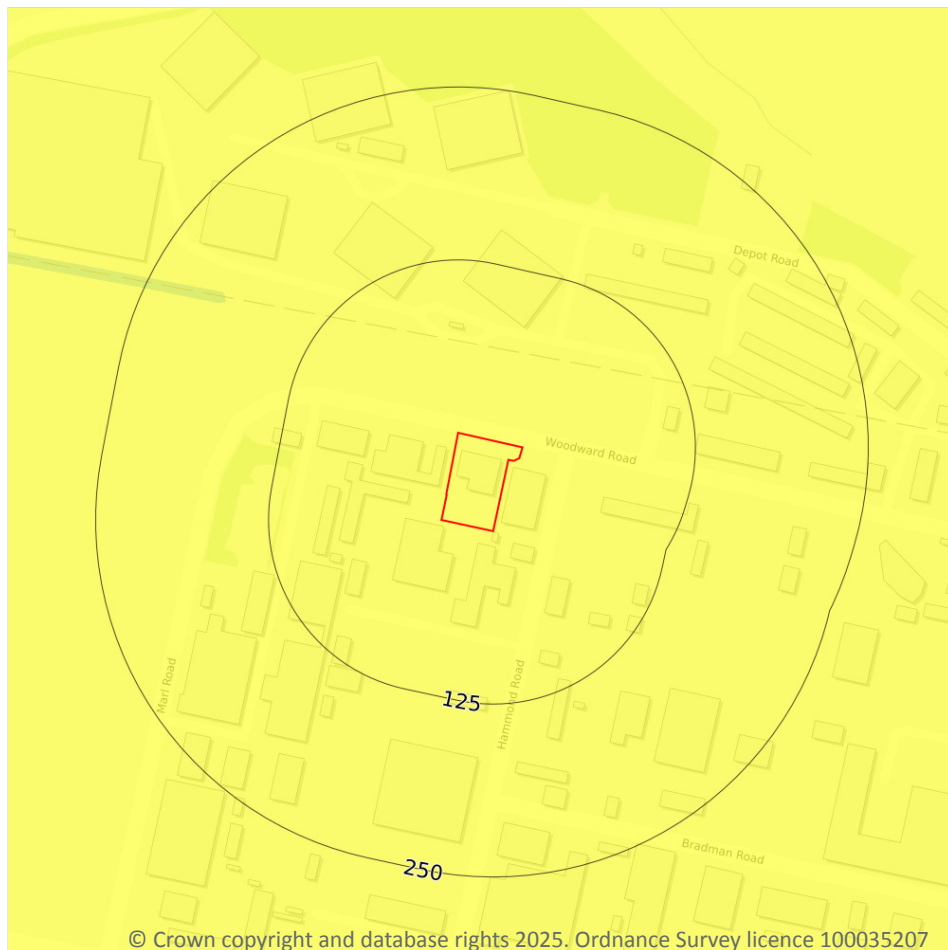
Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 129 >](#)

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.
On site	Very low	Compressibility and uneven settlement problems are not likely to be significant on the site for most land uses.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



— Site Outline
Search buffers in metres (m)

- ☐ No data
- ☐ Negligible
- ☒ Very low
- ☐ Low
- ☐ Moderate
- ☐ High

17.4 Collapsible deposits

Records within 50m

1

The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

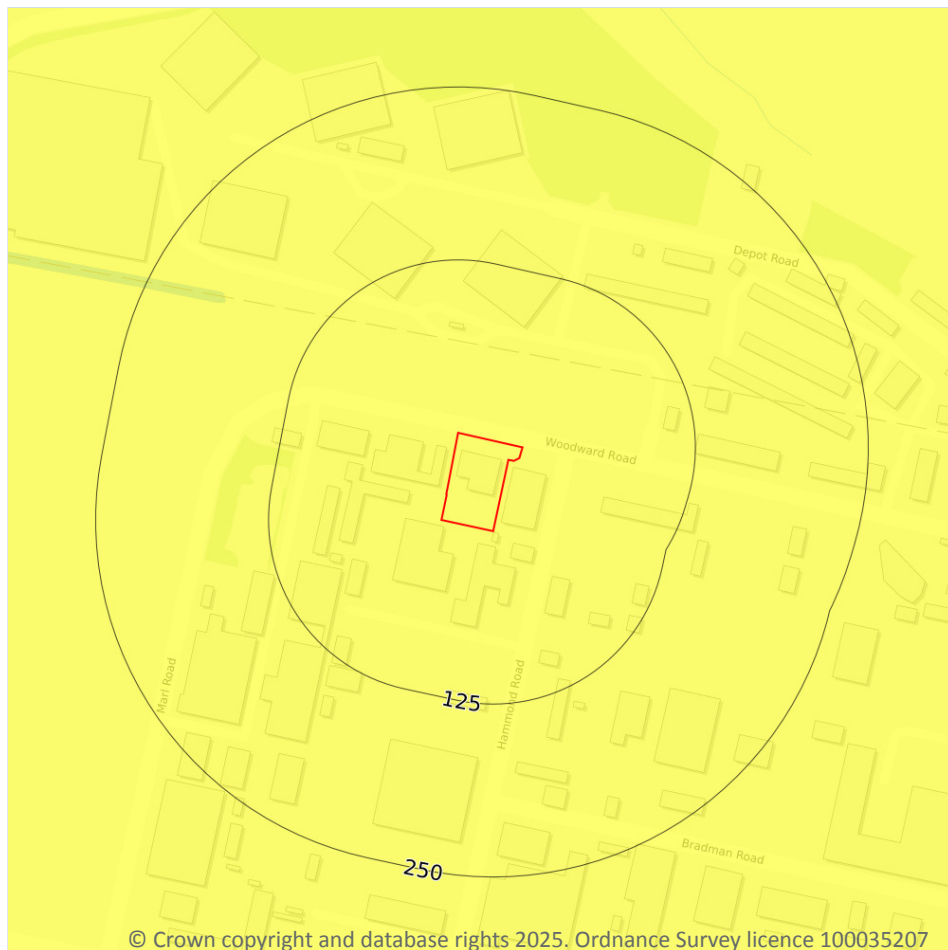
Features are displayed on the Natural ground subsidence - Collapsible deposits map on [page 131](#) >

Location	Hazard rating	Details
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



— Site Outline
Search buffers in metres (m)

- ☐ No data
- ☐ Negligible
- ☐ Very low
- ☐ Low
- ☐ Moderate
- ☐ High

17.5 Landslides

Records within 50m

1

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on [page 132 >](#)

Location	Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



— Site Outline
Search buffers in metres (m)

- ☐ No data
- ☐ Negligible
- ☐ Very low
- ☐ Low
- ☐ Moderate
- ☐ High

17.6 Ground dissolution of soluble rocks

Records within 50m

1

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

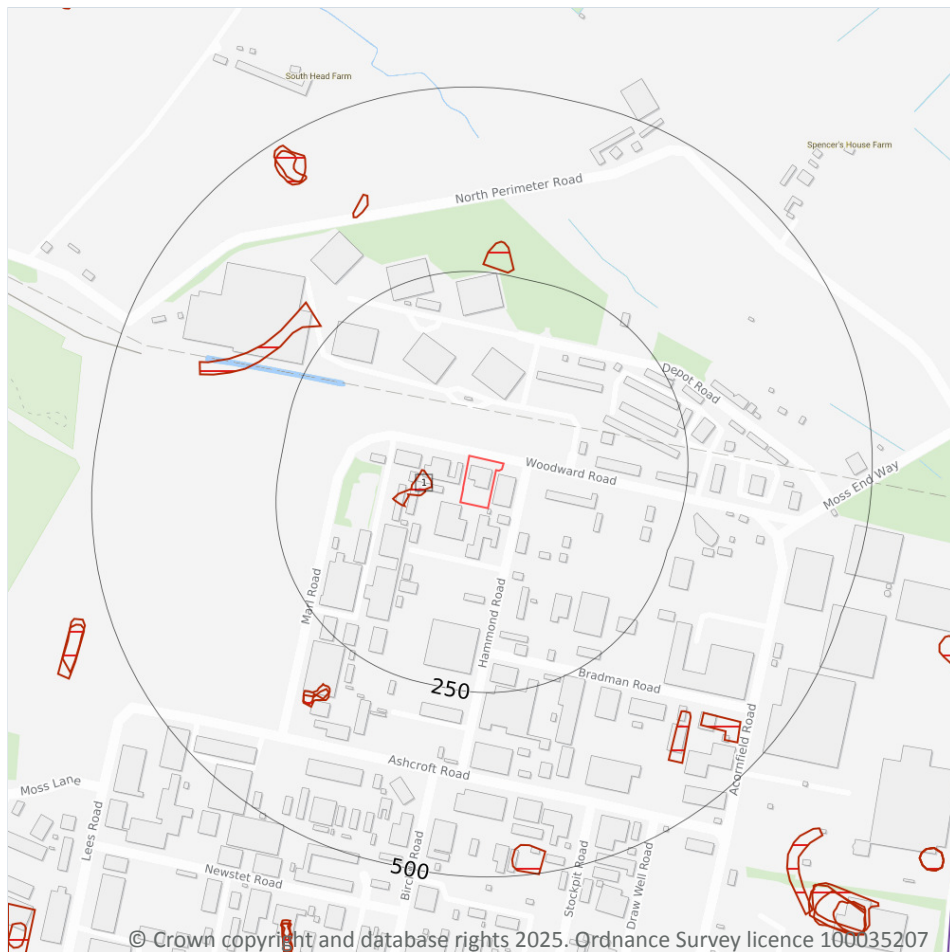
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on [page 133](#) >

Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.

This data is sourced from the British Geological Survey.



18 Mining and ground workings



- Site Outline
- Search buffers in metres (m)
- BritPits
- Surface ground workings
- Underground workings
- Underground mining extents
- Historical mineral planning areas
- TCA non-coal mining
- Non Coal Mining
 - Sporadic underground mining of restricted extent possible
 - Localised small scale underground mining possible
 - Small scale mining possible
 - Underground mining known or likely within or in close proximity
 - Underground mining known within or in very close proximity

18.1 BritPits

Records within 500m

0

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m

1

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining and ground workings map on [page 135 >](#)

ID	Location	Land Use	Year of mapping	Mapping scale
1	42m W	Ponds	1890	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m

0

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

This data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m

0

This data identifies underground mine workings that could present a potential risk, including adits and seam workings. These features have been identified from BGS Geological mapping and mine plans sourced from the BGS and various collections and sources.

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.



18.6 Non-coal mining

Records within 1000m

0

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site

0

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m

0

This data provides an indication of the potential zone of influence of recorded underground non-coal mining workings. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure prior to any re-use.

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m

0

This data indicates areas of potential mining identified from alternative or archival sources, including; BGS Geological paper maps, Lidar data, aerial photographs (from World War II onwards), archaeological data services, websites, Tithe maps, and various text/plans from collected books and reports. Some of this data is approximate and Groundsure have interpreted the resultant risk area and, where possible, specific areas of risk have been captured.

This data is sourced from Groundsure.



18.10 Mining record office plans

Records within 500m**0**

This dataset is representative of Mining Record Office and/or plan extents held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m**0**

This dataset is representative of BGS mine plans held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.12 Coal mining

Records on site**0**

Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site**0**

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.14 Gypsum areas

Records on site**0**

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.



18.15 Tin mining

Records on site	0
-----------------	---

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site	0
-----------------	---

Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).

19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m**0**

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m**0**

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m**0**

This data identifies sinkhole information gathered from media reports and Groundsure's own records. This data goes back to 2014 and includes relative accuracy ratings for each event and links to the original data sources. The data is updated on a regular basis and should not be considered a comprehensive catalogue of all sinkhole events. The absence of data in this database does not mean a sinkhole definitely has not occurred during this time.

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m**0**

This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a narrow shaft with a number of chambers at the base of the shaft. Shakeholes are an alternative name for suffusion sinkholes, most commonly found in the limestone landscapes of North Yorkshire but also extensively noted around the Brecon Beacons National Park.

