GEOENVIRO

SOLUTIONS LIMITED

PHASE I DESKTOP STUDY AND PRELIMINARY RISK ASSESSMENT REPORT

AT

BROOK HALL, EDWARDS LANE, HALESWORTH

FOR

PETER CROCKFORD

Report Reference: 3939-23 PI

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APPENDICES

LIST OF ACRONYMS

Acronym	Meaning
BGS	British Geological Survey
BH	Borehole
CDM	Construction Design and Management
CL:AIRE	Contaminated Land: Applications In Real Environments
CLR	Contaminated Land Report
COSHH	Control Of Substances Hazardous to Health
CSM	Conceptual Site Model
DCP	Dynamic Cone Penetrometer
DEFRA	Department for Environment Foods and Rural Affairs
DoE	Department of Environment
DP	Dynamic Probe
DWS	Drinking Water Standard
EA	Environment Agency
EQS	Environmental Quality Standard
GAC	Generic Acceptance Criteria
HA	Hand Auger
HP	Hand Pit
LPA	Local Planning Authority
LQM	Land Quality Management
mbgl	Metres Below Ground Level
MP	Mackintosh Probe
NGR	National Grid Reference
NPPF	National Planning Policy Framework
OS	Ordnance Survey
SGV	Soil Guideline Value
SPOSH	Significant Possibility of Significant Harm
SPZ	Source Protection Zone
SSSI	Site of Special Scientific Interest
SSV	Soil Screening Value
TP	Trial Pit
TT	Trial Trench
WS	Windowless Sample / Window Sample
WSV	Water Screening Value

1. INTRODUCTION

1.1 BACKGROUND AND INSTRUCTION

GeoEnviro Solutions Limited (GES) were instructed by Peter Crockford (the Client) to produce a Phase I: Desktop Study and Preliminary Risk Assessment Report for the site located at Brook Hall, Edwards Lane, Halesworth, IP19 9HN.

A site location plan is presented as GES Drawing No. 3939-23/01 in **Appendix 1**.

This report is written in accordance with the guidance set out in Land Contamination Risk Management (LCRM), Guiding Principles for Land Contamination (GPLC) 1 – 3, and the National Planning Policy Framework (NPPF).

1.2 PROPOSED DEVELOPMENT

GES understand it is proposed to demolish the current dwelling and construct a new two storey residential property.

A proposed development plan and site location plan, as provided to GES, drawn by Peter Crockford, dated June and July 2023 respectively are provided within **Appendix 1**.

This proposed development plan has been utilized in the preparation of this risk assessment, based upon a 'Residential with Homegrown Produce' end-use. If an alternative development is subsequently proposed this assessment may need revising and should not be relied upon in its present outcome.

1.3 OBJECTIVES

The objectives of this Phase I report are to:

- To gain an understanding of any concerns of the regulatory authorities (Local Authority Planning, Building Control and Environmental Health departments and the Environment Agency) regarding local land filling, flooding, mining, quarrying and other concerns.
- Establish the environmental setting, including sensitivity in relation to human health, surface water, groundwater, and ecological receptors.
- Review historical and recent uses to assess the potential for contamination to be present from past and current land-use.
- Assess by qualitative means the potential nature and extent of contamination from those uses and the environmental risk and liabilities which may affect the site redevelopment.
- Identify the prevalent source-pathway-receptor linkages present on site by means of a Tier 1 contamination risk assessment which incorporates the formulation of a Conceptual Site Model.

1.4 INFORMATION SOURCES

During the production of this report the following primary information sources have been utilised:

- Enviro + Geo Insight data obtained from Groundsure (4C Group Ltd).

- Historical Ordnance Survey mapping at scales ranging from 1:1,250 to 1:10,560, obtained from Groundsure.
- BGS Open Geoscience online geological mapping tool.
- OS Open Data online mapping tool.
- Coal Authority Online interactive map.

1.5 PREVIOUS INVESTIGATIONS

GES have not been provided with any previous environmental and/or geotechnical investigation reports and are unaware that any have been carried out to date.

2. SITE LOCATION AND DESCRIPTION

2.1 SITE LOCATION

The site is located at The Bungalow at Brook Hall, Edwards Lane, Bramfield, IP19 9HN at approximate National Grid Reference of (NGR): 639134, 274688 (centre of the site).

2.2 SITE DESCRIPTION

A site walkover was carried out on the 20th July 2023, and is summarised below.

The site comprises an irregular shaped piece of land with an approximate area of 0.11 Ha.

The topography of the site is generally flat. The rear garden has a gentle slope to the southwest.

The site is currently occupied by the Bungalow, a residential building associated with Brook Hall Farm in the north of the site, with unkempt grass garden covered by mixed hardstanding and soft standing grass covered soil which has become overgrown with grass and shrubs in the south of the site.

A selection of photographs from the site walkover are presented in **Appendix 2**.

An approximate distribution of the surface covering is given below in Table 2.1.

Table 2.1: Site Surface Covering

Type of Surface Cover	Distribution (%)
Soft Ground (grassed and landscaped areas)	55
Hardstanding	25
Roadways	0
Buildings	20
Water (ponds, streams)	0

The site is bounded by Edwards Lane to the west, with commercial farmland to the north and residential farmhouse to the east and fenced fields used for grazing livestock to the south.

Access to the site is via front entrance of Bungalow residential property or via a door built into the west boundary wall.

Surrounding Area

The current surrounding land use to the site is generally residential and commercial farmland in all directions.

Approximately 50 m north of the site are two above ground storage tanks, one for fertiliser and one for diesel fuel. Both tanks are in good condition and stored on hard standing concrete with no visible staining nearby.

The topography of the surrounding area is generally flat with a gentle slope to the south.

3. ENVIRONMENTAL AND GEOLOGICAL SETTING

Information on the environmental and geological setting of the site is presented in a Groundsure Enviro + Geo Insight Report prepared for the site; a copy of this report is presented in **Appendix 3**.

3.1 SITE GEOLOGY

The site geology has been assessed by reference to information from British Geological Survey (BGS) mapping summarised in the Groundsure Enviro + Geo Insight data. Information from these sources referenced in this report has been predominantly limited to that identified within 50 m of the site (underlying geology) or 250 m of the site (structural features, borehole records), in order to focus on the information directly relevant to the site. Information from outside these radii will be referenced when deemed relevant.

Artificial / Made Ground

There are no records of artificial deposits underlying or within 250 m of the site.

Superficial Ground and Drift Deposits

The superficial ground deposits underlying the study site comprise of the Lowestoft Formation (Diamicton), generally described as *'extensive sheet of chalky till, together with outwash sands and gravels, silts and clays, characterised by its chalk and flint content'* (BGS Lexicon Description).

Bedrock Geology

Underlying the superficial deposits is bedrock comprises of The Crag Group, generally described as *'sands, gravels, silts and clays; the sands are characteristically dark green from glauconite but weather bright orange'* (BGS Lexicon Description).

Landslips

There are no records within 250 m of the site.

Linear Features

There are no records of linear features directly under the site.

Natural Ground Subsidence

The following hazard ratings applicable to the site and land within 50 m are presented in the Enviro + Geo Insight Report:

- Shrink / swell clays: Low.
- Running sands: Very low.
- Compressible deposits: Negligible.
- Collapsible deposits: Very low.
- Landslides: Very low.
- Ground dissolution of soluble rocks: Negligible.

3.2 BOREHOLE RECORDS

There are no BGS boreholes recorded on site. However, there is one borehole recorded 43 m northwest of the site.

This borehole records soil to 2 feet below ground level (fbgl) (0.6 mbgl) with underlying boulder clay to 41 fbgl (12.4 mbgl). Intermittent underlying clays, gravels and sands continue to a depth of 111 fbgl (33.8 mbgl) before London Clay is encountered to a depth of 126 fbgl (38 mbgl) and continues to a depth of 154 fbgl (46 mbgl). Lastly underlain by clean white chalk to 230 fbgl (70.1 mbgl).

3.3 HYDROGEOLOGY

These records are derived by Groundsure from Environment Agency and British Geological Survey data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report. Information from these sources referenced in this report have been predominantly limited to those identified within 250 m of the site (or 1000 m of the site for abstractions), in order to focus on the information directly relevant to the site. Information from outside these radii will be referenced when deemed relevant.

The Environment Agency aquifer designations used within the following sections are summarised in Table 3.1, below.

Table 3.1: Aquifer Designations

Definition	Description
Principal Aquifer	Layers with high intergranular and/or secondary permeability capable of supporting water supplies at strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as Major Aquifers.
Secondary (A) Aquifer	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as Minor Aquifers.
Secondary (B) Aquifer	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water bearing parts of former non-Aquifers.
Secondary Undifferentiated Aquifer	Layers that cannot be attributed to a category A or B rock type. These layers could have previously been described as a minor or a non-aquifer due to their variable characteristics.
Unproductive strata	Rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

Aquifer within Superficial Deposits

The superficial geology underlying the site, has been identified as a Secondary Undifferentiated Aquifer.

Permeability of Superficial Deposits

The minimum and maximum permeability are recorded as being low and moderate respectively and the flow type is recorded as mixed.

Aquifer within Bedrock Geology

As a result of the bedrock geology underlying the site, the aquifer has been identified as a Principal Aquifer that is located within the WFD groundwater body Waveney and East Suffolk Chalk & Crag, which had a poor overall, chemical and quantitative classification in 2019.

Permeability of Bedrock Deposits

The minimum and maximum permeability are recorded as being high and the flow type is recorded as intergranular.

Groundwater Vulnerability

The site is recorded to be located within an area where the EA considers the groundwater to have a high vulnerability to mobile pollutants, as summarised in Table 3.2 below.

Table 3.2: Groundwater Vulnerability Definitions

Definition	Description
High Vulnerability	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 Vulnerability	Intermediate between high and low vulnerability.
Low Vulnerability	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.

Groundwater Abstraction Licences

There is one active licenced groundwater abstraction points within 500 m of the site. This abstraction point is located approximately 152 m to the southeast for a heat pump which expires 31st March 2038.

Potable Water Abstraction Licences

There are no potable abstractions within 500 m.

Source Protection Zones

The site is located within a Source Protection Zone (SPZ) – Zone III Total Catchment.

3.4 HYDROLOGY

These records are derived by Groundsure from Environment Agency and British Geological Survey data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report. Information from these sources referenced in this report have been predominantly limited to that identified within 250 m of the site (aquifers, surface water) or 1000 m of the site (abstractions), in order to focus on the information directly relevant to the site. Information from outside these radii will be referenced when deemed relevant.

Ordnance Survey Water Network

There are nine records within 250 m, the closest of which are inland rivers not influenced by normal tidal action at 6 m west, 103 m southwest and 107 m to the northeast. Duplicate entries are present.

Surface Water Features

There are eight surface water features within 250 m of the site, the closest of which is a field dyke 6 m west of the site. The other seven refer to a connecting field dyke system with the furthest distance of 239 m south of the site.

Water Framework Directive Surface Water Bodies and Catchments

The site is within the operational catchment area of the Wenhaston watercourse – Wenhaston Watercourse River, which had a *moderate* overall, *fail* chemical and *moderate* ecological rating in 2019 which is located 249 m south of the site.

Surface Water Abstraction Licences

There are no licensed surface water abstractions within 250 m of site.

3.5 ENVIRONMENTALLY SENSITIVE AREAS

These records are derived by Groundsure from Environment Agency, Natural England, Historic England, English Heritage, Forestry Commission and UK Government data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report.

Information from these sources referenced in this report have been predominantly limited to that identified within 500 m of the site (environmental designations) or 250 m of the site (habitat, visual and cultural designations), in order to focus on the information directly relevant to the site. Information from outside these radii will be referenced when deemed relevant.

Environmental and Habitat Designations

There are four priority habitat inventories located within 250 m of the site, the closest of which is located 53 m northeast of the site and relates to an area of Deciduous Woodland. The remaining entries refer to further areas of deciduous woodland.

Visual and Cultural Designations

There is one listed building recorded located 47 m east of the site relating to a Grade 2 listed building named Brook Hall listed on the 25th October 1951.

4. PAST LAND USE AND POTENTIAL CONTAMINANT SOURCES

Information on past land use and potential contaminant sources is presented in a Groundsure Enviro + Geo Insight Report prepared for the site; a copy of this report is reproduced in **Appendix 3**.

4.1 LAND USE RECORDS

These records are derived by Groundsure from historical mapping and each record corresponds to a particular map revision date. Thus, several records may refer to the same feature where it is present over time. Groundsure has in some cases grouped such records in the Enviro + Geo Insight report. Differences in distances quoted from the study site may be due to expansion of the feature over time or geolocation errors.

Information from these sources referenced in this report have been predominantly limited to that identified within 250 m of the site, in order to focus on the information directly relevant to the site. Information from outside this radius will be referenced when deemed relevant.

Historical Industrial Land Uses

There are no historical land uses recorded on site, however, there are 6 recorded historical industrial land uses within 500 m of the site. The closest offsite record is located 138 m southwest of the site and relates to an unspecified pit. The remaining records relate to sand pits and cuttings.

Historical Tanks

There are no tanks recorded within 500 m of the site.

Historical Energy Features

There are no historical energy features recorded within 500 m of the site.

Historical Petrol Stations

There are no records of historical petrol stations within 500 m of the site.

Historical Garages

There are no records of historical garages within 500 m of the site.

Historical Military Land

There are no records of historical military land within 500 m of the site.

Current or Recent Industrial Land Uses

There are no records of current or recent industrial land uses within 500 m of the site.

Current or Recent Petrol Stations

There are no records of current or recent petrol stations within 500 m of the site.

Electricity Cables

There are no records of high voltage (HV) underground electricity cables within 500 m of the site.

Gas and / or Oil Pipelines

There are no records of medium- or high-pressure underground gas or oil supply pipelines within 500 m of the site.

Railway Infrastructure

There are no records of railway infrastructure within 250 m of the site.

4.2 ENVIRONMENTAL PERMITS, INCIDENTS AND REGISTERS

These records are derived by Groundsure from local authority, Health and Safety Executive and Environment Agency data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report. Information from these sources referenced in this report have been predominantly limited to that identified within 250 m of the site, in order to focus on the information directly relevant to the site. Information from outside this radius will be referenced when deemed relevant.

Sites Determined as Contaminated Land

There are no records of sites determined as contaminated land under Part 2A of the Environmental Protection Act 1990 within 500 m.

Control of Major Accident Hazards (COMAH)

There are no records within 250 m of the site.

Regulated Explosive Sites

There are no records within 250 m of the site.

Planning Hazardous Substances Consents

There are no records within 250 m of the site.

Records of Historic IPC Licensed Activities

There are no records within 250 m of the site.

Records of Part A (1) Licensed Activities

There are no records within 250 m of the site.

Records of Part A (2)/B Licensed Activities and Pollutant Release

There are no records within 500 m of the site.

Records of Radioactive Substance Authorisations

There are no records within 500 m of the site.

Licensed Discharges to Controlled Waters

There are no records within 250 m of the site.

Pollutant release to Surface Waters (Red List)

There are no records within 250 m of the site.

Pollutant Release to Public Sewer

There are no records within 500 m of the site.

List 1 and List 2 Dangerous Substances

There are no records within 500 m of the site.

Substantiated Pollution Incidents

There are no records within 500 m of the site.

Pollution Inventory Substances

There are no records within 500 m of the site.

Pollution Inventory Waste transfers

There are no records within 500 m of the site.

Pollution Inventory Radioactive Waste

There are no records within 500 m of the site.

4.3 WASTE AND LANDFILL

These records are derived by Groundsure from Environment Agency, British Geological Survey, Ordnance Survey (interpreted by Groundsure) and local authority data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report.

Information from these sources referenced in this report have been predominantly limited to that identified within 500 m of the site (landfills) or 250 m of the site (non-landfill waste operations), in order to focus on the information directly relevant to the site. Information from outside these radii will be referenced when deemed relevant.

Active or Recent Landfill

There are no records within 500 m of the site.

Historic Landfill

There are no records within 500 m of the site.

Non-Landfill Waste Records

There are no historical non-landfill waste records within 500 m of the site.

There are no waste exemption records within 500 m of site.

4.4 MINING, GROUND WORKINGS AND NATURAL CAVITIES

These records are derived by from British Geological Survey, Ordnance Survey (interpreted by Groundsure), Coal Authority, Peter Brett Associates, Johnson Poole and Bloomer, Cheshire Brine Subsidence Compensation Board, British Gypsum, Mining Searches UK, Kaolin and Ball Clay Association and local authority data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report.

Information from these sources referenced in this report have been predominantly limited to that identified within 250 m of the site, in order to focus on the information directly relevant to the site. Information from outside these radii will be referenced when deemed relevant.

Natural Cavities

There are no records within 250 m of the site.

Mining Cavities

There are no records within 250 m of the site.

BritPits Data (Surface and Underground Mineral Workings)

There is one record of a ceased surface mineral workings within 250 m of the site, located 179 m south from the site. The surface working was recorded as a sand pit.

Historical Mineral Planning Areas

There are no records within 250 m of the site.

Surface Ground Workings

There are six records located within 250 m of the site. The closest one being a pond located 51 m northeast of the site dated 1905. Based on the data provided the same pond has been recorded again in 1981 located 59 m northeast of the site. The further four entries, which have been recorded twice represent an unspecified pit located 138 m and 139 m southwest, and a sand pit located 158 m and 165 m to the south of the site.

Underground Workings

There are no records within 250 m of the site.

Coal Mining

There are no records within 250 m of the site.

Past Underground Mining

There are no records within 250 m of the site.

Non-Coal Mining

There are no records within 250 m for brine extraction, gypsum, tin or clay mining.

4.5 RADON

These records are derived by Groundsure from British Geological Survey and Public Health England data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report. Information from these sources referenced in this report have been predominantly limited to that identified on or within 50 m of the site.

The study site is not located within a Radon Affected Area, as less than 1% of properties are above the Radon Action Level. No radon protection measures are required.

4.6 BACKGROUND SOIL CHEMISTRY

Values estimated by BGS for background concentrations of six potentially harmful elements are provided as follows:

- Arsenic: 15 mg/kg.
- Lead: 100 mg/kg.
- Bioaccessible lead: 60 mg/kg.
- Cadmium: 1.8 mg/kg.
- Chromium: 40-60 mg/kg.
- Nickel: 15 mg/kg.

These values are not considered to be elevated with respect to guideline values for a Residential with Homegrown Produce end-use.

5. HISTORICAL MAPPING STUDY

5.1 HISTORICAL MAPPING

The object of this search was to report on the evidence of site history and redevelopment of the site and its environs from available County Series and Ordnance Survey Maps at scales ranging from 1:1,250 to 1:10,560 dating from 1883 to the present day, and Getmapping PLC aerial photography dating from the 1999 to the recent past, as provided by Groundsure.

Information in the historical mapping study has been predominantly limited to that identified on the site or within 100m of the site, in order to focus on the information directly relevant to the site. Information from outside this radius will be referenced when deemed relevant.

Each map or photographs only represents a "snap-shot" of the site and its environs at the date of the survey. Changes that had occurred at other times may not have been recorded on the maps and could represent an unidentified hazard to the site.

The information reported might not represent all pertinent information that could be obtained. The interpretation of the maps and/or other data commented on in this report is subjective.

The Historical Ordnance Survey Maps were obtained from Groundsure and are available for review within **Appendix 4** and are summarised in Table 5.1 below.

Table 5.1: Historical Mapping Review

Date	Scale	On-Site	Offsite
1883	1:2,500	The site is currently occupied by the current farmhouse building located to the north of the site with rear garden.	Brookhall Farm is annotated to the north and east of the site with an approximate distance range of 15 – 70 m. A field dyke (not annotated) flows south past the site on the western side of Edwards Lane towards another field dyke (not annotated) flowing from the northwest to the southeast, the confluence being approximately 100 m south of the site.
1903	1:2,500	There are no significant variations from the previous edition.	Unlabelled building approximately 75 m northeast of the site has been removed. Secondary unlabelled building approximately 50 m northwest of the site is removed.
1947	1:10,560	There are no significant variations from the previous edition.	Five buildings (not annotated) located approximately 60 m west and northwest from the site are first noted.
1952-1957	1:10,560	There are no significant variations from the previous edition.	Previously mentioned buildings located approximately 100 m to the west of the site have been removed.
1972-1977	1:2,500	Building on site is now labelled as "The Bungalow". The building has been altered with a rear extension to the east and shortened from the west side.	Numerous new buildings have been built (all unlabelled) within the Brookhall Farm area northwest to northeast of the site. Land located 75 m to the northeast is now labelled as pond. Edwards Lane located adjacent to the western boundary of the site has widened.
1980-1981	1:10,000	There are no significant variations from the previous edition.	There are no significant variations from the previous edition.

Date	Scale	On-Site	Offsite
1995	1:2,500	There are no significant variations from the previous edition.	There are no significant variations from the previous edition.
2001	1:10,000	There are no significant variations from the previous edition.	There are no significant variations from the previous edition.
2003	1:1,250	There are no significant variations from the previous edition.	There are no significant variations from the previous edition.
2010	1:10,000	There are no significant variations from the previous edition.	There are no significant variations from the previous edition.
2023	1:10,000	There are no significant variations from the previous edition.	There are no significant variations from the previous edition.

5.2 AERIAL PHOTOGRAPHY

1999 Aerial Photo

The 1999 aerial photo is generally unclear; however, the site appears to be occupied by the existing property to the north of the site with a rear garden that encompasses most of the centre and southern sections of the site. The surrounding area shows open land to the west and south, a residential property to the east and farm buildings to the north.

2000 Aerial Photo

The 2000 aerial photo shows no significant changes from the previous aerial photograph.

2016 Aerial Photo

The 2016 aerial photo shows an additional barn has been erected northwest of the site.

2019 Aerial Photo

The 2019 aerial photo shows sections of the soft standing ground surrounding the site approximately. In addition, a building to the northeast approximately 75 m off site has been demolished.

Recent Aerial Photograph:

Recent aerial photography shows no on-site changes and the construction of additional buildings within the farm to the north of the site.

The aerial photographs are included in the Groundsure Enviro + Geo Insight Report and are available for review within **Appendix 4**.

5.3 SUMMARY

Review of available historical ordinance surveys maps indicate that the site and its surrounding area has been developed since the first recorded map of 1883. The only significant variation on site occurred between 1972 and 1977, when the “Bungalow” at Brookhall Farm developed into its current layout.

6. FRAMEWORK FOR ASSESSMENT OF CONTAMINATION

Environmental risks are assessed within the risk management framework established in Part IIA of the Environmental Protection Act (EPA) 1990 introduced by Section 57 of the Environment Act 1995 which provides a statutory definition of contaminated land. To fall within this definition it is necessary that, as a result of the condition of the land, substances may be present on or under the land such that:

(a) Significant harm is being caused or there is a significant possibility of such harm being caused.

or

(b) *Pollution of controlled water is being, or is likely to be, caused.*

Risk from contamination is assessed by consideration of possible linkages between contaminant sources and potential receptors which could be harmed or polluted.

The key aspect of the framework is the development of a Conceptual Site Model (CSM) which illustrates the spatial interaction between the potential sources and receptors on site.

The information presented in this report was collated and evaluated to develop an initial CSM to assess ground contamination issues at the site.

For a risk of pollution or environmental harm to occur as a result of ground contamination, ***all*** of the following elements must be present:

- A source, i.e., a substance that is capable of causing pollution or harm.
- A receptor, i.e., something which could be adversely affected by the contaminant.
- A pathway, i.e., a route by which the contaminant can reach the receptor.

