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PROJECT NAME

NORTH CRAY ROAD ESS

REPORT

GEO-ENVIRONMENTAL DESK STUDY REPORT (GDS)

CLIENT

DWD LTD

REFERENCE NO

C12796

C12796_North Cray Road ESS_Rev01

April 2025

REVISION RECORD				
Revision	Project No.	Date	Author(s)	Checker(s)
00	C12796	March 2025	DT	AC
01	C12796	March 2025	DT	AC
02	C12796	April 2025	DT	AC

Red Rock Geoscience Ltd
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Registered Office: East Wing, Station House, Broadclyst Station, EX5 3AS

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APPENDICES

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1 INTRODUCTION

1.1 Commission

Red Rock Geoscience Ltd ('Red Rock') was commissioned by DWD Ltd, to undertake a Phase I Desk Study investigation for a site known as North Cray Road, Sidcup.

1.2 Development Proposals

The development proposals comprise the construction of a new Energy Storage System (ESS) which will comprise of a number of ESS units and associated infrastructure.

The development is therefore a industrial scheme which will be assessed in a Commercial & Industrial Land Use.

The development proposals are enclosed in Appendix A.

1.3 Objectives

The geo-environmental objectives of this assessment were to identify the site's historical land use, potential resulting contamination and associated risks, prior to more detailed intrusive investigations and determination of possible remediation requirements in order to enable the safe development of the site.

This report comprises a desk study in general accordance with model procedures Environment Agency (2019)[1] and publication R&D66[2]. The desk study includes a conceptual model of the site which is intended for identification of specific areas where there could be the potential for ground contamination or geotechnical concerns.

It should be noted that this investigation is focused towards the proposed developments at the site and may need to be re-assessed should the development proposals be revised.

This assessment has been undertaken based on desk study findings of publicly available information on the geological and geo-environmental aspects of the site. Information from the Groundsure Report (enclosed in Appendix B) was utilised in the preparation of the desk study sections of this report.

Information from previous investigations or visits to site and surrounding area was reviewed whenever available and if relevant.

Environmental regulators use the Source-Pathway-Receptor (SPR) pollution linkage concept when assessing the risk posed by a contaminated site. For a liability to arise, each stage of the pollution linkage must be present. The desk study details the historical and current site uses and establishes the environmental sensitivity of the site thus allowing a preliminary conceptual site model identifying potential contaminant sources, migration pathways, and possible receptors to be developed. An assessment of pollutant linkages based on the findings of the desk study is also presented.

It should be noted that references to the word 'contamination' in this report do not relate to the statutory definition of Part IIA Contaminated Land (amended in 2012) in accordance with the Department of the Environment, Transport and the Regions[3]. In the context of this report a wider term is used to cover all cases

1 www.gov.uk, 2023. Land Contamination Risk Management (LCRM).
2 NHBC, Environment Agency & Chartered Institute of Environmental Health, 2008, R&D Publication 66 - Guidance for the Safe Development of Housing on Land Affected by Contamination.
3 Department of the Environment, Transport & the Regions, 2012, Environmental Protection Act 1990: Part IIA.

where the actual or suspected presence of substances in, on or under the land may cause risks to people, property, human activities or the environment, regardless of whether or not the land meets the current statutory definition of Part IIA.

Reference should be made to the 'General Notes and Limitations' included in Appendix E at the end of this report, which provide information on the procedures followed in the investigation and data assessment and explains the context within which this report should be read.

The current report was developed on the basis of the various current publications by UK policy makers, in particular the NHBC Standards[4] and model procedures by DEFRA[5].

The geo-environmental sections of this report only address potential ground contamination issues and do not include issues pertaining to ecology, habitat, flood risk, or wider environmental concerns. Appropriate professionals with expertise in these areas should be consulted.

The Groundsure Report data used as a basis for the desk study sections of this report is provided as a bespoke search of public records and is only relevant to land quality, including geological, geotechnical, and geo-environmental data. The report is the legal property of the client and as such it may be used by any third party at the discretion of the client with the understanding that it may not include publicly available data outside the scope of its initial commission. 3rd parties utilising the data for any purposes other than land quality should satisfy themselves that the data is complete and relevant to their purposes. Red Rock Geoscience Ltd can accept no liability for the use of the Groundsure Report data for any other purposes than the initial Phase 1 Desk Study review.

[4] NHBC, 2023, Standards.

[5] https://www.gov.uk/guidance/land-contamination-how-to-manage-the-risks, based on Environment Agency, 2016, Model procedures for the management of land contamination. Contaminated Land Report 11.

2 DESK STUDY

2.1 Site Description

The site comprises an open, grassed field located near the village of North Cray near Sidcup, access is gained to the site via an asphalt surfaced track from the A223 of approximately 300 m length. This led to an area of isolated residential dwellings and farm buildings around a concrete yard. From here, a grass track , 250 m long and sloping down to the south, led to the main area of the site.

This consisted of a grassed field that was noted to slope down gently from the north east levelling out to the west. A slightly raised earth track was observed running through the center of the site and an area of bare earth were noted to the north and south of the site where plant/equipment had been stored. Offsite to the south of the site a large area of poly tunnels were noted with bunds of soil, excavations and limited burning seen. Adjacent to the north east, an area that appeared to have been used for keeping horses/livestock was present and was noted to have been cut into the hillside by approximately 2-3 m.

The site occupies approximately 6.7 ha and is centred on National Grid Reference 548837E, 171000N.

2.2 Potentially Contaminative Land Use

Assessment of Historical Mapping

The site history has been assessed using various Ordnance Survey historical maps from source scales 1:2,500, 1:10,000, and 1:10,560 enclosed in Appendix B.

Table 2.1: Assessment of Historical Mapping

The site has comprised a largely undeveloped field since the earliest mapping available. Manor Farm lies to the north of the main site area and shows minor development up to the present day. In the 19th century development of the surrounding area was also limited with hamlets and villages in the surrounding area. A chalk pit was marked from the 1800's up until 1973 roughly 750 m to the south east.
Throughout the 20th century development of the surrounding area was noted to increase with Sidcup expanding to the west and south of the site. An orchard was marked adjacent to the west from 1908 to 1950 along with a poultry farm in a similar area from 1961 to 1988. A track running north to south through the middle of the site is shown from 1961 to the present day.

Trade Entries, Permits and Discharges

An assessment of potential trade entries, permits, and discharges with contaminative land use implications for the site was undertaken based on the information contained within the Groundsure Report, the topography of the area, and the nature of any potential contaminative land use identified. The assessment is summarised in the following table.

Table 2.2: Trade Entries, Permits and Discharges

Industrial Sites	
Tanks	One tank was identified 250 m of the site, 127 m to the north
Energy	One energy feature was identified within 250 m as an electrical sub-station 202 m to the north west.

Table 2.2: Trade Entries, Permits and Discharges	
Fuel Storage/ Motor Services	No fuel depots / stations, or motor vehicle repair garages at locations likely to have impacted the site.
Trade Entries	Three industrial land uses are noted within the surrounding area as an Electrical and electronic engineers (178 m north east), Construction and tool hire (196 m north west) and the electricity substation (201 m north west).
Military Sites	No military sites or activities at locations likely to have impacted the site.
Permits, Incidents, and Registers	
Contaminated Land Part IIA	The site has not been identified as contaminated land un Part IIA.
Pollution Prevention and Control Sites	None identified at locations likely to have impacted the site.
Discharge Consents	None identified at locations likely to have impacted the site.
Registered Radioactive Substances	None identified at locations likely to have impacted the site.
Sites Storing Hazardous Substances	None identified at locations likely to have impacted the site.
Environment Agency Recorded Pollution Incidents	None identified at locations likely to have impacted the site.
Waste & Infilled Land	
Waste Management	None identified at locations likely to have impacted the site.
Potentially infilled land	The Groundsure report identifies an area of potentially infilled land 212 m to the north.

2.3 Geological Setting

Geology

Published geological information was obtained from the British Geological Survey and from the Groundsure Report information.

Table 2.3: Geology	
Solid Geology	The solid geology beneath the site comprises the chalk of the Lewes nodular chalk formation, Seaford chalk formation and Newhaven chalk formation (undifferentiated) of Turonian geological age. The north eastern corner is shown to be underlain by the sand of the Thanet Formation of the Thanetian age.
Superficial Geology	Published geological information from the British Geological Survey indicates that head deposits are present beneath the site, likely to comprise clays, silts, sands and gravels.

Table 2.3: Geology	
Linear Features	No geological line features (i.e., fault lines) were identified on or adjacent to the site.
Artificial Ground (i.e., disturbed ground, landslips)	Areas of Made and Worked Ground are shown within the surrounding area with an area of worked ground shown 16 m north where the rock is described as a void.

Natural Subsidence Hazards

Information on subsidence hazards for the site obtained from the Groundsure Report has shown that the site is of high risk of ground dissolution features and of moderate risk of clays susceptible to volume change.

Risks from other causes of subsidence are shown to be of generally negligible to low risk. However, this information is based on large scale mapping and, consequently, a low level of detail is achieved with regard to the assessment of potential for subsidence hazards.

Mining & Quarrying

Mining and quarrying information was obtained from the Groundsure Report.

Table 2.4: Mining & Quarrying	
Metalliferous Mining & Mining Cavities	No mines or mining cavities identified within 250m of the site. Two features are shown within the surrounding 500 m for chalk mining.
Coal Mining	None identified on the site or surrounding area.
Natural Cavities	None identified within 250m of the site.
Quarrying	Evidence of historical quarrying was not identified within the surrounding area however surface workings within the surrounding area with an unspecified pit located 146 m to the north and cemetery 200 m to the north..

Estimated Topsoil Geochemistry

The estimated soil geochemistry is based on the National Soil Chemistry dataset maps geometric mean ambient background concentrations (ABCs) for PHEs in rural topsoils. These classifications are created by mapping British Geological Survey (BGS) rural soil chemistry data within delineations of parent material (bedrock and superficial geology). This allows the estimation of soil / sediment concentrations of potentially harmful chemical elements (PHEs) which include arsenic (As), cadmium (Cd), chromium (Cr), nickel (Ni), and lead (Pb). The PHE concentrations are based on local averages for each geological unit.

The following table shows a comparison between the current guideline values applicable to the development proposals and the BGS estimated background concentrations in topsoils of natural origin.

Table 2.5: Potentially Harmful Chemical Elements (PHEs) in Topsoil			
PHE	**BGS Estimated Concentrations**	**Land Use & Guidelines**	**Comments**
Arsenic	Up to 16 mg/kg	Commercial & Industrial Land Use: Arsenic (640.0mg/kg), Cadmium (230.0mg/kg), Chromium (total	Below guideline value
Cadmium	<1.8 mg/kg		Below guideline value

Table 2.5: Potentially Harmful Chemical Elements (PHEs) in Topsoil			
PHE	**BGS Estimated Concentrations**	**Land Use & Guidelines**	**Comments**
Chromium	Up to 72 mg/kg	8,600.0mg/kg), nickel (980.0mg/kg), and lead (6,000.0mg/kg)	Below guideline value
Nickel	Up to 25 mg/kg		Below guideline value
Lead	< 100 mg/kg		Below guideline value

The estimated soil geochemistry maps are included in the Groundsure Report in Appendix B.

2.4 Ground Gas

The CIRIA 665[6] Publication identifies the most likely sources of ground gas which are varied and are assessed below in view of the conditions of the subject site.

Table 2.6: Ground Gas Potential	
Radon Gas Radon is a gas derived from the natural degradation of uranium-containing rocks. Long-distance migration tends to occur through fissures / fractures within bedrock geological materials.	The site is located within an area where between 1 and 3% of homes are above the action level, and no radon protective measures are required.
Waste Sites (Landfills etc) The biodegradation of organic materials contained within the landfill waste include methane, carbon dioxide, and traces such as VOCs, hydrogen sulphide and carbon monoxide.	No potential source identified within 250m of the site.
Burial Grounds Gases typically generated from corpse decomposition are predominantly carbon dioxide and methane and trace gas especially if the burial ground is in waterlogged or moist / damp conditions. The distance to which gas migrates depends on the ground conditions. Long-distance migration tends to occur through fissures / fractures within consolidated geological materials while unconsolidated deposits tend to encourage short-distance migration.	A cemetery and graveyards were identified roughly 200 m of the site to the north however given that the main portion of the site lies another 100 m south it is considered unlikely that this would pose a source of ground gas.
Made Ground Made Ground containing degradable material such as wood, paper, rags and vegetation with ash, clinker, brick, and concrete fragments etc., could potentially be a source of ground gas. The potential for gas generation from Made Ground materials tend to be low although there is a potential for small but sustained volumes of gas. Where the Made Ground contains elevated concentrations of carbon-rich materials, there is a potential for the ground gas (i.e., methane, carbon dioxide, etc.) to be higher.	Significant infilling (Made Ground) was not identified in the surrounding area and features identified likely to be of inert nature and unlikely to be a significant source of ground gas.

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

Table 2.6: Ground Gas Potential	
Spills, Leaks and Discharges Spillages or leakages of petroleum hydrocarbons from vehicles, machinery, and trams can give rise to contaminated soils but also their associated volatile components may cause hydrocarbon vapour emissions. Hydrocarbons in the ground at elevated concentrations can also be highly flammable.	No potential source identified within 250m of the site.
Organic-Rich Deposits (Alluvium, peat / coal, marshland, or tidal areas) Methane from these sources is produced by microbial decay of the organic content under anaerobic conditions (i.e., waterlogged vegetation). Carbon dioxide is the result of acid reaction on the carbonate fraction of alluvial soils and also by methane oxidation. Potential trace gases include hydrogen sulphide and light hydrocarbons.	Significant Alluvium deposits are shown to lie around 500 m to the west associated with the River Cray. However, while some organic content is possible, this distance from the site is considered to great too pose a risk to the site.
Ground Gas Assessment Required?	Further ground gas assessment not required.

2.5 Groundwater and Surface Water Setting

Groundwater and Surface Water Receptors

An assessment of the groundwater vulnerability and presence of potential critical receptors with respect to the water resources was undertaken based on the Groundsure Report information and historical maps.

Table 2.7: Groundwater and Surface Water Receptors	
Water Features	The River Cray flows approximately 500m to the west of the site. A pond is identified adjacent to the south to the site.
Superficial (Drift) Permeable loose deposits (i.e., sands and gravels)	Secondary Undifferentiated Aquifer comprising variable geology.
Bedrock Solid permeable formations (i.e., sandstone, chalk and limestone)	Principal Aquifer (Previously Major Aquifer) comprising geology with high inter-granular and/or fracture permeability usually provide a high level of water storage and may support water supply and/or river base flow on a strategic scale.
Industrial / Agricultural Water Abstractions	Two groundwater abstractions were identified within the surrounding 1 km located 283 m and 364 m south for irrigation purposes.
Potable (Drinking) Water Abstractions	None identified at locations likely to be impacted by activities on the site.
Groundwater Protection Zones	The site was identified to lie within Zone 2 (Outer Catchment) of a Source Protection Zon (SPZ). .

Surface and Groundwater Flows

Topographically the site slopes gently down towards the west. Surface water flows are likely to largely mimic the topographical gradients, and flow westwards towards the River Cray.

Groundwater flows are locally dependent on the fracturing and fissuring of the bedrock and can be locally variable but would also be expected to flow to the west.

2.6 Protected Sensitive Land Use

The site is not within a protected sensitive land use however is situated with in an area of Green Belt as well as a Nitrate Vulnerable Zone (areas where groundwater is sensitive to nitrate pollution). However, within the surrounding area the River Cray is a site of special scientific interest while areas of designated ancient woodland, these are both located approximately 500 m away.

2.7 Unexploded Ordnance (UXO)

The Unexploded bomb risk maps for the area were consulted to check the potential for UXO to be present as a result of World War Two (WWII) bombing. This indicates that the UXO potential of the site is low.

The UXO risk map is enclosed in Appendix C.

3 CONCEPTUAL MODEL

3.1 Introduction

Environmental regulators use the 'Source-Pathway-Receptor (SPR) pollution linkage' concept when assessing the risk posed by a contaminated site. For a liability or risk to arise each stage of the pollution linkage must be present.

The following Conceptual Site Model (CSM) is based on the findings of the desk study research detailed above. The CSM identifies potential contaminant sources at the site, the possible pathways for these contaminants to leave the site, and the human and environmental receptors in the vicinity of the site.

The main functions of the CSM are to establish the nature and potential impact of any ground contamination present, to provide a tool for assessing risk by identifying where a complete pollution linkage is present and, where necessary, to provide a basis for planning effective targeted investigations.

3.2 Potential Contamination Sources

The following was noted as potential contaminative sources:

- The majority of the site has been largely undeveloped throughout its history and while isolated sources (substation, surrounding industry, historic tanks) have been identified within the surrounding area as well as a small area of reworked ground to the north these are not considered likely to pose a risk to the site in context of the proposed development. In view of the proposed land use, it is considered that the likelihood of contaminants to be present at concentrations likely to pose an unacceptable risk to future site users is low.
- Areas of the proposed cable route are likely to be underlain by made ground and standard best practice for groundworkers be adopted when working on a brownfield site should be followed.

3.3 Potential Critical Receptors & Pathways

In view of the proposals, the site is being considered within a Commercial & Industrial Land Use which considers the following critical receptors.

Table 3.1: Critical Receptors & Pathways

Critical Receptors		**Pathways**
Human Receptors	Future Site Residents and / or Users Site Workers Neighbours	Commercial & Industrial Land Use: Ingestion, dermal contact and inhalation of contaminated soils, dust, water, and gas
Fauna & Flora	On-site Fauna and Flora Off-site Fauna and Flora	Contaminant uptake and ingestion of contaminated plants and water
Water Resources	Nearby streams and surface water bodies Groundwater table / Aquifer Water abstractions	Leakages of contaminated drains and contaminant migration through the soils into surface water, groundwater, or water abstractions

Table 3.1: Critical Receptors & Pathways

Critical Receptors		**Pathways**
Future Built Environment	Damage to concrete structures and pipework by potential aggressive substances within the groundwater and soils	Damage to physical integrity of future built structures

3.4 Risk Assessment of Pollutant Linkages

A number of exposure pathways link the contamination to the receptor and potential risks are dependent on active pathways. The qualitative assessment of potential pollutant linkages based on the desk study information involves the matching of the identified sources of contamination to the receptors through the possible migration pathways according to the table of risk phrases and matrices enclosed in Appendix D. These links must be completed for there to be any risk associated with the site and its development.

This assessment is presented in terms of the Source (S), Pathway (P) and Receptor (R) concept and applying a qualitative value judgement to this appraisal. The assessment assigns a level of risk to each SPR link based on the probability and potential consequence of the risk being realised. Table 3.2 summarises the risk assessment for the site.

Table 3.2: Geo-Environmental Risk Assessment

Receptors	Contaminant Sources	Probability of Pollutant Linkage Being Present	Severity of Consequence if Contaminant and Pollutant Linkage Present	Risk Assessment	Recommendations
Human Health	Standard metals, metalloids, and hydrocarbons ubiquitous in the urban areas and in Made Ground.	2 - UNLIKELY (Pollutant linkage may be present, but the circumstances are such that an event is improbable, even in the long term)	4 - MEDIUM (Chronic human health effects)	VERY LOW RISK (Probability x Severity = 6 to 9)	The risk has been classified as NEGLIGIBLE or VERY LOW. Contamination unlikely and further assessment not required. Personal protective equipment during all site works recommended as good practice.
	Asbestos: Asbestos sources not identified	1 - NO RISK IDENTIFIED (No contaminative sources or contaminants identified above guideline values likely to pose a risk to human health)	5 - SEVERE (Acute or fatal human health effects)	NEGLIGIBLE RISK (Probability x Severity = 1 to 5)	Potential asbestos sources not identified. Further assessment not required.

Table 3.2: Geo-Environmental Risk Assessment

Receptors	Contaminant Sources	Probability of Pollutant Linkage Being Present	Severity of Consequence if Contaminant and Pollutant Linkage Present	Risk Assessment	Recommendations
Human Health - Ground Gas	**Radon:** The site is within an area unlikely to be affected by radon gas.	1 - NO RISK IDENTIFIED (No contaminative sources or contaminants identified above guideline values likely to pose a risk to human health)	4 - MEDIUM (Chronic human health effects)	NEGLIGIBLE RISK (Probability x Severity = 1 to 5)	Radon protection not required.
	Areas of infilled ground and Alluvium	2 - UNLIKELY (Pollutant linkage may be present, but the circumstances are such that an event is improbable, even in the long term)	1 - NONE IDENTIFIED (Human health effects not expected)	NEGLIGIBLE RISK (Probability x Severity = 1 to 5)	Given the nature of the proposed development a viable contaminant linkage has not been identified. Further assessment not required.
Flora and Fauna	Standard metals, metalloids, and hydrocarbons ubiquitous in the urban areas and in Made Ground. No visual signs of vegetation distress or any indication that soils may be toxic to Fauna or Flora. Any impact to vegetation would be localised in nature.	1 - NO RISK IDENTIFIED (No contaminative sources or contaminants identified likely to pose a risk to Fauna and Flora)	3 - MILD (Damage to non-sensitive ecosystems or species)	NEGLIGIBLE RISK (Probability x Severity = 1 to 5)	The risk has been classified as NEGLIGIBLE or VERY LOW. Contamination with potential to affect Flora and Fauna unlikely and further assessment not required in view of the expected ground conditions and proposals.

Table 3.2: Geo-Environmental Risk Assessment

Receptors	Contaminant Sources	Probability of Pollutant Linkage Being Present	Severity of Consequence if Contaminant and Pollutant Linkage Present	Risk Assessment	Recommendations
Water Resources	Standard metals, metalloids, and hydrocarbons ubiquitous in the urban areas and in Made Ground. Presence of contamination in concentrations likely to pose a risk to water resources not expected.	1 - NO RISK IDENTIFIED (No contaminative sources or contaminants identified likely to pose a risk to the water resources)	4 - MEDIUM (Pollution of sensitive controlled waters)	NEGLIGIBLE RISK (Probability x Severity = 1 to 5)	The risk has been classified as NEGLIGIBLE or VERY LOW. Contamination with potential to affect the water resources unlikely and further assessment not required in view of the expected ground conditions and proposals.
Future Built Environment	Standard metals, metalloids, and hydrocarbons ubiquitous in the urban areas and in Made Ground.	1 - NO RISK IDENTIFIED (No contaminative sources or contaminants identified likely to pose a risk to the future built environment)	1 - NONE IDENTIFIED (Effects to the physical integrity of buildings or structures not expected)	NEGLIGIBLE RISK (Probability x Severity = 1 to 5)	The risk has been classified as NEGLIGIBLE or VERY LOW. Contamination with potential to affect the future built environment unlikely and further assessment not required in view of the expected ground conditions and proposals.

4 RECOMMENDATIONS

4.1 Geo-Environmental Considerations

Desk study findings indicate that the likelihood of extensive contamination on the site is low and unlikely to pose a risk to future site users/workers in view of the expected ground conditions and the development proposals. The site is generally considered of Low risk, and an intrusive investigation and assessment is not required with respect to risks to human health or the environment.

4.2 Ground Gas

The site is within an area not affected by radon gas. No radon protection is required for the development.

The site is within an area not affected by landfill / methane / carbon dioxide / hydrocarbon gas. Further ground gas assessment is not required.

4.3 Unidentified Contamination

In addition, the following are general recommendations:

- Adequate precautions and appropriate personal hygiene and safety protocols should be employed by all construction workers on site at all times.
- Regular inspections should be carried out by ground workers during any excavation work, and advice should be sought in the event that unexpected ground conditions are encountered. Should any visual or olfactory signs of contamination be found during construction works, soils should be tested and assessed.
- Should further testing and assessment identify areas of unacceptable risk, appropriate remedial measures would need to be implemented. A detailed remediation strategy should be prepared, any remedial works and associated clean-up levels would need to be discussed with and approved by the Regulatory Authorities. Additionally, a Validation Statement would need to be prepared upon completion of any remedial works, detailing the works undertaken and the results of the associated validation testing.

4.4 Geotechnical Considerations

Near surface ground conditions are likely to comprise Chalk bedrock overlain by superficial head deposits. On the basis of the desk study data:

The Desk study identified the potential for natural subsidence hazards as a result of dissolution features within the chalk bedrock, an area of voiding was indicated adjacent to the north east of the site although no signs of this were identified during the walkover. We would recommend that as a precaution a geophysical study of the main site area should be undertaken, this may need to be supplemented by an appropriate ground investigation if any indication of voiding is detected. It is expected that any geophysical/geotechnical surveys required will be carried out at detailed design stage as part of a suitably worded pre-commencement planning condition.

