clarkebond

Phase 1 Preliminary Risk Assessment(Desk Study)

South Farm, Wickwar

B05313

Bloor Homes South West

clarkebond

MULTIDISCIPLINARY ENGINEERING CONSULTANTS

Phase 1 Preliminary Risk Assessment (Desk Study)

Report No	Date
B05313-CLK-00-XX-RP-GE-0001	02/04/20

Project
South Farm, Wickwar

Client Name
Bloor Homes

Issue Date	Status	Description of Amendments
2nd April 2020	P01 S02	For Information-

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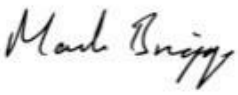
Mark Briggs BSc MSc CGeol FGS **Director Ground Engineering**	

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Executive Summary

Client	Bloor Homes South West
Site	The site is located approximately 400m south west of the village of Wickwar, Gloucestershire, at approximate National Grid Reference ST 72177 876540.
Proposed Development	The site will be developed in phases. The Phase 1 area is anticipated to accommodate 150 residential units as well as land for a potential new community shop. The overall site is 38ha in total and will be subject to future development by Bloor Homes.
History of Site and Surroundings	The site has historically always been greenfield or farmland.
Geology	The site is directly underlain by several lithological units comprising a range of limestones and mudstones. No superficial deposits are recorded on the mapping however a horizon of weathered clays is anticipated.
Hydrogeology & Hydrology	The nearest surface water features are on site in the form of two streams and a pond. Guidance from the Environment Agency indicates that the strata underlying the site range in aquifer designation from Principal Aquifer to Secondary B aquifer. The site is not located within a Source Protection Zone.
Geotechnical Considerations	• The underlying natural soils should be generally suitable for conventional strip or pad foundations. An intrusive site investigation should be completed to confirm the soil profile across the site. • Shallow rockhead may require breaking out in some services trenches. • Shallow groundwater may be encountered and may result in the requirement for the dewatering of excavations. • Ground bearing floor slabs may be appropriate depending on the nature of the shallow soils. • Soakaway drainage may be feasible within fractured bedrock. If considered, soakaway testing should be completed in line with BRE Digest 365: Soakaway Design. • Semi-mature to mature trees appear to be present on-site, giving the potential for localised soil desiccation. Natural moisture content and soil plasticity profiles should be defined at critical locations.
Environmental Considerations	• There is a risk for the presence of sporadic Made Ground to be present across the site containing heavy metals, petroleum hydrocarbons and asbestos particularly in areas of potentially backfilled ponds. • Naturally occurring contaminants within shallow weathered soils e.g lead or arsenic. • Potential for elevated PAHs in shallow soils as a result of incorporation of ash into soil. • There is potential for near-surface topsoil and/or subsoil to contain residual concentrations of pesticides and herbicides.
Risk Rating	The general geotechnical risk is considered to be low. The general risk of significant chemical contamination is low.
Site Investigation Recommendations	In order to quantify and mitigate the geotechnical and contamination risks identified above, site investigation is recommended as follows: • Trial pitting including soakaway testing • Geotechnical laboratory testing • Contaminated land testing

1 Introduction

1.1 Introduction and Brief

Clarkebond (UK) Limited was commissioned by Bloor Homes South West to undertake a Phase I Preliminary Risk Assessment (Desk Study) on a site known as South Farm, Wickwar. This assessment is required to support the outline planning application for the site.

1.2 Scope of Works

The objectives of the investigation were to determine the sub-surface conditions in respect of:

- Preliminary geotechnical advice relating to the anticipated ground conditions
- Preliminary contamination assessment to consider potential significant pollutant linkages arising from the current and historic land uses on and off site.

1.3 Proposals

It is understood the site will likely be developed in phases, however as part of the work to prepare the planning application for the Phase 1 area, the remainder of the site will need to be safeguarded to ensure suitability for future development. Therefore, this report will provide a Phase 1 assessment for the entire site.

The Phase 1 development area of circa 8.2ha is anticipated to accommodate roughly 150 residential units as well as land for a potential new community shop. The overall site is 38ha in total and will be subject to future development by Bloor Homes.

1.4 Limitations

This report is provided for the benefit only of the party to whom it is addressed and we do not accept responsibility to any third party for the whole or any part of the contents and we exercise no duty of care in relation to this report to any third party.

This assessment has been based to a large extent on third party data acquired from Third Parties. This data has been taken at face value and has not been subjected to any third party validation.

Unless specifically noted to the contrary, it should be assumed that this report has not been submitted to any regulatory authorities for approval.

2 Phase 1 Assessment

2.1 Site Location and Description

The site is located approximately 400m south west of the village of Wickwar, Gloucestershire, at approximate National Grid Reference ST 72177 876540. A site location is presented as Appendix A.

The site has not yet been visited however the following site description has been completed from various sources.

- The site is irregular in shape and covers an area of approximately 38Ha.
- The site is generally level and forms an area of high plateau with levels falling gently to east and west.
- The site is currently used as agricultural farmland.
- The surface comprises grassed fields.
- A stream makes up the site's western boundary and another stream runs south to north in the east of the site along the western boundary of the Phase 1 area.
- Some mature trees appear to be present within the hedgerows on site.

The site is bounded as follows:

Table 2.1 Site Surroundings

North	Village of Wickwar, farmland and Wickwar Asphalt plant approximately 1.5km north.
East	B4060, dwellings of the village of Wickwar and farmland beyond.
South	Farmland.
West	Farmland, railway approximately 700m west trending SW-NE and travels through a tunnel to the north of the site.

2.2 Geology

The geology of the site is shown on the maps obtained from the Groundsure report which are extracted from the British Geological Survey Digital Geological Map of Great Britain at 1:50,000 scale.

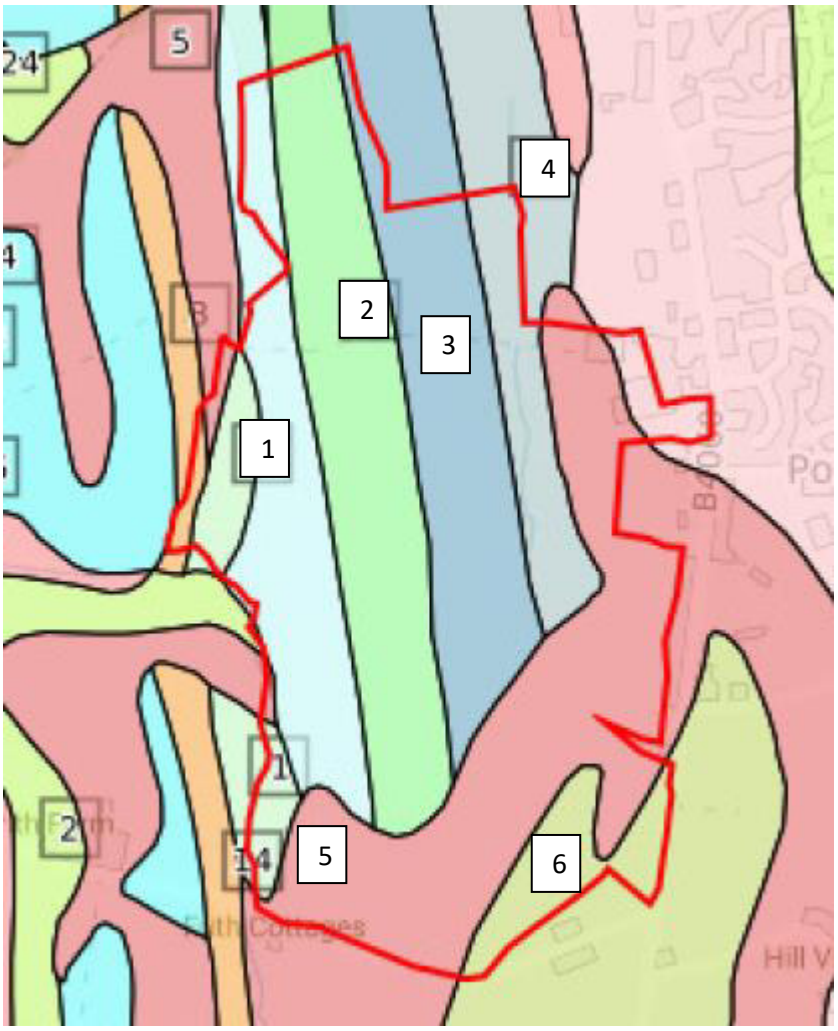


Figure 2.1 Bedrock Geology

This indicates that the site is directly underlain by six lithological units, forming eleven different areas across the site, as shown on Figure 2.1 above. The six lithological units which underly much of the site are labelled on Figure 1 above and detailed in Table 2.2, below. The maps do not show any superficial deposits however a weathered horizon of clays are anticipated near the surface.

Table2.2 Bedrock Geology

Number	Formation
1	Clifton Down Mudstone Formation
2	Black Rock Limestone Subgroup - Dolostone
3	Black Rock Limestone Subgroup - Limestone
4	Avon Group – Interbedded Limestone and Mudstone
5	Westbury Formation and Cotham Member - Mudstone
6	Langport Member and Wilmcote Limestone Member – Interbedded limestone and mudstone.

There are no historical exploratory hole records available from the BGS within the vicinity of the site.

2.3 Hydrology and Hydrogeology

Surface water features in the vicinity of the site comprise two unnamed inland rivers which are believed to contain water year-round: one flows north along a length of the western boundary of the whole site before altering course and flowing west, while the other flows northwards along the western boundary of the Phase 1 area. There is also a pond present in the north east of the site. The potential sensitivity of these receptors is deemed to be **high**.

The site lies on high ground, with land generally lower to the east and west. When combined with the varying permeabilities of the strata beneath the site, groundwater flow below the site will be complex, with potentially flows to both the east and west. Below the Phase 1 development area, flows are anticipated to be to the east and north east, reflecting the site topography.

Guidance from the Environment Agency indicates that the strata underlying the site range in aquifer designation from Principal Aquifer to Secondary B aquifer, as shown on Figure 2.2, below. Therefore, the groundwater vulnerability for the site is deemed as being high.

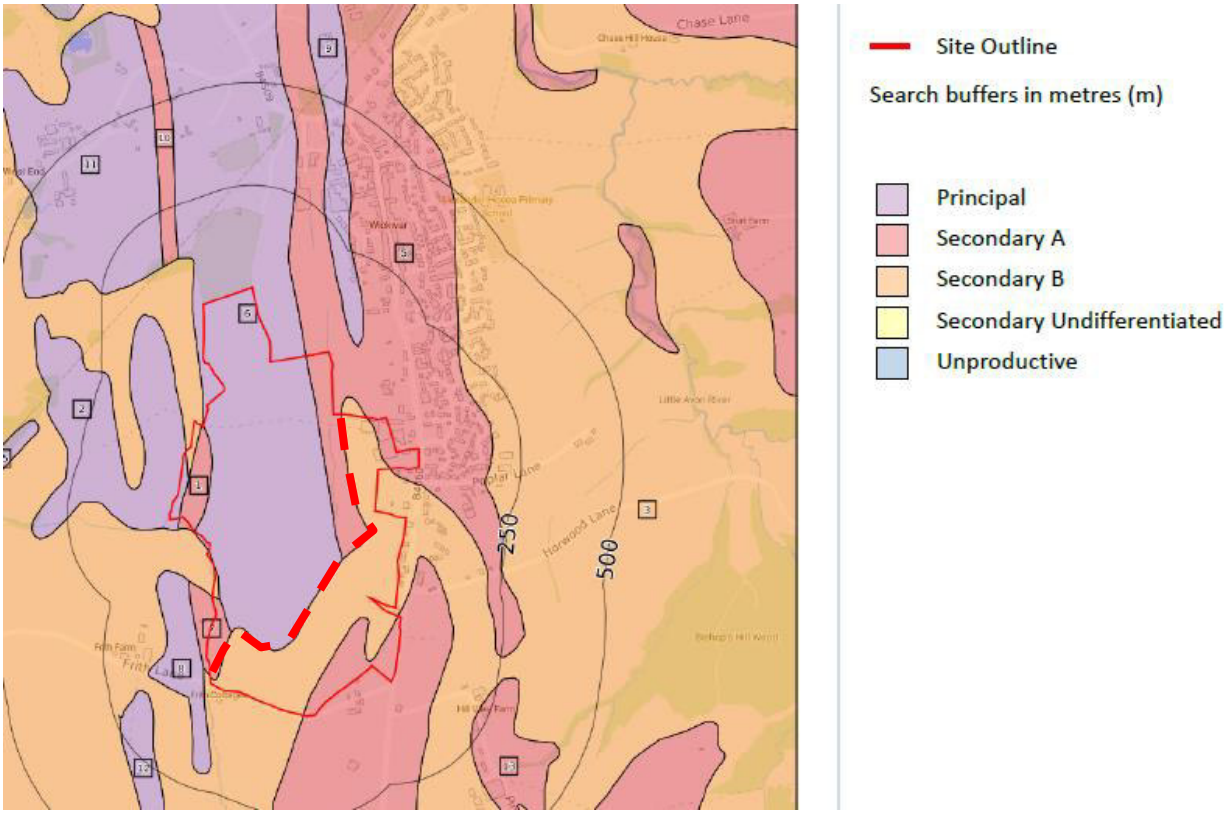


Figure 2.2 Aquifer Designations

There are effectively two groundwater bodies underlying the site, the divide indicated by the dashed line on Figure 2.2, above. The chemical quality of both groundwater bodies is deemed to be good by the Environment Agency.

There are no groundwater or surface water abstraction licenses within 2km of the site.

The site is not located within or near to a Source Protection Zone (SPZ).

The Groundsure report indicates that some of the geological units underlying the site possess high fracture permeability, however it is anticipated that a weathered horizon of clays will be present on site, precluding the use of soakaway drainage for the proposed development unless fractured bedrock is encountered at shallow depth.

2.4 Flood Risk

The western edge of the site lies within a Zone 2 Floodplain (River and Coastal). Accordingly, the "*Risk of Flooding from Rivers and the Sea (RoFRaS*)" is given as high in this localised area, the risk of flooding across the larger site area is very low.

The highest risk of surface water flooding on site is for a 1 in 30-year flood with flood levels of 0.3m to 1m.

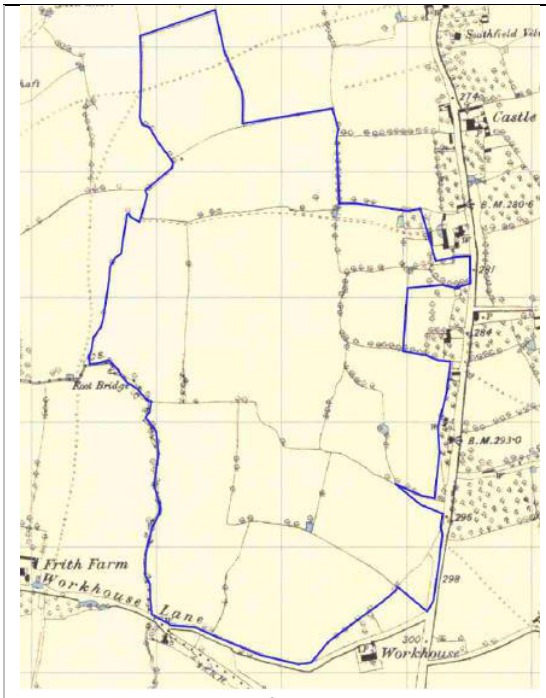
The site is not located within 50m of an area recorded to be susceptible to groundwater flooding.

The above do not represent all the possible sources of flood hazards that could affect the site and do not take into account other factors such as the effects of climate change. To fully identify the flood risk at the site it is recommended that a full Flood Risk Assessment (FRA) be carried out.

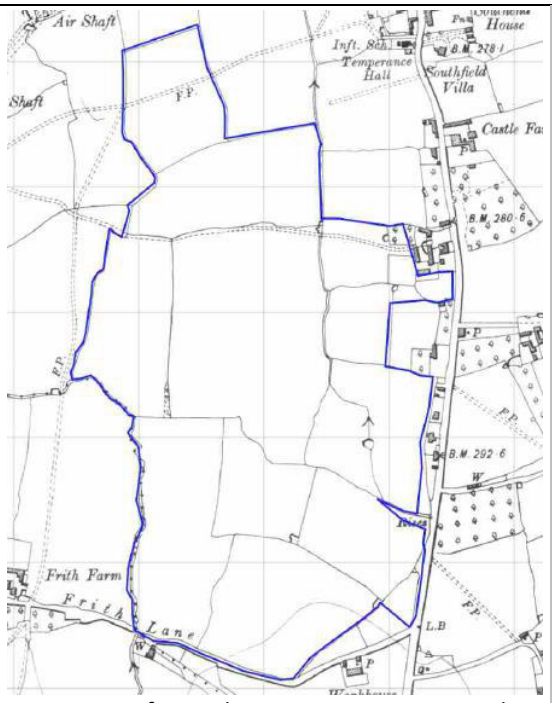
2.5 Site History

Historical maps of the site area have been obtained via Groundsure. Pertinent information determined from review of these maps, as well as other publicly available aerial imagery, is set out in Table 2.2, with the source maps given in Appendix B:

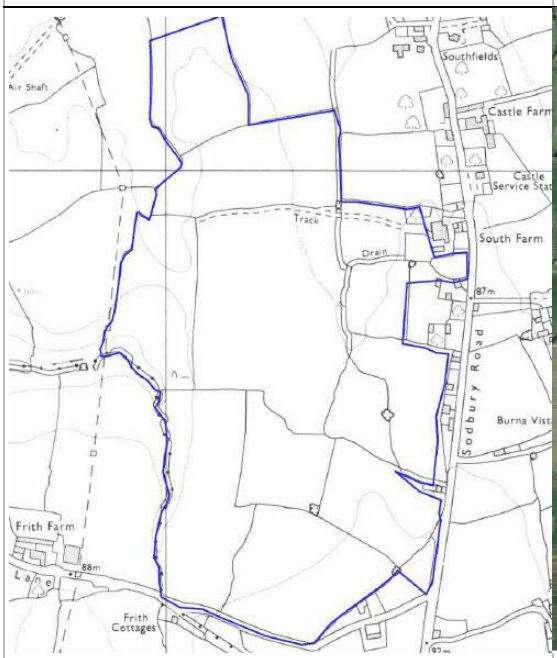
Table 2.3 Historical Mapping



1881-1886: Site is greenfield. Four ponds present in eastern half of site.



1923: No significant change on site, stream in the east of the site appears to issue in the south east and flow north.



1980: No significant change on site, stream in east now listed as drain.

2017 Aerial Photograph: No significant change on site. Ponds in the south east of the site no longer present.

2.6 Environmental Database

Environmental data reports were commissioned to provide an indication of the site history and surrounding land uses available on the public registers. The reports provide data from a number of service providers, including the British Geological Survey, Environment Agency and Natural England. The reports are included in Appendix C.

The location of data point references is provided relative to the site boundary and the search radius extends 1km from it.

The following table provides a summary of which data reference points are considered significant, together with an indication of the potential hazard type.

Table 2.4 Environment Data Review

Data Type	Distance from site	Potentially Significant Hazard
Discharge consents	296m NE 419m NE	Waste oil burner from Wilcox Garage Waste oil burner from Wickwar Garage
Pollution incidents to controlled waters	On site	Silage liquors to surface water, 2002
Groundwater vulnerability	On site	High risk
Extreme flooding from rivers or sea without defences.	On site	Localised high risk in west of site, mostly negligible risk.
Waste Exemptions	33m N	South Farm – Incorporation of ash into soil, burning waste in the open, spreading waste on agricultural land to confer benefit,
Shallow Mining Hazard	On site	Potential for sporadic vein mineral mining
Potential for collapsed ground stability hazards	On site	Very low risk
Potential for compressible ground stability hazards	On site	Negligible risk
Potential for ground dissolution stability hazards	On site	Localised moderate and high risk for solution features to be present
Potential for running sand ground stability hazards	On site	Negligible risk
Potential for shrinking or swelling ground stability hazards	On site	Potential for low to medium plasticity clays; low risk.
Radon Affected Areas	On site	Local variation across the site, ranging from no radon protection measures to full protection measures, shown in **Figure 2.4**, below.

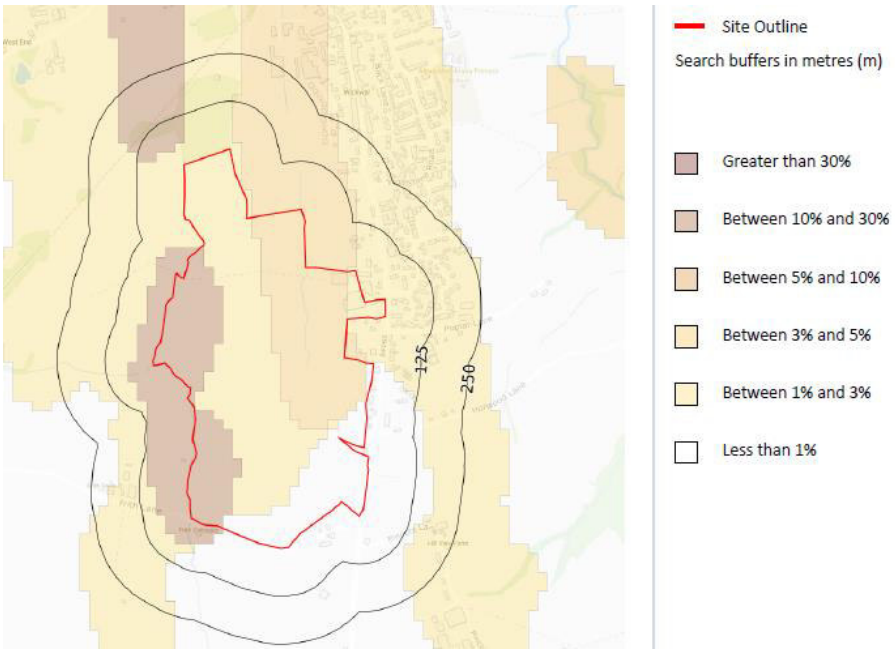


Figure 2.4 Radon Affected Areas

3 Preliminary Conceptual Model

The site characterisation attempts to identify potential sources of contamination, both historic and existing, and both on and off site. A conceptual model is formed, that identifies sources likely to cause harm, due to pathways existing by which contaminants can reach critical receptors. The conceptual model is therefore based on a number of identified source-pathway-receptor scenarios. For land to potentially pose risks, or be at risk, significant pollutant linkages will need to be identified which will include each source/pathway/receptor component of the conceptual model. The absence or removal of a source, or interception of a pathway, will 'break' the pollutant linkage.

The conceptual model is characterised by identification of the following:

- On-site sources, which may impact on-site receptors via plausible pathways.
- On-site sources, which may impact off-site receptors via plausible pathways.
- Off-site sources, which may impact on-site receptors via plausible pathways.

In the event of a change of land use, the planning regime and the National Planning Policy Framework (NPPF) require assessment of the new site development layout within the context of the sources of risk and the potential introduction of new exposure pathways. The assessment is also used to determine if the site contains such significant risks that it would class as "contaminated land" under the definition provided by the Part 2A of the Environment Act 1990 as defined in the Environment Protection Act 1995, i.e. significant possibility of significant harm (SPOSH). Once developed, land should not be capable of being classed as "contaminated land" under Part 2A.