If one of these elements is absent there can be no significant risk. If all are present then the magnitude of the risk is a function of the magnitude and mobility of the source, the sensitivity of the receptor and the nature of the migration pathway.

Potential sources, pathways and receptors are identified in the sections below and the risks associated with possible pollutant linkages outlined.

6.1 SOURCES

On-Site Sources

No potential contaminant sources have been identified on site from the historical study and the Enviro + Geo Insight data.

Offsite Sources

No potential contaminant sources have been identified off site from the historical study and the Enviro + Geo Insight data.

6.2 PATHWAYS

For contaminants to reach potential receptors, there must be a viable **pathway** for the contaminant. Potential pathways that may affect the migration of contaminants are listed in Table 6.1, overleaf.

Table 6.1: Pathways

Pathway	Medium	Properties
Direct Contact	Dust, solid and liquid phase	There is a possibility of dust fumes being produced during earthworks in the construction phase. Dermal contact and ingestion of potentially contaminated soils during construction or operational phase of the site.
Leaching through Made Ground	Unsaturated flow	Potential for leaching and migration of potential contaminants along preferential flow paths in the ground.
Foundations and Underground Infrastructure and Obstructions	Preferential flow	Contaminants will flow the path of least resistance which can be gaps around foundations, services, and floor construction
Migration of Ground Gas and Radon	Gaseous flow	Migration through granular material within superficial deposits is possible.

6.3 RECEPTORS

The site-specific **receptors** that could be potentially affected by the contamination hazards identified during this preliminary appraisal are summarised in Table 6.2, below:

Table 6.2: Receptors

Category	Receptor	Properties
Humans	End users (such as residents and visitors)	Potential contact with contaminated soils is likely, given the residential end use planned. Potential contact with ground gas within enclosed buildings.
	Construction workers	Reworking of contaminant impacted materials in underlying soil during construction works can expose workers to contamination.
Property	Materials and site structures	Foundations and site services may be damaged by potentially aggressive compounds present in soils.
Controlled Waters	Underlying superficial / bedrock Aquifer and surface water	The site is recorded as having a Secondary Undifferentiated Aquifer within the superficial deposits and a Principal Aquifer within the bedrock underlying the site. The site is also within close proximity (7 m) of a field dyke.
Plant (species and uptake) and Wildlife	Various	Attributes will be influenced by factors such as relative quality, scale, rarity and substitutability; it is understood that the site is proposed to be hard surfaced.

7. QUALITATIVE RISK ASSESSMENT

Potential pollutant linkages are identified using the source-pathway-receptor framework detailed above. An assessment of the potential significance of each linkage is then made by consideration of the likely magnitude and mobility of the source, the sensitivity of the receptor and nature of the migration/exposure pathways.

This qualitative risk assessment has been undertaken in accordance with Annex 4 of the National House Building Council/Environment Agency/Chartered Institute of Environmental Health R&D publication 66, Guidance for the Safe Development of Housing on Land Affected by Contamination (NHBC/EA/CIEH, 2008) which updates and supersedes CIRIA C552: Contaminated Land Risk Assessment, A Guide to Good Practice (Rudland et al., 2001).

A summary of the risk assessment protocols, and subsequent risk assessment matrix is provided in **Appendix 5**.

An assessment of the likelihood of the risk being realised and the magnitude of potential risk is presented below to give an estimation of the significance of each potential pollutant linkage identified. Where it is considered that there is no credible linkage, this is indicated in the table. In accordance with the R&D66 guidance, if there is no pollution linkage then there is no need to apply tests for probability and consequence.

The assessment is undertaken based on the current proposals for the site, at the time of issuing this report, which would be classed as a generic end land use of 'Residential with Plant Uptake'. Any change in the development proposals for the site involving a change in end use class may result in a requirement for this assessment to be revised.

8. PRELIMINARY CONCEPTUAL SITE MODEL

Contaminant Source	Pathways	Receptor	Pollutant Linkage	Classification of Probability	Classification of Consequence	Level of Risk	Justification
On Site: Made Ground soils on site	Ingestion, dermal contact, inhalation of dusts/vapours	Future end users and site visitors	Considered inactive	-	-	Very Low	No potential pollutant linkage identified.
		Construction Workers	Considered inactive	-	-	Very Low	No potential pollutant linkage identified.
	Leaching through soils and migration via groundwater or soil pore moisture	Controlled Waters	Considered inactive	-	-	Very Low	No potential pollutant linkage identified.
	Permeation of water pipes	Construction materials, future end users and site visitors	Considered inactive	-	-	Very Low	No potential pollutant linkage identified.
	Uptake	Plant and Wildlife	Considered inactive	-	-	Very Low	No potential pollutant linkage identified.
On Site: Asbestos at/near ground surface in Made Ground soils.	Inhalation of fibres in airborne dust	Future end users and site visitors	Considered inactive	-	-	Very Low	No potential pollutant linkage identified.
		Construction Workers	Considered inactive	-	-	Very Low	No potential pollutant linkage identified.

Contaminant Source	Pathways	Receptor	Pollutant Linkage	Classification of Probability	Classification of Consequence	Level of Risk	Justification
On Site: Ground Gases (CH_4, CO_2, CO, H_2S)	Gas migration and build up within buildings (explosion/ asphyxiation risk)	Future end users and building structures.	Considered inactive	-	-	Very Low	No potential pollutant linkage identified.
Off Site: Historical land uses and activities	Leaching through soils and migration via groundwater or soil pore moisture	Future end users and site visitors	Considered inactive	-	-	Very Low	No potential pollutant linkage identified.
	Ingestion, dermal contact, inhalation of dusts/vapours	Future end users and site visitors	Considered inactive	-	-	Very Low	No potential pollutant linkage identified.
Off Site: Ground Gases (CH_4, CO_2, CO, H_2S)	Gas migration and build up within buildings (explosion/ asphyxiation risk)	Future end users and building structures.	Considered inactive	-	-	Very Low	No potential pollutant linkage identified.

9. RECOMMENDATIONS

9.1 PROPOSED SITE INVESTIGATION

Based on the information obtained for the formation of this report, we would recommend that no further action is required based on the CSM with respect to the environmental condition of the site.

9.2 CONSULTEES

It is highly recommended that this report be forwarded to the relevant Local Authority Environmental Health and Planning Departments to seek their comments and subsequent approval, otherwise further works may be required.

9.3 FLOOD RISK ASSESSMENT

This report does not replace a full hydrogeological survey and specialist studies may need to be undertaken to ascertain the risks posed from flooding. Further details on site flood information can be found within the appendices.

9.4 INVASIVE PLANT SURVEY

The site reconnaissance visit undertaken herein, whilst reference to the possible presence of invasive plants such as Japanese Knotweed has not been made, this report should not be considered an Invasive Plant Survey and any concerns relating to the possible presence of such plants should be undertaken by an appropriately qualified surveyor.

9.5 ASBESTOS SURVEY

The site reconnaissance visit undertaken herein, whilst reference to the possible presence of Asbestos or Asbestos Containing Material (ACM) has been potentially made, this report should not be considered an Asbestos Survey and any concerns relating to the possible presence of ACM should be undertaken by an appropriately qualified surveyor.

10. RELIANCE AND LIMITATIONS

This report has been prepared by GES with all reasonable skill, care and diligence. The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources, together with a site walkover inspection of the site, if undertaken.

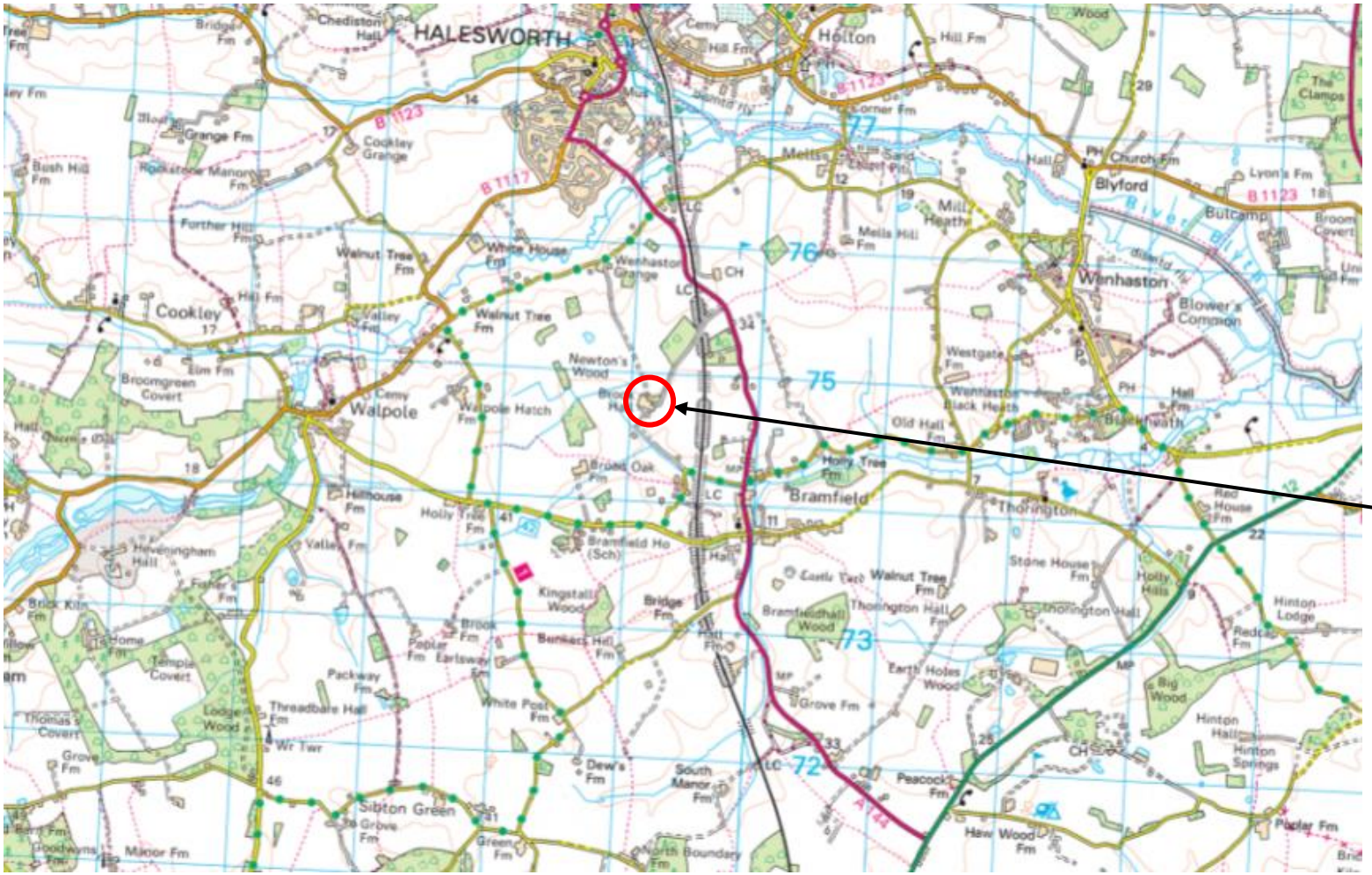
The opinions given in this report have been dictated by the finite data on which are they based and are relevant only to the purpose for which the report was commissioned.

Information reviewed should not be considered exhaustive and accepted in good faith as providing true and representative data with respect to site conditions. Should additional information become available which may influence the opinion expressed in this report, GES reserves the right to review such information and, if warranted, to alter the opinions accordingly.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site. This is an environmental Phase 1 report and does not consider the geotechnical implications for the site, its redevelopment and proposed future use. Further advice should be sought on geotechnical investigation requirements for the proposed development.

APPENDIX 1

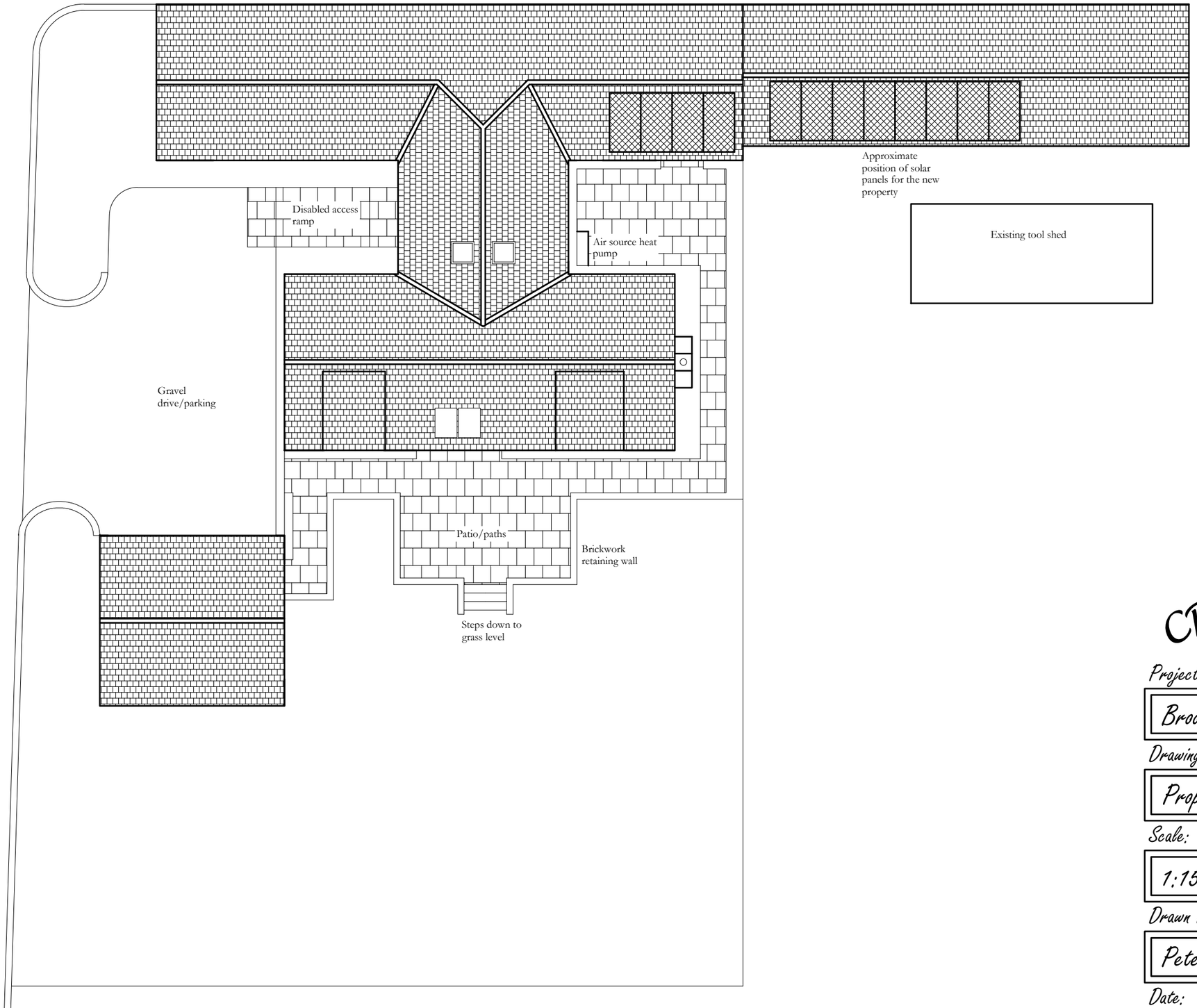
DRAWINGS AND PLANS



GeoEnviro Solutions Ltd
Unit 7 Springvale Works
Brighouse
West Yorkshire
HD6 2RA
Tel: 01484 986010
Email: info@geoenvirosolutions.com
Web: www.geoenvirosolutions.com

N

PROJECT NAME Brook Hall, Edwards Lane		**DRAWING NO.**	**SCALE**
PROJECT NUMBER 3939-23		3939-23/01	N.T.S
TITLE		**DATE**	**DRAWN BY**
Site Location Plan		August 2023	JD



CROCKFORD BUILDERS

Project:

Brook Hall Bungalow

Drawing title:

Proposed site plan

Scale:

1:150 @ A3

Drawn By:

Peter Crockford

Date:

27/06/23

APPENDIX 2

SITE PHOTOGRAPHS

Site: Bungalow Brook Hall, Edwards Lane, Halesworth

Client: Peter Crockford

Job Reference: 3939-23

GEOENVIRO

SOLUTIONS LIMITED

A.

B.

C.

D.

A. View to the front of the property on site, showing hallway through to the rear garden.

B. View to the rear of the property on site.

C. View of west side of rear garden.

D. View of site boundary fence to the east of the rear garden.

Site: Bungalow Brook Hall, Edwards Lane, Halesworth

Client: Peter Crockford

Job Reference: 3939-23

GEOENVIRO
SOLUTIONS LIMITED

E.

F.

E. Rear view of site with boundary wall.

F. View taken facing south toward Edwards Lane to the west of the site. Photo taken approximately 5 m west from site boundary.

G.

G. Grass covered field located south beyond site boundary. Photo taken approximately 10 m southwest from site boundary facing east.

H.

H. View of hard standing barn and storage building located north approximately 13 m from site boundary.

Site: Bungalow Brook Hall, Edwards Lane, Halesworth
Client: Peter Crockford
Job Reference: 3939-23

GEOENVIRO
SOLUTIONS LIMITED

I.

J.

K.

L.

I. Chafer N19 + 19 SO2 fertiliser storage tank. Reported as empty and not in use. Located off site approximately 55 m to the north from the site boundary.

J. View of diesel storage tank located approximately 60 m northwest from the site boundary.

K. Hard standing concrete drive with animal barn, located approximately 33 m northwest from the site boundary.

L. Pond located approximately 75 m northwest from the site boundary.

APPENDIX 3

GROUNDSURE ENVIRO + GEO INSIGHT REPORT

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

BROOK HALL BUNGALOW, EDWARDS LANE, BRAMFIELD, IP19 9HN

Order Details

Date: 19/07/2023

Your ref: 3939-23

Our Ref: GS-19B-MJ2-7HP-YM8

Site Details

Location: 639132 274690

Area: 0.11 ha

Authority: East Suffolk Council ↗

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

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	0	0	3	3	-
16	1.2	Historical tanks	0	0	0	0	-
16	1.3	Historical energy features	0	0	0	0	-
16	1.4	Historical petrol stations	0	0	0	0	-
17	1.5	Historical garages	0	0	0	0	-
17	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
18 >	2.1 >	Historical industrial land uses >	0	0	4	4	-
19	2.2	Historical tanks	0	0	0	0	-
19	2.3	Historical energy features	0	0	0	0	-
19	2.4	Historical petrol stations	0	0	0	0	-
20	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
21	3.1	Active or recent landfill	0	0	0	0	-
21	3.2	Historical landfill (BGS records)	0	0	0	0	-
21	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
21	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
21	3.5	Historical waste sites	0	0	0	0	-
22	3.6	Licensed waste sites	0	0	0	0	-
22	3.7	Waste exemptions	0	0	0	0	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
23	4.1	Recent industrial land uses	0	0	0	-	-
23	4.2	Current or recent petrol stations	0	0	0	0	-
23	4.3	Electricity cables	0	0	0	0	-
23	4.4	Gas pipelines	0	0	0	0	-
23	4.5	Sites determined as Contaminated Land	0	0	0	0	-

24	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
24	4.7	Regulated explosive sites	0	0	0	0	-
24	4.8	Hazardous substance storage/usage	0	0	0	0	-
24	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
24	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
25	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
25	4.12	Radioactive Substance Authorisations	0	0	0	0	-
25	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
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	-
26	4.16	List 1 Dangerous Substances	0	0	0	0	-
26	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	-
27	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	**Hydrogeology >**	On site	0-50m	50-250m	250-500m	500-2000m
28 >	**5.1 >**	**Superficial aquifer >**	Identified (within 500m)				
30 >	**5.2 >**	**Bedrock aquifer >**	Identified (within 500m)				
32 >	**5.3 >**	**Groundwater vulnerability >**	Identified (within 50m)				
33	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
33	5.5	Groundwater vulnerability- local information	None (within 0m)				
34 >	**5.6 >**	**Groundwater abstractions >**	0	0	1	0	28
40	5.7	Surface water abstractions	0	0	0	0	0
41 >	**5.8 >**	**Potable abstractions >**	0	0	0	0	10
43 >	**5.9 >**	**Source Protection Zones >**	1	0	0	0	-
43	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	**Hydrology >**	On site	0-50m	50-250m	250-500m	500-2000m
44 >	**6.1 >**	**Water Network (OS MasterMap) >**	0	1	8	-	-

45 >	6.2 >	Surface water features >	0	1	7	-	-
46 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
46 >	6.4 >	WFD Surface water bodies >	0	0	1	-	-
46 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
48	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
48	7.2	Historical Flood Events	0	0	0	-	-
48	7.3	Flood Defences	0	0	0	-	-
49	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
49	7.5	Flood Storage Areas	0	0	0	-	-
50	7.6	Flood Zone 2	None (within 50m)				
50	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
51	8.1	Surface water flooding	Negligible (within 50m)				
Page	Section	Groundwater flooding >					
52 >	9.1 >	Groundwater flooding >	Low (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
53	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
54	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
54	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
54	10.4	Special Protection Areas (SPA)	0	0	0	0	0
54	10.5	National Nature Reserves (NNR)	0	0	0	0	0
55	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
55 >	10.7 >	Designated Ancient Woodland >	0	0	0	0	2
55	10.8	Biosphere Reserves	0	0	0	0	0
55	10.9	Forest Parks	0	0	0	0	0
56	10.10	Marine Conservation Zones	0	0	0	0	0
56	10.11	Green Belt	0	0	0	0	0
56	10.12	Proposed Ramsar sites	0	0	0	0	0

56	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
56	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
57	10.15	Nitrate Sensitive Areas	0	0	0	0	0
57 >	**10.16 >**	**Nitrate Vulnerable Zones >**	1	0	0	0	3
58 >	**10.17 >**	**SSSI Impact Risk Zones >**	1	-	-	-	-
59	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
60	11.1	World Heritage Sites	0	0	0	-	-
61	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
61	11.3	National Parks	0	0	0	-	-
61 >	**11.4 >**	**Listed Buildings >**	0	1	0	-	-
62	11.5	Conservation Areas	0	0	0	-	-
62	11.6	Scheduled Ancient Monuments	0	0	0	-	-
62	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	**Agricultural designations >**	On site	0-50m	50-250m	250-500m	500-2000m
63 >	**12.1 >**	**Agricultural Land Classification >**	Grade 3 (within 250m)				
64	12.2	Open Access Land	0	0	0	-	-
64	12.3	Tree Felling Licences	0	0	0	-	-
64	12.4	Environmental Stewardship Schemes	0	0	0	-	-
64	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	**Habitat designations >**	On site	0-50m	50-250m	250-500m	500-2000m
65 >	**13.1 >**	**Priority Habitat Inventory >**	0	0	4	-	-
66	13.2	Habitat Networks	0	0	0	-	-
66	13.3	Open Mosaic Habitat	0	0	0	-	-
66	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
67 >	**14.1 >**	**10k Availability >**	Identified (within 500m)				
68	14.2	Artificial and made ground (10k)	0	0	0	0	-
69	14.3	Superficial geology (10k)	0	0	0	0	-