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Appendix A. DEVELOPMENT PROPOSALS

A0

Revisions:

Revision	Date	Revision Notes	Drawn	Inspected
01	16.01.25	First Issue	CS	JH
02	20.01.25	Revised Substation	CS	JH
03	27.02.25	Layout Updated	CS	JH
04	04.03.25	Layout Updated	HL	JH
05	26.03.25	RLB & Access Amended	CS	JH
06	31.03.25	RLB & Access Amended	CS	JH

LEGEND:

PLANNING APPLICATION BOUNDARY

WATERCOURSE

MAINTENANCE ACCESS

SITE ACCESS

EMERGENCY ACCESS

DNO ACCESS

SECURITY FENCELINE

ELE — HV 132kV OVERHEAD ELEC CABLE 132kV ELE — HV 132kV

ELE — HV 33kV OVERHEAD ELEC CABLE 33kV ELE — HV 33kV

ELE — HV — ELE OVERHEAD ELEC CABLE 11kV ELE — HV — ELE

GAS — GAS — GAS MEDIUM PRESSURE GAS GAS — GAS — GAS

TEL — TEL — TEL BT TELECOMS TEL — TEL — TEL

ELE — HV — ELE UNDERGROUND ELEC CABLE ELE — HV — ELE

ELE — HV 33kV UNDERGROUND ELEC CABLE 33kV ELE — HV 33kV

SITE INFRASTRUCTURE:

- SECURITY GATE
- 132kV SUBSTATION
- CCTV CAMERA
- DNO CONTROL ROOM
- TWIN SKID (TX)
- 240,000l WATER TANK & PUMP
- ESS UNIT
- SCS INVERTER
- ESS INTERFACE CABINET
- 40FT STORAGE CONTAINER
- CUSTOMER SWITCHROOM
- 40FT WELFARE OFFICE
- WATER HYDRANT

VEGETATION:

- CATEGORY A TREE GROUP
- CATEGORY B TREE GROUP
- CATEGORY C TREE GROUP
- BRANCH SPREAD
- ROOT PROTECTION AREA (RPA)
- FIRST SIGNIFICANT BRANCH DIRECTION

PL-02

N

Project:

North Cray Road

North Cray Road ESS
Sidcup, DA14 5HE

Applicant:

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Status:

PLANNING

Drawing Title:

North Cray Road Sidcup ESS
Proposed Site Layout Plan (Overall)

Drawn:	Checked:	First Issued:
CS	JH	16.01.2025

Project Code:	Drawing Number:
FST029-	PL-01

Sheet Size:	Scale:	Revision:
A0	1:2500	06

1 NORTH CRAY ROAD - PROPOSED SITE LAYOUT PLAN (OVERALL)

Scale: 1:2500@A0

0 50 100 150 200 250m

SCALE 1:2500

Appendix B. GROUNDSURE SURVEY DATA

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

North Cray Road, Bexley

Order Details

Date: 19/03/2025

Your ref: C12796 North Cray Road, Sidcup

Our Ref: GS-L94-MSN-22C-LPV

Site Details

Location: 548842 171008

Area: 7.05 ha

Authority: London Borough of Bexley ↗

Contact us with any questions at:
info@groundsure.com ↗
01273 257 755

Certified B Corporation

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 >	0	0	11	1	-
16 >	1.2 >	Historical tanks >	0	0	1	2	-
17 >	1.3 >	Historical energy features >	0	0	1	2	-
17	1.4	Historical petrol stations	0	0	0	0	-
17	1.5	Historical garages	0	0	0	0	-
18	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
19 >	2.1 >	Historical industrial land uses >	0	0	13	1	-
20 >	2.2 >	Historical tanks >	0	0	1	3	-
21 >	2.3 >	Historical energy features >	0	0	1	3	-
21	2.4	Historical petrol stations	0	0	0	0	-
21	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
22	3.1	Active or recent landfill	0	0	0	0	-
22	3.2	Historical landfill (BGS records)	0	0	0	0	-
23	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
23	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
23	3.5	Historical waste sites	0	0	0	0	-
23	3.6	Licensed waste sites	0	0	0	0	-
23 >	3.7 >	Waste exemptions >	0	0	1	1	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
25 >	4.1 >	Recent industrial land uses >	0	0	3	-	-
26	4.2	Current or recent petrol stations	0	0	0	0	-
26	4.3	Electricity cables	0	0	0	0	-
26	4.4	Gas pipelines	0	0	0	0	-
26	4.5	Sites determined as Contaminated Land	0	0	0	0	-

26	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
27	4.7	Regulated explosive sites	0	0	0	0	-
27	4.8	Hazardous substance storage/usage	0	0	0	0	-
27	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
27	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
27	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
28	4.12	Radioactive Substance Authorisations	0	0	0	0	-
28 >	**4.13 >**	**Licensed Discharges to controlled waters >**	0	0	0	1	-
28	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
28	4.15	Pollutant release to public sewer	0	0	0	0	-
29	4.16	List 1 Dangerous Substances	0	0	0	0	-
29	4.17	List 2 Dangerous Substances	0	0	0	0	-
29	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
29	4.19	Pollution inventory substances	0	0	0	0	-
29	4.20	Pollution inventory waste transfers	0	0	0	0	-
30	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	**Hydrogeology >**	On site	0-50m	50-250m	250-500m	500-2000m
31 >	**5.1 >**	**Superficial aquifer >**	Identified (within 500m)				
33 >	**5.2 >**	**Bedrock aquifer >**	Identified (within 500m)				
35 >	**5.3 >**	**Groundwater vulnerability >**	Identified (within 50m)				
38 >	**5.4 >**	**Groundwater vulnerability- soluble rock risk >**	Identified (within 0m)				
38	5.5	Groundwater vulnerability- local information	None (within 0m)				
39 >	**5.6 >**	**Groundwater abstractions >**	0	0	0	3	26
46 >	**5.7 >**	**Surface water abstractions >**	0	0	0	0	4
47 >	**5.8 >**	**Potable abstractions >**	0	0	0	0	10
49 >	**5.9 >**	**Source Protection Zones >**	2	0	0	1	-
49	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	**Hydrology >**	On site	0-50m	50-250m	250-500m	500-2000m
50	6.1	Water Network (OS MasterMap)	0	0	0	-	-

50 >	6.2 >	Surface water features >	0	1	0	-	-
51 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
51 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
52 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
53	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
53	7.2	Historical Flood Events	0	0	0	-	-
53	7.3	Flood Defences	0	0	0	-	-
54	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
54	7.5	Flood Storage Areas	0	0	0	-	-
55	7.6	Flood Zone 2	None (within 50m)				
55	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
56 >	8.1 >	Surface water flooding >	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
58 >	9.1 >	Groundwater flooding >	Moderate (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
59 >	10.1 >	Sites of Special Scientific Interest (SSSI) >	0	0	0	0	1
60	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
60	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
60	10.4	Special Protection Areas (SPA)	0	0	0	0	0
60	10.5	National Nature Reserves (NNR)	0	0	0	0	0
61 >	10.6 >	Local Nature Reserves (LNR) >	0	0	0	1	1
61 >	10.7 >	Designated Ancient Woodland >	0	0	1	4	6
62	10.8	Biosphere Reserves	0	0	0	0	0
62	10.9	Forest Parks	0	0	0	0	0
62	10.10	Marine Conservation Zones	0	0	0	0	0
62 >	10.11 >	Green Belt >	1	0	0	1	4
63	10.12	Proposed Ramsar sites	0	0	0	0	0

63	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
63	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
63	10.15	Nitrate Sensitive Areas	0	0	0	0	0
64 >	10.16 >	Nitrate Vulnerable Zones >	1	0	0	0	0
65 >	10.17 >	SSSI Impact Risk Zones >	2	-	-	-	-
66 >	10.18 >	SSSI Units >	0	0	0	0	1
Page	Section	Visual and cultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
68	11.1	World Heritage Sites	0	0	0	-	-
69	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
69	11.3	National Parks	0	0	0	-	-
69	11.4	Listed Buildings	0	0	0	-	-
69 >	11.5 >	Conservation Areas >	0	0	1	-	-
70	11.6	Scheduled Ancient Monuments	0	0	0	-	-
70 >	11.7 >	Registered Parks and Gardens >	0	0	1	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
71 >	12.1 >	Agricultural Land Classification >	Urban (within 250m)				
72	12.2	Open Access Land	0	0	0	-	-
72	12.3	Tree Felling Licences	0	0	0	-	-
72	12.4	Environmental Stewardship Schemes	0	0	0	-	-
73	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations >	On site	0-50m	50-250m	250-500m	500-2000m
74 >	13.1 >	Priority Habitat Inventory >	0	0	9	-	-
75	13.2	Habitat Networks	0	0	0	-	-
75	13.3	Open Mosaic Habitat	0	0	0	-	-
75	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
76 >	14.1 >	10k Availability >	Identified (within 500m)				
77 >	14.2 >	Artificial and made ground (10k) >	1	1	2	2	-
79 >	14.3 >	Superficial geology (10k) >	1	0	0	3	-

80	14.4	Landslip (10k)	0	0	0	0	-
81 >	14.5 >	Bedrock geology (10k) >	2	1	1	1	-
82	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
83 >	15.1 >	50k Availability >	Identified (within 500m)				
84 >	15.2 >	Artificial and made ground (50k) >	0	1	2	1	-
85	15.3	Artificial ground permeability (50k)	0	0	-	-	-
86 >	15.4 >	Superficial geology (50k) >	1	0	0	3	-
87 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
87	15.6	Landslip (50k)	0	0	0	0	-
87	15.7	Landslip permeability (50k)	None (within 50m)				
88 >	15.8 >	Bedrock geology (50k) >	2	1	1	2	-
89 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
89	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
90 >	16.1 >	BGS Boreholes >	0	0	1	-	-
Page	Section	Natural ground subsidence >					
91 >	17.1 >	Shrink swell clays >	Moderate (within 50m)				
93 >	17.2 >	Running sands >	Low (within 50m)				
95 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
96 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
97 >	17.5 >	Landslides >	Very low (within 50m)				
99 >	17.6 >	Ground dissolution of soluble rocks >	High (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
101 >	18.1 >	BritPits >	0	0	0	1	-
102 >	18.2 >	Surface ground workings >	0	0	7	-	-
102	18.3	Underground workings	0	0	0	0	0
103	18.4	Underground mining extents	0	0	0	0	-
103	18.5	Historical Mineral Planning Areas	0	0	0	0	-

103 >	18.6 >	Non-coal mining >	2	1	1	6	14
106	18.7	JPB mining areas	None (within 0m)				
106	18.8	The Coal Authority non-coal mining	0	0	0	0	-
106 >	18.9 >	Researched mining >	0	0	0	2	-
107	18.10	Mining record office plans	0	0	0	0	-
107	18.11	BGS mine plans	0	0	0	0	-
107	18.12	Coal mining	None (within 0m)				
107	18.13	Brine areas	None (within 0m)				
107	18.14	Gypsum areas	None (within 0m)				
108	18.15	Tin mining	None (within 0m)				
108	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes >	On site	0-50m	50-250m	250-500m	500-2000m
109	19.1	Natural cavities	0	0	0	0	-
110 >	19.2 >	Mining cavities >	0	0	0	2	4
110	19.3	Reported recent incidents	0	0	0	0	-
110	19.4	Historical incidents	0	0	0	0	-
Page	Section	Radon >					
112 >	20.1 >	Radon >	Between 1% and 3% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
114 >	21.1 >	BGS Estimated Background Soil Chemistry >	8	18	-	-	-
115 >	21.2 >	BGS Estimated Urban Soil Chemistry >	21	16	-	-	-
117	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
118	22.1	Underground railways (London)	0	0	0	-	-
118	22.2	Underground railways (Non-London)	0	0	0	-	-
118	22.3	Railway tunnels	0	0	0	-	-
118	22.4	Historical railway and tunnel features	0	0	0	-	-
118	22.5	Royal Mail tunnels	0	0	0	-	-
119	22.6	Historical railways	0	0	0	-	-

119	22.7	Railways	0	0	0	-	-
119	22.8	Crossrail 2	0	0	0	0	-
119	22.9	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 30/04/2022

Site Area: 7.05ha

Recent site history - 2019 aerial photograph

Capture Date: 29/06/2019

Site Area: 7.05ha

Recent site history - 2015 aerial photograph

Capture Date: 09/08/2015

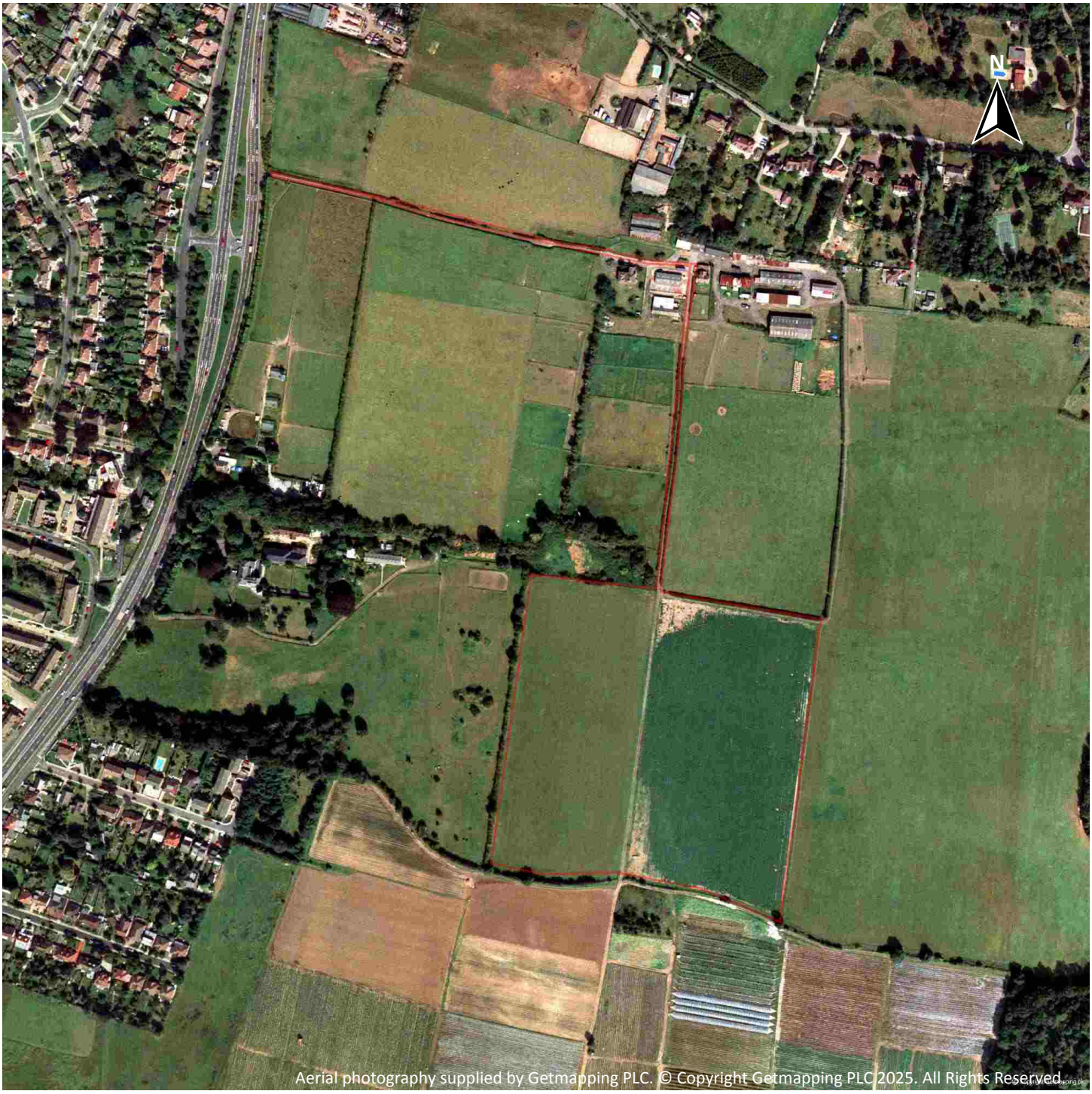
Site Area: 7.05ha

Recent site history - 2012 aerial photograph

Capture Date: 25/05/2012

Site Area: 7.05ha

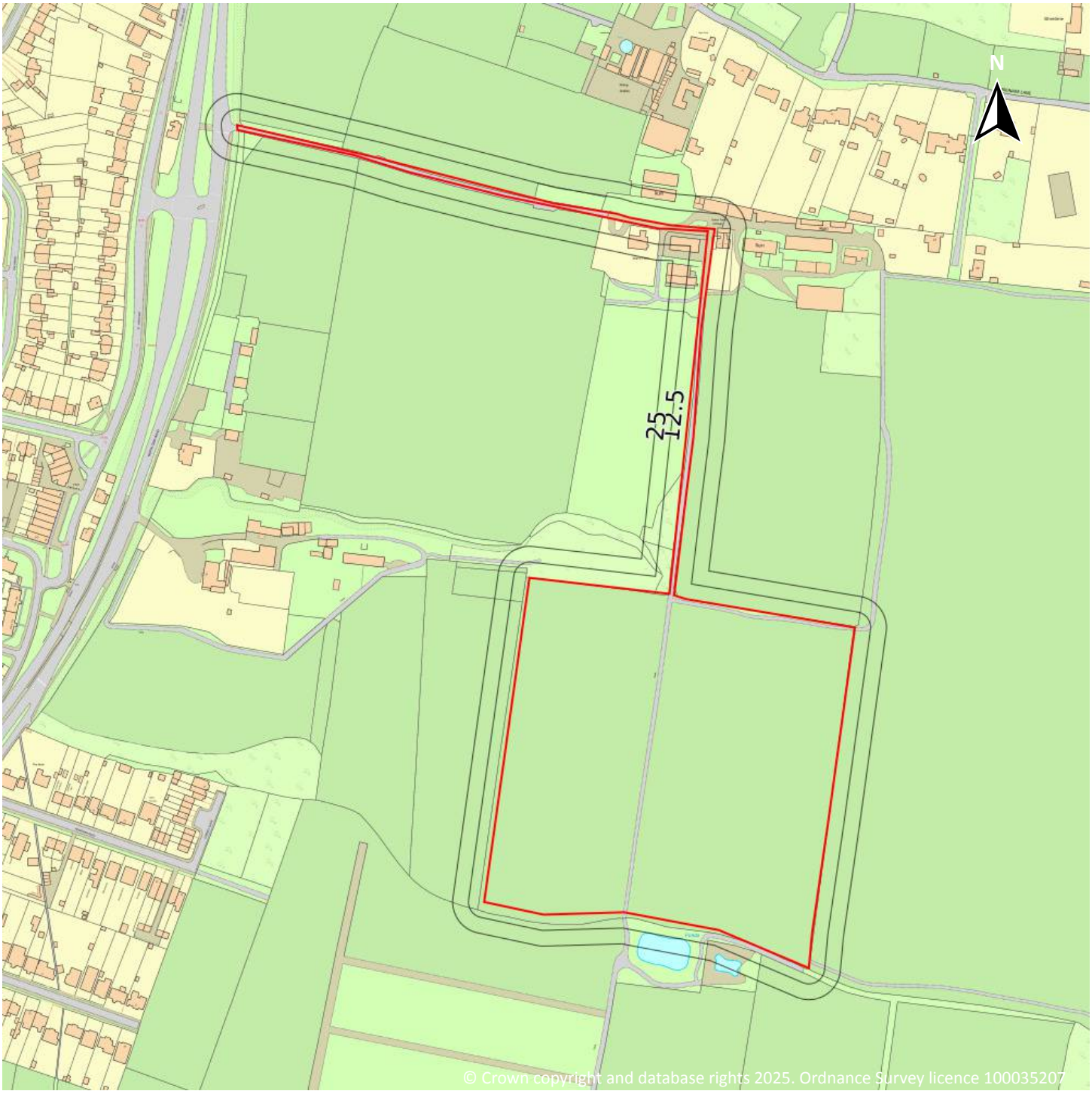
Recent site history - 1999 aerial photograph



Capture Date: 06/09/1999

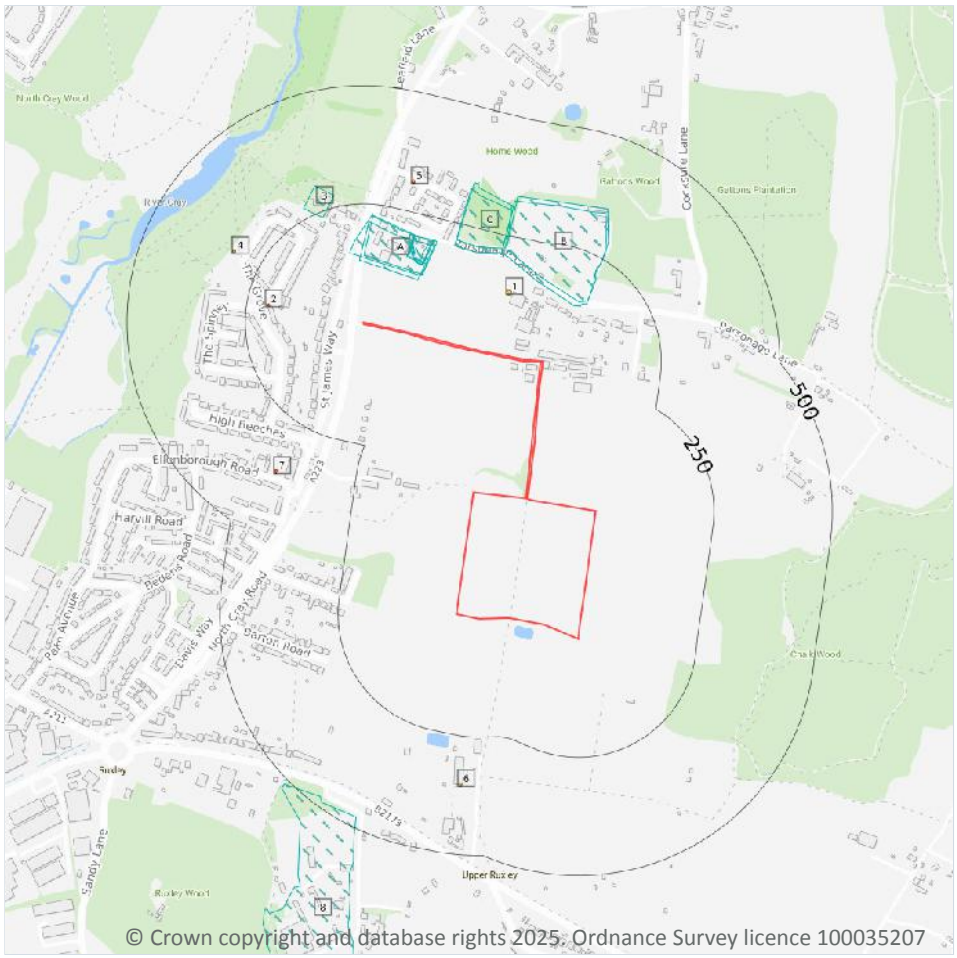
Site Area: 7.05ha

OS MasterMap site plan



Site Area: 7.05ha

1 Past land use



1.1 Historical industrial land uses

Records within 500m	12

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	113m N	Nurseries	1988	2315891

ID	Location	Land use	Dates present	Group ID
A	123m N	Nurseries	1966	2290880
A	126m N	Nurseries	1973	2222066
B	135m N	Nursery	1988	2277787
A	146m N	Unspecified Ground Workings	1895	2162966
B	147m N	Nursery	1966 - 1973	2312920
A	147m N	Unspecified Pit	1908	2269855
A	148m N	Unspecified Pit	1868	2229030
C	200m N	Cemetery	1988	2274193
C	212m N	Cemetery	1966 - 1973	2222067
3	237m NW	Grave Yard	1868	2165774
8	478m SW	Nursery	1988	2180000

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**3**

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 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
1	127m N	Unspecified Tank	1991	386662
4	309m NW	Unspecified Tank	1897	386661
6	349m S	Unspecified Tank	1968 - 1991	410030

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	3

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 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
2	202m NW	Electricity Substation	1987	271978
5	310m N	Electricity Substation	1983 - 1991	293447
7	358m W	Electricity Substation	1991	274578

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 un-grouped 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 un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

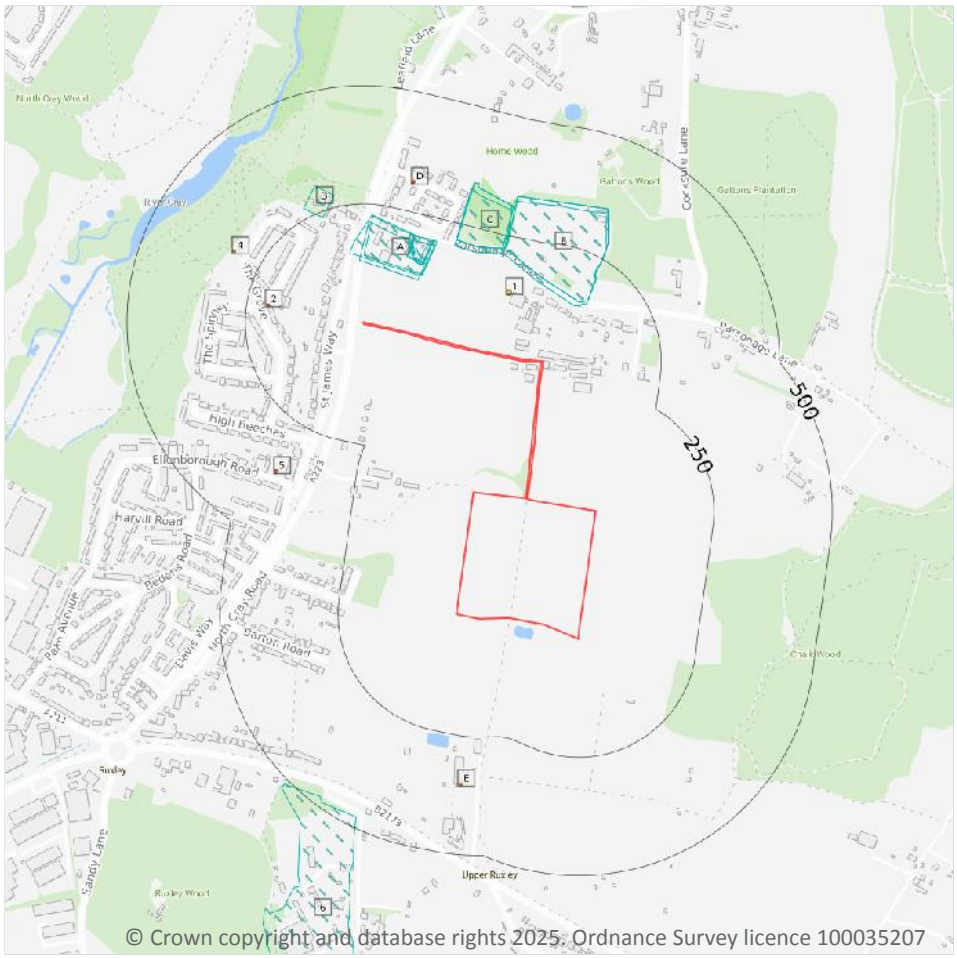
1.6 Historical military land

Records within 500m	0

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.