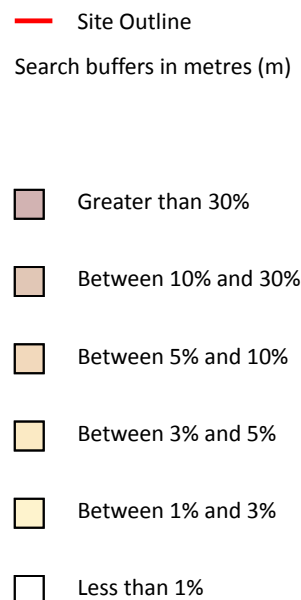
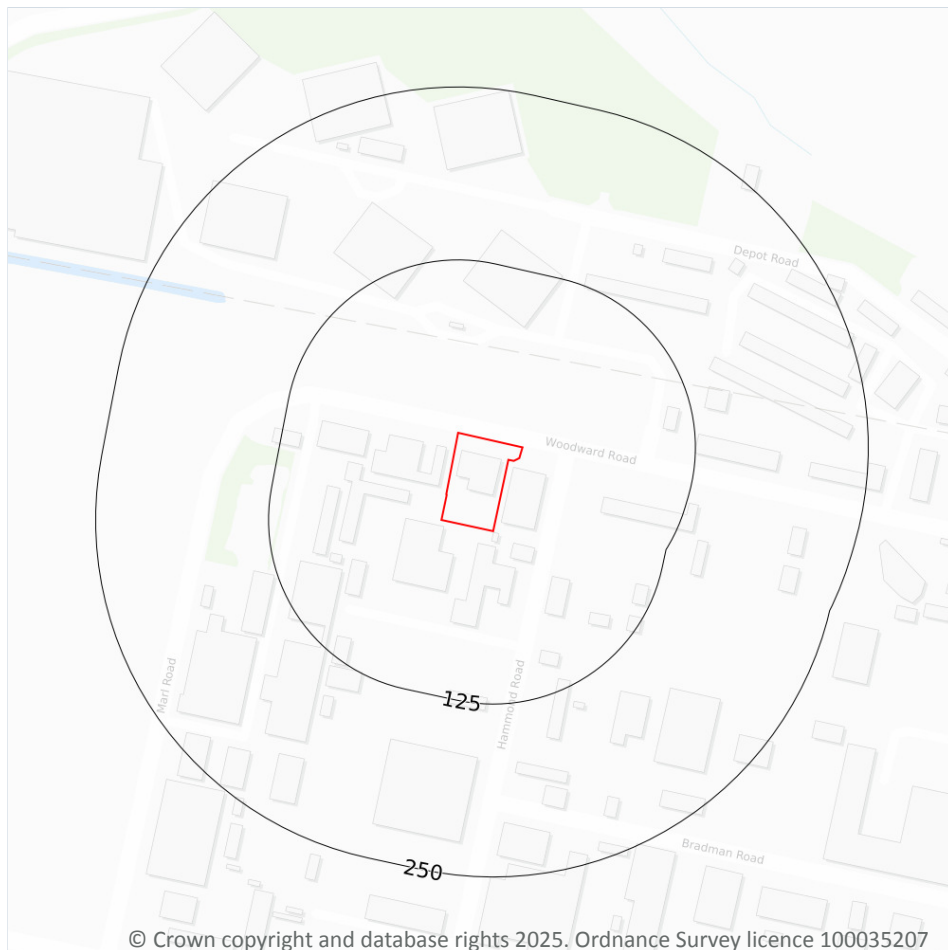
Not all 'holes' noted on Ordnance Survey mapping will necessarily be present within this dataset.



This data is sourced from Groundsure.



20 Radon



20.1 Radon

Records on site

1

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on [page 142 >](#)

Location	Estimated properties affected	Radon Protection Measures required
On site	Less than 1%	None



This data is sourced from the British Geological Survey and UK Health Security Agency.



21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m

2

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.



22 Railway infrastructure and projects



- Site Outline
- Search buffers in metres (m)
- C2 Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

22.1 Underground railways (London)

Records within 250m

0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m

0

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.



This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m

27

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

Features are displayed on the Railway infrastructure and projects map on [page 145 >](#)

Location	Land Use	Year of mapping	Mapping scale
On site	Railway Sidings	1962	2500
On site	Railway Sidings	1966	10560
On site	Railway Sidings	1978	10000
17m N	Railway Sidings	1962	1250
18m N	Railway Sidings	1956	10560
72m E	Railway Sidings	1962	1250
77m E	Railway Sidings	1971	1250
108m NW	Railway Sidings	1962	1250
123m E	Railway Sidings	1962	1250
126m W	Railway Sidings	1962	2500
128m W	Railway Sidings	1962	1250
147m N	Railway Sidings	1962	1250
155m NE	Railway Sidings	1962	1250
160m S	Railway Sidings	1962	1250
172m W	Railway Sidings	1962	1250
189m N	Railway Sidings	1962	1250
192m S	Railway Sidings	1962	2500



Location	Land Use	Year of mapping	Mapping scale
193m SW	Railway Sidings	1962	1250
193m S	Railway Sidings	1962	1250
196m W	Railway Sidings	1971	1250
196m S	Railway Sidings	1962	2500
196m S	Railway Sidings	1962	1250
197m S	Railway Sidings	1962	2500
197m S	Railway Sidings	1962	1250
211m E	Railway Sidings	1962	1250
237m SW	Railway Sidings	1962	1250
242m S	Railway Sidings	1962	1250

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m

0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m

1

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

Features are displayed on the Railway infrastructure and projects map on [page 145 >](#)

Location	Description
21m NE	Razed

This data is sourced from OpenStreetMap.



22.7 Railways

Records within 250m

3

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways. Features are displayed on the Railway infrastructure and projects map on [page 145 >](#)

Location	Name	Type
53m N		rail
55m NE		rail
56m N		rail

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 2

Records within 500m

0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

22.9 HS2

Records within 500m

0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 Ltd.



Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference> ↗.

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INSIGHTS

HISTORICAL MAP PACK LEGEND

COUNTY SERIES & NATIONAL GRID 1:10,560 & 1:10,000

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COUNTY SERIES 1:10,560

VEGETATION



Fir Wood



Mixed Wood



Orchard



Rough Pasture



Marsh



Deciduous Wood



Brushwood



Reeds

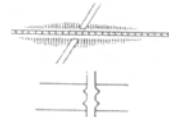


Furze

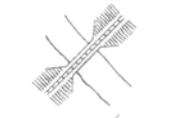


Osiers

ROADS



Railway over Road



Road over River or Canal



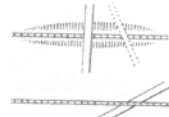
Railway over River



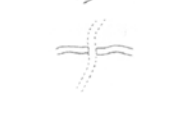
Road over Stream



Raised Road



Road over Railway



Level Crossing



Road over Stream



Sunken Road

RAILWAYS



Double Lines of Railway



Single Lines of Railway and Tramway

GENERAL FEATURES



Gravel Pit



Quarry



Other Pits



Sand Pit



Shingle



Antiquities, Site of

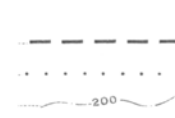


Arrow, showing direction of flow of water



Trigonometrical Station

BOUNDARIES



County Boundary



Parish Boundary



Contours



Parliamentary Division Boundary



Union Boundary



Rural District Boundary

NATIONAL GRID 1:10,000 & 1:10,560

HEIGHTS (METRES)

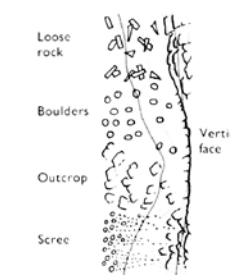
Values are given in metres above mean sea level at Newlyn.

Surface heights determined by ground survey 163m

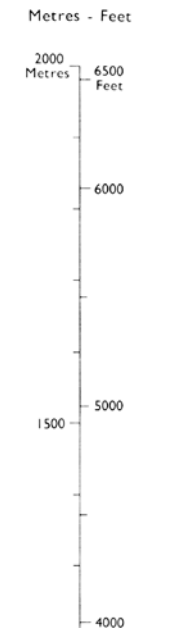
Bench marks and their values are shown on large scale maps, and bench mark lists containing fuller and possibly later levelling information are obtainable from the Director General, Ordnance Survey.

Contours are at 5 metres vertical interval.

ROCK FEATURES



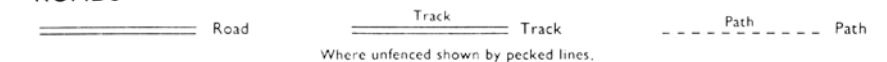
CONVERSION SCALE



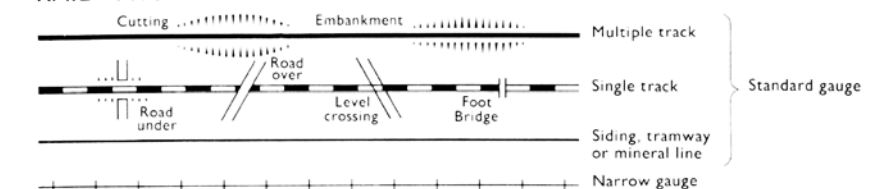
ABBREVIATIONS

BP,BS	Boundary Post or Stone	PO	Post Office
Ch	Church	PC	Public Convenience
CH	Club House	PH	Public House
F Sta	Fire Station	S	Stone
FB	Foot Bridge	Spr	Spring
Fn	Fountain	TCB	Telephone Call Box
GP	Guide Post	TCP	Telephone Call Post
MP,MS	Mile Post or Stone	TH	Town Hall
P	Pole or Post	W	Well
Pol Sta	Police Station	Y	Youth hostel

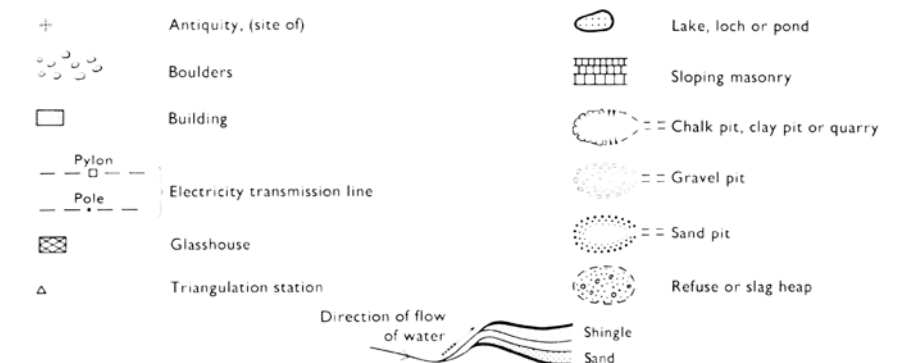
ROADS



RAILWAYS



GENERAL FEATURES



VEGETATION



In some areas bracken (T) and rough grassland (T) are shown separately.



Groundsure
INSIGHTS

HISTORICAL MAP PACK LEGEND

COUNTY SERIES
1:1,2500
NATIONAL GRID
1:1,250 & 1:2,500

Information present on these legends is sourced from the same Ordnance Survey mapping as the maps used in this product.

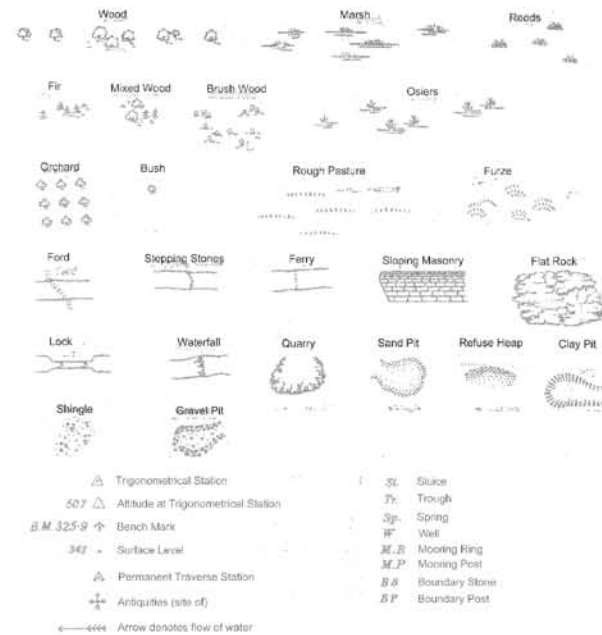
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COUNTY SERIES 1:2,500

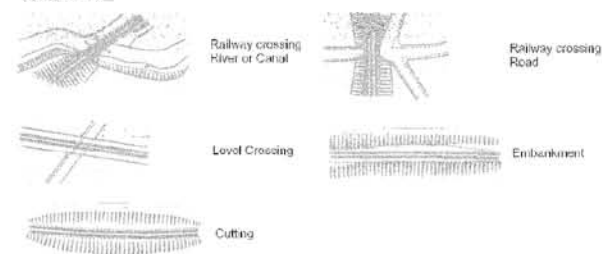
GENERAL FEATURES



ROADS



RAILWAYS

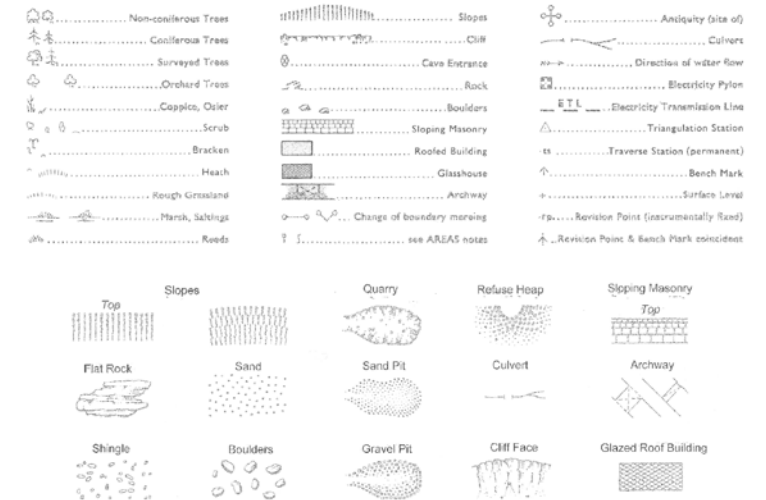


ABBREVIATIONS

Trigonometrical Station	Sluice
Altitude at Trigonometrical Station	Trough
Bench Mark	Spring
Surface Level	Well
Permanent Traverse Station	Mooring Ring
Antiquities (site of)	Mooring Post
	Boundary Stone
	Boundary Post