69	14.4	Landslip (10k)	0	0	0	0	-
70	14.5	Bedrock geology (10k)	0	0	0	0	-
70	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
71 >	15.1 >	**50k Availability >**	Identified (within 500m)				
72	15.2	Artificial and made ground (50k)	0	0	0	0	-
72	15.3	Artificial ground permeability (50k)	0	0	-	-	-
73 >	15.4 >	**Superficial geology (50k) >**	1	0	1	0	-
74 >	15.5 >	**Superficial permeability (50k) >**	Identified (within 50m)				
74	15.6	Landslip (50k)	0	0	0	0	-
74	15.7	Landslip permeability (50k)	None (within 50m)				
75 >	15.8 >	**Bedrock geology (50k) >**	1	0	0	0	-
76 >	15.9 >	**Bedrock permeability (50k) >**	Identified (within 50m)				
76	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
77 >	16.1 >	**BGS Boreholes >**	0	1	0	-	-
Page	Section	**Natural ground subsidence >**					
78 >	17.1 >	**Shrink swell clays >**	Low (within 50m)				
79 >	17.2 >	**Running sands >**	Very low (within 50m)				
80 >	17.3 >	**Compressible deposits >**	Negligible (within 50m)				
81 >	17.4 >	**Collapsible deposits >**	Very low (within 50m)				
82 >	17.5 >	**Landslides >**	Very low (within 50m)				
83 >	17.6 >	**Ground dissolution of soluble rocks >**	Negligible (within 50m)				
Page	Section	**Mining and ground workings >**	On site	0-50m	50-250m	250-500m	500-2000m
85 >	18.1 >	**BritPits >**	0	0	1	0	-
86 >	18.2 >	**Surface ground workings >**	0	0	6	-	-
86	18.3	Underground workings	0	0	0	0	0
87	18.4	Underground mining extents	0	0	0	0	-
87	18.5	Historical Mineral Planning Areas	0	0	0	0	-

87	18.6	Non-coal mining	0	0	0	0	0
87	18.7	JPB mining areas	None (within 0m)				
87	18.8	The Coal Authority non-coal mining	0	0	0	0	-
88	18.9	Researched mining	0	0	0	0	-
88	18.10	Mining record office plans	0	0	0	0	-
88	18.11	BGS mine plans	0	0	0	0	-
88	18.12	Coal mining	None (within 0m)				
89	18.13	Brine areas	None (within 0m)				
89	18.14	Gypsum areas	None (within 0m)				
89	18.15	Tin mining	None (within 0m)				
89	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
90	19.1	Natural cavities	0	0	0	0	-
90	19.2	Mining cavities	0	0	0	0	0
90	19.3	Reported recent incidents	0	0	0	0	-
90	19.4	Historical incidents	0	0	0	0	-
91	19.5	National karst database	0	0	0	0	-
Page	Section	**Radon** >					
92 >	**20.1** >	**Radon** >	Less than 1% (within 0m)				
Page	Section	**Soil chemistry** >	On site	0-50m	50-250m	250-500m	500-2000m
94 >	**21.1** >	**BGS Estimated Background Soil Chemistry** >	1	0	-	-	-
94	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
94	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
95	22.1	Underground railways (London)	0	0	0	-	-
95	22.2	Underground railways (Non-London)	0	0	0	-	-
95	22.3	Railway tunnels	0	0	0	-	-
95	22.4	Historical railway and tunnel features	0	0	0	-	-
95	22.5	Royal Mail tunnels	0	0	0	-	-

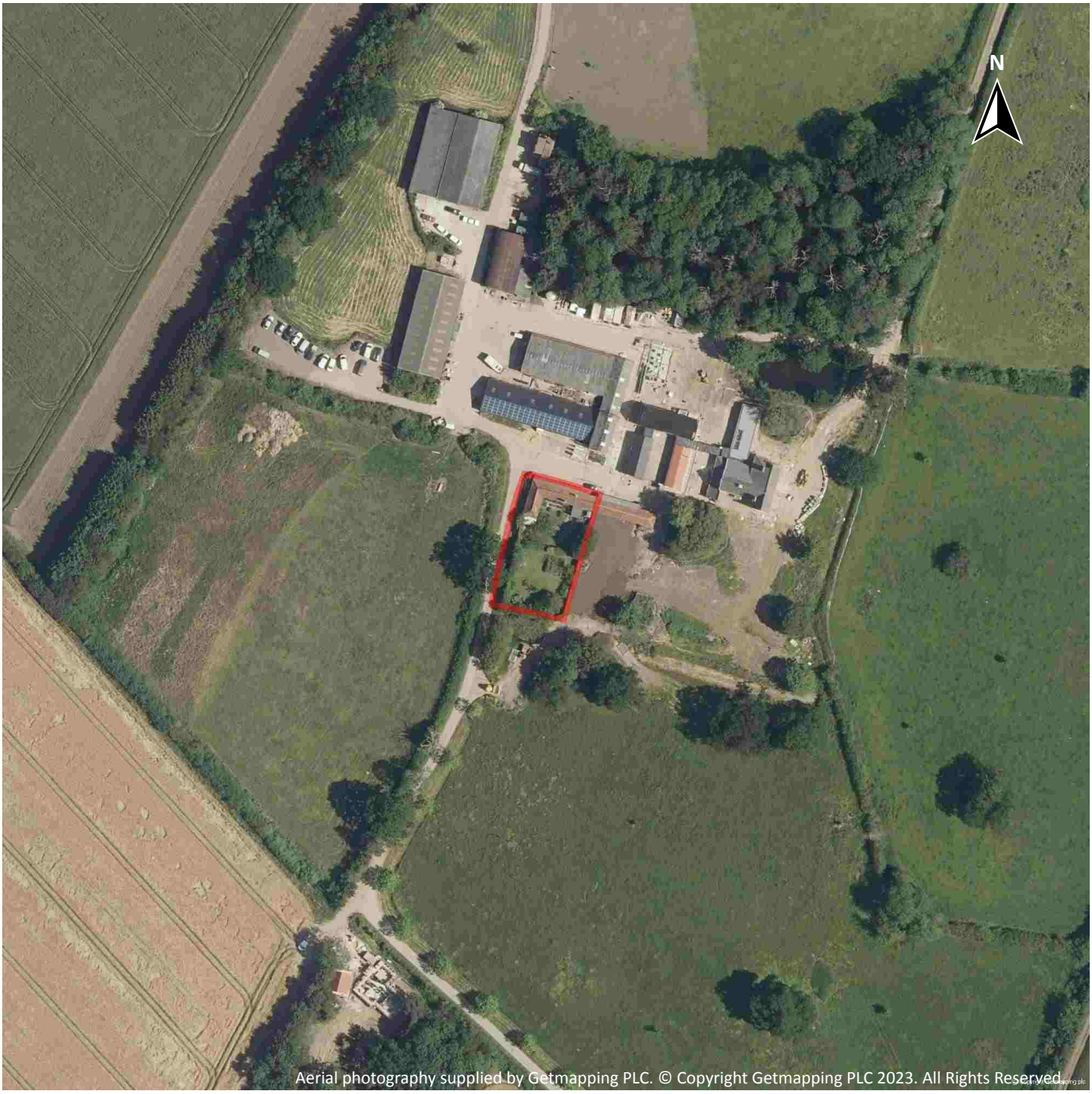
96	22.6	Historical railways	0	0	0	-	-
96	22.7	Railways	0	0	0	-	-
96	22.8	Crossrail 1	0	0	0	0	-
96	22.9	Crossrail 2	0	0	0	0	-
96	22.10	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 13/06/2021

Site Area: 0.11ha

Recent site history - 2019 aerial photograph



Capture Date: 04/07/2019

Site Area: 0.11ha

Recent site history - 2016 aerial photograph

Capture Date: 05/05/2016

Site Area: 0.11ha

Recent site history - 2000 aerial photograph

Capture Date: 08/06/2000

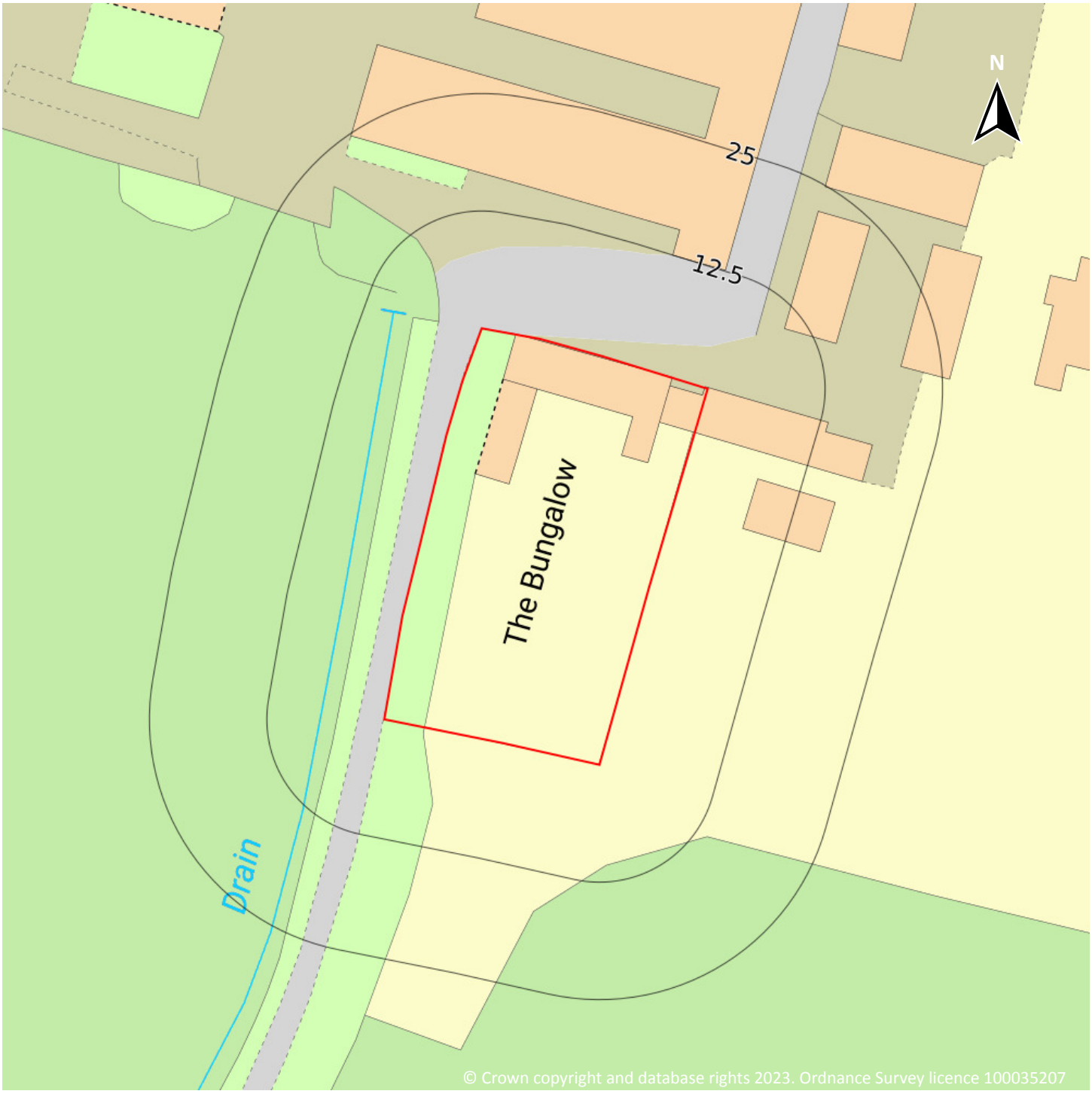
Site Area: 0.11ha

Recent site history - 1999 aerial photograph

Capture Date: 19/06/1999

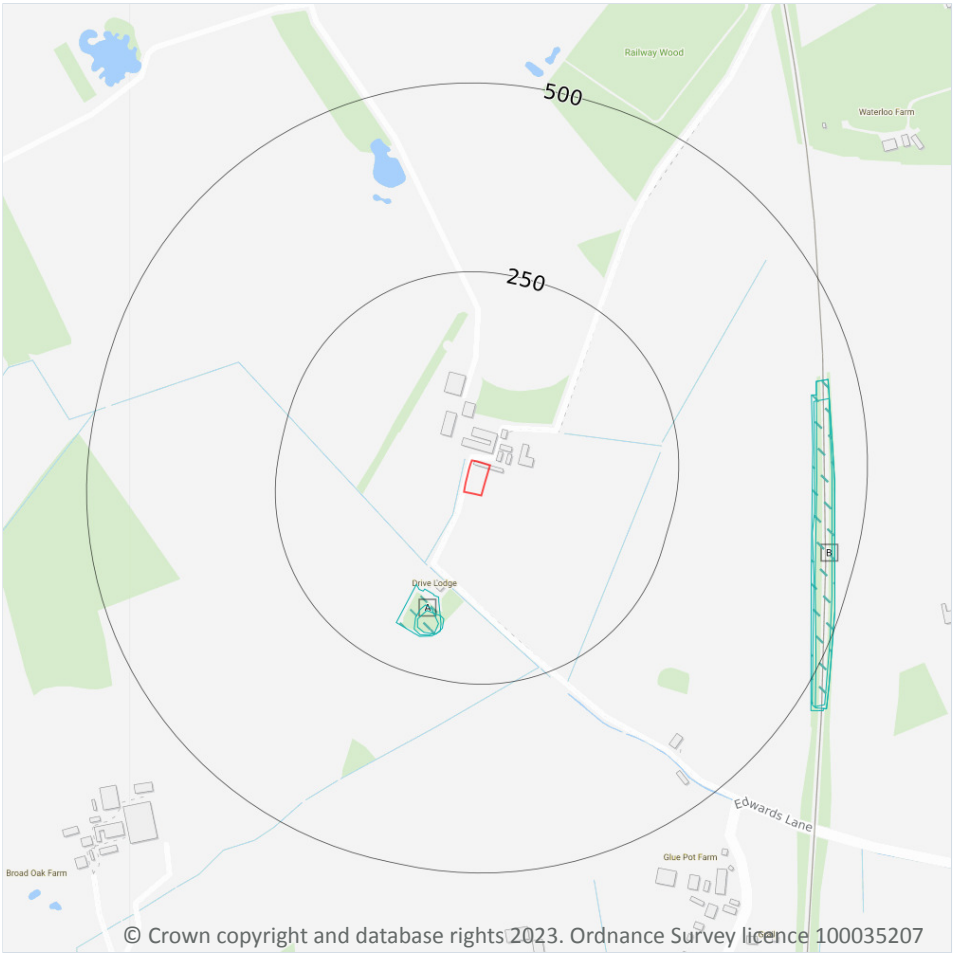
Site Area: 0.11ha

OS MasterMap site plan



Site Area: 0.11ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

1.1 Historical industrial land uses

Records within 500m	6

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

Features are displayed on the Past land use map on **page 15 >**

ID	Location	Land use	Dates present	Group ID
A	138m SW	Unspecified Pit	1947 - 1952	2336850

ID	Location	Land use	Dates present	Group ID
A	158m S	Sand Pit	1905	2344163
A	165m S	Sand Pit	1883	2328944
B	427m E	Cuttings	1905 - 1947	2332696
B	430m E	Cuttings	1952	2334837
B	433m E	Cuttings	1883	2343814

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.

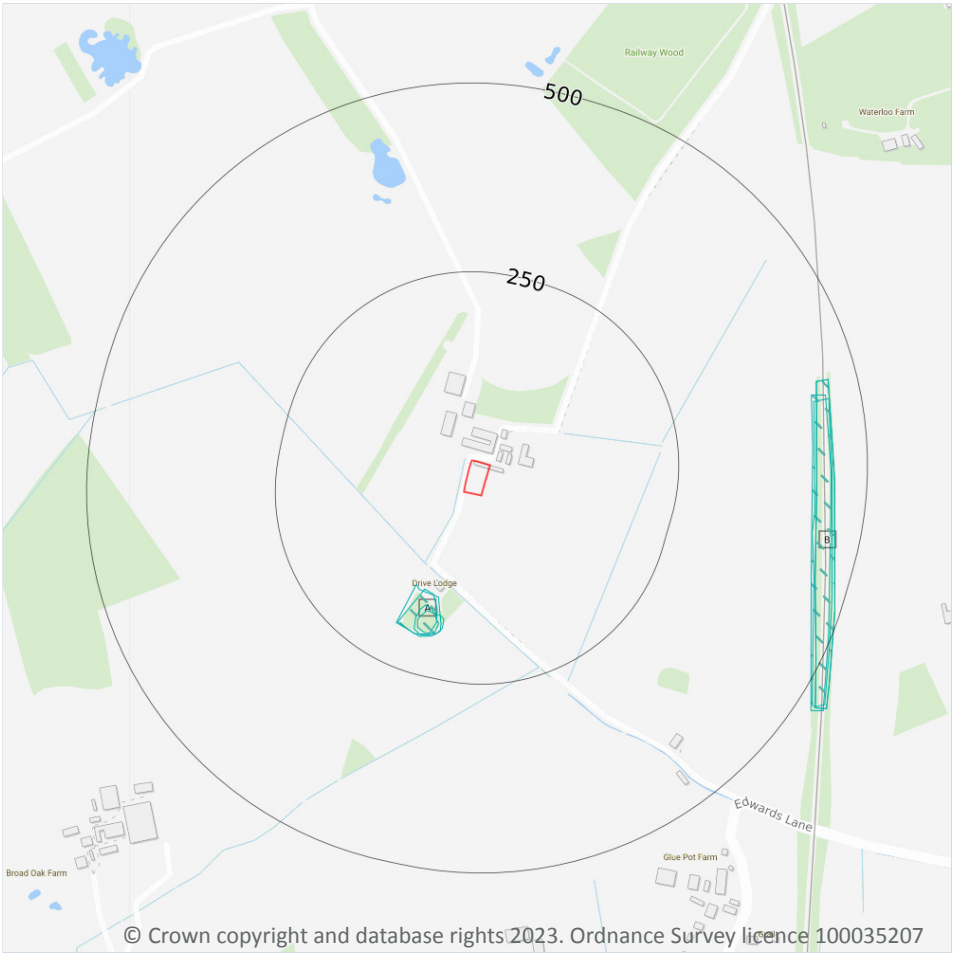
1.6 Historical military land

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



Site Outline

Search buffers in metres (m)

Historical industrial land uses

2.1 Historical industrial land uses

Records within 500m	8

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

Features are displayed on the Past land use - un-grouped map on **page 18 >**

ID	Location	Land Use	Date	Group ID
A	138m SW	Unspecified Pit	1947	2336850
A	139m SW	Unspecified Pit	1952	2336850
A	158m S	Sand Pit	1905	2344163

ID	Location	Land Use	Date	Group ID
A	165m S	Sand Pit	1883	2328944
B	427m E	Cuttings	1905	2332696
B	430m E	Cuttings	1952	2334837
B	433m E	Cuttings	1947	2332696
B	433m E	Cuttings	1883	2343814

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

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	0

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.

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

4 Current industrial land use

4.1 Recent industrial land uses

Records within 250m	0

Current potentially contaminative industrial sites.

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	0

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

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.

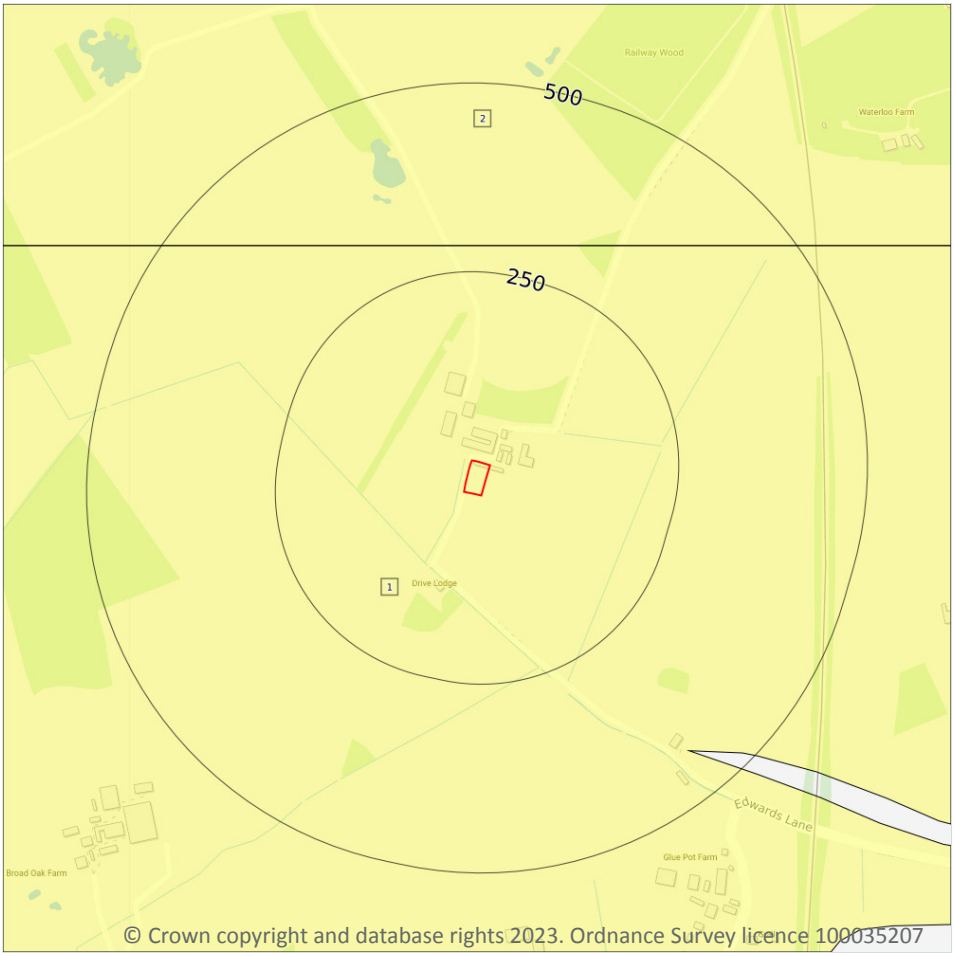
4.21 Pollution inventory radioactive waste

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	2

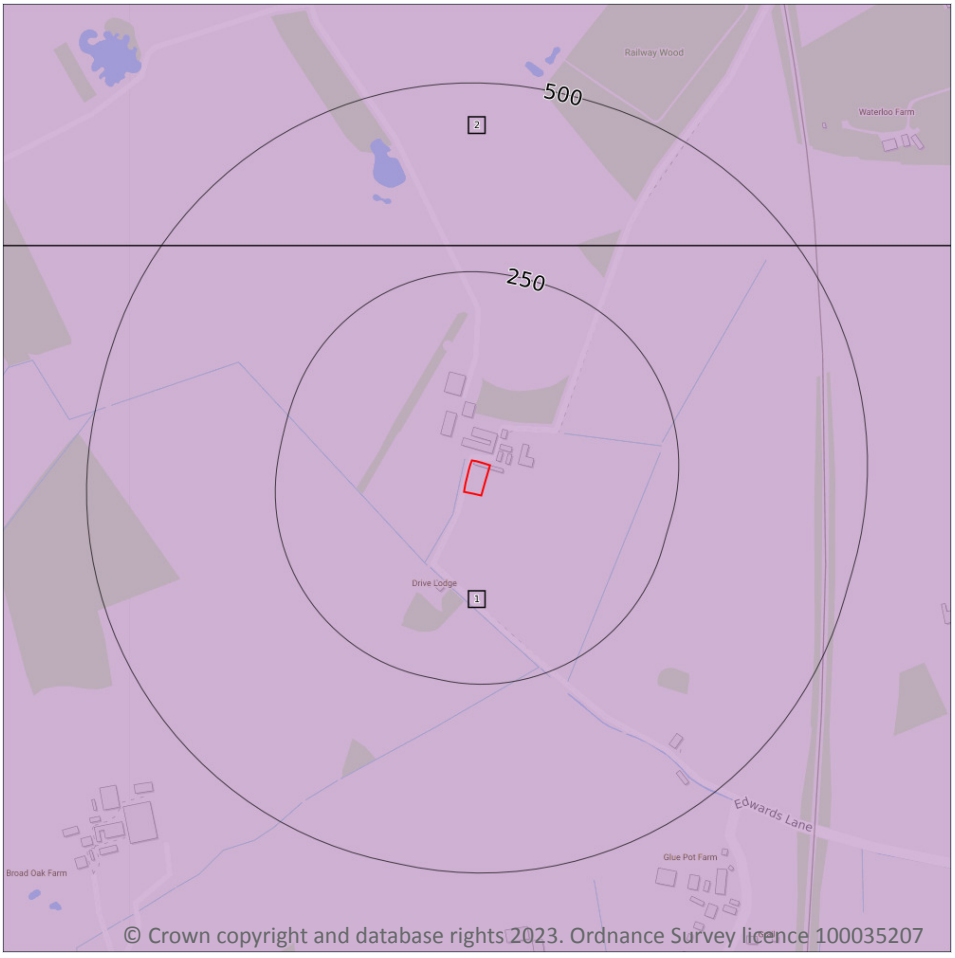
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 28 >**

