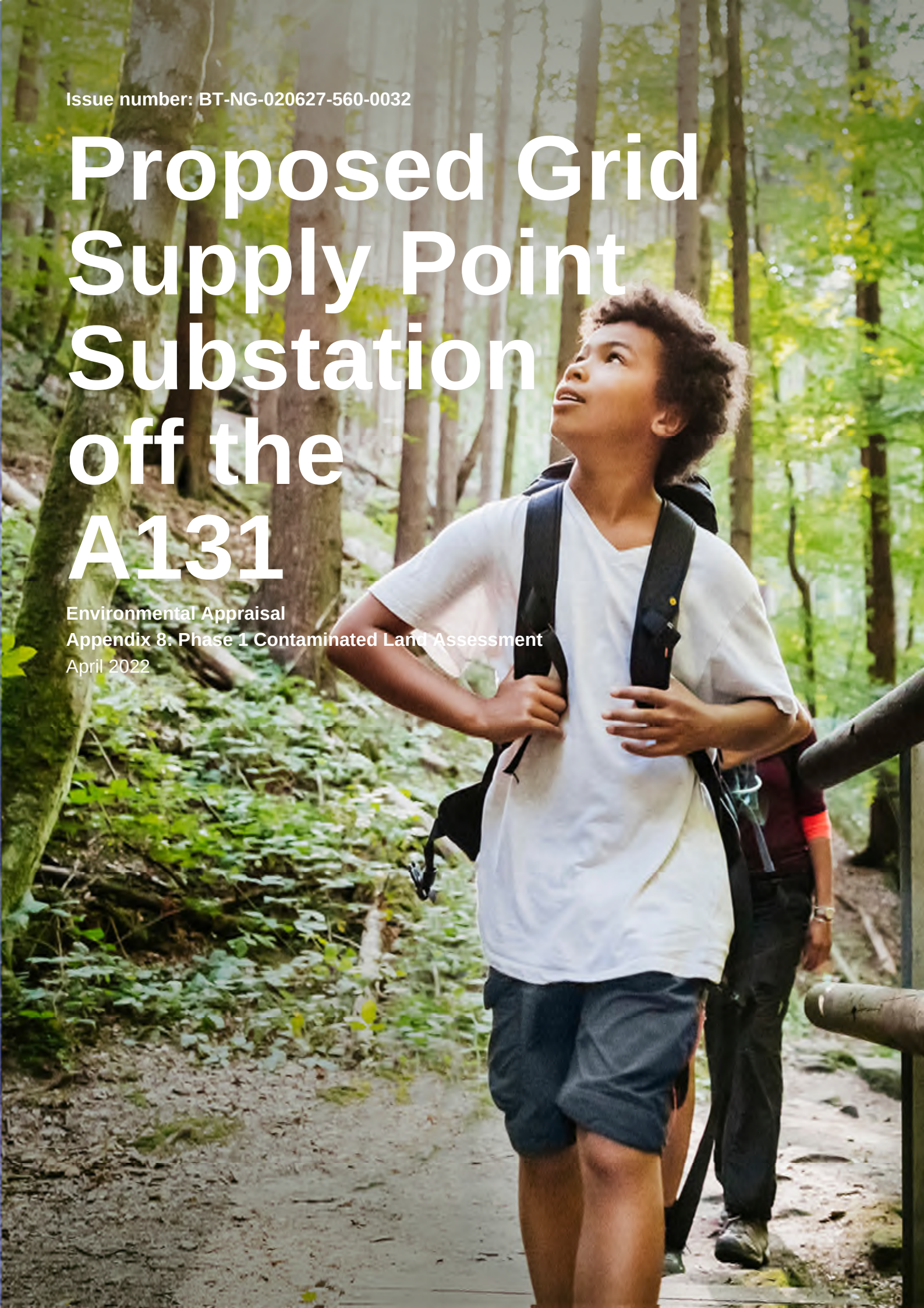
Issue number: BT-NG-020627-560-0032

Proposed Grid Supply Point Substation off the A131

Environmental Appraisal
Appendix 8: Phase 1 Contaminated Land Assessment
April 2022



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Appendix 8: Phase 1 Contaminated Land Assessment

1. Introduction

1.1 Purpose of this Document

1.1.1 This appendix comprises a Phase 1 Contaminated Land Assessment relevant to the proposed Grid Supply Point (GSP) substation off the A131, as shown on Figure 2 of the Environmental Appraisal.

1.1.2 The objective of this appendix is to identify the likely ground conditions and environmental setting that might have associated environmental hazards and that may require management (remediation or mitigation) using published and publicly available information.

1.1.3 The scope of work for the Phase 1 Contaminated Land Assessment comprises:

- A desk-based review of publicly available information including: geological, hydrogeological and aquifer vulnerability maps; historical Ordnance Survey (OS) maps; and
- A qualitative Tier 1 preliminary contamination risk assessment utilising a Conceptual Site Model (CSM) to identify 'source-pathway-receptor' linkages to assess the potential risk and hazards, if any, associated with existing contamination in the ground.

1.1.4 The assessment is supported by a Groundsure Insight Report (Groundsure, 2022) included within Annex 1 of this Appendix.

1.2 Methodology

1.2.1 UK Legislation on the contamination of land from historical activities is principally contained in Part 2A of the Environmental Protection Act 1990 (which was inserted into the Act by Section 57 of the Environment Act 1995).

1.2.2 The Regulations and Statutory Guidance that accompanied the Act, including the Contaminated Land (England) Regulations 2006, have been revised with the issue of the Contaminated Land (England) (Amendment) Regulations 2012 (SI 2012/263) and the Contaminated Land Statutory Guidance for England 2012.

1.2.3 Under the National Planning Policy Framework (NPPF) (Ministry of Housing, Communities & Local Government, 2021), the broad approach, concepts and principles behind land contamination management advocated by the Part 2A regime are applied to the determination of planning applications. The Land Contamination Risk Management (LCRM) (Environment Agency, 2021) guidance, which is based on and supersedes the Model Procedures for the Management of Contaminated Land (CLR11) (Environment Agency, 2004), which provides references to established technical and procedural practice.

1.2.4 LCRM presents a three-stage process to the management of contaminated land:

- Stage 1 = risk assessment;
- Stage 2 = options appraisal; and
- Stage 3 = remediation.

1.2.5 The Stage 1 risk assessment is undertaken in a phased manner comprising three tiers:

- Tier 1 – “Preliminary Risk Assessment” – a qualitative assessment forming part of a Phase 1 report;
- Tier 2 – “Generic Risk Assessment” - a quantitative assessment using published criteria to screen site specific ground condition data forming part of a Phase 2 report; and
- Tier 3 – “Detailed Risk Assessment” – a quantitative assessment involving the generation of site-specific assessment criteria (SSAC).

1.2.6 The underlying principle is the evaluation of pollutant linkages in order to assess whether the presence of a source of contamination could potentially lead to harmful consequences. A pollutant linkage consists of the following three elements:

- A source of contamination or hazard that has the potential to cause harm or pollution;
- A pathway for the hazard to move along / generate exposure; and
- A receptor which is affected by the hazard.

1.2.7 Each tier of risk assessment comprises the following four stages:

- Hazard Identification – identifying potential contaminant sources on and off site;
- Hazard Assessment – assessing the potential for unacceptable risks by identifying what pathways and receptors (and their sensitivity) that could be present, and what pollutant linkages could result (forming the CSM);
- Risk Estimation – estimating the magnitude and probability of the possible consequences (what degree of harm might result to a defined receptor and how likely); and
- Risk Evaluation – evaluating whether the risk needs to be, and can be, managed.

1.2.8 To determine the risk to the identified receptor, both the probability and the degree of harm to a potential receptor (consequence) of the potential hazard is put into a risk assessment matrix which is based on standard industry guidance (Construction Industry Research and Information Association (CIRIA) C552, 2001), as shown in Table 1.1.

Table 1.1 Classification of Risk

	Consequence			
Probability	**Severe**	**Medium**	**Mild**	**Minor**
High likelihood	Very high	High	Moderate	Low
Likely	High	Moderate	Moderate/	Low
Low likelihood	Moderate	Moderate	Low	Very low
Unlikely	Low	Low	Very low	Very low

1.2.9 The categorisation of risk, consequence and probability as shown in Table 1.2, Table 1.3 and Table 1.4 respectively has been used in this assessment.

Table 1.2 Risk Rating Definitions

Risk Classification	Description
Very high risk	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability.
High risk	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability.
Moderate risk	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild.
Low risk	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very low risk	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.

Table 1.3 Classification of Consequence

Classification	Examples
Severe	Human health effect - exposure likely to result in “significant harm” as defined in the Defra (2012) Part 2A Statutory Guidance Controlled water effect - short-term risk of pollution (note: Water Resources Act contains no scope for considering significance of pollution) of sensitive water resource. Equivalent to Environment Agency Category 1 incident (persistent and/or extensive effects on water quality leading to closure of potable abstraction point or loss of amenity, agriculture or commercial value. Major fish kill. Ecological effect - short-term exposure likely to result in a substantial adverse effect. Catastrophic damage to crops, buildings or property
Medium	Human health effect - exposure could result in “significant harm” Controlled water effect - equivalent to Environment Agency Category 2 incident requiring notification of abstractor Ecological effect - short-term exposure may result in a substantial adverse effect Damage to crops, buildings or property
Mild	Human health effect - exposure may result in “significant harm” Controlled water effect - equivalent to Environment Agency Category 3 incident (short lived and/or minimal effects on water quality) Ecological effect - unlikely to result in a substantial adverse effect Minor damage to crops, buildings or property. Damage to building rendering it unsafe to occupy (for example foundation damage resulting in instability)
Minor	No measurable effect on humans. Protective equipment is not required during site works

Classification	Examples
	Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems. Repairable effects to crops, buildings or property. The loss of plants in a landscaping scheme. Discolouration of concrete

Table 1.4 Classification of Probability

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

1.3 Sources of Information

1.3.1 The following primary sources of information were used in the completion of this assessment:

- A Groundsure Insight Report (Groundsure, 2022) which contains environmental database searches, historical mapping and ground condition database searches for the site and surrounding area, a copy of which is included within Annex 1. The Groundsure Insight Report is based on an older version of the site boundary, however it is still appropriate to inform this assessment.
- Information published by the British Geological Survey (BGS) from 1:50,000 scale geological mapping (BGS,1982)
- Borehole records held by the BGS as accessed via their website, http://mapapps.bgs.ac.uk/geologyofbritain/home.html (BGS, 2022)
- Review of the MAGIC (Multi-Agency Geographic Information for the Countryside) website, http://www.magic.gov.uk. The MAGIC website provides geographic information about the natural environment from across government. (MAGIC, 2022)
- A review of historical aerial photography accessed via Google Earth Pro (Google Earth, 2022).

2. Site Setting

2.1 Introduction

2.1.1 This section presents a summary of the historical and current land uses on and immediately adjacent to the site.

2.1.2 The current land use is based on a review of aerial photography and the historical land use information is based on historical Ordnance Survey (OS) maps and plans provided by the Groundsure Insight Report (2022), presented in Annex 1 of this Appendix.

2.2 Site Location and Description

2.2.1 A site location plan is presented in Figure 1 of the Environmental Appraisal. The site is located off the A131, approximately 5km south of Sudbury. The site is centred at approximate National Grid Reference TL 844 371.

2.2.2 The site comprises a plot of land that is approximately rectangular in shape and occupies an area of about 8 hectares (ha). The site is bounded by Waldegrave Wood to the south, Butler's Wood to the north, the A131 to the east and agricultural fields to the west.

2.2.3 The site is situated on gently sloping land with existing ground levels at approximately 80-85 m above Ordnance Datum (OD) across the site.

2.3 Current Land Use

2.3.1 The site is currently used for agricultural purposes and contains two pylons for an existing 400kV overhead line, with both situated along the southern boundary of the site.

2.4 Historical Land Use

2.4.1 The earliest available historical OS maps dated 1885-1903 show that the land between Butler's Wood and Waldegrave, where majority of the site is located, is primarily covered in woodland. A small section on the eastern and western edges of the site appear to be open fields. A road, now known as the A131, crosses the far eastern section of the site in a north-south direction.

2.4.2 The site and surrounding areas remain largely unchanged until the OS map dated 1985-1987 which shows the woodland across majority of the site has been removed, with the site area now primarily consisting of open fields.

2.4.3 Aerial photography dated from 2000 shows land drains running adjacent to the northern and southern boundaries of the site and south-north drain intersecting western part of the site. These ditches are known to still be present on the site.

3. Environmental Setting

3.1 Introduction

3.1.1 Information on the environmental setting of the site is presented in this section and the data is used to inform the Preliminary Risk Assessment in Section 4 of this Appendix.

3.2 Published Geology

3.2.1 The published geology is based on the 1:50,00 scale Solid and Drift geological map of the area, Sheet 223, Braintree, published by the British Geological Survey (BGS, 1982).

The description of the superficial and solid geology, based on the BGS records, is presented in the sections below.

Superficial deposits

3.2.2 The superficial geology underlying the site comprises the Lowestoft Formation which is found to typically comprise a chalky diamicton, together with outwash sands and gravels, silts, and clays.

3.2.3 Underlying the Lowestoft Formation, the Kesgrave Catchment Subgroup is likely to be present which is typically found to comprise moderately sorted sands and gravels.

Solid Geology

3.2.4 London Clay Formation underlies the superficial deposits, and is described by the BGS as comprising laminated, blue-grey, pyritic, bioturbated, silty and fine-grained sandy clay with common seams or nodules of calcareous 'cement stone'. Glauconite is also known to be present in some of the sand and clay layers.

3.2.5 Underlying the London Clay Formation is likely to be the Lambeth Group, overlying the Thanet Sand formation and the White Chalk Subgroup.

BGS Borehole Records

3.2.6 The BGS archives contain records from exploratory holes surrounding the site of varying depths. Table 3.1 shows two records within proximity of the site that represent the expected geology to be found within the site boundary.

Table 3.1: Summary of Ground Conditions from BGS Records

Interpreted Strata	Typical Depth to base (m bgl)	Thickness	Typical Description
Soil	0.10 – 0.20	0.10 – 0.20	-
Lowestoft Formation	1.5 – 16.0	1.5 – 15.80	Orange-brown clay with pebbles of flint and chalk
Kesgrave Catchment Subgroup	20.9 - 23.2	>13.9 – 20.7	Clayey gravelly SAND with clay laminae and gravel of quartz, quartzite and flint
London Clay	>17.0 – 35.4	>1.4 – 10.0	Dark greenish and bluish grey very silty CLAY.
Lambeth Group	45.7 – 46.0	10.3 -14.7	Sand and clay
Thanet Sands	48.8	3.1	Black/green sand
White Chalk Subgroup	>76.2	>30	Chalk

Borehole records used: TL83NW24, TL83NW19, TL83NW42, TL83NW34

3.3 Radon

3.3.1 The UK radon maps (Public Health England, 2022) indicate that the site is in the lowest band of radon potential where less than 1% of homes are above the radon Action Level. Therefore, no radon protection measures would be required. While the measure is not

considered to be entirely relevant to this proposed GSP substation, it is a good indicator of whether the risk from Radon gas needs to be considered.

3.4 Controlled Waters – Groundwater

3.4.1 The BGS borehole (TL83NW19) located approximately 600m to the west of the site indicates groundwater at a depth of approximately 16m below ground level within the Kesgrave Catchment Subgroup. Deeper boreholes located approximately 700m to the northwest and 600m to the northeast of the site identified groundwater at approximately 32m to 35m below ground level at the interface between the London Clay and the Lambeth Group.

3.4.2 The Environmental Agency classifies the superficial Lowestoft Formation as a 'Secondary Undifferentiated Aquifer' and the Kesgrave Catchment Subgroup as a 'Secondary A Aquifer'. The deeper solid strata comprising the London Clay Formation is classified as 'Unproductive Strata'. The London Clay Formation effectively acts as an aquiclude, prohibiting the downward movement of contamination into the underlying Chalk aquifer. The Lowestoft Formation may also locally restrict rainwater infiltration to the Kesgrave Catchment Subgroup depending on the proportion of clay to outwash silt, sand and gravel.

3.4.3 Secondary A Aquifers are defined by the Environmental Agency as a formation of variable permeability that, although seldom produces large quantities of water for abstraction, may be important for local supplies and in supplying base flow to rivers.

3.4.4 Secondary Undifferentiated Aquifers are aquifers where it is not possible to apply either a Secondary A or B definition because of the variable characteristics of the rock type. They usually have relatively low permeability and have minor value for water supply and river baseflow.

3.4.5 The Groundsure Insight Report (2022), included as Annex 1 of this Appendix, indicates that the vulnerability of the groundwater beneath the site is classified as having 'Medium' vulnerability, which implies that, in general, the Lowestoft Formation allows rainwater infiltration to reach the underlying strata.

3.4.6 The site is shown to be in a Source Protection Zone (SPZ) 3, which is defined as the area around a supply source within which all the groundwater ends up at the abstraction point. However, the source of the abstractions relating to the SPZ is within the Chalk, which is isolated from the site by the London Clay Formation, therefore the site is not considered to be located within a SPZ. There are no public or private groundwater abstractions within 250m of the site.

3.5 Controlled Waters – Surface Water

3.5.1 A drainage ditch traverses through the western part of the site orientated north south. It joins the ditch along the northern site perimeter. A number of small water features are present in both Butler's Wood and Waldegrave Wood. Waldegrave Wood contains a drainage ditch that is connected to the southern perimeter of the site. Given the depth to the groundwater, these drainage ditches are likely to be for surface water only and will not receive groundwater discharge,

3.5.2 The site falls into the Belchamp Brook Water Framework Directive Body which was classified as having a moderate ecological status and a failed chemical status in 2019.

3.5.3 According to the Environment Agency Flood Map for Planning, the site is situated in a Flood Zone 1 which is classed as having a low probability of flooding from surface water.

3.6 Ecological Systems & Sensitive Land Uses

3.6.1 According to the Groundsure Insight Report (2022), the site is within a Site of Special Scientific Interest (SSSI) Impact Risk Zone however this is specific to airports, helipads and other aviation. Potential impacts on SSSIs are considered in Section 3.3 of the Environmental Appraisal. The adjacent woodlands (Butler's Wood and Waldegrave Woods) are also designated as Ancient Woodland.

4. Tier 1 Preliminary Risk Assessment

4.1 Introduction

4.1.1 The Tier 1 Preliminary Risk Assessment includes the development of a preliminary CSM. The preliminary CSM describes the types and locations of potential contamination sources, the identification of potential receptors and the identification of potential transport/migration pathways.

4.1.2 For a pollutant linkage to be identified, a connection between all three elements (source-pathway-receptor) is required.

4.2 Potential Pollutant Linkages

4.2.1 Potential pollutant linkages have been identified using the information on potential sources (hazards), receptors and exposure pathways.

Potential Sources (Hazards)

4.2.2 With the exception of agricultural land uses, no potentially contaminative land uses either on or in the immediate vicinity of the site have been identified. Therefore, the contamination potential at the site is considered to be **Very Low.**

Potential Receptors and Sensitivity Score

4.2.3 The receptors considered as part of this land contamination assessment are summarised in Table 4.1 and, based on the information reviewed, either eliminated from further consideration or allocated a sensitivity. The sensitivity informs the consequence element of the risk estimation process.

Table 4.1: Potential Receptors and Sensitivity Score

Receptor Type	Comment	Sensitivity
Human Health – Current	Current site users including agricultural workers	Very Low
Human Health – Neighbours	Limited, the nearest residential property is over 300m from the site and the surrounding land use is primarily agricultural and woodland.	Very Low
Human Health – Construction / Maintenance Workers	Construction workers and future maintenance workers	High
Groundwater	Lowestoft Formation – Secondary Undifferentiated Aquifer Kesgrave Catchment Subgroup – Secondary A Aquifer	Low
Surface Water	Drainage ditches	Very Low

Property – Buildings	400kV overhead lines and pylons, future to include the proposed GSP substation	Moderate
Property – Animal and Crops	No local designations	Very Low
Ecological Systems	SSSI Impact Zone	Moderate

Potential Exposure Pathways

4.2.4 The following potential pathways by which contaminants may affect the identified receptors and therefore cause a consequence are as follows:

4.2.5 Human Health:

- Inhalation of contaminated dust;
- Ingestion of contaminated soil; and
- Direct dermal contact with contaminated soils.