The method used for risk evaluation is qualitative based on interpretation of the available Geoenvironmental data in order to provide an overall impression of the potential risks present at the site. This is described in terms of two variables as follows:

- **"Probability"** – being the likelihood that a hazard is present on site or in the surroundings.
- **"Consequence"** – being the potential outcome of the hazard.

The combination of these is used to define the risk. Clearly if a hazard is not present there can be no consequence. Similarly hazards that are potentially present will have different degrees of potential consequence. The combination of the presence of a hazard, and the potential severity of outcome of such a hazard within any event, can be used to manage the approach to management of the risk.

The probability (likelihood) of an event can be classified on a four point system using the following terms and definitions based on CIRIA C552:

- **Highly likely**: The event appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution;
- **Likely**: It is probable that an event will occur, or circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term;

- **Low likelihood**: Circumstances are possible under which an event could occur, but it is not certain even in the long term that an event would occur and it is less likely in the short term;
- **Unlikely**: Circumstances are such that it is improbably the event would occur even in the long term.

A fifth category has been added to the CIRIA guidance, representing conditions where no contaminant, or linkage is present, thereby negating any risk.

The consequence (severity) can be classified using a similar system, also based on CIRIA C552. The terms and definitions relating to consequence are:

- **Severe**: Short term (acute) risk to human health likely to result in 'significant harm'. Short-term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. Short term risk to an ecosystem or organism forming part of that ecosystem;
- **Medium**: Chronic damage to human health ('significant harm'), pollution of sensitive water resources, significant change in an ecosystem or organism forming part of that ecosystem#;
- **Mild**: Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services. Damage to sensitive buildings, structures or the environment; and
- **Minor**: Harm, not necessarily significant, but that could result in financial loss or expenditure to resolve. Non-permanent human health effects easily prevented by use of personal protective clothing. Easily repairable damage to buildings, structures and services.

The term 'significant harm' is as defined in Defra Circular on "Contaminated Land', EPA 1990 Part 2a", 01/2006, September 2006.

Once the probability of an event occurring and its consequence have been classified, a risk category can be assigned as Table 3.1.

Table 3.1 Risk Classification System (after CIRIA 552)

Risk probability x consequence		**Consequence**			
		Severe	**Medium**	**Mild**	**Minor**
Probability	**High Likelihood**	Very high risk	High risk	Moderate risk	Low risk
	Likely	High risk	Moderate risk	Low risk	Very low risk
	Low Likelihood	Moderate risk	Low risk	Low risk	Very low risk
	Unlikely	Low risk	Very low risk	Very low risk	Very low risk
	No Linkage	No risk			

Table 3.2 provides a Preliminary Conceptual Model showing the hazard (source), pathway and receptor, then probability and consequence and corresponding degree of risk.

Table 3.2 Source – Pathway – Receptor Model

Source(s)	Possible Pathway(s)	Receptor(s)	Probability	Conse-quence	Risk Level	Comments
Unrecorded Made Ground on-site containing hazardous materials derived from former land use, fly tipping or backfilled ponds.	Ingestion, inhalation or direct dermal contact	End users/Site preparation workers	Likely	Medium	Moderate	Ground investigation recommended to include soil sampling to allow potential sources to be quantified and risk to be assessed, also to enable the geochemical nature of these materials to be established. Particular attention to be kept for possible ash mixed into soil given waste handling on adjacent land.
Naturally occurring contaminants within shallow weathered soils e.g lead or arsenic	Ingestion, inhalation or direct dermal contact	End users/Site preparation workers	Unlikely	Medium	Low	
Potential for elevated PAHs in shallow soils as a result of incorporation of ash into soil.	Ingestion, inhalation or direct dermal contact	End users/Site preparation workers	Unlikely	Medium	Low	
Radon	Inhalation of outdoor air/migration into structures	End users	Low likelihood	Severe	Moderate	Basic and full radon protection measures required in localised areas of site.

The tables indicate that the site and environs are considered to vary between low to moderate risk with respect to contamination.

In summary the potentially significant sources of risk are:

Table 3.3 Potential Risks and Contaminants of Concern

Source of Risk	Contaminants of Concern
Sporadic Made Ground across the entire site	Heavy metals, TPH, PAHs, asbestos
Naturally occurring contaminants in shallow soils	Heavy metals

4 Summary

The below geotechnical and contamination considerations are considered relevant to the proposed development at the site.

4.1 Geotechnical Considerations

- The underlying natural soils should be suitable for conventional strip or pad foundations. An intrusive site investigation should be completed to confirm the soil profile across the site.
- Shallow rockhead may require breaking out in some services trenches.
- Shallow groundwater may be encountered may result in the requirement for the dewatering of excavations.
- Soakaway drainage may be feasible within fractured bedrock if encountered at shallow depths. If considered, soakaway testing should be completed in line with BRE Digest DG365: *Soakaway Design*.
- Semi-mature to mature trees appear to be present on-site, giving the potential for localised soil desiccation. Natural moisture content and soil plasticity profiles should be defined at critical locations.

The general geotechnical risk is considered to be **low**. Intrusive investigations are due to be undertaken at the site, which will allow soil sampling and testing to fully assess the geotechnical risk and ground conditions at the site.

4.2 Contamination Considerations

- There is a risk of the presence of sporadic Made Ground to be present across the site containing heavy metals, petroleum hydrocarbons and asbestos, particularly in areas of potentially backfilled ponds and where improvements to farm access tracks has historically occurred.
- Naturally occurring contaminants within shallow weathered soils e.g lead or arsenic.
- Potential for elevated PAHs in shallow soils as a result of incorporation of ash into soil.
- There is potential for near-surface topsoil and/or subsoil to contain residual concentrations of pesticides and herbicides.

The general risk of significant contamination is considered to be **low**. The potential impact to the local environment should be assessed by appropriate analysis of the soils and groundwater together with a risk assessment based on the site-specific criteria.

4.3 Recommendation for Further Investigation

Based on the desk study completed to date the following broad scope of investigation is recommended.

- Trial pitting, with soakaway testing.
- In situ CBR testing.
- Geotechnical laboratory testing to includes pH and water-soluble sulphate, Atterberg limits, gradings and natural moisture content as appropriate to the soil type.
- Contaminated land testing to include a general indicator suite, speciated Total Petroleum and Polyaromatic Hydrocarbons.
- WAC tests should be performed to inform off-site waste classification.
- Localised soils to be tested for pesticides and herbicides.

Appendices

A. Site Location Plan
B. Historic Maps
C. Groundsure Reports

Appendix A – Site Location Plan

KEY

- Phase 1 Application boundary
- Wider Application boundary
- Title Plan: ST7287SW

Recreation Ground
Tunnel
Air Shaft
Pond
Pond
Pond
Pond
Pond
Pond
FB
Path (um)
Track
Track
Frith Cottages
FRITH LANE
Tank
El Sub Sta
Club
Tel Ex
Rectory
THE BUTHAY
PO
TCB
84.6m
Southend House
Southend Gardens
INGLESTONE ROAD
BURLEIGH WAY
SODBURY ROAD
Castle Barn
The Mews
83.8m
Castle House
Windmill Farm
Track
B 4060
Garage
85.3m
Cedar Barn
Grey Barns
AMBERLEY WAY
El Sub Sta
South Farm
86.5m
Pond
PENNINGTON ROAD
ISAAC CLOSE
Croft Co
Foxcroft House
Tollgate Cottage
The Yard
ESS
89.7m
Rose Cottage
87.8m
88.2m
86.0m
91.3m
GP
Track
Fernleigh
Track

0 metres 60
(1:1,500)

emapsite™

Turley

CLIENT
Bloor Limited

PROJECT
Land at Wickwar

DRAWING
Redline Plan - Phase 1

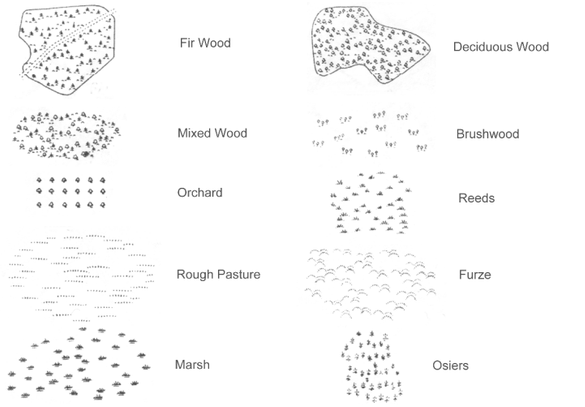
PROJECT NUMBER
BLOA3039

DRAWING NUMBER	CHECKED BY
1001	JB
REVISION	STATUS
–	DRAFT
DATE	SCALE
March 2020	1:1500 @ A1

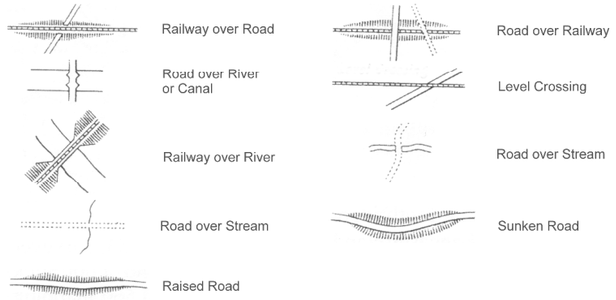
Appendix B – Historic Maps

County Series 1:10,560 scale

VEGETATION

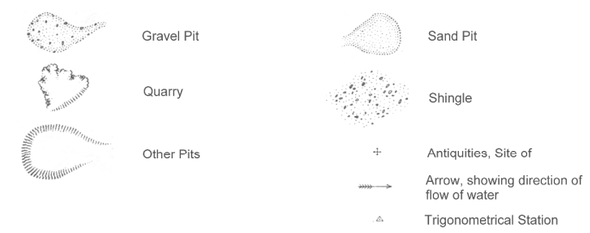


ROADS



RAILWAYS

GENERAL FEATURES



BOUNDARIES

National Grid 1:10,000 scale

HEIGHTS (METRES)

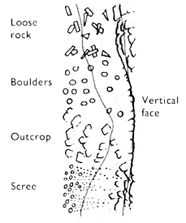
Values are given in metres above mean sea level at Newlyn.

Surface heights determined by: ground survey • 163m; air survey • 163

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

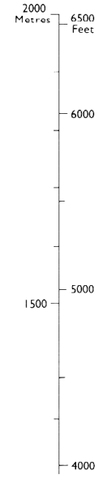
Contours are at 5 metres vertical interval.

ROCK FEATURES



CONVERSION SCALE

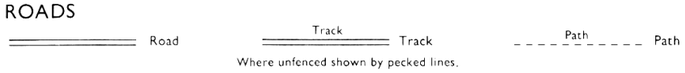
Metres - Feet



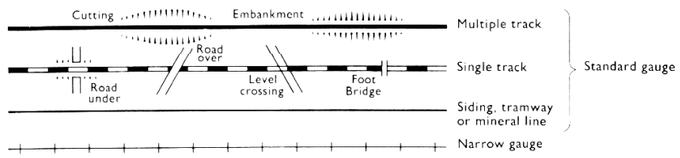
ABBREVIATIONS

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

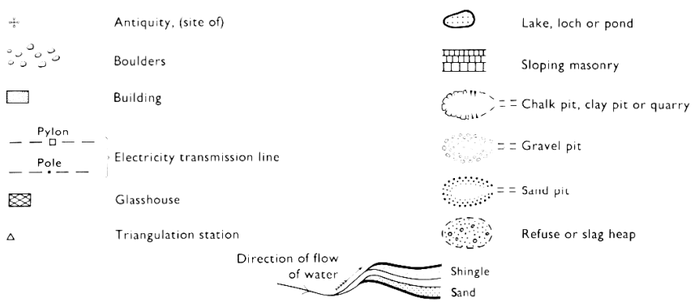
ROADS



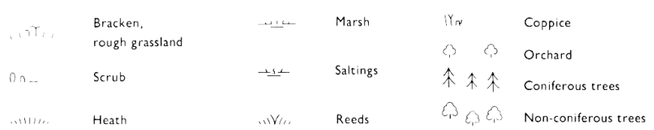
RAILWAYS



GENERAL FEATURES



VEGETATION



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

GroundSure

Historical Map Pack Legend

County Series & National Grid

1:10,560 scale

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

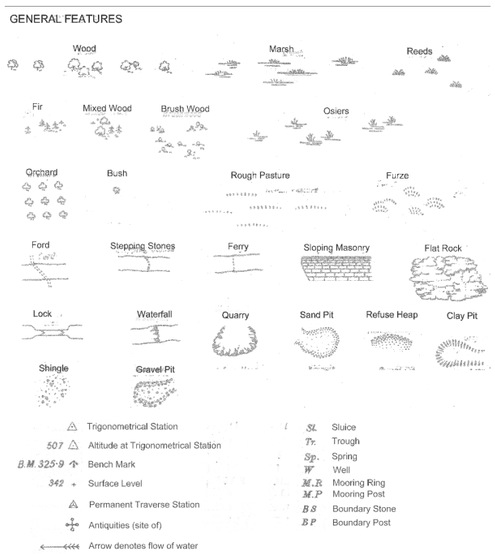
If you have a query regarding any of the maps provided please contact GroundSure's technical helpline. We will endeavour to answer any queries you may have.

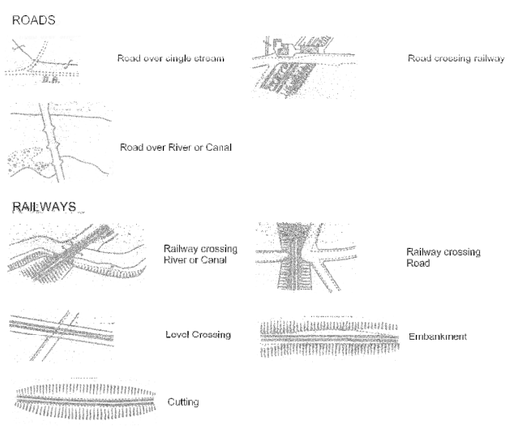
Technical Helpline

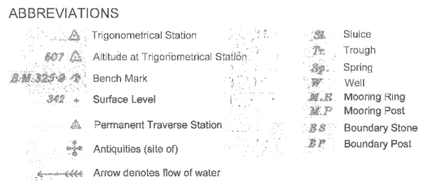
Tel 08444159000

groundsureinsight@groundsure.com
www.groundsure.com

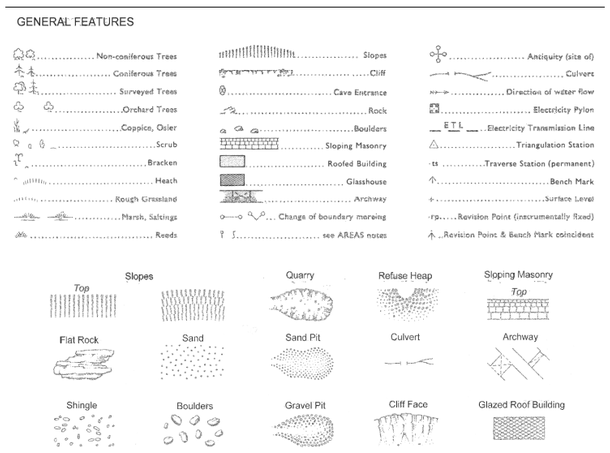
County Series 1:2,500 scale

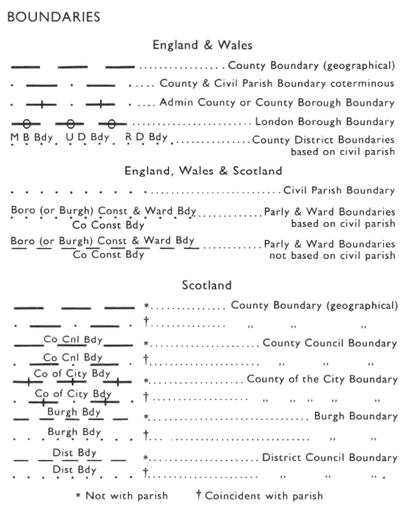


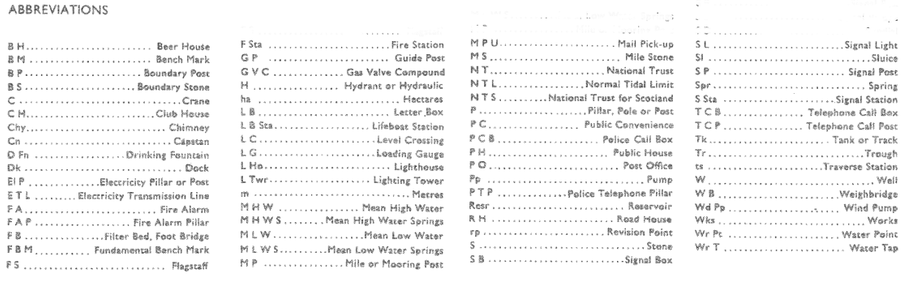




National Grid 1:2,500 / 1:1,250 scale







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Historical Map Pack Legend

County Series

1:1,250 scale

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County Series & National Grid

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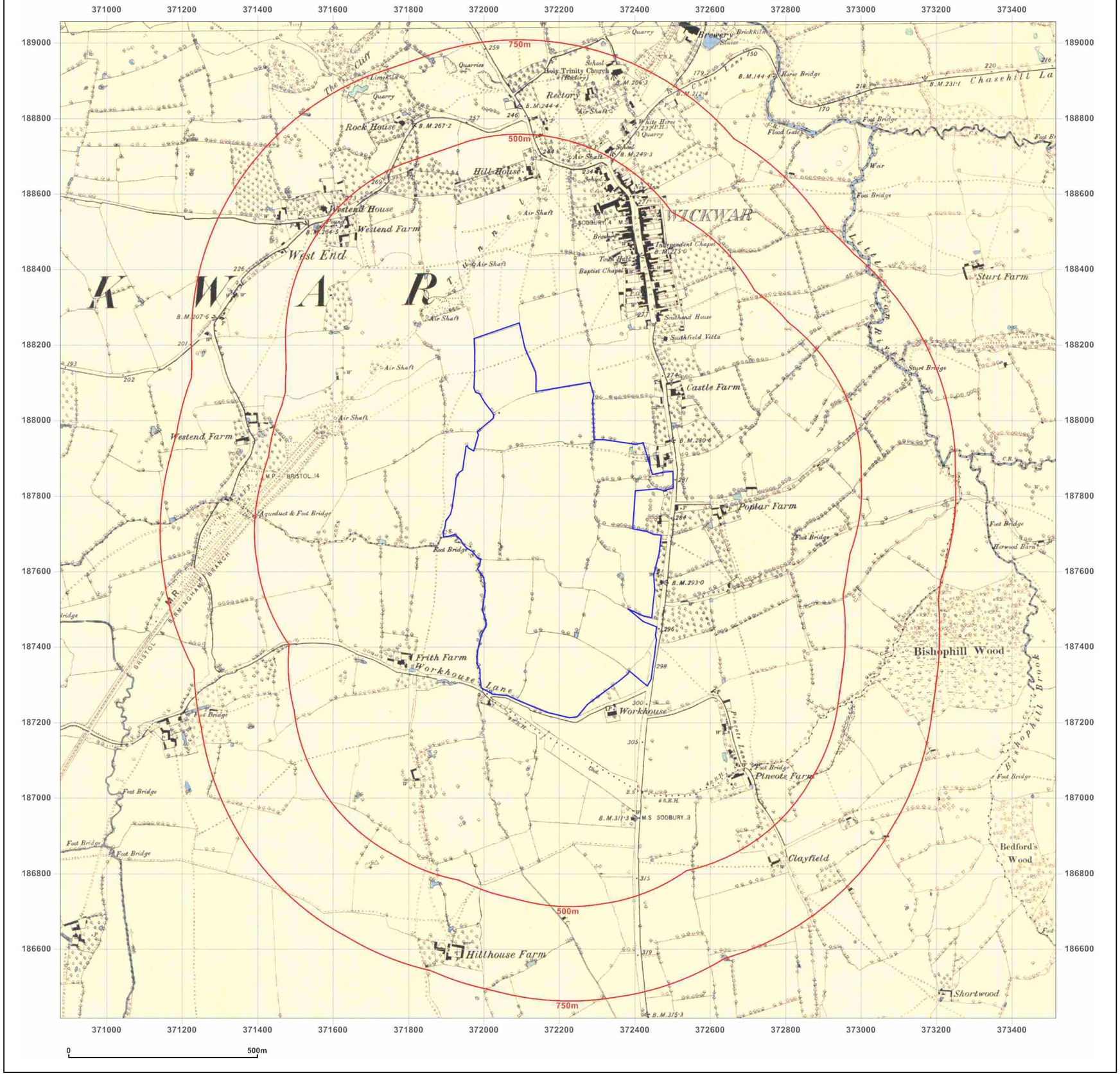

clarkebond

Site Details:

Wickwar

Client Ref: EMS_602221_805426
Report Ref: EMS-CB-602221_805426
Grid Ref: 372196, 187736

Map Name: County Series

Map date: **1881-1886**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1881
Revised N/A
Edition N/A
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Revised 1881
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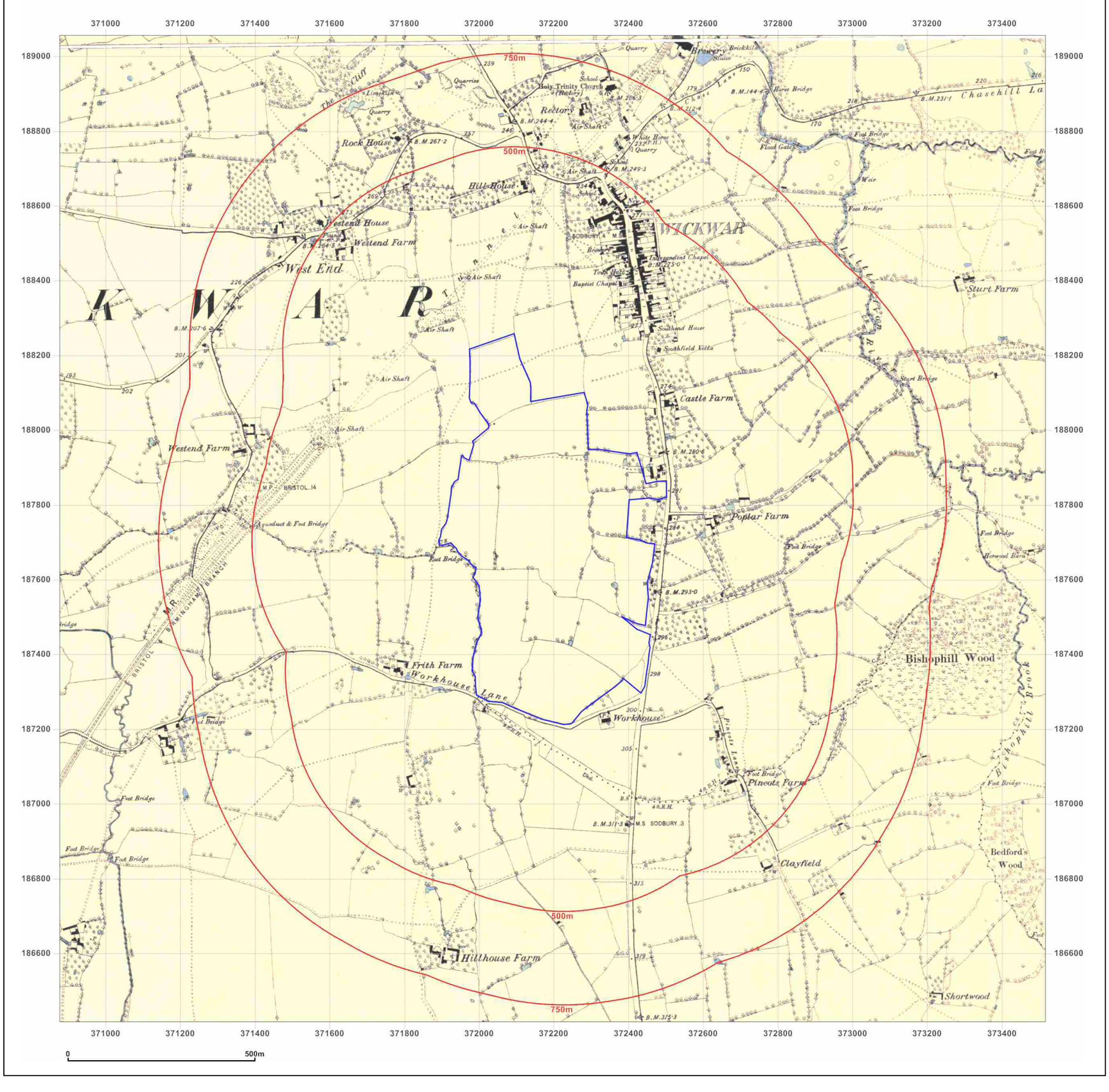