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	285m N	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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

Bedrock aquifer



Site Outline

Search buffers in metres (m)

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

5.2 Bedrock aquifer

Records within 500m	2

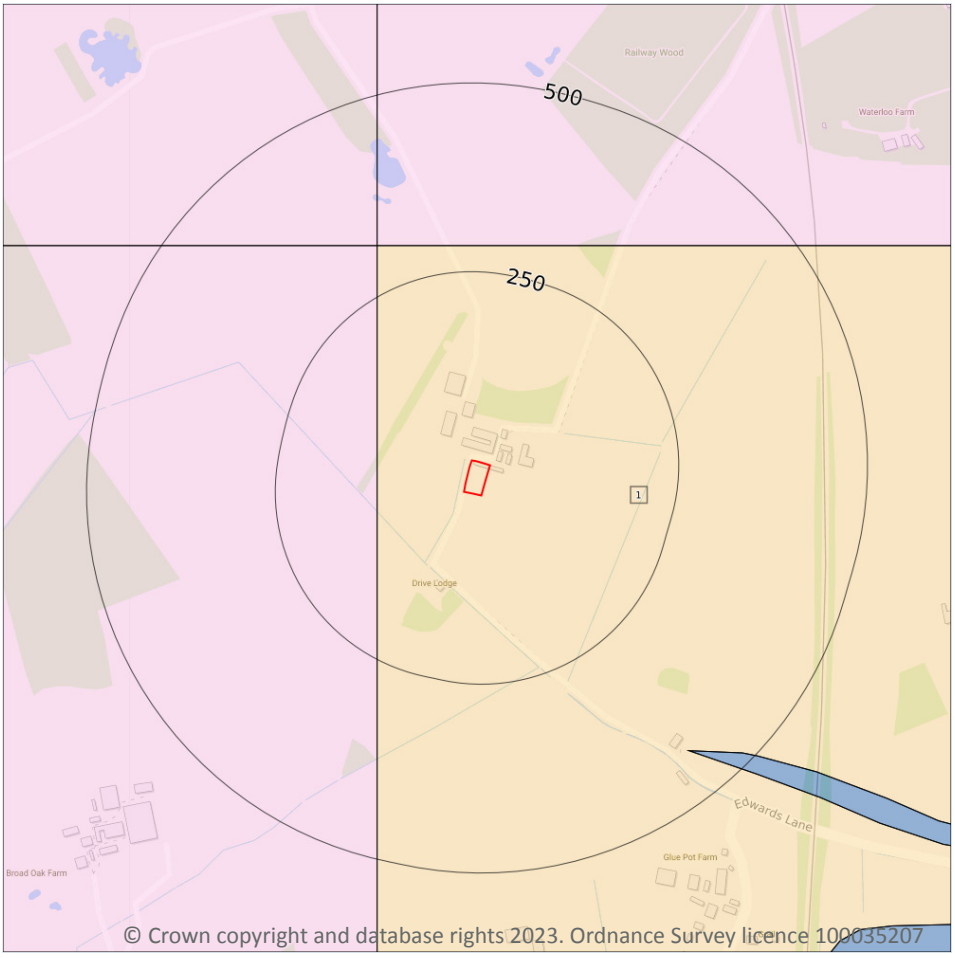
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 30 >**

ID	Location	Designation	Description
1	**On site**	**Principal**	**Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers**
2	285m N	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

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

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

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

Bedrock vulnerability

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

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	1

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

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

Features are displayed on the Groundwater vulnerability map on **page 32 >**

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

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.

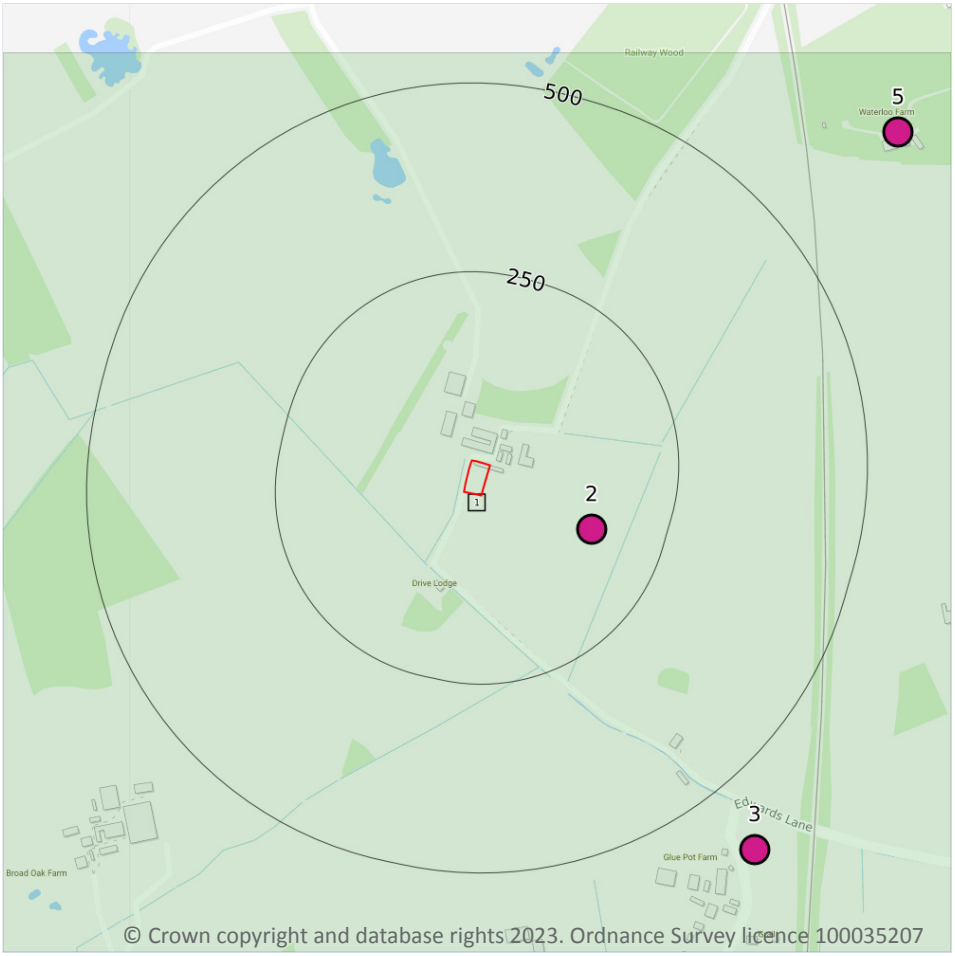
5.5 Groundwater vulnerability- local information

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	29

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 34 >**

ID	Location	Details	
2	152m SE	Status: Active Licence No: AN/035/0002/006 Details: Heat Pump Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE AT BROOKHALL FARM, BRAMFIELD Data Type: Point Name: Marc Elman Easting: 639284 Northing: 274624	Annual Volume (m^3): 30000 Max Daily Volume (m^3): 100 Original Application No: NPS/WR/037765 Original Start Date: 17/04/2020 Expiry Date: 31/03/2038 Issue No: 2 Version Start Date: 04/05/2022 Version End Date: -
3	592m SE	Status: Historical Licence No: 7/35/02/*G/0057 Details: Spray Irrigation - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: 20 WELLPTS AT THE SHORTS,BRAM. Data Type: Point Name: FRUIT PLANTS LTD Easting: 639500 Northing: 274200	Annual Volume (m^3): 11800 Max Daily Volume (m^3): 551 Original Application No: - Original Start Date: 28/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/10/2003 Version End Date: -
-	664m S	Status: Historical Licence No: 7/35/02/*G/0057 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: WELL AT THE SHORTS,BRAMFIELD Data Type: Point Name: FRUIT PLANTS LTD Easting: 639280 Northing: 274020	Annual Volume (m^3): 11800 Max Daily Volume (m^3): 551 Original Application No: - Original Start Date: 28/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/10/2003 Version End Date: -
5	697m NE	Status: Historical Licence No: 7/35/02/*G/0099 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BORE AT WATERLOO FM,BRAMFIELD Data Type: Point Name: HOUGHTON Easting: 639690 Northing: 275150	Annual Volume (m^3): 5455 Max Daily Volume (m^3): 18 Original Application No: - Original Start Date: 01/04/1967 Expiry Date: - Issue No: 100 Version Start Date: 01/07/1973 Version End Date: -
-	1157m N	Status: Historical Licence No: 7/35/02/*G/0020 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: WELL AT WENHASTON GRANGE Data Type: Point Name: HOLLEBONE Easting: 638720 Northing: 275800	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 01/12/1965 Version End Date: -

ID	Location	Details	
-	1236m N	Status: Historical Licence No: 7/35/02/*G/0145 Details: Spray Irrigation - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE AT ST.HELENA GOLF CLB Data Type: Point Name: HALESWORTH GOLF CLUB LTD Easting: 639600 Northing: 275860	Annual Volume (m^3): 12000 Max Daily Volume (m^3): 180 Original Application No: - Original Start Date: 01/03/1991 Expiry Date: - Issue No: 100 Version Start Date: 01/12/1996 Version End Date: -
-	1236m N	Status: Historical Licence No: 7/35/02/*G/0145 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE AT ST.HELENA GOLF CLB Data Type: Point Name: HALESWORTH GOLF CLUB LTD Easting: 639600 Northing: 275860	Annual Volume (m^3): 12000 Max Daily Volume (m^3): 180 Original Application No: - Original Start Date: 01/03/1991 Expiry Date: - Issue No: 100 Version Start Date: 01/12/1996 Version End Date: -
-	1236m N	Status: Active Licence No: 7/35/02/*G/0145 Details: Spray Irrigation - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE AT HALESWORTH GOLF CLUB Data Type: Point Name: Halesworth Golf Club Easting: 639600 Northing: 275860	Annual Volume (m^3): 12000 Max Daily Volume (m^3): 180 Original Application No: NPS/WR/009514 Original Start Date: 01/03/1991 Expiry Date: - Issue No: 102 Version Start Date: 16/03/2012 Version End Date: -
-	1236m N	Status: Active Licence No: 7/35/02/*G/0145 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE AT HALESWORTH GOLF CLUB Data Type: Point Name: Halesworth Golf Club Easting: 639600 Northing: 275860	Annual Volume (m^3): 12000 Max Daily Volume (m^3): 180 Original Application No: NPS/WR/009514 Original Start Date: 01/03/1991 Expiry Date: - Issue No: 102 Version Start Date: 16/03/2012 Version End Date: -
-	1373m E	Status: Historical Licence No: 7/35/02/*G/0054 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: WELL AT HOLLY TREE FM,BRAMF'LD Data Type: Point Name: HOLMES Easting: 640500 Northing: 274460	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: 01/02/1966 Version End Date: -

ID	Location	Details	
-	1386m NW	Status: Historical Licence No: 7/35/02/*G/0082 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: 2 BORES AT WALPOLE Data Type: Point Name: NORTHUMBRIAN WATER LTD Easting: 638120 Northing: 275670	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/11/1966 Expiry Date: - Issue No: 104 Version Start Date: 10/03/2005 Version End Date: -
-	1386m NW	Status: Historical Licence No: 7/35/02/*G/0082 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BORE 1 AT WALPOLE SUFFOLK Data Type: Point Name: NORTHUMBRIAN WATER LTD Easting: 638120 Northing: 275670	Annual Volume (m^3): 1040000 Max Daily Volume (m^3): 3864 Original Application No: - Original Start Date: 01/11/1966 Expiry Date: - Issue No: 105 Version Start Date: 20/06/2005 Version End Date: -
-	1386m NW	Status: Historical Licence No: 7/35/02/*G/0082 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE 1 AT WALPOLE SUFFOLK Data Type: Point Name: NORTHUMBRIAN WATER LTD Easting: 638120 Northing: 275670	Annual Volume (m^3): 1040000 Max Daily Volume (m^3): 3864 Original Application No: - Original Start Date: 01/11/1966 Expiry Date: - Issue No: 108 Version Start Date: 01/04/2012 Version End Date: -
-	1393m NW	Status: Historical Licence No: 7/35/02/*G/0082 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BORE 2 AT WALPOLE SUFFOLK Data Type: Point Name: NORTHUMBRIAN WATER LTD Easting: 638110 Northing: 275670	Annual Volume (m^3): 1040000 Max Daily Volume (m^3): 3864 Original Application No: - Original Start Date: 01/11/1966 Expiry Date: - Issue No: 105 Version Start Date: 20/06/2005 Version End Date: -
-	1393m NW	Status: Historical Licence No: 7/35/02/*G/0082 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE 2 AT WALPOLE SUFFOLK Data Type: Point Name: NORTHUMBRIAN WATER LTD Easting: 638110 Northing: 275670	Annual Volume (m^3): 1040000 Max Daily Volume (m^3): 3864 Original Application No: - Original Start Date: 01/11/1966 Expiry Date: - Issue No: 108 Version Start Date: 01/04/2012 Version End Date: -

ID	Location	Details	
-	1423m NW	Status: Active Licence No: 7/35/02/*G/0082 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE 1 AT WALPOLE SUFFOLK Data Type: Point Name: Northumbrian Water Ltd Easting: 638065 Northing: 275665	Annual Volume (m^3): 1040000 Max Daily Volume (m^3): 3864 Original Application No: NPS/WR/011782 Original Start Date: 01/11/1966 Expiry Date: - Issue No: 110 Version Start Date: 01/04/2013 Version End Date: -
-	1423m NW	Status: Historical Licence No: 7/35/02/*G/0082 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE 2 AT WALPOLE SUFFOLK Data Type: Point Name: NORTHUMBRIAN WATER LTD Easting: 638060 Northing: 275660	Annual Volume (m^3): 1040000 Max Daily Volume (m^3): 3864 Original Application No: - Original Start Date: 01/11/1966 Expiry Date: - Issue No: 106 Version Start Date: 16/02/2009 Version End Date: -
-	1427m W	Status: Historical Licence No: 7/35/02/*G/0097 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BORE AT WALPOLE HATCH FM,WAL'E Data Type: Point Name: GILLETT & SONS Easting: 637690 Northing: 274750	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/04/1967 Expiry Date: - Issue No: 101 Version Start Date: 23/12/2004 Version End Date: -
-	1458m NW	Status: Historical Licence No: 7/35/02/*G/0082 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE 1 AT WALPOLE SUFFOLK Data Type: Point Name: NORTHUMBRIAN WATER LTD Easting: 637990 Northing: 275630	Annual Volume (m^3): 1040000 Max Daily Volume (m^3): 3864 Original Application No: - Original Start Date: 01/11/1966 Expiry Date: - Issue No: 106 Version Start Date: 16/02/2009 Version End Date: -
-	1459m NW	Status: Active Licence No: 7/35/02/*G/0082 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE 2 AT WALPOLE SUFFOLK Data Type: Point Name: Northumbrian Water Ltd Easting: 637992 Northing: 275635	Annual Volume (m^3): 1040000 Max Daily Volume (m^3): 3864 Original Application No: NPS/WR/011782 Original Start Date: 01/11/1966 Expiry Date: - Issue No: 110 Version Start Date: 01/04/2013 Version End Date: -

ID	Location	Details	
-	1483m E	Status: Historical Licence No: 7/35/02/*G/0127 Details: Spray Irrigation - Anti Frost Storage Direct Source: GROUND WATER SOURCE OF SUPPLY Point: 20 WELLPTS AT HOLLY FM,BRAMF'D Data Type: Point Name: HOLMES Easting: 640600 Northing: 274400	Annual Volume (m^3): 22000 Max Daily Volume (m^3): 2410 Original Application No: - Original Start Date: 01/02/1979 Expiry Date: - Issue No: 100 Version Start Date: 02/06/1987 Version End Date: -
-	1483m E	Status: Historical Licence No: 7/35/02/*G/0127 Details: Spray Irrigation - Storage Direct Source: GROUND WATER SOURCE OF SUPPLY Point: 20 WELLPTS AT HOLLY FM,BRAMF'D Data Type: Point Name: HOLMES Easting: 640600 Northing: 274400	Annual Volume (m^3): 22000 Max Daily Volume (m^3): 2410 Original Application No: - Original Start Date: 01/02/1979 Expiry Date: - Issue No: 100 Version Start Date: 02/06/1987 Version End Date: -
-	1483m E	Status: Active Licence No: 7/35/02/*G/0127 Details: Spray Irrigation - Storage Direct Source: GROUND WATER SOURCE OF SUPPLY Point: 20 WELLPTS AT HOLLY FM, BRAMFIELD Data Type: Point Name: Thomson Easting: 640600 Northing: 274400	Annual Volume (m^3): 22000 Max Daily Volume (m^3): 2410 Original Application No: NPS/WR/011592 Original Start Date: 01/02/1979 Expiry Date: - Issue No: 101 Version Start Date: 06/08/2012 Version End Date: -
-	1483m E	Status: Active Licence No: 7/35/02/*G/0127 Details: Spray Irrigation - Anti Frost Storage Direct Source: GROUND WATER SOURCE OF SUPPLY Point: 20 WELLPTS AT HOLLY FM, BRAMFIELD Data Type: Point Name: Thomson Easting: 640600 Northing: 274400	Annual Volume (m^3): 22000 Max Daily Volume (m^3): 2410 Original Application No: NPS/WR/011592 Original Start Date: 01/02/1979 Expiry Date: - Issue No: 101 Version Start Date: 06/08/2012 Version End Date: -
-	1495m NW	Status: Active Licence No: 7/35/02/*G/0082 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE 3 AT WALPOLE, SUFFOLK Data Type: Point Name: Northumbrian Water Ltd Easting: 638000 Northing: 275700	Annual Volume (m^3): 1040000 Max Daily Volume (m^3): 3864 Original Application No: NPS/WR/011782 Original Start Date: 01/11/1966 Expiry Date: - Issue No: 110 Version Start Date: 01/04/2013 Version End Date: -

ID	Location	Details	
-	1651m SE	Status: Historical Licence No: 7/35/02/*G/0058 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BORE AT HILL FM,BRAMFIELD Data Type: Point Name: JOHNSON Easting: 640560 Northing: 273830	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: -
-	1832m NE	Status: Historical Licence No: 7/35/02/*G/0016 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BORE AT MELLS COURT FM,MELLS Data Type: Point Name: MACPHEE Easting: 640450 Northing: 276000	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 01/11/1976 Version End Date: -
-	1868m NE	Status: Historical Licence No: 7/35/02/*G/0016 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: WELL AT MELLS COURT FM,MELLS Data Type: Point Name: MACPHEE Easting: 640500 Northing: 276000	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 01/11/1976 Version End Date: -
-	1927m SE	Status: Historical Licence No: 7/35/02/*G/0069 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: WELL AT HALL FM,BRAMFIELD Data Type: Point Name: CLARKE Easting: 639880 Northing: 272890	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/05/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/05/1966 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	**0**

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.