4.2.6 Environmental receptors:

- Leaching of contaminants to groundwater;
- Migration of leachable contaminants to groundwater and surface water; and
- Direct contact of buildings/infrastructure with contaminated materials or sulphate attack.

Preliminary Conceptual Model

4.2.7 The preliminary CSM has not identified any notable source of contamination on or in the immediate vicinity of the proposed GSP substation and the contamination potential has been classified as Very Low and as such no source-pathway-receptor linkages have been identified.

4.2.8 However, potential receptors and potentially viable pathways have been identified and therefore appropriate control measures should be put in place to prevent the release of potential contamination during the construction and operational phases of development. These risks will be managed by good practise measures set out in Appendix 1 (Construction Environmental Management Plan) of the Environmental Appraisal, which details how unexpected contaminated ground would be managed if it was uncovered during construction.

5. Conclusion

5.1.1 The Phase 1 contaminated land assessment uses publicly available information together with historical maps and environmental data provided by Groundsure (2022) and has identified the following key considerations:

- The site is underlain by superficial deposits of the Lowestoft Formation comprising predominately chalky diamicton, which in turn are underlain by the Kesgrave Catchment Subgroup which comprises sands and gravels. The solid geology beneath the site comprises the London Clay Formation, comprising clays.

- Boreholes obtained from the BGS achieves within close proximity to the site suggest the Lowestoft Formation is extremely variable in thickness and in some locations is up to 15.8m thick. The Kesgrave Catchment Subgroup was found underlying the Lowestoft Formation and was encountered to a depth of between 20.9m and 23.2m, this was in turn was found to be underlain by the London Clay Formation and in general agreement with the geological mapping for the area.
- Historical mapping of the site indicates is has remained largely as open fields since the earliest available mapping.
- The Environment Agency has classified the Lowestoft Formation as a Secondary Undifferentiated Aquifer and the Kesgrave Catchment Subgroup as a Secondary A Aquifer. The deeper solid strata of the London Clay Formation has been classified as Unproductive Strata and effectively acts as an aquiclude, prohibiting the downward movement of contamination into the underlying Chalk aquifer. The Lowestoft Formation may also locally restrict rainwater infiltration to the Kesgrave Catchment Subgroup depending on the proportion of clay to outwash silt, sand and gravel.

5.1.2 The qualitative risk assessment undertaken did not identify any notable source of contamination currently present at the site or within the immediate vicinity based on the current and historical land uses and therefore the contamination potential of the site is considered to be Very Low. As no current source has been identified a source-pathway-receptor linkage has also not been identified and therefore there is not considered a risk to the proposed GSP substation.

References

BGS (1982) Braintree, England and Wales Sheet 223. Bedrock and Superficial Deposits, 1 to 50,000 scale. British Geological Survey, Keyworth.

BGS (2022) Geology of Britain Viewer, http://mapapps.bgs.ac.uk/geologyofbritain/home.html [Accessed February 2022]

Defra (2012). Environmental Protection Act 1990: Part 2A. Contaminated Land Statutory Guidance.

Environment Agency (2004) CLR 11 Model procedures for the management of contaminated land. Department of the Environment Contaminated Land Report.

Environment Agency (2021) Land Contamination: Risk Management, LCRM. Environment Agency. April 2021

Google Earth (2022) Historical aerial photography, available from Google Earth Pro [accessed February 2022].

Groundsure (2022) Enviro+Geo Insight Report No HMD-8491262, dated 02/02/2022. Groundsure

MAGIC (2022) Available from: http://www.magic.gov.uk/website/magic/ [Accessed: February 2022].

MHCLG (2021) National Planning Policy Framework. Department for Communities and Local Government, London.

Public Health England (2022) UK Maps of Radon [accessed February 2022]

Annex 1: Groundsure Insight Report

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

584372.8900710817, 237089.75368458295

Order Details

Date: 02/02/2022

Your ref: EPL008973

Our Ref: HMD-8491262

Client: Stantec UK Ltd

Site Details

Location: 584372 237089

Area: 8.01 ha

Authority: Braintree District Council

Contact us with any questions at:
info@groundsure.com
08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	1.1	Historical industrial land uses	0	0	0	0	-
14	1.2	Historical tanks	0	0	0	0	-
14	1.3	Historical energy features	0	0	0	0	-
15	1.4	Historical petrol stations	0	0	0	0	-
15	1.5	Historical garages	0	0	0	0	-
15	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
16	2.1	Historical industrial land uses	0	0	0	0	-
16	2.2	Historical tanks	0	0	0	0	-
16	2.3	Historical energy features	0	0	0	0	-
16	2.4	Historical petrol stations	0	0	0	0	-
17	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
18	3.1	Active or recent landfill	0	0	0	0	-
18	3.2	Historical landfill (BGS records)	0	0	0	0	-
19	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
19	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
19	3.5	Historical waste sites	0	0	0	0	-
19	3.6	Licensed waste sites	0	0	0	0	-
19	**3.7**	**Waste exemptions**	0	0	1	1	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
21	**4.1**	**Recent industrial land uses**	2	0	1	-	-
22	4.2	Current or recent petrol stations	0	0	0	0	-
22	4.3	Electricity cables	0	0	0	0	-
22	4.4	Gas pipelines	0	0	0	0	-
22	4.5	Sites determined as Contaminated Land	0	0	0	0	-

22	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
23	4.7	Regulated explosive sites	0	0	0	0	-
23	4.8	Hazardous substance storage/usage	0	0	0	0	-
23	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
23	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
23	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
24	4.12	Radioactive Substance Authorisations	0	0	0	0	-
24	**4.13**	**Licensed Discharges to controlled waters**	0	0	0	5	-
25	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
25	4.15	Pollutant release to public sewer	0	0	0	0	-
25	4.16	List 1 Dangerous Substances	0	0	0	0	-
25	4.17	List 2 Dangerous Substances	0	0	0	0	-
26	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
26	4.19	Pollution inventory substances	0	0	0	0	-
26	4.20	Pollution inventory waste transfers	0	0	0	0	-
26	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
27	**5.1**	**Superficial aquifer**	Identified (within 500m)				
29	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
30	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
31	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
31	5.5	Groundwater vulnerability- local information	None (within 0m)				
32	**5.6**	**Groundwater abstractions**	0	0	0	0	8
34	**5.7**	**Surface water abstractions**	0	0	0	0	1
35	5.8	Potable abstractions	0	0	0	0	0
35	**5.9**	**Source Protection Zones**	1	0	0	0	-
35	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
36	**6.1**	**Water Network (OS MasterMap)**	7	3	6	-	-

38	**6.2**	**Surface water features**	1	2	3	-	-
38	**6.3**	**WFD Surface water body catchments**	1	-	-	-	-
39	**6.4**	**WFD Surface water bodies**	0	0	0	-	-
39	6.5	WFD Groundwater bodies	0	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
40	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
40	7.2	Historical Flood Events	0	0	0	-	-
40	7.3	Flood Defences	0	0	0	-	-
41	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
41	7.5	Flood Storage Areas	0	0	0	-	-
42	7.6	Flood Zone 2	None (within 50m)				
42	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
43	**8.1**	**Surface water flooding**	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding					
45	**9.1**	**Groundwater flooding**	Moderate (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
46	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
47	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
47	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
47	10.4	Special Protection Areas (SPA)	0	0	0	0	0
47	10.5	National Nature Reserves (NNR)	0	0	0	0	0
48	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
48	**10.7**	**Designated Ancient Woodland**	2	0	0	0	5
48	10.8	Biosphere Reserves	0	0	0	0	0
49	10.9	Forest Parks	0	0	0	0	0
49	10.10	Marine Conservation Zones	0	0	0	0	0
49	10.11	Green Belt	0	0	0	0	0
49	10.12	Proposed Ramsar sites	0	0	0	0	0

49	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
50	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
50	10.15	Nitrate Sensitive Areas	0	0	0	0	0
50	**10.16**	**Nitrate Vulnerable Zones**	2	2	0	0	10
52	**10.17**	**SSSI Impact Risk Zones**	1	-	-	-	-
53	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
54	11.1	World Heritage Sites	0	0	0	-	-
54	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
54	11.3	National Parks	0	0	0	-	-
54	11.4	Listed Buildings	0	0	0	-	-
55	11.5	Conservation Areas	0	0	0	-	-
55	11.6	Scheduled Ancient Monuments	0	0	0	-	-
55	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
56	**12.1**	**Agricultural Land Classification**	Grade 3 (within 250m)				
57	12.2	Open Access Land	0	0	0	-	-
57	**12.3**	**Tree Felling Licences**	0	0	1	-	-
58	12.4	Environmental Stewardship Schemes	0	0	0	-	-
58	**12.5**	**Countryside Stewardship Schemes**	2	0	2	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
59	**13.1**	**Priority Habitat Inventory**	3	7	9	-	-
60	13.2	Habitat Networks	0	0	0	-	-
60	13.3	Open Mosaic Habitat	0	0	0	-	-
61	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
62	**14.1**	**10k Availability**	Identified (within 500m)				
63	14.2	Artificial and made ground (10k)	0	0	0	0	-
64	**14.3**	**Superficial geology (10k)**	1	1	0	1	-

65	14.4	Landslip (10k)	0	0	0	0	-
66	14.5	Bedrock geology (10k)	1	0	0	2	-
67	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
68	15.1	50k Availability	Identified (within 500m)				
69	15.2	Artificial and made ground (50k)	0	0	0	0	-
69	15.3	Artificial ground permeability (50k)	0	0	-	-	-
70	15.4	Superficial geology (50k)	1	0	2	1	-
71	15.5	Superficial permeability (50k)	Identified (within 50m)				
71	15.6	Landslip (50k)	0	0	0	0	-
71	15.7	Landslip permeability (50k)	None (within 50m)				
72	15.8	Bedrock geology (50k)	1	0	0	1	-
73	15.9	Bedrock permeability (50k)	Identified (within 50m)				
73	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
74	16.1	BGS Boreholes	0	0	0	-	-
Page	Section	Natural ground subsidence					
75	17.1	Shrink swell clays	Low (within 50m)				
76	17.2	Running sands	Very low (within 50m)				
77	17.3	Compressible deposits	Negligible (within 50m)				
78	17.4	Collapsible deposits	Very low (within 50m)				
79	17.5	Landslides	Very low (within 50m)				
80	17.6	Ground dissolution of soluble rocks	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
82	18.1	Natural cavities	0	0	0	0	-
83	18.2	BritPits	0	0	0	0	-
83	18.3	Surface ground workings	0	7	3	-	-
83	18.4	Underground workings	0	0	0	0	0
84	18.5	Historical Mineral Planning Areas	0	0	0	0	-

84	**18.6**	**Non-coal mining**	0	0	0	0	1
84	18.7	Mining cavities	0	0	0	0	0
84	18.8	JPB mining areas	None (within 0m)				
85	18.9	Coal mining	None (within 0m)				
85	18.10	Brine areas	None (within 0m)				
85	18.11	Gypsum areas	None (within 0m)				
85	18.12	Tin mining	None (within 0m)				
85	18.13	Clay mining	None (within 0m)				

Page	Section	Radon	
86	**19.1**	**Radon**	Less than 1% (within 0m)

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
87	**20.1**	**BGS Estimated Background Soil Chemistry**	4	2	-	-	-
87	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
88	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-

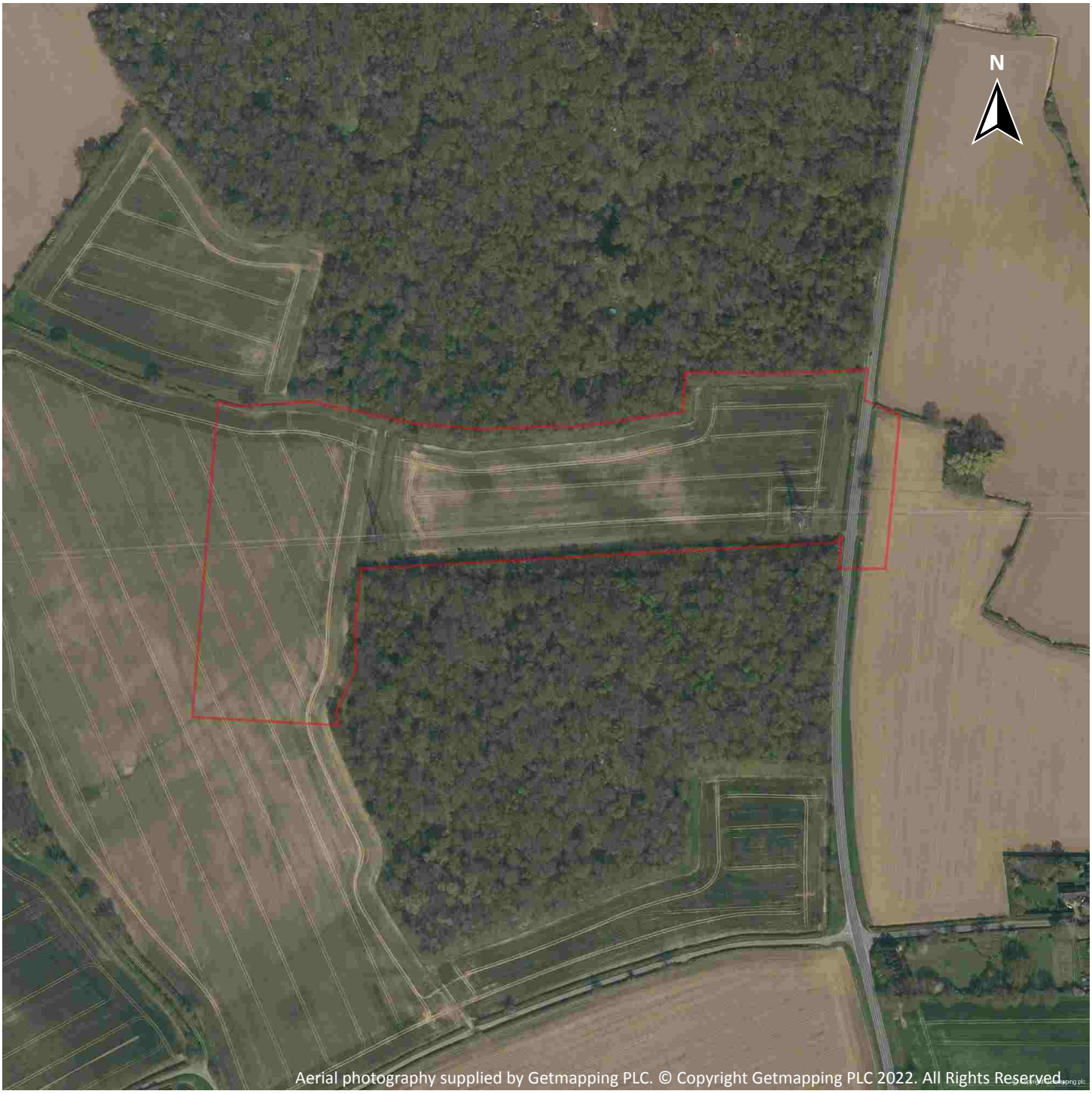
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
89	21.1	Underground railways (London)	0	0	0	-	-
89	21.2	Underground railways (Non-London)	0	0	0	-	-
89	21.3	Railway tunnels	0	0	0	-	-
89	21.4	Historical railway and tunnel features	0	0	0	-	-
89	21.5	Royal Mail tunnels	0	0	0	-	-
90	21.6	Historical railways	0	0	0	-	-
90	21.7	Railways	0	0	0	-	-
90	21.8	Crossrail 1	0	0	0	0	-
90	21.9	Crossrail 2	0	0	0	0	-
90	21.10	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 05/04/2020

Site Area: 8.01ha

Recent site history - 2017 aerial photograph



Capture Date: 09/04/2017

Site Area: 8.01ha

Recent site history - 2013 aerial photograph

Capture Date: 01/05/2013

Site Area: 8.01ha

Recent site history - 2008 aerial photograph

Capture Date: 14/08/2008

Site Area: 8.01ha

Recent site history - 1999 aerial photograph

Capture Date: 04/05/1999

Site Area: 8.01ha

OS MasterMap site plan

Site Area: 8.01ha

1 Past land use

1.1 Historical industrial land uses

Records within 500m	0

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'.

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	0

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'.

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	0

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'.

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	0

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'.

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	0

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'.

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	0

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'.

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 18**

ID	Location	Site	Reference	Category	Sub-Category	Description
1	225m S	Stockpile	WEX264973	Storing waste exemption	On a farm	Storage of sludge

ID	Location	Site	Reference	Category	Sub-Category	Description
2	402m S	Stockpile	WEX264950	Storing waste exemption	On a farm	Storage of sludge

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

4 Current industrial land use

Site Outline

Search buffers in metres (m)

Recent industrial land uses

Licensed Discharges to controlled waters

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 21**

ID	Location	Company	Address	Activity	Category
1	**On site**	**Pylon**	**Essex, CO10**	**Electrical Features**	**Infrastructure and Facilities**
2	**On site**	**Pylon**	**Essex, CO10**	**Electrical Features**	**Infrastructure and Facilities**
3	218m W	Pylon	Essex, CO10	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	5

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 21**

ID	Location	Address	Details	
4	333m SE	LODGE FARM, THE GREEN, TWINSTEAD, SUDBURY, SUFFOLK, CO10 7NE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: PR2NF95 Permit Version: 1 Receiving Water: trib River Stour	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 16/10/1985 Effective Date: 16/10/1985 Revocation Date: 16/12/1992
5	362m SE	LODGE HOUSE, THE GREEN, TWINSTEAD, SUDBURY, SUFFOLK, CO10 7NE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: PR2NF161 Permit Version: 1 Receiving Water: Trib River Stour	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 06/01/1986 Effective Date: 06/01/1986 Revocation Date: 02/09/1992
A	467m N	WOODVIEW, WATERY LANE, LITTLE HENNEY, SUDBURY, SUFFOLK, CO10 7NG	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: PRENF08680 Permit Version: 1 Receiving Water: tributary River Stour	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: 25/01/1994 Effective Date: 25/01/1994 Revocation Date: 04/05/1994
A	467m N	WOODVIEW, WATERY LANE, LITTLE HENNEY, SUDBURY, SUFFOLK, CO10 7NG	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: PRENF08680 Permit Version: 2 Receiving Water: tributary River Stour	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: 05/05/1994 Effective Date: 05/05/1994 Revocation Date: -

ID	Location	Address	Details	
6	498m SE	THE GREEN AT TWINSTEAD, TWINSTEAD, SUDBURY, SUFFOLK, CO10 7NE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: PR2NFE05164 Permit Version: 1 Receiving Water: Ditch Loshhouse Brook	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 06/05/1964 Effective Date: 06/05/1964 Revocation Date: 28/03/1996

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.