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Site Details:

Wickwar

Client Ref: EMS_602221_805426
Report Ref: EMS-CB-602221_805426
Grid Ref: 372196, 187736

Map Name: County Series

Map date: **1881-1886**

Scale: 1:10,560

Printed at: 1:10,560

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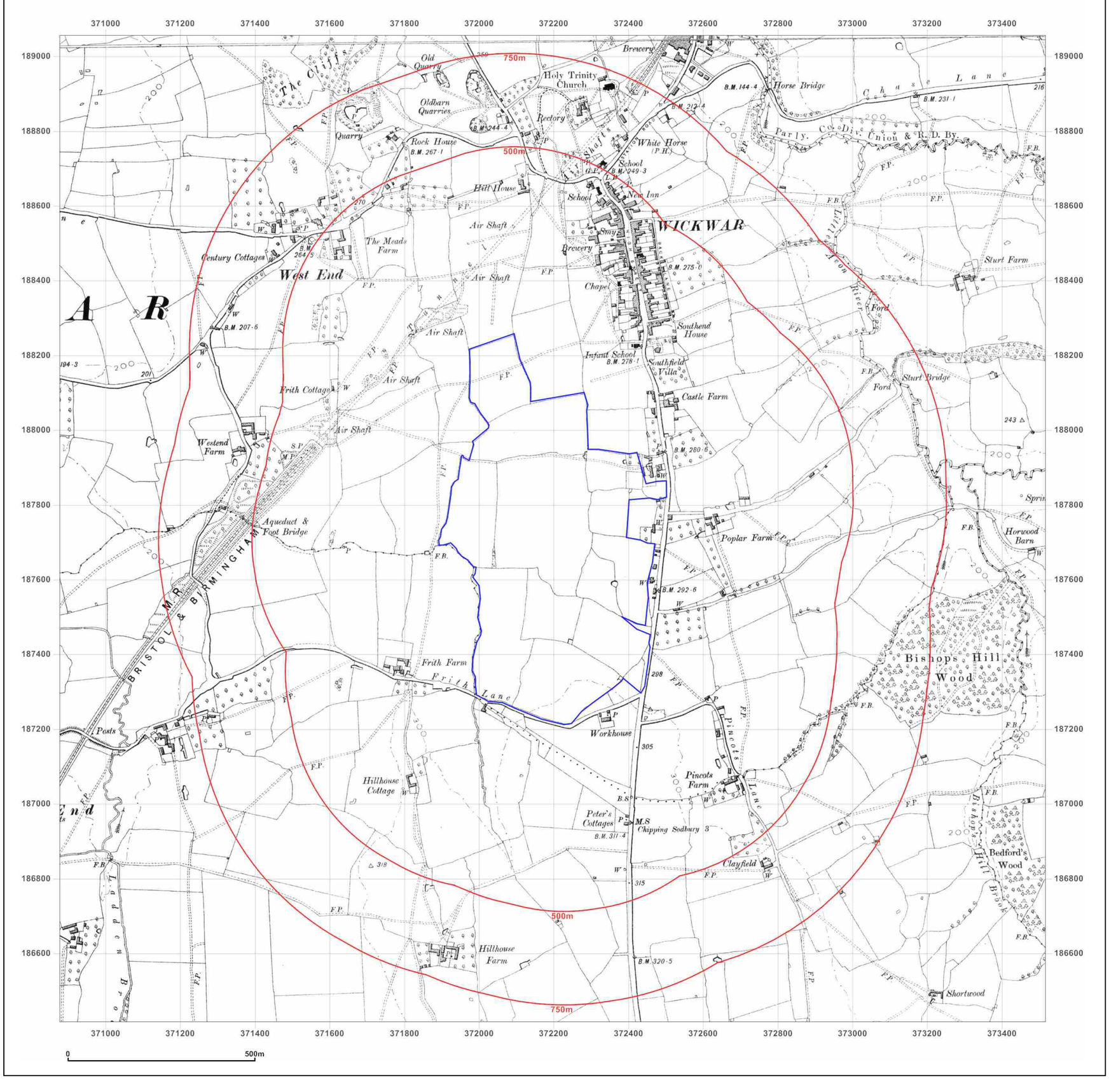

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Site Details:

Wickwar

Client Ref: EMS_602221_805426
Report Ref: EMS-CB-602221_805426
Grid Ref: 372196, 187736

Map Name: County Series

Map date: **1900-1901**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1881
Revised 1901
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
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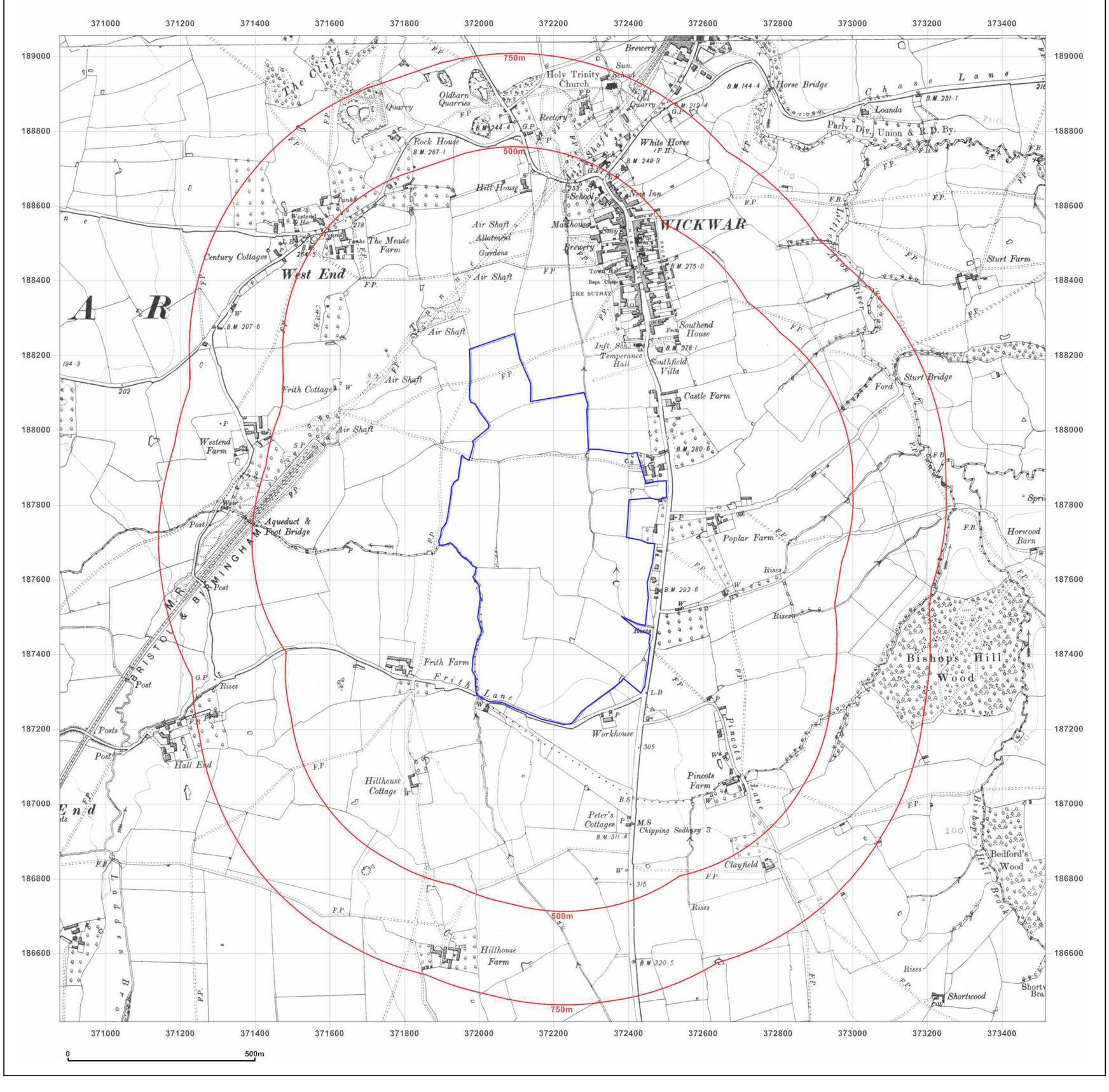

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Site Details:

Wickwar

Client Ref: EMS_602221_805426
Report Ref: EMS-CB-602221_805426
Grid Ref: 372196, 187736

Map Name: County Series

Map date: **1923**

Scale: 1:10,560

Printed at: 1:10,560

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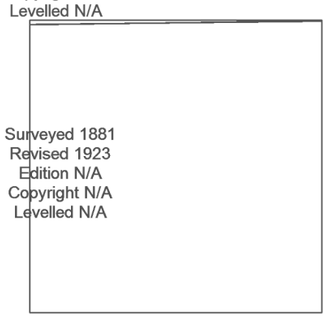
Surveyed 1881
Revised 1923
Edition N/A
Copyright N/A
Levelled N/A



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Revised 1923
Edition N/A
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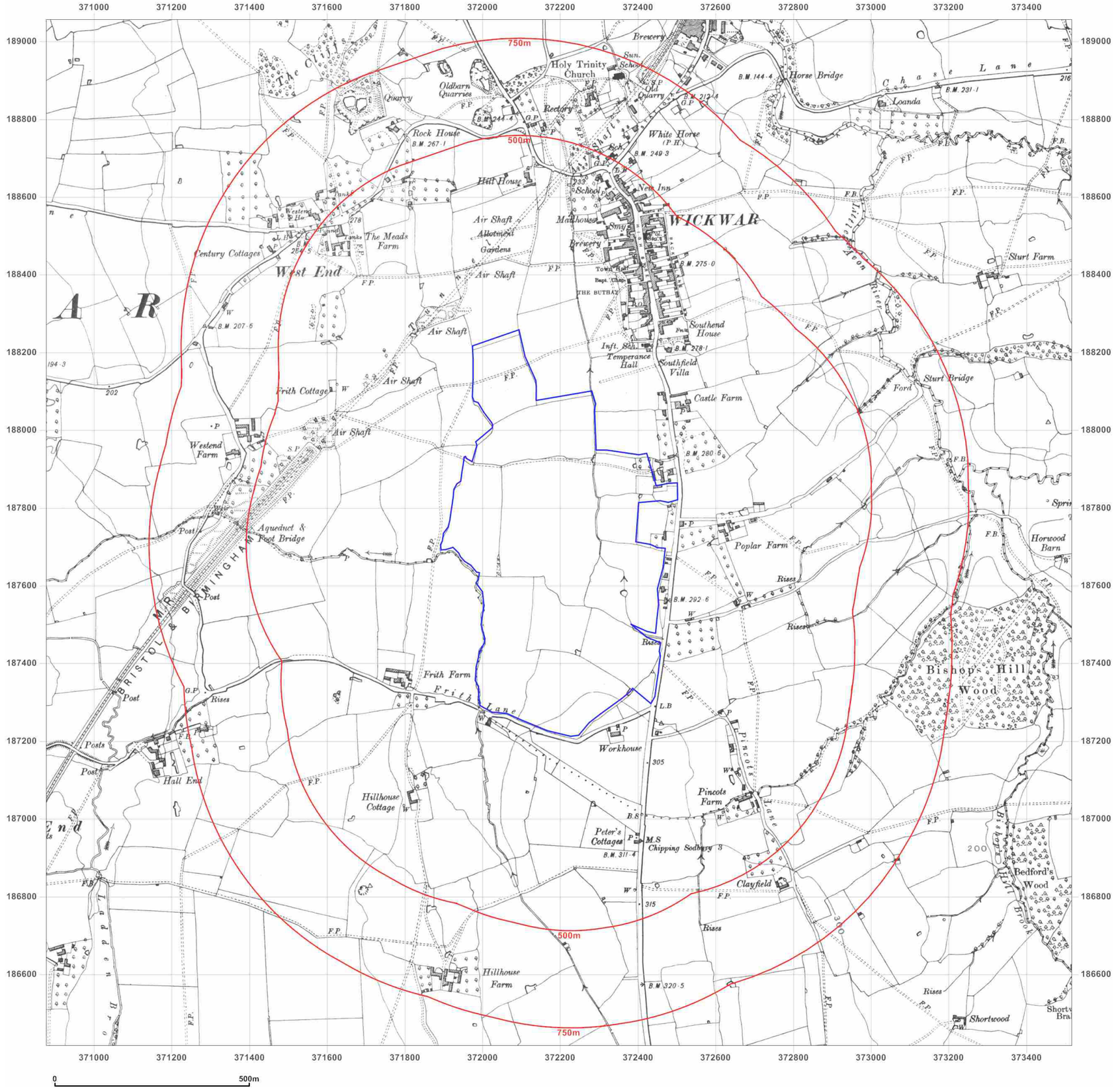

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Site Details:

Wickwar

Client Ref: EMS_602221_805426
Report Ref: EMS-CB-602221_805426
Grid Ref: 372196, 187736

Map Name: County Series

Map date: **1923**

Scale: 1:10,560

Printed at: 1:10,560

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Revised 1923
Edition N/A
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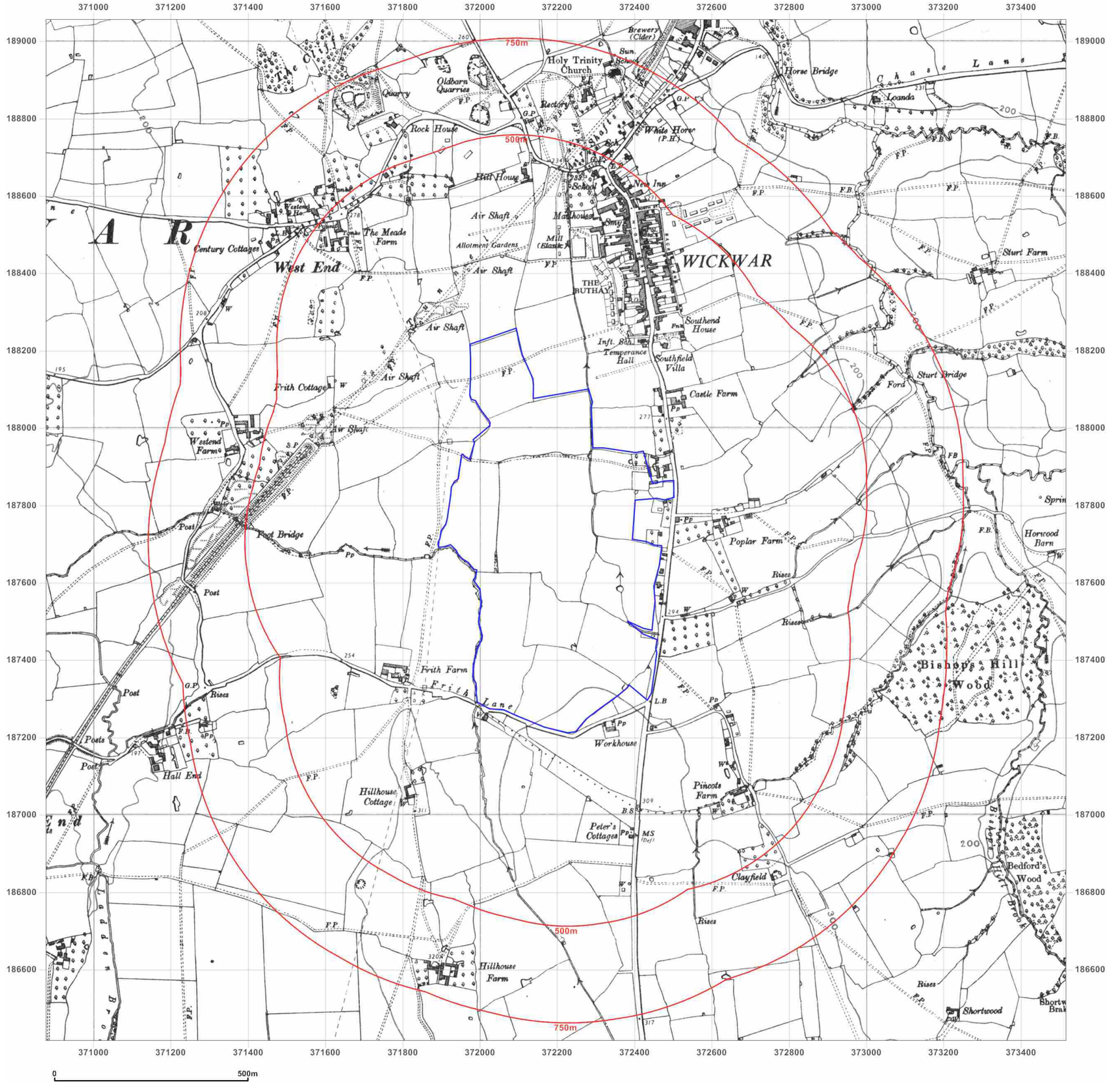

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Site Details:

Wickwar

Client Ref: EMS_602221_805426
Report Ref: EMS-CB-602221_805426
Grid Ref: 372196, 187736

Map Name: Provisional
Map date: **1949**
Scale: 1:10,560
Printed at: 1:10,560

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Surveyed 1949
Revised 1949
Edition N/A
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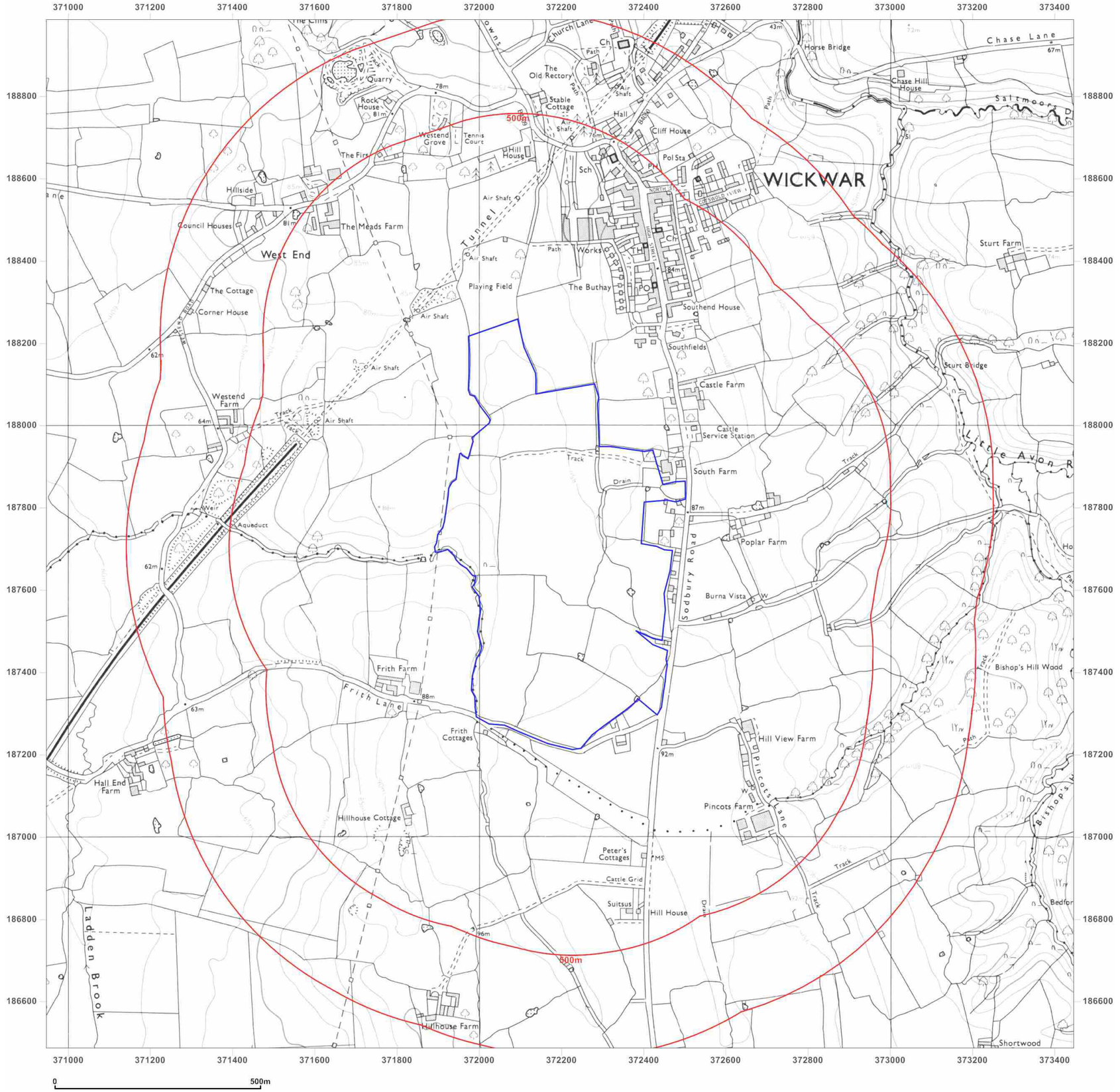

clarkebond

Site Details:

Wickwar

Client Ref: EMS_602221_805426
Report Ref: EMS-CB-602221_805426
Grid Ref: 372196, 187736