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

5.8 Potable abstractions

Records within 2000m	10

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 34 >**

ID	Location	Details	
-	1386m NW	Status: Historical Licence No: 7/35/02/*G/0082 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: 2 BORES AT WALPOLE Data Type: Point Name: NORTHUMBRIAN WATER LTD Easting: 638120 Northing: 275670	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/11/1966 Expiry Date: - Issue No: 104 Version Start Date: 10/03/2005 Version End Date: -
-	1386m NW	Status: Historical Licence No: 7/35/02/*G/0082 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BORE 1 AT WALPOLE SUFFOLK Data Type: Point Name: NORTHUMBRIAN WATER LTD Easting: 638120 Northing: 275670	Annual Volume (m^3): 1040000 Max Daily Volume (m^3): 3864 Original Application No: - Original Start Date: 01/11/1966 Expiry Date: - Issue No: 105 Version Start Date: 20/06/2005 Version End Date: -
-	1386m NW	Status: Historical Licence No: 7/35/02/*G/0082 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE 1 AT WALPOLE SUFFOLK Data Type: Point Name: NORTHUMBRIAN WATER LTD Easting: 638120 Northing: 275670	Annual Volume (m^3): 1040000 Max Daily Volume (m^3): 3864 Original Application No: - Original Start Date: 01/11/1966 Expiry Date: - Issue No: 108 Version Start Date: 01/04/2012 Version End Date: -
-	1393m NW	Status: Historical Licence No: 7/35/02/*G/0082 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BORE 2 AT WALPOLE SUFFOLK Data Type: Point Name: NORTHUMBRIAN WATER LTD Easting: 638110 Northing: 275670	Annual Volume (m^3): 1040000 Max Daily Volume (m^3): 3864 Original Application No: - Original Start Date: 01/11/1966 Expiry Date: - Issue No: 105 Version Start Date: 20/06/2005 Version End Date: -

ID	Location	Details	
-	1393m NW	Status: Historical Licence No: 7/35/02/*G/0082 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE 2 AT WALPOLE SUFFOLK Data Type: Point Name: NORTHUMBRIAN WATER LTD Easting: 638110 Northing: 275670	Annual Volume (m^3): 1040000 Max Daily Volume (m^3): 3864 Original Application No: - Original Start Date: 01/11/1966 Expiry Date: - Issue No: 108 Version Start Date: 01/04/2012 Version End Date: -
-	1423m NW	Status: Active Licence No: 7/35/02/*G/0082 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE 1 AT WALPOLE SUFFOLK Data Type: Point Name: Northumbrian Water Ltd Easting: 638065 Northing: 275665	Annual Volume (m^3): 1040000 Max Daily Volume (m^3): 3864 Original Application No: NPS/WR/011782 Original Start Date: 01/11/1966 Expiry Date: - Issue No: 110 Version Start Date: 01/04/2013 Version End Date: -
-	1423m NW	Status: Historical Licence No: 7/35/02/*G/0082 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE 2 AT WALPOLE SUFFOLK Data Type: Point Name: NORTHUMBRIAN WATER LTD Easting: 638060 Northing: 275660	Annual Volume (m^3): 1040000 Max Daily Volume (m^3): 3864 Original Application No: - Original Start Date: 01/11/1966 Expiry Date: - Issue No: 106 Version Start Date: 16/02/2009 Version End Date: -
-	1458m NW	Status: Historical Licence No: 7/35/02/*G/0082 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE 1 AT WALPOLE SUFFOLK Data Type: Point Name: NORTHUMBRIAN WATER LTD Easting: 637990 Northing: 275630	Annual Volume (m^3): 1040000 Max Daily Volume (m^3): 3864 Original Application No: - Original Start Date: 01/11/1966 Expiry Date: - Issue No: 106 Version Start Date: 16/02/2009 Version End Date: -
-	1459m NW	Status: Active Licence No: 7/35/02/*G/0082 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE 2 AT WALPOLE SUFFOLK Data Type: Point Name: Northumbrian Water Ltd Easting: 637992 Northing: 275635	Annual Volume (m^3): 1040000 Max Daily Volume (m^3): 3864 Original Application No: NPS/WR/011782 Original Start Date: 01/11/1966 Expiry Date: - Issue No: 110 Version Start Date: 01/04/2013 Version End Date: -

ID	Location	Details	
-	1495m NW	Status: Active Licence No: 7/35/02/*G/0082 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE 3 AT WALPOLE, SUFFOLK Data Type: Point Name: Northumbrian Water Ltd Easting: 638000 Northing: 275700	Annual Volume (m^3): 1040000 Max Daily Volume (m^3): 3864 Original Application No: NPS/WR/011782 Original Start Date: 01/11/1966 Expiry Date: - Issue No: 110 Version Start Date: 01/04/2013 Version End Date: -

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

5.9 Source Protection Zones

Records within 500m	**1**

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 34 >**

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

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

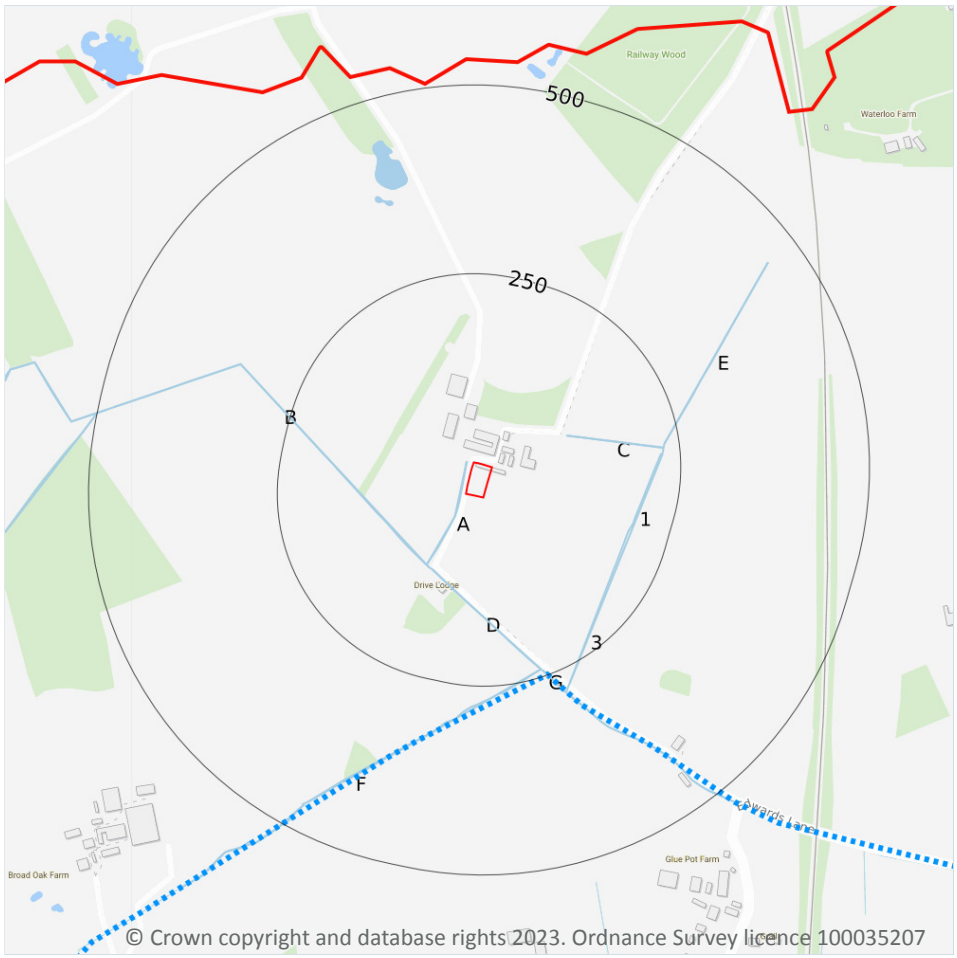
5.10 Source Protection Zones (confined aquifer)

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	9

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 44 >**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	6m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
B	103m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	107m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	107m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
1	195m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
3	198m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	228m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	239m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
G	239m S	Inland river not influenced by normal tidal action.	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	**8**

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 44 >**

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 44 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	**On site**	**River**	**Wenhaston Watercourse**	**GB105035046010**	**Suffolk Coastal**	**Suffolk East**

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 44 >**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
5	249m S	River	Wenhaston Watercourse	GB105035046010 ↗	Moderate	Fail	Moderate	2019

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

6.5 WFD Groundwater bodies

Records on site	1

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

Features are displayed on the Hydrology map on **page 44 >**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	**On site**	**Waveney and East Suffolk Chalk & Crag**	**GB40501G400600** ↗	**Poor**	**Poor**	**Poor**	**2019**

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

7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m	0

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

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

7.2 Historical Flood Events

Records within 250m	0

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

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

7.3 Flood Defences

Records within 250m	0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

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

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

7.5 Flood Storage Areas

Records within 250m	0

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

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

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0

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

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

7.7 Flood Zone 3

Records within 50m	0

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

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

8 Surface water flooding

8.1 Surface water flooding

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

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.

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	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

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	**Low**

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

Features are displayed on the Groundwater flooding map on **page 52 >**

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	2

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 53 >**

ID	Location	Name	Woodland Type
-	1358m S	Kingstall Wood	Ancient & Semi-Natural Woodland
-	1967m SE	Bramfieldhall Wood	Ancient Replanted 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

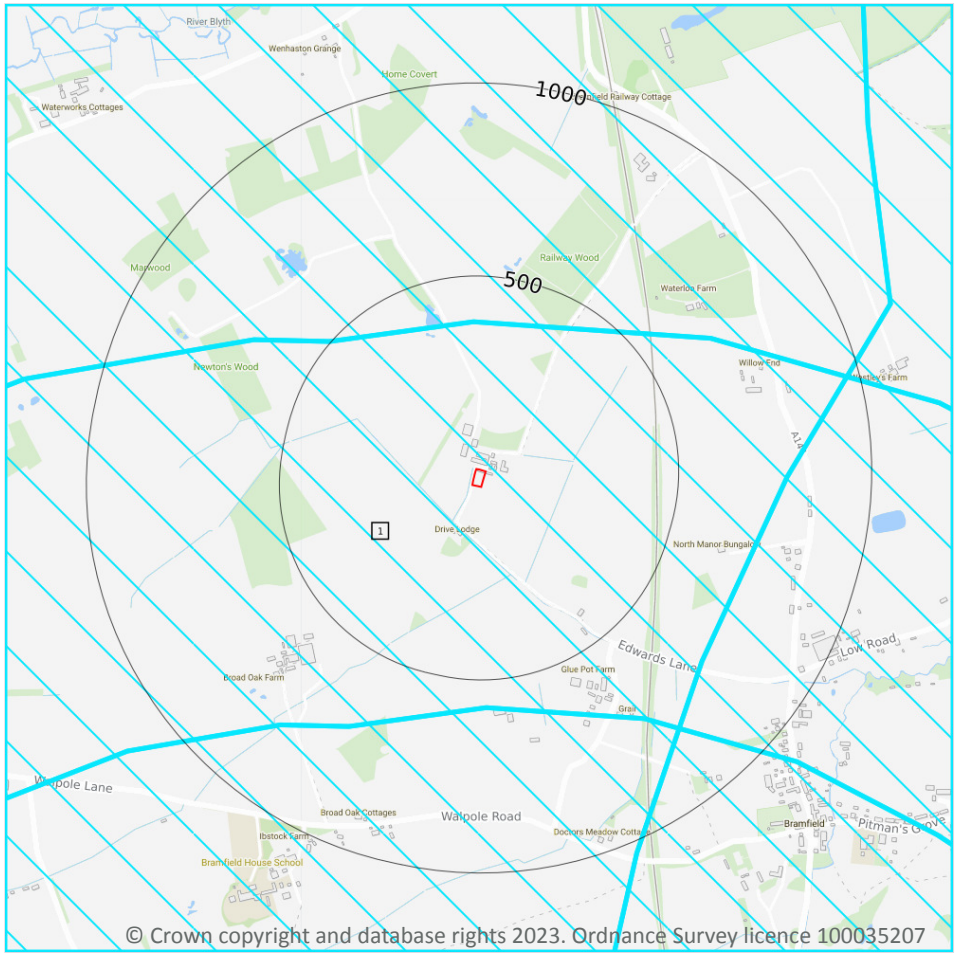
Records within 2000m	4

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	**Blyth NVZ**	**Surface Water**	**417**	**Existing**
1267m N	Blyth NVZ	Surface Water	417	Existing
1404m NE	Byford	Groundwater	168	Existing
1531m NE	Byford	Groundwater	168	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 58 >**

ID	Location	Type of developments requiring consultation
1	On site	**Infrastructure - Airports, helipads and other aviation proposals. Wind and Solar - Solar schemes with footprint > 0.5ha, all wind turbines. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Residential - Residential development of 50 units or more. Rural residential - Any residential development of 50 or more houses outside existing settlements/urban areas. Air pollution - Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m², manure stores > 3500t). Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill. Discharges - Any discharge of water or liquid waste of more than 20m³/day to ground (ie to seep away) or to surface water, such as a beck or stream. Notes: Strategic solutions for recreational impacts are in place. Please contact your Local Planning Authority as they have the information to advise on specific requirements.**

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

Site Outline

Search buffers in metres (m)

Listed buildings

Conservation areas

Conservation areas - no data

National Parks

Areas of Outstanding Natural Beauty

Registered parks and gardens

Scheduled Monuments

World Heritage Sites

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	1

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.

Features are displayed on the Visual and cultural designations map on **page 60 >**

ID	Location	Name	Grade	Reference Number	Listed date
1	47m E	Brook Hall	II	1198540	25/10/1951

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

11.5 Conservation Areas

Records within 250m	0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m	0

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

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

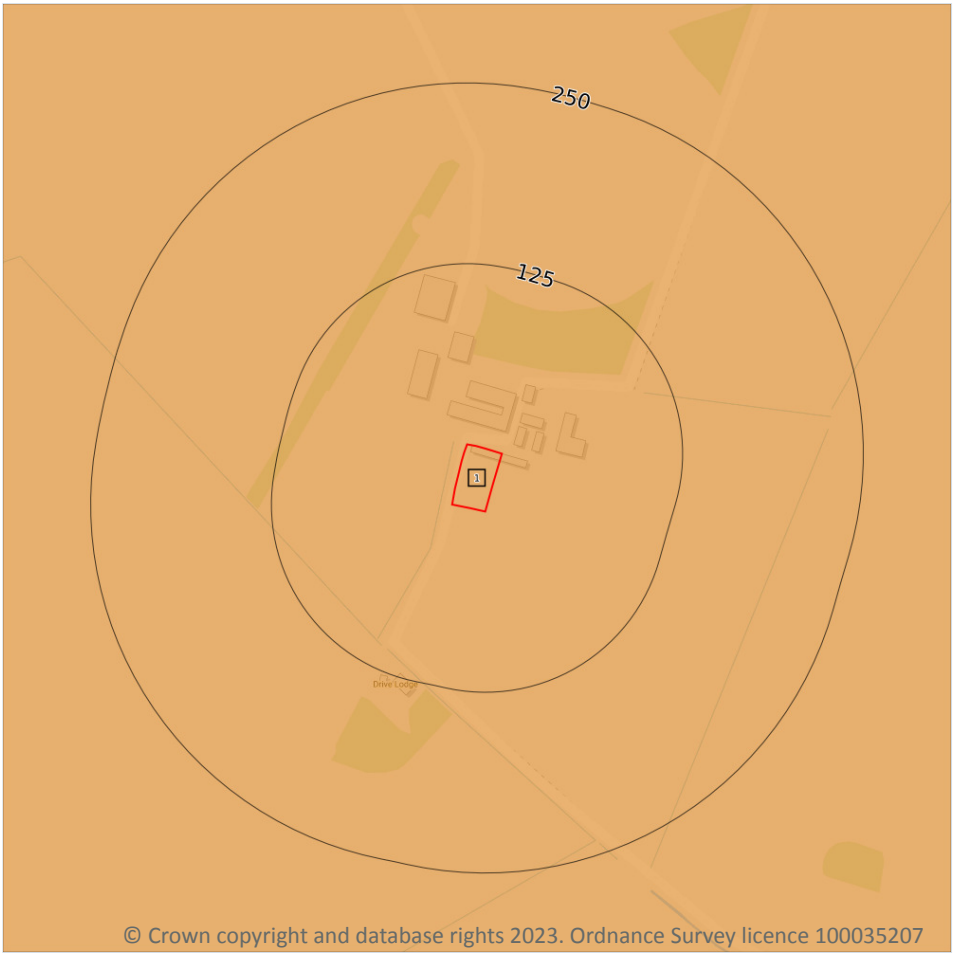
11.7 Registered Parks and Gardens

Records within 250m	0

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

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

12 Agricultural designations



Site Outline

Search buffers in metres (m)

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

12.1 Agricultural Land Classification

Records within 250m	1

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

Features are displayed on the Agricultural designations map on **page 63 >**

ID	Location	Classification	Description
1	On site	Grade 3	Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	0

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

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

12.3 Tree Felling Licences

Records within 250m	0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

13 Habitat designations

Site Outline

Search buffers in metres (m)

Priority Habitat Inventory
Open Mosaic Habitat
Limestone Pavement Orders

Habitat Networks

Primary Habitat
Restorable Habitat
Associated Habitats
Habitat Restoration-Creation
Network Enhancement Zone 1
Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m	4

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 65 >**

ID	Location	Main Habitat	Other habitats
A	53m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	58m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
1	61m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	69m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

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

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability

Site Outline

Search buffers in metres (m)

Full coverage

Partial coverage

No coverage

14.1 10k Availability

Records within 500m	1

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

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 67 >**

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

This data is sourced from the British Geological Survey.

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

14.2 Artificial and made ground (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock

14.5 Bedrock geology (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

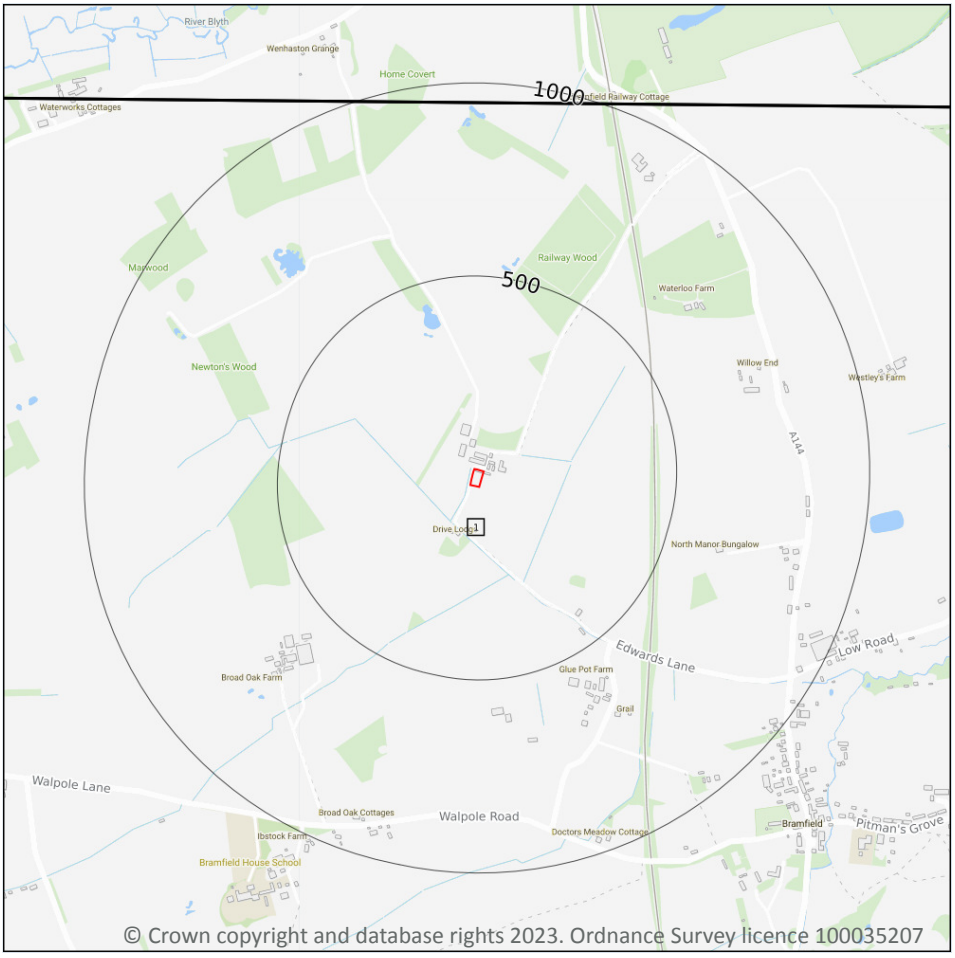
14.6 Bedrock faults and other linear features (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 71 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**EW191_saxmundham_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.

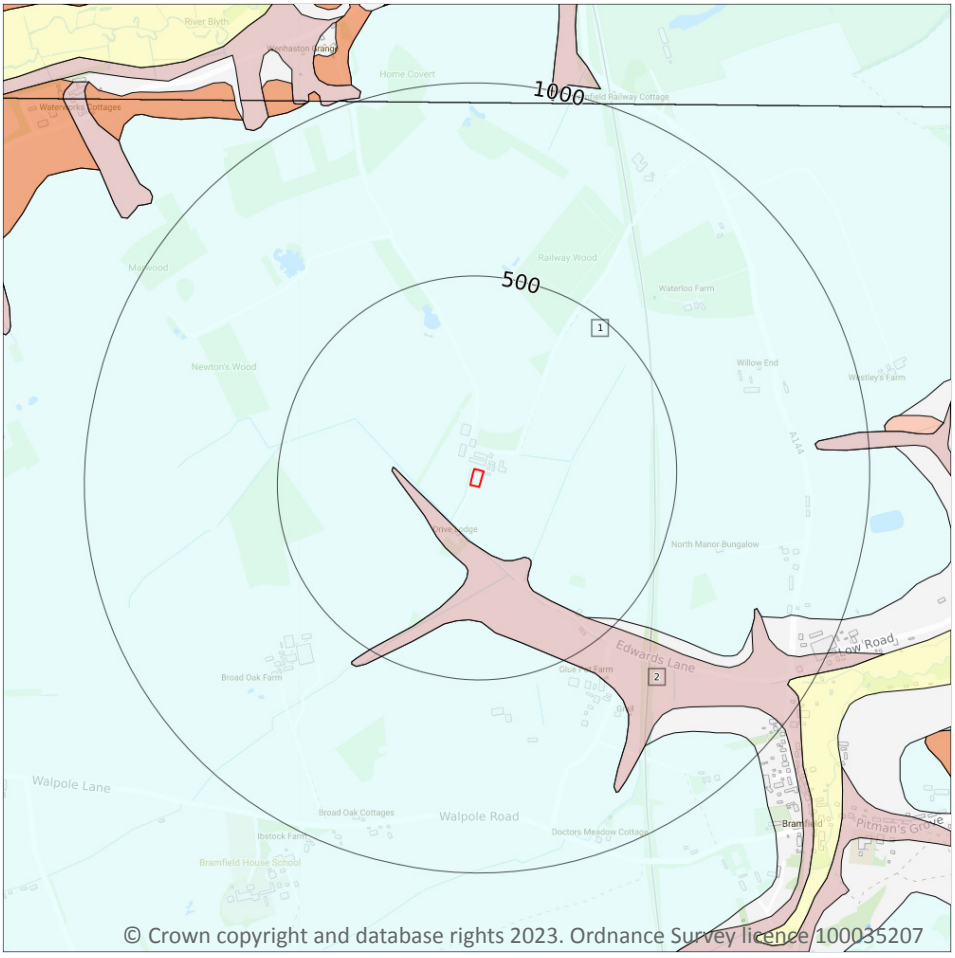
15.3 Artificial ground permeability (50k)

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	2

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 73 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**LOFT-DMTN**	**LOWESTOFT FORMATION**	**DIAMICTON**
2	106m SW	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

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

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

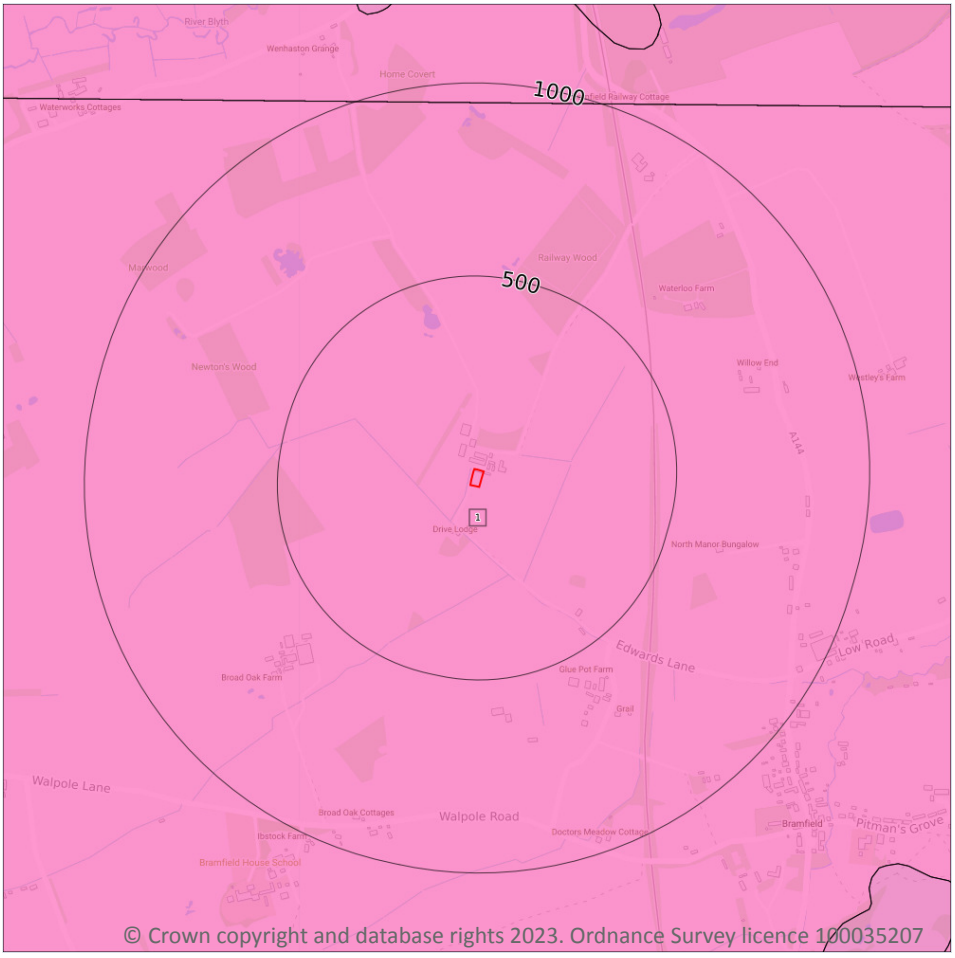
15.7 Landslip permeability (50k)

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	1

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 75 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**CRAG-S**	**CRAG GROUP - SAND**	**-**

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	**Intergranular**	**High**	**High**

This data is sourced from the British Geological Survey.