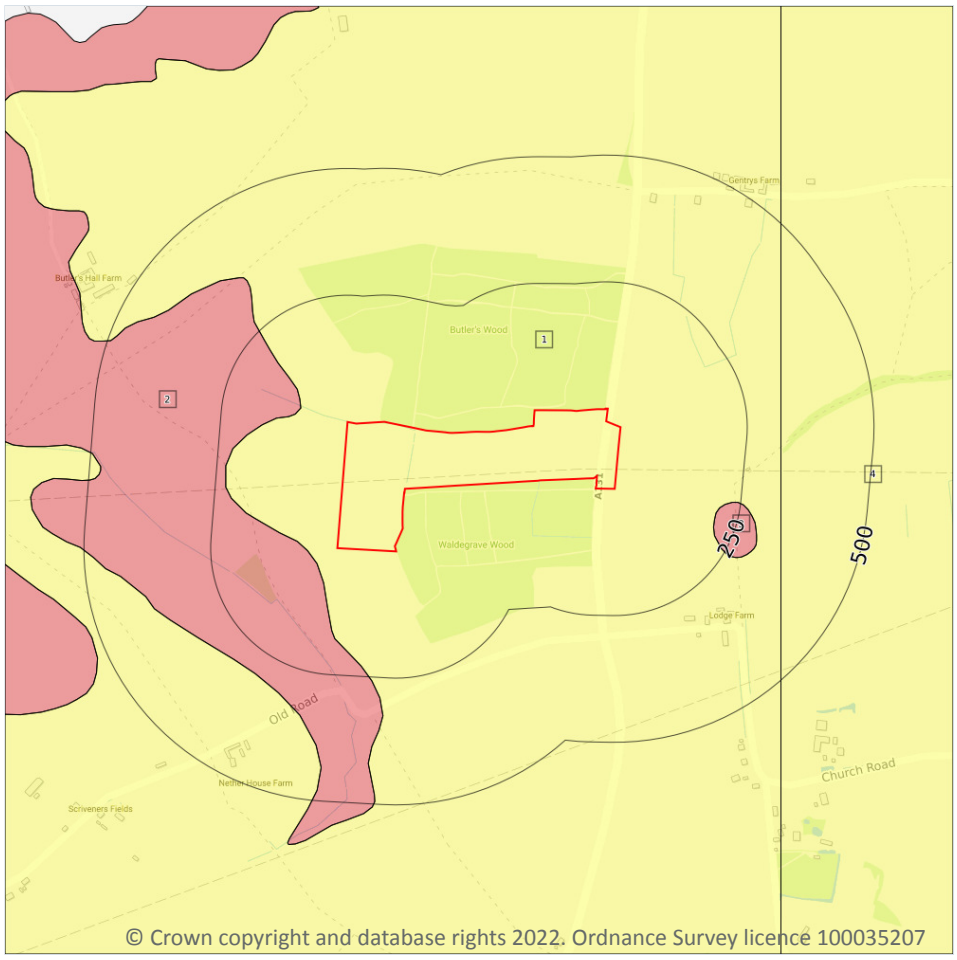
4.21 Pollution inventory radioactive waste

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



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive
- Unknown

5.1 Superficial aquifer

Records within 500m	4

Aquifer status of groundwater held within superficial geology.

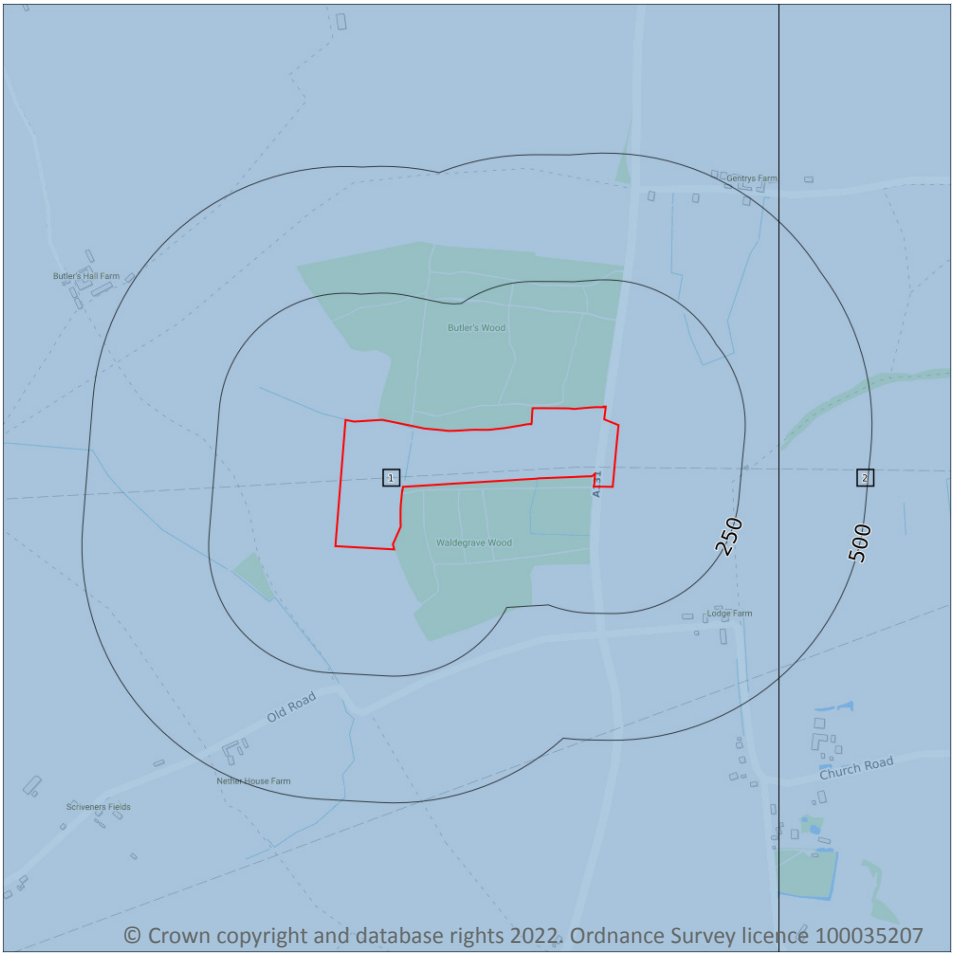
Features are displayed on the Hydrogeology map on **page 27**

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	50m 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

ID	Location	Designation	Description
3	206m E	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
4	316m E	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

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

Bedrock aquifer



5.2 Bedrock aquifer

Records within 500m	2

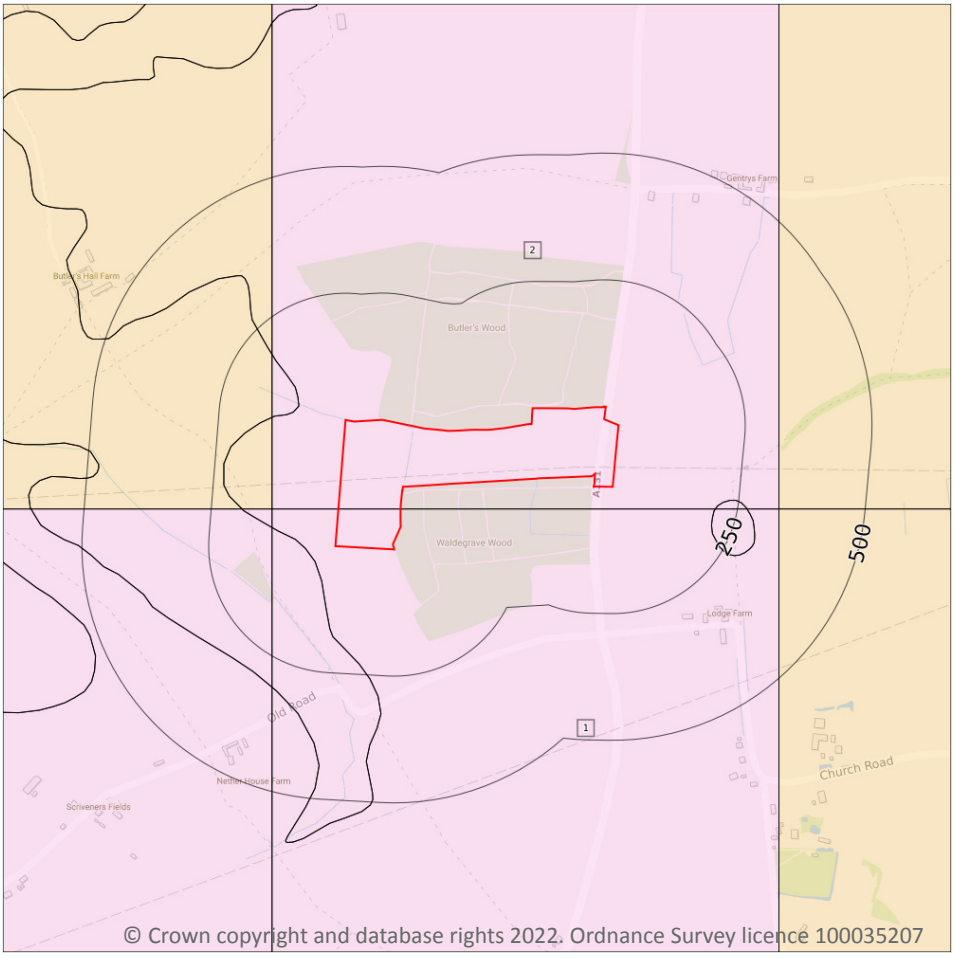
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 29**

ID	Location	Designation	Description
1	**On site**	**Unproductive**	**These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow**
2	316m E	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.

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

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

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

Other information
- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	2

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 30**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Unproductive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: <300mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Mixed
2	On site	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Unproductive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: <300mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Mixed

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0

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

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

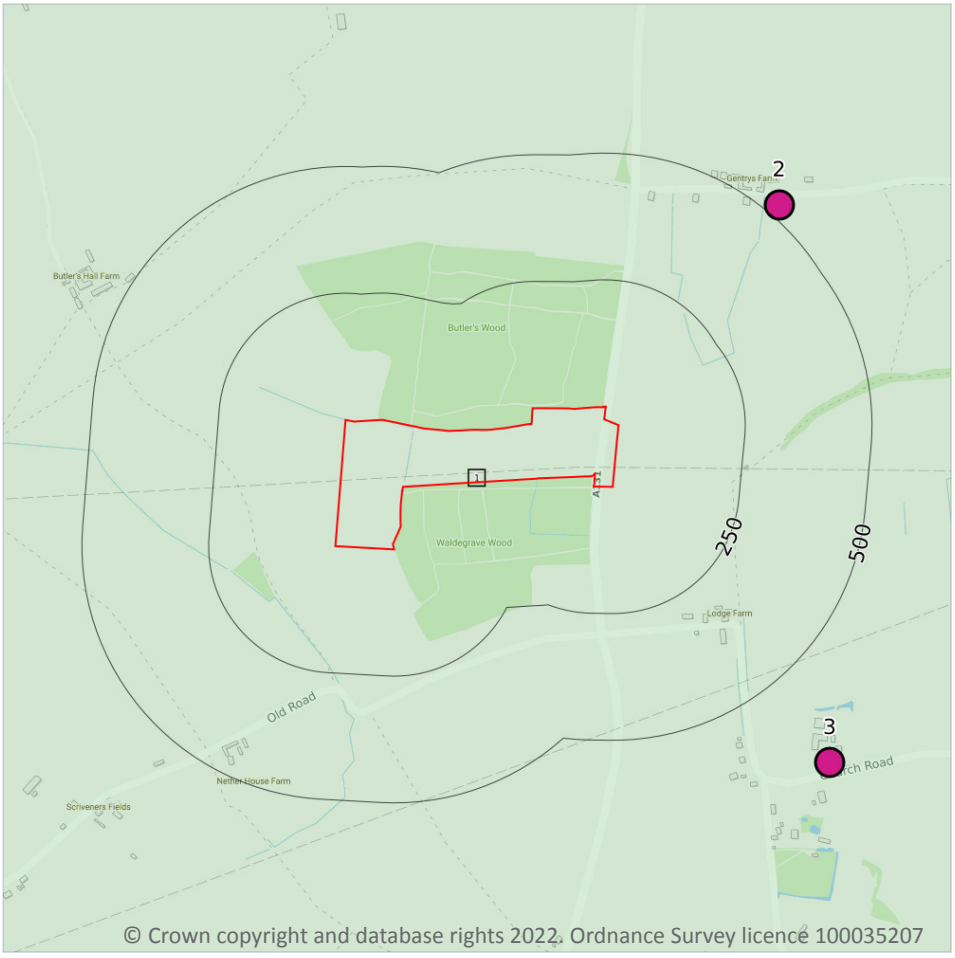
5.5 Groundwater vulnerability- local information

Records on site	0

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	8

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 32**

ID	Location	Details	
2	524m NE	Status: Historical Licence No: 8/36/15/*G/0018 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: WELL AT GENTRY'S FM, LT HENNY, SUDBURY Data Type: Point Name: JOAN WHEELER FARMS Easting: 585000 Northing: 237600	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1967 Version End Date: -
3	691m SE	Status: Historical Licence No: 8/36/15/*G/0001 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: WELL, PELHAM HALL EST, TWINSTEAD Data Type: Point Name: NOTT Easting: 585100 Northing: 236500	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/04/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1966 Version End Date: -
-	1127m S	Status: Historical Licence No: 8/36/15/*G/0016 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: OLD ROSES FARM, TWINSTEAD. Data Type: Point Name: STEBBINGS Easting: 585100 Northing: 236000	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/02/1996 Version End Date: -
-	1254m NW	Status: Historical Licence No: 8/36/14/*G/0010 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUND WATER SOURCE OF SUPPLY Point: THE BRICKFIELDS 1, BULMER Data Type: Point Name: BULMER BRICK & TILE CO Easting: 583200 Northing: 238000	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/03/1966 Version End Date: -
-	1254m NW	Status: Historical Licence No: 8/36/14/*G/0010 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: THE BRICKFIELDS 1, BULMER Data Type: Point Name: BULMER BRICK & TILE CO Easting: 583200 Northing: 238000	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/03/1966 Version End Date: -

ID	Location	Details	
-	1322m NW	Status: Historical Licence No: 8/36/14/*G/0010 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: THE BRICKFIELDS 2, BULMER Data Type: Point Name: BULMER BRICK & TILE CO Easting: 583200 Northing: 238100	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/03/1966 Version End Date: -
-	1322m NW	Status: Historical Licence No: 8/36/14/*G/0010 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUND WATER SOURCE OF SUPPLY Point: THE BRICKFIELDS 2, BULMER Data Type: Point Name: BULMER BRICK & TILE CO Easting: 583200 Northing: 238100	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/03/1966 Version End Date: -
-	1733m NE	Status: Historical Licence No: 8/36/15/*G/0036 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: RYES FARM, LT. HENNY. Data Type: Point Name: MORTON Easting: 586000 Northing: 238300	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/08/1982 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	**1**

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 32**

ID	Location	Details	
-	1525m E	Status: Historical Licence No: 8/36/15/*S/0041 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TWINSTEAD HALL FM, TWINSTEAD Data Type: Point Name: TWINSTEAD HALL FARMS LTD Easting: 586200 Northing: 237000	Annual Volume (m^3): 13636 Max Daily Volume (m^3): 681.9 Original Application No: - Original Start Date: 01/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 02/04/1969 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	0

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.

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

5.9 Source Protection Zones

Records within 500m	1

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 32**

ID	Location	Type	Description
1	**On site**	**3**	**Total catchment**

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

5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

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

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

6 Hydrology

Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	16

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

Features are displayed on the Hydrology map on **page 36**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	**On site**	**Inland river not influenced by normal tidal action.**	**Underground**	**Watercourse contains water year round (in normal circumstances)**	**-**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**
A	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**
A	**On site**	**Inland river not influenced by normal tidal action.**	**Underground**	**Watercourse contains water year round (in normal circumstances)**	**-**
A	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**
A	**On site**	**Inland river not influenced by normal tidal action.**	**Underground**	**Watercourse contains water year round (in normal circumstances)**	**-**
B	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**
C	1m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	16m S	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
D	21m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
4	156m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	180m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
E	186m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
6	187m W	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
F	203m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
8	239m NE	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	**6**

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 36**

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 36**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	**On site**	**River**	**Belchamp Brook**	**GB105036040710**	**Stour OC**	**Essex Combined**

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 36**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	3016m NW	River	Belchamp Brook	GB105036040710	Moderate	Fail	Moderate	2019

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

6.5 WFD Groundwater bodies

Records on site	0

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.

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 43**

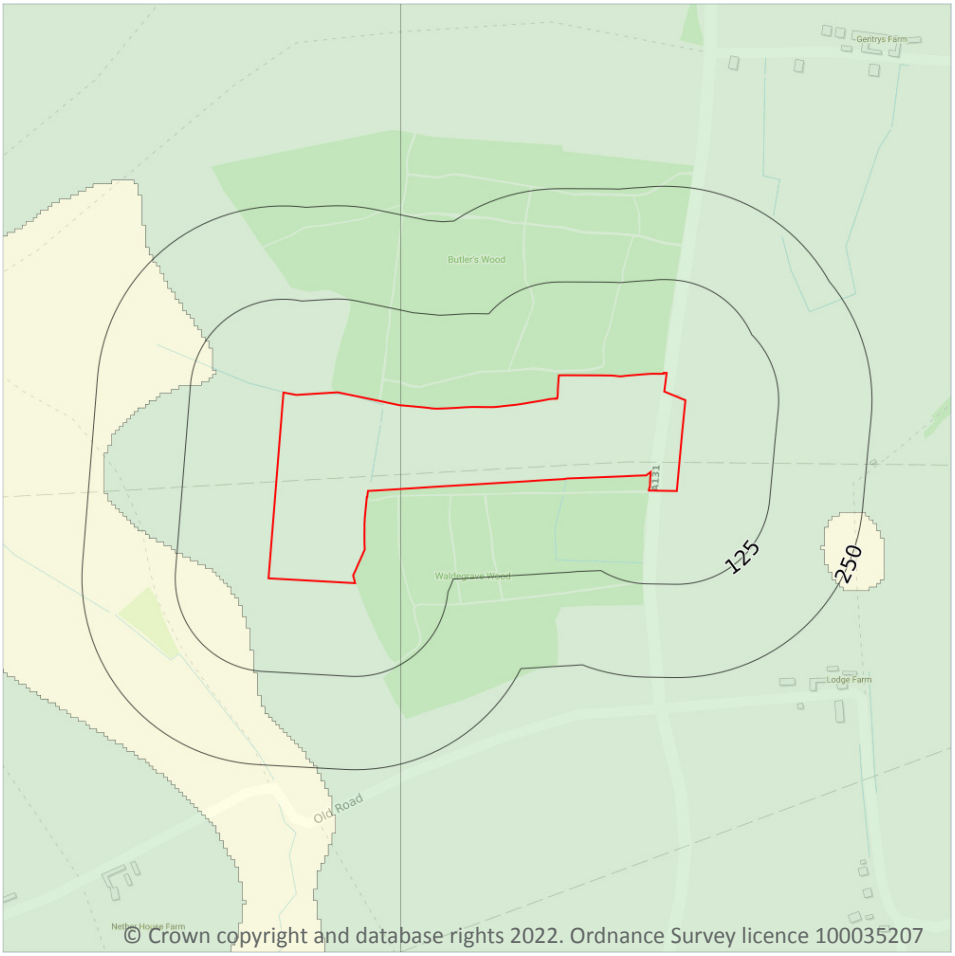
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on

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

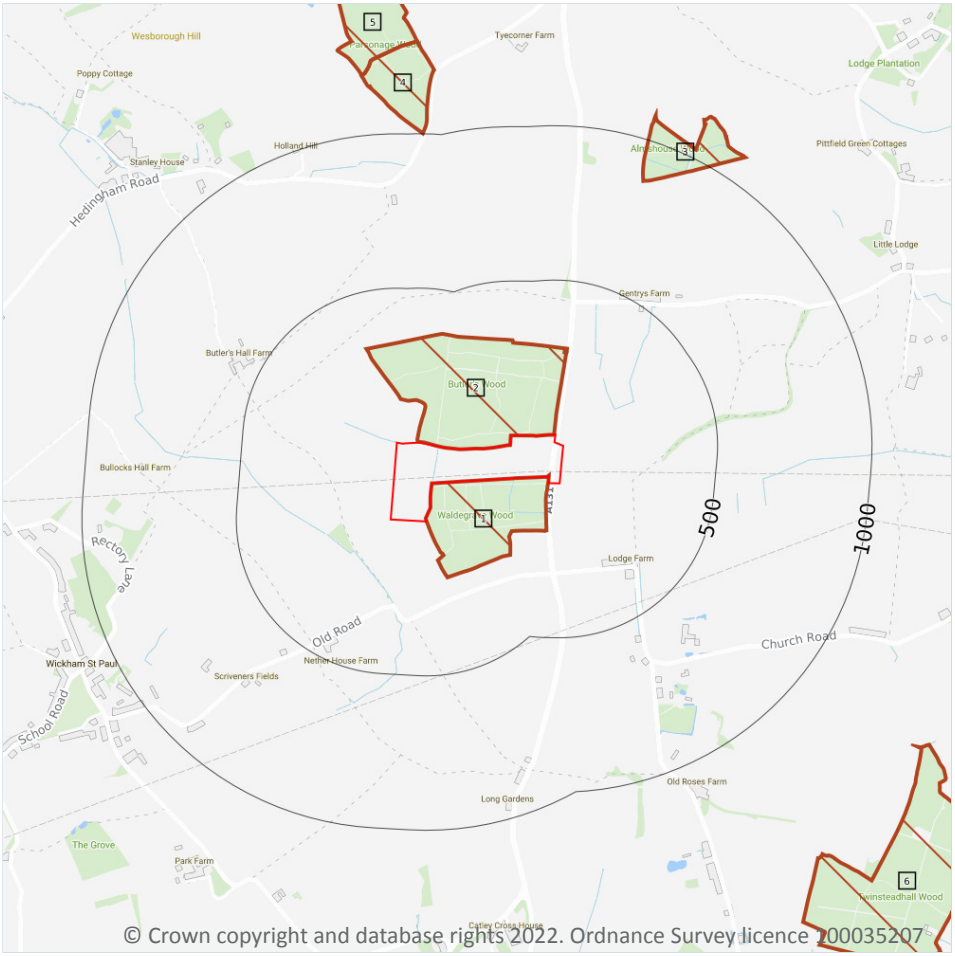
Highest risk on site	**Low**
Highest risk within 50m	**Moderate**

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 45**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



Site Outline

Search buffers in metres (m)

Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m	0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	0

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.