NATIONAL GRID 1:2,500 & 1:1,250

GENERAL FEATURES



BOUNDARIES

England & Wales	
County Boundary (geographical)	
County & Civil Parish Boundary coterminous	
Admin County or County Borough Boundary	
London Borough Boundary	
County District Boundaries based on civil parish	
England, Wales & Scotland	
Civil Parish Boundary	
Boro (or Burgh) Const & Ward Bdy	Parly & Ward Boundaries based on civil parish
Co Const Bdy	
Boro (or Burgh) Const & Ward Bdy	Parly & Ward Boundaries not based on civil parish
Co Const Bdy	
Scotland	
County Boundary (geographical)	
County Council Boundary	
County of the City Boundary	
Burgh Boundary	
Dist Bdy	District Council Boundary
Dist Bdy	
* Not with parish † Coincident with parish	

ABBREVIATIONS

B.H.	Beer House	M.P.U.	Mail Pick-up
B.M.	Bench Mark	M.S.	Mile Stone
B.P.	Boundary Post	N.T.	National Trust
B.S.	Boundary Stone	N.T.L.	Normal Tidal Limit
C.H.	Club House	N.T.S.	National Trust for Scotland
Chy.	Chimney	P.	Pillar, Pole or Post
Ca.	Capstan	P.C.	Public Convenience
D.F.	Drinking Fountain	P.C.B.	Police Call Box
Dk.	Dock	P.H.	Public House
E.P.	Electricity Pillar or Pole	P.O.	Post Office
E.T.L.	Electricity Transmission Line	P.P.	Police Telephone Pillar
F.A.	Fire Alarm	P.T.P.	Police Telephone Pillar
F.A.P.	Fire Alarm Pillar	R.H.	Road House
F.B.	Filter Bed, Foot Bridge	rp.	Revision Point
F.B.M.	Fundamental Bench Mark	S.	Stone
F.S.	Flacstaff	S.B.	Signal Box
F.St.	Fire Station	S.L.	Signal Light
G.P.	Guide Post	Sl.	Sluice
G.V.C.	Gas Valve Compound	S.P.	Signal Post
H.	Hydrant or Hydraulic	Spr.	Spring
ha.	Heath	S.St.	Signal Station
L.B.	Litter Box	T.C.B.	Telephone Call Box
L.B.St.	Litter Box Station	T.C.P.	Telephone Call Post
L.C.	Level Crossing	Tk.	Tank or Track
L.G.	Loading Gauge	Tr.	Trough
L.H.	Lighthouse	ts.	Traverse Station
L.Twr.	Lighting Tower	W.	Well
m.	Metres	W.B.	Weighbridge
M.H.W.	Mean High Water	Wd.P.	Wind Pump
M.H.W.S.	Mean High Water Springs	Wks.	Works
M.L.W.	Mean Low Water	W.P.	Water Point
M.L.W.S.	Mean Low Water Springs	W.T.	Water Tap
M.P.	Mile or Mooring Post		



Site Details:

Woodward Road, Kirkby, L33
7UZ

Client Ref: CMAPS-AAG-1212885-4165-180325
Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: County Series

Map date: 1890-1892

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1890

Revised 1890

Edition N/A

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Levelled N/A

Surveyed 1892

Revised 1892

Edition N/A

Copyright N/A

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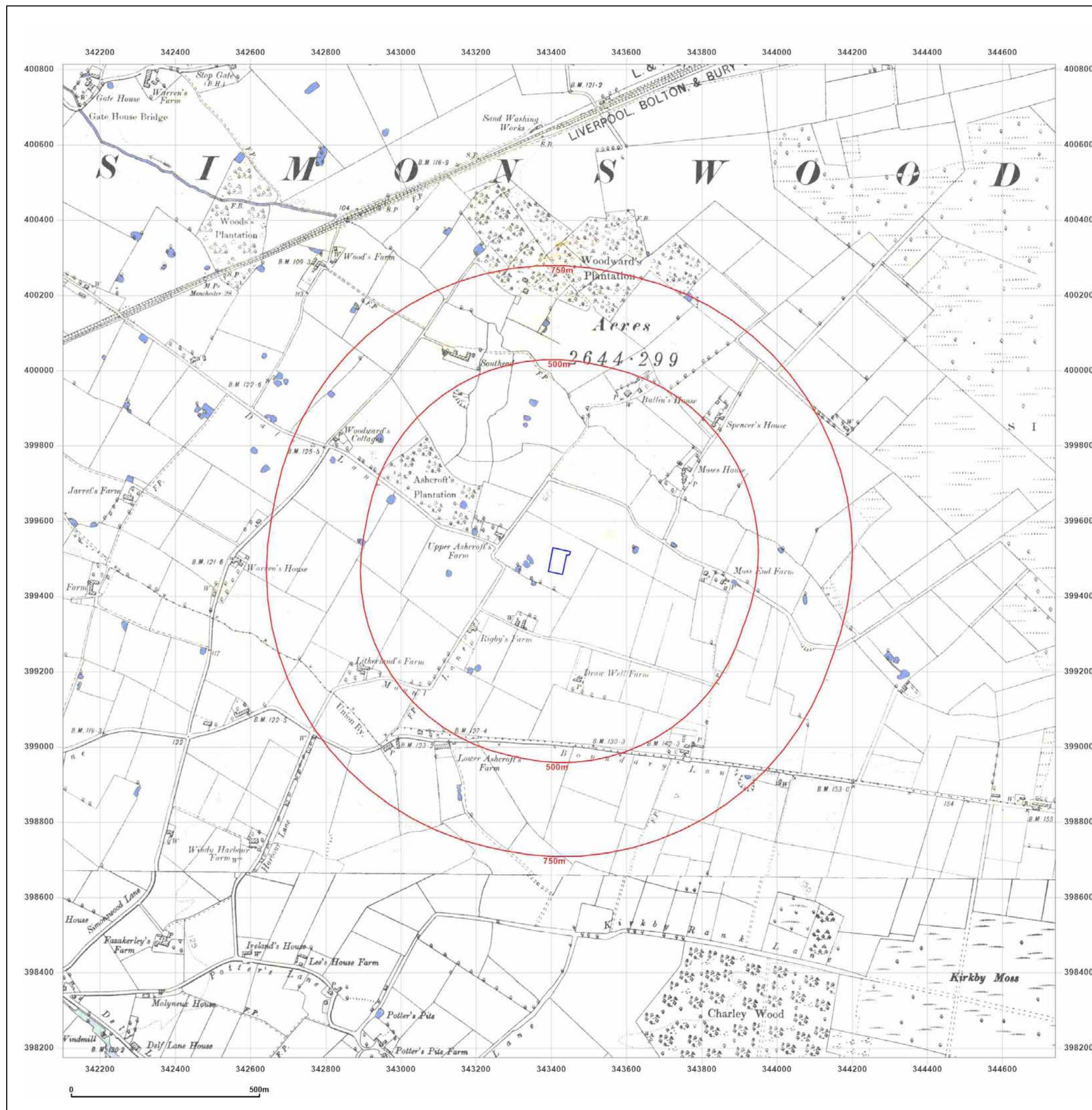


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Woodward Road, Kirkby, L33
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Client Ref: CMAPS-AAG-1212885-4165-180325
Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: County Series

Map date: 1907

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1847

Revised 1907
Edition N/A
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Surveyed 1892

Revised 1907
Edition N/A
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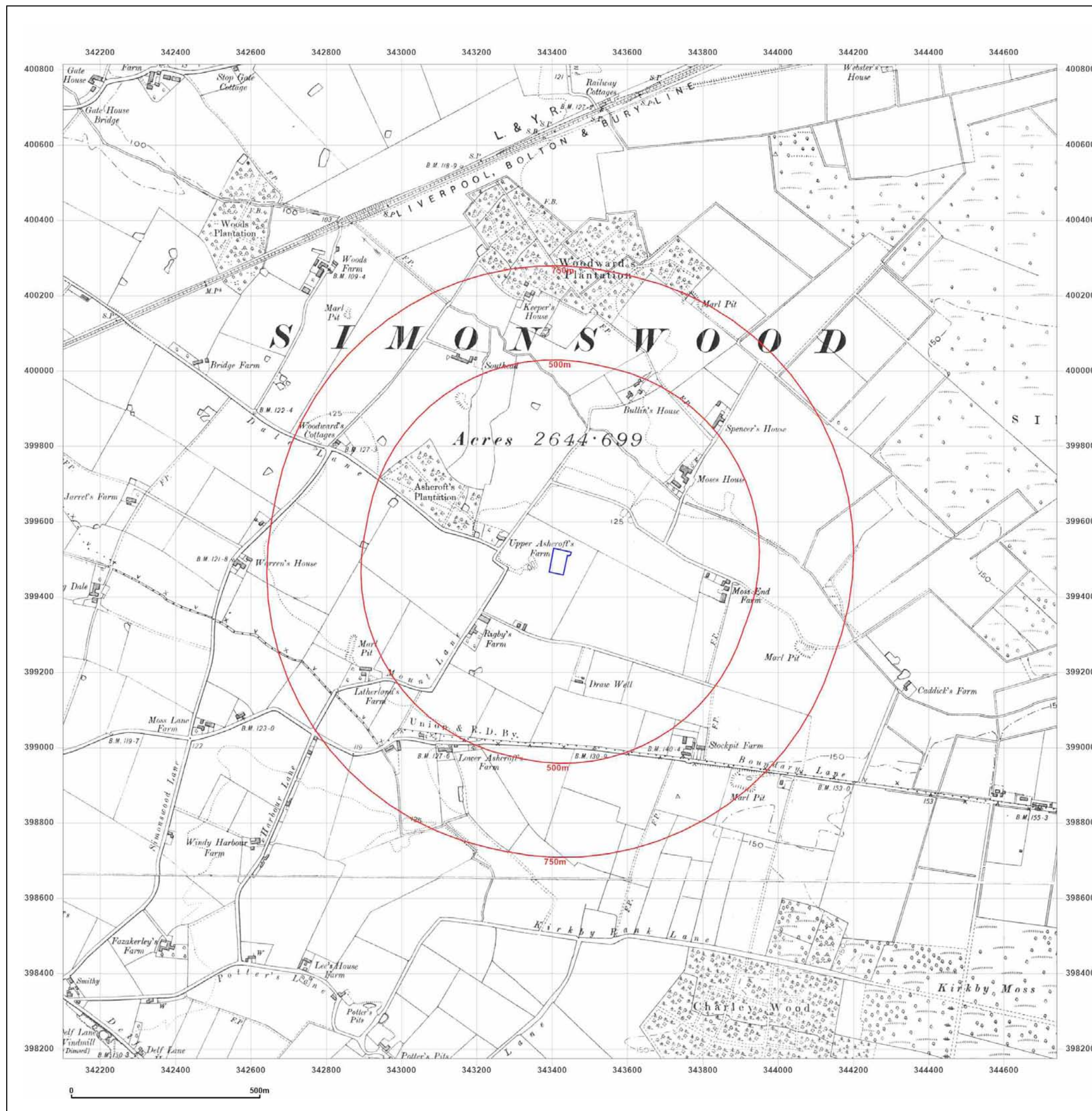


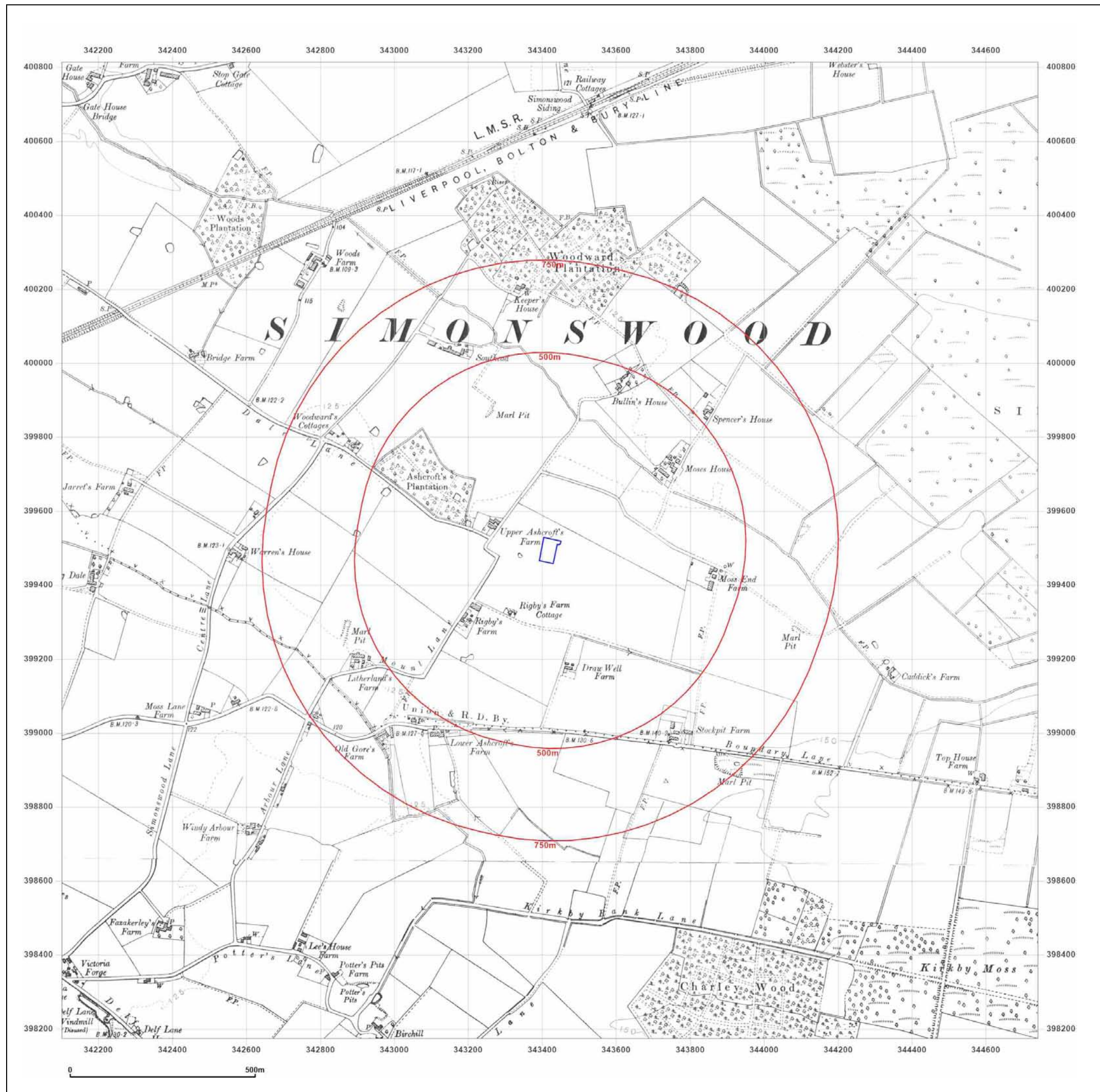
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Woodward Road, Kirkby, L33
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Client Ref: CMAPS-AAG-1212885-4165-180325
Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: County Series