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

2 Past land use - un-grouped



2.1 Historical industrial land uses

Records within 500m	14

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 19 >**

ID	Location	Land Use	Date	Group ID
A	113m N	Nurseries	1988	2315891
A	123m N	Nurseries	1966	2290880
A	126m N	Nurseries	1973	2222066

ID	Location	Land Use	Date	Group ID
B	135m N	Nursery	1988	2277787
A	146m N	Unspecified Ground Workings	1895	2162966
B	147m N	Nursery	1973	2312920
B	147m N	Nursery	1966	2312920
A	147m N	Unspecified Pit	1908	2269855
A	148m N	Unspecified Pit	1868	2229030
C	200m N	Cemetery	1988	2274193
C	212m N	Cemetery	1973	2222067
C	212m N	Cemetery	1966	2222067
3	237m NW	Grave Yard	1868	2165774
6	478m SW	Nursery	1988	2180000

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m **4**

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 19 >**

ID	Location	Land Use	Date	Group ID
1	127m N	Unspecified Tank	1991	386662
4	309m NW	Unspecified Tank	1897	386661
E	349m S	Unspecified Tank	1991	410030
E	350m S	Unspecified Tank	1968	410030

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	4

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 19 >**

ID	Location	Land Use	Date	Group ID
2	202m NW	Electricity Substation	1987	271978
D	310m N	Electricity Substation	1983	293447
D	311m N	Electricity Substation	1991	293447
5	358m W	Electricity Substation	1991	274578

This data is sourced from Ordnance Survey / Groundsure.

2.4 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. 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.

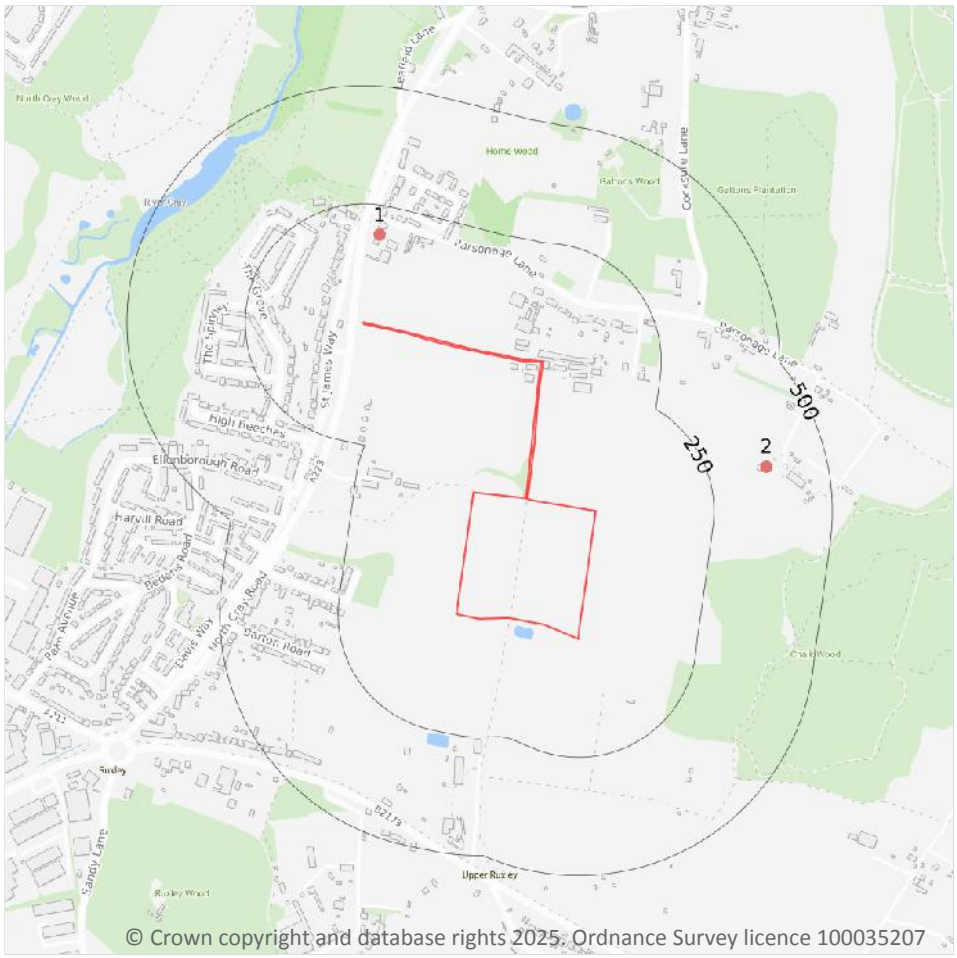
2.5 Historical garages

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)

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

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

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	0

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

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

3.6 Licensed waste sites

Records within 500m	0

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

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

3.7 Waste exemptions

Records within 500m	2

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.

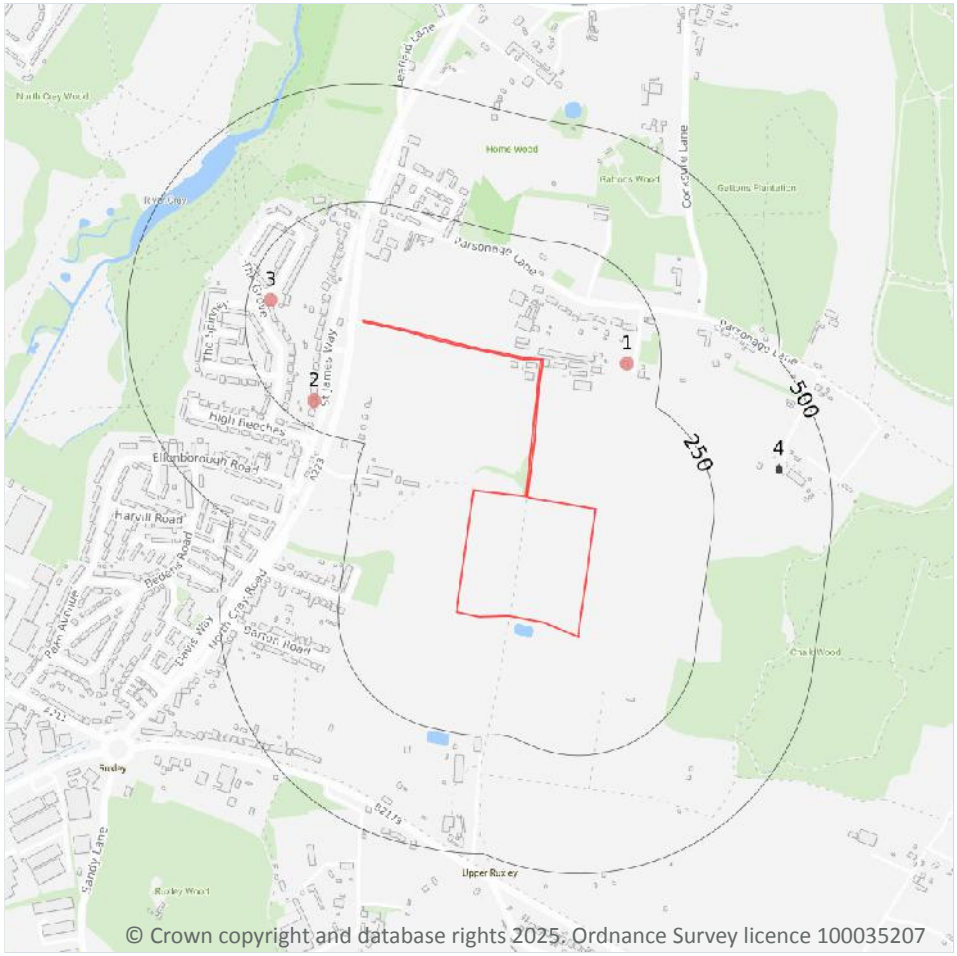
Features are displayed on the Waste and landfill map on **page 22 >**

ID	Location	Site	Reference	Category	Sub-Category	Description
1	187m NW	135, North Cray Road, Sidcup, Da14 5he	WEX251111	Disposing of waste exemption	Not on a farm	Burning waste in the open

ID	Location	Site	Reference	Category	Sub-Category	Description
2	372m E	-	WEX237479	Using waste exemption	On a farm	Use of waste in construction

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

4 Current industrial land use



4.1 Recent industrial land uses

Records within 250m	3

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 25 >**

ID	Location	Company	Address	Activity	Category
1	178m NE	Grays Technical Services	41, Parsonage Lane, Sidcup, Greater London, DA14 5EZ	Electrical and Electronic Engineers	Engineering Services
2	196m NW	We Tube Scaffolding Ltd	60, St James Way, Sidcup, Greater London, DA14 5ER	Construction and Tool Hire	Hire Services

ID	Location	Company	Address	Activity	Category
3	201m NW	Electricity Sub Station	Greater London, DA14	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

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	0

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.

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	0

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.

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

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.

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m	0

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

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

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

Records within 500m	0

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.

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	0

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	1

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 25 >**

ID	Location	Address	Details	
4	396m E	MANORFREEHOLDFARMSTPDF,MANORFREEHOLDFARM,67PARSONAGELANE,SIDCUP,KENT,DA145EZ	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: EPRTB3456TV Permit Version: 1 Receiving Water: GROUNDWATER	Status: NEW ISSUED UNDER EPR 2010 Issue date: 25/01/2024 Effective Date: 25/01/2024 Revocation Date: -

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

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

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	0

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.

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

4.17 List 2 Dangerous Substances

Records within 500m	0

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.

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	0

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

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	0

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.

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

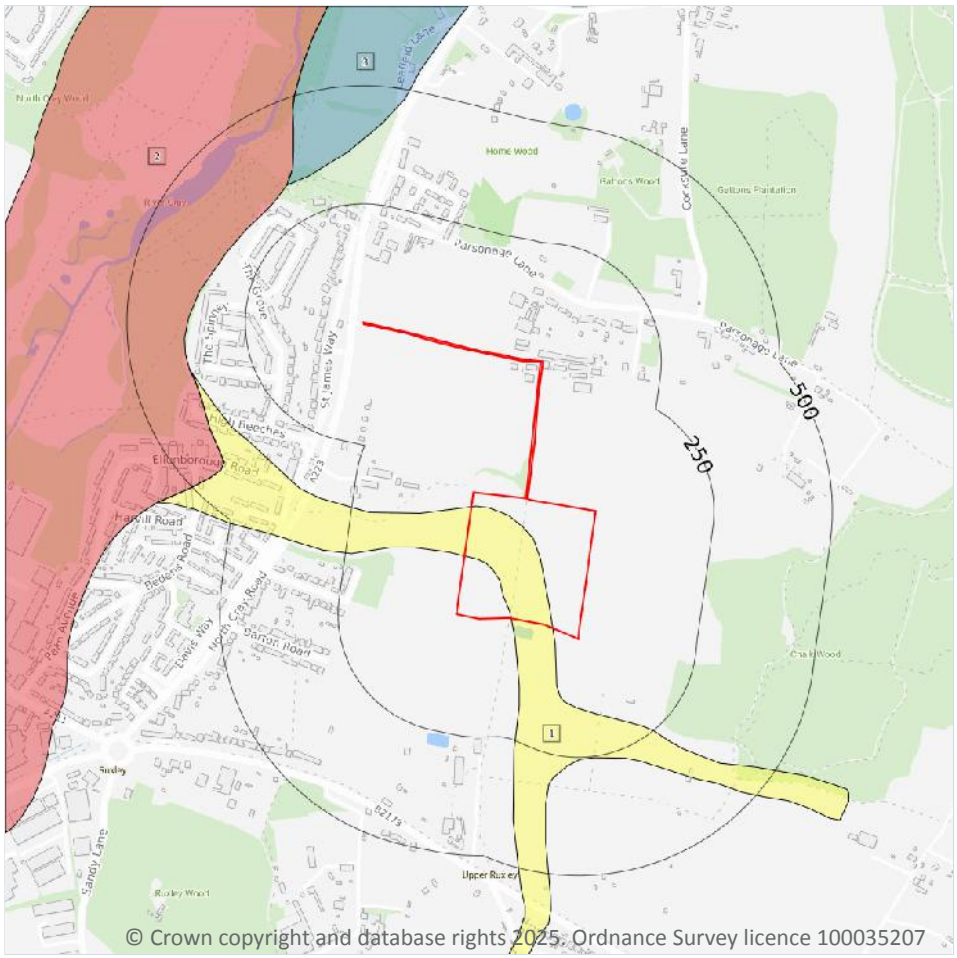
4.21 Pollution inventory radioactive waste

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



5.1 Superficial aquifer

Records within 500m	3

Aquifer status of groundwater held within superficial geology.

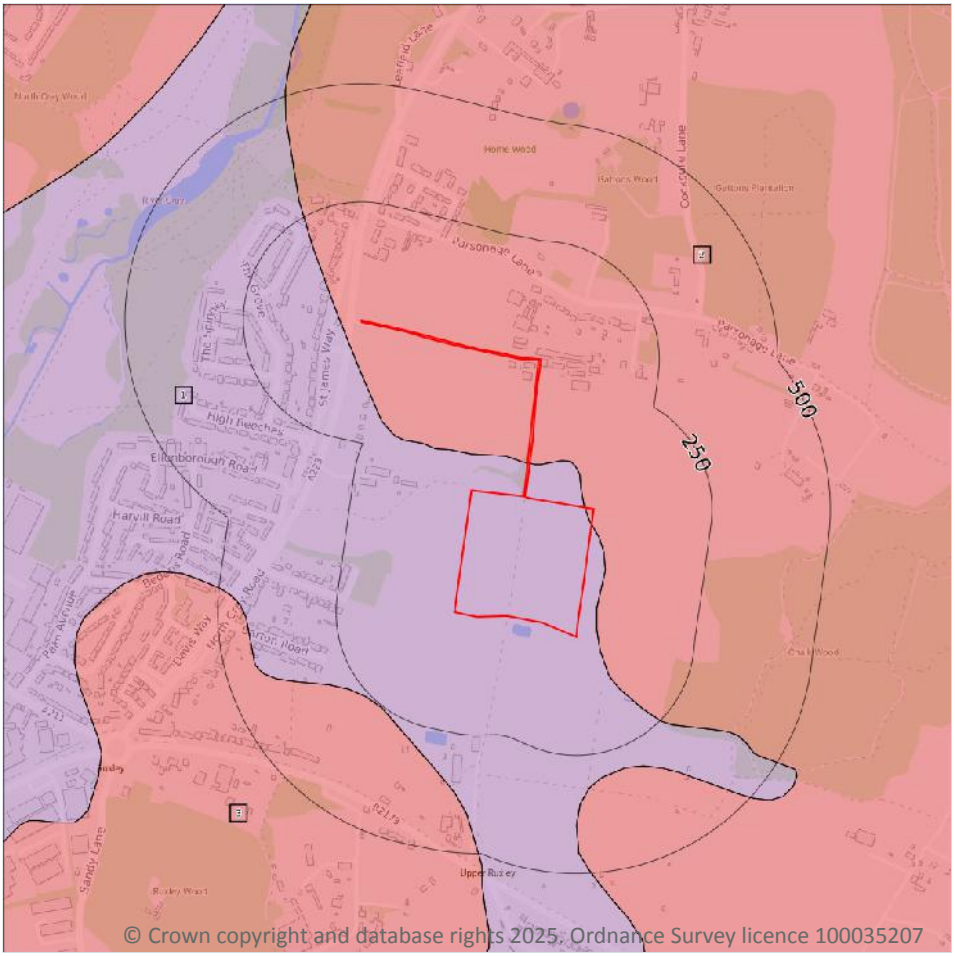
Features are displayed on the Hydrogeology map on **page 31 >**

ID	Location	Designation	Description
1	**On site**	**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**
2	313m NW	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

ID	Location	Designation	Description
3	330m NW	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

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	3

Aquifer status of groundwater held within bedrock geology.

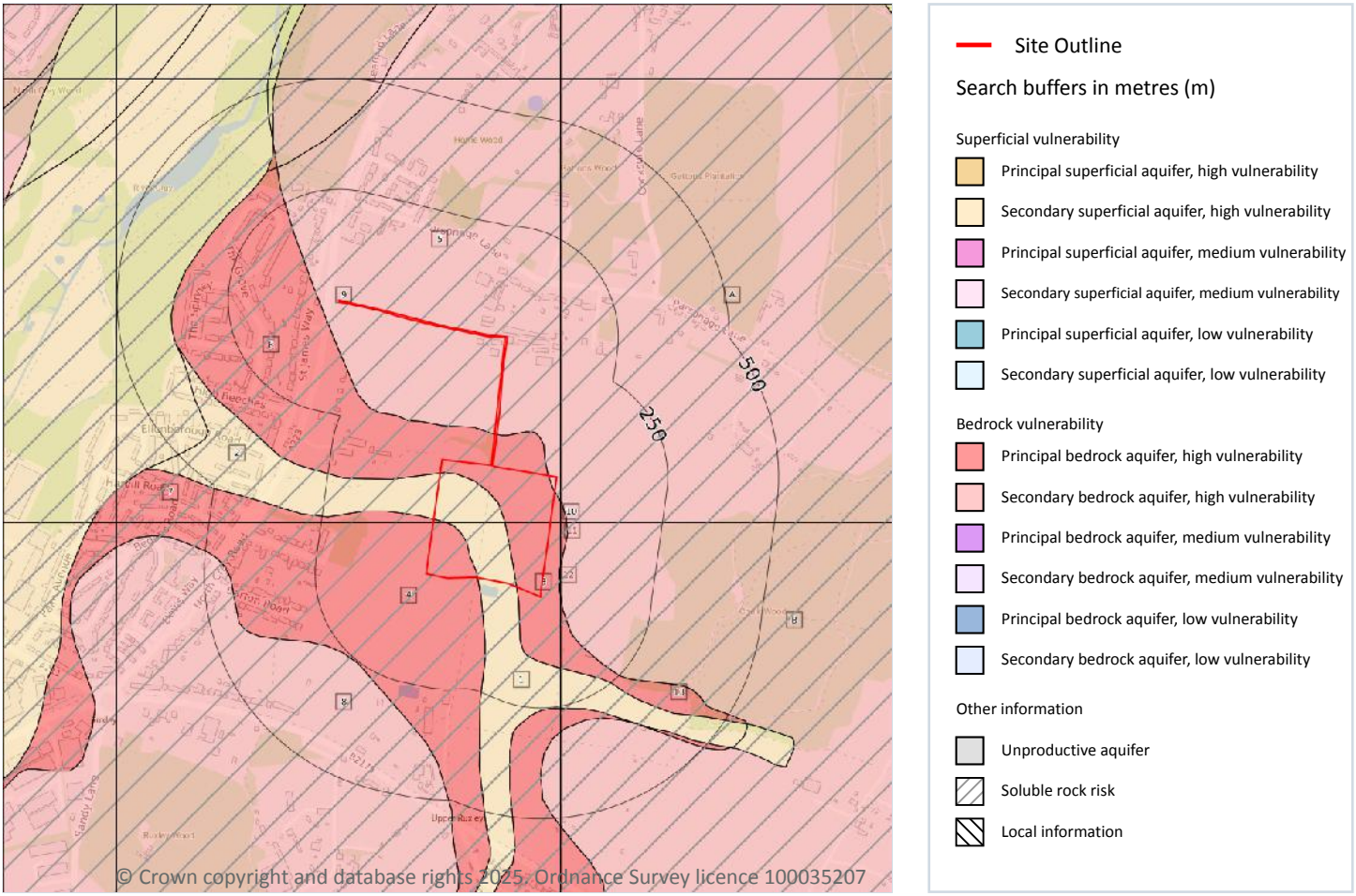
Features are displayed on the Bedrock aquifer map on **page 33 >**

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	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

ID	Location	Designation	Description
3	254m SW	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.

Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m	13

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 35 >**

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: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: High Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: High Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
3	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
4	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
5	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
6	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
7	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
A	9m NE	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Intergranular
10	16m E	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Intergranular
11	22m E	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
12	35m SE	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
B	36m E	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
13	45m SE	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures

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	2

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

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
8	**Very significant soluble rocks are likely to be present with a high possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, especially in adverse conditions such as concentrated surface or subsurface water flow.**	**8.0%**
9	**Very significant soluble rocks are likely to be present with a high possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, especially in adverse conditions such as concentrated surface or subsurface water flow.**	**27.0%**

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

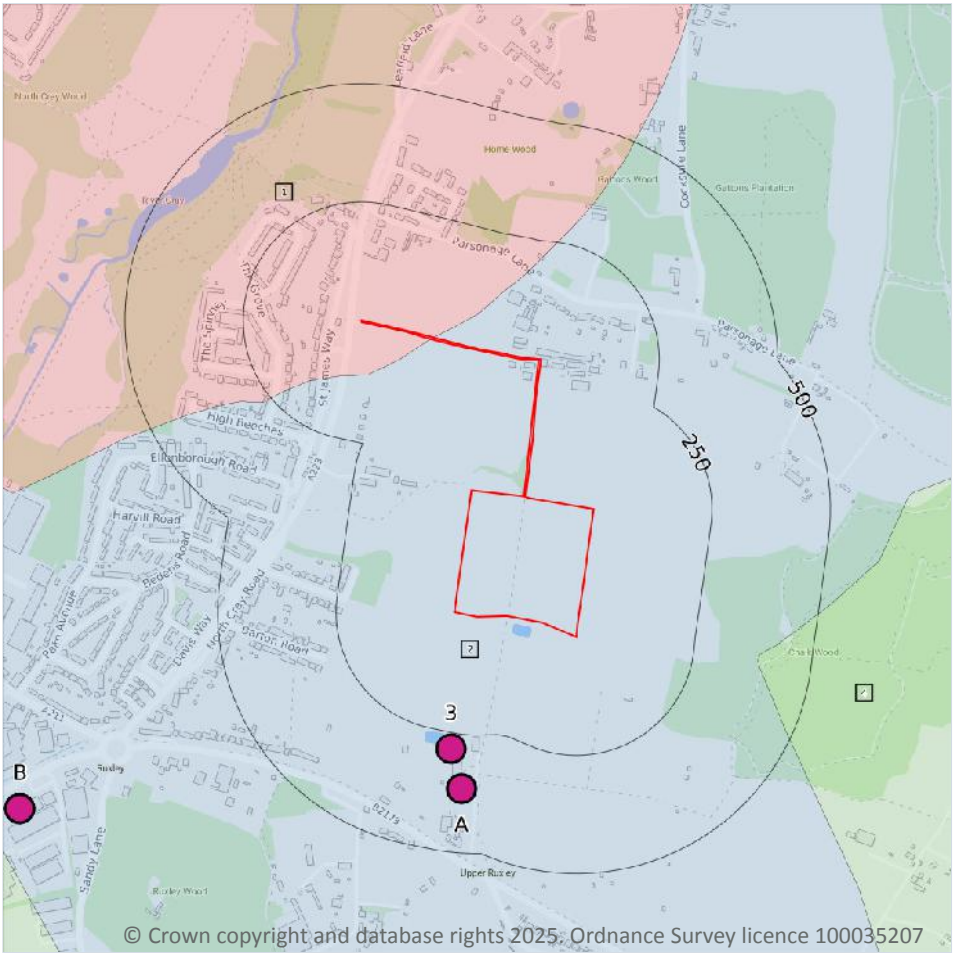
5.5 Groundwater vulnerability- local information

Records on site	0

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
- 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	29

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 39 >**

ID	Location	Details	
3	283m S	Status: Active Licence No: SO/040/0037/020 Details: Trickle Irrigation - Storage Direct Source: Southern Region Groundwater Point: HONEYDALE FARM - BOREHOLE A Data Type: Point Name: M J Fruit Farms Limited Easting: 548690 Northing: 170596	Annual Volume (m^3): 56860 Max Daily Volume (m^3): 275 Original Application No: NPS/WR/034551 Original Start Date: 13/08/2019 Expiry Date: 31/03/2026 Issue No: 2 Version Start Date: 10/11/2020 Version End Date: -
A	364m S	Status: Active Licence No: SO/040/0037/020 Details: Spray Irrigation - Direct Direct Source: Southern Region Groundwater Point: HONEYDALE FARM - BOREHOLE B Data Type: Point Name: M J Fruit Farms Limited Easting: 548712 Northing: 170512	Annual Volume (m^3): 56860 Max Daily Volume (m^3): 275 Original Application No: NPS/WR/034551 Original Start Date: 13/08/2019 Expiry Date: 31/03/2026 Issue No: 2 Version Start Date: 10/11/2020 Version End Date: -
A	364m S	Status: Active Licence No: SO/040/0037/020 Details: General Farming & Domestic Direct Source: Southern Region Groundwater Point: HONEYDALE FARM - BOREHOLE B Data Type: Point Name: M J Fruit Farms Limited Easting: 548712 Northing: 170512	Annual Volume (m^3): 56860 Max Daily Volume (m^3): 275 Original Application No: NPS/WR/034551 Original Start Date: 13/08/2019 Expiry Date: 31/03/2026 Issue No: 2 Version Start Date: 10/11/2020 Version End Date: -
B	1006m SW	Status: Historical Licence No: 9/40/01/0003/GR Details: Conveying Materials Direct Source: Southern Region Groundwater Point: CHALK BOREHOLE AT RICHARD KLINGER LTD Data Type: Point Name: IKEA Properties Investments Limited Easting: 547780 Northing: 170470	Annual Volume (m^3): 545454 Max Daily Volume (m^3): 3636 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 30/10/2006 Version End Date: -
B	1006m SW	Status: Historical Licence No: 9/40/01/0003/GR Details: Non-Evaporative Cooling Direct Source: Southern Region Groundwater Point: CHALK BOREHOLE AT RICHARD KLINGER LTD Data Type: Point Name: IKEA Properties Investments Limited Easting: 547780 Northing: 170470	Annual Volume (m^3): 545454 Max Daily Volume (m^3): 3636 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 30/10/2006 Version End Date: -

ID	Location	Details	
-	1092m N	Status: Active Licence No: 9/40/01/0130/GR Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: WELLS AND ADITS AT BEXLEY PUMPING STATION Data Type: Poly4 Name: Thames Water Utilities Ltd Easting: 548505 Northing: 172933	Annual Volume (m^3): 11600000 Max Daily Volume (m^3): 36000 Original Application No: NPS/WR/030483 Original Start Date: 30/12/1966 Expiry Date: - Issue No: 108 Version Start Date: 07/05/2020 Version End Date: -
-	1092m N	Status: Active Licence No: 9/40/01/0130/GR Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BEXLEY PUMPING STATION, LONDON BOROUGH OF BEXLEY, KENT Data Type: Poly4 Name: Thames Water Utilities Ltd Easting: 548505 Northing: 172933	Annual Volume (m^3): 11600000 Max Daily Volume (m^3): 36000 Original Application No: NPS/WR/030483 Original Start Date: 30/12/1966 Expiry Date: - Issue No: 108 Version Start Date: 07/05/2020 Version End Date: -
-	1121m S	Status: Active Licence No: SO/040/0037/023 Details: Dust Suppression Direct Source: Southern Region Groundwater Point: BOREHOLE AT SWANLEY, KENT Data Type: Point Name: Envar Composting Services Ltd Easting: 549069 Northing: 169716	Annual Volume (m^3): 16000 Max Daily Volume (m^3): 80 Original Application No: NPS/WR/042335 Original Start Date: 30/05/2019 Expiry Date: 31/03/2026 Issue No: 2 Version Start Date: 01/05/2024 Version End Date: -
-	1121m S	Status: Active Licence No: SO/040/0037/023 Details: General Use Relating To Secondary Category (High Loss) Direct Source: Southern Region Groundwater Point: BOREHOLE AT SWANLEY, KENT Data Type: Point Name: Envar Composting Services Ltd Easting: 549069 Northing: 169716	Annual Volume (m^3): 16000 Max Daily Volume (m^3): 80 Original Application No: NPS/WR/042335 Original Start Date: 30/05/2019 Expiry Date: 31/03/2026 Issue No: 2 Version Start Date: 01/05/2024 Version End Date: -