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

10.7 Designated Ancient Woodland

Records within 2000m	7

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 46**

ID	Location	Name	Woodland Type
1	**On site**	**Unknown**	**Ancient & Semi-Natural Woodland**
2	**On site**	**Butlers/waldegrave Woods**	**Ancient & Semi-Natural Woodland**
3	869m N	Almshouse Wood	Ancient & Semi-Natural Woodland
4	1001m N	Unknown	Ancient Replanted Woodland
5	1194m N	Unknown	Ancient & Semi-Natural Woodland
6	1441m SE	Twinsteadhall Wood	Ancient Replanted Woodland
-	1913m NE	Coopersfield 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	0

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

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	14

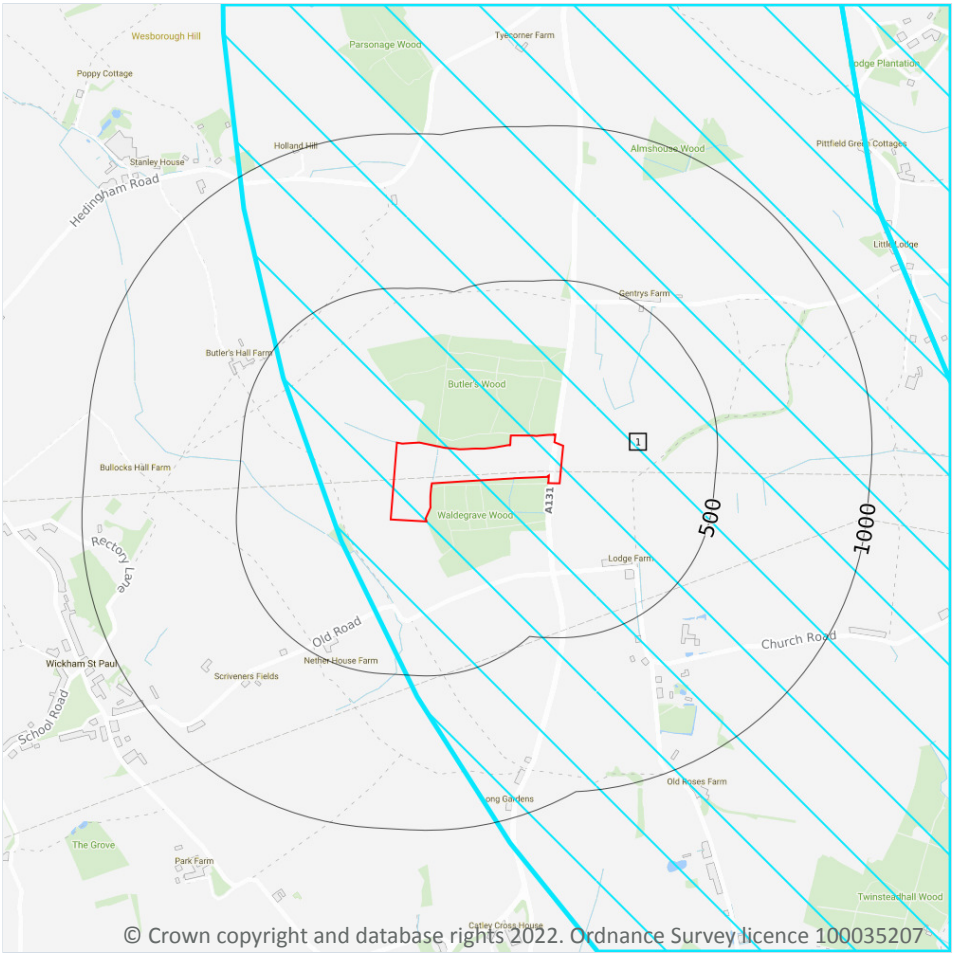
Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
On site	**Sandlings and Chelmsford**	**Groundwater**	**78**	**Existing**
On site	**Lower Stour NVZ**	**Surface Water**	**424**	**Existing**
33m NW	Lower Stour NVZ	Surface Water	424	Existing
33m NW	Sandlings and Chelmsford	Groundwater	78	Existing
584m SE	Colne NVZ	Surface Water	437	Existing
938m SE	Lower Stour NVZ	Surface Water	424	Existing
938m SE	Sandlings and Chelmsford	Groundwater	78	Existing
945m SW	Lower Stour NVZ	Surface Water	424	Existing

Location	Name	Type	NVZ ID	Status
945m SW	Sandlings and Chelmsford	Groundwater	78	Existing
986m SE	Colne NVZ	Surface Water	437	Existing
1248m SW	Colne NVZ	Surface Water	437	Existing
1329m S	Colne NVZ	Surface Water	437	Existing
1519m SW	Colne NVZ	Surface Water	437	Existing
1883m W	Colne NVZ	Surface Water	437	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	1

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 52**

ID	Location	Type of developments requiring consultation
1	**On site**	**Infrastructure - Airports, helipads and other aviation proposals.** **Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m², manure stores > 3500t.**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	0

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

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

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	0

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

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

11.5 Conservation Areas

Records within 250m	0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m	0

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

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

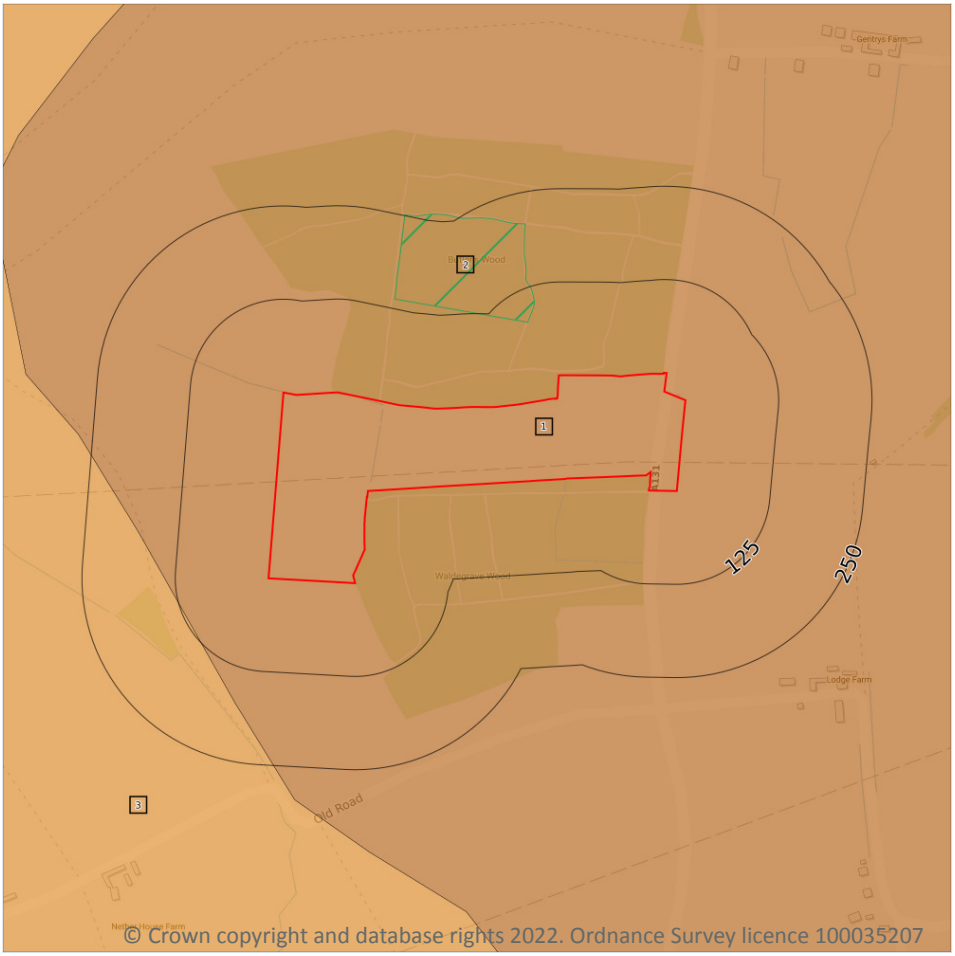
11.7 Registered Parks and Gardens

Records within 250m	0

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

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

12 Agricultural designations



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	2

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 56**

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.**
3	121m SW	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.

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	**1**

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.

Features are displayed on the Agricultural designations map on **page 56**

ID	Location	Description	Reference	Application date
2	83m NW	Selective Fell/Thin (Conditional)	017/31/07-08	10/08/2007

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	4

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.

Location	Reference	Scheme	Start Date	End Date
On site	**974967**	**Countryside Stewardship (Middle Tier)**	**01/01/2021**	**31/12/2025**
On site	**364678**	**Countryside Stewardship (Middle Tier)**	**01/01/2017**	**31/12/2021**
182m NW	358880	Countryside Stewardship (Middle Tier)	01/01/2017	31/12/2021
242m E	974967	Countryside Stewardship (Middle Tier)	01/01/2021	31/12/2025

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	19

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 59**

ID	Location	Main Habitat	Other habitats
1	**On site**	**Deciduous woodland**	**Main habitat: DWOOD (INV > 50%)**
2	**On site**	**Deciduous woodland**	**Main habitat: DWOOD (INV > 50%)**
3	**On site**	**Deciduous woodland**	**Main habitat: DWOOD (INV > 50%)**
4	0m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

ID	Location	Main Habitat	Other habitats
5	1m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
6	3m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
7	7m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	10m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
8	13m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
9	28m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
10	62m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	68m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
11	87m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
12	105m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
13	174m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
14	187m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
15	198m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
16	211m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
17	241m N	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.

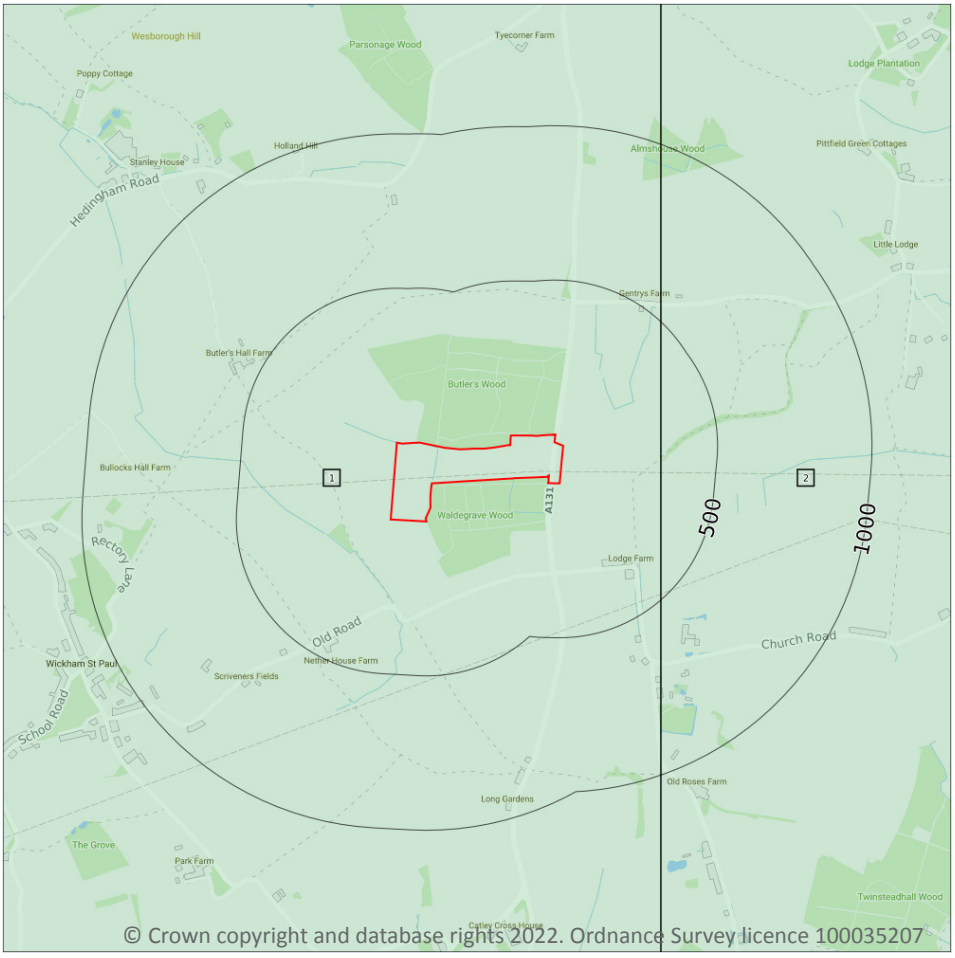
13.4 Limestone Pavement Orders

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 **2**

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 62**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**TL83NW**
2	316m E	Full	Full	Full	No coverage	TL83NE

This data is sourced from the British Geological Survey.

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

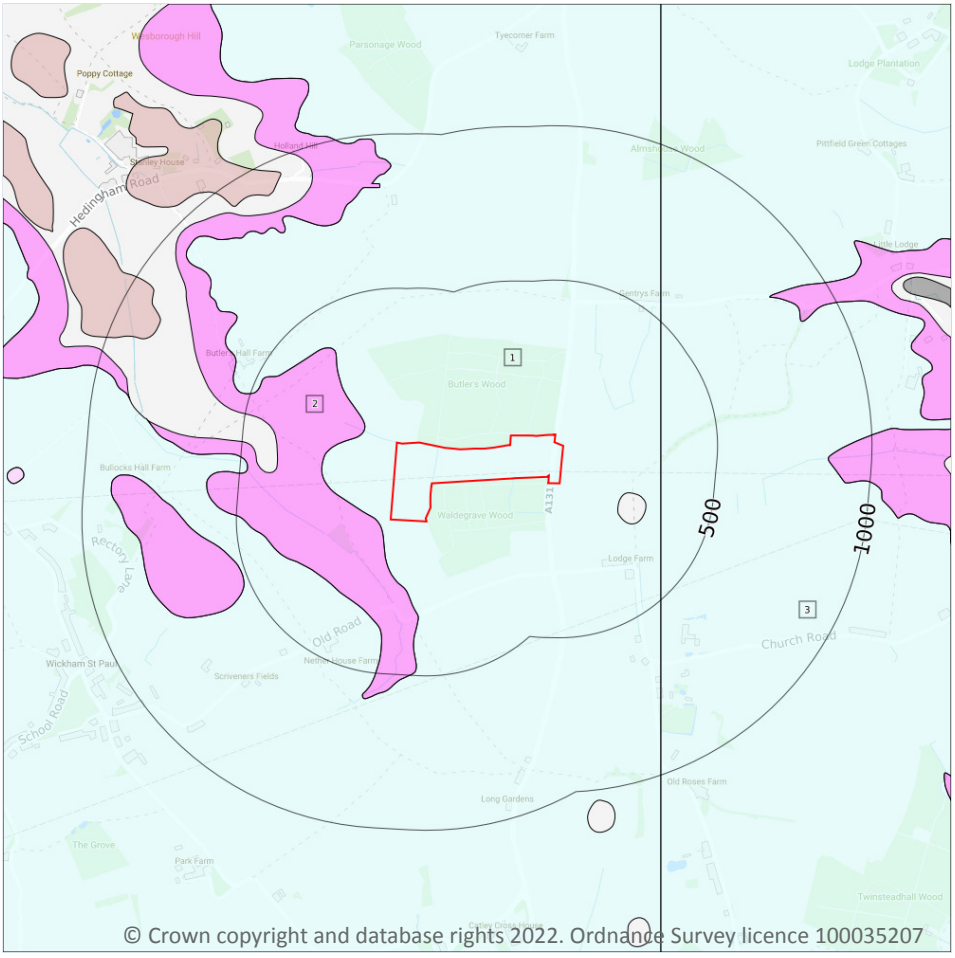
14.2 Artificial and made ground (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



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 **3**

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 64**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TILL-DMTN**	**Till - Diamicton**	**Diamicton**
2	39m SW	KGCA-XSV	Kesgrave Catchment Subgroup - Sand And Gravel	Sand And Gravel
3	316m E	TILL-DMTN	Till - Diamicton	Diamicton

This data is sourced from the British Geological Survey.

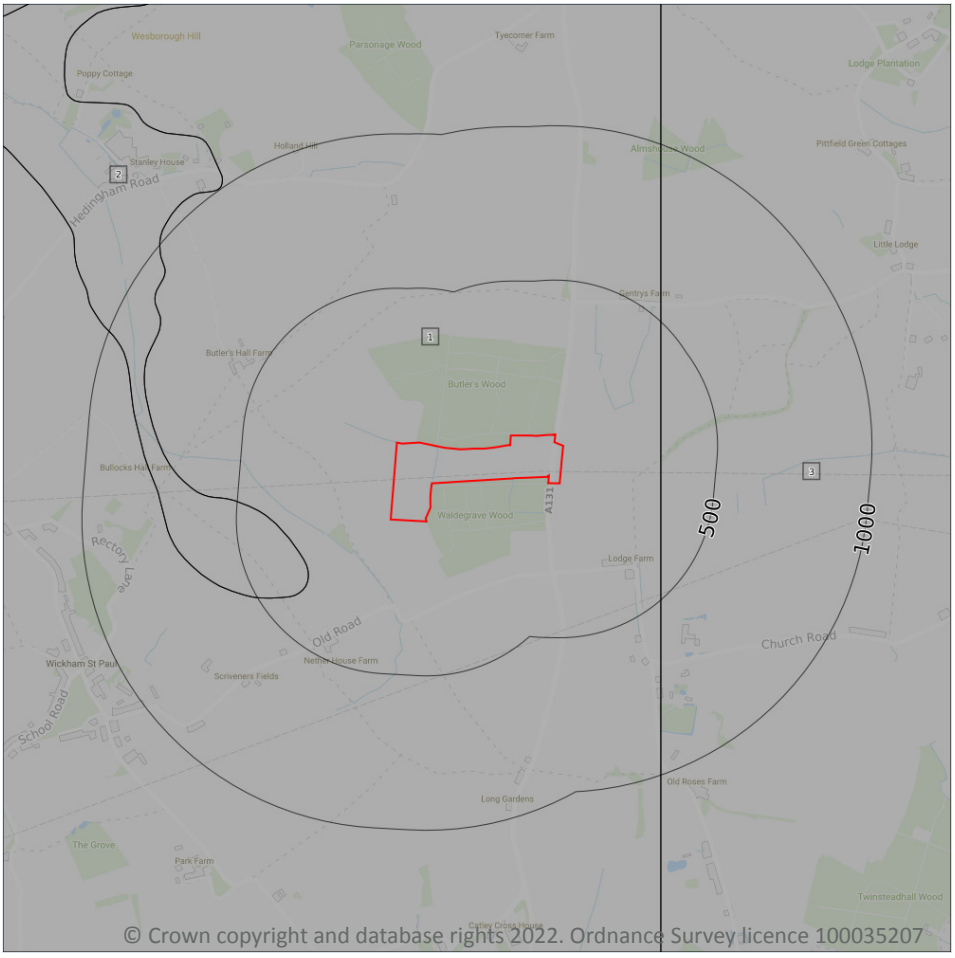
14.4 Landslip (10k)

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 **3**

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 66**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**CFB-SANDU**	**Chillesford Church Sand Member - Sand**	**Antian/Bramertonian Age**
2	310m SW	THAM-CLSI	Thames Group - Clay And Silt	Eocene Epoch
3	316m E	CFB-SANDU	Chillesford Church Sand Member - Sand	Antian/Bramertonian Age

This data is sourced from the British Geological Survey.