Map date: 1925-1928

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1847

Revised 1928
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Surveyed 1847

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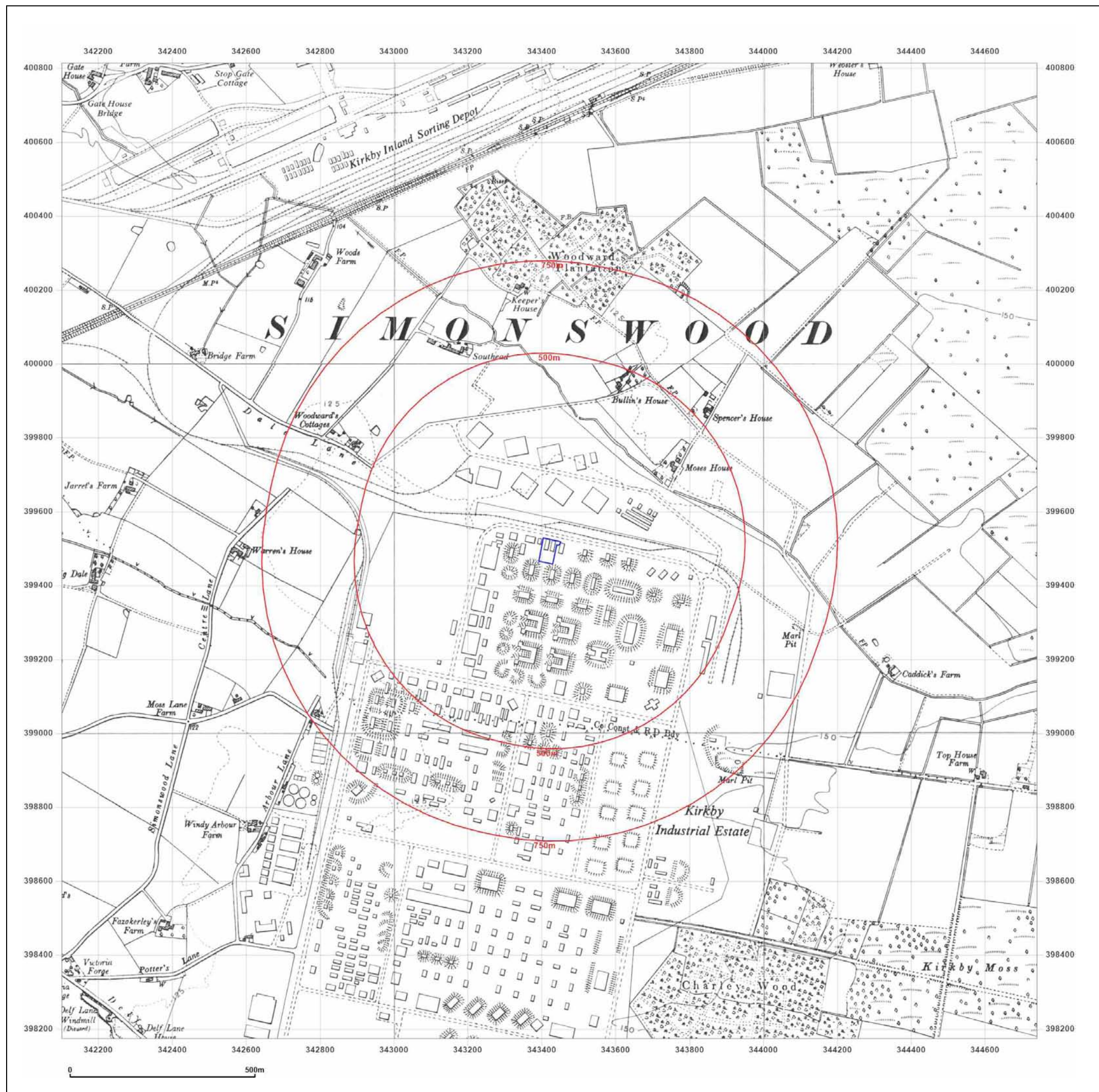


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Client Ref: CMAPS-AAG-1212885-4165-180325
Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: Provisional

Map date: 1955-1956

Scale: 1:10,560

Printed at: 1:10,560



Surveyed N/A
Revised 1955
Edition N/A
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Surveyed N/A
Revised 1955
Edition N/A
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Site Details:

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7UZ

Client Ref: CMAPS-AAG-1212885-4165-180325
Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: Provisional

Map date: 1966

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1966
Revised 1966
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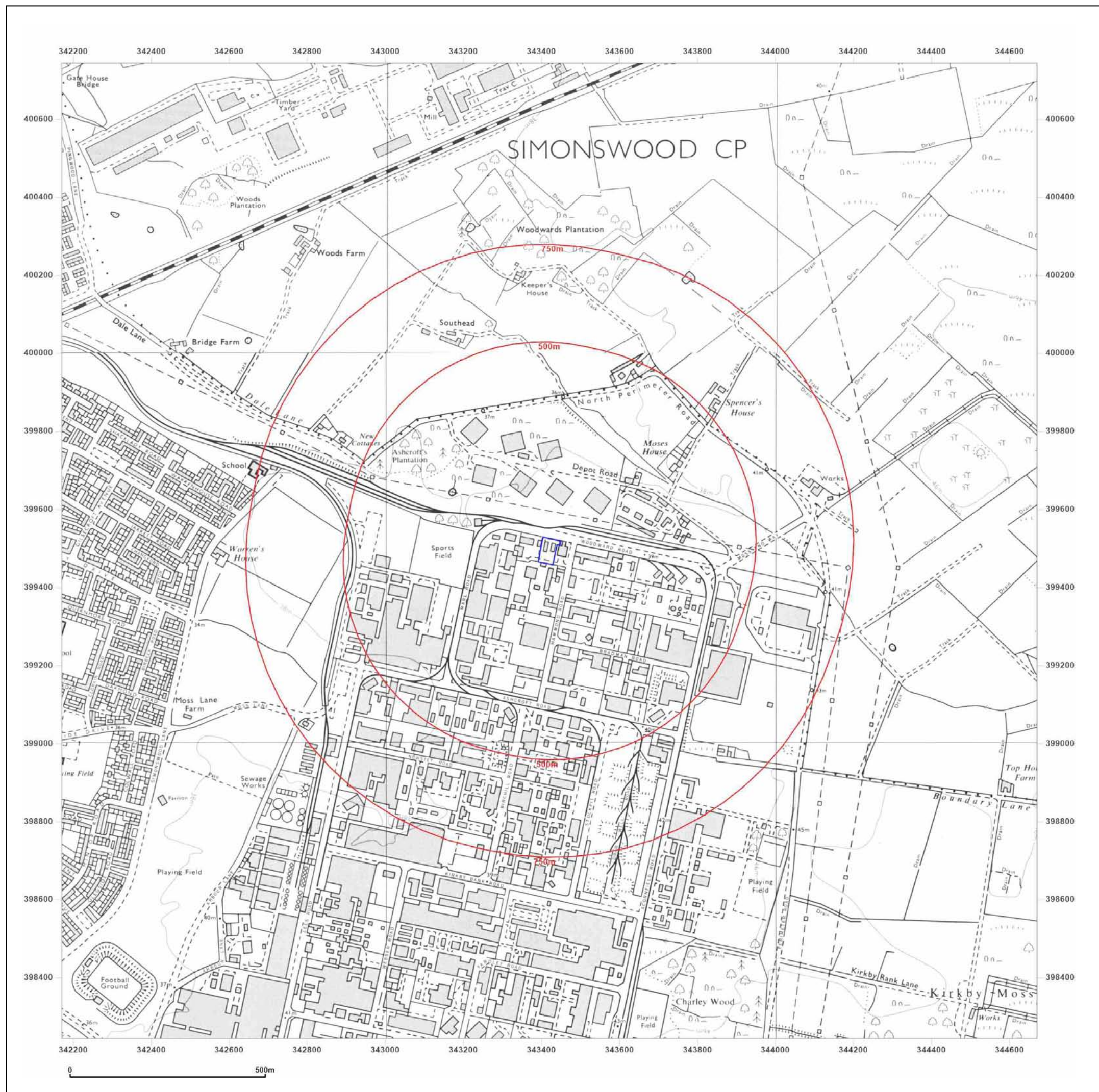
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Client Ref: CMAPS-AAG-1212885-4165-180325
Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: National Grid

Map date: 1974-1978

Scale: 1:10,000

Printed at: 1:10,000



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Surveyed 1975
Revised 1977
Edition N/A
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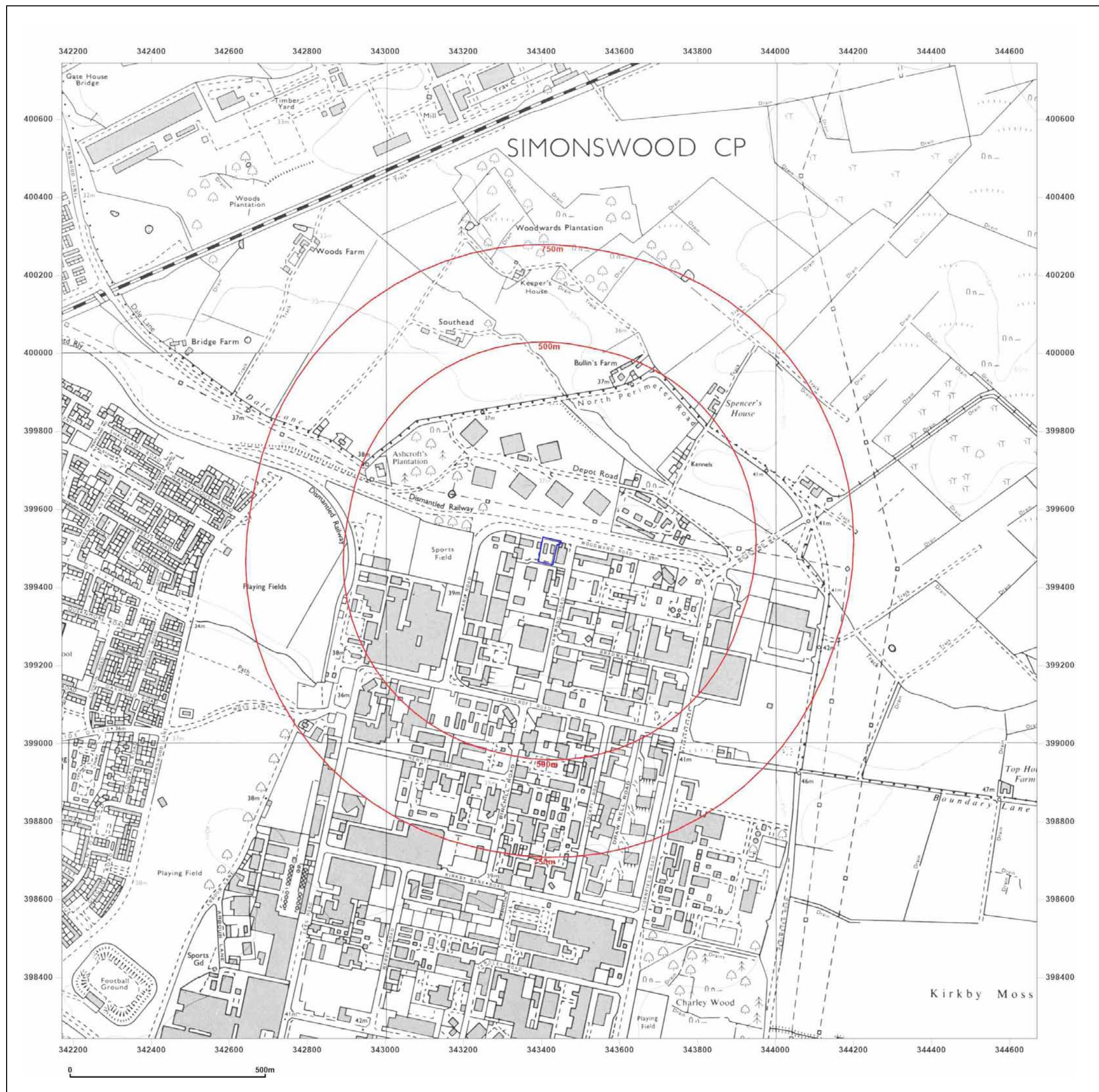