ID	Location	Details	
-	1121m S	Status: Historical Licence No: SO/040/0037/023 Details: General Use Relating To Secondary Category (High Loss) Direct Source: Southern Region Groundwater Point: BOREHOLE AT SWANLEY, KENT Data Type: Point Name: Biogen (UK) Limited Easting: 549069 Northing: 169716	Annual Volume (m^3): 8000 Max Daily Volume (m^3): 40 Original Application No: NPS/WR/029613 Original Start Date: 30/05/2019 Expiry Date: 31/03/2026 Issue No: 1 Version Start Date: 30/05/2019 Version End Date: -
-	1121m S	Status: Historical Licence No: SO/040/0037/023 Details: Dust Suppression Direct Source: Southern Region Groundwater Point: BOREHOLE AT SWANLEY, KENT Data Type: Point Name: Biogen (UK) Limited Easting: 549069 Northing: 169716	Annual Volume (m^3): 8000 Max Daily Volume (m^3): 40 Original Application No: NPS/WR/029613 Original Start Date: 30/05/2019 Expiry Date: 31/03/2026 Issue No: 1 Version Start Date: 30/05/2019 Version End Date: -
-	1209m N	Status: Historical Licence No: 9/40/01/0130/GR Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE 2 AT BEXLEY PUMPING STATION Data Type: Point Name: Thames Water Utilities Ltd Easting: 548730 Northing: 172688	Annual Volume (m^3): - Max Daily Volume (m^3): 36000 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 105 Version Start Date: 01/04/2011 Version End Date: -
-	1228m N	Status: Historical Licence No: 9/40/01/0130/GR Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: WELL AT BEXLEY PUMPING STATION Data Type: Point Name: Thames Water Utilities Ltd Easting: 548649 Northing: 172720	Annual Volume (m^3): - Max Daily Volume (m^3): 36000 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 105 Version Start Date: 01/04/2011 Version End Date: -
-	1229m N	Status: Historical Licence No: 9/40/01/0130/GR Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE AT BEXLEY PUMPING STATION Data Type: Point Name: Thames Water Utilities Ltd Easting: 548650 Northing: 172720	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 01/04/2001 Version End Date: -

ID	Location	Details	
-	1258m N	Status: Historical Licence No: 9/40/01/0130/GR Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE 1 AT BEXLEY PUMPING STATION Data Type: Point Name: Thames Water Utilities Ltd Easting: 548501 Northing: 172758	Annual Volume (m^3): - Max Daily Volume (m^3): 36000 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 105 Version Start Date: 01/04/2011 Version End Date: -
-	1288m W	Status: Active Licence No: SO/040/0037/015 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Southern Region Groundwater Point: BOREHOLE AT BAUGH ROAD, SIDCUP, KENT. Data Type: Point Name: David Lloyd Leisure Limited Easting: 547215 Northing: 171428	Annual Volume (m^3): 14600 Max Daily Volume (m^3): 40 Original Application No: NPS/WR/018891 Original Start Date: 22/03/2016 Expiry Date: 31/03/2026 Issue No: 1 Version Start Date: 22/03/2016 Version End Date: -
-	1372m SE	Status: Historical Licence No: 9/40/01/0059/GR Details: Spray Irrigation - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE AT UPPER HOCKENDEN FARM Data Type: Point Name: Albert Vinson Ltd Easting: 549700 Northing: 169680	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 19/11/1992 Version End Date: -
-	1397m SE	Status: Active Licence No: 9/40/01/0059/GR Details: Spray Irrigation - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE AT UPPER HOCKENDEN FARM Data Type: Point Name: Bemkat Holdings Limited Easting: 549821 Northing: 169735	Annual Volume (m^3): 47000 Max Daily Volume (m^3): 1080 Original Application No: NPS/WR/027907 Original Start Date: 03/06/1966 Expiry Date: - Issue No: 105 Version Start Date: 17/05/2018 Version End Date: -
-	1407m SE	Status: Historical Licence No: 9/40/01/0059/GR Details: Spray Irrigation - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE AT UPPER HOCKENDEN FARM Data Type: Point Name: Bemkat Holdings Limited Easting: 549830 Northing: 169730	Annual Volume (m^3): 47000 Max Daily Volume (m^3): 1080 Original Application No: - Original Start Date: 03/06/1966 Expiry Date: - Issue No: 104 Version Start Date: 11/07/2017 Version End Date: -

ID	Location	Details	
-	1449m NE	Status: Historical Licence No: SO/040/0037/031 Details: Dewatering Direct Source: Southern Region Groundwater Point: HURST SUBSTATION AT STABLE LANE Data Type: Poly4 Name: Hochtief-Murphy Joint Venture Easting: 549783 Northing: 172675	Annual Volume (m^3): 166406.4 Max Daily Volume (m^3): 777.6 Original Application No: NPS/WR/033818 Original Start Date: 25/05/2021 Expiry Date: 31/03/2024 Issue No: 1 Version Start Date: 25/05/2021 Version End Date: -
-	1458m W	Status: Active Licence No: 9/40/01/0078/GR Details: Non-Evaporative Cooling Direct Source: Southern Region Groundwater Point: BOREHOLE AT COCA COLA, SIDCUP, KENT Data Type: Point Name: Coca Cola Europacific Partners Great Britian Ltd Easting: 547249 Northing: 170715	Annual Volume (m^3): 1596505 Max Daily Volume (m^3): 4567 Original Application No: NPS/WR/040910 Original Start Date: 10/01/1966 Expiry Date: - Issue No: 103 Version Start Date: 03/04/2024 Version End Date: -
-	1458m W	Status: Active Licence No: 9/40/01/0078/GR Details: Water Bottling Direct Source: Southern Region Groundwater Point: BOREHOLE AT COCA COLA, SIDCUP, KENT Data Type: Point Name: Coca Cola Europacific Partners Great Britian Ltd Easting: 547249 Northing: 170715	Annual Volume (m^3): 1596505 Max Daily Volume (m^3): 4567 Original Application No: NPS/WR/040910 Original Start Date: 10/01/1966 Expiry Date: - Issue No: 103 Version Start Date: 03/04/2024 Version End Date: -
-	1458m W	Status: Historical Licence No: 9/40/01/0078/GR Details: Water Bottling Direct Source: Southern Region Groundwater Point: BOREHOLE AT COCA COLA, SIDCUP, KENT Data Type: Point Name: Coca Cola Enterprises Limited Easting: 547249 Northing: 170715	Annual Volume (m^3): 1592860 Max Daily Volume (m^3): 4567 Original Application No: NPS/WR/020674 Original Start Date: 10/01/1966 Expiry Date: - Issue No: 102 Version Start Date: 15/10/2015 Version End Date: -
-	1458m W	Status: Historical Licence No: 9/40/01/0078/GR Details: Non-Evaporative Cooling Direct Source: Southern Region Groundwater Point: BOREHOLE AT COCA COLA, SIDCUP, KENT Data Type: Point Name: Coca Cola Enterprises Limited Easting: 547249 Northing: 170715	Annual Volume (m^3): 1592860 Max Daily Volume (m^3): 4567 Original Application No: NPS/WR/020674 Original Start Date: 10/01/1966 Expiry Date: - Issue No: 102 Version Start Date: 15/10/2015 Version End Date: -

ID	Location	Details	
-	1509m W	Status: Historical Licence No: 9/40/01/0078/GR Details: Water Bottling Direct Source: Southern Region Groundwater Point: BOREHOLE AT COCA COLA, SIDCUP, KENT Data Type: Point Name: Coca Cola Schweppes Beverages Ltd Easting: 547200 Northing: 170700	Annual Volume (m^3): 703645 Max Daily Volume (m^3): 4567 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 22/11/2006 Version End Date: -
-	1509m W	Status: Historical Licence No: 9/40/01/0078/GR Details: Non-Evaporative Cooling Direct Source: Southern Region Groundwater Point: BOREHOLE AT COCA COLA, SIDCUP, KENT Data Type: Point Name: Coca Cola Schweppes Beverages Ltd Easting: 547200 Northing: 170700	Annual Volume (m^3): 703645 Max Daily Volume (m^3): 4567 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 22/11/2006 Version End Date: -
-	1672m NE	Status: Historical Licence No: 9/40/01/0167/G Details: Non-Evaporative Cooling Direct Source: Southern Region Groundwater Point: BOREHOLES AT VICARAGE ROAD, BEXLEY -("01") & ("02"). Data Type: Point Name: The National Grid Company Plc Easting: 550000 Northing: 172660	Annual Volume (m^3): 958370 Max Daily Volume (m^3): 2618.5 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 23/11/2006 Version End Date: -
-	1701m NW	Status: Historical Licence No: 9/40/01/0162/G Details: Non-Evaporative Cooling Direct Source: Southern Region Groundwater Point: POINT A1, FOOTSCRAY LANE, BEXLEY. Data Type: Point Name: The National Grid Company Plc Easting: 547380 Northing: 172780	Annual Volume (m^3): 958370 Max Daily Volume (m^3): 2618.5 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 23/11/2006 Version End Date: -
-	1891m E	Status: Active Licence No: SO/040/0037/029 Details: Trickle Irrigation - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE AT STANHILL FARM Data Type: Point Name: Toby Williams Easting: 550849 Northing: 170731	Annual Volume (m^3): 9513 Max Daily Volume (m^3): 552 Original Application No: NPS/WR/040909 Original Start Date: 23/11/2022 Expiry Date: 31/03/2038 Issue No: 2 Version Start Date: 08/02/2024 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	4

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 39 >**

ID	Location	Details	
-	1214m N	Status: Active Licence No: 9/40/01/0062/SR Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: RIVER CRAY AT WOOLLETT HALL FARM, NORTH CRAY Data Type: Line Name: Beck Evans Farm Limited Easting: 548990 Northing: 172760	Annual Volume (m^3): 16866 Max Daily Volume (m^3): 263.7 Original Application No: NPS/WR/037639 Original Start Date: 18/04/1966 Expiry Date: - Issue No: 103 Version Start Date: 22/06/2022 Version End Date: -
-	1603m N	Status: Active Licence No: 37/098 Details: Fish Farm/Cress Pond Throughflow Direct Source: Southern Region Surface Waters Point: RIVER CRAY AT OLD BEXLEY Data Type: Point Name: Waker Easting: 549300 Northing: 172965	Annual Volume (m^3): 177860 Max Daily Volume (m^3): 1102 Original Application No: NPS/WR/027020 Original Start Date: 06/08/1993 Expiry Date: 31/03/2026 Issue No: 103 Version Start Date: 15/11/2017 Version End Date: -
-	1712m N	Status: Historical Licence No: 37/098 Details: Fish Farm/Cress Pond Throughflow Direct Source: Southern Region Surface Waters Point: POINT A, RIVER CRAY AT OLD BEXLEY Data Type: Point Name: The Secretary of Cray River Anglers '84 Easting: 549330 Northing: 173070	Annual Volume (m^3): 177860 Max Daily Volume (m^3): 1102 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 27/04/2006 Version End Date: -
-	1746m N	Status: Historical Licence No: 37/098 Details: Fish Farm/Cress Pond Throughflow Direct Source: Southern Region Surface Waters Point: POINT B, RIVER CRAY AT OLD BEXLEY Data Type: Point Name: The Secretary of Cray River Anglers '84 Easting: 549350 Northing: 173100	Annual Volume (m^3): 177860 Max Daily Volume (m^3): 1102 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 27/04/2006 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	10

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 39 >**

ID	Location	Details	
-	1092m N	Status: Active Licence No: 9/40/01/0130/GR Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: WELLS AND ADITS AT BEXLEY PUMPING STATION Data Type: Poly4 Name: Thames Water Utilities Ltd Easting: 548505 Northing: 172933	Annual Volume (m^3): 11600000 Max Daily Volume (m^3): 36000 Original Application No: NPS/WR/030483 Original Start Date: 30/12/1966 Expiry Date: - Issue No: 108 Version Start Date: 07/05/2020 Version End Date: -
-	1092m N	Status: Active Licence No: 9/40/01/0130/GR Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BEXLEY PUMPING STATION, LONDON BOROUGH OF BEXLEY, KENT Data Type: Poly4 Name: Thames Water Utilities Ltd Easting: 548505 Northing: 172933	Annual Volume (m^3): 11600000 Max Daily Volume (m^3): 36000 Original Application No: NPS/WR/030483 Original Start Date: 30/12/1966 Expiry Date: - Issue No: 108 Version Start Date: 07/05/2020 Version End Date: -
-	1209m N	Status: Historical Licence No: 9/40/01/0130/GR Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE 2 AT BEXLEY PUMPING STATION Data Type: Point Name: Thames Water Utilities Ltd Easting: 548730 Northing: 172688	Annual Volume (m^3): - Max Daily Volume (m^3): 36000 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 105 Version Start Date: 01/04/2011 Version End Date: -
-	1228m N	Status: Historical Licence No: 9/40/01/0130/GR Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: WELL AT BEXLEY PUMPING STATION Data Type: Point Name: Thames Water Utilities Ltd Easting: 548649 Northing: 172720	Annual Volume (m^3): - Max Daily Volume (m^3): 36000 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 105 Version Start Date: 01/04/2011 Version End Date: -

ID	Location	Details	
-	1229m N	Status: Historical Licence No: 9/40/01/0130/GR Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE AT BEXLEY PUMPING STATION Data Type: Point Name: Thames Water Utilities Ltd Easting: 548650 Northing: 172720	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 01/04/2001 Version End Date: -
-	1258m N	Status: Historical Licence No: 9/40/01/0130/GR Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE 1 AT BEXLEY PUMPING STATION Data Type: Point Name: Thames Water Utilities Ltd Easting: 548501 Northing: 172758	Annual Volume (m^3): - Max Daily Volume (m^3): 36000 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 105 Version Start Date: 01/04/2011 Version End Date: -
-	1288m W	Status: Active Licence No: SO/040/0037/015 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Southern Region Groundwater Point: BOREHOLE AT BAUGH ROAD, SIDCUP, KENT. Data Type: Point Name: David Lloyd Leisure Limited Easting: 547215 Northing: 171428	Annual Volume (m^3): 14600 Max Daily Volume (m^3): 40 Original Application No: NPS/WR/018891 Original Start Date: 22/03/2016 Expiry Date: 31/03/2026 Issue No: 1 Version Start Date: 22/03/2016 Version End Date: -
-	1458m W	Status: Active Licence No: 9/40/01/0078/GR Details: Water Bottling Direct Source: Southern Region Groundwater Point: BOREHOLE AT COCA COLA, SIDCUP, KENT Data Type: Point Name: Coca Cola Europacific Partners Great Britian Ltd Easting: 547249 Northing: 170715	Annual Volume (m^3): 1596505 Max Daily Volume (m^3): 4567 Original Application No: NPS/WR/040910 Original Start Date: 10/01/1966 Expiry Date: - Issue No: 103 Version Start Date: 03/04/2024 Version End Date: -
-	1458m W	Status: Historical Licence No: 9/40/01/0078/GR Details: Water Bottling Direct Source: Southern Region Groundwater Point: BOREHOLE AT COCA COLA, SIDCUP, KENT Data Type: Point Name: Coca Cola Enterprises Limited Easting: 547249 Northing: 170715	Annual Volume (m^3): 1592860 Max Daily Volume (m^3): 4567 Original Application No: NPS/WR/020674 Original Start Date: 10/01/1966 Expiry Date: - Issue No: 102 Version Start Date: 15/10/2015 Version End Date: -

ID	Location	Details	
-	1509m W	Status: Historical Licence No: 9/40/01/0078/GR Details: Water Bottling Direct Source: Southern Region Groundwater Point: BOREHOLE AT COCA COLA, SIDCUP, KENT Data Type: Point Name: Coca Cola Schweppes Beverages Ltd Easting: 547200 Northing: 170700	Annual Volume (m^3): 703645 Max Daily Volume (m^3): 4567 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 22/11/2006 Version End Date: -

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

5.9 Source Protection Zones

Records within 500m	**3**

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 39 >**

ID	Location	Type	Description
1	**On site**	**1**	**Inner catchment**
2	**On site**	**2**	**Outer catchment**
4	387m SE	3	Total catchment

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

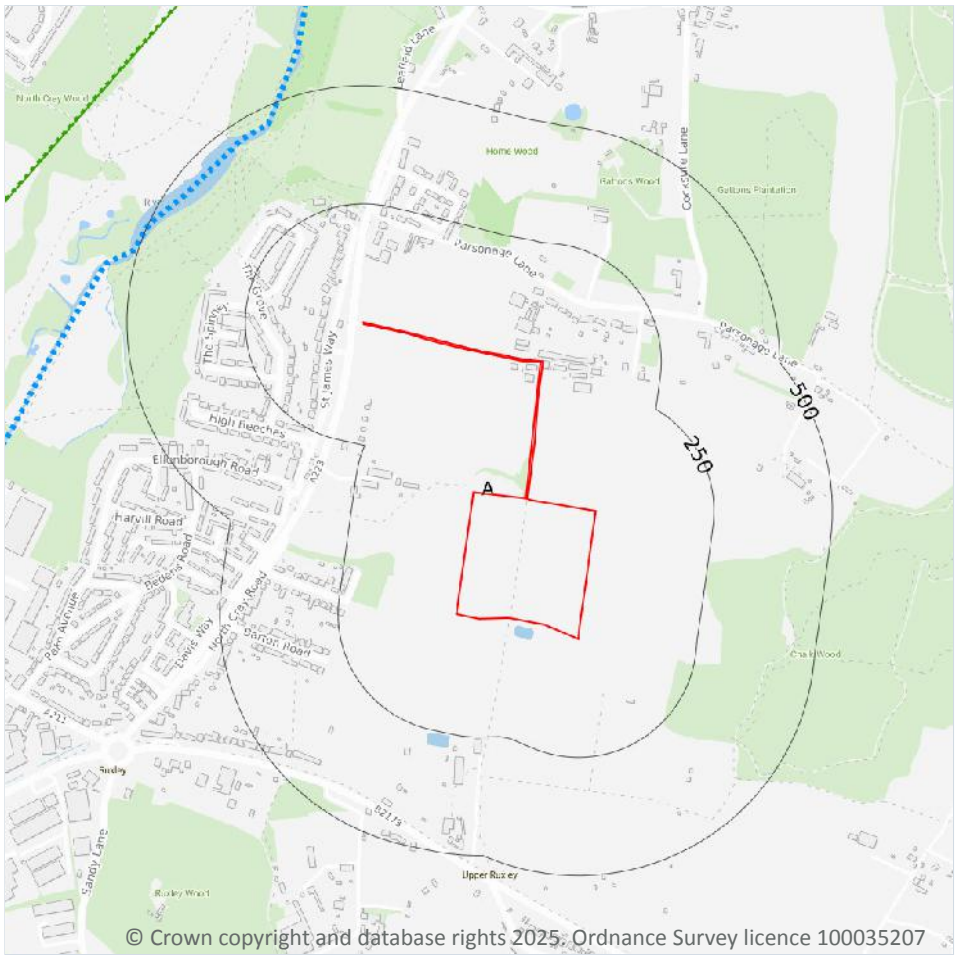
5.10 Source Protection Zones (confined aquifer)

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 50 >**

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 50 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	**On site**	**River**	**Upper Cray**	**GB106040023990**	**Cray and Shuttle**	**Darent and Cray**

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 50 >**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
5	456m NW	River	Upper Cray	GB106040023990 ↗	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 50 >**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	**On site**	**West Kent Darent and Cray Chalk**	**GB40601G501800** ↗	**Poor**	**Poor**	**Poor**	**2019**

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

7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m	0

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).

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

7.6 Flood Zone 2

Records within 50m	0

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.

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

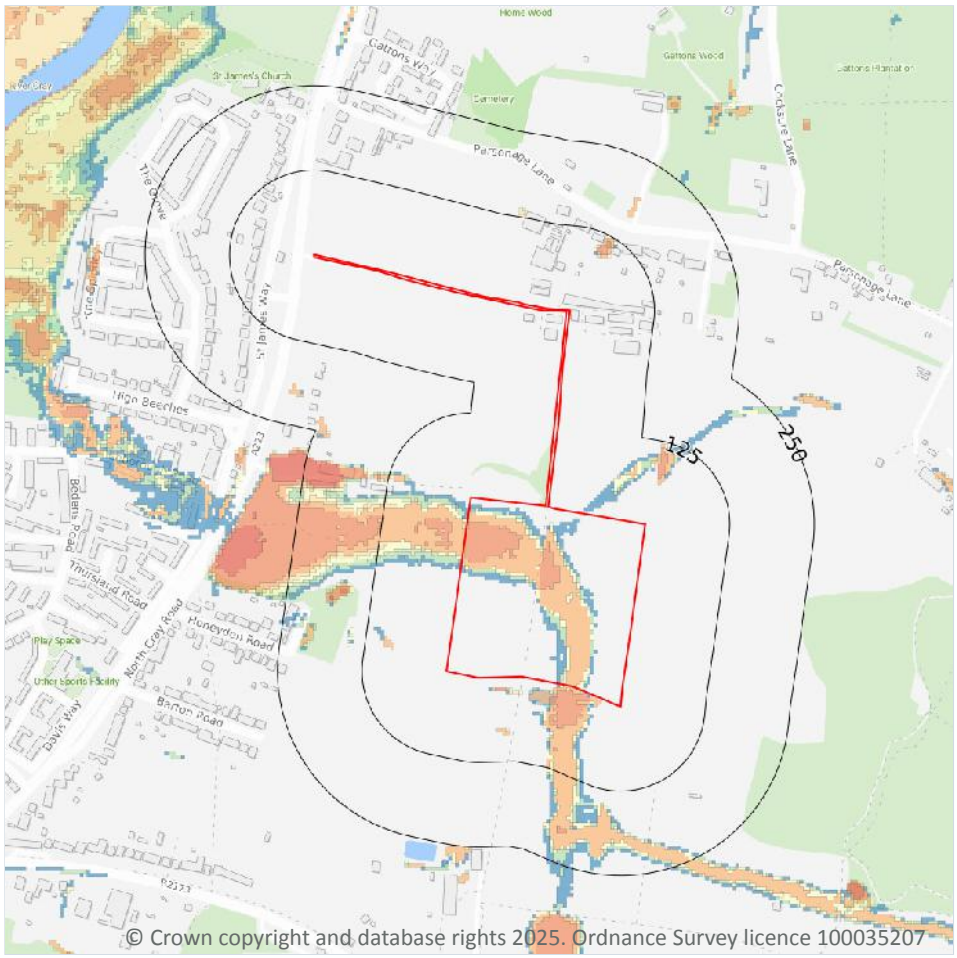
7.7 Flood Zone 3

Records within 50m	0

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.