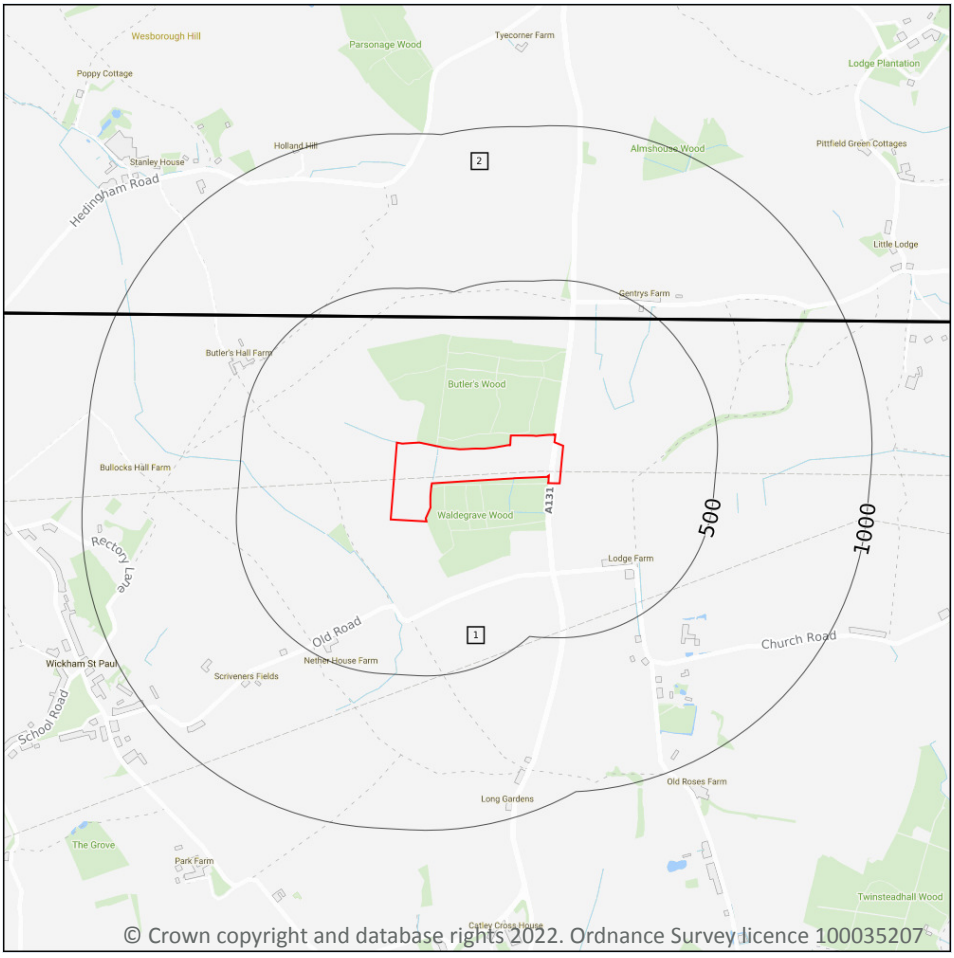
14.6 Bedrock faults and other linear features (10k)

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	2

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 68**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**EW223_braintree_v4**
2	377m N	Full	Full	Full	Full	EW206_sudbury_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	0

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.

This data is sourced from the British Geological Survey.

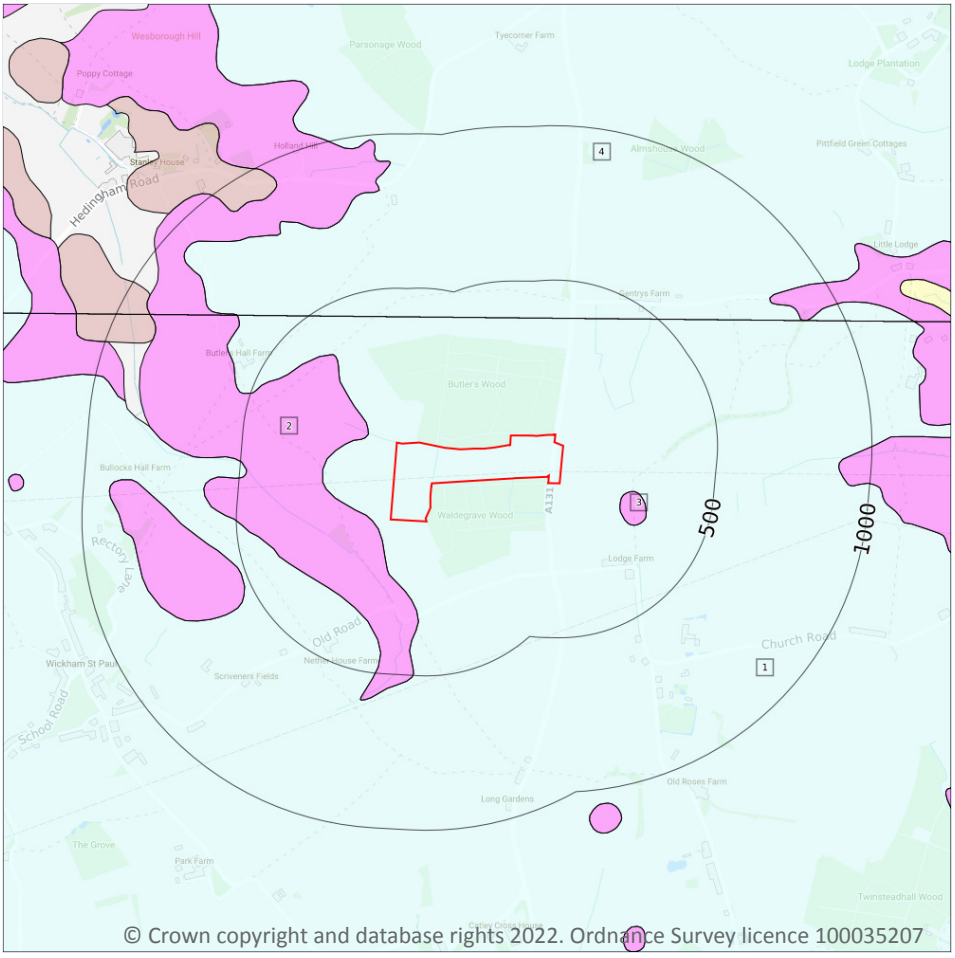
15.3 Artificial ground permeability (50k)

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 70**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**LOFT-DMTN**	**LOWESTOFT FORMATION**	**DIAMICTON**
2	50m SW	KGCA-XSV	KESGRAVE CATCHMENT SUBGROUP	SAND AND GRAVEL
3	206m E	KGCA-XSV	KESGRAVE CATCHMENT SUBGROUP	SAND AND GRAVEL
4	376m N	LOFT-DMTN	LOWESTOFT FORMATION	DIAMICTON

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Mixed**	**Moderate**	**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.

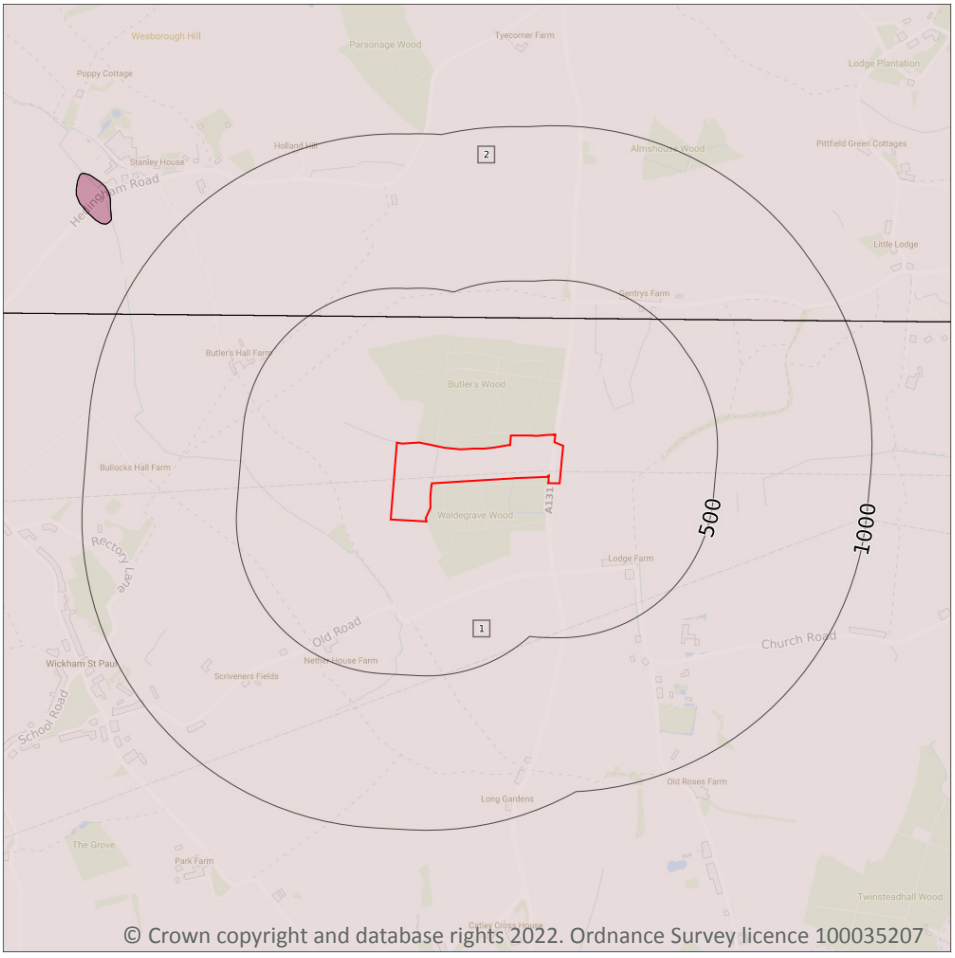
15.7 Landslip permeability (50k)

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	2

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 72**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**LC-XCZS**	**LONDON CLAY FORMATION - CLAY, SILT AND SAND**	**YPRESIAN**
2	376m N	LC-XCZS	LONDON CLAY FORMATION - CLAY, SILT AND SAND	YPRESIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Mixed**	**Moderate**	**Very 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

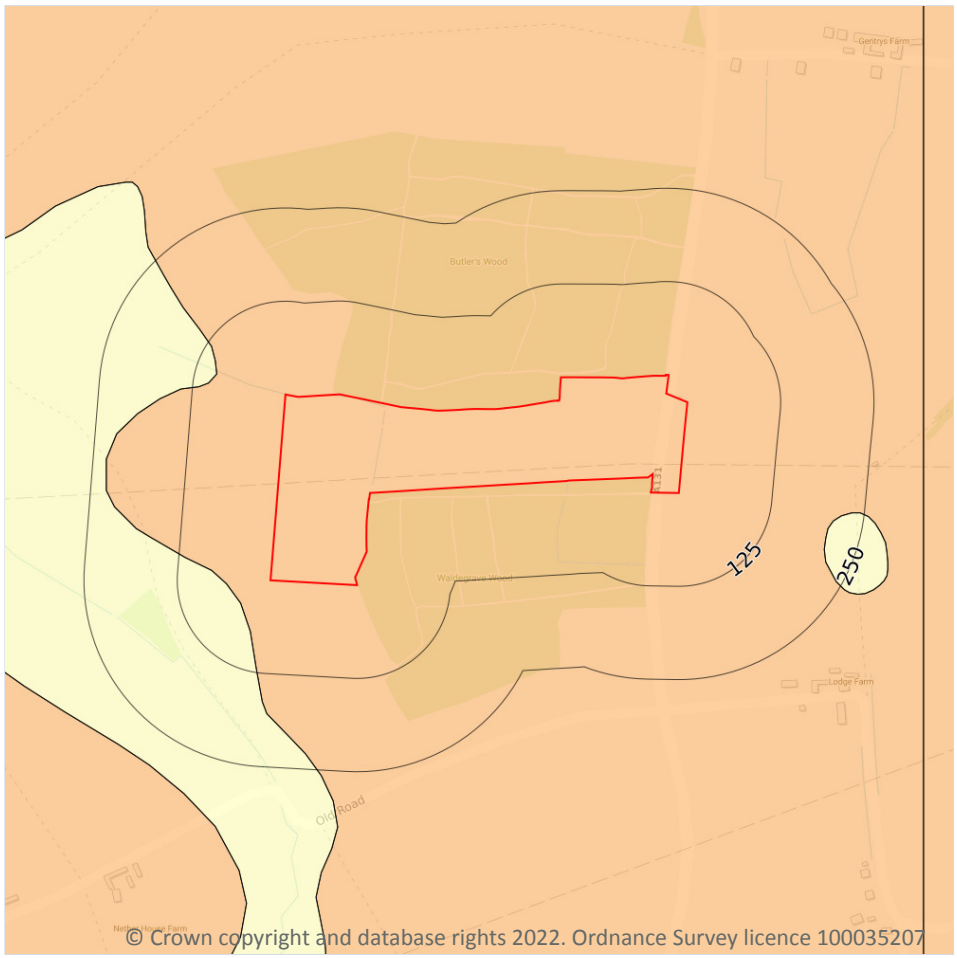
16.1 BGS Boreholes

Records within 250m	0

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.

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

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

17.1 Shrink swell clays

Records within 50m	1

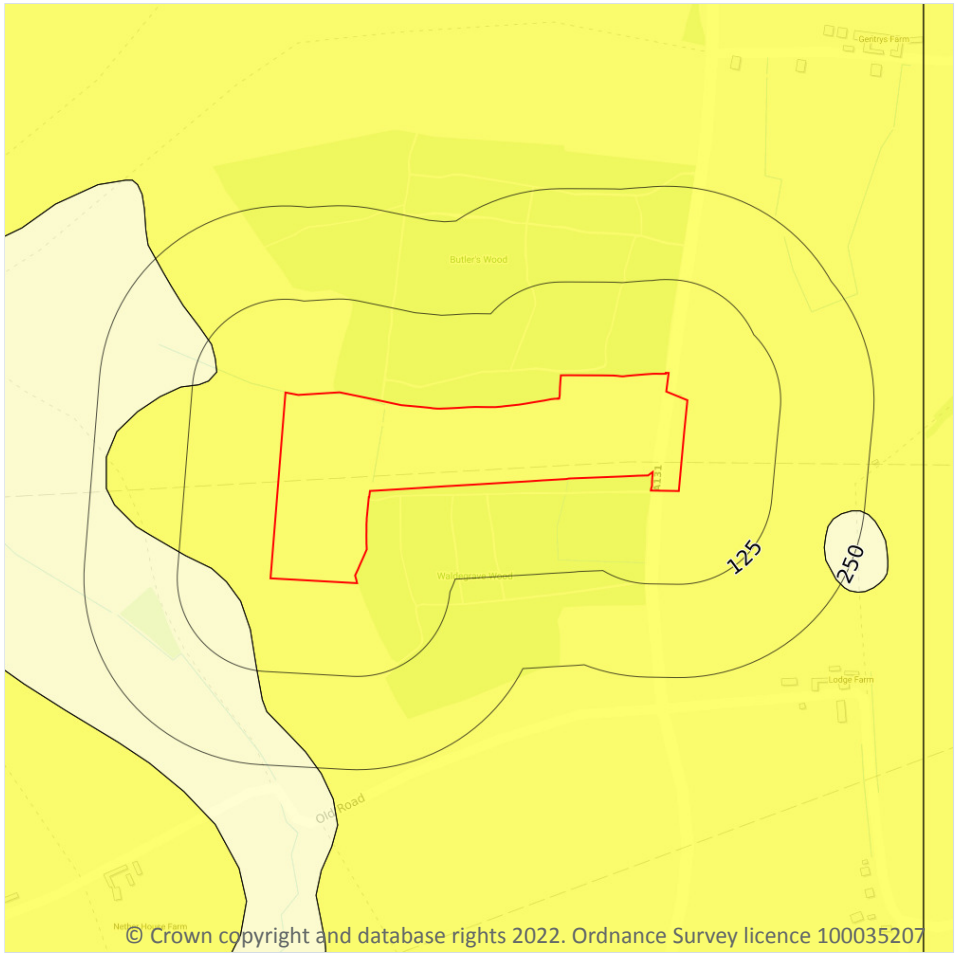
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 75**

Location	Hazard rating	Details
On site	**Low**	**Ground conditions predominantly medium 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	1

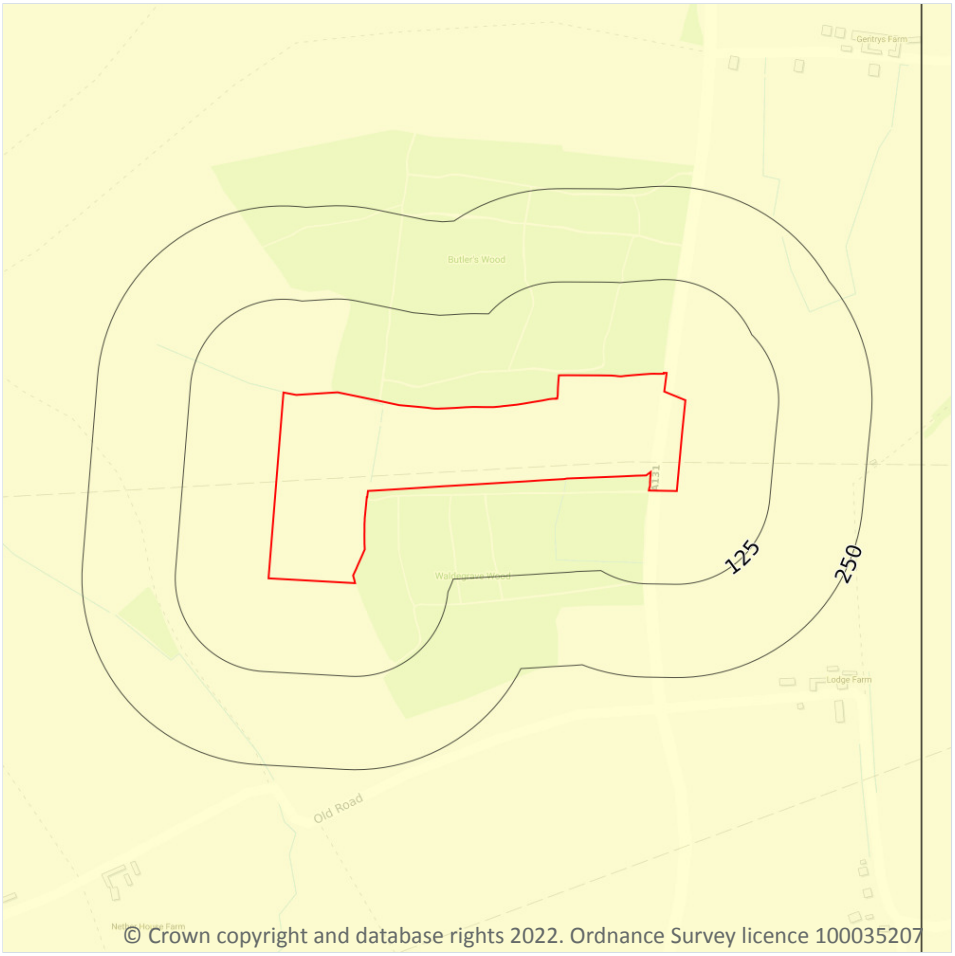
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 76**