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Client Ref: CMAPS-AAG-1212885-4165-180325
Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: National Grid

Map date: 1987-1988

Scale: 1:10,000

Printed at: 1:10,000



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Surveyed 1987
Revised 1988
Edition N/A
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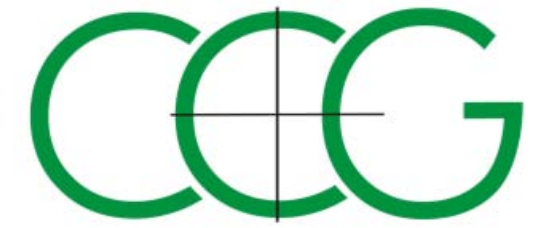
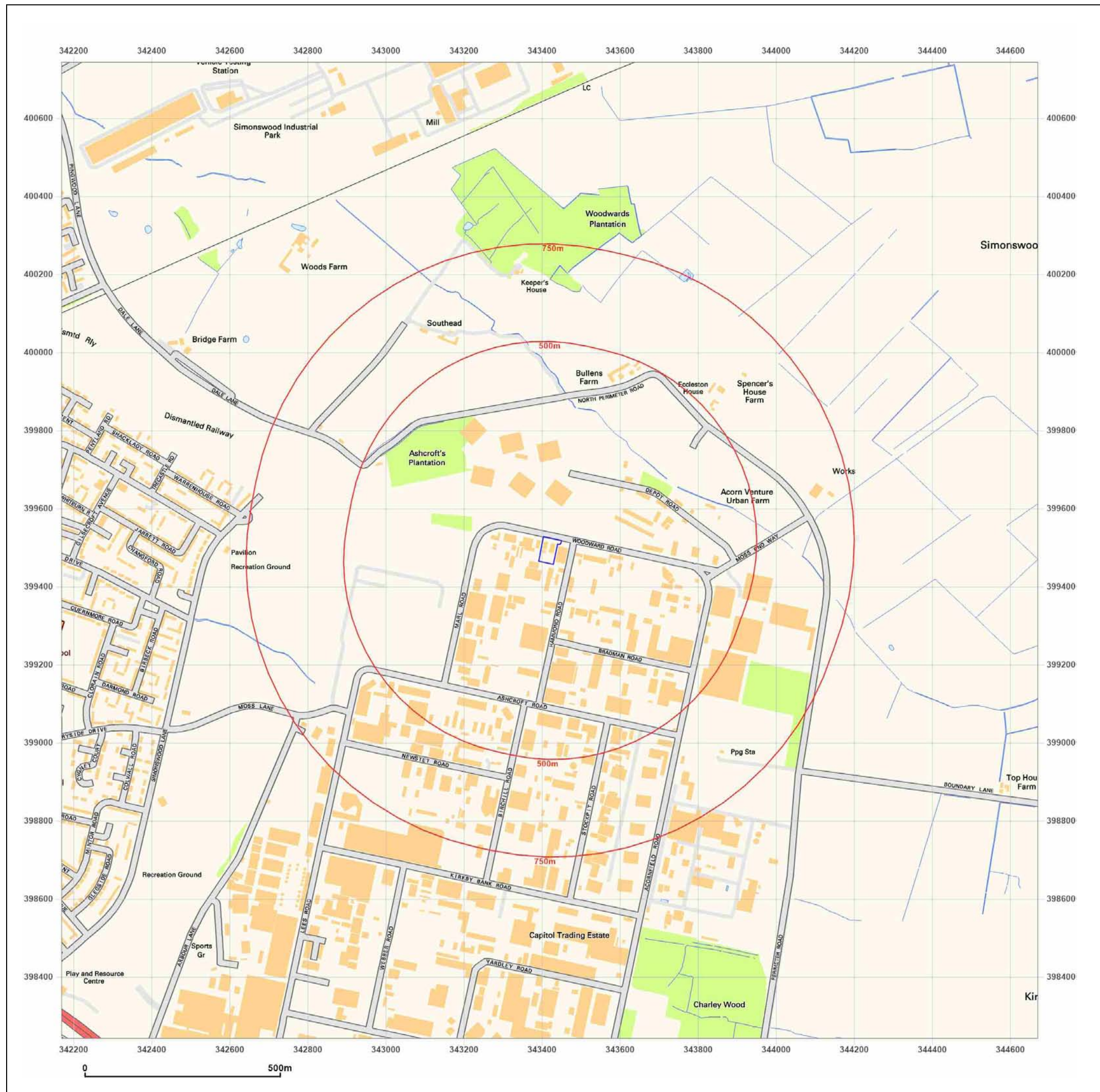


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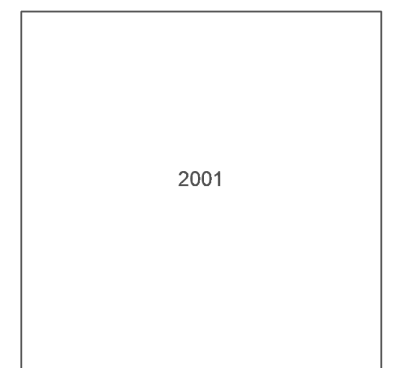
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Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000



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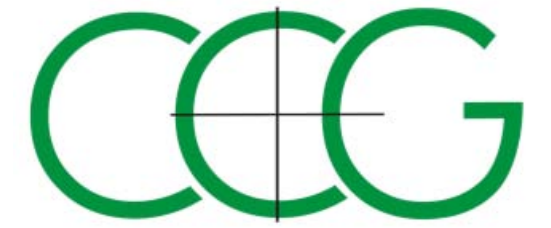
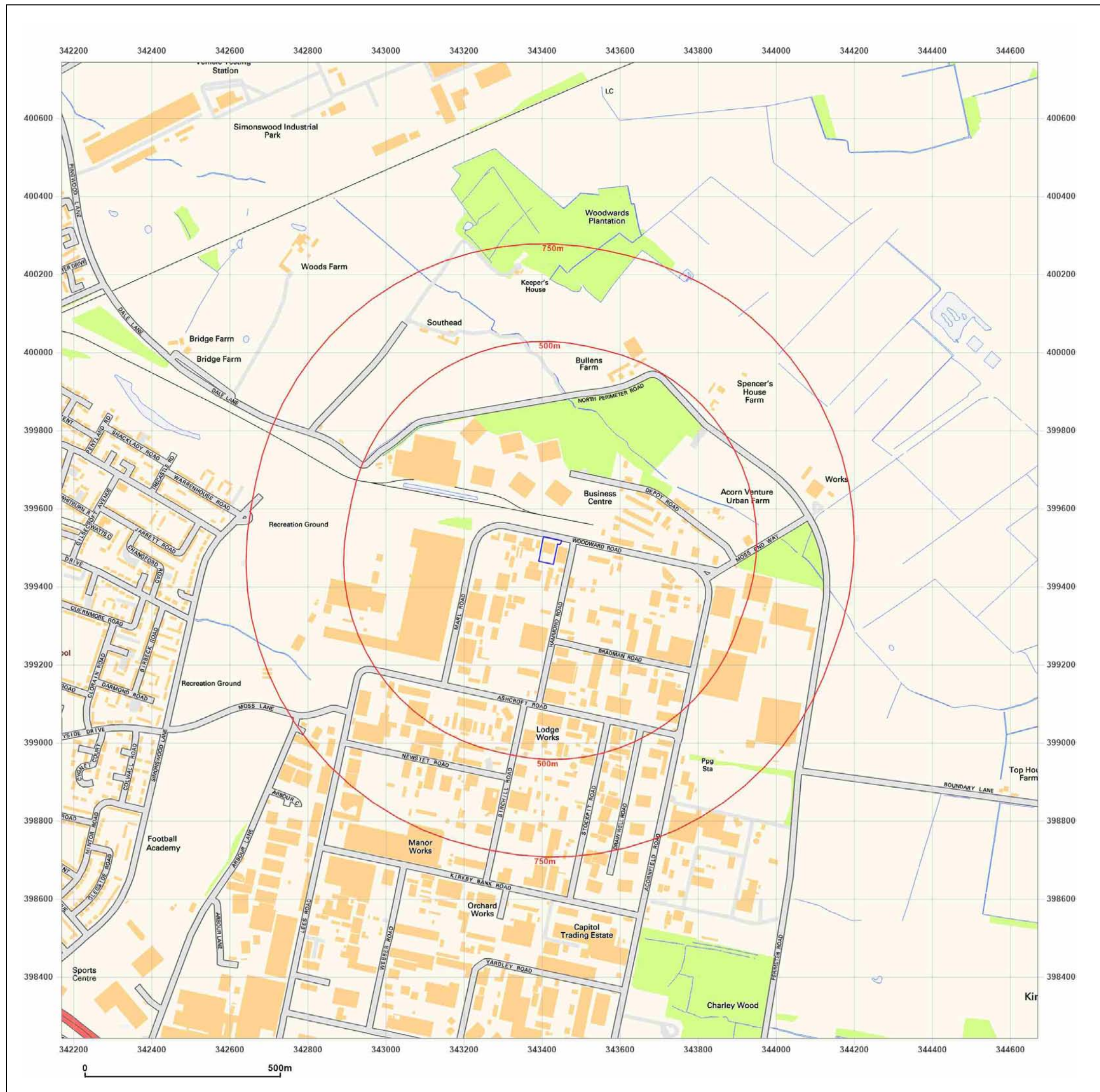


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Site Details:

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Client Ref: CMAPS-AAG-1212885-4165-180325
Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000



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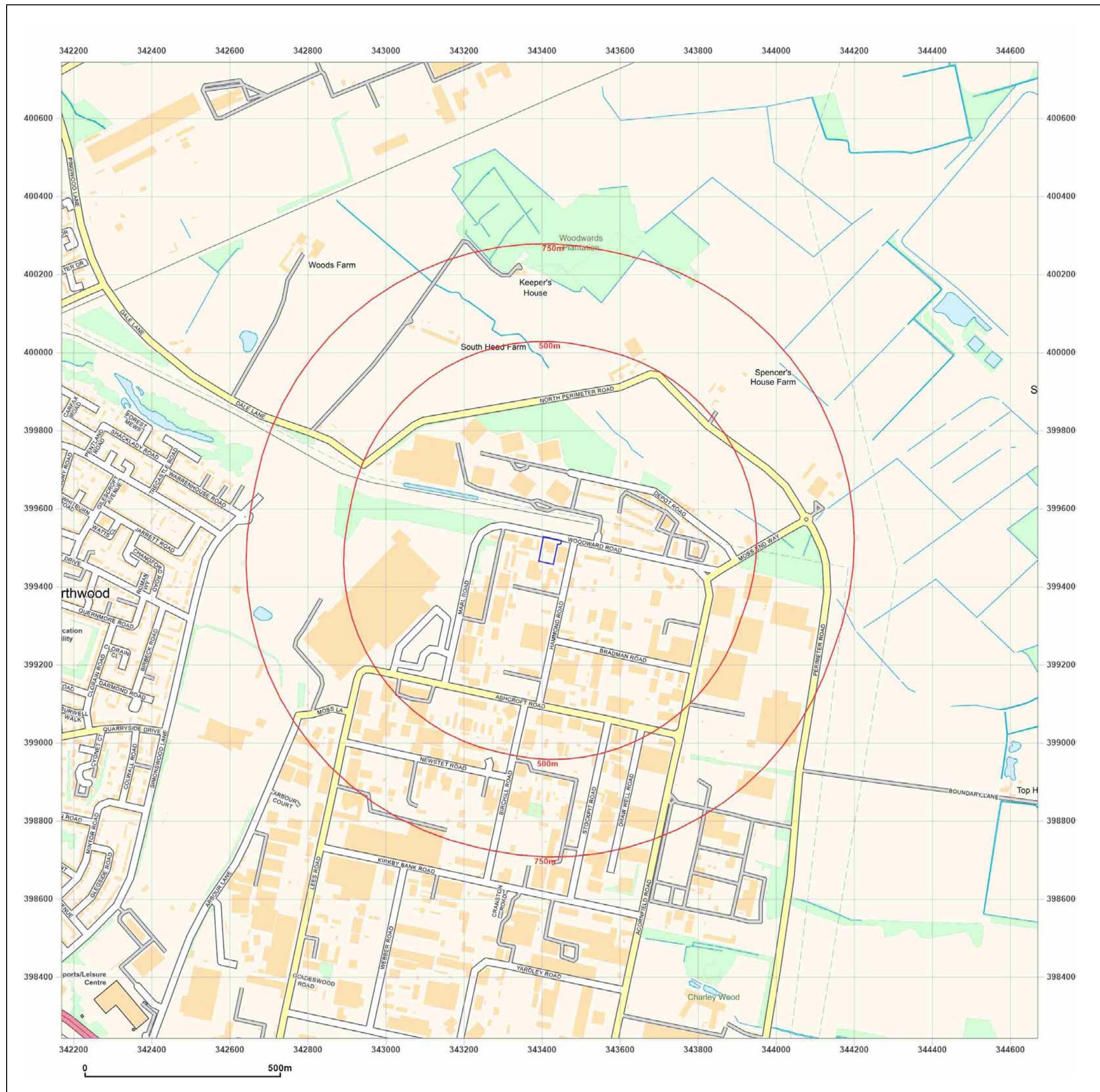