Map Name: National Grid

Map date: **1980**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1977
Revised 1980
Edition N/A
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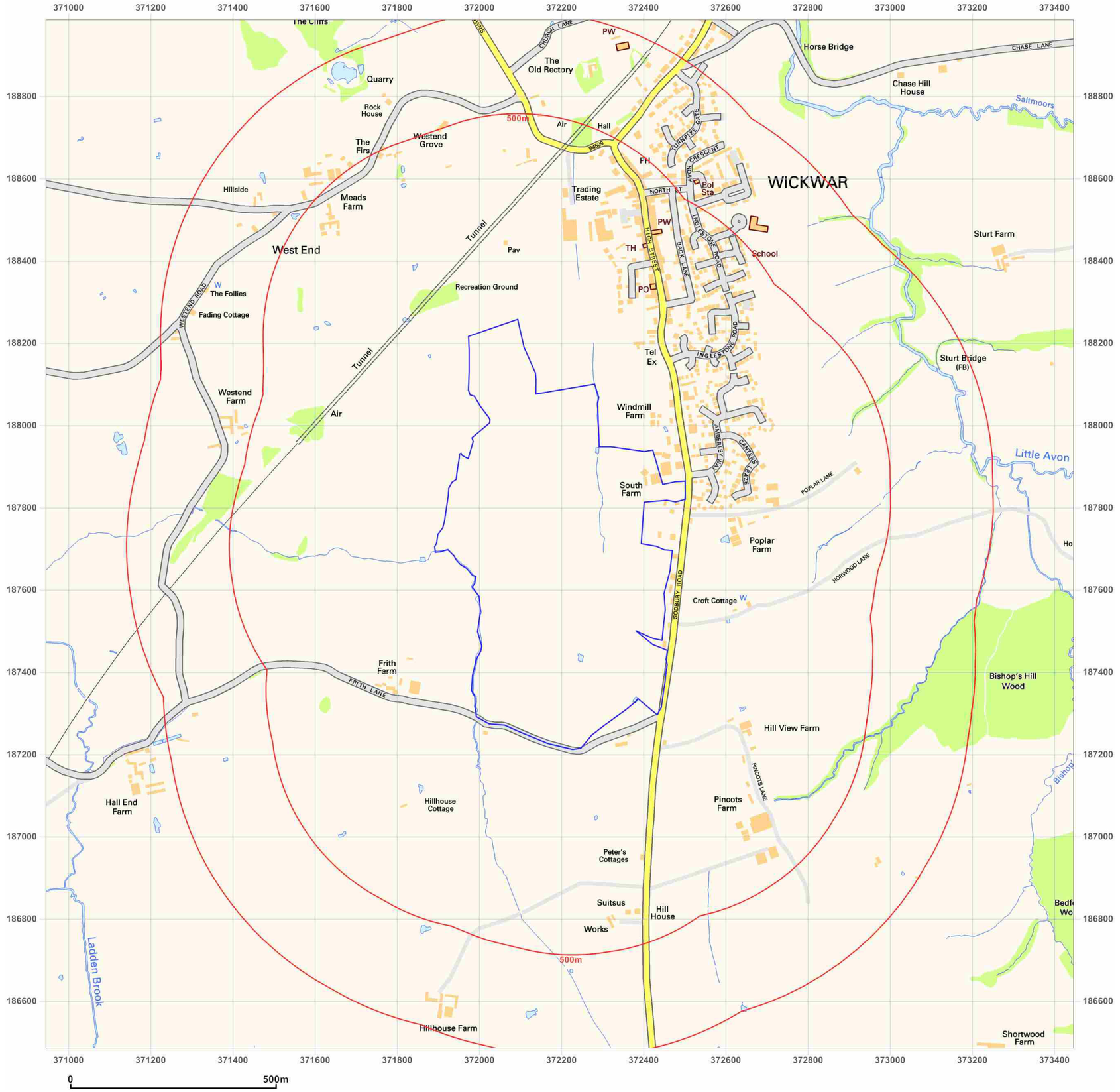

clarkebond

Site Details:

Wickwar

Client Ref: EMS_602221_805426
Report Ref: EMS-CB-602221_805426
Grid Ref: 372196, 187736

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

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2001

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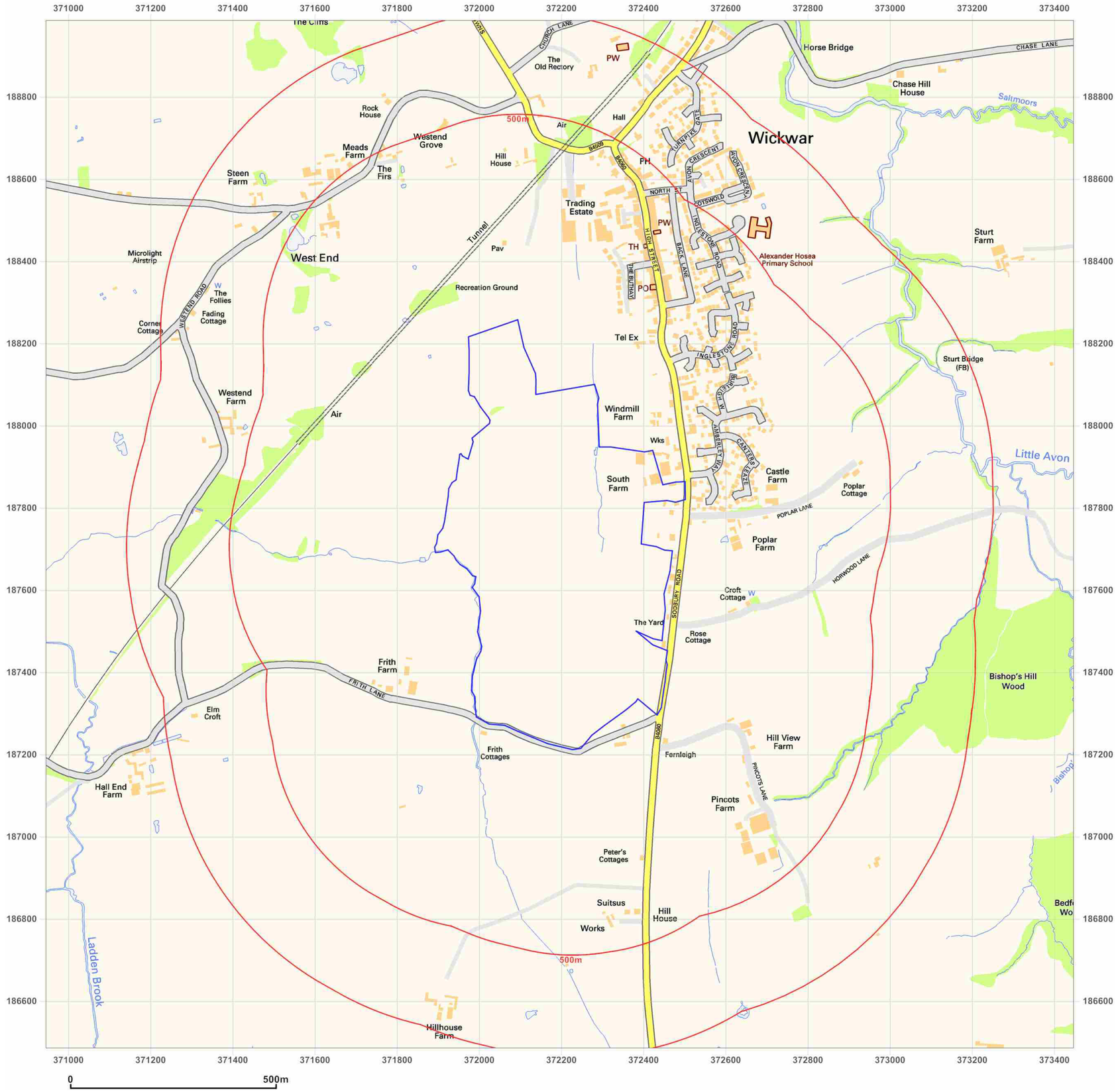

clarkebond

Site Details:

Wickwar

Client Ref: EMS_602221_805426
Report Ref: EMS-CB-602221_805426
Grid Ref: 372196, 187736

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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2010

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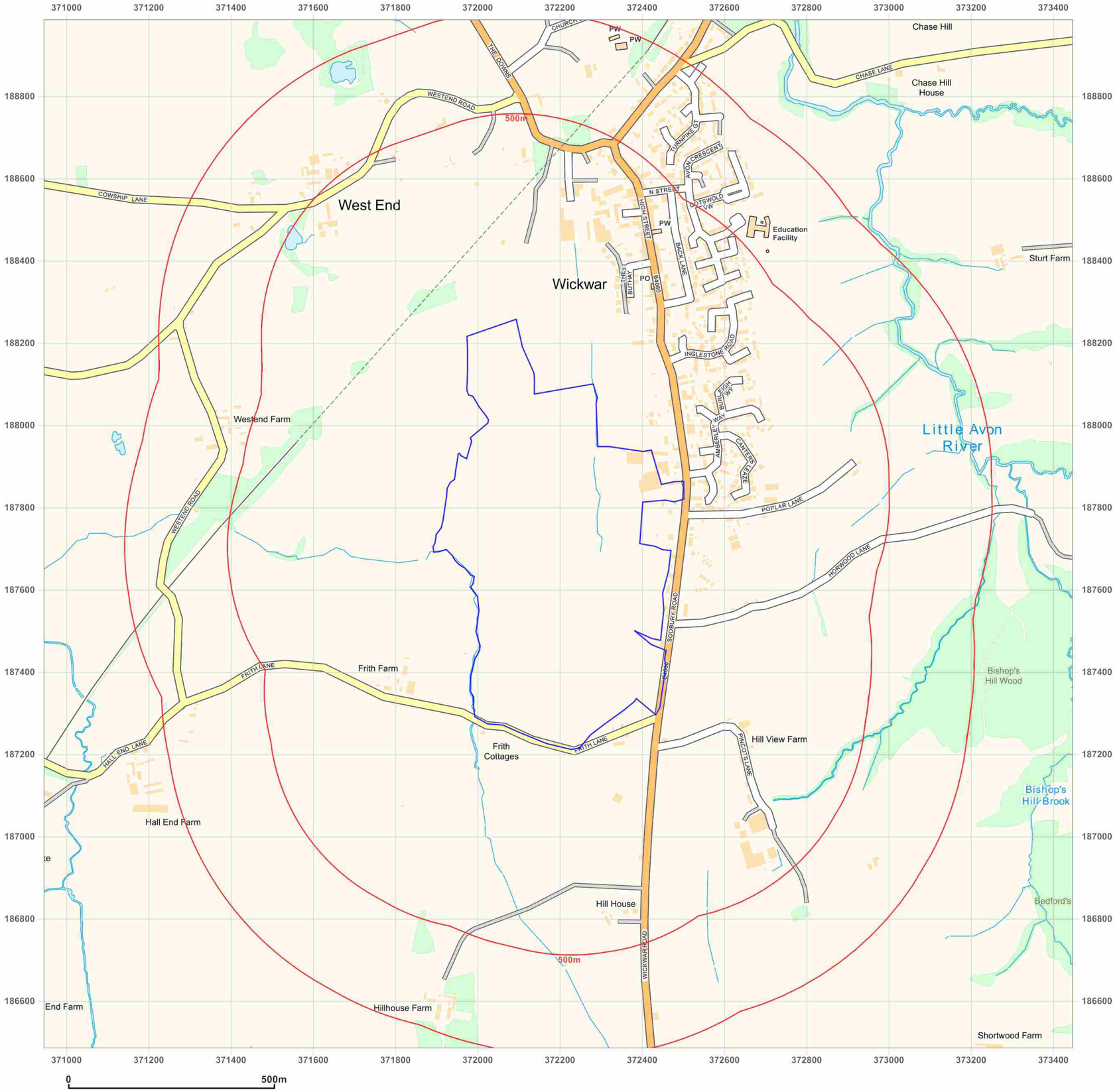

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Site Details:

Wickwar

Client Ref: EMS_602221_805426
Report Ref: EMS-CB-602221_805426
Grid Ref: 372196, 187736

Map Name: National Grid

Map date: **2020**

Scale: 1:10,000

Printed at: 1:10,000

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2020

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Appendix C – Groundsure Report

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

Wickwar,

Order Details

Date: 24/03/2020

Your ref: EMS_602221_805427

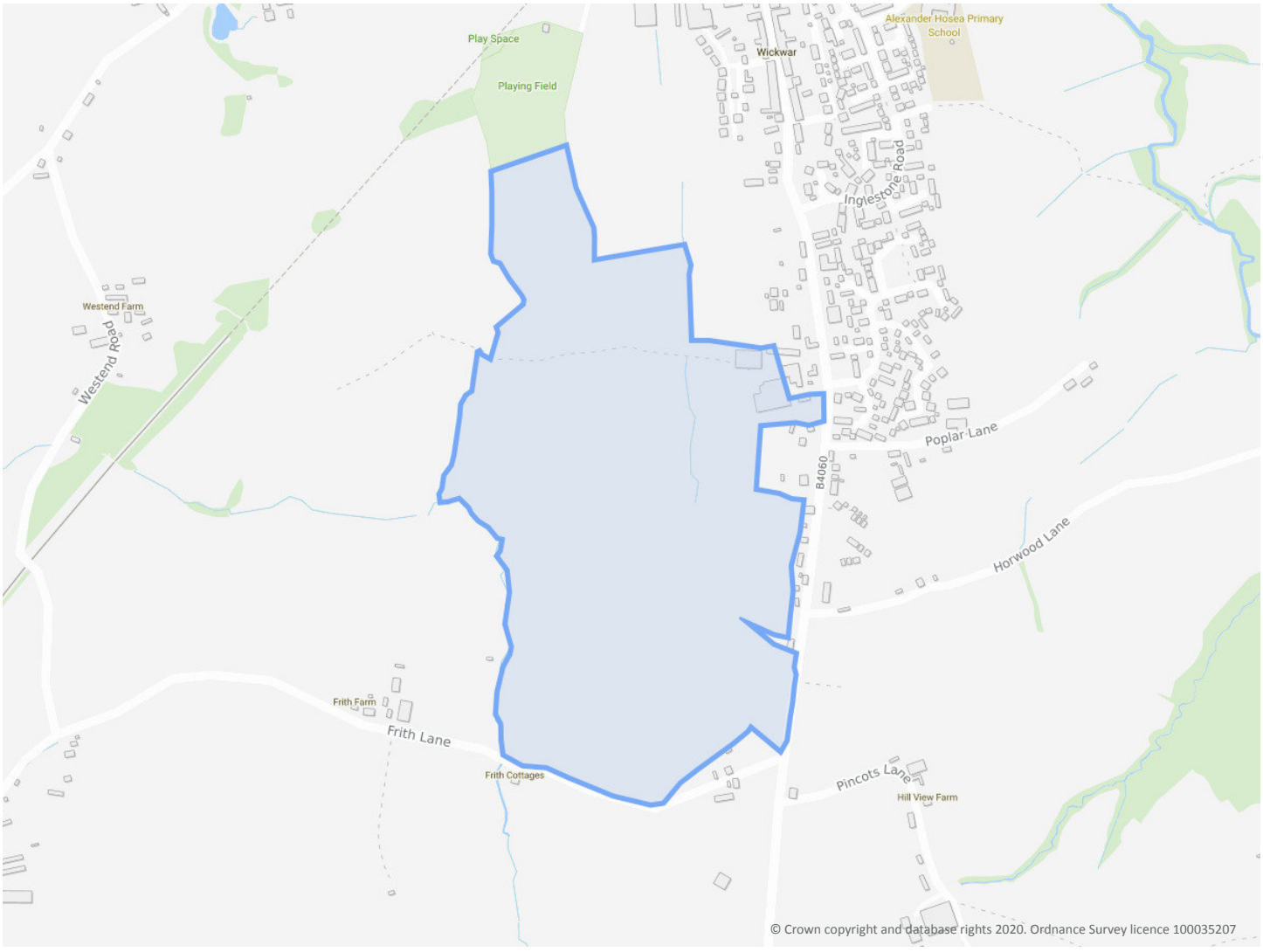
Our Ref: EMS-CB-602221_805427

Client: Clarkebond (UK) Limited

Site Details

Location: 372185 187686

Area: 38.82 ha



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

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
13	1.1	Historical industrial land uses	0	6	15	47	-
16	1.2	Historical tanks	1	0	0	2	-
17	1.3	Historical energy features	0	0	2	2	-
17	1.4	Historical petrol stations	0	0	0	0	-
17	1.5	Historical garages	0	0	3	3	-
18	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
19	2.1	Historical industrial land uses	0	6	19	57	-
23	2.2	Historical tanks	1	0	0	5	-
23	2.3	Historical energy features	0	0	4	12	-
24	2.4	Historical petrol stations	0	0	0	0	-
24	2.5	Historical garages	0	0	5	8	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
26	3.1	Active or recent landfill	0	0	0	0	-
26	3.2	Historical landfill (BGS records)	0	0	0	0	-
27	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
27	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
27	3.5	Historical waste sites	0	0	0	0	-
27	3.6	Licensed waste sites	0	0	0	0	-
27	3.7	Waste exemptions	0	8	30	9	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
33	4.1	Recent industrial land uses	0	3	4	-	-
34	4.2	Current or recent petrol stations	0	0	1	0	-
34	4.3	Electricity cables	0	0	0	0	-
34	4.4	Gas pipelines	0	0	0	0	-
35	4.5	Sites determined as Contaminated Land	0	0	0	0	-

35	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
35	4.7	Regulated explosive sites	0	0	0	0	-
35	4.8	Hazardous substance storage/usage	0	0	0	0	-
35	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
36	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
36	**4.11**	**Licensed pollutant release (Part A(2)/B)**	0	0	0	2	-
36	4.12	Radioactive Substance Authorisations	0	0	0	0	-
36	**4.13**	**Licensed Discharges to controlled waters**	0	0	0	2	-
37	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
37	4.15	Pollutant release to public sewer	0	0	0	0	-
37	4.16	List 1 Dangerous Substances	0	0	0	0	-
38	4.17	List 2 Dangerous Substances	0	0	0	0	-
38	**4.18**	**Pollution Incidents (EA/NRW)**	1	0	0	0	-
38	4.19	Pollution inventory substances	0	0	0	0	-
38	4.20	Pollution inventory waste transfers	0	0	0	0	-
39	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
40	5.1	Superficial aquifer	None (within 500m)				
41	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
44	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
47	**5.4**	**Groundwater vulnerability- soluble rock risk**	Identified (within 0m)				
48	5.5	Groundwater vulnerability- local information	None (within 0m)				
49	5.6	Groundwater abstractions	0	0	0	0	0
49	5.7	Surface water abstractions	0	0	0	0	0
49	5.8	Potable abstractions	0	0	0	0	0
49	5.9	Source Protection Zones	0	0	0	0	-
50	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
51	**6.1**	**Water Network (OS MasterMap)**	6	5	5	-	-

53	6.2	Surface water features	1	2	3	-	-
53	6.3	WFD Surface water body catchments	3	-	-	-	-
54	6.4	WFD Surface water bodies	0	0	0	-	-
54	6.5	WFD Groundwater bodies	6	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
56	7.1	Risk of Flooding from Rivers and Sea (RoFRaS)	High (within 50m)				
57	7.2	Historical Flood Events	0	0	0	-	-
57	7.3	Flood Defences	0	0	0	-	-
57	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
57	7.5	Flood Storage Areas	0	0	0	-	-
58	7.6	Flood Zone 2	Identified (within 50m)				
59	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
60	8.1	Surface water flooding	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding					
62	9.1	Groundwater flooding	Negligible (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
63	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	2
64	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
64	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
64	10.4	Special Protection Areas (SPA)	0	0	0	0	0
64	10.5	National Nature Reserves (NNR)	0	0	0	0	0
65	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
65	10.7	Designated Ancient Woodland	0	0	0	0	12
66	10.8	Biosphere Reserves	0	0	0	0	0
66	10.9	Forest Parks	0	0	0	0	0
66	10.10	Marine Conservation Zones	0	0	0	0	0
66	10.11	Green Belt	0	0	0	0	0
66	10.12	Proposed Ramsar sites	0	0	0	0	0

67	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
67	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
67	10.15	Nitrate Sensitive Areas	0	0	0	0	0
67	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
68	**10.17**	**SSSI Impact Risk Zones**	2	-	-	-	-
69	**10.18**	**SSSI Units**	0	0	0	0	11
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
74	11.1	World Heritage Sites	0	0	0	-	-
75	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
75	11.3	National Parks	0	0	0	-	-
75	**11.4**	**Listed Buildings**	0	1	4	-	-
76	**11.5**	**Conservation Areas**	1	0	0	-	-
76	11.6	Scheduled Ancient Monuments	0	0	0	-	-
76	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
77	**12.1**	**Agricultural Land Classification**	Grade 3 (within 250m)				
78	12.2	Open Access Land	0	0	0	-	-
78	12.3	Tree Felling Licences	0	0	0	-	-
79	**12.4**	**Environmental Stewardship Schemes**	1	1	1	-	-
79	**12.5**	**Countryside Stewardship Schemes**	0	1	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
80	**13.1**	**Priority Habitat Inventory**	0	0	1	-	-
81	13.2	Habitat Networks	0	0	0	-	-
81	13.3	Open Mosaic Habitat	0	0	0	-	-
81	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
82	**14.1**	**10k Availability**	Identified (within 500m)				
83	14.2	Artificial and made ground (10k)	0	0	0	0	-
84	14.3	Superficial geology (10k)	0	0	0	0	-

84	14.4	Landslip (10k)	0	0	0	0	-
85	14.5	Bedrock geology (10k)	0	0	0	0	-
85	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
86	**15.1**	**50k Availability**	Identified (within 500m)				
87	15.2	Artificial and made ground (50k)	0	0	0	0	-
87	15.3	Artificial ground permeability (50k)	0	0	-	-	-
88	15.4	Superficial geology (50k)	0	0	0	0	-
88	15.5	Superficial permeability (50k)	None (within 50m)				
88	15.6	Landslip (50k)	0	0	0	0	-
88	15.7	Landslip permeability (50k)	None (within 50m)				
89	**15.8**	**Bedrock geology (50k)**	13	3	12	16	-
92	**15.9**	**Bedrock permeability (50k)**	Identified (within 50m)				
92	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
93	16.1	BGS Boreholes	0	0	0	-	-
Page	Section	Natural ground subsidence					
94	**17.1**	**Shrink swell clays**	Low (within 50m)				
96	**17.2**	**Running sands**	Negligible (within 50m)				
97	**17.3**	**Compressible deposits**	Negligible (within 50m)				
98	**17.4**	**Collapsible deposits**	Very low (within 50m)				
99	**17.5**	**Landslides**	Low (within 50m)				
101	**17.6**	**Ground dissolution of soluble rocks**	High (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
103	18.1	Natural cavities	0	0	0	0	-
104	18.2	BritPits	0	0	0	0	-
104	**18.3**	**Surface ground workings**	0	0	9	-	-
104	**18.4**	**Underground workings**	0	0	20	15	5
106	18.5	Historical Mineral Planning Areas	0	0	0	0	-