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.**

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

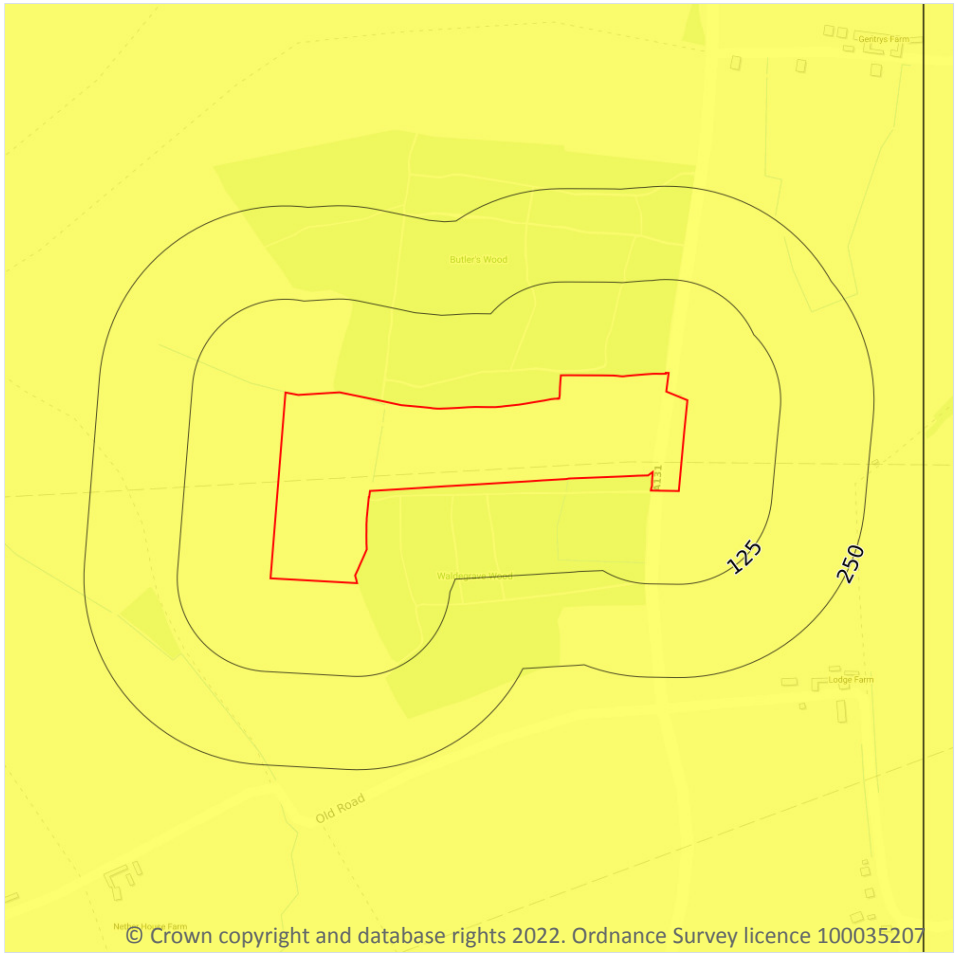
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 77**

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

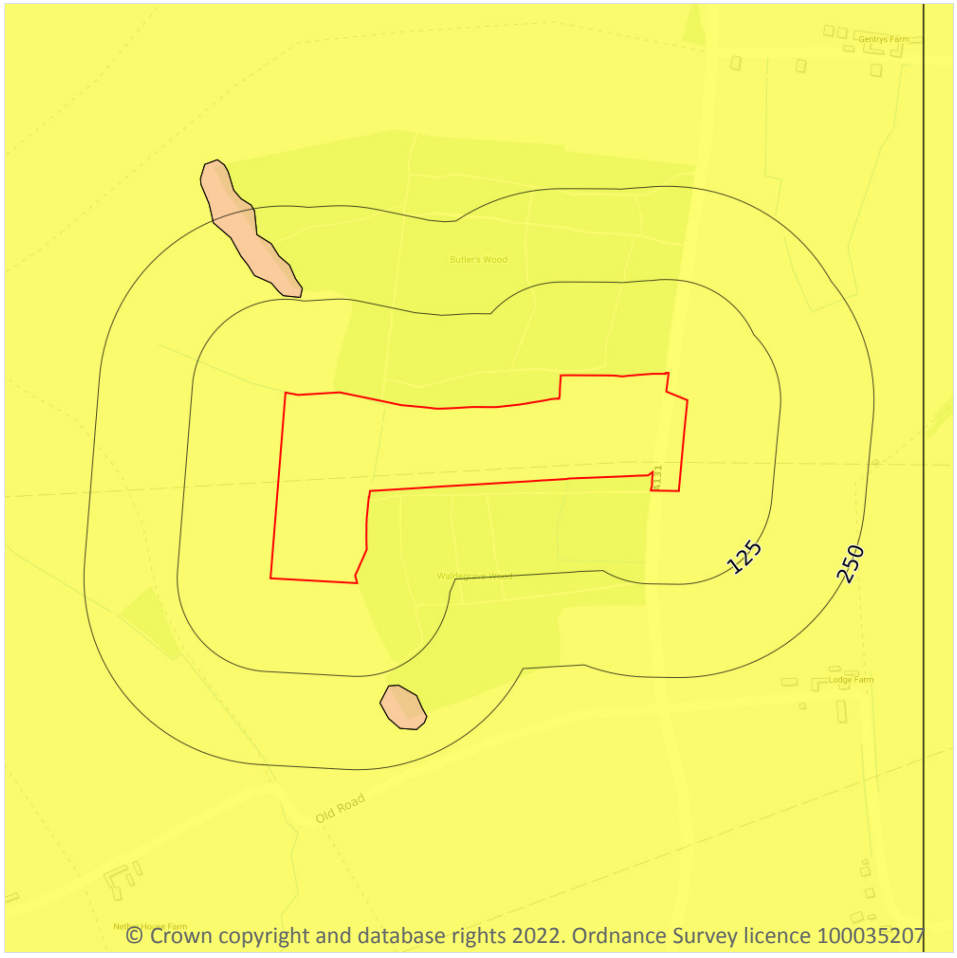
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 78**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

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

17.5 Landslides

Records within 50m	1

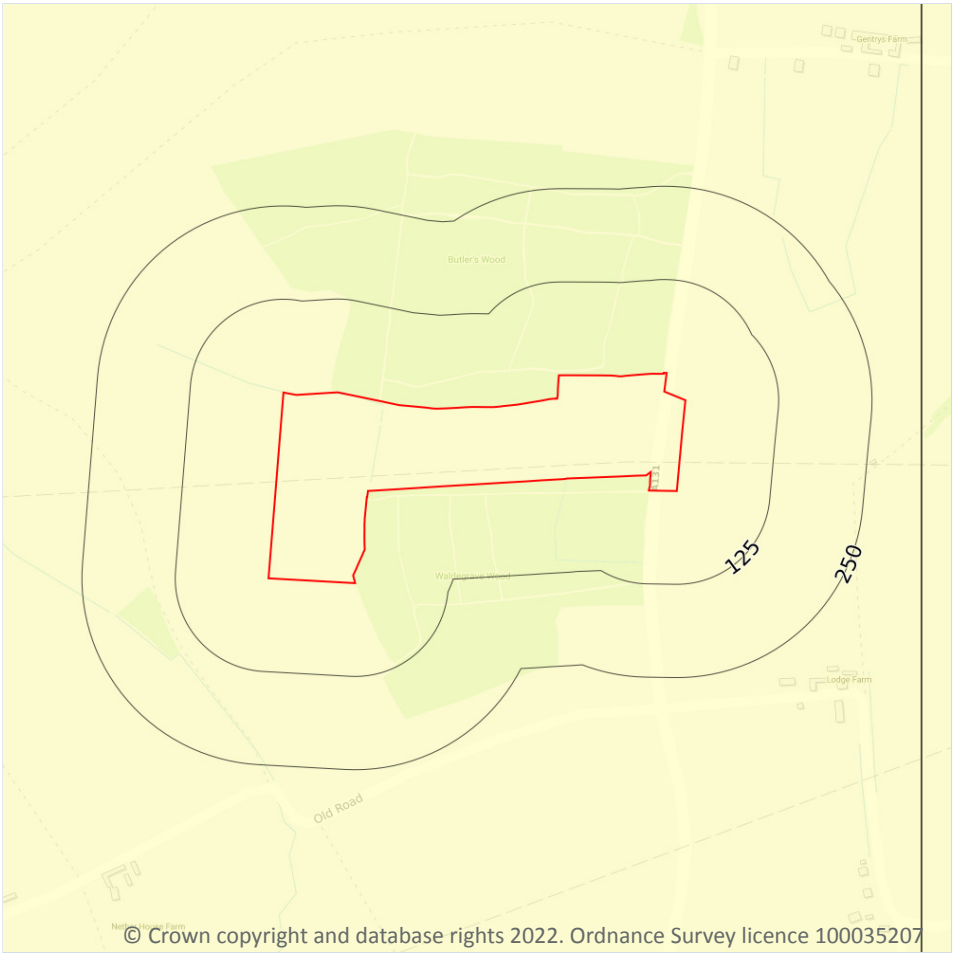
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 79**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

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

17.6 Ground dissolution of soluble rocks

Records within 50m	1

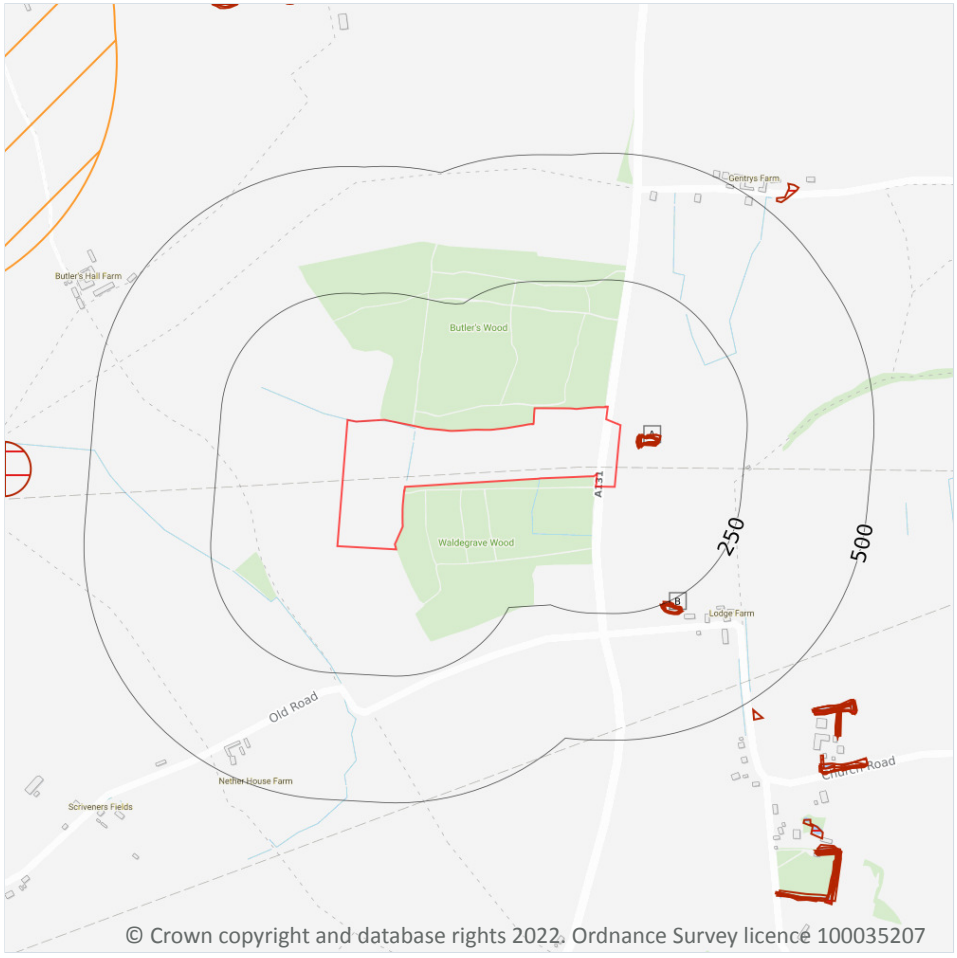
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 80**

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

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



Site Outline

Search buffers in metres (m)

Natural cavities (Area)

Natural cavities (Point)

BritPits

Surface ground workings

Underground workings

Historical Mineral Planning Areas

Mining Cavities

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 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.

18.2 BritPits

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	10

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, ground workings and natural cavities map on **page 82**

ID	Location	Land Use	Year of mapping	Mapping scale
A	35m E	Pond	1925	1:10560
A	35m E	Pond	1925	1:10560
A	37m E	Pond	1876	1:10560
A	39m E	Pond	1898	1:10560
A	42m E	Pond	1896	1:10560
A	43m E	Pond	1985	1:10000
A	43m E	Pond	1958	1:10560
B	246m SE	Pond	1958	1:10560
B	249m S	Pond	1876	1:10560
B	250m S	Pond	1925	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 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.

18.5 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	1

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, ground workings and natural cavities map on **page 82**

ID	Location	Name	Commodity	Class	Likelihood
4	690m NW	Not available	Chalk	C	Small scale underground mining may have occurred; mine adits, shafts and tunnels may be present. Potential for localised difficult ground conditions are at a level where they should be considered

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	0

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

This data is sourced from Stantec UK Ltd.

18.8 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.

18.9 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.

18.10 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.

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.13 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 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%

19.1 Radon

Records on site	1

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 86**

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

This data is sourced from the British Geological Survey and Public Health England.

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	**6**

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	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
44m E	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
44m SE	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	**0**

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km^2).

This data is sourced from the British Geological Survey.

20.3 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.

21 Railway infrastructure and projects

21.1 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.

21.2 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.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 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.

21.5 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.

21.6 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.

21.7 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.

21.8 Crossrail 1

Records within 500m	0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

21.9 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.

21.10 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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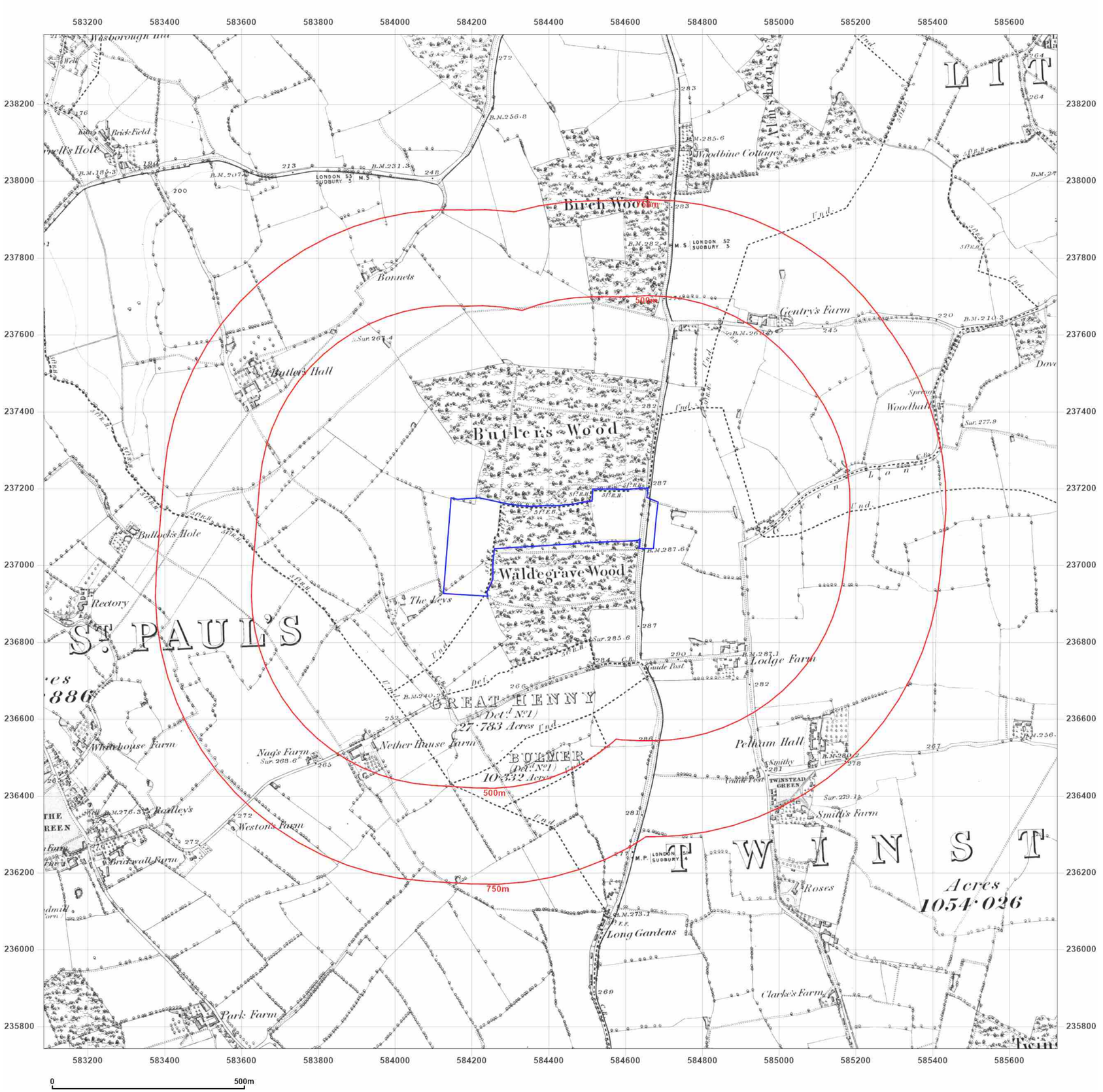

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Report Ref: HMD-8491261
Grid Ref: 584404, 237061