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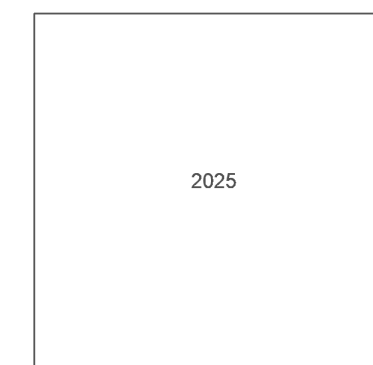
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Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: National Grid

Map date: 2025

Scale: 1:10,000

Printed at: 1:10,000



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Client Ref: CMAPS-AAG-1212885-4165-180325
Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: County Series

Map date: 1867

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1867
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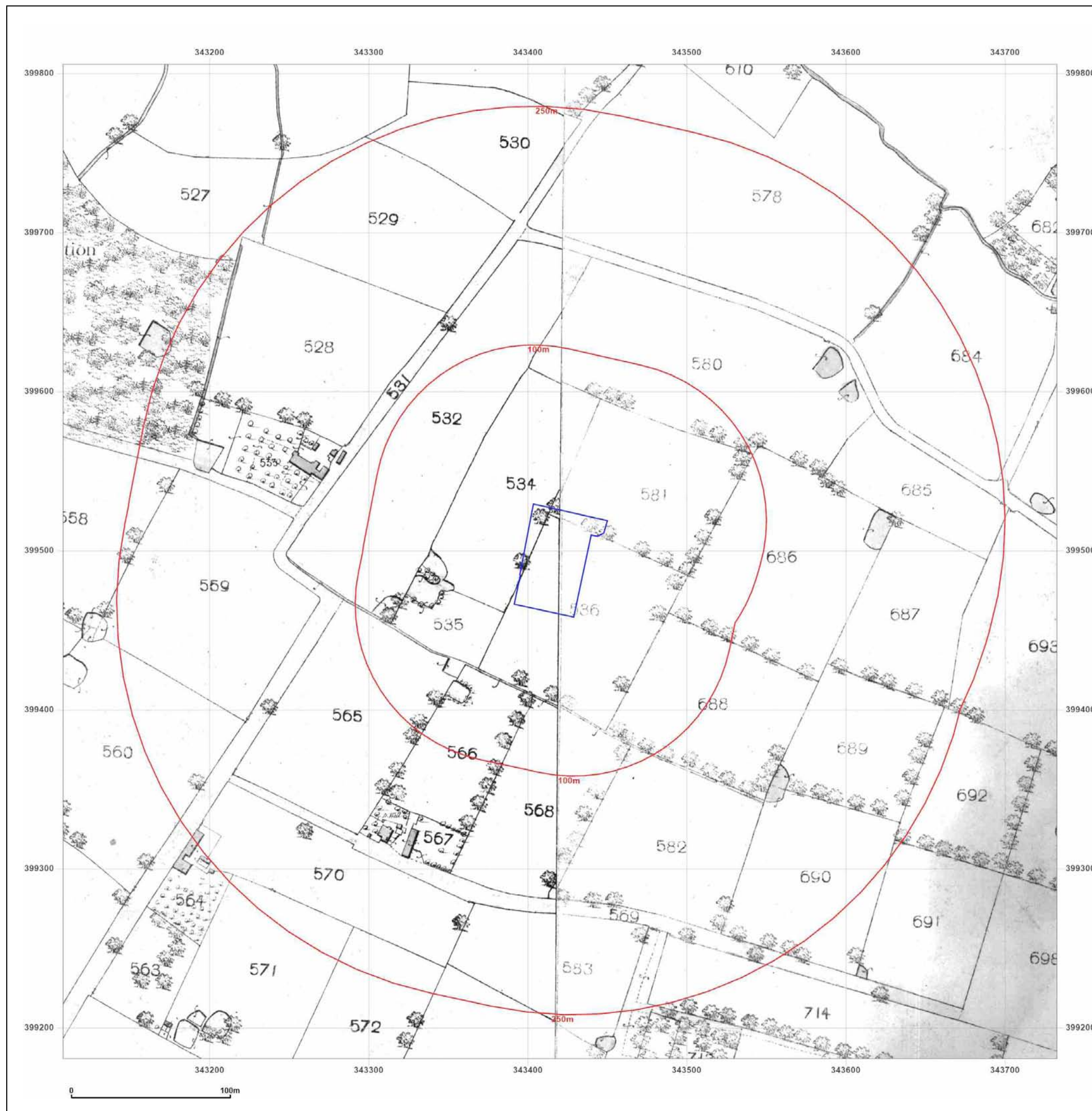


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Site Details:

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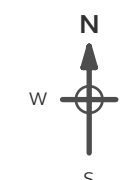
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Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: County Series

Map date: 1893

Scale: 1:2,500

Printed at: 1:2,500



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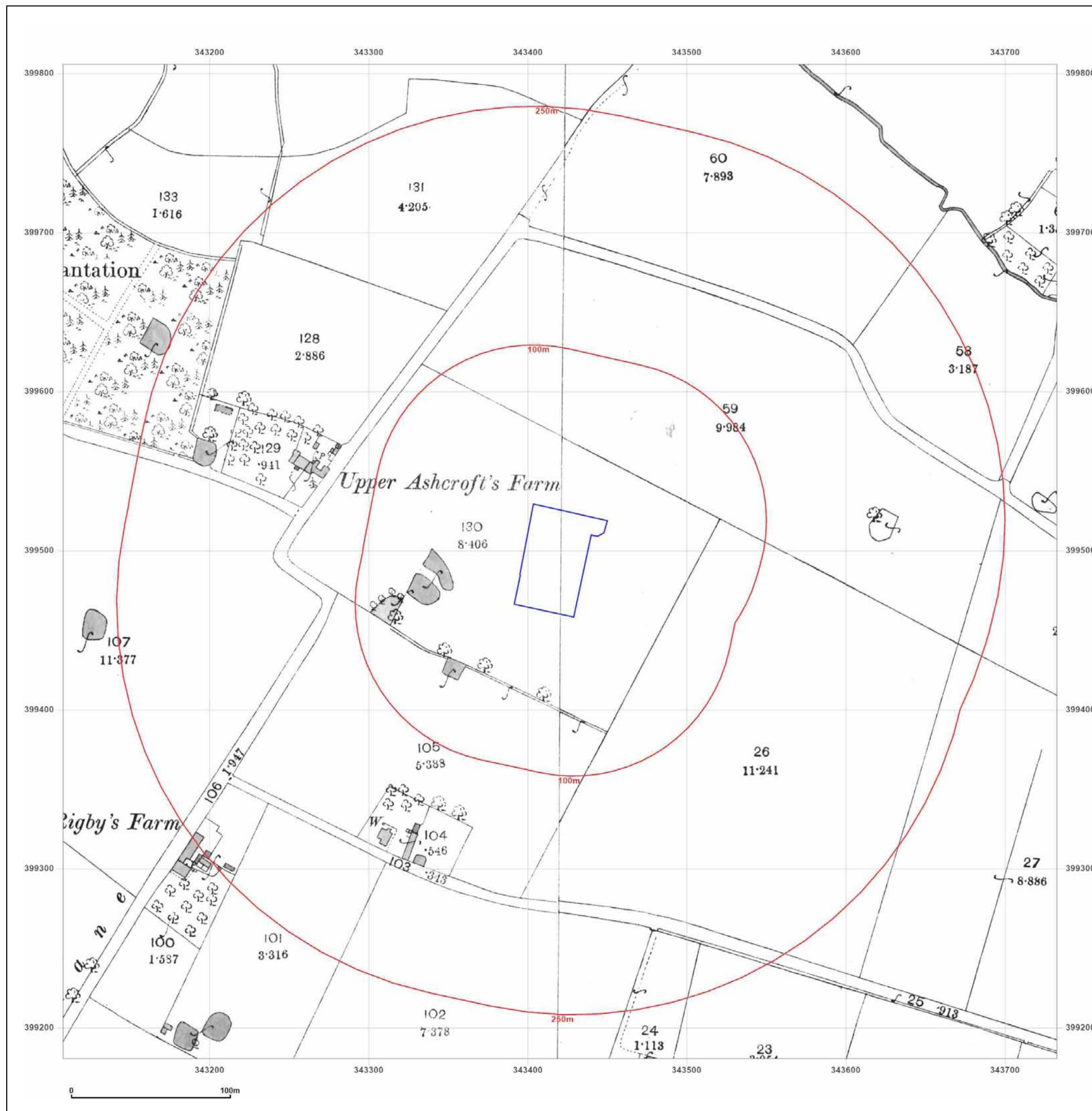


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Client Ref: CMAPS-AAG-1212885-4165-180325
Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: County Series

Map date: 1908

Scale: 1:2,500

Printed at: 1:2,500



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Revised 1908
Edition N/A
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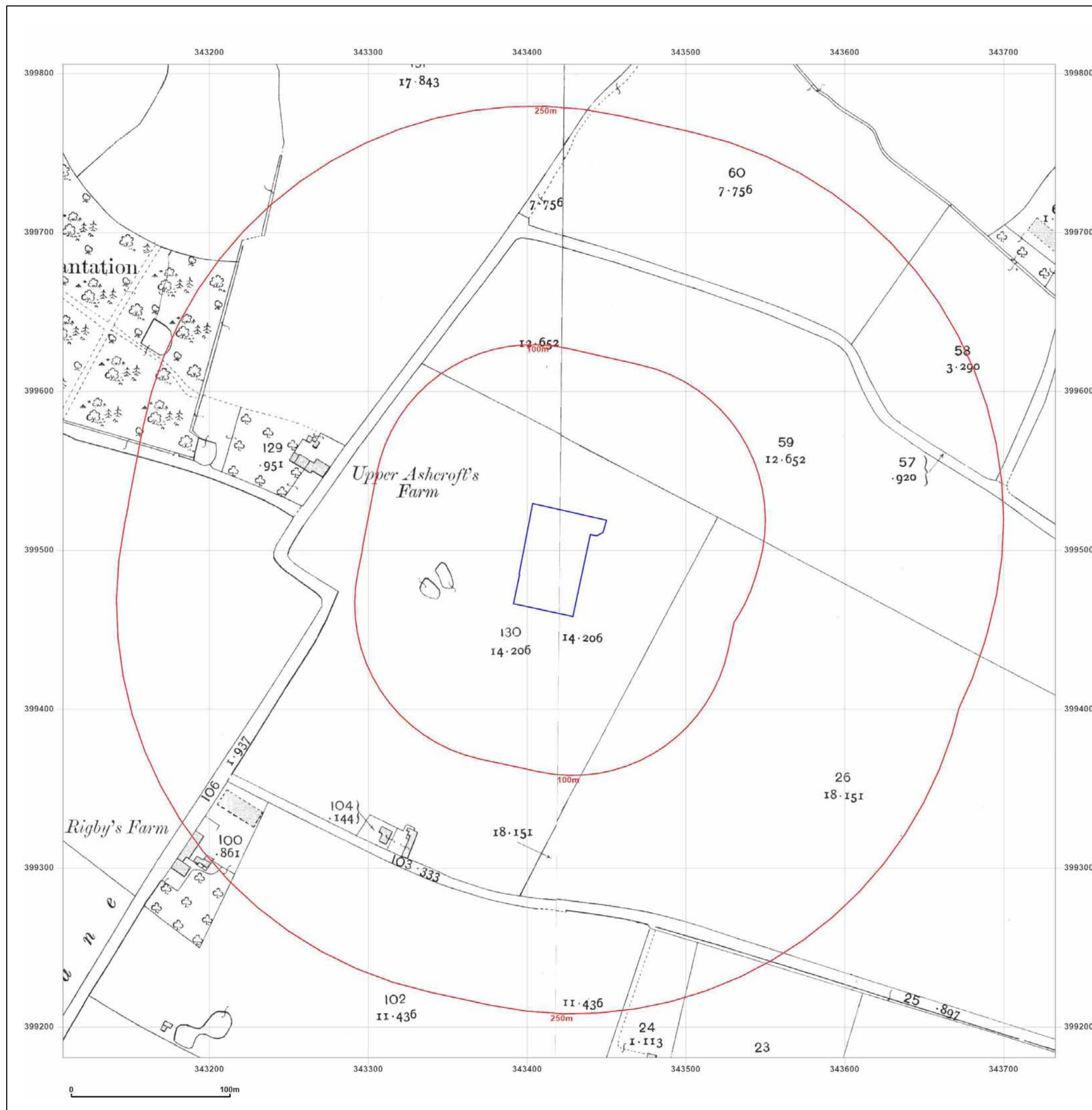


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Client Ref: CMAPS-AAG-1212885-4165-180325
Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: County Series