106	**18.6**	**Non-coal mining**	2	0	2	2	4
108	18.7	Mining cavities	0	0	0	0	0
108	18.8	JPB mining areas	None (within 0m)				
108	18.9	Coal mining	None (within 0m)				
108	18.10	Brine areas	None (within 0m)				
108	18.11	Gypsum areas	None (within 0m)				
109	18.12	Tin mining	None (within 0m)				
109	18.13	Clay mining	None (within 0m)				

Page	Section	Radon	
110	**19.1**	**Radon**	Between 10% and 30% (within 0m)

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
112	**20.1**	**BGS Estimated Background Soil Chemistry**	47	10	-	-	-
115	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
115	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-

Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
116	21.1	Underground railways (London)	0	0	0	-	-
116	21.2	Underground railways (Non-London)	0	0	0	-	-
117	**21.3**	**Railway tunnels**	0	0	1	-	-
117	**21.4**	**Historical railway and tunnel features**	0	0	17	-	-
118	21.5	Royal Mail tunnels	0	0	0	-	-
118	21.6	Historical railways	0	0	0	-	-
118	**21.7**	**Railways**	0	0	2	-	-
119	21.8	Crossrail 1	0	0	0	0	-
119	21.9	Crossrail 2	0	0	0	0	-
119	21.10	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 03/04/2017

Site Area: 38.82ha

Recent site history - 2014 aerial photograph

Capture Date: 15/04/2014

Site Area: 38.82ha

Recent site history - 2008 aerial photograph

Capture Date: 27/07/2008

Site Area: 38.82ha

Recent site history - 2000 aerial photograph

Capture Date: 19/06/2000

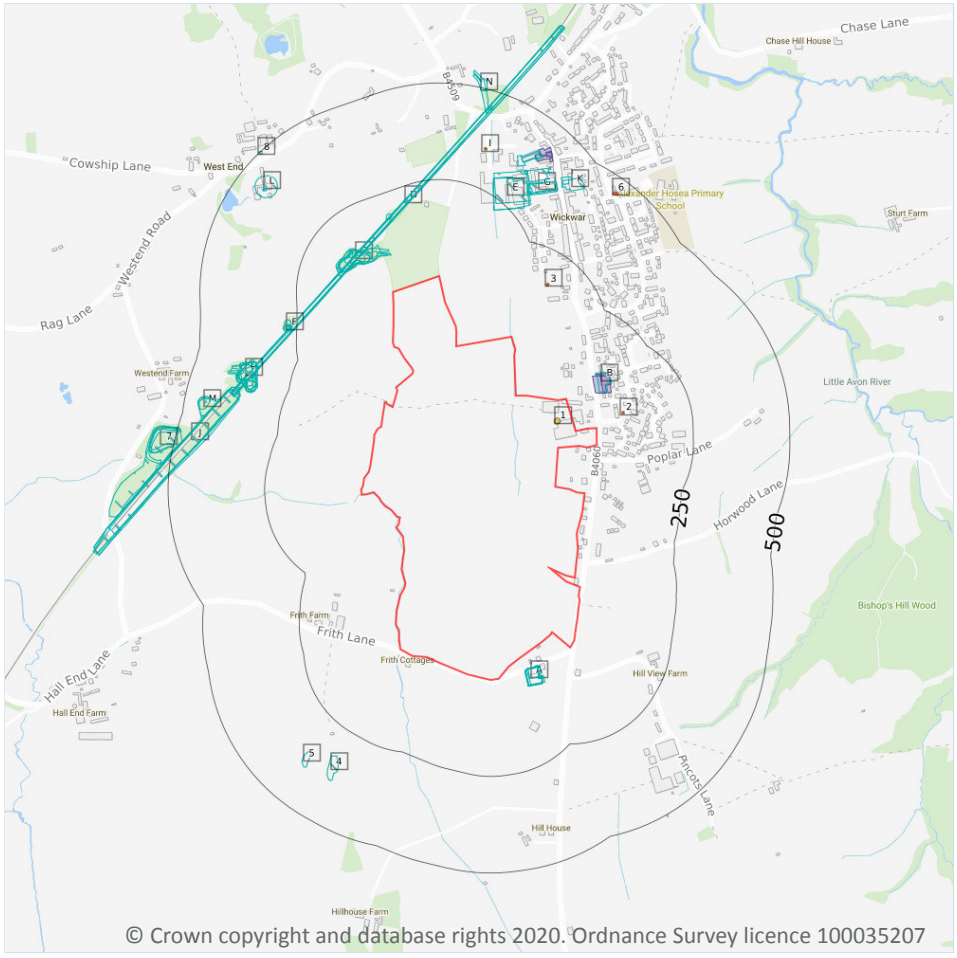
Site Area: 38.82ha

Recent site history - 1999 aerial photograph

Capture Date: 29/08/1999

Site Area: 38.82ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

Historical garages

1.1 Historical industrial land uses

Records within 500m	68

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 13**

ID	Location	Land use	Dates present	Group ID
A	33m SE	Workhouse	1900	1157868

ID	Location	Land use	Dates present	Group ID
A	35m SE	Unspecified Workhouse	1949	1209174
A	35m SE	Unspecified Workhouse	1881	1217945
A	35m SE	Unspecified Workhouse	1923	1264470
A	36m SE	Unspecified Workhouse	1886	1215061
A	36m SE	Unspecified Workhouse	1923	1219702
B	88m E	Service Station	1980	1187815
C	92m N	Unspecified Ground Workings	1923	1269985
C	94m N	Unspecified Ground Workings	1900	1234167
C	95m NW	Unspecified Heaps	1949	1179587
C	100m NW	Unspecified Ground Workings	1886	1201828
C	101m NW	Refuse Heap	1881	1178334
C	102m NW	Unspecified Heap	1980	1163285
D	125m NW	Tunnel	1900 - 1923	1210512
D	125m NW	Tunnel	1881 - 1886	1251818
D	126m NW	Tunnel	1949 - 1980	1203907
D	128m NW	Tunnel	1923	1270186
D	180m N	Unspecified Heap	1886	1163284
E	221m NE	Brewery	1923	1204549
E	222m NE	Elastic Mill	1949	1170741
E	239m NE	Unspecified Works	1980	1179062
F	263m W	Unspecified Heap	1923	1223831
F	265m W	Unspecified Heap	1980	1225317
F	268m W	Unspecified Heap	1900	1198672
F	269m W	Unspecified Heap	1949	1218730
G	311m NE	Brewery	1900	1222335
G	314m NE	Brewery	1881 - 1886	1228166
G	317m NE	Brewery	1923	1268841
4	321m SW	Unspecified Quarry	1980	1170028

ID	Location	Land use	Dates present	Group ID
H	327m W	Unspecified Ground Workings	1923	1206924
H	329m W	Unspecified Ground Workings	1900	1206325
H	330m W	Unspecified Heap	1949	1210716
H	331m W	Unspecified Ground Workings	1886	1193136
H	334m NW	Unspecified Heap	1881	1208497
H	334m NW	Unspecified Heap	1923	1272115
G	337m NE	Smithy	1923	1228206
H	341m NW	Unspecified Heap	1980	1248675
H	341m W	Refuse Heap	1881	1254015
H	341m W	Refuse Heap	1923	1263740
G	345m NE	Smithy	1949	1242302
G	345m NE	Smithy	1900	1258716
G	349m NE	Malthouse	1923 - 1949	1214168
5	351m SW	Unspecified Heap	1980	1163286
J	361m W	Cuttings	1886	1230466
J	362m W	Cuttings	1900 - 1923	1219559
J	363m W	Cuttings	1949 - 1980	1212814
J	364m W	Cuttings	1923	1211418
J	364m W	Cuttings	1881	1223188
G	366m NE	Malthouse	1923	1236740
K	393m NE	Police Station	1923	1218734
K	398m NE	Police Station	1923 - 1949	1222070
L	398m NW	Unspecified Tanks	1923	1204394
M	412m W	Unspecified Heap	1900 - 1923	1203918
M	416m W	Unspecified Ground Workings	1886	1161191
L	421m NW	Unspecified Tanks	1923	1246225
L	424m NW	Unspecified Tanks	1949	1209595
M	434m W	Unspecified Heap	1980	1227024

ID	Location	Land use	Dates present	Group ID
N	437m N	Unspecified Ground Workings	1923 - 1949	1219257
N	449m N	Air Shafts	1949	1259195
N	450m N	Air Shafts	1900	1194050
N	451m N	Air Shafts	1923	1249613
N	455m N	Air Shafts	1923	1255089
7	480m W	Unspecified Ground Workings	1923	1212624
O	489m W	Unspecified Ground Workings	1886	1239583
N	493m N	Unspecified Heap	1980	1163281
8	493m NW	Unspecified Tanks	1923	1168814
O	496m W	Unspecified Heap	1949 - 1980	1236860
O	497m W	Unspecified Ground Workings	1900	1202499

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**3**

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

Features are displayed on the Past land use map on **page 13**

ID	Location	Land use	Dates present	Group ID
1	**On site**	**Unspecified Tank**	**1988**	**174869**
I	347m N	Unspecified Tank	1966	184583
I	349m N	Unspecified Tank	1981 - 1991	188742

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	4

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, 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 13**

ID	Location	Land use	Dates present	Group ID
2	76m NE	Electricity Substation	1988	98133
3	161m NE	Electricity Substation	1993 - 1997	111364
G	363m NE	Electricity Substation	1988 - 1997	110229
6	453m NE	Electricity Substation	1988 - 1997	105177

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	6

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'.

Features are displayed on the Past land use map on **page 13**

ID	Location	Land use	Dates present	Group ID
B	78m E	Garage	1988	34634
B	92m N	Service Station	1966	32485
B	98m NE	Garage	1988 - 1991	36118
G	391m NE	Garage	1981 - 1991	34761
G	408m NE	Garage	1993 - 1997	35098
G	416m NE	Garage	1966	32754

This data is sourced from Ordnance Survey / Groundsure.

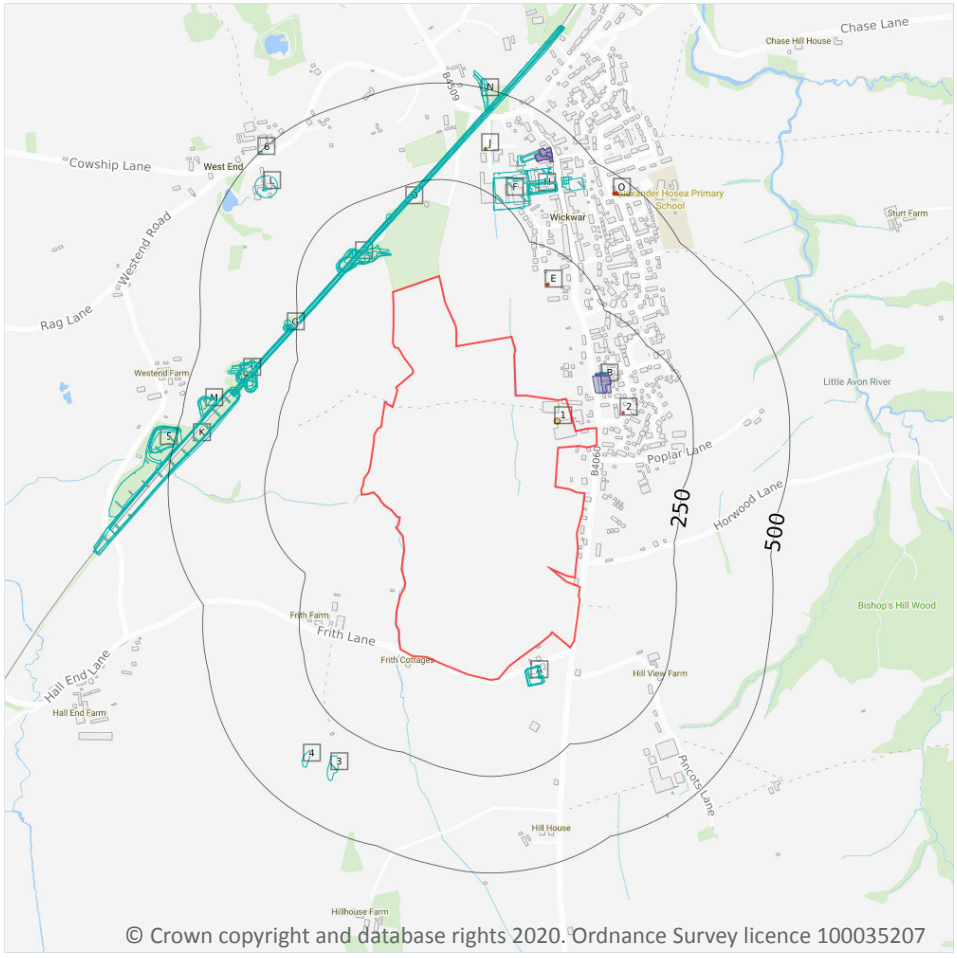
1.6 Historical military land

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

Historical tanks

Historical energy features

Historical garages

2.1 Historical industrial land uses

Records within 500m	82

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

Features are displayed on the Past land use - un-grouped map on **page 19**

ID	Location	Land Use	Date	Group ID
A	33m SE	Workhouse	1900	1157868
A	35m SE	Unspecified Workhouse	1923	1264470
A	35m SE	Unspecified Workhouse	1881	1217945

ID	Location	Land Use	Date	Group ID
A	35m SE	Unspecified Workhouse	1949	1209174
A	36m SE	Unspecified Workhouse	1886	1215061
A	36m SE	Unspecified Workhouse	1923	1219702
B	88m E	Service Station	1980	1187815
C	92m N	Unspecified Ground Workings	1923	1269985
C	92m N	Unspecified Ground Workings	1923	1269985
C	94m N	Unspecified Ground Workings	1900	1234167
C	95m NW	Unspecified Heaps	1949	1179587
C	100m NW	Unspecified Ground Workings	1886	1201828
C	101m NW	Refuse Heap	1881	1178334
C	102m NW	Unspecified Heap	1980	1163285
D	125m NW	Tunnel	1923	1210512
D	125m NW	Tunnel	1886	1251818
D	126m NW	Tunnel	1949	1203907
D	126m NW	Tunnel	1980	1203907
D	128m NW	Tunnel	1923	1270186
D	128m NW	Tunnel	1881	1251818
D	129m NW	Tunnel	1900	1210512
D	180m N	Unspecified Heap	1886	1163284
F	221m NE	Brewery	1923	1204549
F	222m NE	Elastic Mill	1949	1170741
F	239m NE	Unspecified Works	1980	1179062
G	263m W	Unspecified Heap	1923	1223831
G	263m W	Unspecified Heap	1923	1223831
G	265m W	Unspecified Heap	1980	1225317
G	268m W	Unspecified Heap	1900	1198672
G	269m W	Unspecified Heap	1949	1218730
H	311m NE	Brewery	1900	1222335

ID	Location	Land Use	Date	Group ID
H	314m NE	Brewery	1886	1228166
H	317m NE	Brewery	1923	1268841
H	317m NE	Brewery	1881	1228166
3	321m SW	Unspecified Quarry	1980	1170028
I	327m W	Unspecified Ground Workings	1923	1206924
I	329m W	Unspecified Ground Workings	1900	1206325
I	330m W	Unspecified Heap	1949	1210716
I	331m W	Unspecified Ground Workings	1886	1193136
I	334m NW	Unspecified Heap	1923	1272115
I	334m NW	Unspecified Heap	1881	1208497
H	337m NE	Smithy	1923	1228206
H	337m NE	Smithy	1923	1228206
I	341m NW	Unspecified Heap	1980	1248675
I	341m W	Refuse Heap	1923	1263740
I	341m W	Refuse Heap	1881	1254015
H	345m NE	Smithy	1949	1242302
H	345m NE	Smithy	1900	1258716
H	349m NE	Malthouse	1923	1214168
4	351m SW	Unspecified Heap	1980	1163286
K	361m W	Cuttings	1886	1230466
K	362m W	Cuttings	1923	1219559
H	363m NE	Malthouse	1949	1214168
K	363m W	Cuttings	1949	1212814
K	363m W	Cuttings	1980	1212814
K	364m W	Cuttings	1923	1211418
K	364m W	Cuttings	1881	1223188
H	366m NE	Malthouse	1923	1236740
K	366m W	Cuttings	1900	1219559

ID	Location	Land Use	Date	Group ID
H	393m NE	Police Station	1923	1218734
H	398m NE	Police Station	1949	1222070
L	398m NW	Unspecified Tanks	1923	1204394
H	402m NE	Police Station	1923	1222070
M	412m W	Unspecified Heap	1923	1203918
M	416m W	Unspecified Ground Workings	1886	1161191
M	420m W	Unspecified Heap	1900	1203918
L	421m NW	Unspecified Tanks	1923	1246225
L	424m NW	Unspecified Tanks	1949	1209595
M	434m W	Unspecified Heap	1980	1227024
N	437m N	Unspecified Ground Workings	1923	1219257
N	447m N	Unspecified Ground Workings	1949	1219257
N	449m N	Air Shafts	1949	1259195
N	450m N	Air Shafts	1900	1194050
N	451m N	Air Shafts	1923	1249613
N	455m N	Air Shafts	1923	1255089
5	480m W	Unspecified Ground Workings	1923	1212624
P	489m W	Unspecified Ground Workings	1886	1239583
N	493m N	Unspecified Heap	1980	1163281
6	493m NW	Unspecified Tanks	1923	1168814
P	496m W	Unspecified Heap	1949	1236860
P	496m W	Unspecified Heap	1980	1236860
P	497m W	Unspecified Ground Workings	1900	1202499

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	6

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

Features are displayed on the Past land use - un-grouped map on **page 19**

ID	Location	Land Use	Date	Group ID
1	**On site**	**Unspecified Tank**	**1988**	**174869**
J	347m N	Unspecified Tank	1966	184583
J	349m N	Unspecified Tank	1981	188742
J	349m N	Unspecified Tank	1988	188742
J	349m N	Unspecified Tank	1990	188742
J	349m N	Unspecified Tank	1991	188742

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	16

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

Features are displayed on the Past land use - un-grouped map on **page 19**

ID	Location	Land Use	Date	Group ID
2	76m NE	Electricity Substation	1988	98133
E	161m NE	Electricity Substation	1996	111364
E	161m NE	Electricity Substation	1997	111364
E	161m NE	Electricity Substation	1993	111364
H	363m NE	Electricity Substation	1988	110229
H	363m NE	Electricity Substation	1990	110229
H	363m NE	Electricity Substation	1991	110229
H	363m NE	Electricity Substation	1996	110229

ID	Location	Land Use	Date	Group ID
H	363m NE	Electricity Substation	1997	110229
H	363m NE	Electricity Substation	1993	110229
O	453m NE	Electricity Substation	1988	105177
O	453m NE	Electricity Substation	1990	105177
O	453m NE	Electricity Substation	1991	105177
O	456m NE	Electricity Substation	1996	105177
O	456m NE	Electricity Substation	1997	105177
O	456m NE	Electricity Substation	1993	105177

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	**13**

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'.

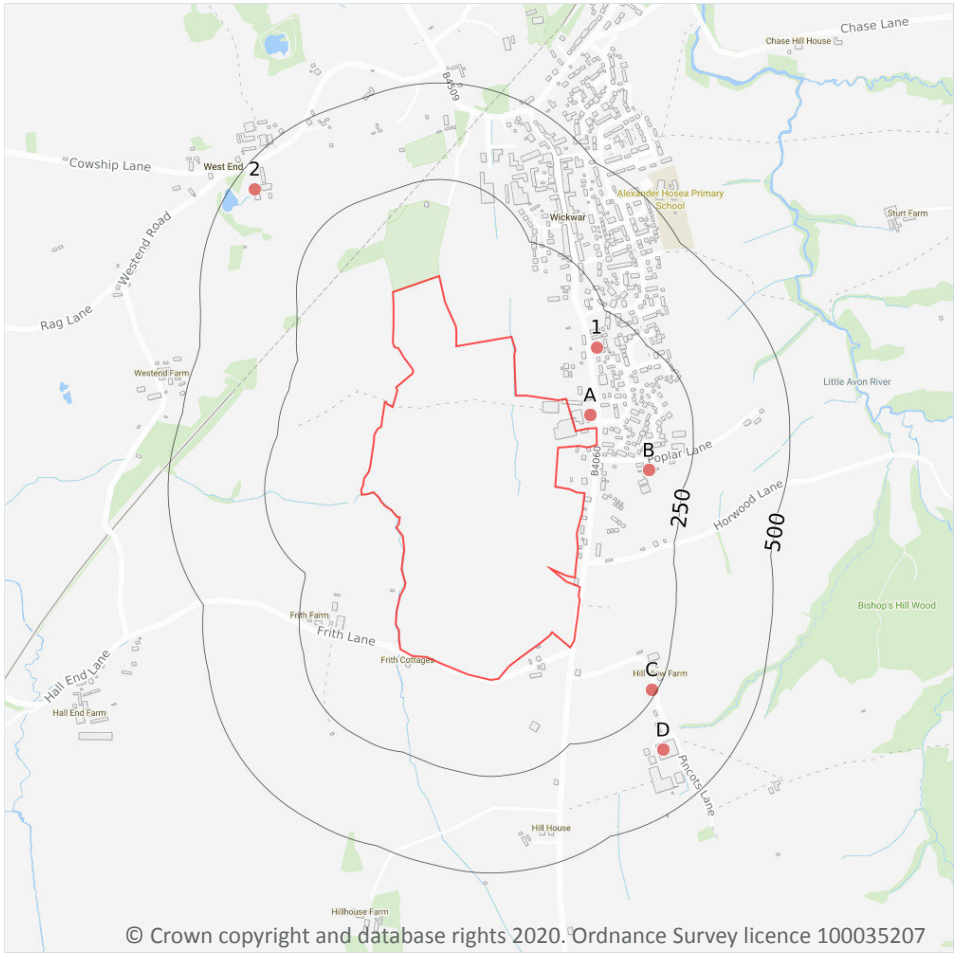
Features are displayed on the Past land use - un-grouped map on **page 19**

ID	Location	Land Use	Date	Group ID
B	78m E	Garage	1988	34634
B	92m N	Service Station	1966	32485
B	98m NE	Garage	1988	36118
B	98m NE	Garage	1990	36118
B	98m NE	Garage	1991	36118

ID	Location	Land Use	Date	Group ID
H	391m NE	Garage	1988	34761
H	391m NE	Garage	1990	34761
H	391m NE	Garage	1991	34761
H	391m NE	Garage	1981	34761
H	408m NE	Garage	1996	35098
H	408m NE	Garage	1997	35098
H	408m NE	Garage	1993	35098
H	416m NE	Garage	1966	32754

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



Site Outline

Search buffers in metres (m)