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 30 year, 0.3m - 1.0m**
Highest risk within 50m	**1 in 30 year, 0.3m - 1.0m**

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 56 >**

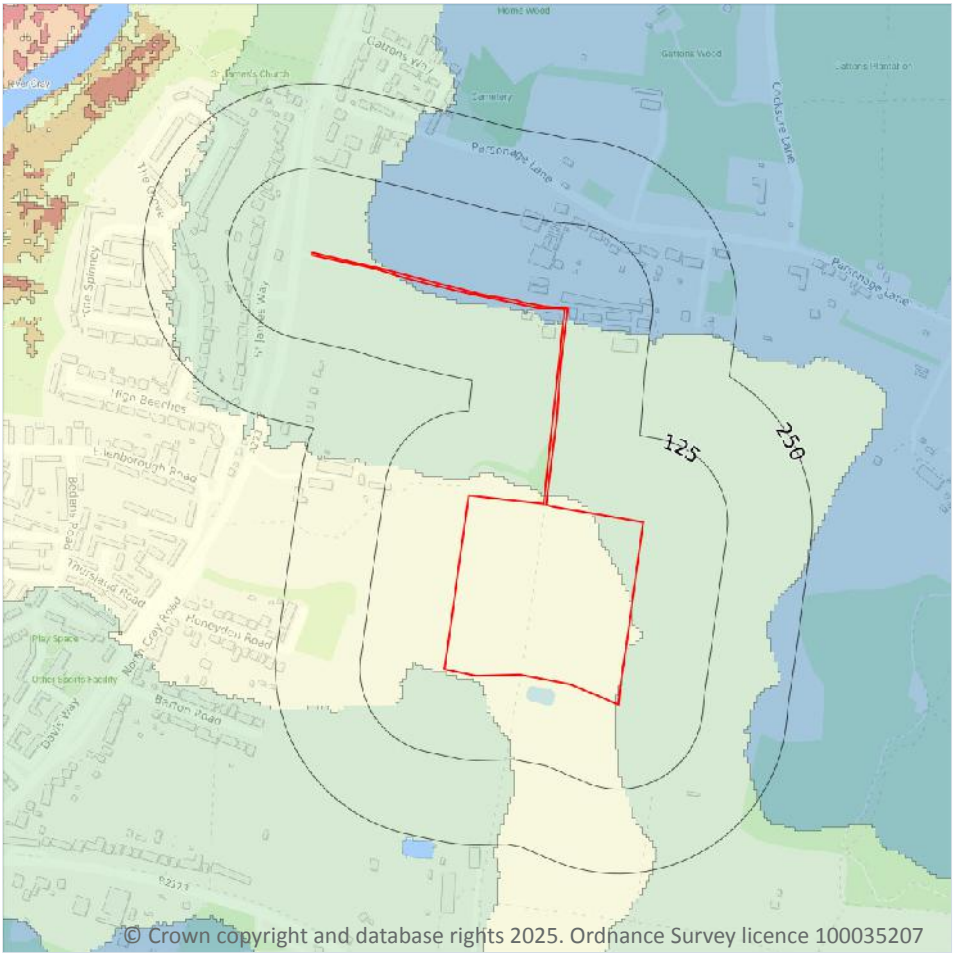
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.3m and 1.0m

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



Site Outline

Search buffers in metres (m)

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

9.1 Groundwater flooding

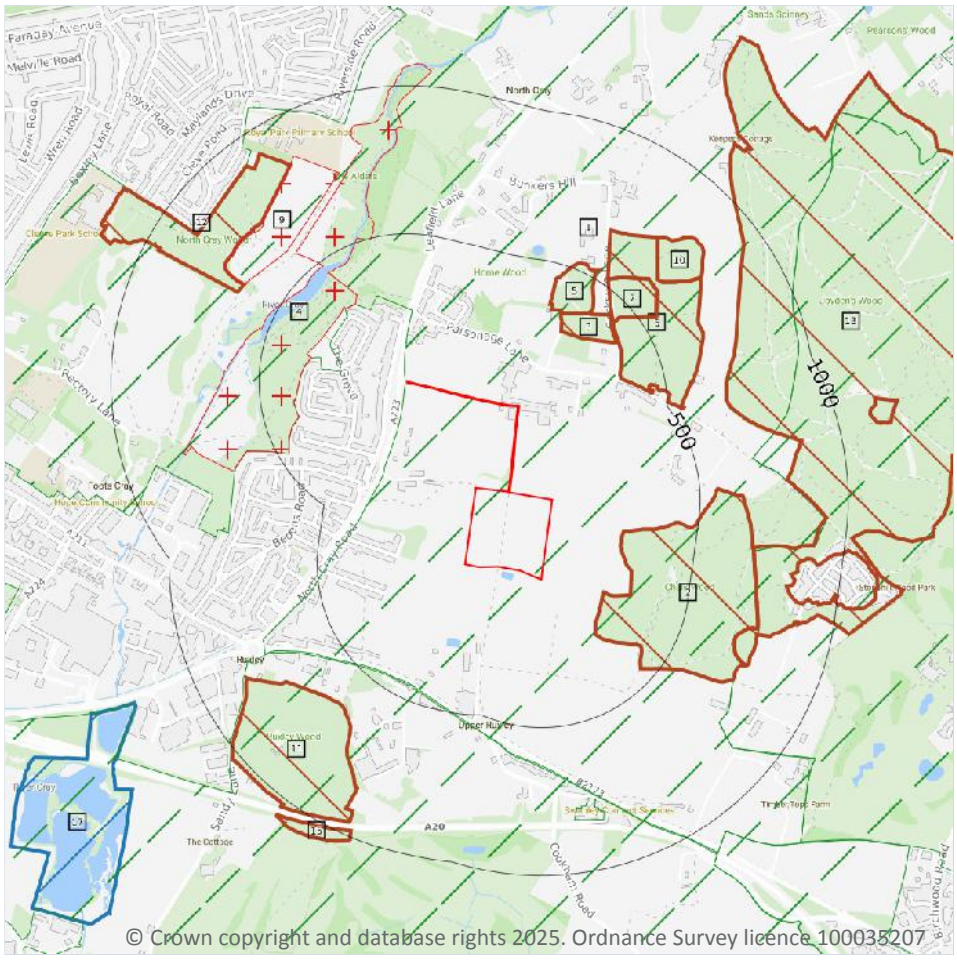
Highest risk on site	**Moderate**
Highest risk within 50m	**Moderate**

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 58 >**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	1

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.

Features are displayed on the Environmental designations map on **page 59 >**

ID	Location	Name	Data source
17	1211m SW	Ruxley Gravel Pits	Natural England

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	2

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 59 >**

ID	Location	Name	Data source
4	314m NW	Foots Cray Meadows	Natural England
9	599m NW	Foots Cray Meadows	Natural England

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

10.7 Designated Ancient Woodland

Records within 2000m	11

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.

Features are displayed on the Environmental designations map on **page 59 >**

ID	Location	Name	Woodland Type
2	214m SE	Joydens Wood	Ancient & Semi-Natural Woodland
3	289m N	Gattons Wood/plantation	Ancient Replanted Woodland
5	344m N	Gattons Wood/plantation	Ancient & Semi-Natural Woodland
6	356m NE	Gattons Wood/plantation	Ancient & Semi-Natural Woodland
7	423m NE	Gattons Wood/plantation	Ancient Replanted Woodland
10	633m NE	Gattons Wood/plantation	Ancient Replanted Woodland
11	634m SW	Ruxley Wood	Ancient Replanted Woodland
12	641m NW	North Cray Wood	Ancient & Semi-Natural Woodland
13	678m NE	Joydens Wood	Ancient Replanted Woodland
15	980m SW	Ruxley Wood	Ancient Replanted Woodland
18	1359m E	Joydens Wood	Ancient & Semi-Natural Woodland

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	6

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

Features are displayed on the Environmental designations map on **page 59 >**

ID	Location	Name	Local Authority name
1	**On site**	**London Green Belt**	**Bexley**
8	448m SW	London Green Belt	Bromley
14	693m E	London Green Belt	Dartford
16	1055m SE	London Green Belt	Sevenoaks
19	1486m W	London Green Belt	Bexley

ID	Location	Name	Local Authority name
-	1811m SE	London Green Belt	Sevenoaks

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

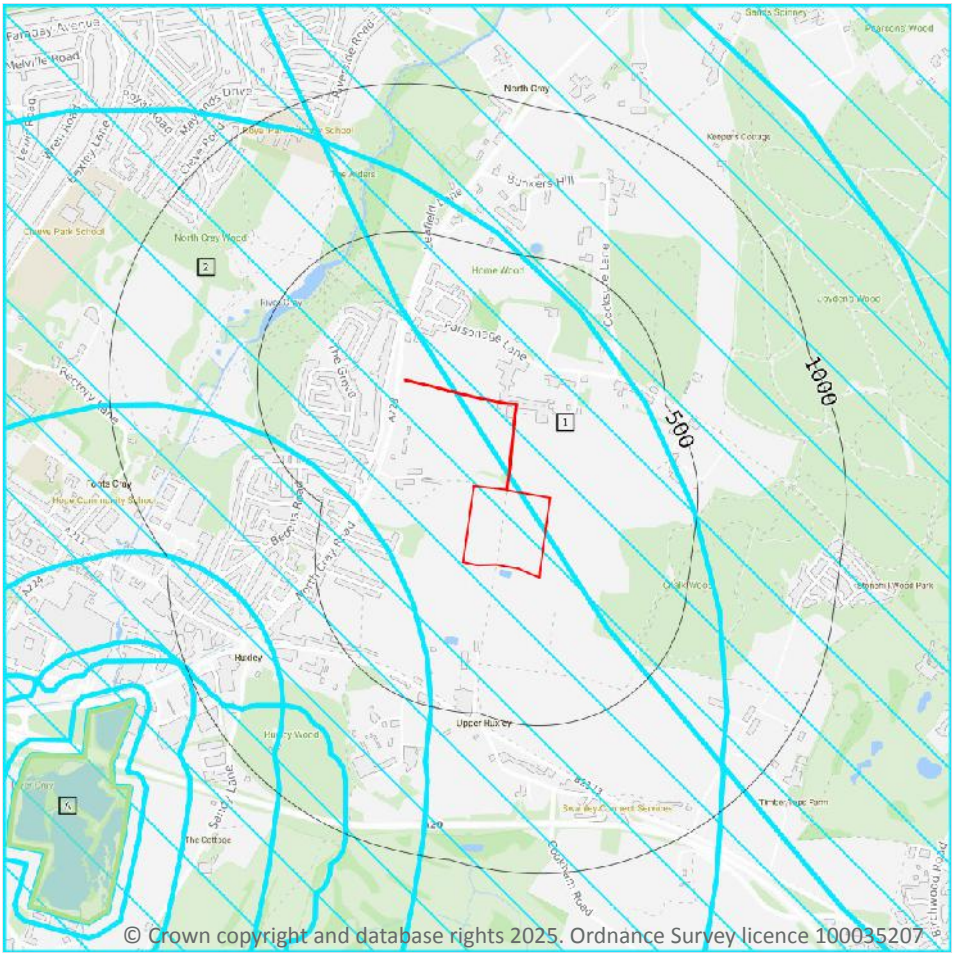
Records within 2000m	**1**

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	**North Kent**	**Groundwater**	**65**	**Existing**

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site	2

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.

Features are displayed on the SSSI Impact Zones and Units map on **page 65 >**

ID	Location	Type of developments requiring consultation
1	On site	**Infrastructure - Pipelines and underground cables, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Air pollution - Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m², manure stores > 250t). Combustion - General combustion processes >20MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill. Composting - Any composting proposal with more than 75000 tonnes maximum annual operational throughput. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Discharges - Any discharge of water or liquid waste of more than 20m³/day to ground (ie to seep away) or to surface water, such as a beck or stream. Water supply - Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m² or more.**
2	On site	**Infrastructure - Pipelines and underground cables, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Air pollution - Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m², manure stores > 250t). Combustion - General combustion processes >20MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill. Composting - Any composting proposal with more than 75000 tonnes maximum annual operational throughput. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Water supply - Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m² or more.**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	1

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.

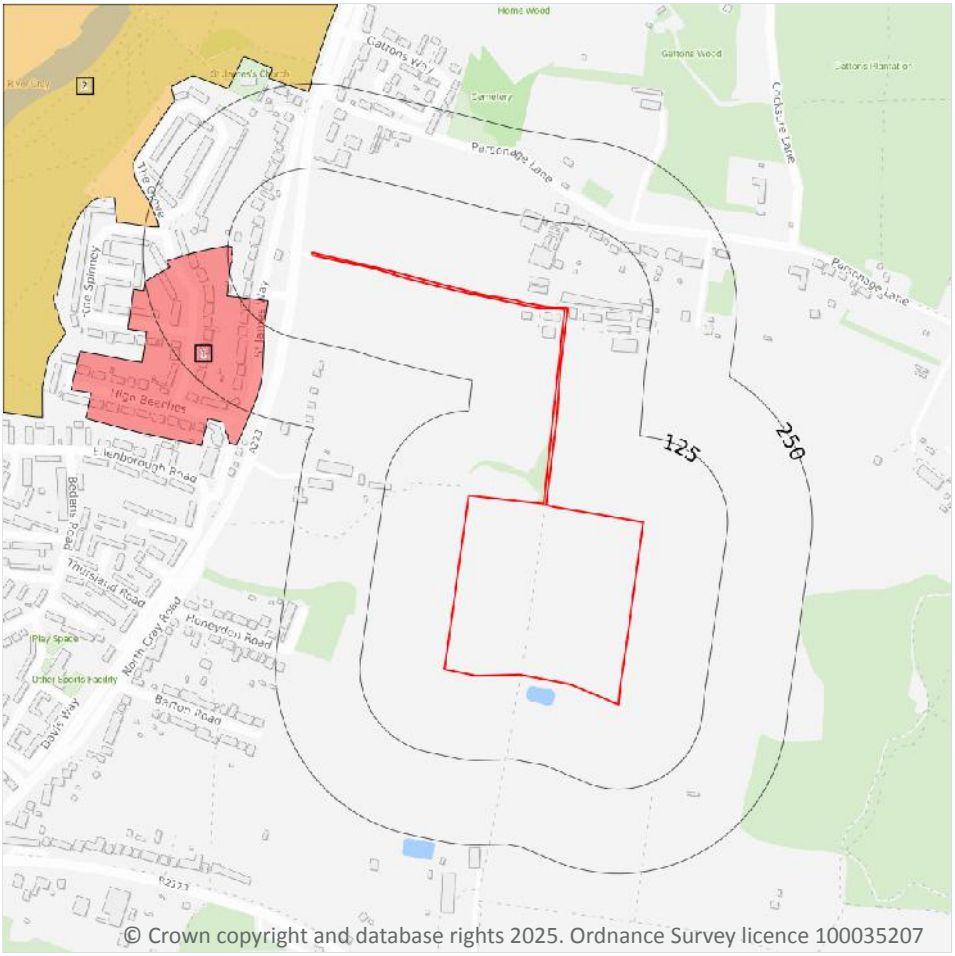
Features are displayed on the SSSI Impact Zones and Units map on **page 65 >**

ID: A
Location: 1211m SW
SSSI name: Ruxley Gravel Pits
Unit name: Whole Site
Broad habitat: Standing Open Water And Canals
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
Assemblages of breeding birds - Lowland open waters and their margins	Favourable	19/03/2013

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

11 Visual and cultural designations



Site Outline

Search buffers in metres (m)

- Listed buildings
- Conservation areas
- Conservation areas - no data
- National Parks
- Areas of Outstanding Natural Beauty
- Registered parks and gardens
- Scheduled Monuments
- World Heritage Sites

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	1

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.

Features are displayed on the Visual and cultural designations map on **page 68 >**

ID	Location	Name	District	Date of designation
1	94m NW	High Beeches	Bexley	30/11/2005

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	**1**

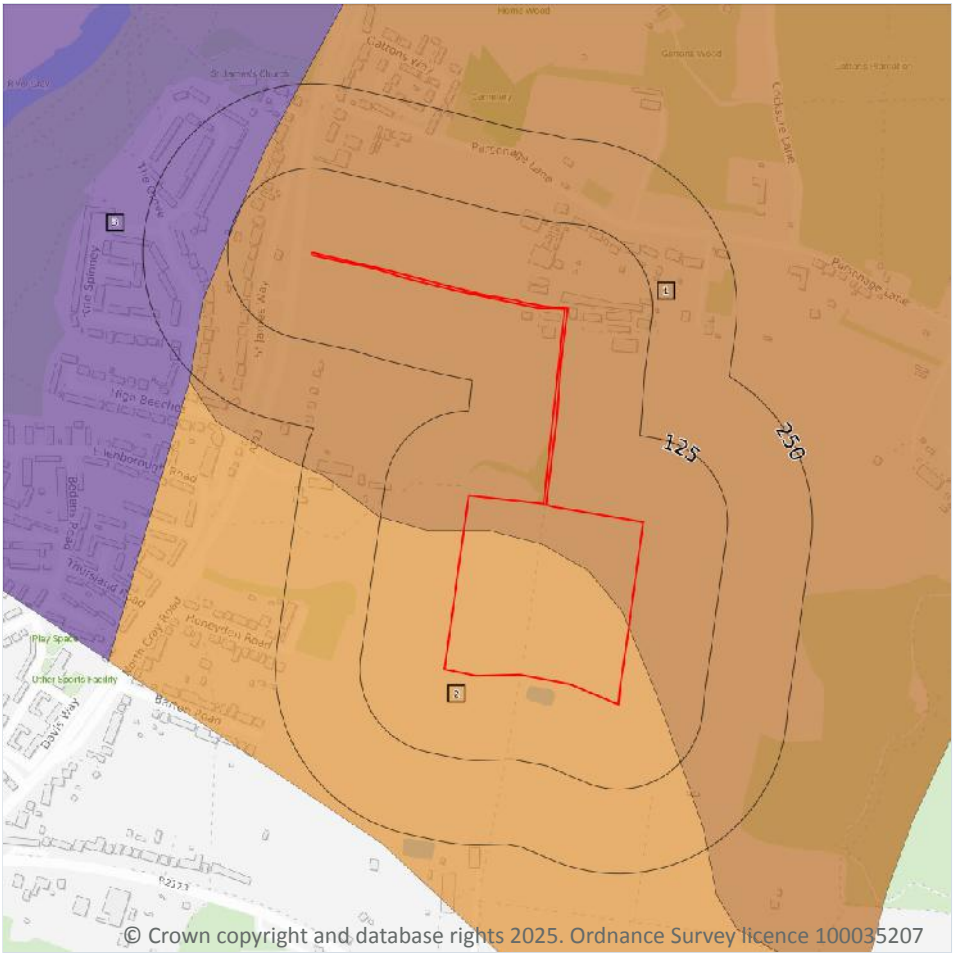
Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the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

Features are displayed on the Visual and cultural designations map on **page 68 >**

ID	Location	Name	Grade
2	230m NW	Foots Cray Place	II

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	3

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 71 >**

ID	Location	Classification	Description
1	**On site**	**Grade 2**	**Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.**
2	**On site**	**Grade 3**	**Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.**
3	123m NW	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.

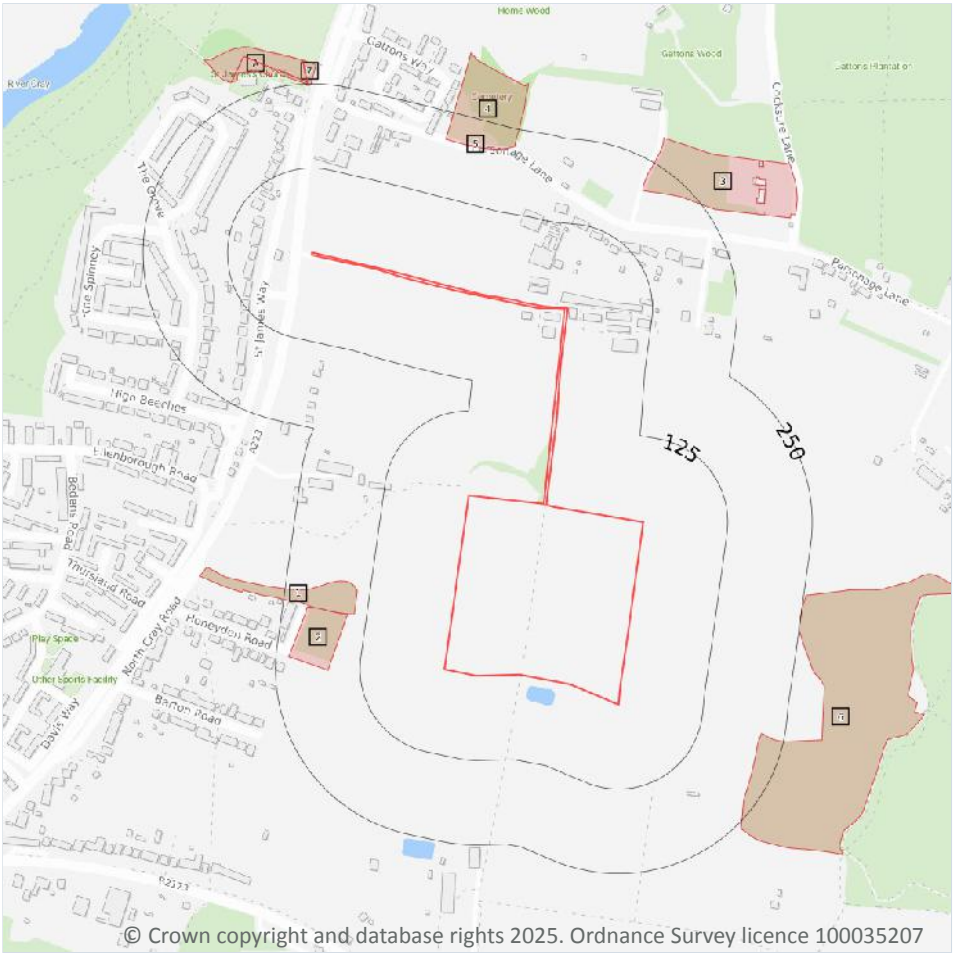
12.5 Countryside Stewardship Schemes

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	9

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 74 >**

ID	Location	Main Habitat	Other habitats
1	144m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	153m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	207m N	No main habitat but additional habitats present	Main habitat: DWOOD (INV > 50%)
4	209m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

ID	Location	Main Habitat	Other habitats
5	209m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
6	214m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%); GQSIG (INV > 50%)
7	248m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	248m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	249m NW	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.

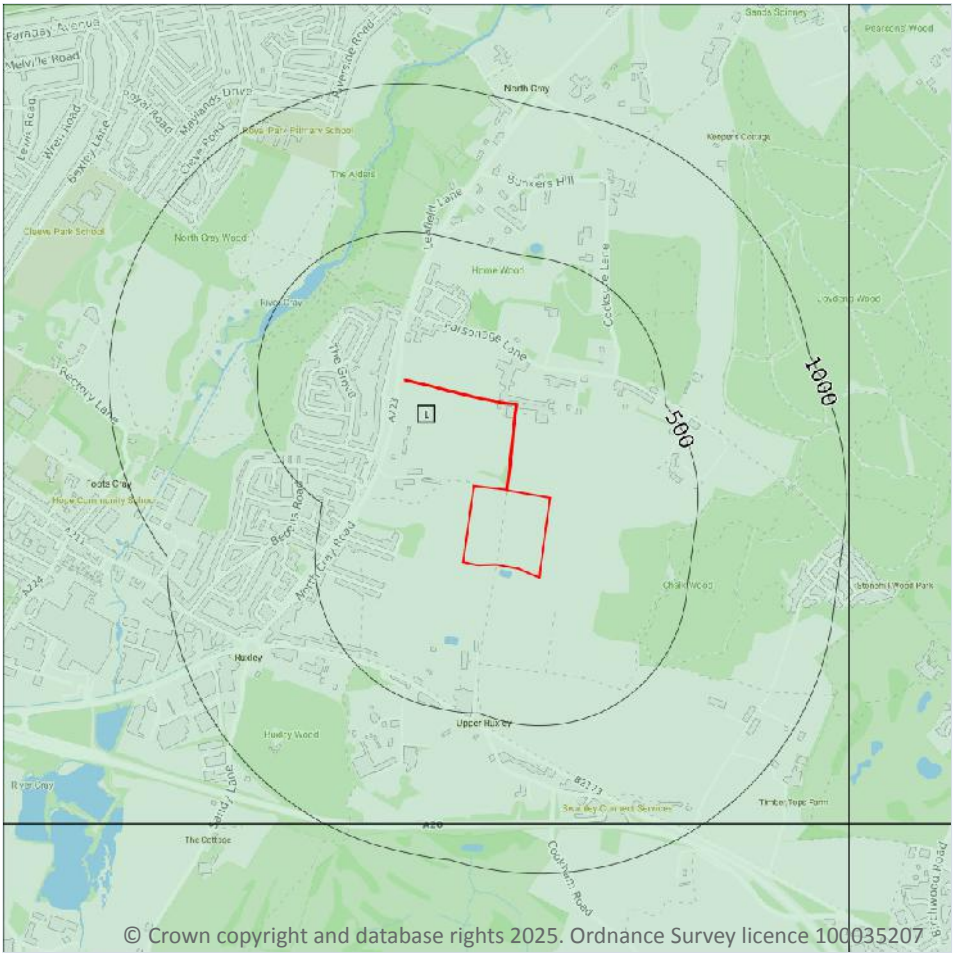
13.4 Limestone Pavement Orders

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

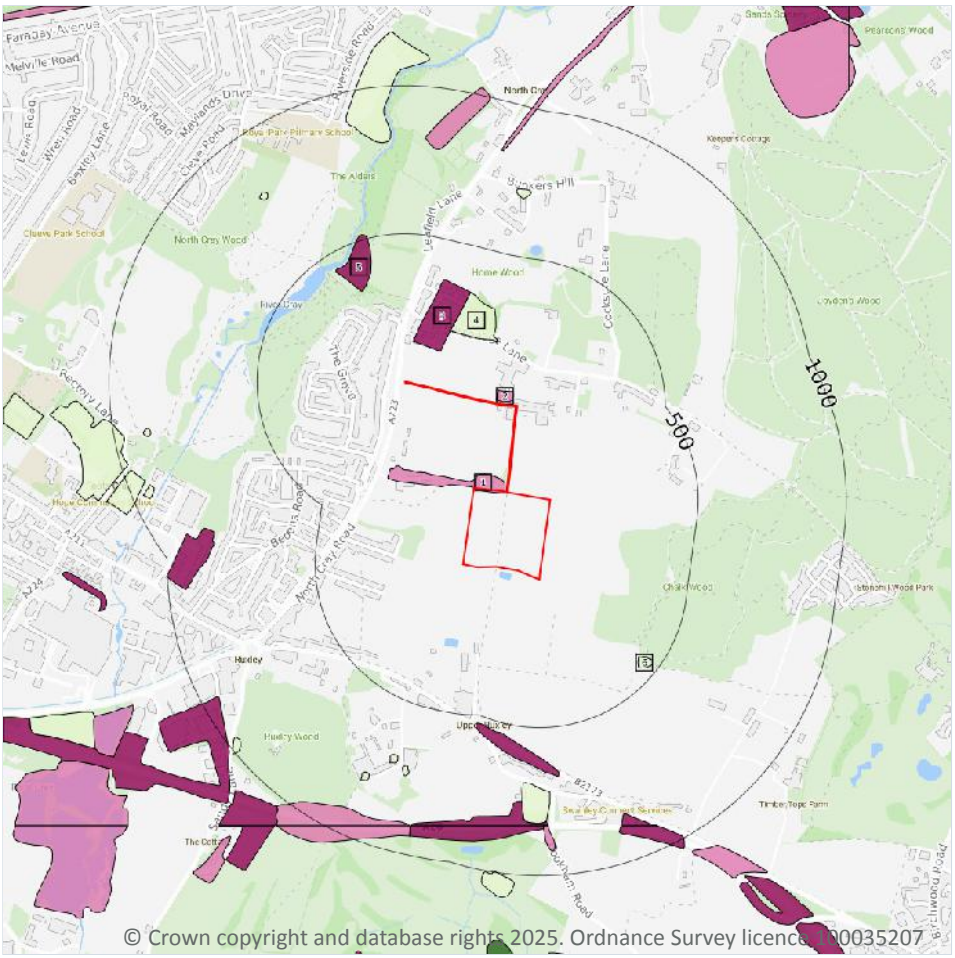
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 76 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**TQ47SE**

This data is sourced from the British Geological Survey.

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



Site Outline

Search buffers in metres (m)

- Reclaimed ground
- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

14.2 Artificial and made ground (10k)

Records within 500m **6**

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.