Map date: 1927

Scale: 1:2,500

Printed at: 1:2,500



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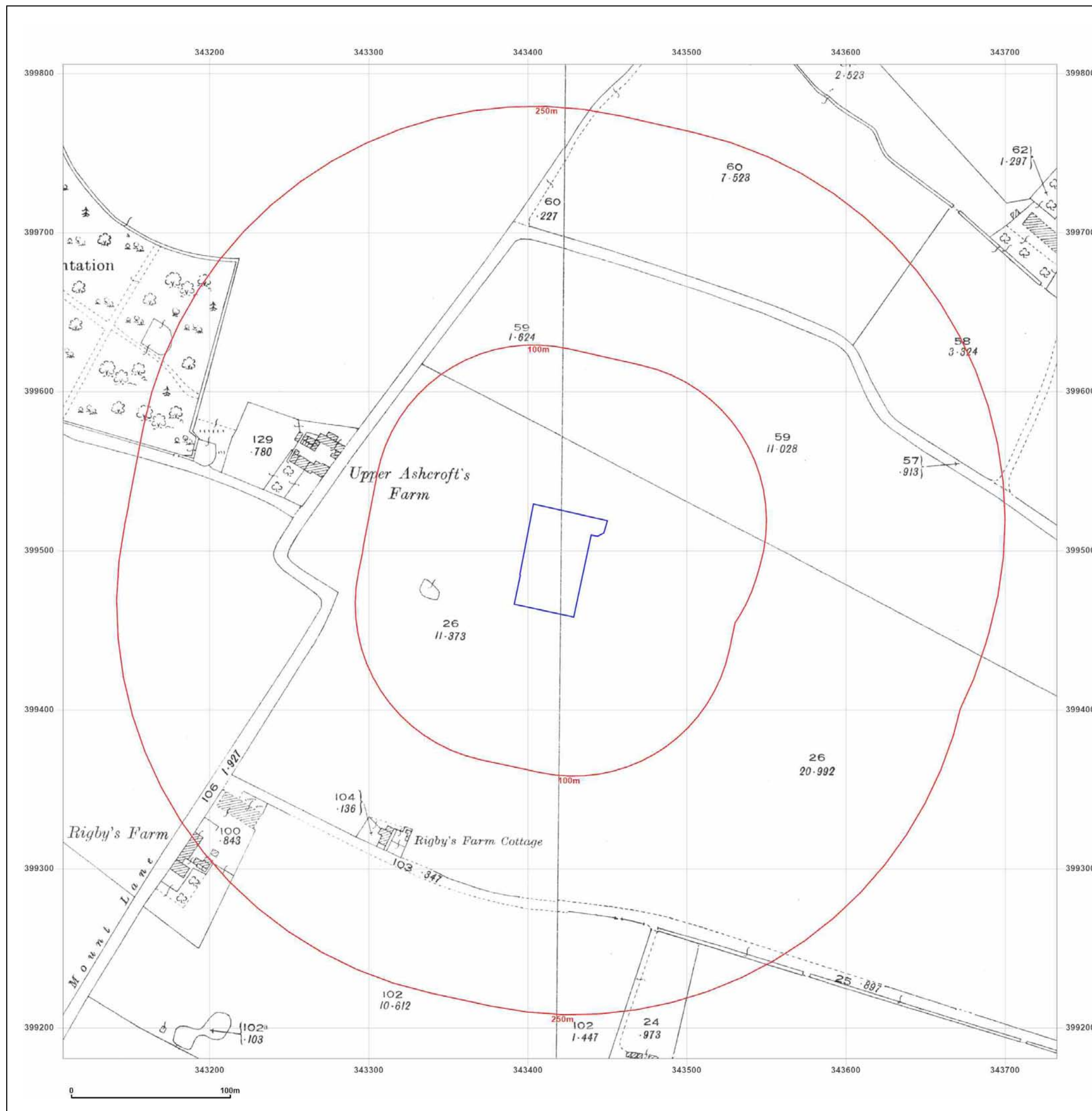


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Client Ref: CMAPS-AAG-1212885-4165-180325
Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: National Grid

Map date: 1962

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1961
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Edition N/A
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Surveyed 1961
Revised 1961
Edition N/A
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Revised 1961
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Client Ref: CMAPS-AAG-1212885-4165-180325
Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: National Grid

Map date: 1962

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1961
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Edition 1962
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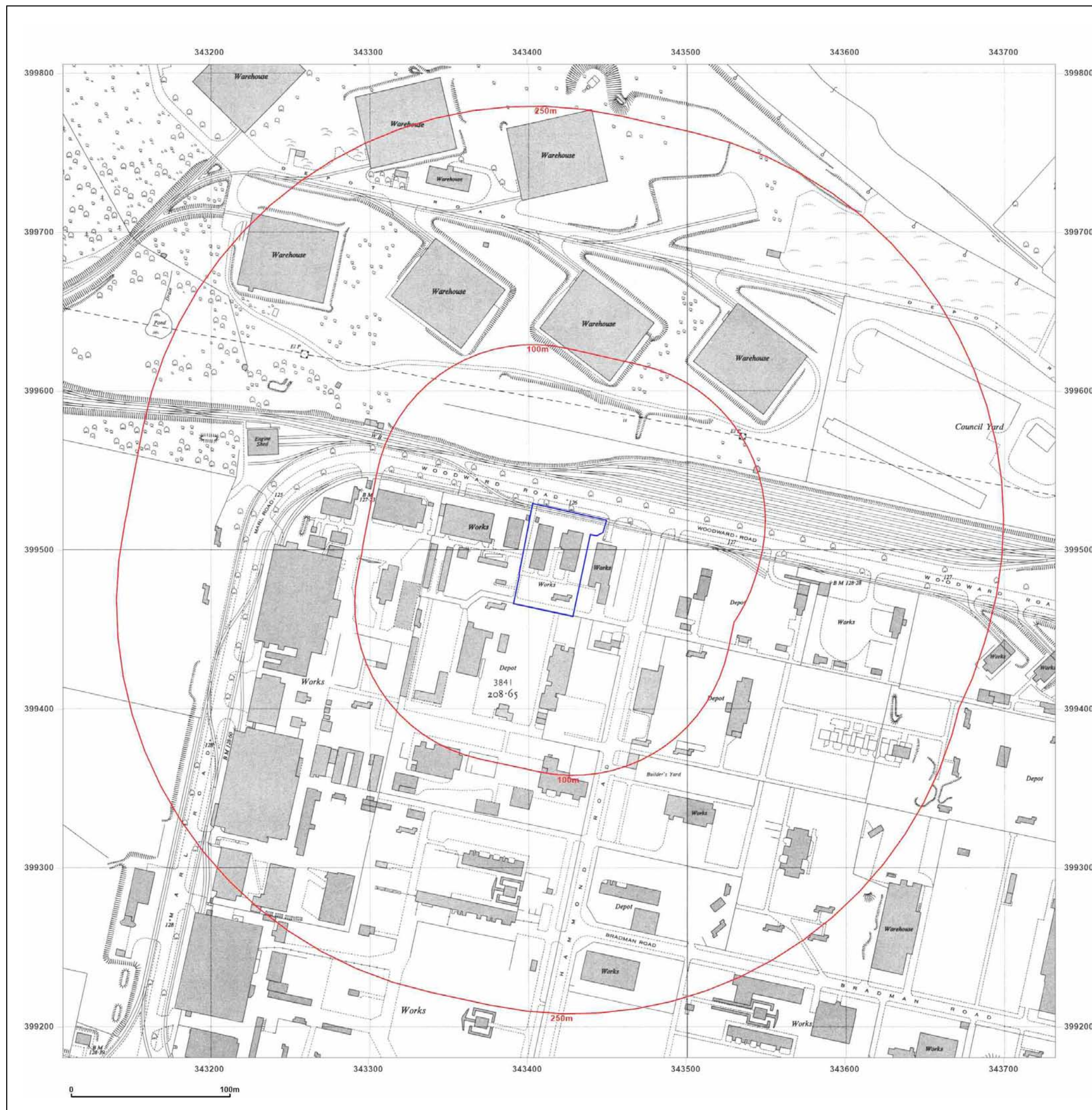


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Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: National Grid

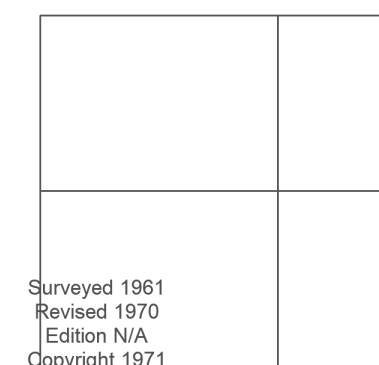
Map date: 1971-1976

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1961
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Edition N/A
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Surveyed 1961
Revised 1970
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Surveyed 1961
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Site Details:

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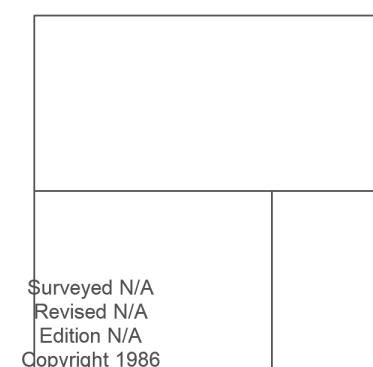
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Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: National Grid

Map date: 1984-1986

Scale: 1:1,250

Printed at: 1:2,000



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Edition N/A
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Revised 1984
Edition N/A
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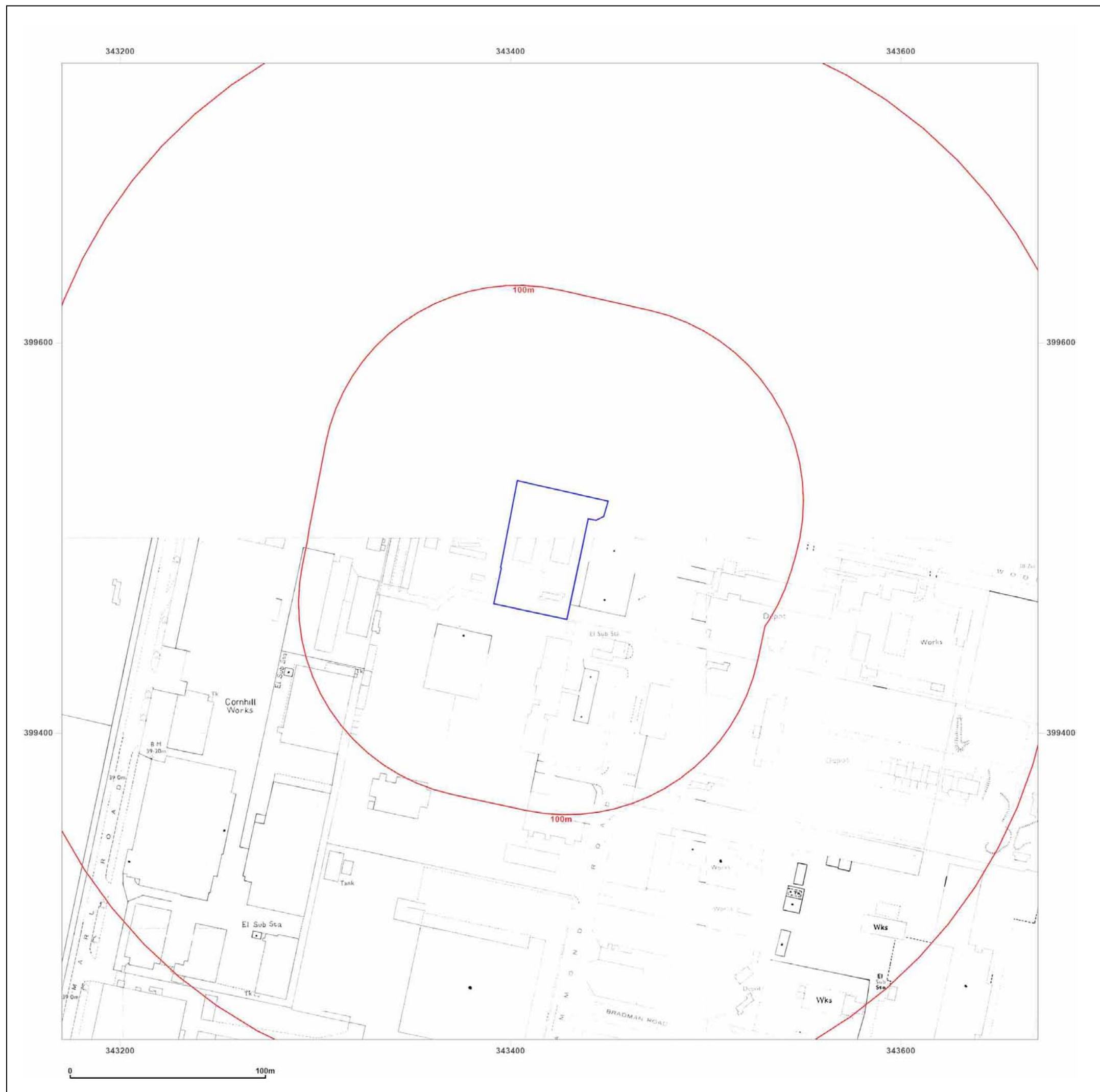


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Client Ref: CMAPS-AAG-1212885-4165-180325
Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: National Grid