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

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

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

3.5 Historical waste sites

Records within 500m	0

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

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

3.6 Licensed waste sites

Records within 500m	0

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

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

3.7 Waste exemptions

Records within 500m	47

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

Features are displayed on the Waste and landfill map on **page 26**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	33m N	SOUTH FARM, 56, SODBURY ROAD, WICKWAR, WOTTON-UNDER-EDGE, GL12 8PG	WEX070746	Disposing of waste exemption	On a farm	Deposit of waste from dredging of inland waters
A	33m N	SOUTH FARM, 56, SODBURY ROAD, WICKWAR, WOTTON-UNDER-EDGE, GL12 8PG	WEX070746	Disposing of waste exemption	On a farm	Deposit of agricultural waste consisting of plant tissue under a Plant Health notice
A	33m N	SOUTH FARM, 56, SODBURY ROAD, WICKWAR, WOTTON-UNDER-EDGE, GL12 8PG	WEX070746	Disposing of waste exemption	On a farm	Burning waste in the open
A	33m N	SOUTH FARM, 56, SODBURY ROAD, WICKWAR, WOTTON-UNDER-EDGE, GL12 8PG	WEX070746	Storing waste exemption	On a farm	Storage of waste in a secure place
A	33m N	SOUTH FARM, 56, SODBURY ROAD, WICKWAR, WOTTON-UNDER-EDGE, GL12 8PG	WEX070746	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
A	33m N	SOUTH FARM, 56, SODBURY ROAD, WICKWAR, WOTTON-UNDER-EDGE, GL12 8PG	WEX070746	Using waste exemption	On a farm	Spreading waste on non-agricultural land to confer benefit
A	33m N	SOUTH FARM, 56, SODBURY ROAD, WICKWAR, WOTTON-UNDER-EDGE, GL12 8PG	WEX070746	Using waste exemption	On a farm	Incorporation of ash into soil
A	33m N	SOUTH FARM, 56, SODBURY ROAD, WICKWAR, WOTTON-UNDER-EDGE, GL12 8PG	WEX070746	Using waste exemption	On a farm	Use of waste for a specified purpose
B	150m SE	Poplar Farm Poplar Lane WOTTON-UNDER-EDGE Gloucestershire GL12 8NS	EPR/JE5880MX/A001	Disposing of waste exemption	Non-Agricultural Waste Only	Disposal by incineration
B	150m SE	Poplar Farm Poplar Lane WOTTON-UNDER-EDGE Gloucestershire GL12 8NS	EPR/JE5880MX/A001	Disposing of waste exemption	Non-Agricultural Waste Only	Burning waste in the open

ID	Location	Site	Reference	Category	Sub-Category	Description
B	150m SE	Poplar Farm Poplar Lane WOTTON-UNDER-EDGE Gloucestershire GL12 8NS	EPR/JE5880MX/A001	Treating waste exemption	Non-Agricultural Waste Only	Cleaning, washing, spraying or coating relevant waste
B	150m SE	Poplar Farm Poplar Lane WOTTON-UNDER-EDGE Gloucestershire GL12 8NS	EPR/JE5880MX/A001	Treating waste exemption	Non-Agricultural Waste Only	Aerobic composting and associated prior treatment
B	150m SE	Poplar Farm Poplar Lane WOTTON-UNDER-EDGE Gloucestershire GL12 8NS	EPR/JE5880MX/A001	Using waste exemption	Non-Agricultural Waste Only	Use of waste in construction
B	150m SE	Poplar Farm Poplar Lane WOTTON-UNDER-EDGE Gloucestershire GL12 8NS	EPR/JE5880MX/A001	Using waste exemption	Non-Agricultural Waste Only	Spreading waste on agricultural land to confer benefit
B	150m SE	Poplar Farm Poplar Lane WOTTON-UNDER-EDGE Gloucestershire GL12 8NS	EPR/JE5880MX/A001	Using waste exemption	Non-Agricultural Waste Only	Burning of waste as a fuel in a small appliance
B	150m SE	Poplar Farm Poplar Lane WOTTON-UNDER-EDGE Gloucestershire GL12 8NS	EPR/JE5880MX/A001	Using waste exemption	Non-Agricultural Waste Only	Use of waste for a specified purpose
B	151m SE	POPLAR FARM, POPLAR LANE, WICKWAR, WOTTON-UNDER-EDGE, GL12 8NS	WEX190014	Using waste exemption	On a Farm	Burning of waste as a fuel in a small appliance
B	151m SE	POPLAR FARM, POPLAR LANE, WICKWAR, WOTTON-UNDER-EDGE, GL12 8NS	WEX190014	Using waste exemption	On a Farm	Use of waste for a specified purpose
B	151m SE	POPLAR FARM, POPLAR LANE, WICKWAR, WOTTON-UNDER-EDGE, GL12 8NS	WEX190014	Using waste exemption	On a Farm	Spreading waste on agricultural land to confer benefit
B	151m SE	POPLAR FARM, POPLAR LANE, WICKWAR, WOTTON-UNDER-EDGE, GL12 8NS	WEX190014	Using waste exemption	On a Farm	Spreading of plant matter to confer benefit

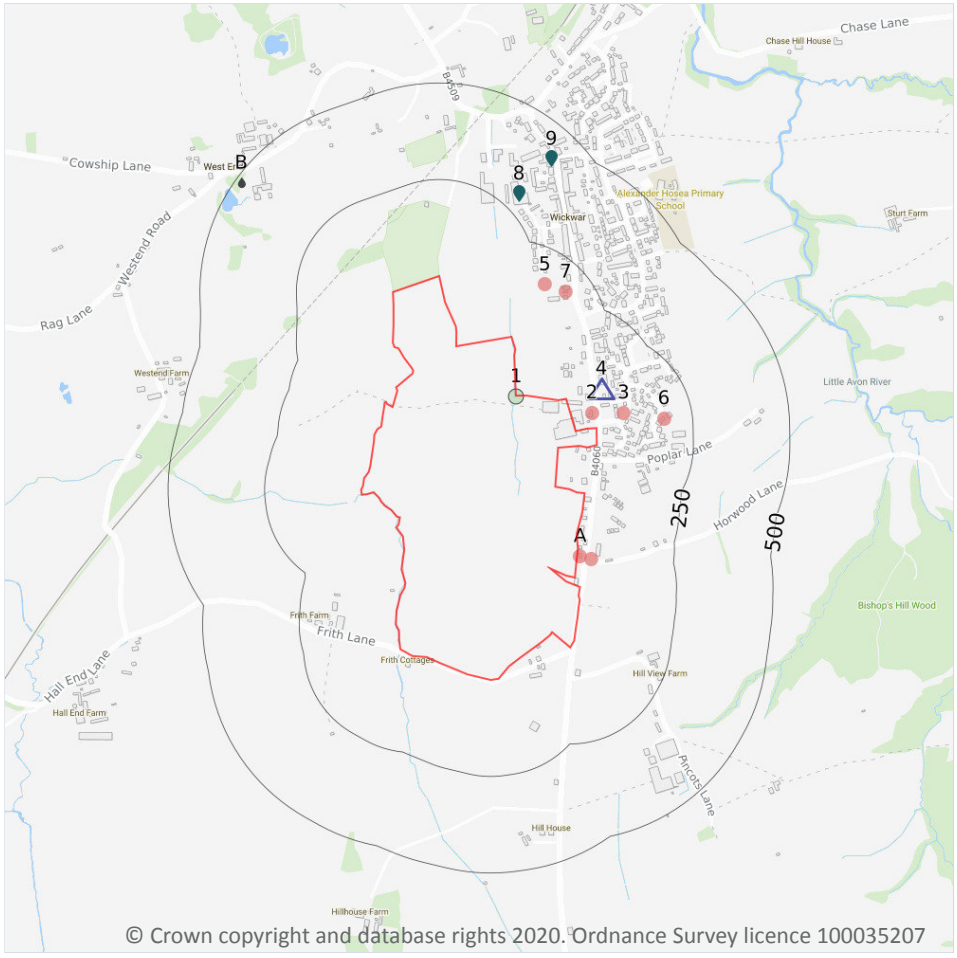
ID	Location	Site	Reference	Category	Sub-Category	Description
B	151m SE	POPLAR FARM, POPLAR LANE, WICKWAR, WOTTON-UNDER-EDGE, GL12 8NS	WEX190014	Treating waste exemption	On a Farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
B	151m SE	POPLAR FARM, POPLAR LANE, WICKWAR, WOTTON-UNDER-EDGE, GL12 8NS	WEX190014	Disposing of waste exemption	On a Farm	Burning waste in the open
B	151m SE	POPLAR FARM, POPLAR LANE, WICKWAR, WOTTON-UNDER-EDGE, GL12 8NS	WEX190014	Storing waste exemption	On a Farm	Storage of waste in a secure place
B	151m SE	POPLAR FARM, POPLAR LANE, WICKWAR, WOTTON-UNDER-EDGE, GL12 8NS	WEX032426	Disposing of waste exemption	On a farm	Burning waste in the open
B	151m SE	POPLAR FARM, POPLAR LANE, WICKWAR, WOTTON-UNDER-EDGE, GL12 8NS	WEX032426	Storing waste exemption	On a farm	Storage of waste in a secure place
B	151m SE	POPLAR FARM, POPLAR LANE, WICKWAR, WOTTON-UNDER-EDGE, GL12 8NS	WEX032426	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
B	151m SE	POPLAR FARM, POPLAR LANE, WICKWAR, WOTTON-UNDER-EDGE, GL12 8NS	WEX032426	Using waste exemption	On a farm	Spreading of plant matter to confer benefit
B	151m SE	POPLAR FARM, POPLAR LANE, WICKWAR, WOTTON-UNDER-EDGE, GL12 8NS	WEX032426	Using waste exemption	On a farm	Use of waste for a specified purpose
1	154m NE	CASTLE HOUSE, SODBURY ROAD, WICKWAR, WOTTON-UNDER-EDGE, GL12 8NR	WEX000149	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
C	238m SE	Pincots Farm, Pincots Lane, Wickwar, GL12 8NY	WEX064680	Disposing of waste exemption	On a farm	Deposit of waste from dredging of inland waters
C	238m SE	Pincots Farm, Pincots Lane, Wickwar, GL12 8NY	WEX064680	Disposing of waste exemption	On a farm	Deposit of agricultural waste consisting of plant tissue under a Plant Health notice

ID	Location	Site	Reference	Category	Sub-Category	Description
C	238m SE	Pincots Farm, Pincots Lane, Wickwar, GL12 8NY	WEX064680	Disposing of waste exemption	On a farm	Burning waste in the open
C	238m SE	Pincots Farm, Pincots Lane, Wickwar, GL12 8NY	WEX064680	Storing waste exemption	On a farm	Storage of waste in a secure place
C	238m SE	Pincots Farm, Pincots Lane, Wickwar, GL12 8NY	WEX064680	Treating waste exemption	On a farm	Aerobic composting and associated prior treatment
C	238m SE	Pincots Farm, Pincots Lane, Wickwar, GL12 8NY	WEX064680	Treating waste exemption	On a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
C	238m SE	Pincots Farm, Pincots Lane, Wickwar, GL12 8NY	WEX064680	Using waste exemption	On a farm	Use of waste in construction
C	238m SE	Pincots Farm, Pincots Lane, Wickwar, GL12 8NY	WEX064680	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
C	238m SE	Pincots Farm, Pincots Lane, Wickwar, GL12 8NY	WEX064680	Using waste exemption	On a farm	Use of waste for a specified purpose
D	359m SE	pincots farm	EPR/CF0533ZM/A001	Disposing of waste exemption	Agricultural Waste Only	Deposit of waste from dredging of inland waters
D	359m SE	pincots farm	EPR/CF0533ZM/A001	Disposing of waste exemption	Agricultural Waste Only	Deposit of agricultural waste consisting of plant tissue under a Plant Health notice
D	359m SE	pincots farm	EPR/CF0533ZM/A001	Disposing of waste exemption	Agricultural Waste Only	Burning waste in the open
D	359m SE	pincots farm	EPR/CF0533ZM/A001	Treating waste exemption	Agricultural Waste Only	Aerobic composting and associated prior treatment
D	359m SE	pincots farm	EPR/CF0533ZM/A001	Treating waste exemption	Agricultural Waste Only	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
D	359m SE	pincots farm	EPR/CF0533ZM/A001	Using waste exemption	Agricultural Waste Only	Use of waste in construction
D	359m SE	pincots farm	EPR/CF0533ZM/A001	Using waste exemption	Agricultural Waste Only	Spreading waste on agricultural land to confer benefit

ID	Location	Site	Reference	Category	Sub-Category	Description
D	359m SE	pincots farm	EPR/CF0533ZM/A001	Using waste exemption	Agricultural Waste Only	Use of waste for a specified purpose
2	445m NW	POUND BARN, WEST END, WICKWAR, WOTTON-UNDER-EDGE, GL12 8LB	WEX103385	Using waste exemption	Not on a farm	Use of waste in construction

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

4 Current industrial land use



Site Outline

Search buffers in metres (m)

Recent industrial land uses

Current or recent petrol stations

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

Licensed Discharges to controlled waters

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	7

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 33**

ID	Location	Company	Address	Activity	Category
A	8m E	Country Style Supplies Ltd	The Yard, Sodbury Road, Wickwar, Wotton-under-Edge, Gloucestershire, GL12 8NT	Fences, Gates and Railings	Industrial Products
A	37m E	Electricity Sub Station	Gloucestershire, GL12	Electrical Features	Infrastructure and Facilities

ID	Location	Company	Address	Activity	Category
2	41m N	R J & B J Kingston & Sons	South Farm 56, Sodbury Road, Wickwar, Wotton-under-Edge, Gloucestershire, GL12 8PG	Dairy Farming	Farming
3	80m NE	Electricity Sub Station	Gloucestershire, GL12	Electrical Features	Infrastructure and Facilities
5	161m NE	Electricity Sub Station	Gloucestershire, GL12	Electrical Features	Infrastructure and Facilities
6	176m E	Blastmaster UK Ltd	4, Canters Leaze, Wickwar, Wotton-under-Edge, Gloucestershire, GL12 8LX	Construction Completion Services	Construction Services
7	182m NE	Telephone Exchange	Gloucestershire, GL12	Telecommunications Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	**1**

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 33**

ID	Location	Company	Address	LPG	Status
4	95m E	OBSOLETE	Sodbury Road, Wickwar, Wotton-Under-Edge, South Gloucestershire, GL12 8NR	Not Applicable	Obsolete

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	2

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

Features are displayed on the Current industrial land use map on **page 33**

ID	Location	Address	Details	
8	296m NE	Wilcox Garage, High Street, Wickwar, Gloucestershire, GL12 8NG	Process: Waste Oil Burner 0.4 MW Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
9	419m NE	Wickwar Garage, 22 High Street, Wickwar, Wotton Under Edge, South Glos, GL12 8NG	Process: Waste Oil Burner 0.4 MW Status: New Legislation Applies Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

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	2

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

Features are displayed on the Current industrial land use map on **page 33**

ID	Location	Address	Details	
B	484m NW	EVANWOOD HOUSE, WEST END, WICKWAR	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 012542 Permit Version: 1 Receiving Water: REED BED	Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 113 & SCHED 12) Issue date: 06/04/1995 Effective Date: 04/04/1995 Revocation Date: 16/12/2012
B	484m NW	EVANWOOD HOUSE, WEST END, WICKWAR	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 012542 Permit Version: 2 Receiving Water: REED BED	Status: VARIED UNDER EPR 2010 Issue date: 17/12/2012 Effective Date: 17/12/2012 Revocation Date: -

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

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

4.15 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m	0

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

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

4.17 List 2 Dangerous Substances

Records within 500m	0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	1

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

Features are displayed on the Current industrial land use map on **page 33**

ID	Location	Details	
1	**On site**	**Incident Date: 08/11/2002** **Incident Identification: 119513** **Pollutant: Agricultural Materials and Wastes** **Pollutant Description: Silage Liquors**	**Water Impact: Category 3 (Minor)** **Land Impact: Category 4 (No Impact)** **Air Impact: Category 4 (No Impact)**

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

4.19 Pollution inventory substances

Records within 500m	0

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

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

4.20 Pollution inventory waste transfers

Records within 500m	0

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

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

4.21 Pollution inventory radioactive waste

Records within 500m	0

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

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

5 Hydrogeology - Superficial aquifer

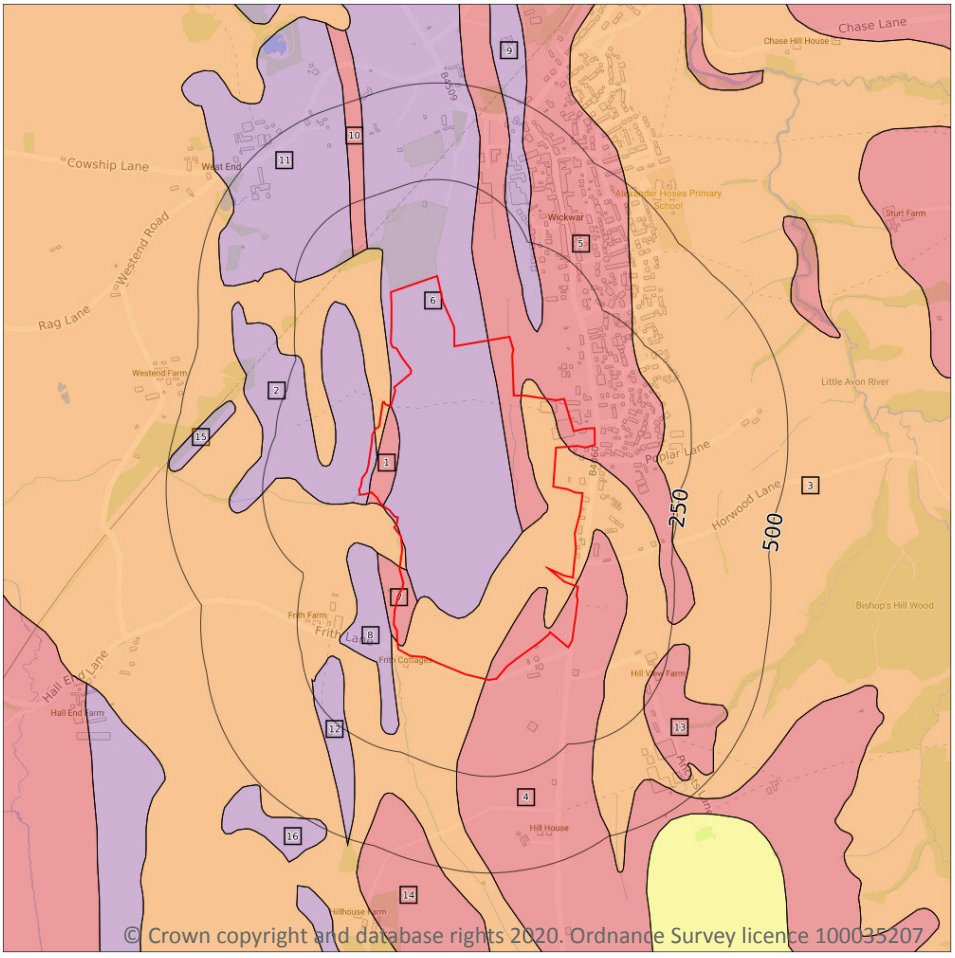
5.1 Superficial aquifer

Records within 500m	0

Aquifer status of groundwater held within superficial geology.

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	16

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 41**

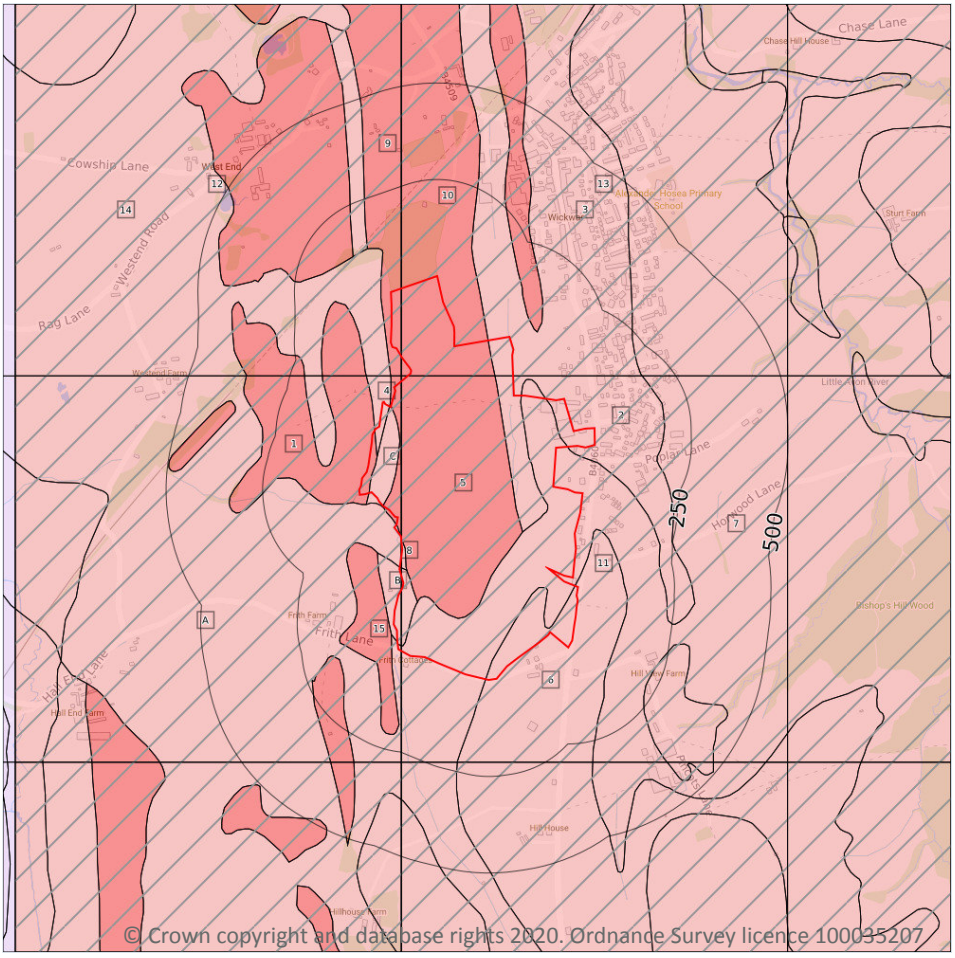
ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	On site	Principal	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

ID	Location	Designation	Description
3	**On site**	**Secondary B**	**Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers**
4	**On site**	**Secondary A**	**Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers**
5	**On site**	**Secondary A**	**Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers**
6	**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**
7	**On site**	**Secondary A**	**Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers**
8	11m W	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
9	66m NE	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
10	127m NW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
11	134m NW	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
12	154m W	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
13	223m SE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
14	357m S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
15	361m W	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

ID	Location	Designation	Description
16	486m SW	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	17

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 44**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
3	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
4	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
5	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
6	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
7	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
8	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
9	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
10	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
A	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
B	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
B	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
C	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
C	**On site**	**Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer**	**Leaching class: Intermediate Infiltration value: <40% Dilution value: 300-550mm/year**	**Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data**	**Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures**
14	11m W	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
15	11m W	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	**4**

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

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
11	**Very significant soluble rocks are likely to be present with a high possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, especially in adverse conditions such as concentrated surface or subsurface water flow.**	**4.0%**
12	**Very significant soluble rocks are likely to be present with a high possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, especially in adverse conditions such as concentrated surface or subsurface water flow.**	**4.0%**
13	**Very significant soluble rocks are likely to be present with a high possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, especially in adverse conditions such as concentrated surface or subsurface water flow.**	**2.0%**

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
A	**Very significant soluble rocks are likely to be present with a high possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, especially in adverse conditions such as concentrated surface or subsurface water flow.**	**7.000000000000001%**

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

5.6 Groundwater abstractions

Records within 2000m	0

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.