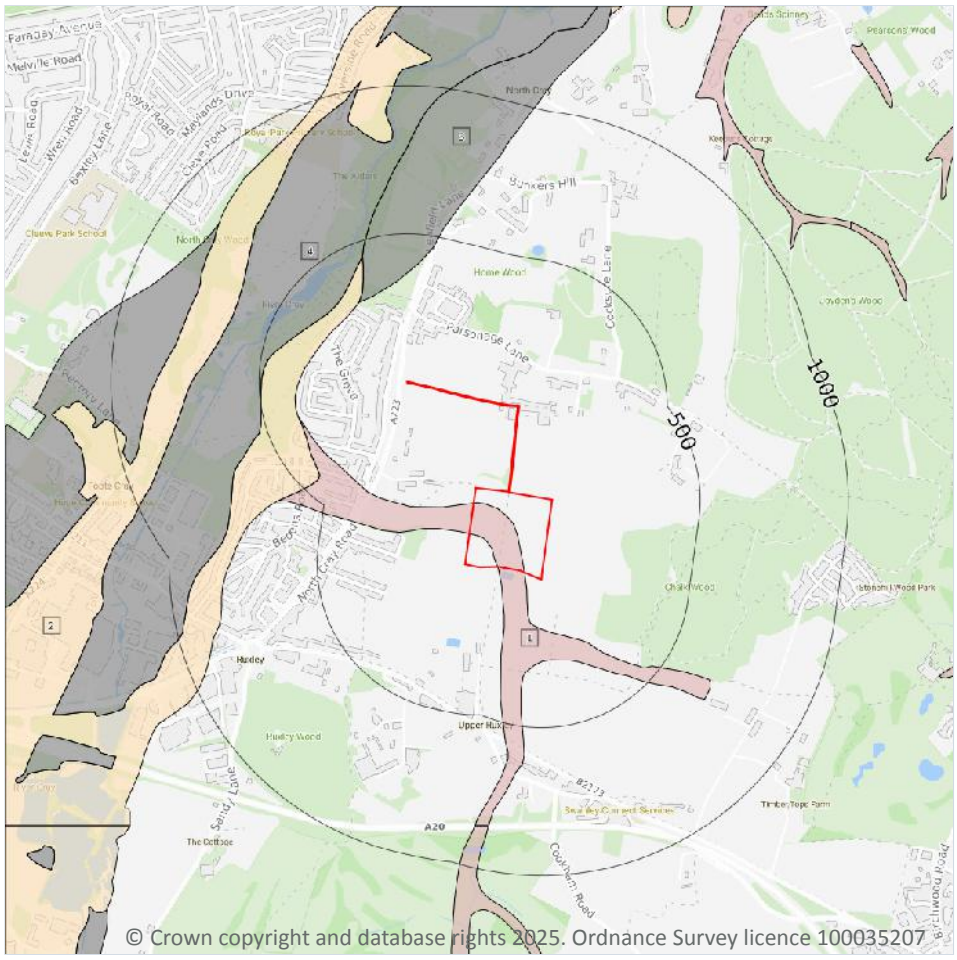
Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 77 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**WGR-VOID**	**Worked Ground (Undivided)**	**Void**
2	10m N	WGR-VOID	Worked Ground (Undivided)	Void
3	126m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	200m N	WMGR-ARTDP	Infilled Ground	Artificial Deposit

ID	Location	LEX Code	Description	Rock description
5	338m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
6	426m SE	WMGR-ARTDP	Infilled Ground	Artificial Deposit

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m **4**

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.

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 79 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**HEAD-DMTN**	**Head - Diamicton**	**Diamicton**
2	298m NW	TPGR-XSV	Taplow Gravel Formation - Sand And Gravel	Sand And Gravel
3	310m NW	CFSI-Z	Crayford Silt Member - Silt	Silt

ID	Location	LEX Code	Description	Rock description
4	352m NW	ALV-Z	Alluvium - Silt (unlithified Deposits Coding Scheme)	Silt

This data is sourced from the British Geological Survey.

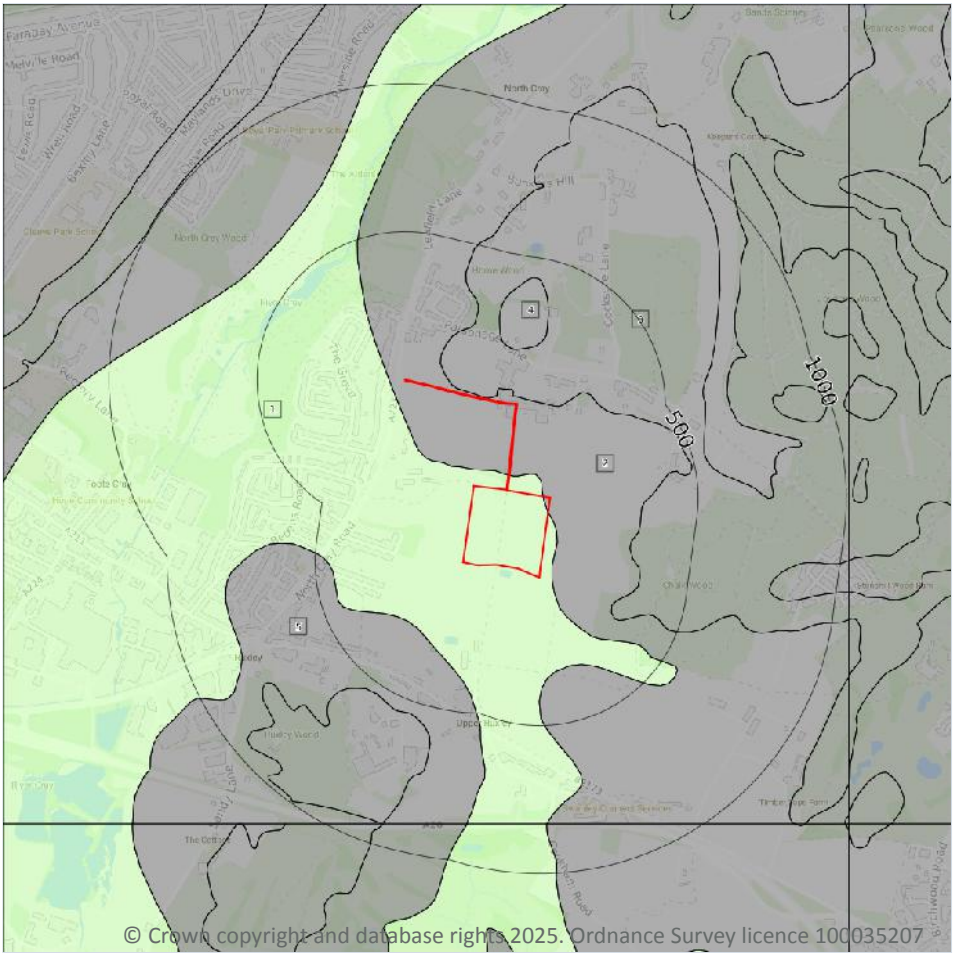
14.4 Landslip (10k)

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



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m **5**

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.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 81 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**SNCK-CHLK**	**Seaford Chalk Formation And Newhaven Chalk Formation (undifferentiated) - Chalk**	**Campanian Age - Coniacian Age**
2	**On site**	**TAB-SANDU**	**Thanet Sand Formation - Sand**	**Thanetian Age**
3	3m N	LMBE-SANCL	Lambeth Group - Sand And Clay	Paleocene Epoch

ID	Location	LEX Code	Description	Rock age
4	183m N	HWH-GRAV	Harwich Formation - Gravel	Eocene Epoch - Paleocene Epoch
5	271m SW	TAB-SANDU	Thanet Sand Formation - Sand	Thanetian Age

This data is sourced from the British Geological Survey.

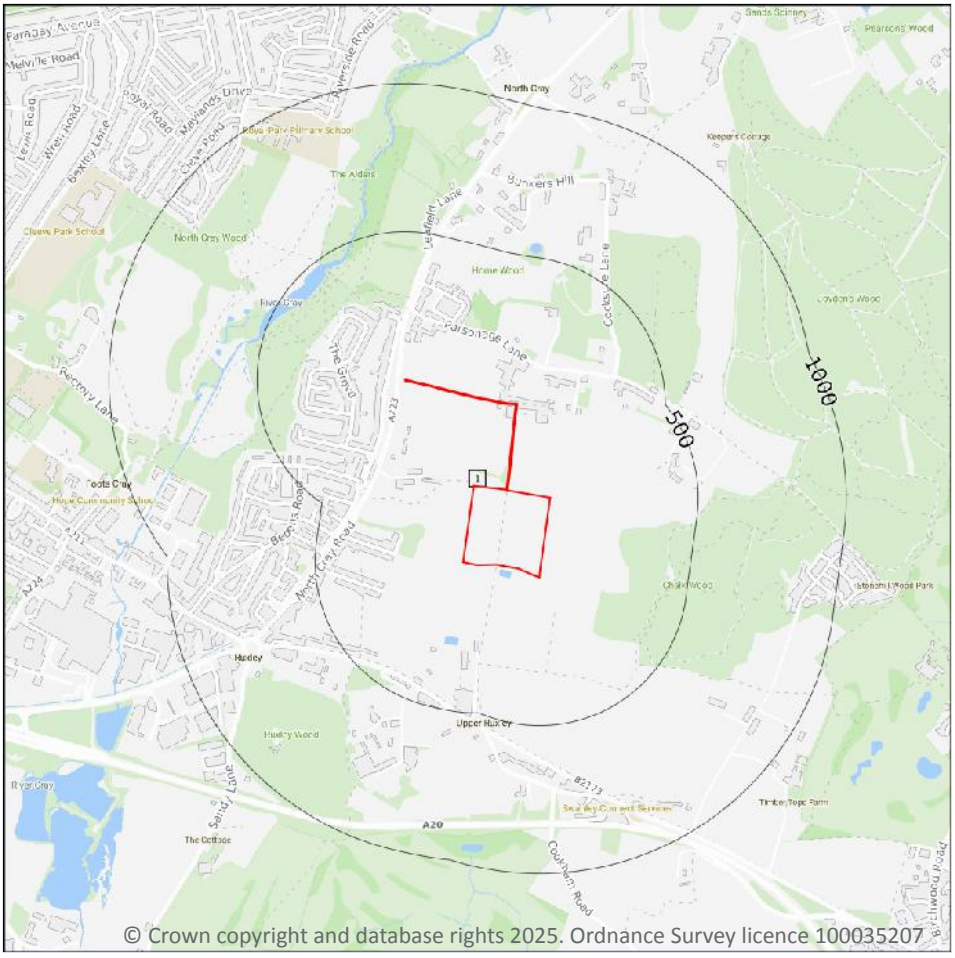
14.6 Bedrock faults and other linear features (10k)

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

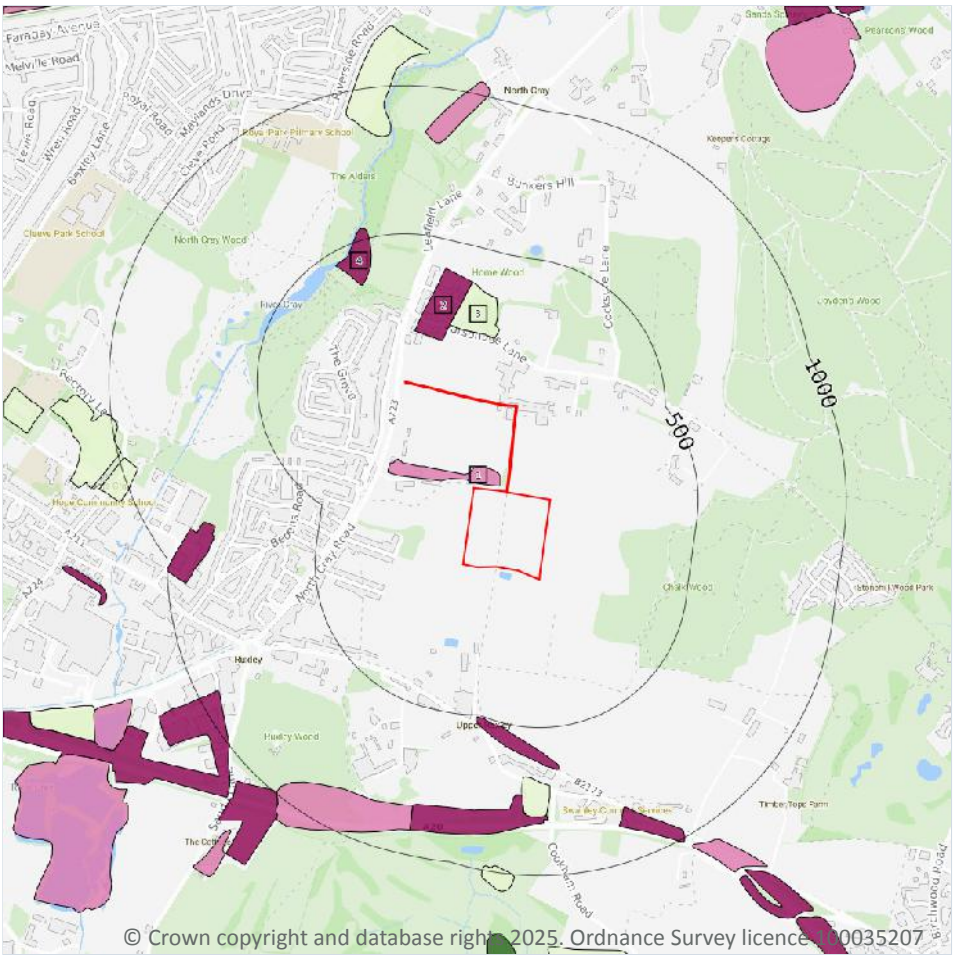
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 83 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**EW271_dartford_v4**

This data is sourced from the British Geological Survey.

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



15.2 Artificial and made ground (50k)

Records within 500m	4

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 84 >**

ID	Location	LEX Code	Description	Rock description
1	16m NW	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
2	162m N	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
3	212m N	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT
4	357m NW	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.

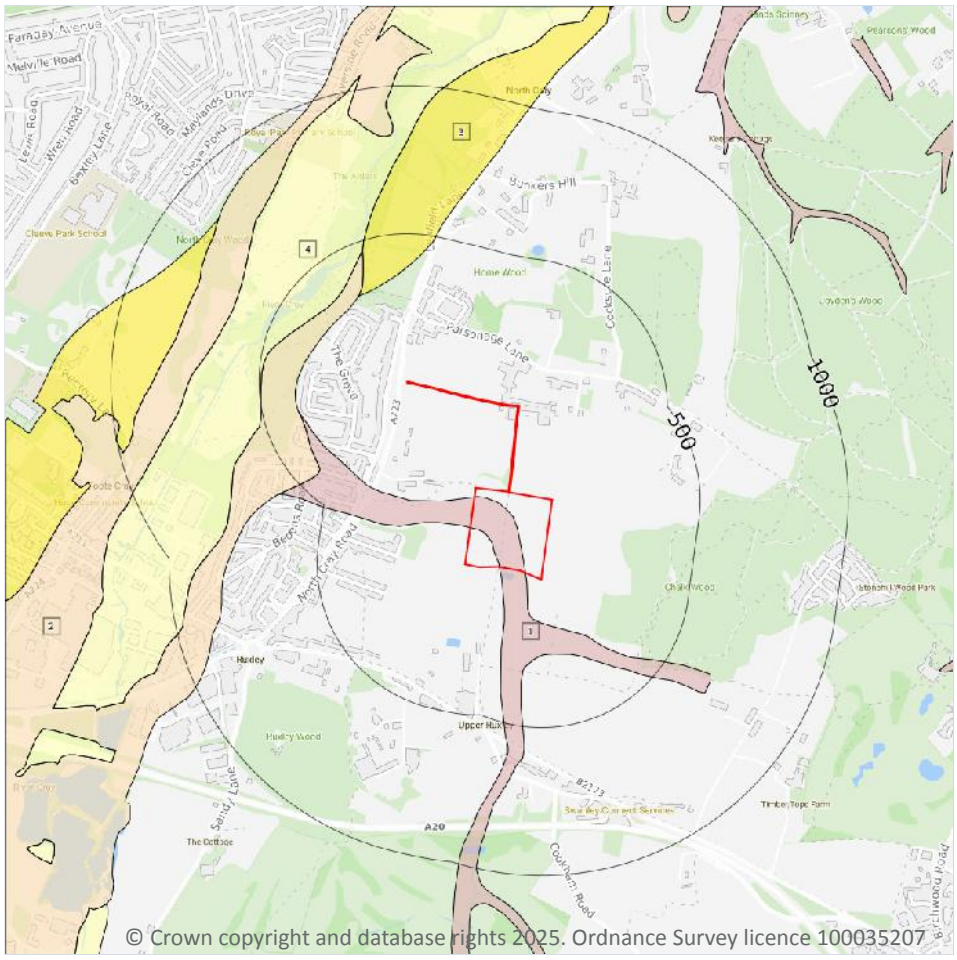
15.3 Artificial ground permeability (50k)

Records within 50m	0

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).

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 **4**

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 86 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**HEAD-XCZSV**	**HEAD**	**CLAY, SILT, SAND AND GRAVEL**
2	313m NW	TPGR-XSV	TAPLOW GRAVEL MEMBER	SAND AND GRAVEL
3	330m NW	CFSI-XCZ	CRAYFORD SILT MEMBER	CLAY AND SILT

ID	Location	LEX Code	Description	Rock description
4	366m NW	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL

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	**Mixed**	**High**	**Very Low**

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.

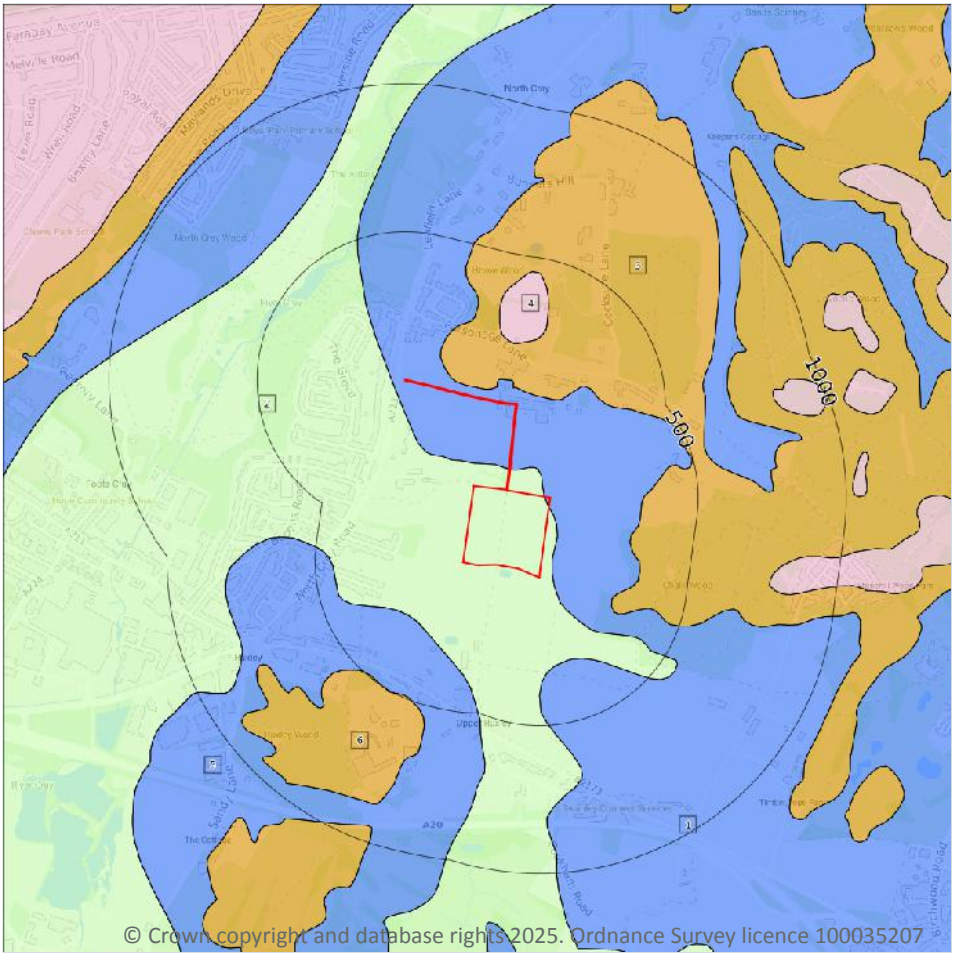
15.7 Landslip permeability (50k)

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 **6**

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 88 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**TAB-S**	**THANET FORMATION - SAND**	**THANETIAN**
2	**On site**	**LSNCK-CHLK**	**LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION (UNDIFFERENTIATED) - CHALK**	**TURONIAN**
3	30m N	LMBE-XSZC	LAMBETH GROUP - SAND, SILT AND CLAY	THANETIAN

ID	Location	LEX Code	Description	Rock age
4	203m N	HWH-XSV	HARWICH FORMATION - SAND AND GRAVEL	YPRESIAN
5	254m SW	TAB-S	THANET FORMATION - SAND	THANETIAN
6	492m SW	LMBE-XSZC	LAMBETH GROUP - SAND, SILT AND CLAY	THANETIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	**3**

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	**Fracture**	**Very High**	**Very High**
On site	**Intergranular**	**High**	**High**
30m N	Intergranular	High	Low

This data is sourced from the British Geological Survey.

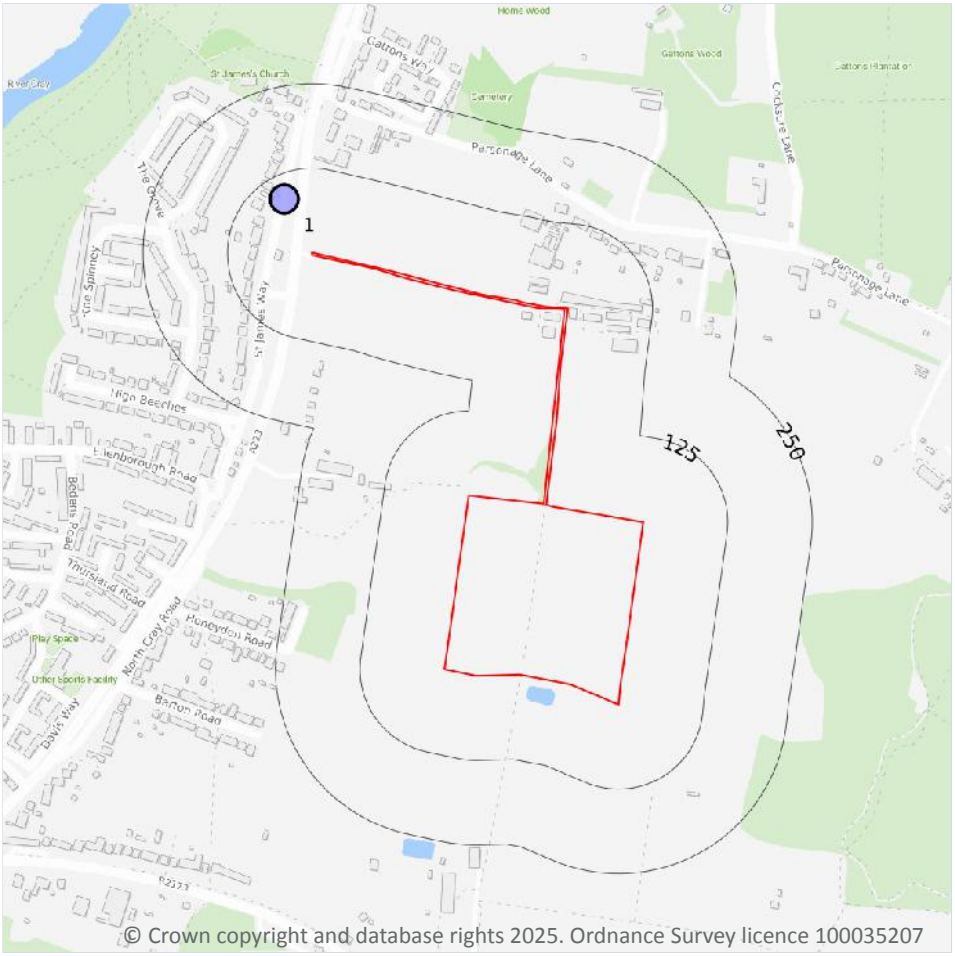
15.10 Bedrock faults and other linear features (50k)

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	1

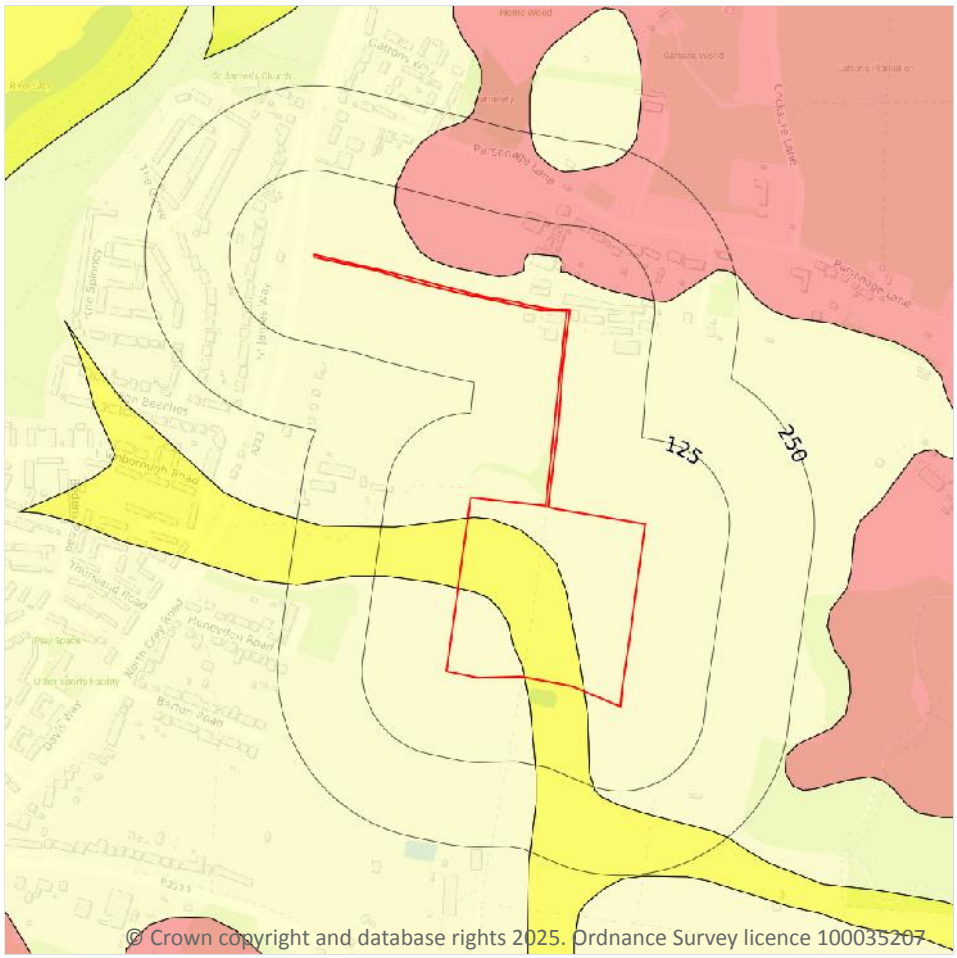
The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several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