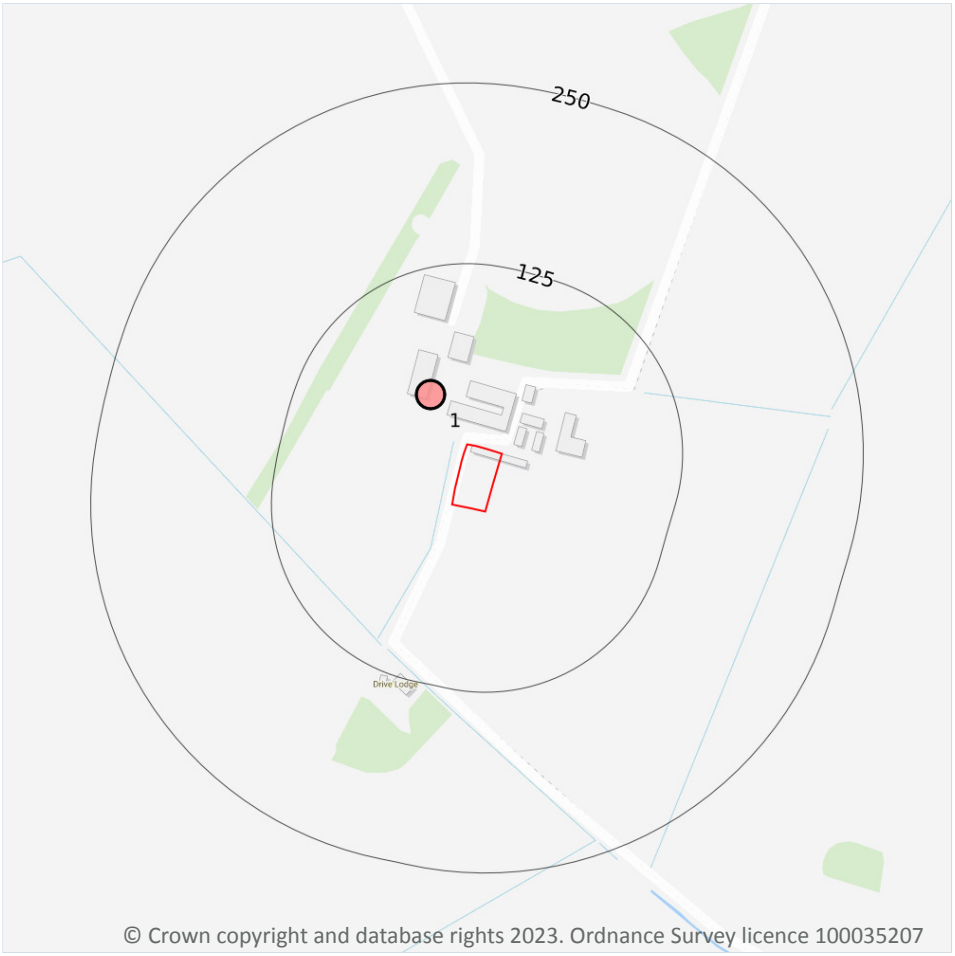
15.10 Bedrock faults and other linear features (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

16 Boreholes



Site Outline

Search buffers in metres (m)

Confidential

0 - 10m

10 - 30m

30m+

Unknown

16.1 BGS Boreholes

Records within 250m	1

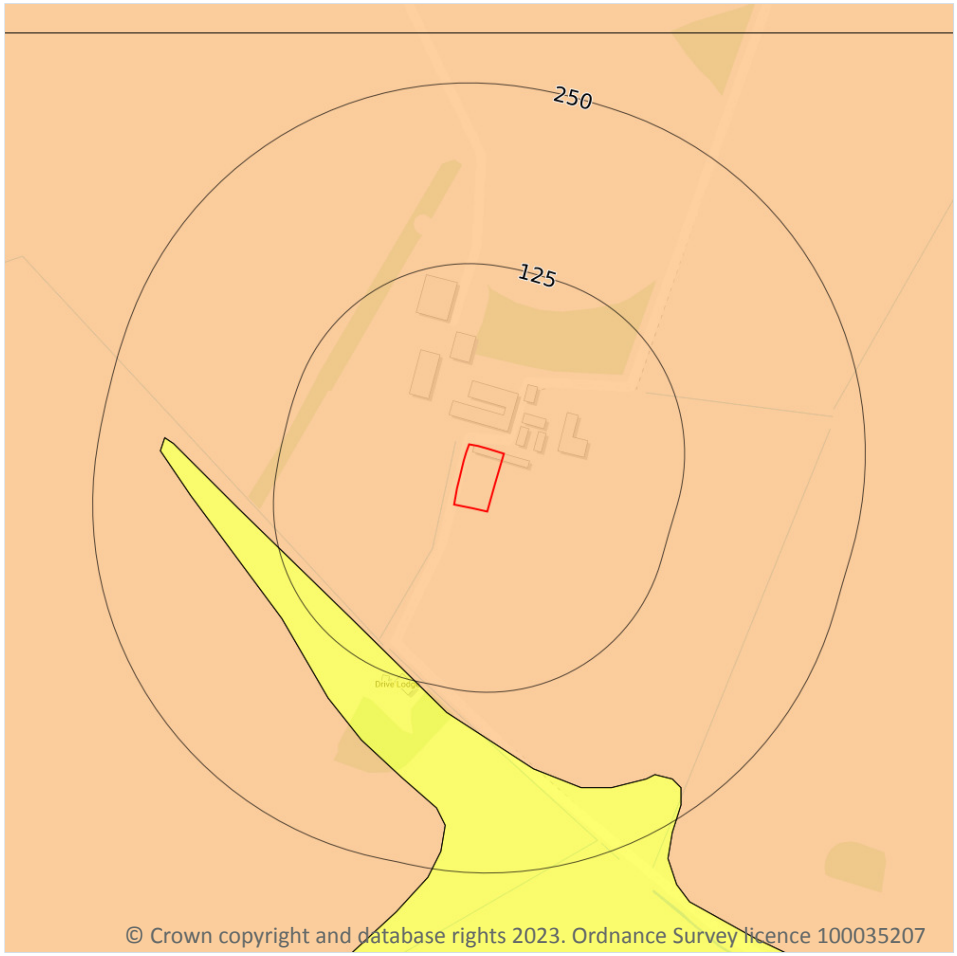
The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several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

Features are displayed on the Boreholes map on **page 77 >**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	43m NW	639100 274750	BROOK HALL FARM	70.1	N	566868 ↗

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

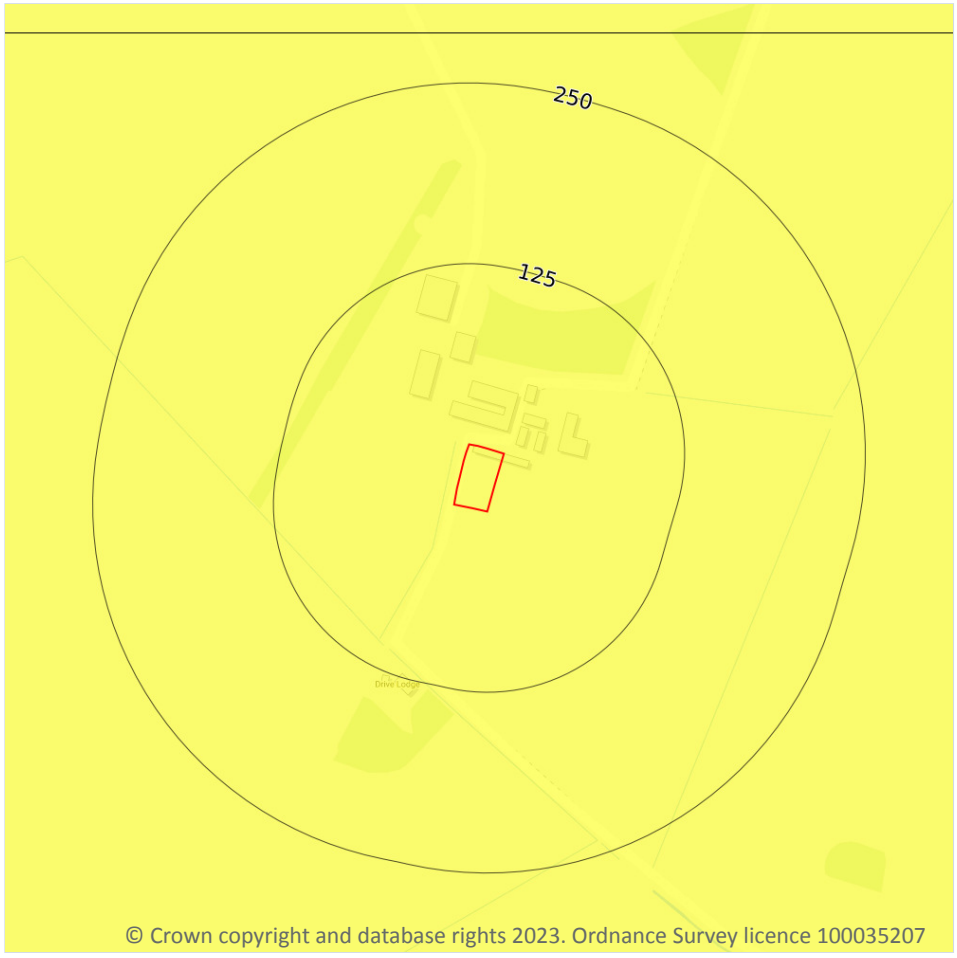
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 78 >**

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 79 >**

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

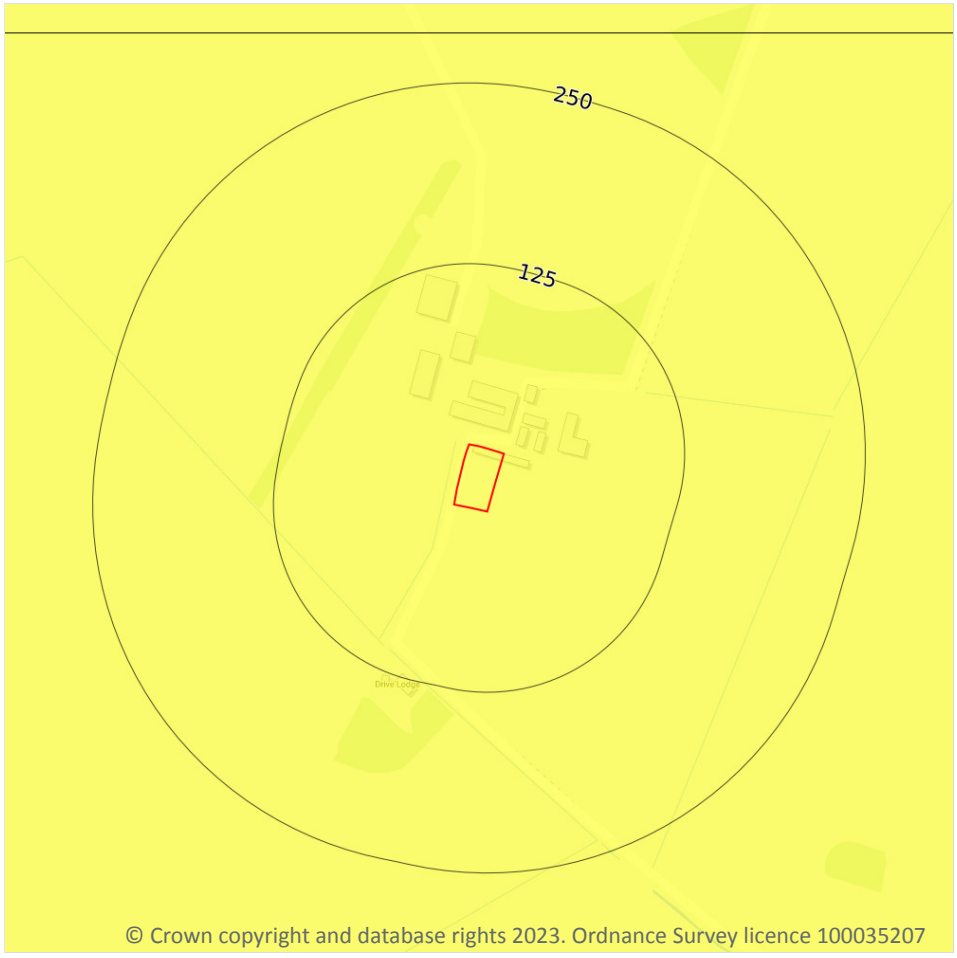
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 80 >**

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

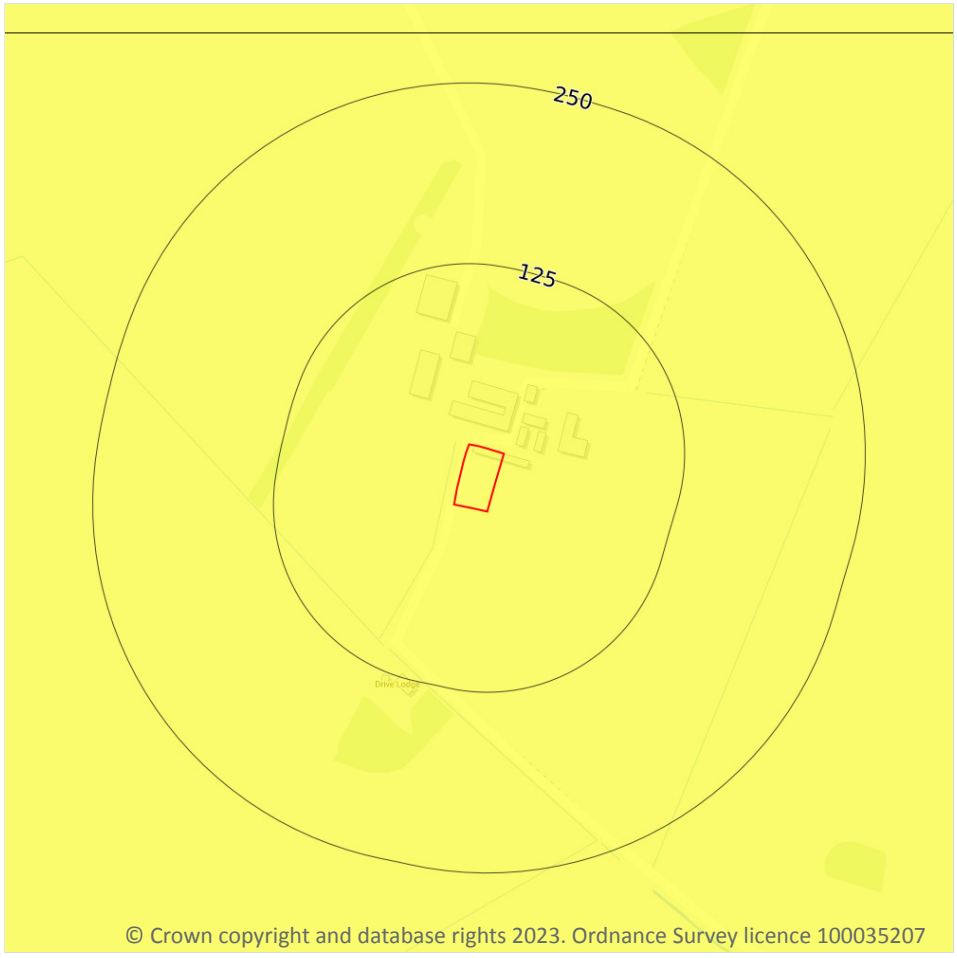
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 81 >**

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 82 >**

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

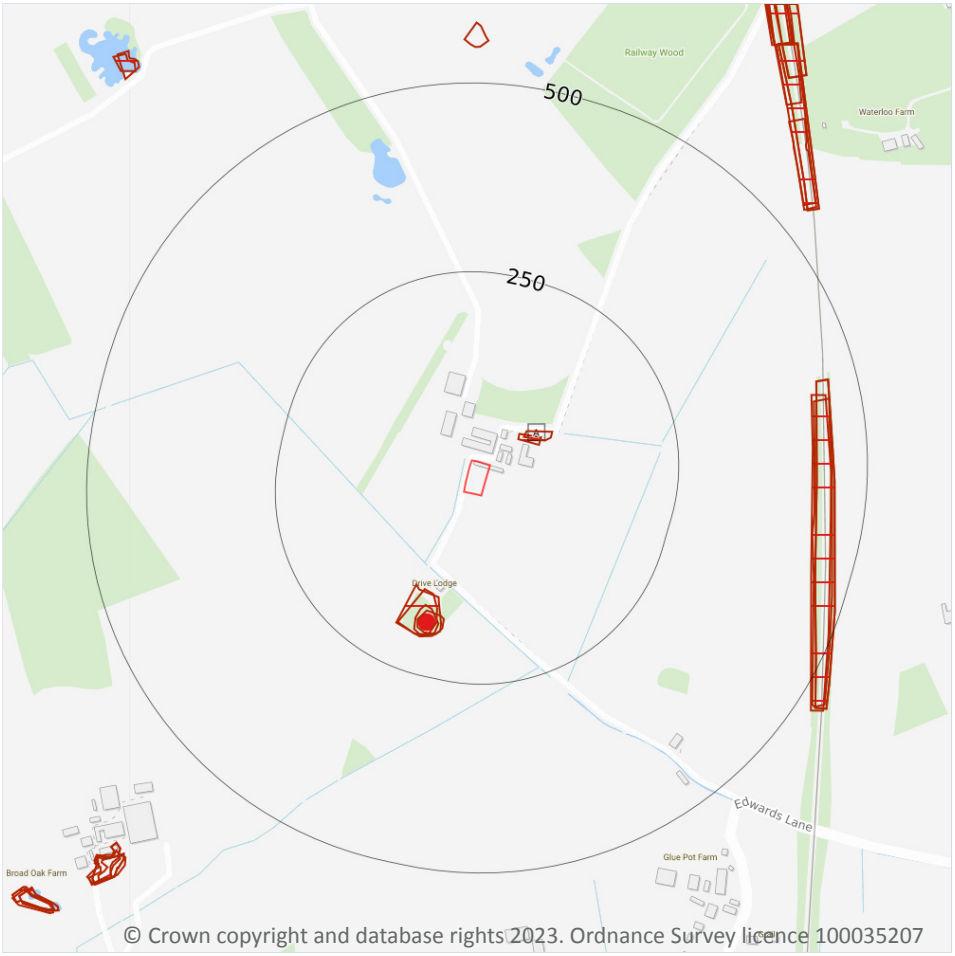
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 83 >**

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

This data is sourced from the British Geological Survey.

18 Mining and ground workings



Site Outline

Search buffers in metres (m)

BritPits

Surface ground workings

Underground workings

Underground mining extents

Historical mineral planning areas

TCA non-coal mining

Non Coal Mining

Sporadic underground mining of restricted extent possible

Localised small scale underground mining possible

Small scale mining possible

Underground mining known or likely within or in close proximity

Underground mining known within or in very close proximity

18.1 BritPits

Records within 500m	1

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

Features are displayed on the Mining and ground workings map on **page 85 >**

ID	Location	Details	Description
B	179m S	Name: Brookhall Farm Sand Pit Address: Bramfield, HALESWORTH, Suffolk Commodity: Sand Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m **6**

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

Features are displayed on the Mining and ground workings map on **page 85 >**

ID	Location	Land Use	Year of mapping	Mapping scale
A	51m NE	Pond	1905	1:10560
A	59m NE	Pond	1981	1:10000
B	138m SW	Unspecified Pit	1947	1:10560
B	139m SW	Unspecified Pit	1952	1:10560
B	158m S	Sand Pit	1905	1:10560
B	165m S	Sand Pit	1883	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m **0**

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

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m	0

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

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	0

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

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site	0

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

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m	0

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

Coal Authority and permission should be sought from Groundsure prior to any re-use.

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m	0

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

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m	0

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

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m	0

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

This data is sourced from Groundsure.

18.12 Coal mining

Records on site	0

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

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site	0

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

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

18.14 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site	0

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

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

19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m	0

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

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m	0

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

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m	0

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

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

This data is sourced from Groundsure.

19.5 National karst database

Records within 500m	0

This is a comprehensive database of national karst information gathered from a wide range of sources. BGS have collected data on five main types of karst feature: Sinkholes, stream links, caves, springs, and incidences of associated damage to buildings, roads, bridges and other engineered works.

Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over 800 caves, 1300 stream sinks, 5600 springs, 10,000 sinkholes.

The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

This data is sourced from the British Geological Survey.

20 Radon

Site Outline

Search buffers in metres (m)

- Greater than 30%
- Between 10% and 30%
- Between 5% and 10%
- Between 3% and 5%
- Between 1% and 3%
- Less than 1%

20.1 Radon

Records on site	1

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

Features are displayed on the Radon map on **page 92 >**

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

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

21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m	1

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**	**40 - 60 mg/kg**	**15 mg/kg**

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km^2.

This data is sourced from the British Geological Survey.

22 Railway infrastructure and projects

22.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m	0

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

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 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.

22.9 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.

22.10 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

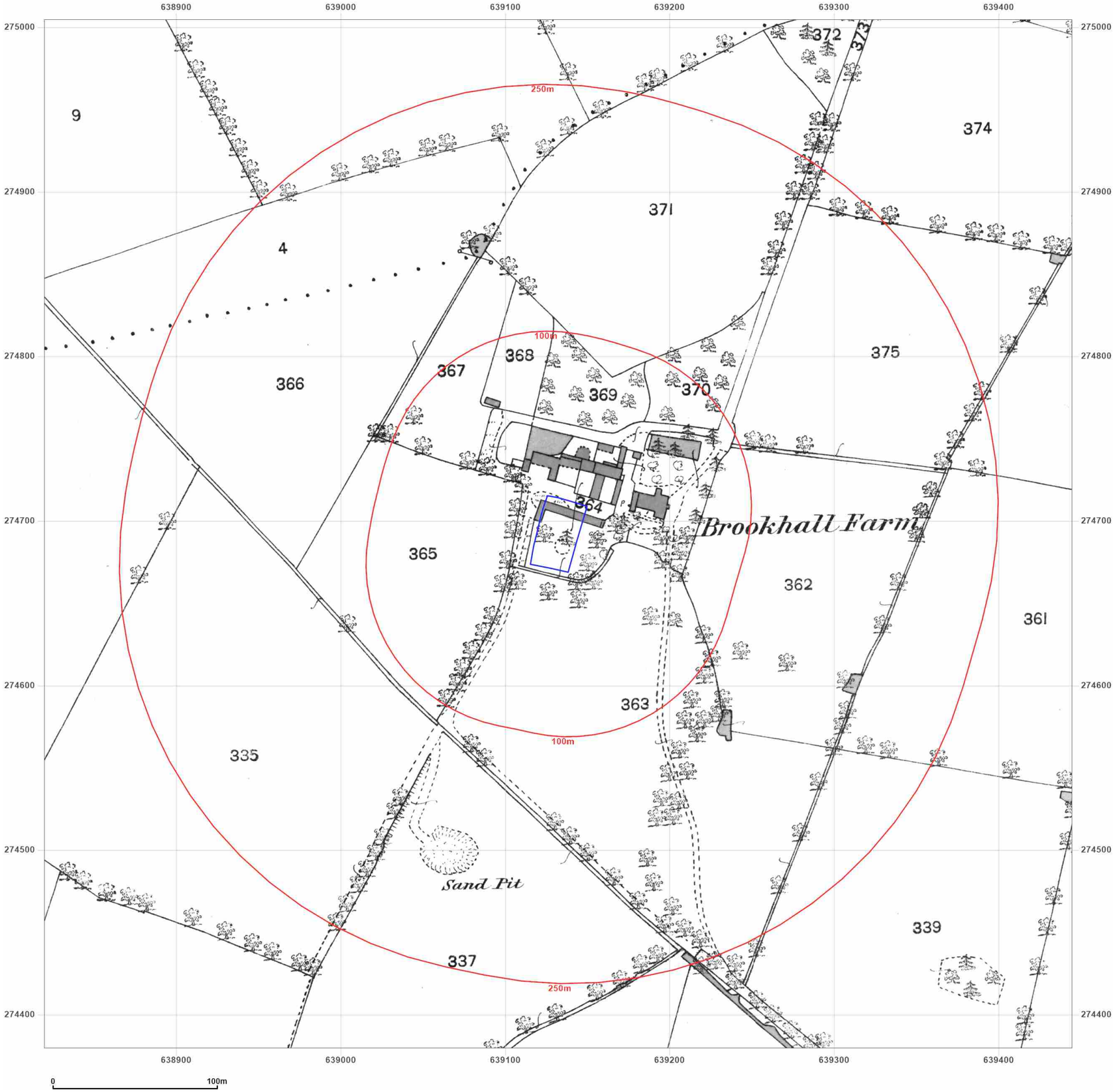
Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see https://www.groundsure.com/sources-reference ↗.