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	0

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

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

5.9 Source Protection Zones

Records within 500m	0

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

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

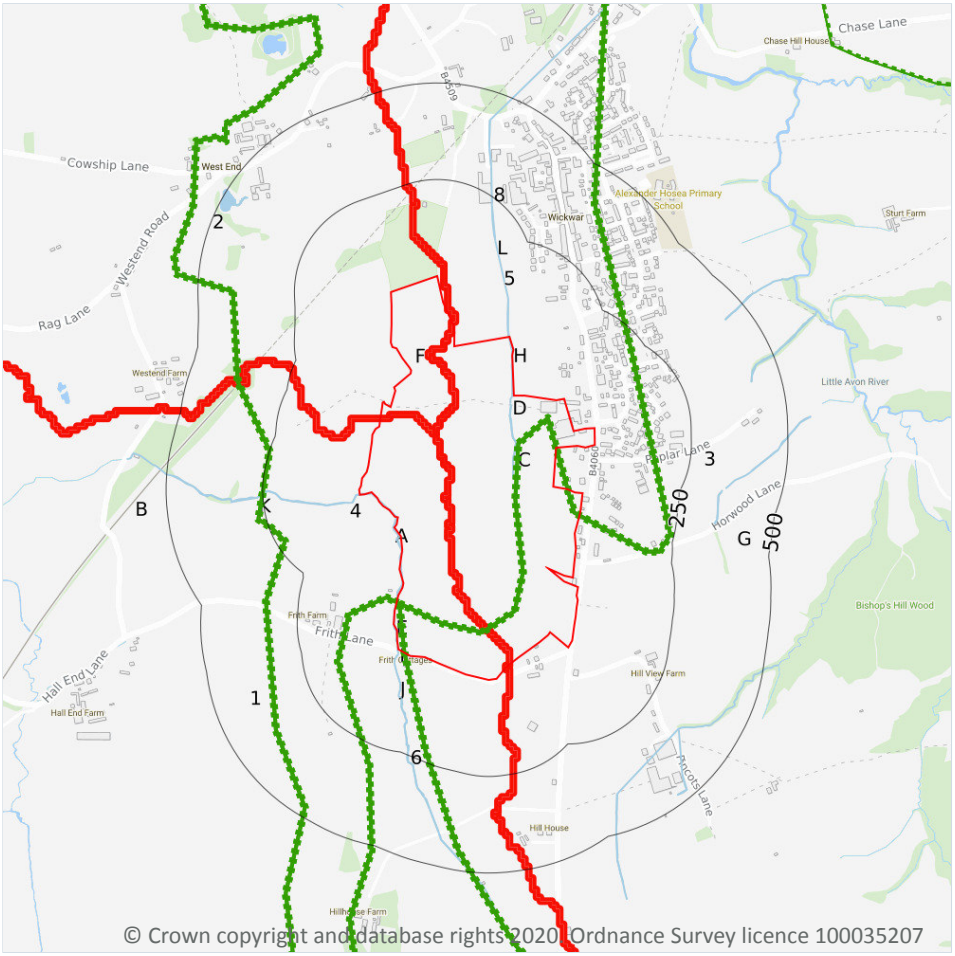
5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

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

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

6 Hydrology



Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	**16**

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

Features are displayed on the Hydrology map on **page 51**

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

ID	Location	Type of water feature	Ground level	Permanence	Name
C	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**
D	**On site**	**Lake, loch or reservoir.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**
D	**On site**	**Inland river not influenced by normal tidal action.**	**Underground**	**Watercourse contains water year round (in normal circumstances)**	**-**
E	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**
H	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**
I	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**
I	2m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
J	10m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
4	32m SW	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
K	43m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
5	98m N	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-
6	114m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
L	176m NE	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
L	178m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
8	230m NE	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	6

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

Features are displayed on the Hydrology map on **page 51**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	3

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 51**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	**On site**	**River WB catchment**	**Laddon Bk - source to conf R Frome (Brist)**	**GB109053027590**	**Bristol Avon Urban**	**Avon Bristol and North Somerset Streams**
2	**On site**	**River WB catchment**	**Tortworth Bk - source to conf R LIttle Avon**	**GB109054026590**	**Lower Severn Vale**	**Avon Bristol and North Somerset Streams**
3	**On site**	**River WB catchment**	**Little Avon R - source to conf Ozleworth Bk**	**GB109054026580**	**Lower Severn Vale**	**Avon Bristol and North Somerset Streams**

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

6.4 WFD Surface water bodies

Records identified	3

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 51**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	622m NE	River	Little Avon R - source to conf Ozleworth Bk	GB109054026580	Moderate	Good	Moderate	2016
-	907m SW	River	Laddon Bk - source to conf R Frome (Brist)	GB109053027590	Poor	Good	Poor	2016
-	2125m NW	River	Tortworth Bk - source to conf R LIttle Avon	GB109054026590	Moderate	Good	Moderate	2016

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

6.5 WFD Groundwater bodies

Records on site	6

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.

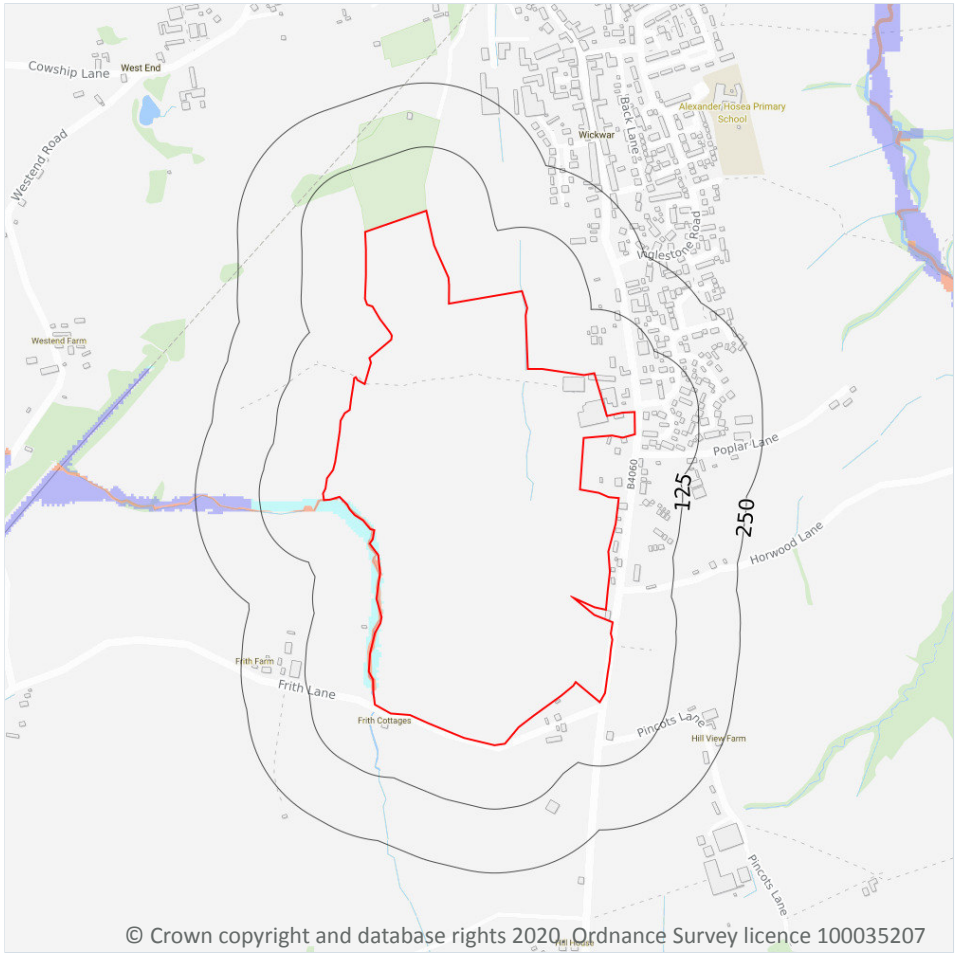
Features are displayed on the Hydrology map on **page 51**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
B	**On site**	**Bristol Triassic**	**GB40902G804800**	**Poor**	**Poor**	**Good**	**2015**
B	**On site**	**Bristol Triassic**	**GB40902G804800**	**Poor**	**Poor**	**Good**	**2016**
F	**On site**	**Carboniferous Limestone (Alveston)**	**GB40901G806200**	**Good**	**Good**	**Good**	**2015**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
F	**On site**	**Carboniferous Limestone (Alveston)**	**GB40901G806200**	**Good**	**Good**	**Good**	**2016**
G	**On site**	**Avonmouth Mercia Mudstone**	**GB40902G303100**	**Good**	**Good**	**Good**	**2015**
G	**On site**	**Avonmouth Mercia Mudstone**	**GB40902G303100**	**Good**	**Good**	**Good**	**2016**

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

7 River and coastal flooding



Site Outline

Search buffers in metres (m)

Environment Agency river and coastal flooding:

- High
- Medium
- Low
- Very Low
- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences
- Flood Defences

7.1 Risk of Flooding from Rivers and Sea (RoFRaS)

Records within 50m	14

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition; 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).

Features are displayed on the River and coastal flooding map on **page 56**

Distance	RoFRaS flood risk
On site	**High**
0 - 50m	High

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

7.2 Historical Flood Events

Records within 250m	0

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

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

7.3 Flood Defences

Records within 250m	0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

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

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

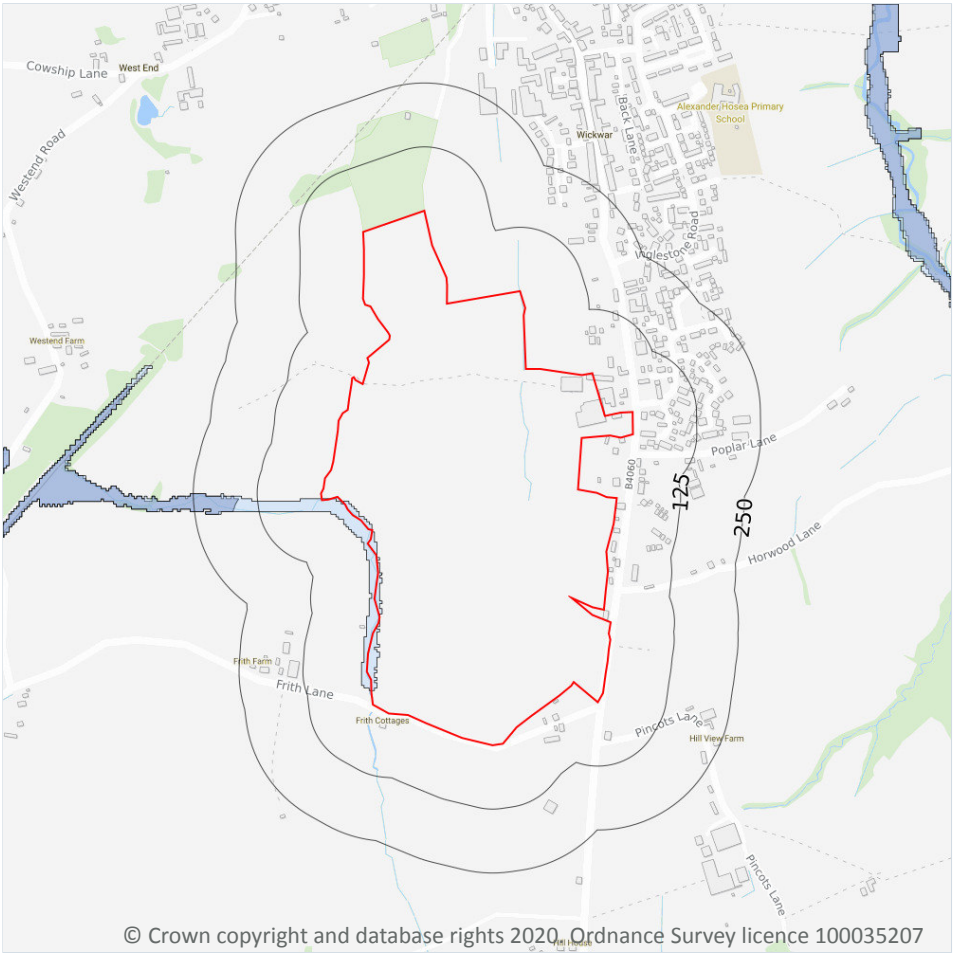
7.5 Flood Storage Areas

Records within 250m	0

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

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

River and coastal flooding - Flood Zones



Site Outline

Search buffers in metres (m)

Flood zone 2

Flood zone 3

7.6 Flood Zone 2

Records within 50m	1

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

Features are displayed on the River and coastal flooding map on **page 56**

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

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

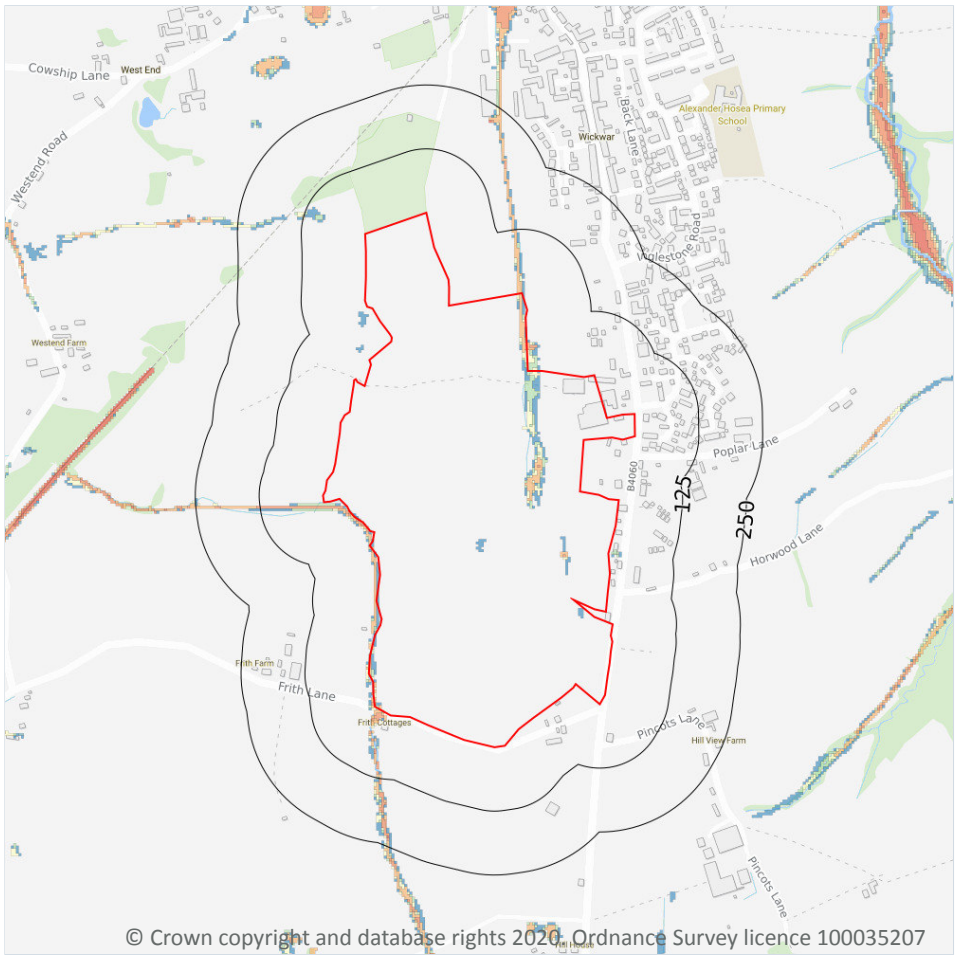
7.7 Flood Zone 3

Records within 50m	0

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

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

8 Surface water flooding



Site Outline

Search buffers in metres (m)

1 in 1000 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

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

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

Features are displayed on the Surface water flooding map on **page 60**

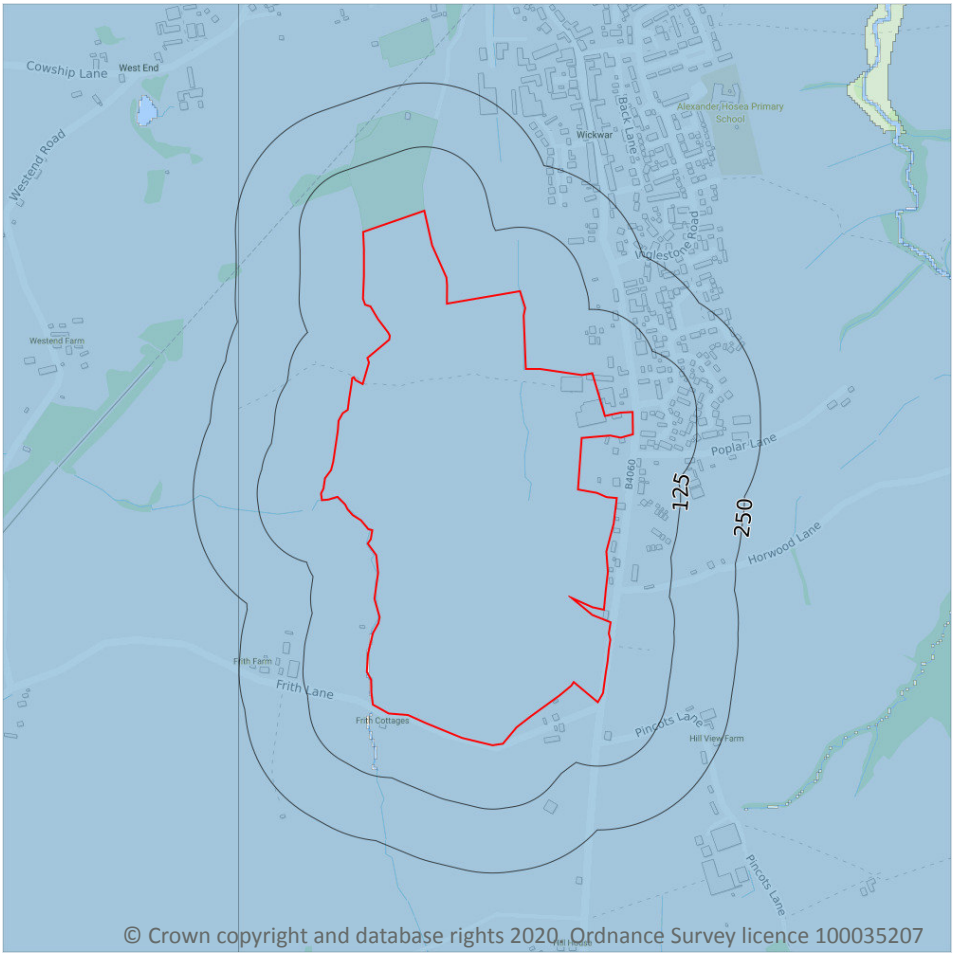
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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

Return period	Maximum modelled depth
1 in 1000 year	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.3m and 1.0m

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



Site Outline

Search buffers in metres (m)

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

9.1 Groundwater flooding

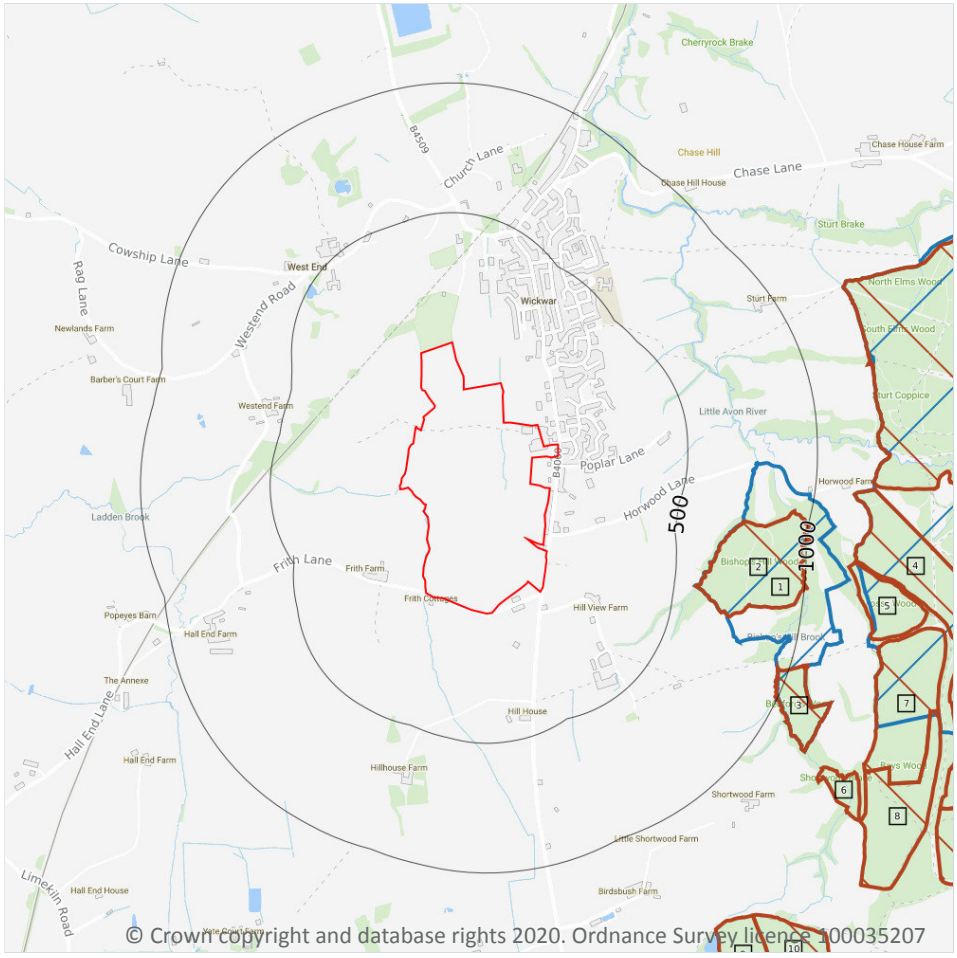
Highest risk on site	**Negligible**
Highest risk within 50m	**Negligible**

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 62**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



Site Outline

Search buffers in metres (m)

Sites of Special Scientific Interest (SSSI)

Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	2

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

Features are displayed on the Environmental designations map on **page 63**

ID	Location	Name	Data source
1	581m E	Bishop's Hill Wood	Natural England

ID	Location	Name	Data source
A	1153m E	Lower Woods	Natural England

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m	0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	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	12

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 63**

ID	Location	Name	Woodland Type
2	583m E	BISHOPS HILL WOOD SSSI.	Ancient & Semi-Natural Woodland
3	958m E	BEDFORD WOOD	Ancient & Semi-Natural Woodland
4	1153m E	SHORTWOOD BRAKE	Ancient & Semi-Natural Woodland
5	1166m E	SHORTWOOD BRAKE	Ancient & Semi-Natural Woodland
A	1220m E	SHORTWOOD BRAKE	Ancient & Semi-Natural Woodland
6	1281m SE	SHORTWOOD BRAKE	Ancient & Semi-Natural Woodland
7	1314m E	SHORTWOOD BRAKE	Ancient & Semi-Natural Woodland
8	1428m SE	SHORTWOOD BRAKE	Ancient Replanted Woodland
9	1457m SE	LADYS WOOD	Ancient Replanted Woodland
10	1493m SE	LADYS WOOD	Ancient & Semi-Natural Woodland
-	1669m S	LITTLE WOOD	Ancient & Semi-Natural Woodland
12	1754m SE	SHORTWOOD BRAKE	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.