Features are displayed on the Boreholes map on **page 90 >**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	90m NW	548460 171580	NORTH CRAY RD 2	4.88	N	790845 ↗

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	3

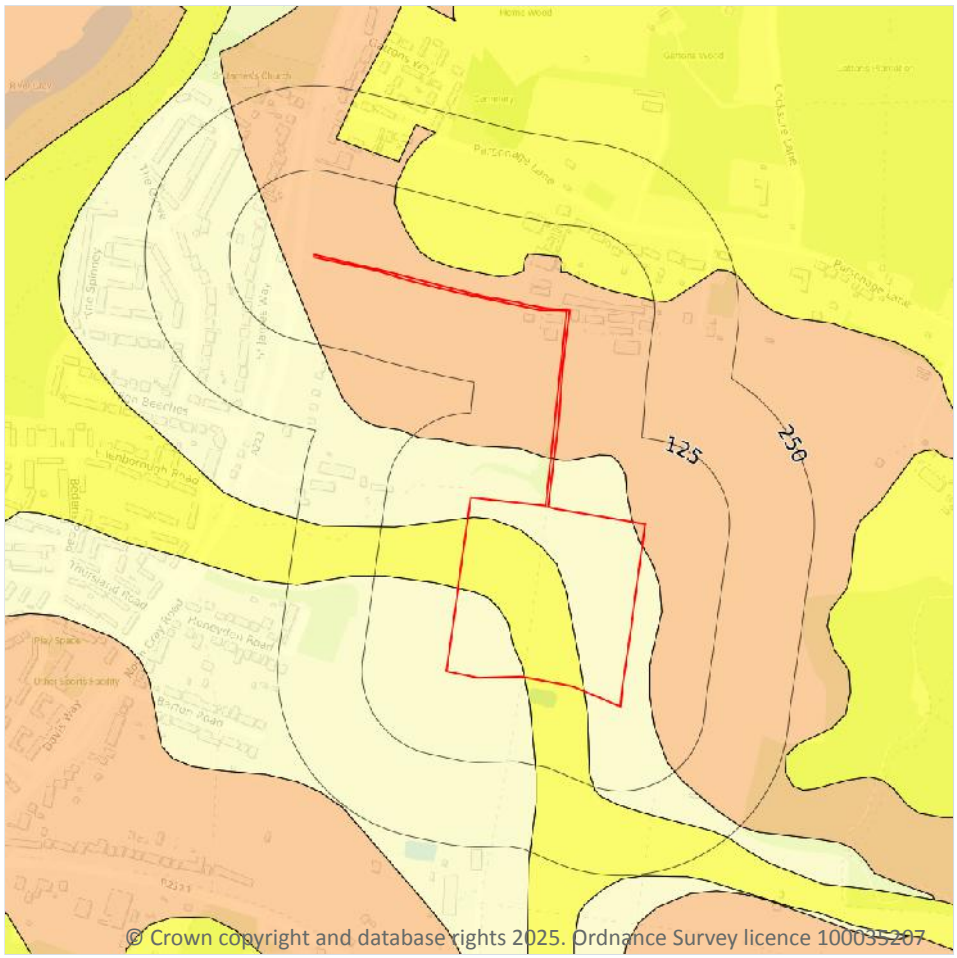
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 91 >**

Location	Hazard rating	Details
On site	**Negligible**	**Ground conditions predominantly non-plastic.**
On site	**Very low**	**Ground conditions predominantly low plasticity.**
30m N	Moderate	Ground conditions predominantly high plasticity.

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	4

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.

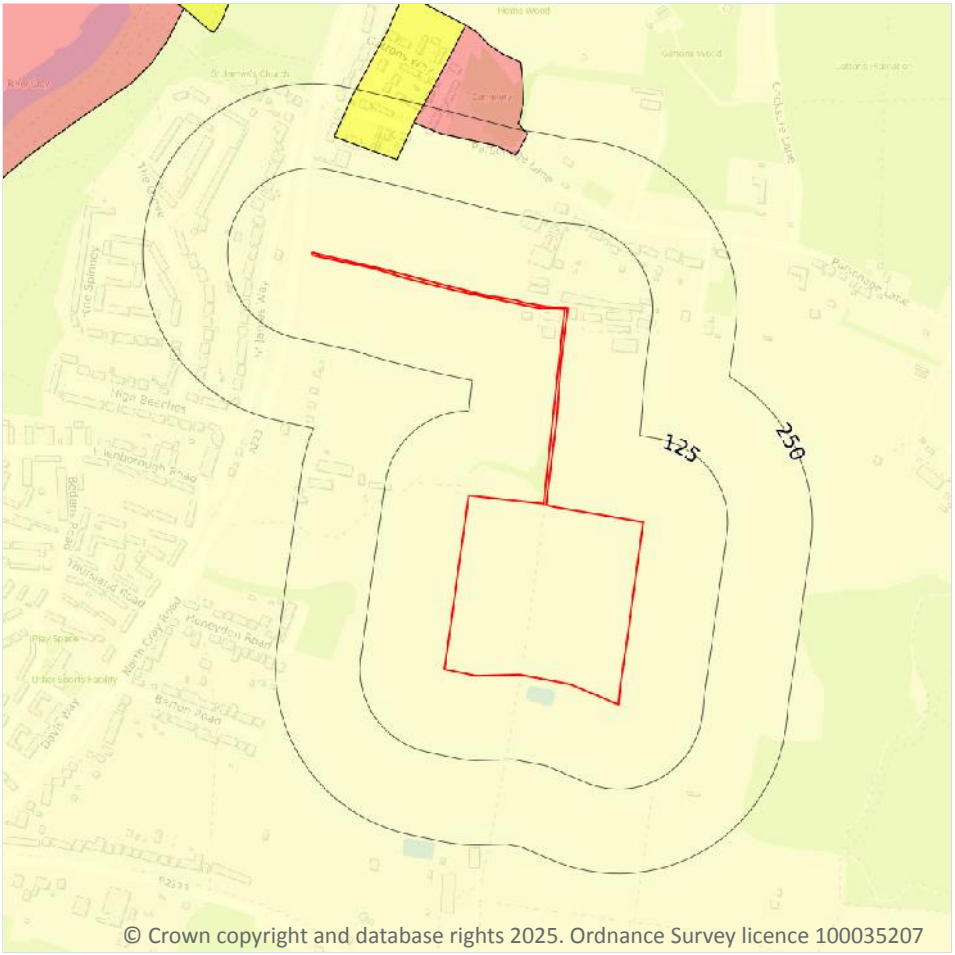
Features are displayed on the Natural ground subsidence - Running sands map on **page 93 >**

Location	Hazard rating	Details
On site	**Negligible**	**Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.**

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.**
On site	**Low**	**Running sand conditions may be present. Constraints may apply to land uses involving excavation or the addition or removal of water.**
30m N	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

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

17.3 Compressible deposits

Records within 50m	1

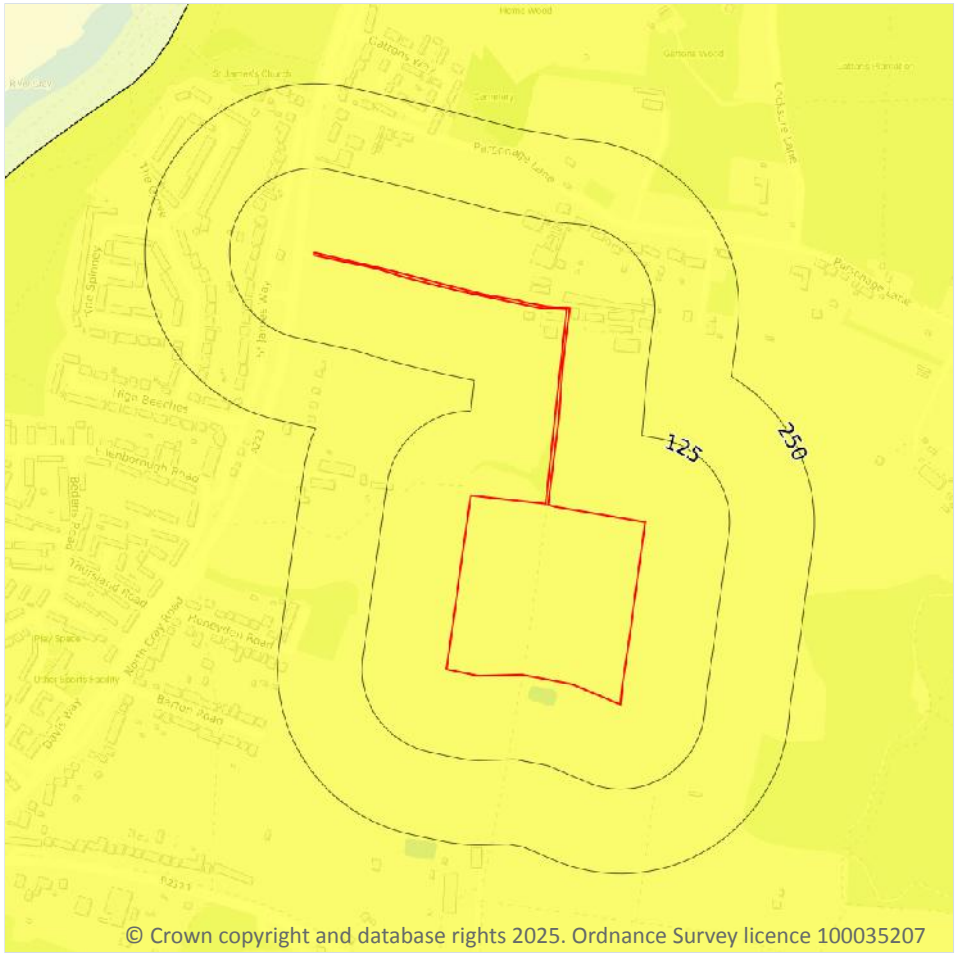
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 95 >**

Location	Hazard rating	Details
On site	**Negligible**	**Compressible strata are not thought to occur.**

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

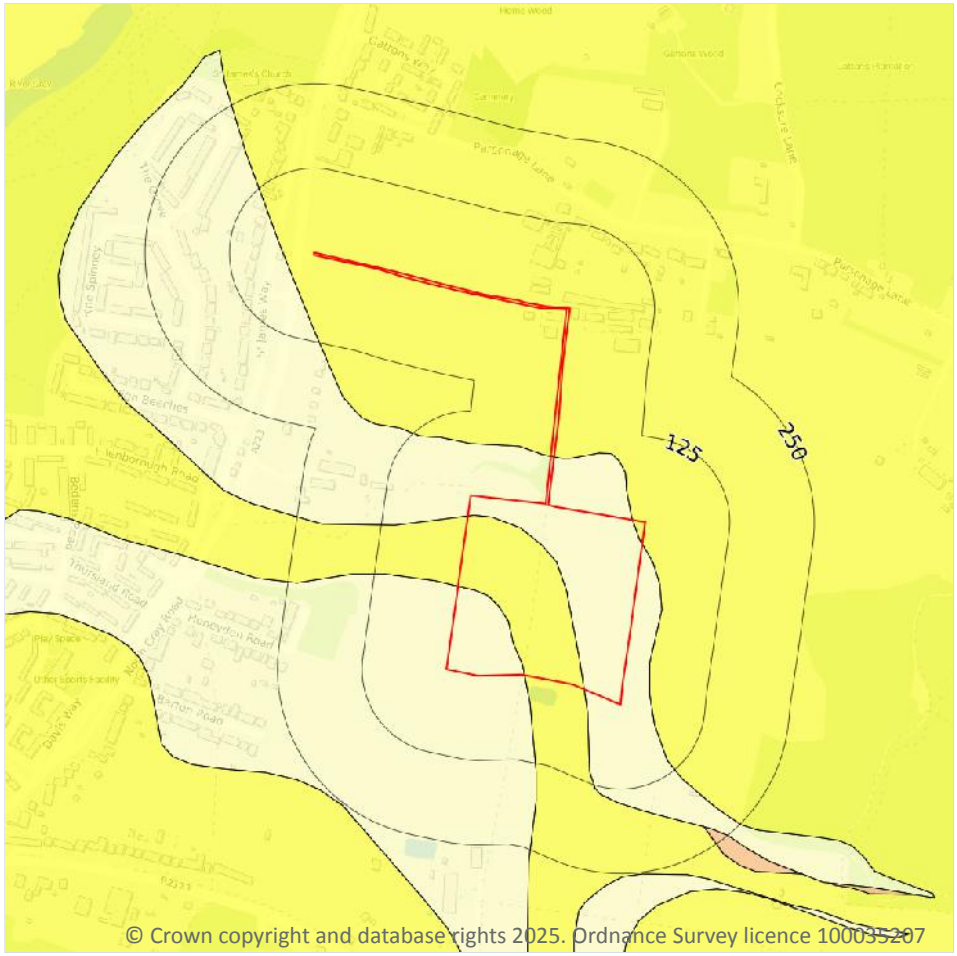
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 96 >**

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	2

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.

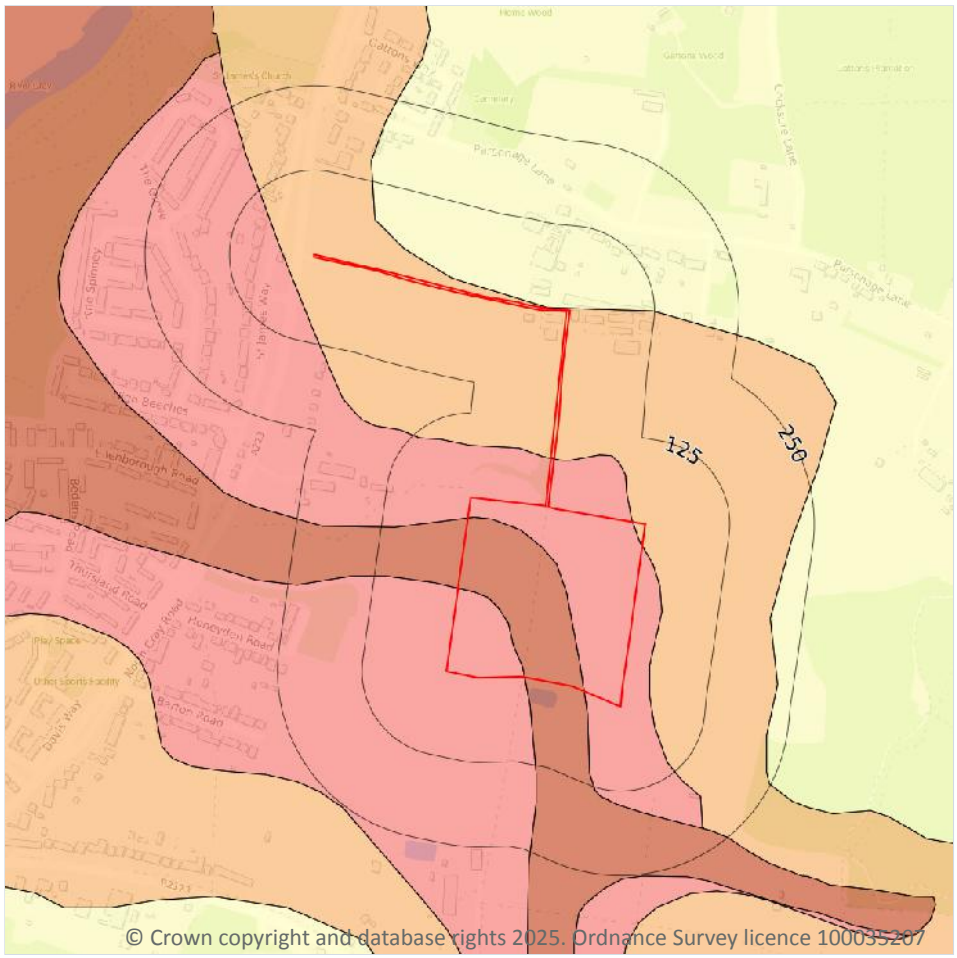
Features are displayed on the Natural ground subsidence - Landslides map on **page 97 >**

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

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



17.6 Ground dissolution of soluble rocks

Records within 50m	4

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.

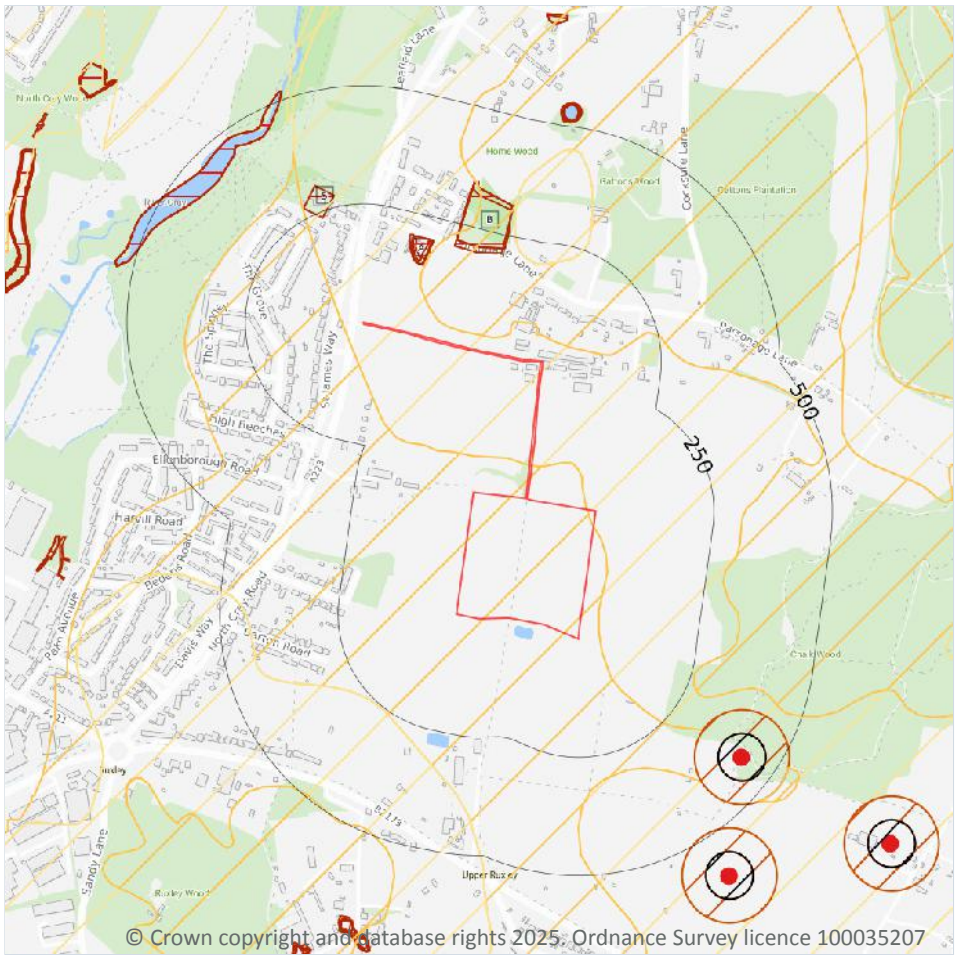
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 99 >**

Location	Hazard rating	Details
On site	**Low**	**Soluble rocks are present within the ground. Some dissolution features may be present. Potential for difficult ground conditions are at a level where they may be considered, localised subsidence need not be considered except in exceptional circumstances.**

Location	Hazard rating	Details
On site	**Moderate**	**Soluble rocks are present within the ground. Many dissolution features may be present. Potential for difficult ground conditions are at a level where they should be considered. Potential for subsidence is at a level where it may need to be considered.**
On site	**High**	**Soluble rocks are present within the ground. Numerous dissolution features may be present. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered.**
1m N	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	1

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.

Features are displayed on the Mining and ground workings map on **page 101 >**

ID	Location	Details	Description
C	424m SE	Name: Chalk Wood Denehole Address: SIDCUP, Greater London Commodity: Chalk Status: Ceased	Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m **7**

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 101 >**

ID	Location	Land Use	Year of mapping	Mapping scale
A	146m N	Unspecified Ground Workings	1895	1:10560
A	147m N	Unspecified Pit	1908	1:10560
A	148m N	Unspecified Pit	1868	1:10560
B	200m N	Cemetery	1988	1:10000
B	212m N	Cemetery	1966	1:10560
B	212m N	Cemetery	1973	1:10000
5	237m NW	Grave Yard	1868	1:10560

This is 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 is 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	24

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).

Features are displayed on the Mining and ground workings map on **page 101 >**

ID	Location	Name	Commodity	Class	Likelihood
1	**On site**	**Not available**	**Chalk**	**A**	**Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.**
2	**On site**	**Not available**	**Chalk**	**B**	**Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.**
3	30m N	Not available	Chalk	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.

ID	Location	Name	Commodity	Class	Likelihood
4	203m N	Not available	Chalk	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
6	254m SW	Not available	Chalk	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
C	326m SE	Chalk Wood	Chalk	D	Underground mining is considered likely to have occurred within or close to the area. The location, extent and nature of mining should be considered in any site investigation. Potential for difficult ground conditions should be considered.
C	376m SE	Chalk Wood	Chalk	E	Underground mining is known or considered likely within or very close to the area. The location, extent and nature of mining should be considered in any site investigation. Potential for difficult ground conditions should be considered.
7	454m NW	Not available	Sand	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
8	492m SW	Not available	Chalk	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
E	493m SE	Chalk Wood	Chalk	D	Underground mining is considered likely to have occurred within or close to the area. The location, extent and nature of mining should be considered in any site investigation. Potential for difficult ground conditions should be considered.
9	514m SE	Not available	Chalk	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
E	543m SE	Chalk Wood	Chalk	E	Underground mining is known or considered likely within or very close to the area. The location, extent and nature of mining should be considered in any site investigation. Potential for difficult ground conditions should be considered.
10	645m NW	Not available	Sand	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.

ID	Location	Name	Commodity	Class	Likelihood
H	690m SE	Upper Ruxley Farm	Chalk	D	Underground mining is considered likely to have occurred within or close to the area. The location, extent and nature of mining should be considered in any site investigation. Potential for difficult ground conditions should be considered.
11	722m NW	Not available	Chalk	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
H	740m SE	Upper Ruxley Farm	Chalk	E	Underground mining is known or considered likely within or very close to the area. The location, extent and nature of mining should be considered in any site investigation. Potential for difficult ground conditions should be considered.
12	766m NW	Not available	Chalk	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
13	774m E	Not available	Chalk	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
15	826m NE	Not available	Chalk	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
-	832m S	Not available	Chalk	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
-	832m S	Not available	Chalk	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
-	871m S	Not available	Chalk	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
-	947m SW	Not available	Chalk	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.

ID	Location	Name	Commodity	Class	Likelihood
-	980m SW	Not available	Chalk	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.

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	2

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.

Location	Mineral type
295m S	Stone
379m SE	Stone

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.

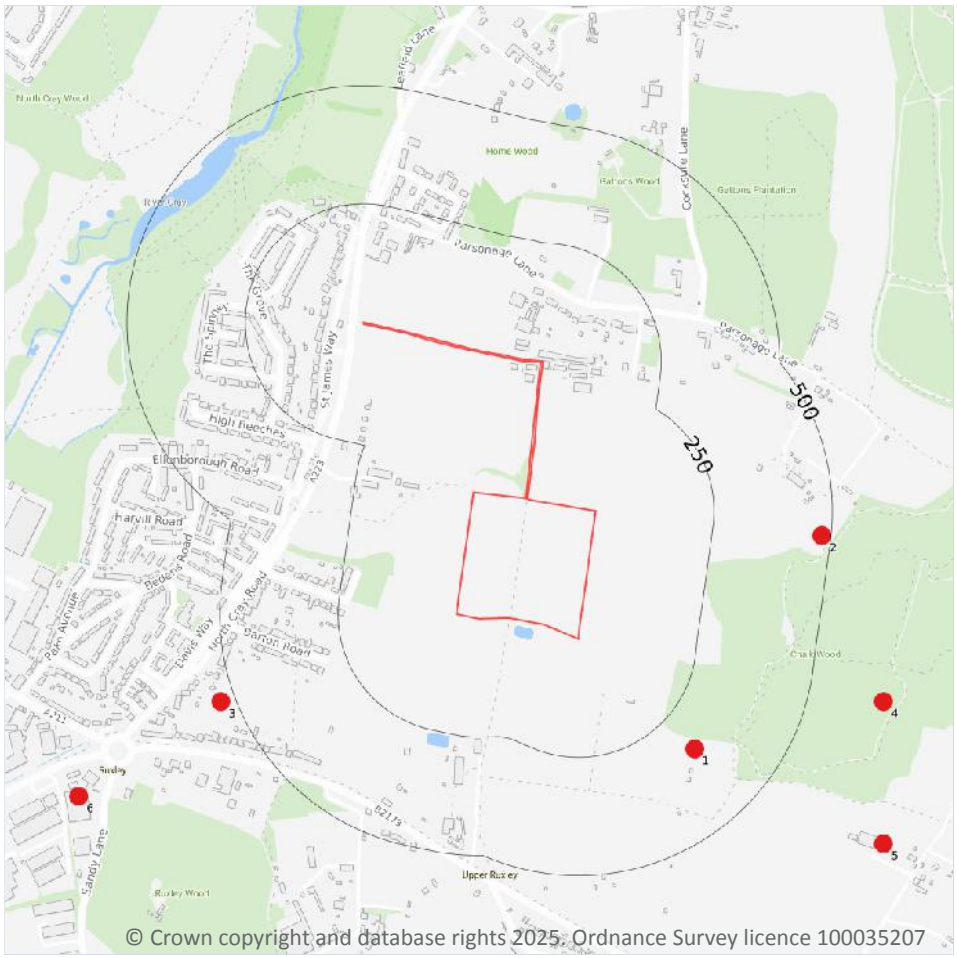
18.16 Clay mining

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



Site Outline

Search buffers in metres (m)

Natural cavities (Area)

Natural cavities (Point)

Mining cavities

Reported recent incidents

Historical incidents

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	6

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.