Map date: 1992-1994

Scale: 1:1,250

Printed at: 1:2,000



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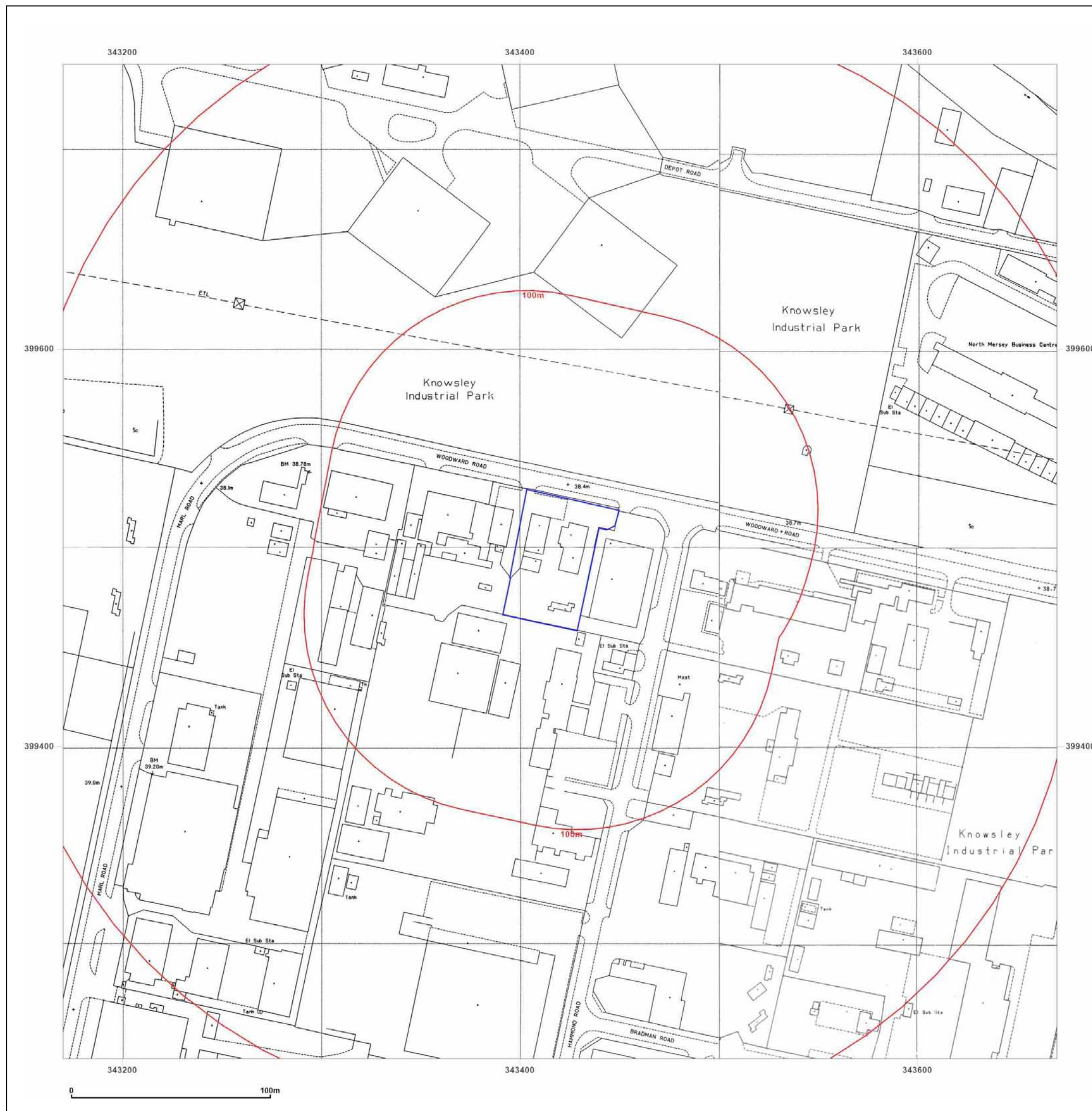


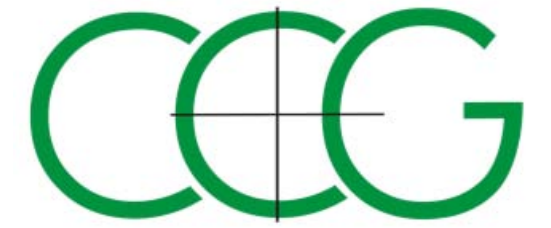
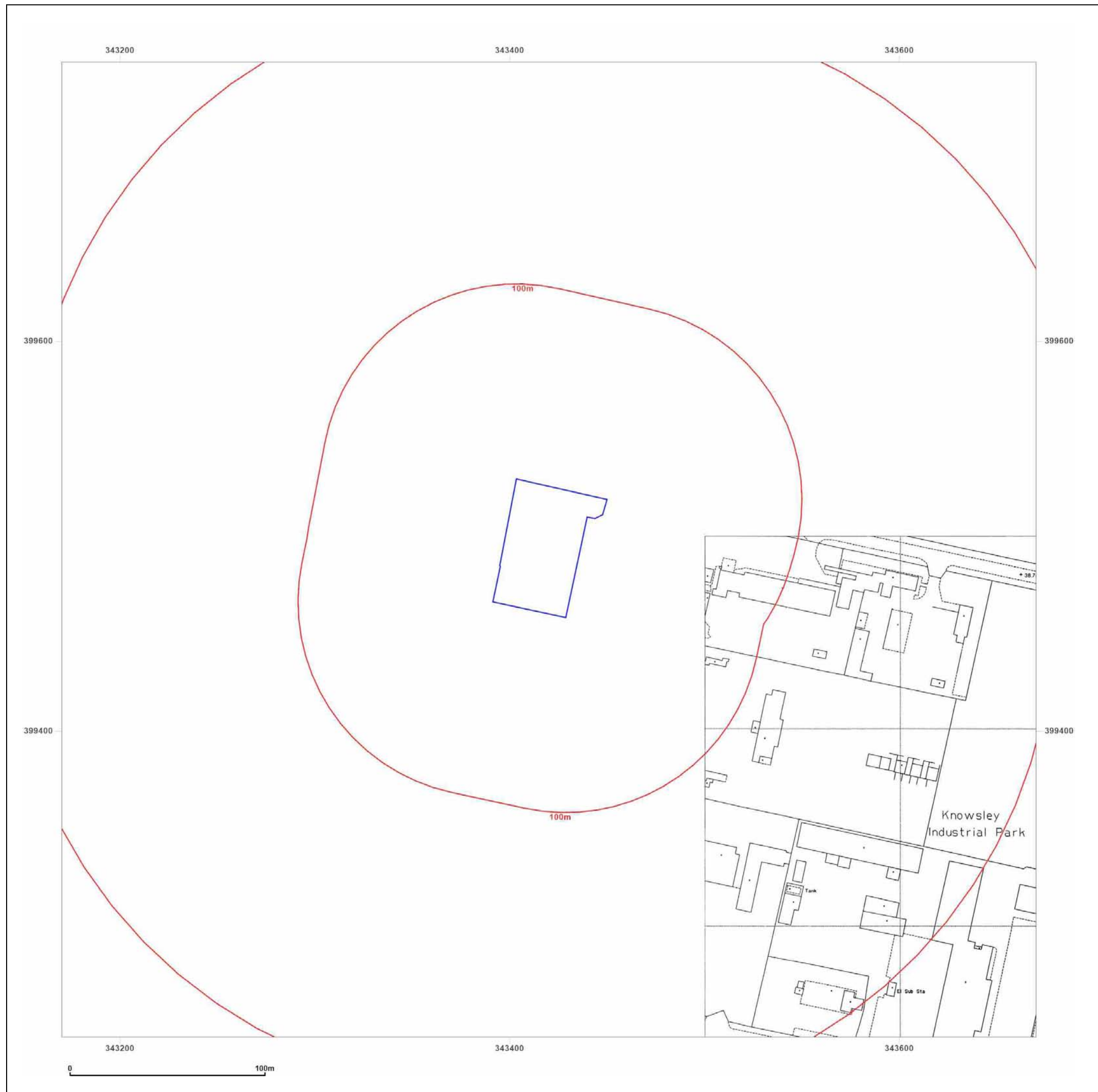
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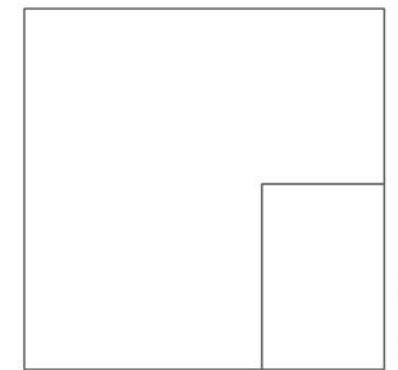
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Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: National Grid

Map date: 1994

Scale: 1:1,250

Printed at: 1:2,000



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Site Details:

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Client Ref: CMAPS-AAG-1212885-4165-180325
Report Ref: CMAPS-AAG-1212885-4165-180325HIS
Grid Ref: 343420, 399493

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



2003



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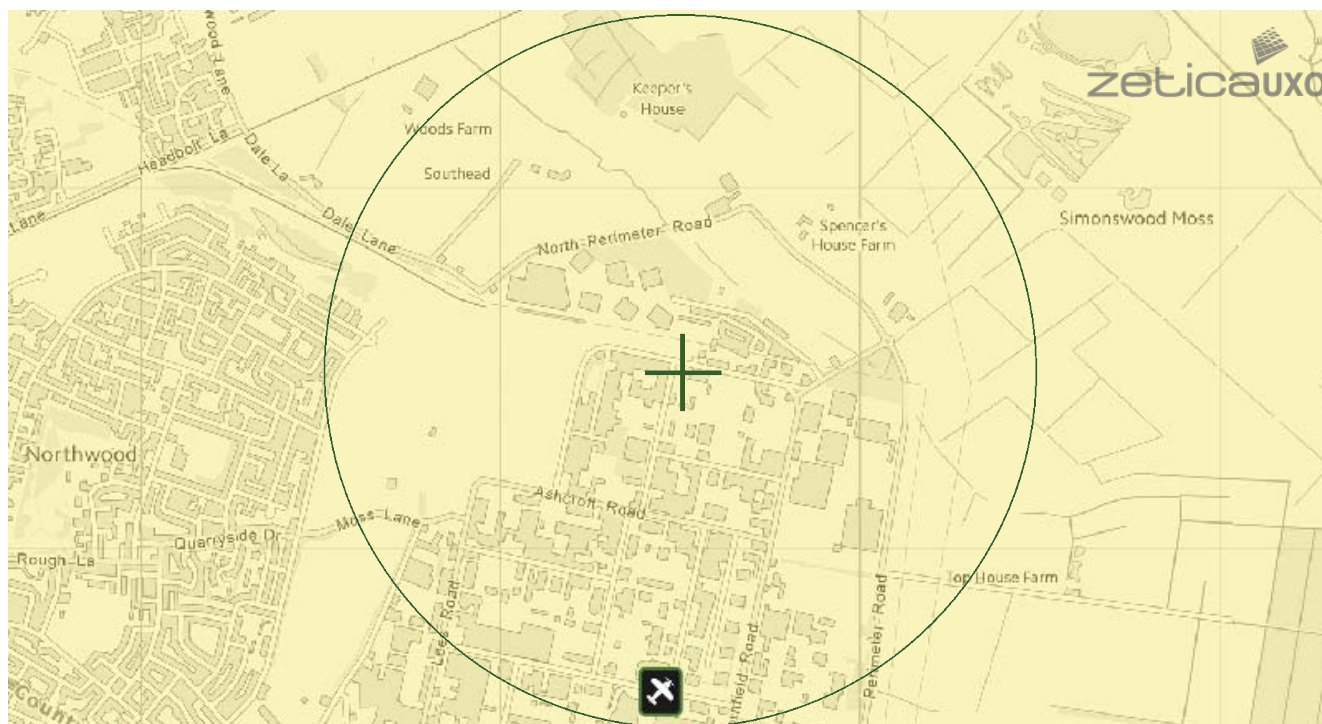


UNEXPLODED BOMB RISK MAP



SITE LOCATION

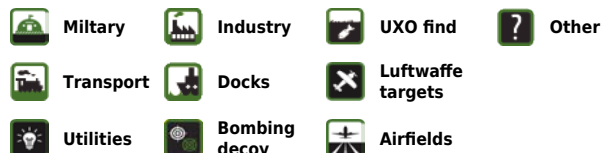
Map Centre: 343470,399494



This map principally indicates a hazard from Unexploded Bombs (UXB) due to WWII bombardment. Other sources of Unexploded Ordnance (UXO) may be present. It should be noted that this map does not represent UXO risk and should not be reported as such when reproduced.

LEGEND

- High:** Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.
- Moderate:** Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.
- Low:** Areas indicated as having 15 bombs per 1000acre or less.



How to use your Unexploded Bomb (UXB) risk map?

This map indicates the potential for UXBs to be present because of World War Two (WWII) bombing. It can be incorporated into a technical report, such as a Phase 1 Desk Study, or similar document as an indication of the potential for UXO encounter on a Site. Other sources of UXO may also be indicated, although note that these are not comprehensive and more detailed research is required to confirm their presence.

What if my Site is in a moderate or high density area?

We typically recommend that a detailed UXO desk study and risk assessment is undertaken for sites in an area with a moderate or high bombing density. Additionally, if your site is in close proximity to a strategic target, military establishment, airfield or bombing decoy, then [additional detailed research](#) is recommended.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirm that there is a low potential for UXO to be present on your site, then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

If you are unsure whether other sources of UXO may be present, you can request one of our [pre-desk study assessments \(PDSA\)](#) by emailing a site boundary and location to pdsa@zetica.com.

You should never plan site work or undertake a risk assessment using these maps alone. More detail is required, to include an assessment of the likelihood of a source of UXO hazard from other military activity not reflected on these maps.

If I have any questions, who do I contact?

tel: +44 (0) 1993 886682 email: uxo@zetica.com web: www.zeticauxo.com

The information in this UXB risk map is derived from a range of sources and should be used with the [accompanying notes on our website](#).

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APPENDIX E: SITE PHOTOGRAPHS