Map Name: County Series

Map date: **1876**

Scale: 1:10,560

Printed at: 1:10,560

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Revised 1876
Edition N/A
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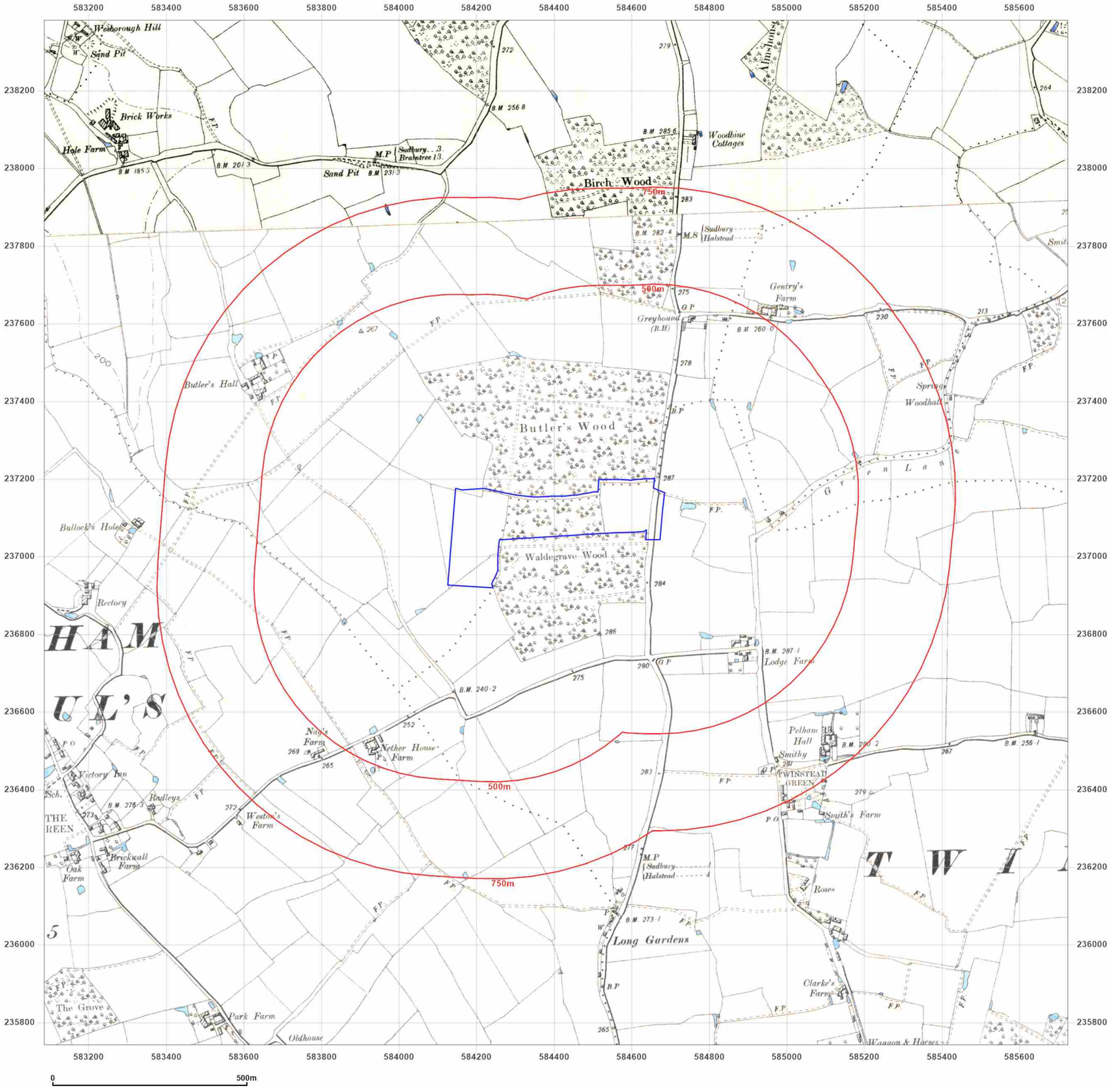

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Client Ref: EPL008973
Report Ref: HMD-8491261
Grid Ref: 584404, 237061

Map Name: County Series

Map date: **1896-1898**

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Surveyed 1885
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Edition N/A
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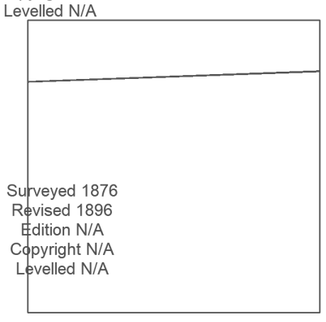

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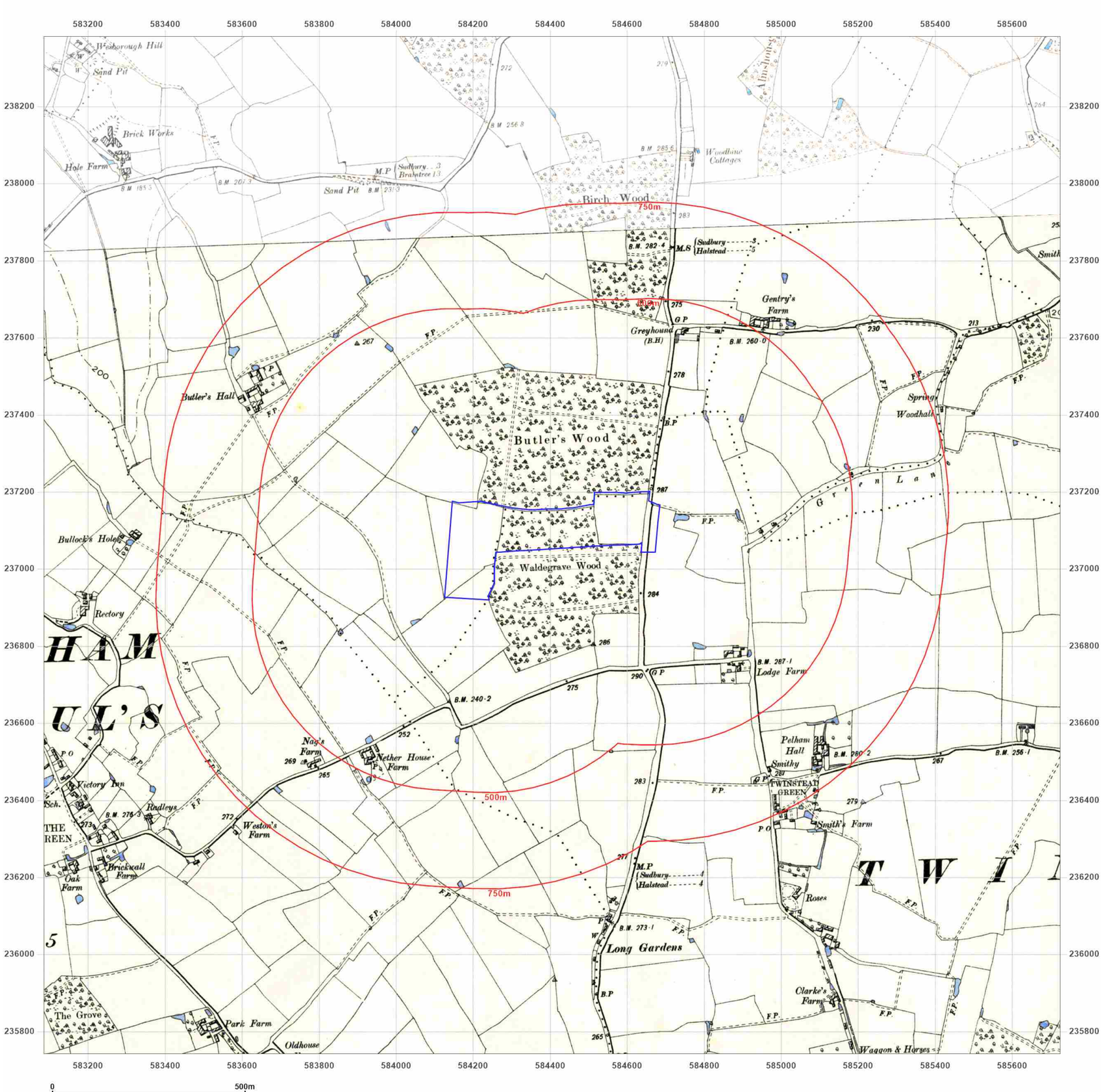

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Report Ref: HMD-8491261
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Edition N/A
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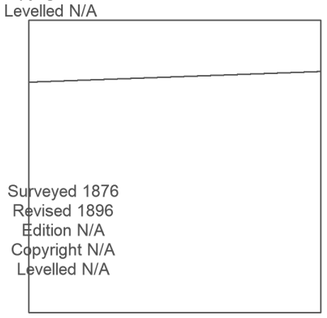

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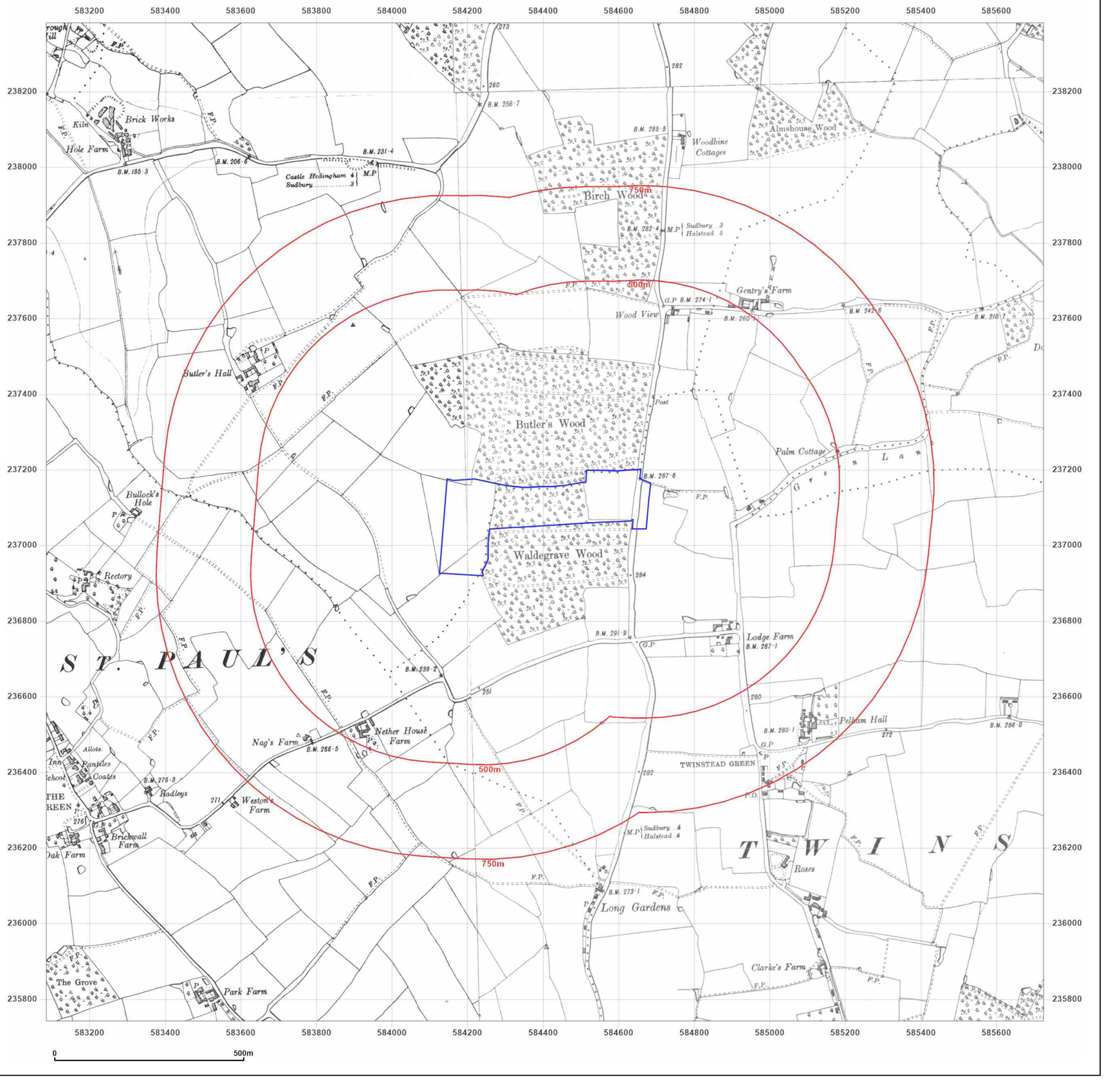

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Map Name: County Series

Map date: **1924-1925**

Scale: 1:10,560

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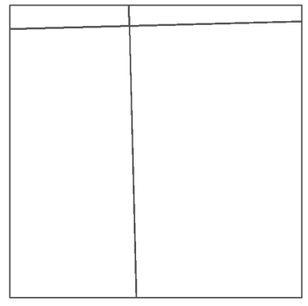

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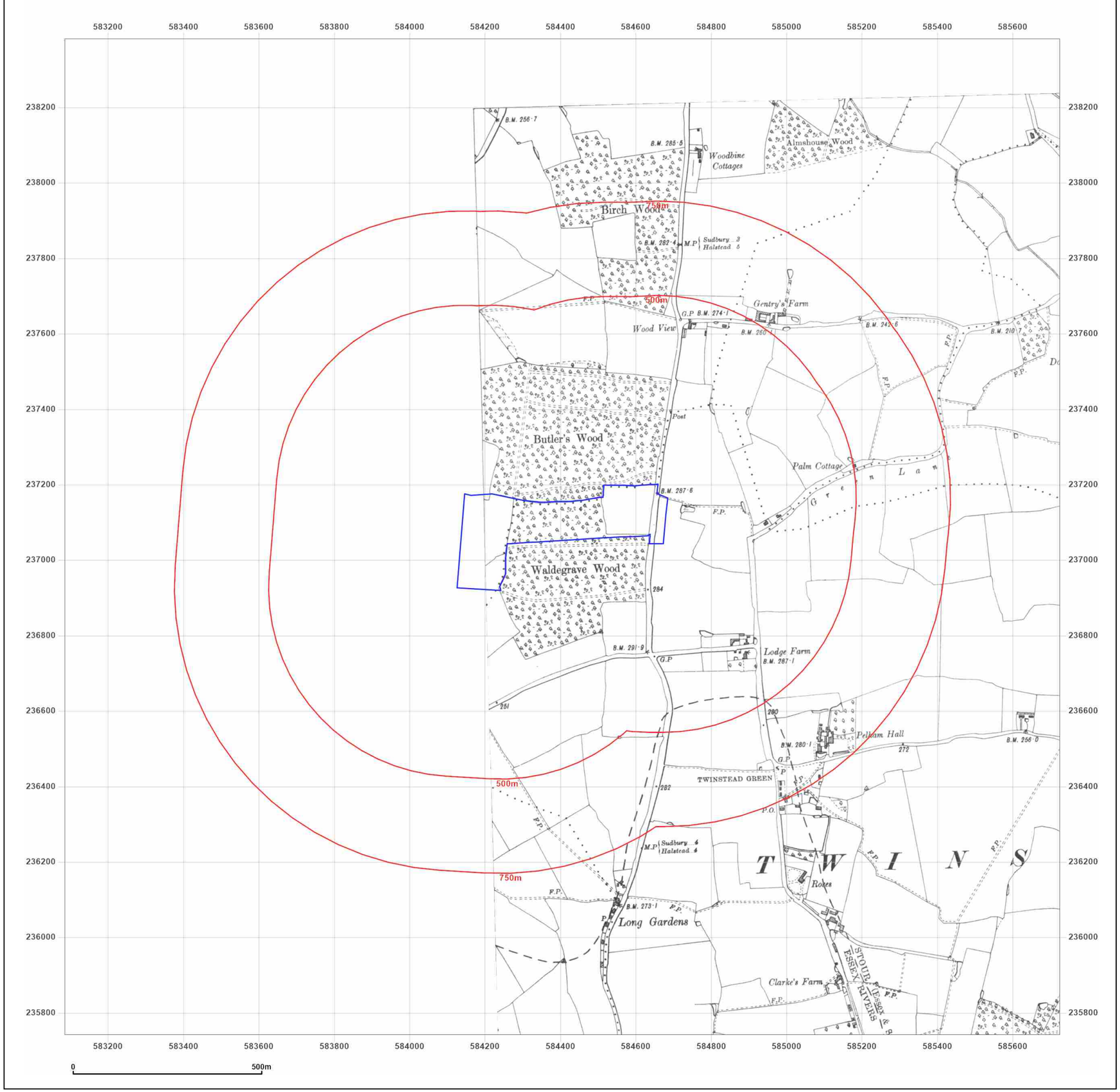

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Map Name: County Series

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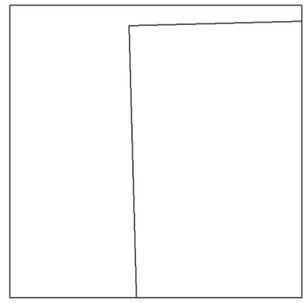

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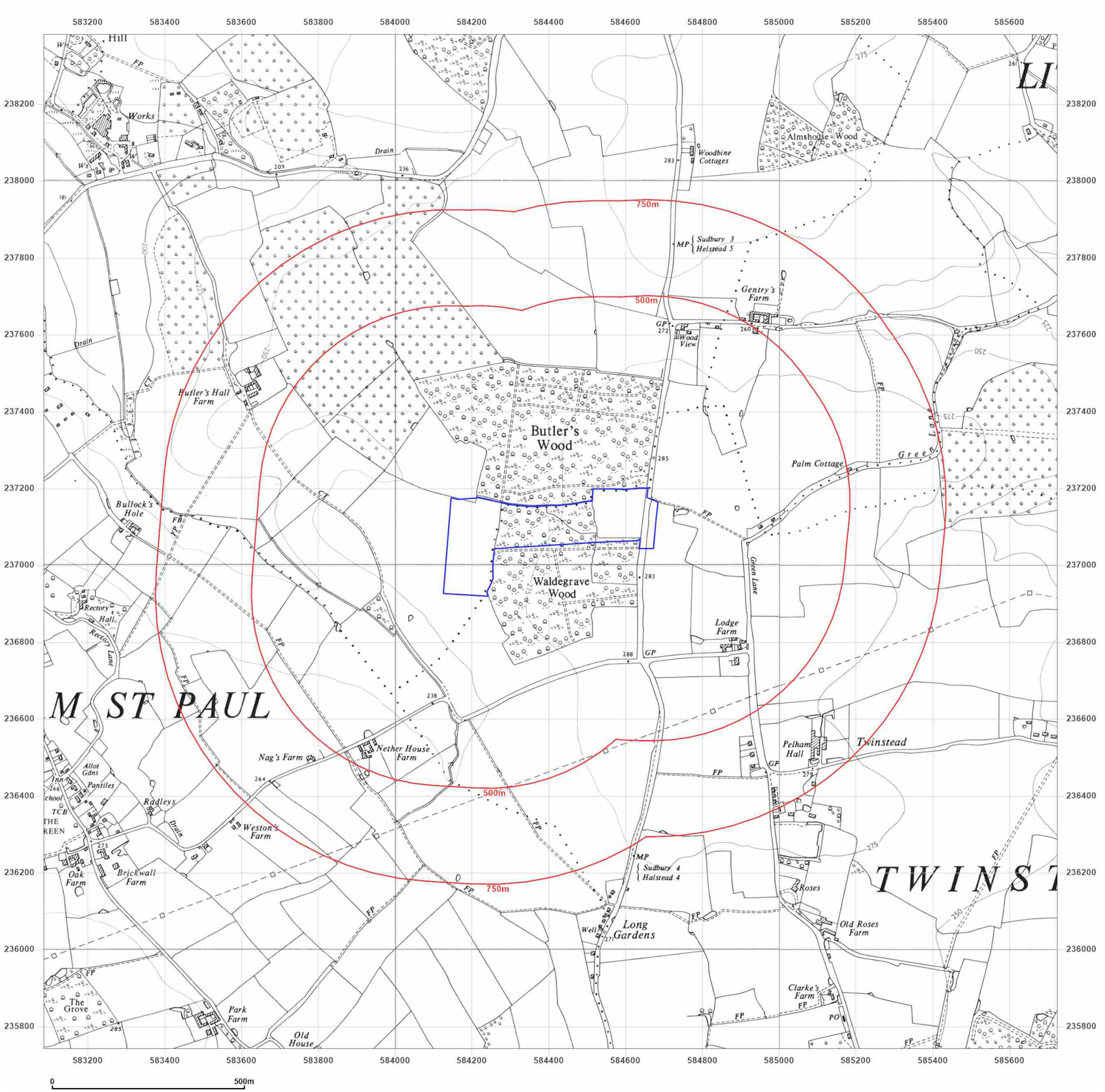

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Report Ref: HMD-8491261
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Map Name: Provisional