Features are displayed on the Ground cavities and sinkholes map on **page 109 >**

ID	Location	Mine Address	Mineral	Data source	Publisher
1	337m SE	Foots Cray, Greater London	Chalk	-	-
2	481m E	Joyden's Wood, Kent	Chalk	-	-
3	530m SW	Foots Cray, Kent	Chalk	-	-
4	658m E	Joyden's Wood, Kent	Chalk	-	-
5	776m SE	Swanley, Kent	Chalk	-	-
6	885m SW	Foots Cray, Kent	Chalk	-	-

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

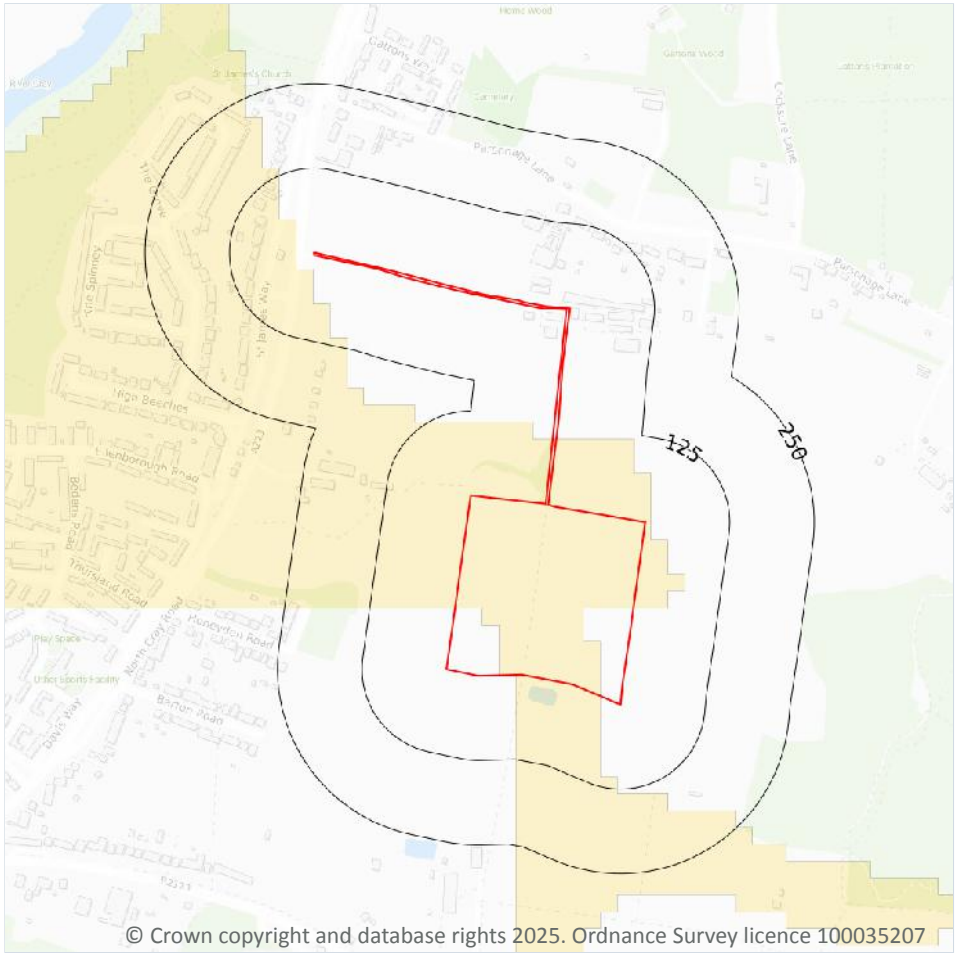
Records within 500m	0

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



Site Outline

Search buffers in metres (m)

Greater than 30%

Between 10% and 30%

Between 5% and 10%

Between 3% and 5%

Between 1% and 3%

Less than 1%

20.1 Radon

Records on site	2

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 112 >**

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

Location	Estimated properties affected	Radon Protection Measures required
On site	**Between 1% and 3%**	**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	26

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 km^2. 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 km^2; 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	**No data**	**No data**	**No data**	**No data**	**No data**	**No data**	**No data**
On site	**No data**	**No data**	**No data**	**No data**	**No data**	**No data**	**No data**
On site	**No data**	**No data**	**No data**	**No data**	**No data**	**No data**	**No data**
On site	**No data**	**No data**	**No data**	**No data**	**No data**	**No data**	**No data**
On site	**No data**	**No data**	**No data**	**No data**	**No data**	**No data**	**No data**
On site	**No data**	**No data**	**No data**	**No data**	**No data**	**No data**	**No data**
On site	**No data**	**No data**	**No data**	**No data**	**No data**	**No data**	**No data**
On site	**No data**	**No data**	**No data**	**No data**	**No data**	**No data**	**No data**
1m NW	No data	No data	No data	No data	No data	No data	No data
1m NW	No data	No data	No data	No data	No data	No data	No data
9m NE	No data	No data	No data	No data	No data	No data	No data
9m NE	No data	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	No data	No data
16m E	No data	No data	No data	No data	No data	No data	No data
16m E	No data	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	No data	No data
22m E	No data	No data	No data	No data	No data	No data	No data
22m E	No data	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	No data	No data
30m N	No data	No data	No data	No data	No data	No data	No data
35m SE	No data	No data	No data	No data	No data	No data	No data

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
36m E	No data	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	No data	No data
36m SE	No data	No data	No data	No data	No data	No data	No data
38m N	No data	No data	No data	No data	No data	No data	No data
42m NW	No data	No data	No data	No data	No data	No data	No data
45m SE	No data	No data	No data	No data	No data	No data	No data
45m SE	No data	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	No data	No data
46m NW	No data	No data	No data	No data	No data	No data	No data
49m N	No data	No data	No data	No data	No data	No data	No data

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m **37**

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 km^2).

Location	Arsenic (mg/kg)	Bioaccessible Arsenic (mg/kg)	Lead (mg/kg)	Bioaccessible Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Tin (mg/kg)
On site	**10**	**1.8**	**61**	**42**	**0.4**	**50**	**21**	**14**	**4**
On site	**10**	**1.8**	**57**	**39**	**0.5**	**48**	**17**	**14**	**4**
On site	**10**	**1.8**	**61**	**42**	**0.5**	**50**	**20**	**14**	**4**
On site	**10**	**1.8**	**57**	**39**	**0.5**	**49**	**18**	**14**	**3**
On site	**10**	**1.8**	**67**	**46**	**0.5**	**52**	**23**	**15**	**5**
On site	**11**	**1.9**	**73**	**50**	**0.4**	**57**	**32**	**18**	**6**
On site	**11**	**1.9**	**67**	**46**	**0.4**	**54**	**26**	**16**	**5**
On site	**11**	**1.9**	**65**	**45**	**0.7**	**57**	**24**	**19**	**4**
On site	**11**	**1.9**	**71**	**49**	**0.5**	**55**	**29**	**17**	**6**
On site	**12**	**2.1**	**78**	**54**	**0.4**	**59**	**37**	**20**	**7**

Location	Arsenic (mg/kg)	Bioaccessible Arsenic (mg/kg)	Lead (mg/kg)	Bioaccessible Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Tin (mg/kg)
On site	**12**	**2.1**	**74**	**51**	**0.4**	**56**	**29**	**18**	**6**
On site	**12**	**2.1**	**76**	**52**	**0.4**	**60**	**39**	**21**	**7**
On site	**12**	**2.1**	**76**	**52**	**0.4**	**59**	**38**	**20**	**7**
On site	**13**	**2.3**	**71**	**49**	**0.7**	**59**	**27**	**21**	**5**
On site	**14**	**2.5**	**75**	**52**	**0.7**	**60**	**27**	**21**	**6**
On site	**15**	**2.6**	**83**	**57**	**0.7**	**61**	**29**	**21**	**7**
On site	**16**	**2.8**	**90**	**62**	**0.8**	**66**	**34**	**25**	**7**
On site	**9**	**1.6**	**56**	**38**	**0.5**	**48**	**17**	**13**	**3**
On site	**9**	**1.6**	**55**	**38**	**0.5**	**47**	**16**	**13**	**3**
On site	**9**	**1.6**	**61**	**42**	**0.5**	**50**	**19**	**13**	**4**
On site	**9**	**1.6**	**57**	**39**	**0.5**	**48**	**17**	**12**	**4**
1m NW	17	3	101	69	0.7	65	33	23	9
1m NW	17	3	95	65	0.6	62	29	21	9
9m NE	9	1.6	57	39	0.5	48	16	11	4
9m NE	9	1.6	61	42	0.5	49	18	12	4
13m W	11	1.9	68	47	0.4	53	23	16	5
20m N	11	1.9	65	45	0.7	56	23	18	4
22m NW	16	2.8	82	56	0.9	69	37	28	6
22m N	10	1.8	59	41	0.6	51	19	15	4
22m E	9	1.6	66	45	0.6	51	20	13	5
25m N	10	1.8	57	39	0.5	49	17	14	4
27m NW	11	1.9	61	42	0.5	50	19	15	4
32m SE	11	1.9	80	55	0.5	59	37	20	7
33m N	10	1.8	56	38	0.5	50	18	14	4
36m SE	10	1.8	72	49	0.7	52	23	15	5
46m N	11	1.9	65	45	0.6	53	20	16	4
46m N	15	2.6	79	54	1.1	72	40	31	6

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 km^2.

This data is sourced from the British Geological Survey.

22 Railway infrastructure and projects

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	0

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.

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	0

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

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m	0

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

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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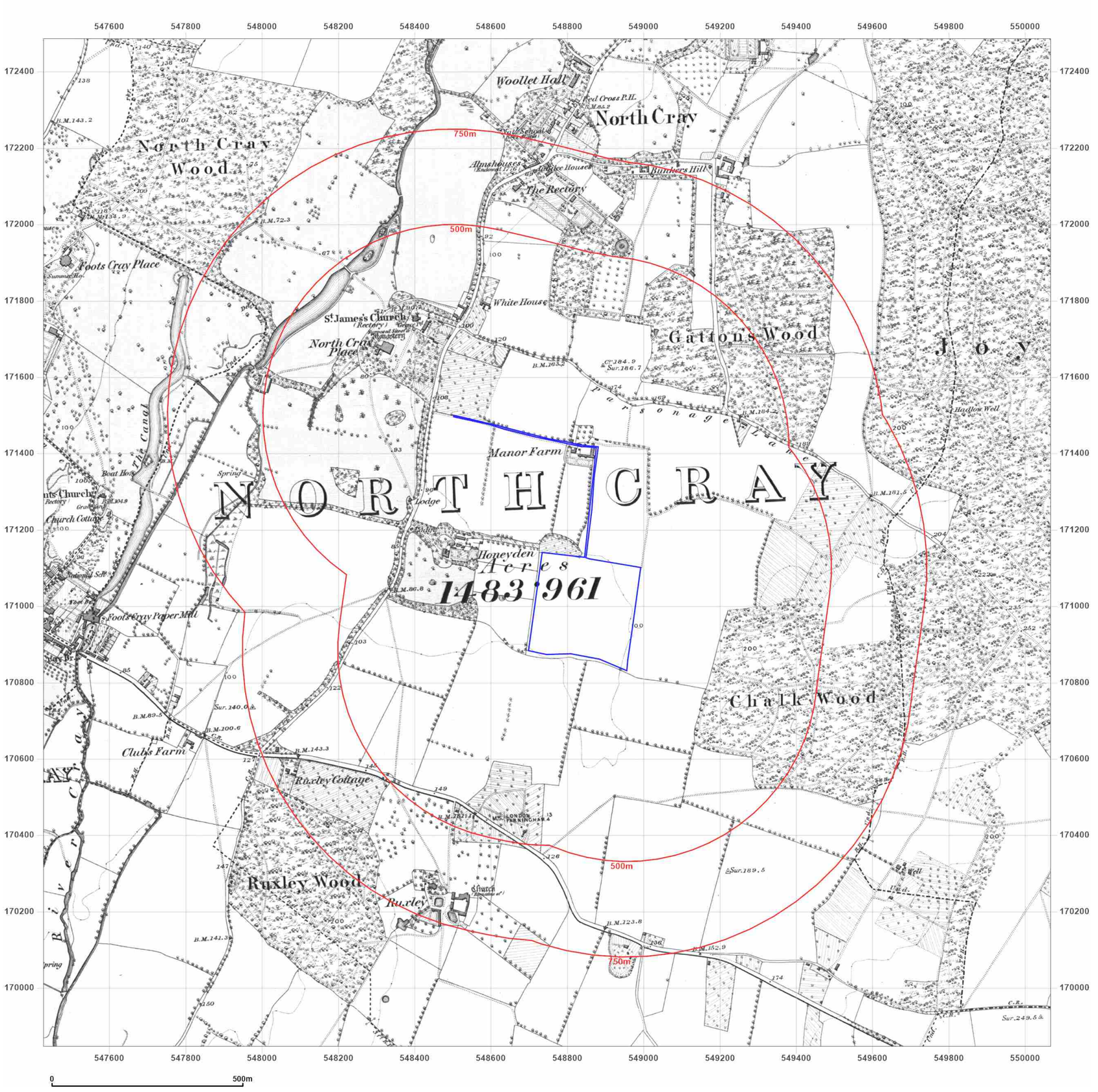

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Site Details:

North Cray Road, Bexley

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Report Ref: GS-U9N-CHV-QBE-A83
Grid Ref: 548746, 171166

Map Name: County Series

Map date: **1868**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1868
Revised 1868
Edition N/A
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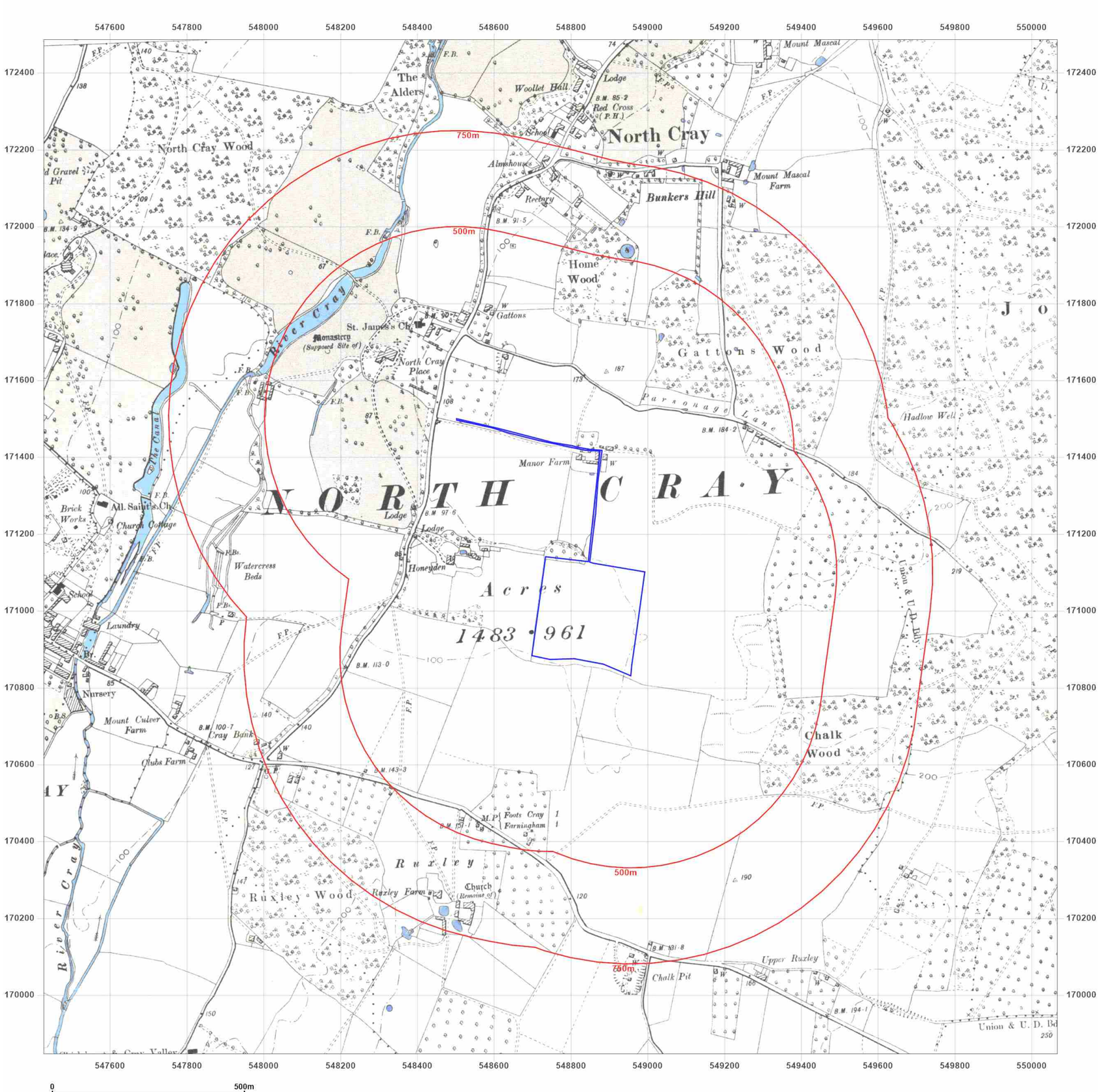

Groundsure INSIGHTS

Site Details:

North Cray Road, Bexley

Client Ref: C12796 North Cray Road, Sidcup
Report Ref: GS-U9N-CHV-QBE-A83
Grid Ref: 548746, 171166

Map Name: County Series

Map date: **1895**

Scale: 1:10,560

Printed at: 1:10,560

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Edition N/A
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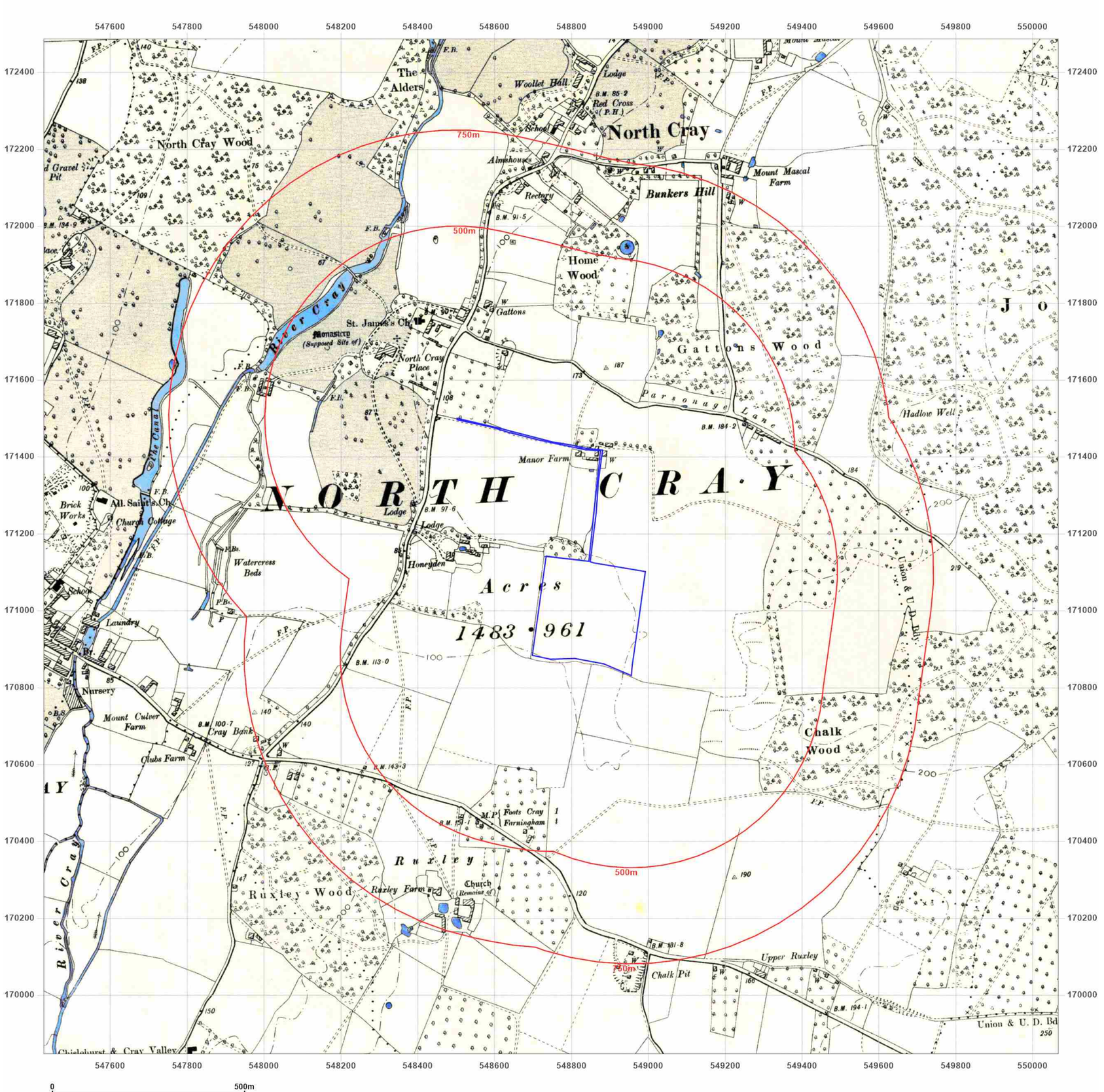

Groundsure INSIGHTS

Site Details:

North Cray Road, Bexley

Client Ref: C12796 North Cray Road, Sidcup
Report Ref: GS-U9N-CHV-QBE-A83
Grid Ref: 548746, 171166

Map Name: County Series

Map date: **1898**

Scale: 1:10,560

Printed at: 1:10,560

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Revised 1895
Edition 1898
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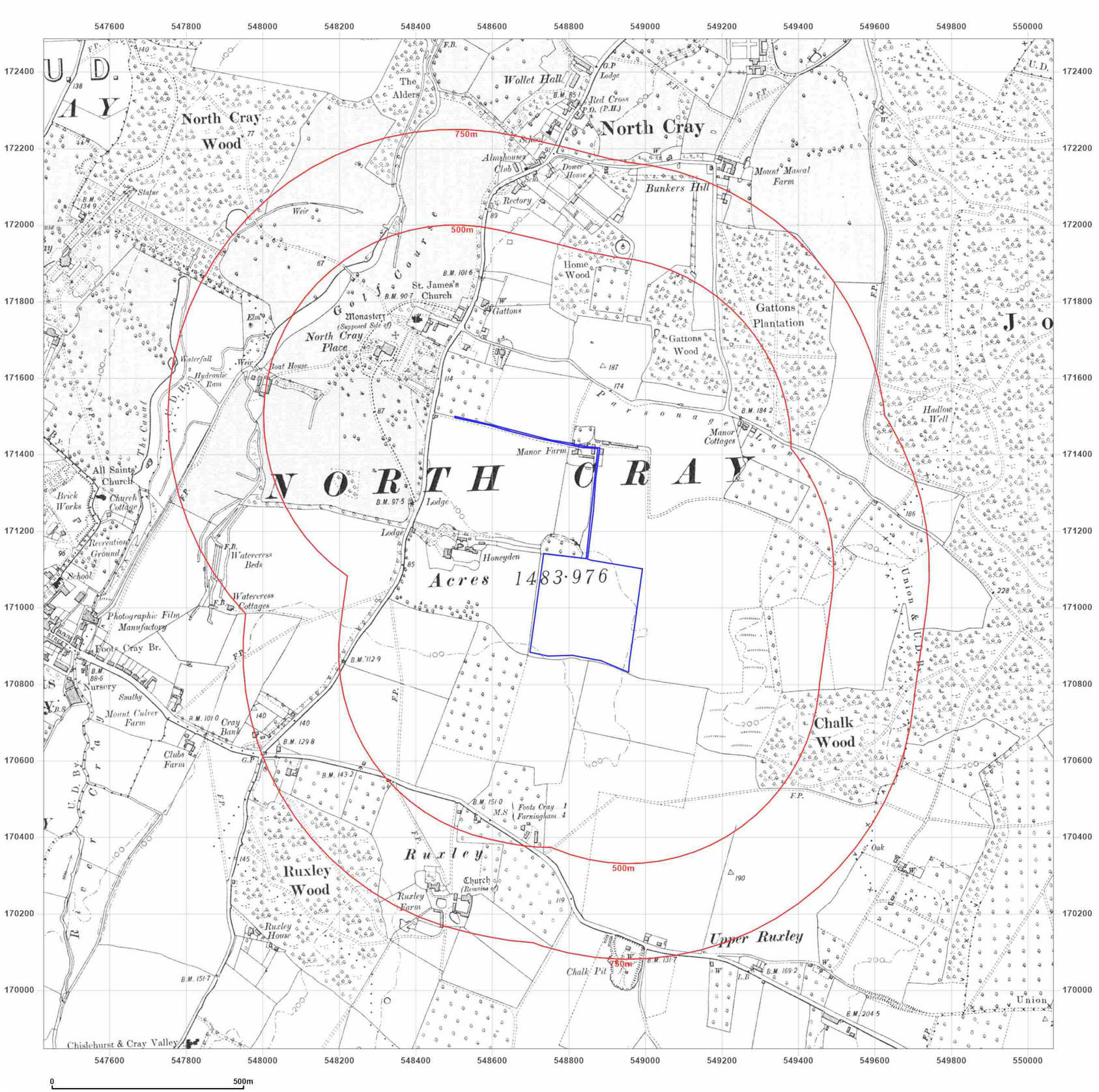

Groundsure INSIGHTS

Site Details:

North Cray Road, Bexley

Client Ref: C12796 North Cray Road, Sidcup
Report Ref: GS-U9N-CHV-QBE-A83
Grid Ref: 548746, 171166

Map Name: County Series

Map date: **1908**

Scale: 1:10,560

Printed at: 1:10,560

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