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: https://www.groundsure.com/terms-and-conditions-april-2023/ ↗.

APPENDIX 4

HISTORICAL ORDANCE SURVEY MAPS



Groundsure INSIGHTS

Site Details:

BROOK HALL BUNGALOW,
EDWARDS LANE, BRAMFIELD,
IP19 9HN

Client Ref: 3939-23
Report Ref: GS-A5R-5A6-JHJ-DL9
Grid Ref: 639132, 274692

Map Name: County Series

Map date: **1883**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1883
Revised 1883
Edition N/A
Copyright N/A
Levelled N/A

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Map legend available at:
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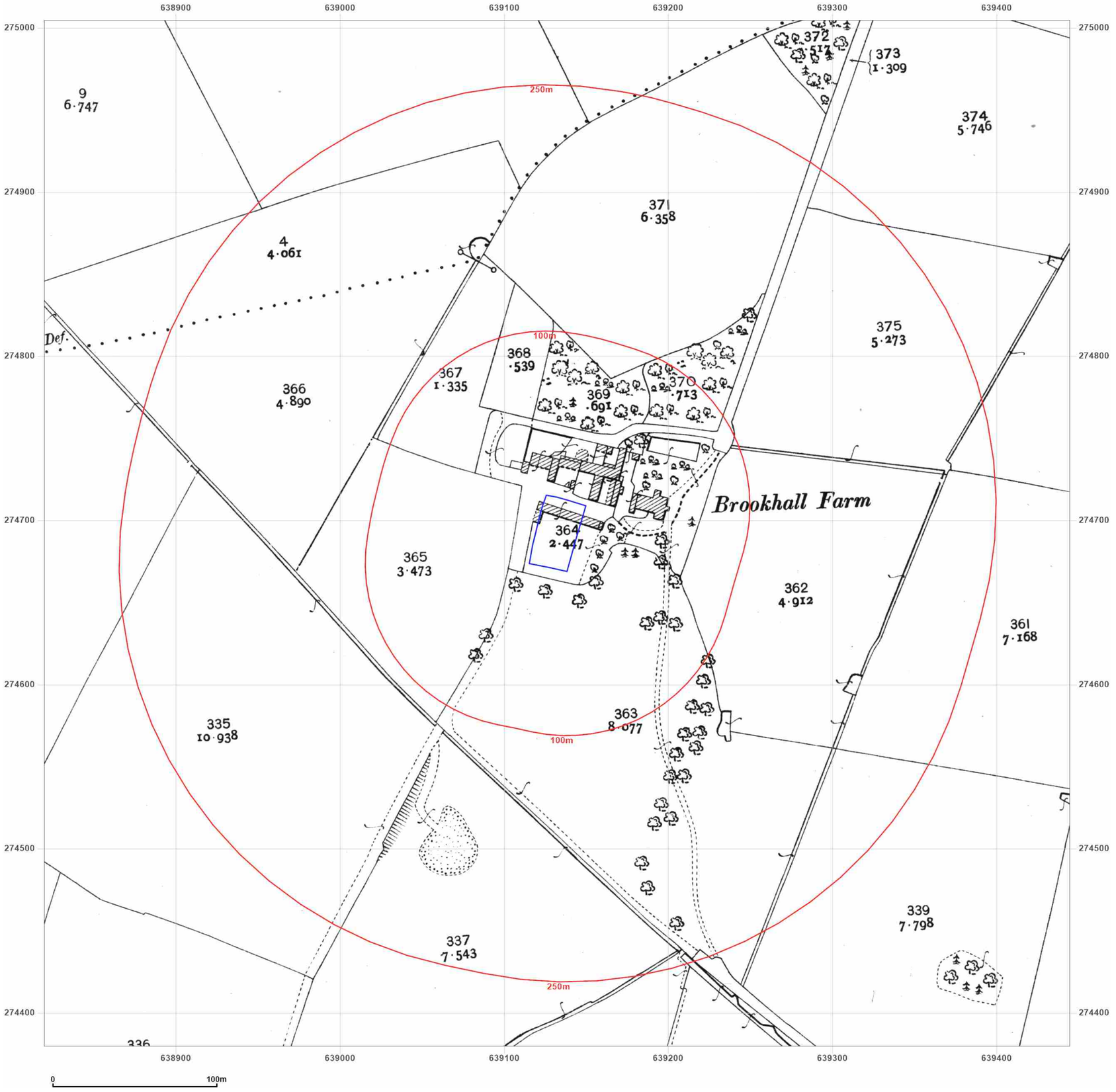

Groundsure INSIGHTS

Site Details:

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Client Ref: 3939-23
Report Ref: GS-A5R-5A6-JHJ-DL9
Grid Ref: 639132, 274692

Map Name: County Series

Map date: **1903**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1903
Revised 1903
Edition N/A
Copyright N/A
Levelled N/A

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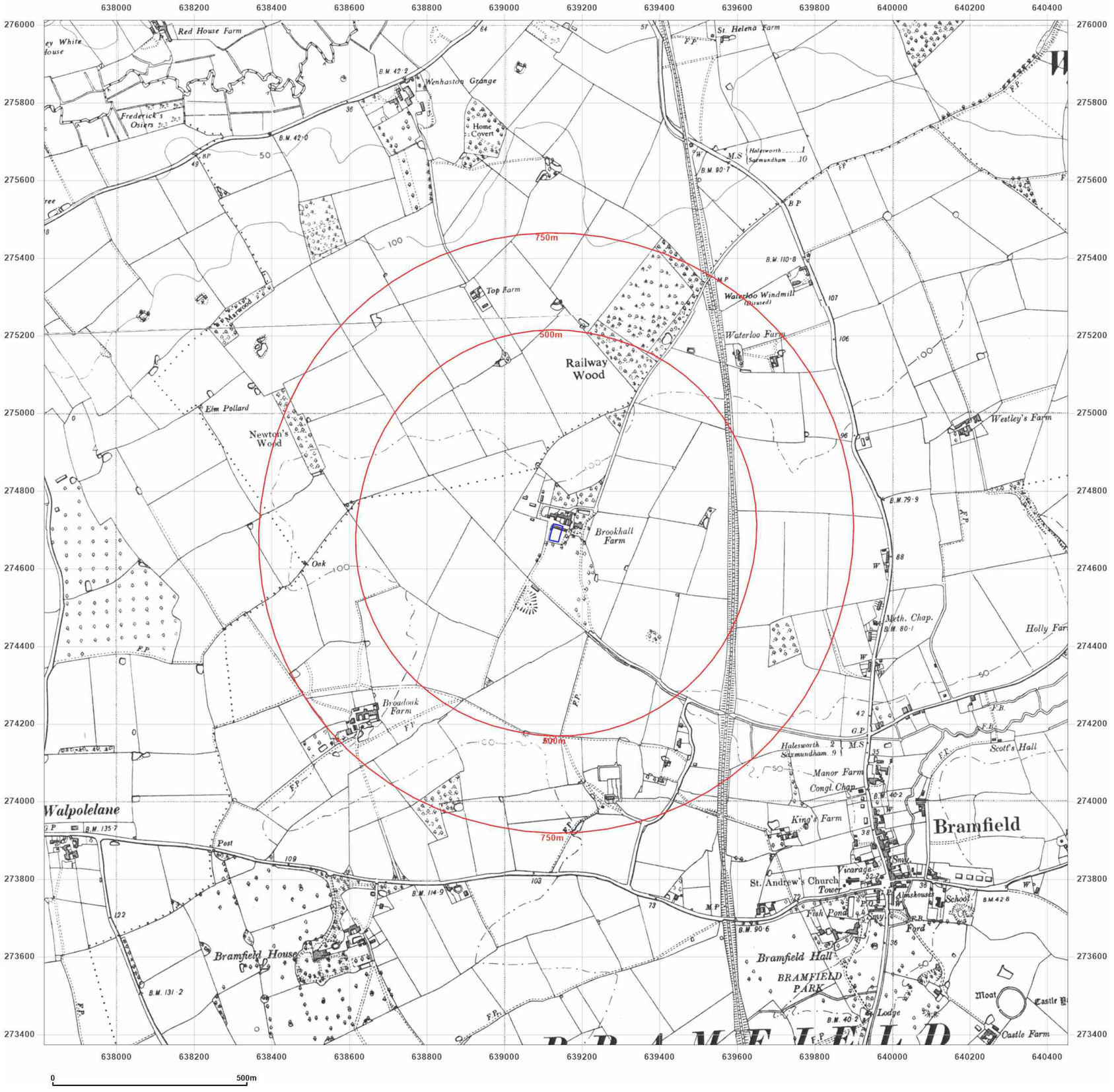

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Client Ref: 3939-23
Report Ref: GS-A5R-5A6-JHJ-DL9
Grid Ref: 639132, 274692

Map Name: County Series

Map date: **1947**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1883
Revised 1947
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1882
Revised 1947
Edition N/A
Copyright N/A
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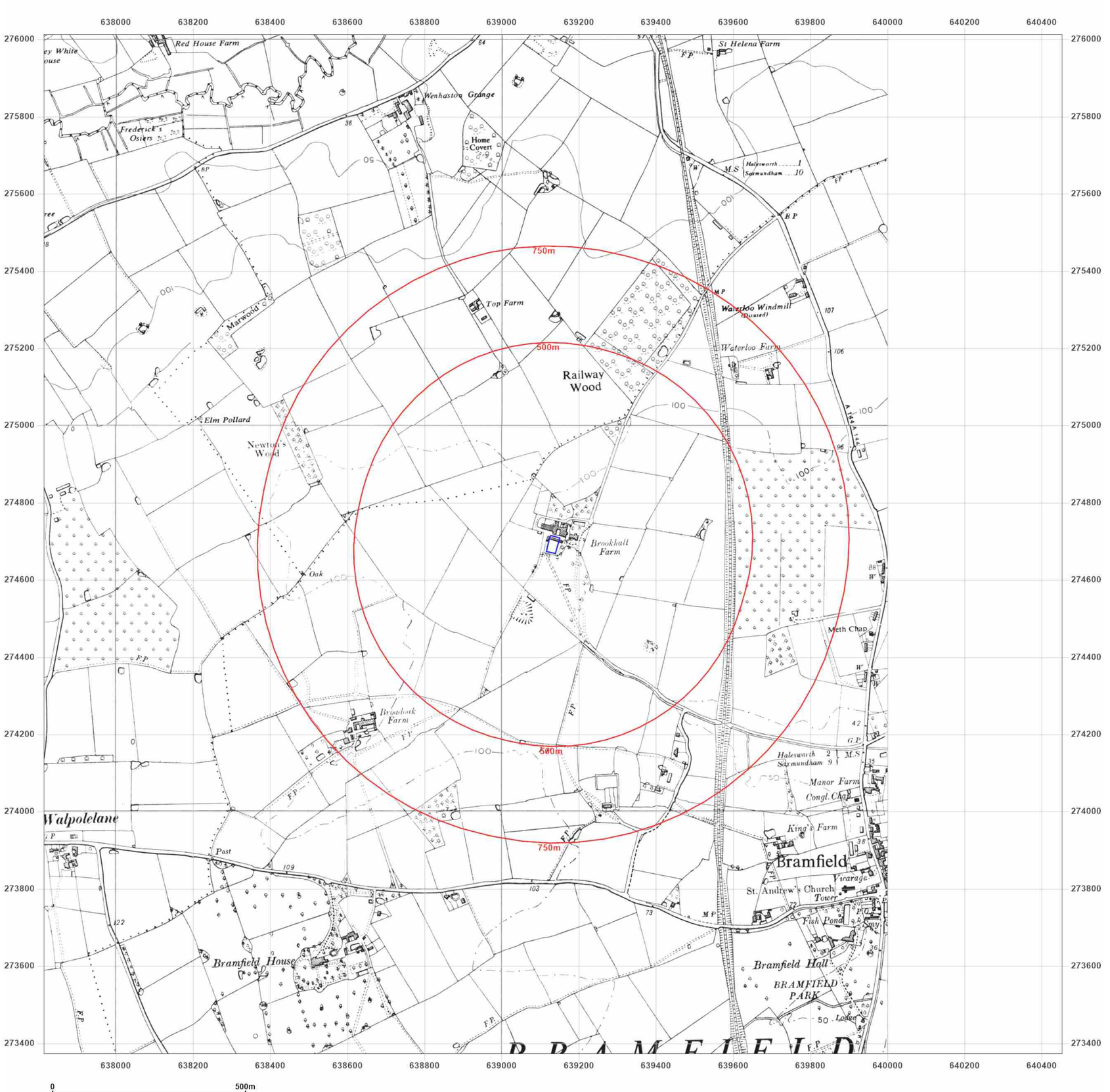

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IP19 9HN

Client Ref: 3939-23
Report Ref: GS-A5R-5A6-JHJ-DL9
Grid Ref: 639132, 274692

Map Name: Provisional

Map date: **1952-1957**

Scale: 1:10,560

Printed at: 1:10,560

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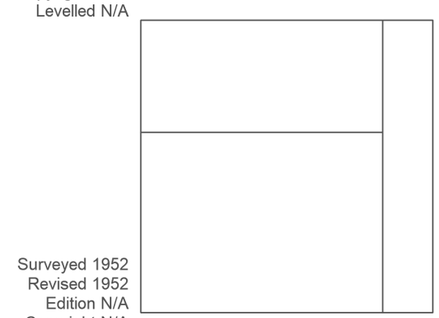
Surveyed N/A
Revised 1957
Edition N/A
Copyright 1957
Levelled N/A

Surveyed 1952
Revised 1952
Edition N/A
Copyright N/A
Levelled N/A



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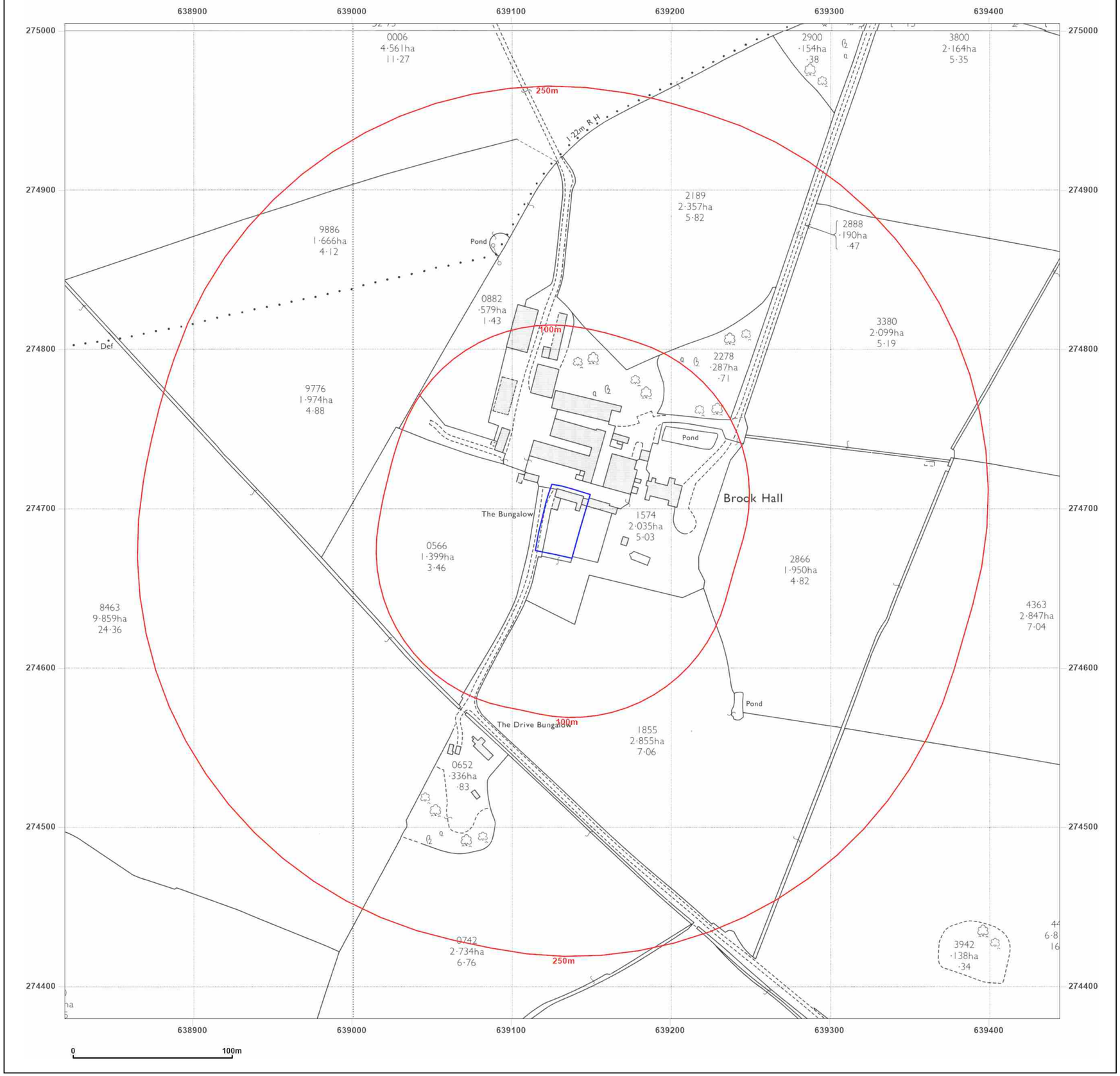

Groundsure INSIGHTS

Site Details:

BROOK HALL BUNGALOW,
EDWARDS LANE, BRAMFIELD,
IP19 9HN

Client Ref: 3939-23
Report Ref: GS-A5R-5A6-JHJ-DL9
Grid Ref: 639132, 274692

Map Name: National Grid

Map date: **1972-1977**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed N/A
Revised 1971
Edition N/A
Copyright 1972
Levelled 1968

Surveyed 1976
Revised 1976
Edition N/A
Copyright 1977
Levelled 1968

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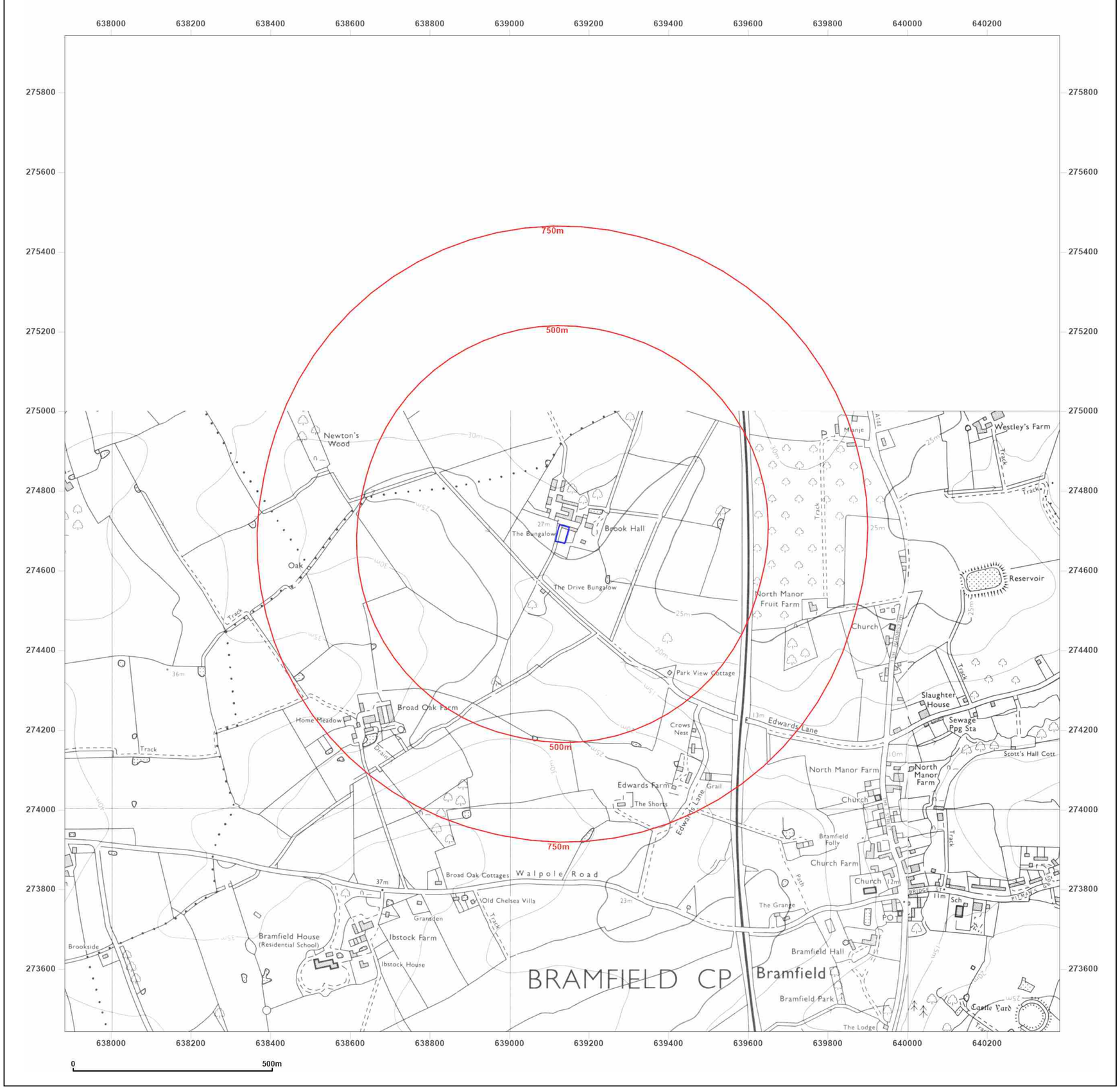

Groundsure INSIGHTS

Site Details:

BROOK HALL BUNGALOW,
EDWARDS LANE, BRAMFIELD,
IP19 9HN

Client Ref: 3939-23
Report Ref: GS-A5R-5A6-JHJ-DL9
Grid Ref: 639132, 274692

Map Name: National Grid

Map date: **1980-1981**

Scale: 1:10,000

Printed at: 1:10,000

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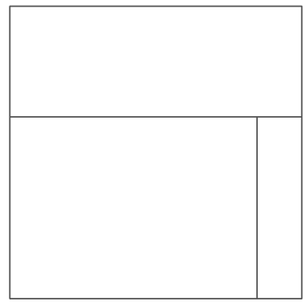

Surveyed 1977
Revised 1981
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1975
Revised 1980
Edition N/A
Copyright N/A
Levelled N/A

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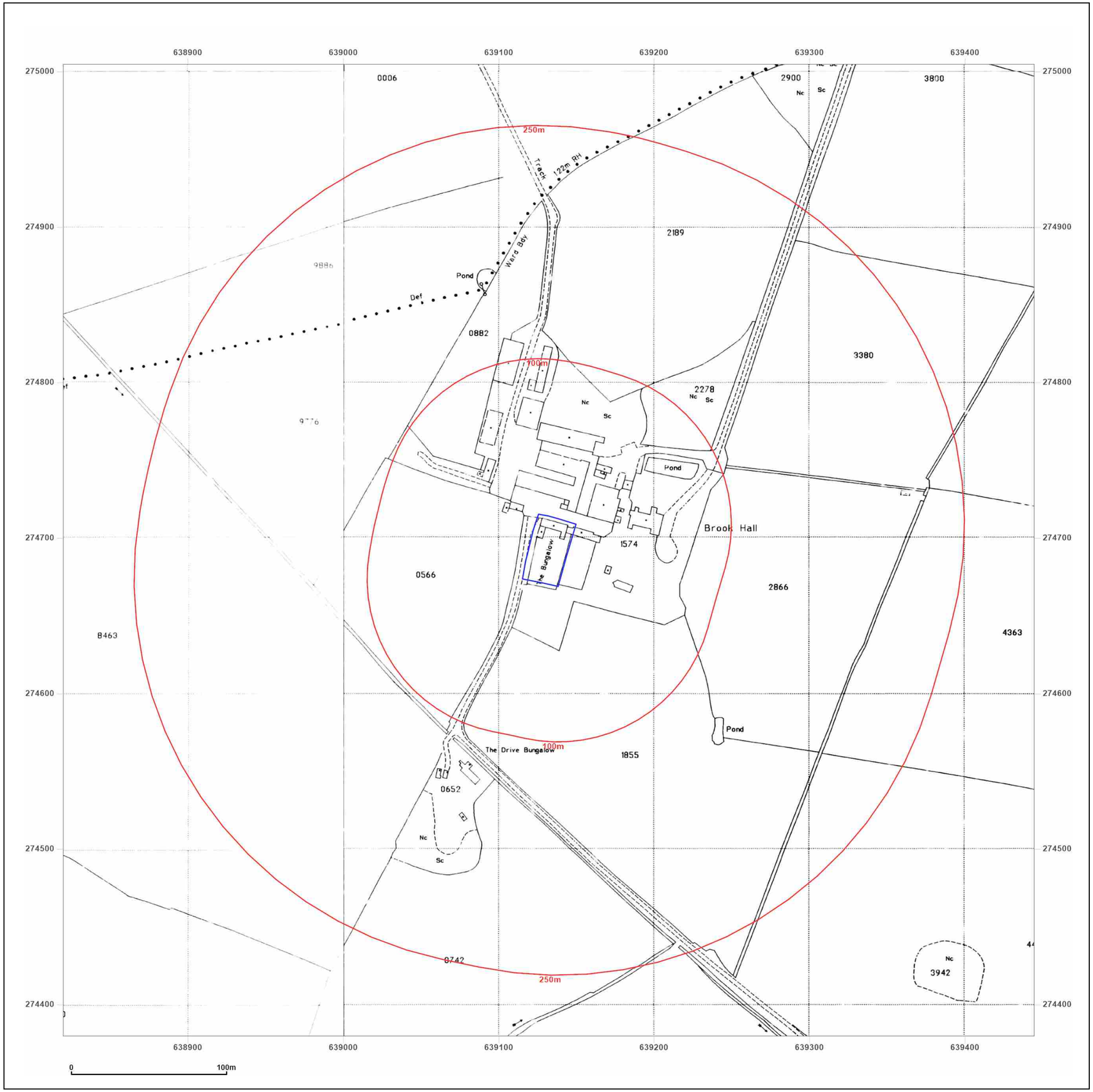

Groundsure INSIGHTS

Site Details:

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IP19 9HN

Client Ref: 3939-23
Report Ref: GS-A5R-5A6-JHJ-DL9
Grid Ref: 639132, 274692

Map Name: National Grid
Map date: **1995**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1995
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1995
Levelled N/A

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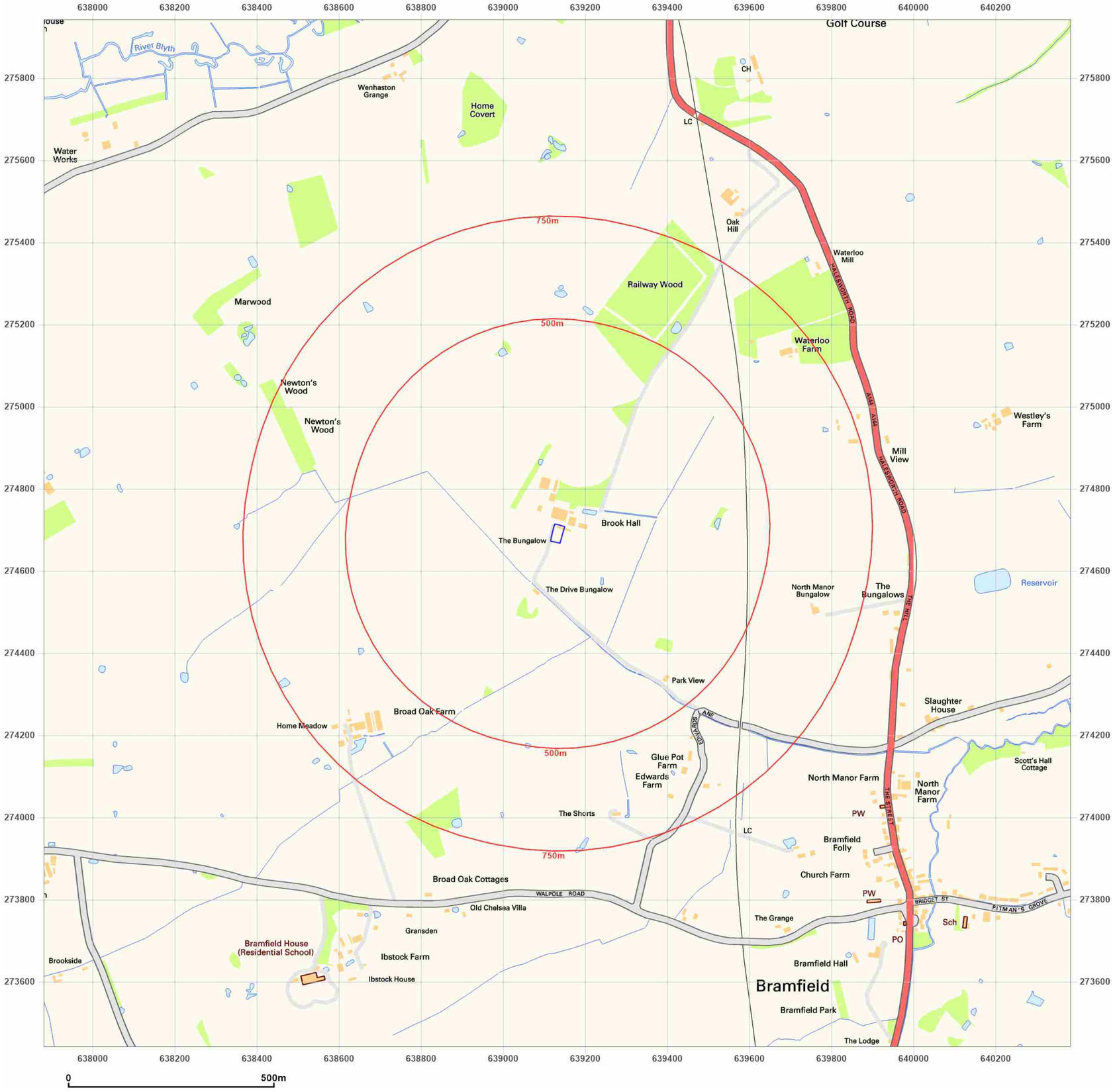

Groundsure INSIGHTS

Site Details:

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EDWARDS LANE, BRAMFIELD,
IP19 9HN

Client Ref: 3939-23
Report Ref: GS-A5R-5A6-JHJ-DL9
Grid Ref: 639132, 274692

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

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Site Details:

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IP19 9HN

Client Ref: 3939-23
Report Ref: GS-A5R-5A6-JHJ-DL9
Grid Ref: 639132, 274692

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Map date: **2003**
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Printed at: 1:1,250

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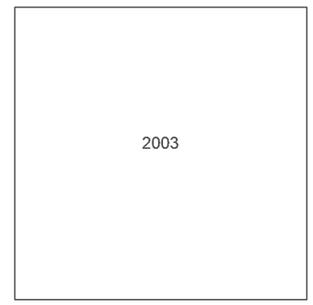

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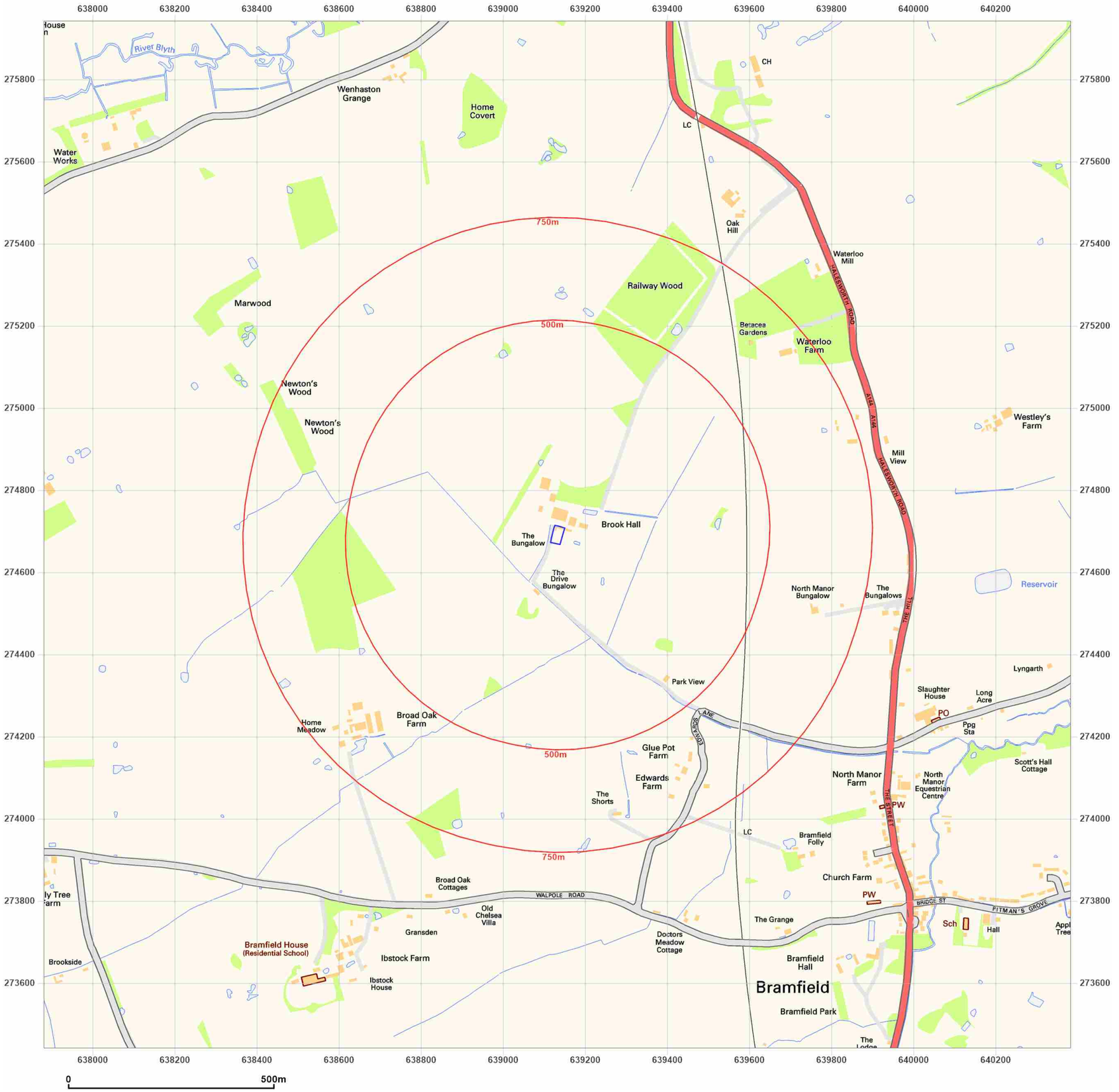

Groundsure INSIGHTS

Site Details:

BROOK HALL BUNGALOW,
EDWARDS LANE, BRAMFIELD,
IP19 9HN

Client Ref: 3939-23
Report Ref: GS-A5R-5A6-JHJ-DL9
Grid Ref: 639132, 274692

Map Name: National Grid
Map date: **2010**
Scale: 1:10,000
Printed at: 1:10,000

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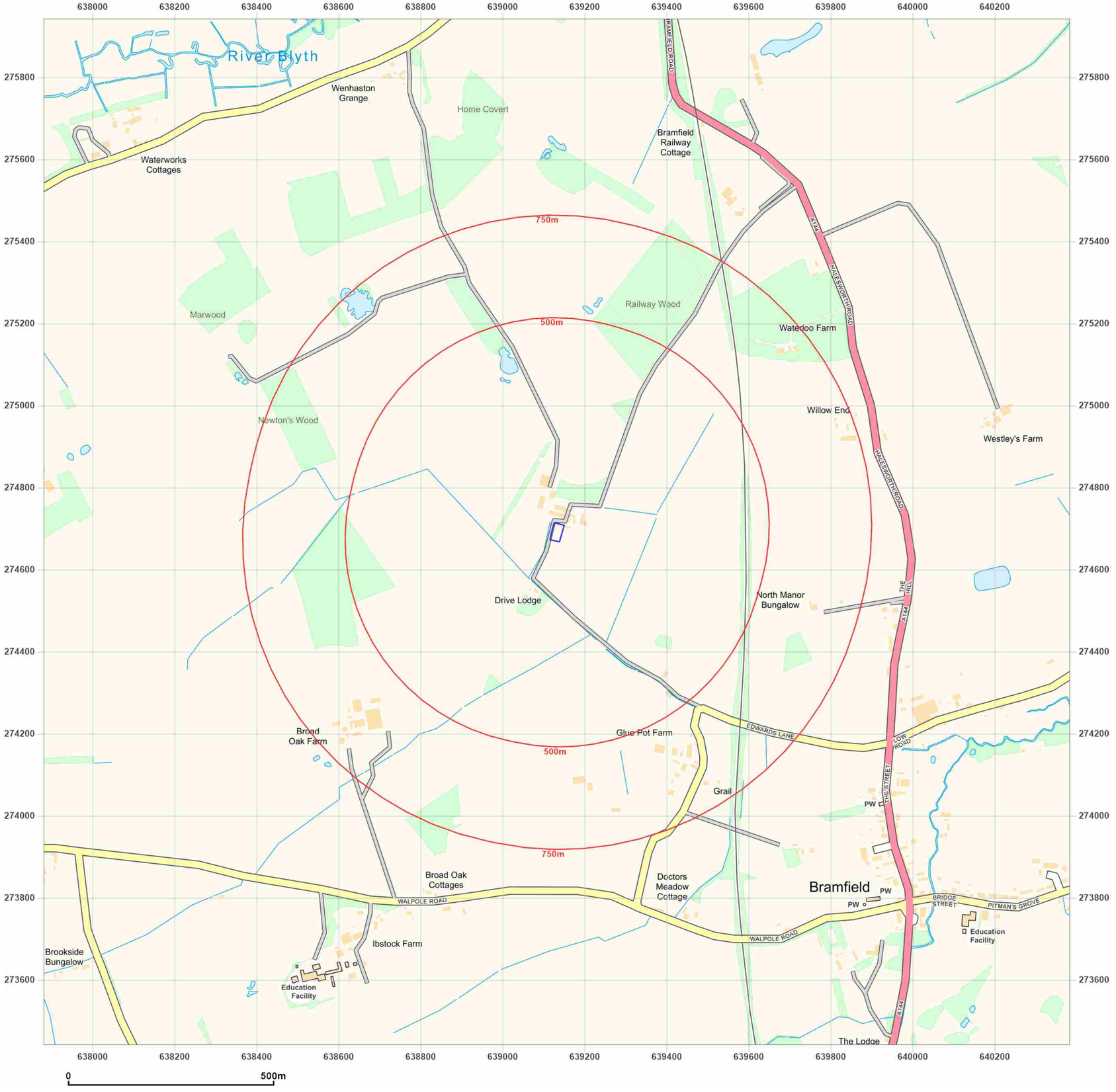

Groundsure INSIGHTS

Site Details:

BROOK HALL BUNGALOW,
EDWARDS LANE, BRAMFIELD,
IP19 9HN

Client Ref: 3939-23
Report Ref: GS-A5R-5A6-JHJ-DL9
Grid Ref: 639132, 274692

Map Name: National Grid

Map date: **2023**

Scale: 1:10,000

Printed at: 1:10,000

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APPENDIX 5

RISK ASSESSMENT MATRIX

Preliminary Risk Assessment Methodology (After NHBC Guidance for the Safe Development of Housing on Land Affected by Contamination (2008))

NHBC Guidance for the Safe Development of Housing on Land Affected by Contamination (2008) sets out a methodology for the estimation of risk.

At Phase I the risk estimation will take the form of a qualitative risk assessment, which will be entirely based on the conceptual model for each potential end-use of the site. Comments on level of uncertainty will also need to be included for each source-pathway-target linkage to allow the confidence in the assessed risks to be understood. The results of the qualitative risk assessment will allow the risk evaluation to be concisely described in the following chapters.

The methodology for risk evaluation is a qualitative method for interpreting the output for the risk estimation stage of the assessment. It involves the classification of the:

The magnitude of probability (i.e. likelihood).
[takes into account both the presence of the hazard and receptor and the integrity of the pathway]

The magnitude of the potential consequence (i.e. severity).
[takes into account both the potential severity of the hazard and the sensitivity of the receptor]

Classification of Probability

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

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Classification of Consequence

	Definition	Examples
Severe (Sv)	Highly elevated concentrations likely to result in "significant harm" to human health as defined by the EPA 1990, Part 2A, if exposure occurs. A Category 1: Human Health risk is present. Equivalent to EA Category 1 pollution incident including persistent and/or extensive effects on water quality; leading to closure of a potable abstraction point major impact on amenity value or major damage to agriculture or commerce. Major damage to aquatic or other ecosystems, which is likely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long - term maintenance of the population. Catastrophic damage to crops, buildings or property.	*Significant harm to humans is defined in circular 01/2006 as death, disease*, serious injury, genetic mutation, birth defects or the impairment of reproductive functions.* *Major fish kill in surface water from large spillage of contaminants from site.* *Highly elevated concentrations of List I and substances present in groundwater close to small potable abstraction (high sensitivity).* *Explosion, causing building collapse (can also equate to immediate human health risk if buildings are occupied).*
Medium (Md)	Elevated concentrations which could result in "significant harm" to human health as defined by the EPA 1990, Part 2A if exposure occurs. A Category 2: Human Health risk is present. Equivalent to EA Category 2 pollution incident including significant effect on water quality; notification required to abstractors; reduction in amenity value or significant damage to agriculture or commerce. Significant damage to aquatic or other ecosystems, which may result in a substantial adverse change in its functioning or harm to a species of special interest that may endanger the long-term maintenance of the population. Significant damage to crops, buildings or property.	*Significant harm to humans is defined in circular 01/2006 as death, disease* serious injury, genetic mutation, birth defects or the impairment of reproductive functions.* *Damage to building rendering it unsafe to occupy e.g. foundation damage resulting in instability.* *Ingress of contaminants through plastic potable water pipes.*
Mild (Ml)	Exposure to human health unlikely to lead to "significant harm". A Category 3 Human Health risk is present. Equivalent to EA Category 3 pollution incident including minimal or short lived effect on water quality; marginal effect on amenity value, agriculture or commerce Minor or short lived damage to aquatic or other ecosystems, which is unlikely to result in a substantial adverse change in its functioning or harm to a species of special interest that would endanger the long-term maintenance of the population Minor damage to crops, buildings or property.	*Exposure could lead to slight short - term effects (e.g. mild skin rash).* *Surface spalling of concrete.*
Minor (Mr)	No measurable effect on humans.A Category 4: Human Health risk is present. Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems. Repairable effects of damage to buildings, structures and services.	*The presence of contaminants at such concentrations that protective equipment is required during site works.* *The loss of plants in a landscaping scheme.* *Discoloration of concrete.*

* For these purposes, disease is to be taken to mean an unhealthy condition of the body or a part of it and can include, for example, cancer, liver dysfunction or extensive skin ailments. Mental dysfunction is included only insofar as it is attributable to the effects of a pollutant on the body of the person concerned.

The classification of consequence does not take into account the probability of the consequence being realized. Therefore, there may be more than one consequence for a particular pollutant linkage. Both a severe and medium classification can result in death. Severe relates to short term (acute) risk while medium relates to long

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term (chronic) risk. Mild relates to significant harm but to less sensitive receptors. Minor classification relates to harm which is not significant but could have a financial cost.

The classification gives a guide as to the severity and consequence of identified risk when compared with other risk presented on the site. It should be noted that if a risk is identified it cannot be classified as “no risk” but as “very low risk”. Differing stakeholders may have a different view on the acceptability of a risk.

Risk Evaluation Matrix

		Consequence			
		Severe (Sv)	Medium (Md)	Mild (Mi)	Minor (Mr)
Probability	High likelihood (Hi)	Very high risk (VH)	High Risk (H)	Moderate Risk (M)	Mod/low risk (M/L)
	Likely (Li)	High risk (H)	Moderate risk (M)	Mod/low risk (M/L)	Low risk (L)
	Low likelihood (Lw)	Moderate risk (M)	Mod/low risk (M/L)	Low risk (L)	Very low risk (VL)
	Unlikely (Ul)	Mod/low risk (M/L)	Low risk (L)	Very low risk (VL)	Very low risk (VL)

Risk Categorizations

Very high risk (VH)	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 realized, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High risk (H)	Harm is likely to arise to a designated receptor from an identified hazard. Realization of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short-term and are likely over the longer-term.
Moderate risk (M)	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. Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer-term.
Low risk (L)	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realized, would at worst normally be mild.
Very low risk (VL)	There is a low possibility that harm could arise to a receptor. In the event of such harm being realized it is not likely to be severe.

Reference

Rudland, D J, Lancefield, R M, Mayell, P N; 2001; Contaminated land Risk Assessment. A guide to Good Practice; CIRIA Report C552.

The NHBC (National House-Building Council) the Environment Agency and the Chartered Institute of Environmental Health, 2008, Guidance for the Safe Development of Housing on Land Affected by Contamination R&D66.