Map date: **1958-1959**

Scale: 1:10,560

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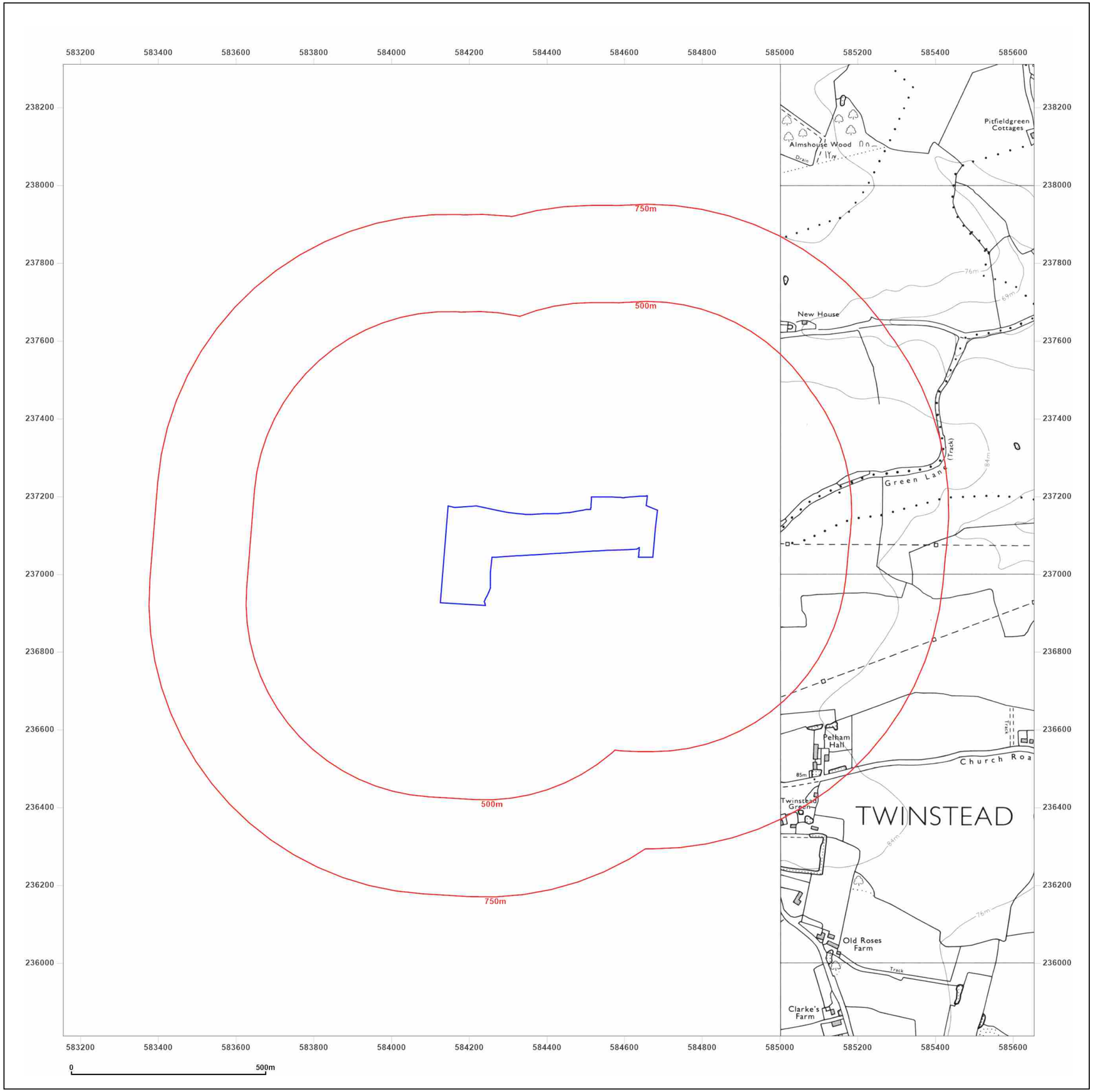

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Client Ref: EPL008973
Report Ref: HMD-8491261
Grid Ref: 584404, 237061

Map Name: National Grid

Map date: **1977**

Scale: 1:10,000

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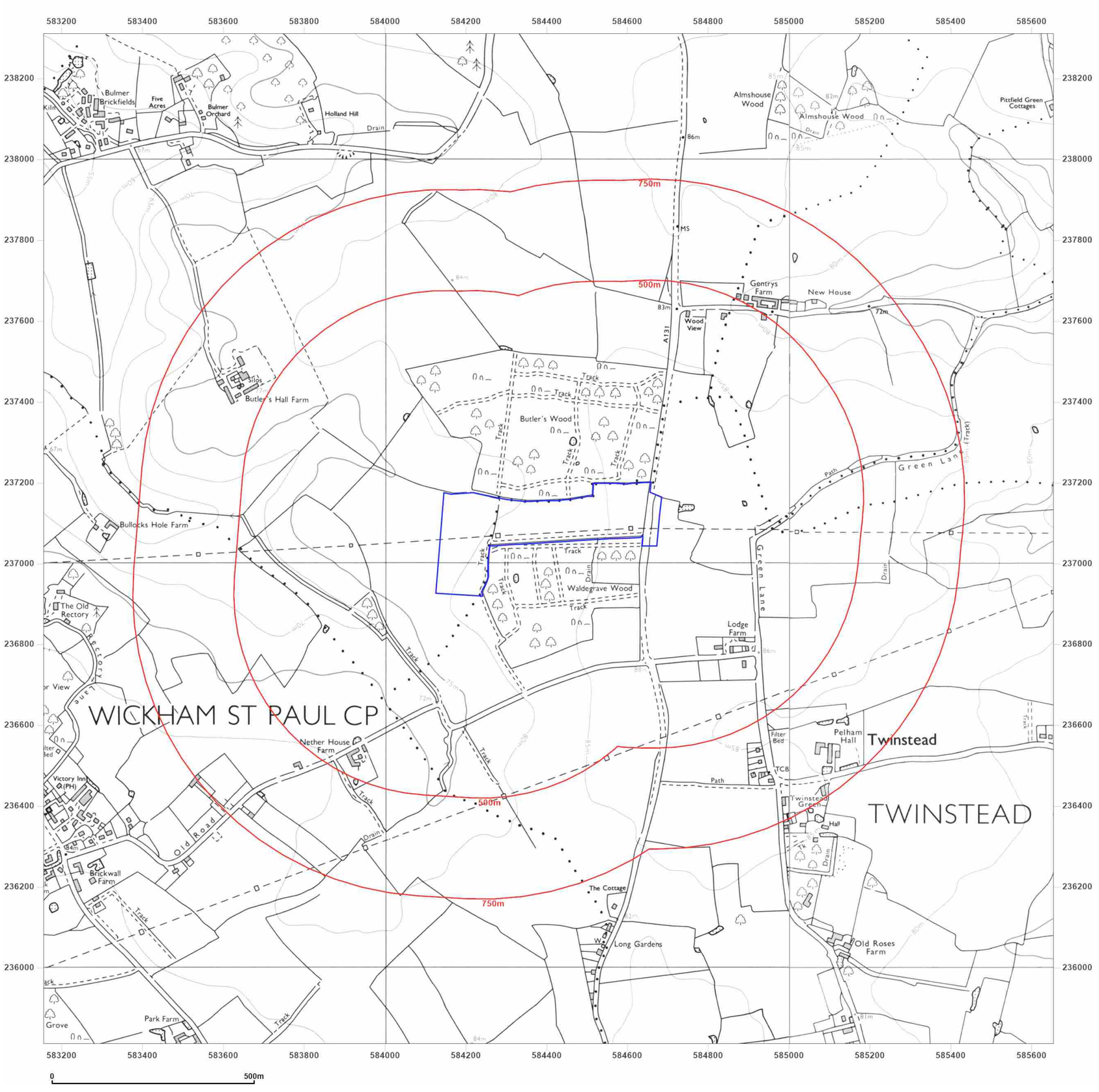

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Grid Ref: 584404, 237061

Map Name: National Grid

Map date: **1985-1987**

Scale: 1:10,000

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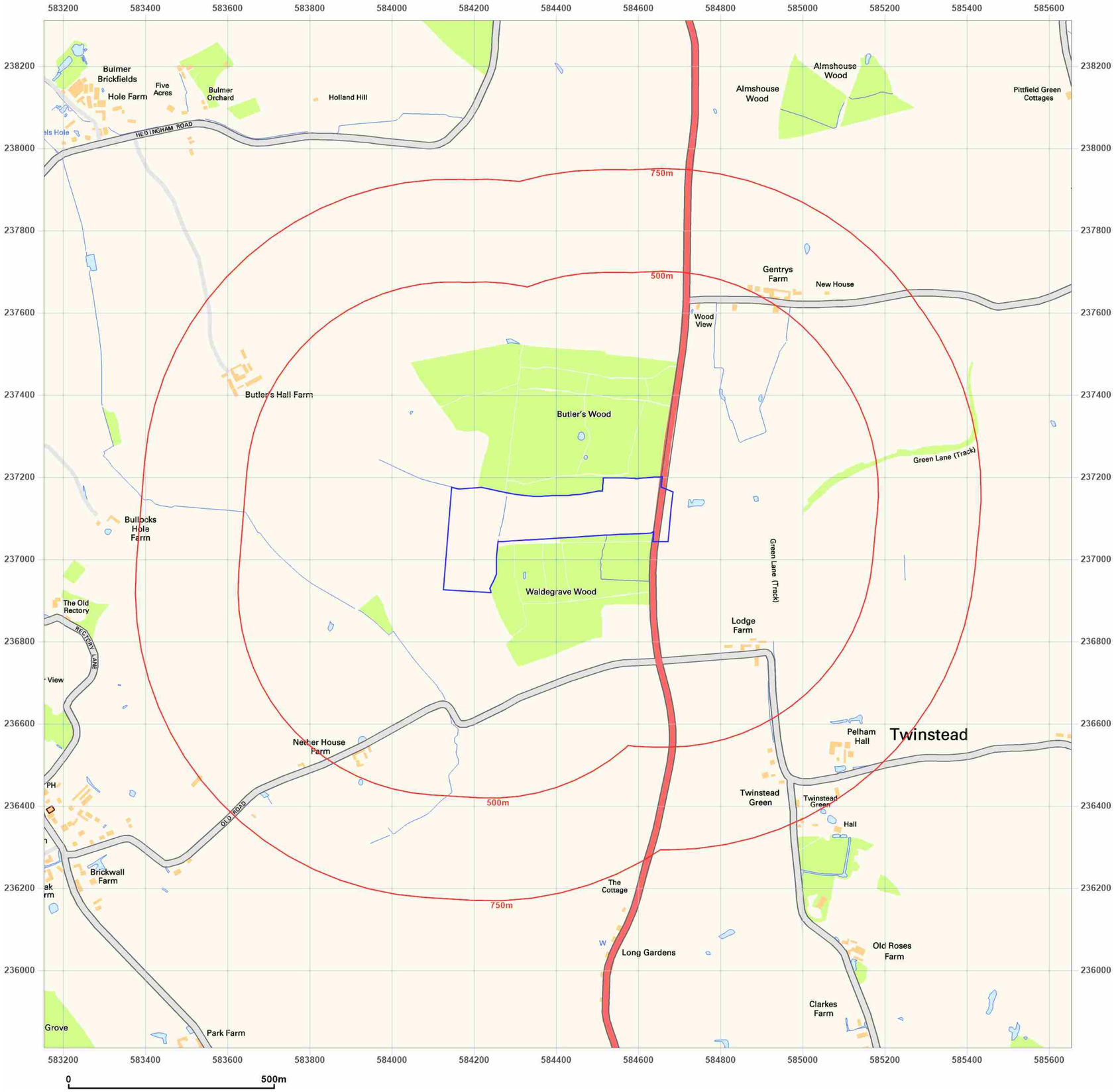

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Site Details:

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Client Ref: EPL008973
Report Ref: HMD-8491261
Grid Ref: 584404, 237061

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

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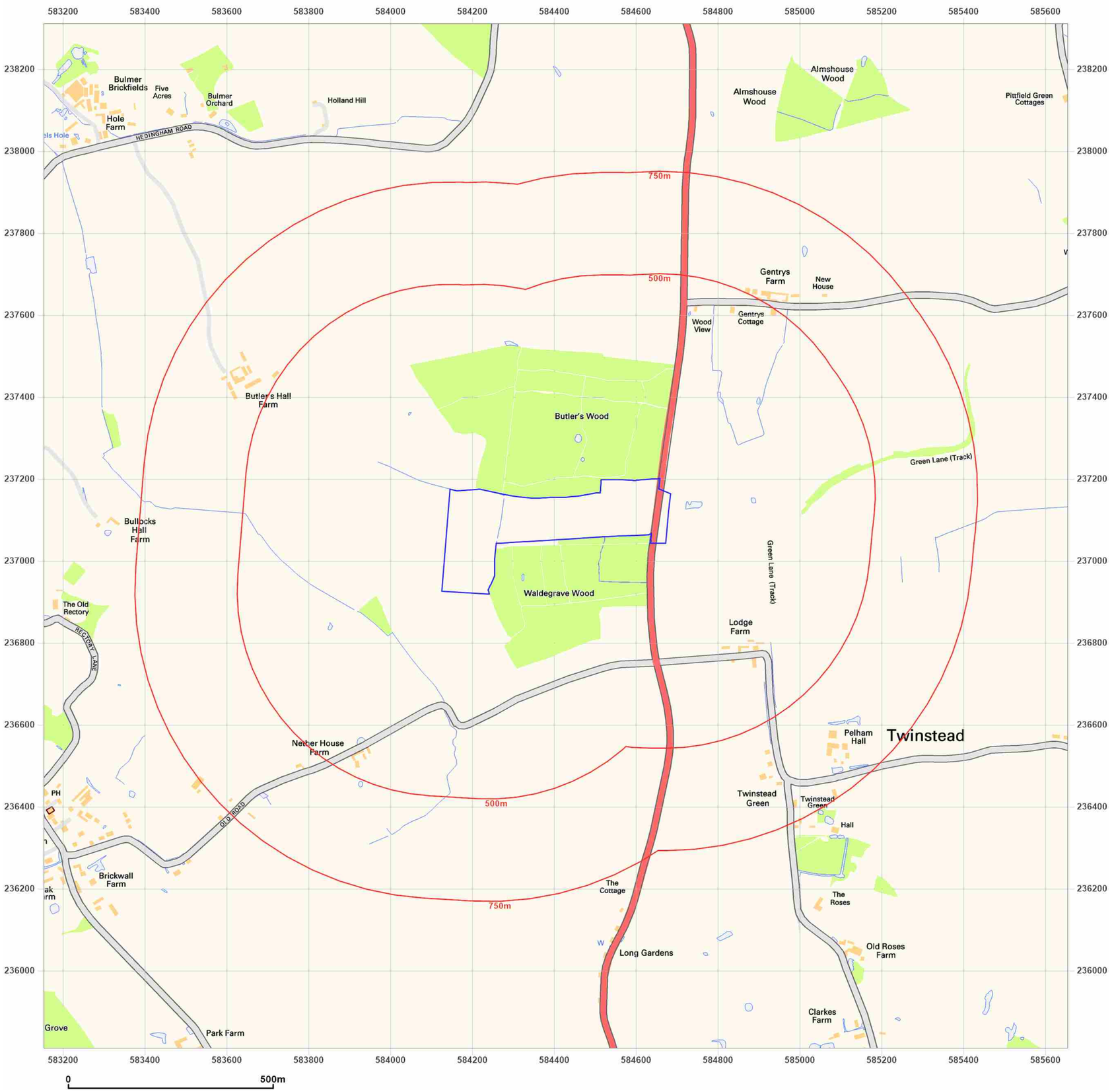

Groundsure INSIGHTS

Site Details:

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Client Ref: EPL008973
Report Ref: HMD-8491261
Grid Ref: 584404, 237061

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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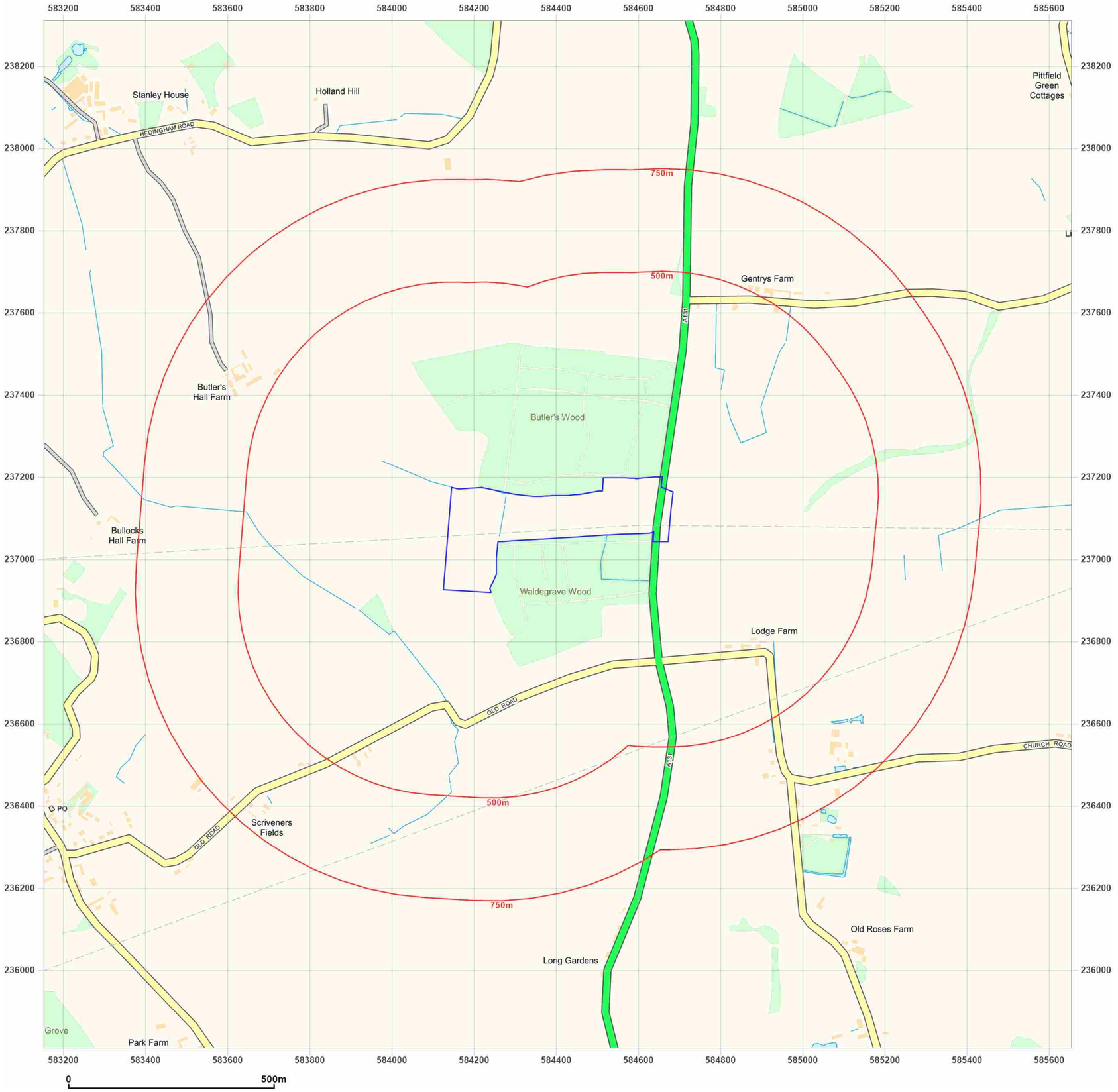

Groundsure INSIGHTS

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Report Ref: HMD-8491261
Grid Ref: 584404, 237061

Map Name: National Grid

Map date: **2022**

Scale: 1:10,000

Printed at: 1:10,000

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