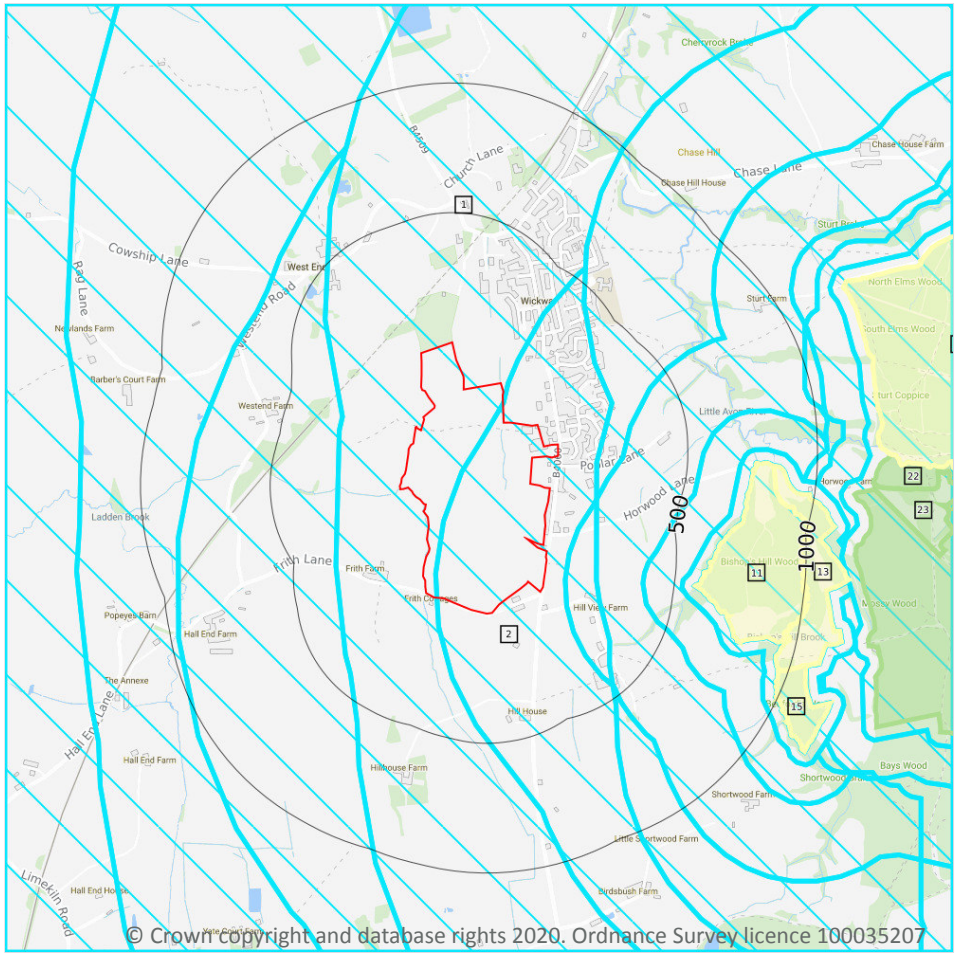
10.16 Nitrate Vulnerable Zones

Records within 2000m	0

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.

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

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

10.17 SSSI Impact Risk Zones

Records on site	2

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

Features are displayed on the SSSI Impact Zones and Units map on **page 68**

ID	Location	Type of developments requiring consultation
1	On site	**All applications - All Planning Applications (Except Householder) Outside Or Extending Outside Existing Settlements/urban Areas Affecting Greenspace, Farmland, Semi Natural Habitats Or Landscape Features Such As Trees, Hedges, Streams, Rural Buildings/structures. Infrastructure - Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Air pollution - Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons > 200m² & manure stores > 250t). Combustion - General combustion processes >20MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill. Composting - Any composting proposal with more than 75000 tonnes maximum annual operational throughput. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Water supply - Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m² or more.**
2	On site	**All applications - All Planning Applications (Except Householder) Outside Or Extending Outside Existing Settlements/urban Areas Affecting Greenspace, Farmland, Semi Natural Habitats Or Landscape Features Such As Trees, Hedges, Streams, Rural Buildings/structures. Infrastructure - Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Air pollution - Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons > 200m² & manure stores > 250t). Combustion - General combustion processes >20MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill. Composting - Any composting proposal with more than 500 tonnes maximum annual operational throughput. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Water supply - Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m² or more.**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	11

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

Features are displayed on the SSSI Impact Zones and Units map on **page 68**

ID: 11
Location: 581m E
SSSI name: Bishop's Hill Wood
Unit name: Bishops Hill Wood
Broad habitat: Broadleaved, Mixed And Yew Woodland - Lowland
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
Lowland mixed deciduous woodland	Favourable	01/10/2010

ID: 13
Location: 833m E
SSSI name: Bishop's Hill Wood
Unit name: Grassland
Broad habitat: Calcareous Grassland - Lowland
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
Lowland neutral grassland (MG5)	Unfavourable - Recovering	01/10/2010

ID: 15
Location: 961m E
SSSI name: Bishop's Hill Wood
Unit name: Bedfords Wood
Broad habitat: Broadleaved, Mixed And Yew Woodland - Lowland
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
Lowland mixed deciduous woodland	Favourable	01/10/2010

ID: 21
Location: 1153m E
SSSI name: Lower Woods
Unit name: High Forest
Broad habitat: Broadleaved, Mixed And Yew Woodland - Lowland

Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
Invert. assemblage A1 arboreal canopy	Favourable	17/08/2012
Invert. assemblage A2 wood decay	Favourable	17/08/2012
Lowland mixed deciduous woodland	Favourable	17/08/2012
Wet woodland	Favourable	17/08/2012

ID: 22
Location: 1220m E
SSSI name: Lower Woods
Unit name: High Forest
Broad habitat: Broadleaved, Mixed And Yew Woodland - Lowland
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
Invert. assemblage A1 arboreal canopy	Favourable	17/08/2012
Invert. assemblage A2 wood decay	Favourable	17/08/2012
Lowland mixed deciduous woodland	Favourable	17/08/2012
Wet woodland	Favourable	17/08/2012

ID: 23
Location: 1223m E
SSSI name: Lower Woods
Unit name: Wetmoor (Gwt Reserve)
Broad habitat: Neutral Grassland - Lowland
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
Lowland mixed deciduous woodland	Favourable	17/07/2012
Lowland neutral grassland (MG5)	Favourable	17/07/2012

ID: 25
Location: 1234m E
SSSI name: Lower Woods
Unit name: Coppiced Wood, Historically Grazed
Broad habitat: Broadleaved, Mixed And Yew Woodland - Lowland
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
Invert. assemblage A1 arboreal canopy	Unfavourable - Recovering	18/07/2012
Invert. assemblage A2 wood decay	Unfavourable - Recovering	18/07/2012
Lowland mixed deciduous woodland	Unfavourable - Recovering	18/07/2012
Wet woodland	Unfavourable - Recovering	18/07/2012

ID: -
Location: 1541m E
SSSI name: Lower Woods
Unit name: Geological Unit - Gwt Reserve
Broad habitat: Earth Heritage
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
EO - Rhaetian	Favourable	27/03/2013
Lowland mixed deciduous woodland	Favourable	27/03/2013
Wet woodland	Favourable	27/03/2013

ID: -
Location: 1780m E
SSSI name: Lower Woods
Unit name: Geological Unit - Gwt Reserve
Broad habitat: Earth Heritage
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
EO - Rhaetian	Favourable	27/03/2013
Lowland mixed deciduous woodland	Favourable	27/03/2013

Feature name	Feature condition	Date of assessment
Wet woodland	Favourable	27/03/2013

ID: -
Location: 1874m NE
SSSI name: Lower Woods
Unit name: North-West Common Land
Broad habitat: Neutral Grassland - Lowland
Condition: Favourable
Reportable features:

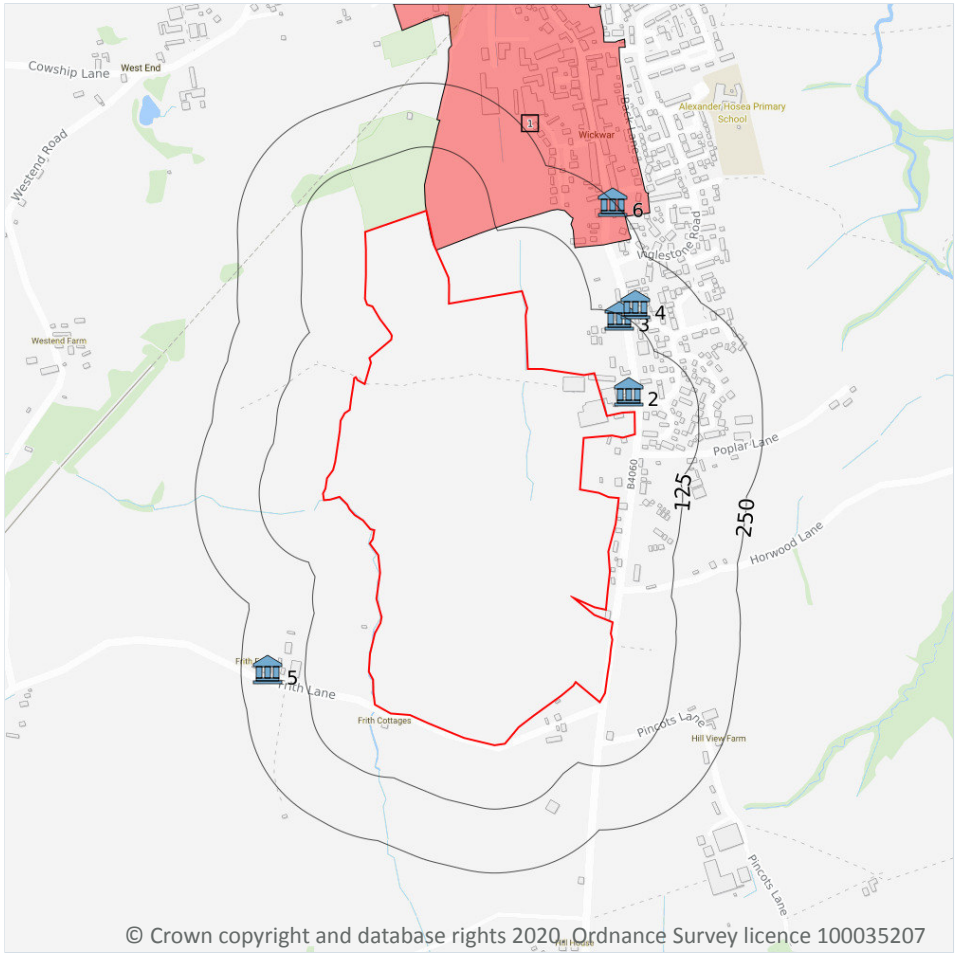
Feature name	Feature condition	Date of assessment
Lowland neutral grassland (MG5)	Favourable	17/07/2012

ID: -
Location: 1912m E
SSSI name: Lower Woods
Unit name: Lower Woods Lodge (Gwt Reserve)
Broad habitat: Neutral Grassland - Lowland
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
Lowland neutral grassland (MG5)	Favourable	17/07/2012

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	5

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 74**

ID	Location	Name	Grade	Reference Number	Listed date
2	41m N	South Farmhouse, Wickwar, South Gloucestershire, GL12	II	1321153	05/06/1984
3	122m NE	Ivy House, Wickwar, South Gloucestershire, GL12	II	1137321	05/06/1984
4	156m NE	Castle Farmhouse, Wickwar, South Gloucestershire, GL12	II	1115052	17/09/1952
5	198m W	Frith Farmhouse, And Bakehouse At South East, Wickwar, South Gloucestershire, GL12	II*	1128768	17/09/1952
6	250m NE	Southend House, Wickwar, South Gloucestershire, GL12	II	1137314	05/06/1984

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

11.5 Conservation Areas

Records within 250m	1

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

Features are displayed on the Visual and cultural designations map on **page 74**

ID	Location	Name	District	Date of designation
1	**On site**	**Wickwar**	**South Gloucestershire**	**13/01/1973**

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

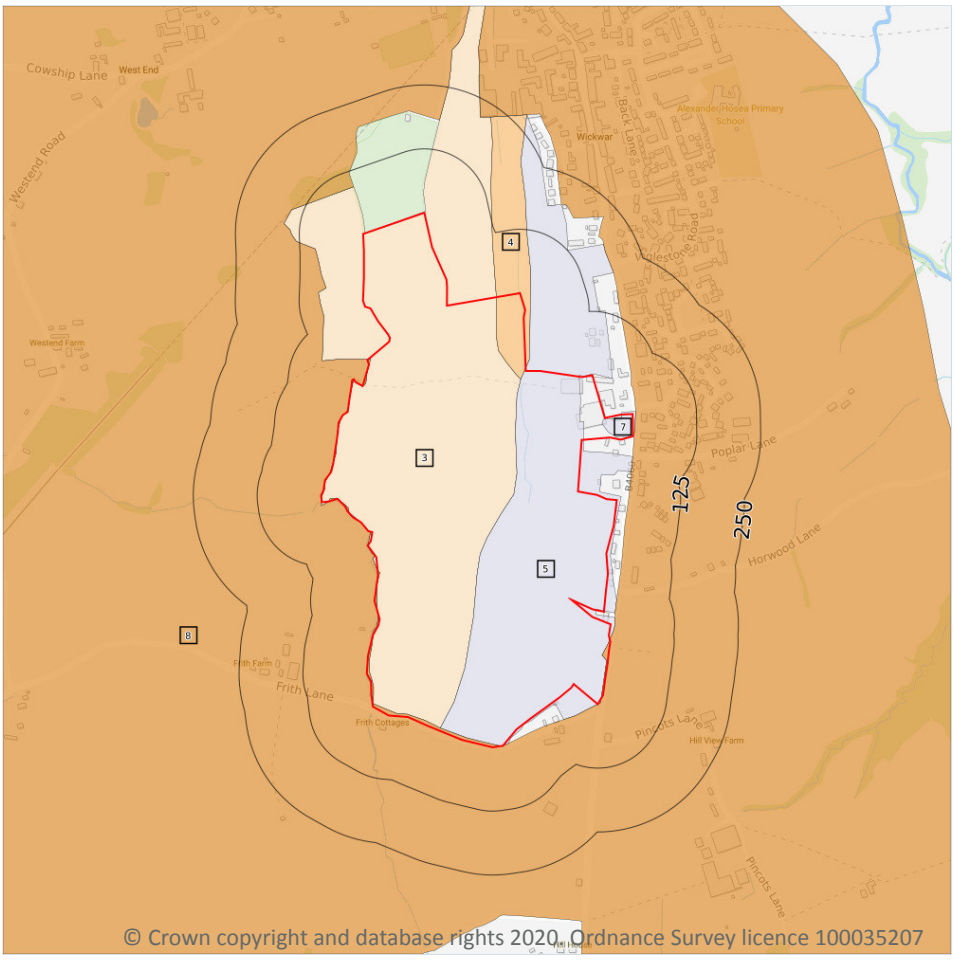
11.7 Registered Parks and Gardens

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 English Heritage, 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	5

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 77**

ID	Location	Classification	Description
3	**On site**	**Grade 3b**	**Moderate quality agricultural land. Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.**

ID	Location	Classification	Description
4	On site	Grade 3a	Good quality agricultural land. Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.
5	On site	Grade 4	Poor quality agricultural land. Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.
7	On site	Grade 4	Poor quality agricultural land. Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.
8	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	3

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment.

Location	Reference	Scheme	Start Date	End date
On site	**AG00469623**	**Entry Level Stewardship**	**01/07/2013**	**30/06/2018**
8m S	AG00469623	Entry Level Stewardship	01/07/2013	30/06/2018
202m NE	AG00440454	Entry Level Stewardship	01/06/2013	31/05/2018

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

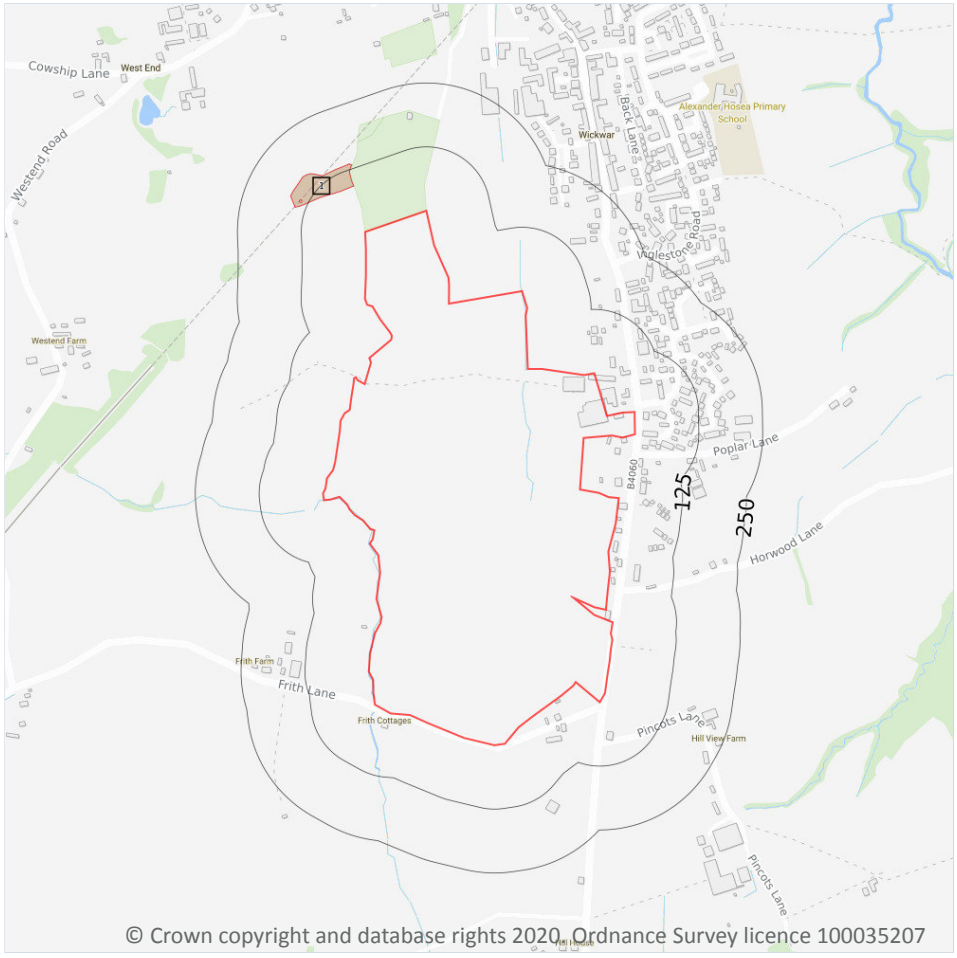
Records within 250m	1

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

Location	Reference	Scheme	Start Date	End Date
10m S	308631	Countryside Stewardship (Middle Tier)	01/01/2017	31/12/2021

This data is sourced from Natural England.

13 Habitat designations



Site Outline

Search buffers in metres (m)

Priority Habitat Inventory
Open Mosaic Habitat
Limestone Pavement Orders

Habitat Networks

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

13.1 Priority Habitat Inventory

Records within 250m	1

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

Features are displayed on the Habitat designations map on **page 80**

ID	Location	Main Habitat	Other habitats
1	92m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

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

This data is sourced from Natural England.

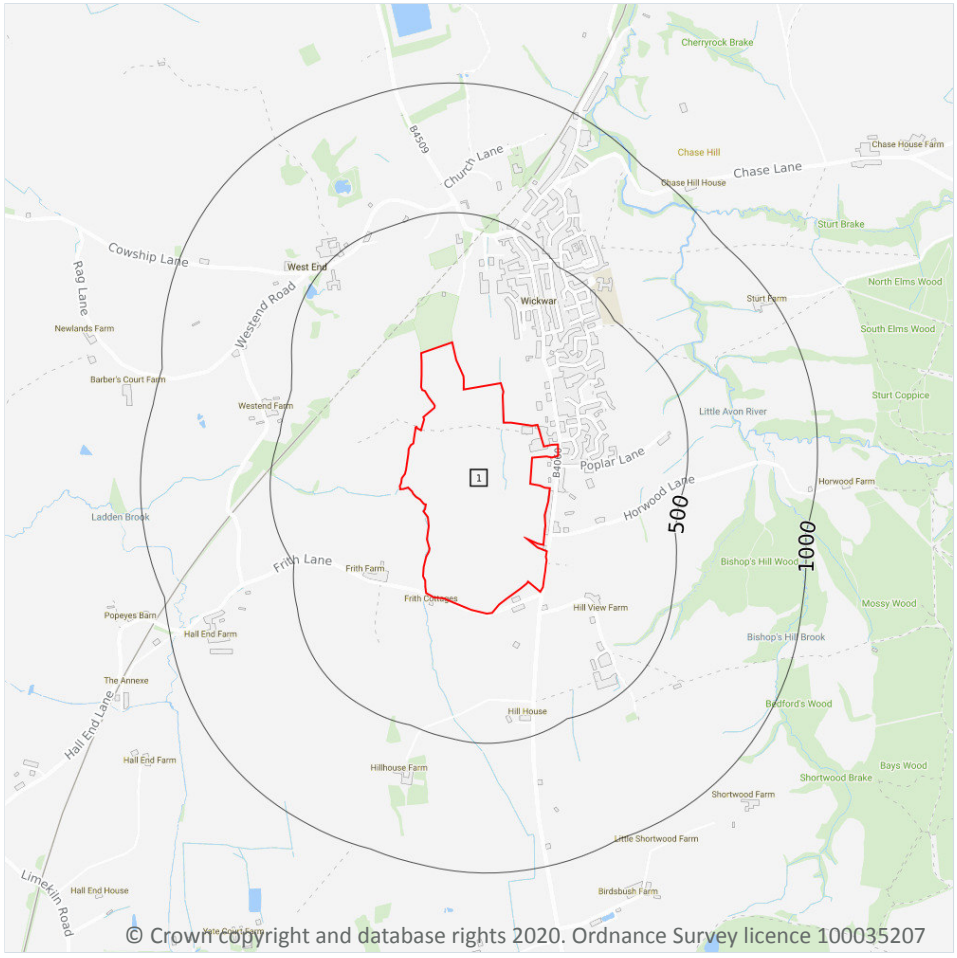
13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



Site Outline

Search buffers in metres (m)

Full coverage

Partial coverage

No coverage

14.1 10k Availability

Records within 500m	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 82**

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.

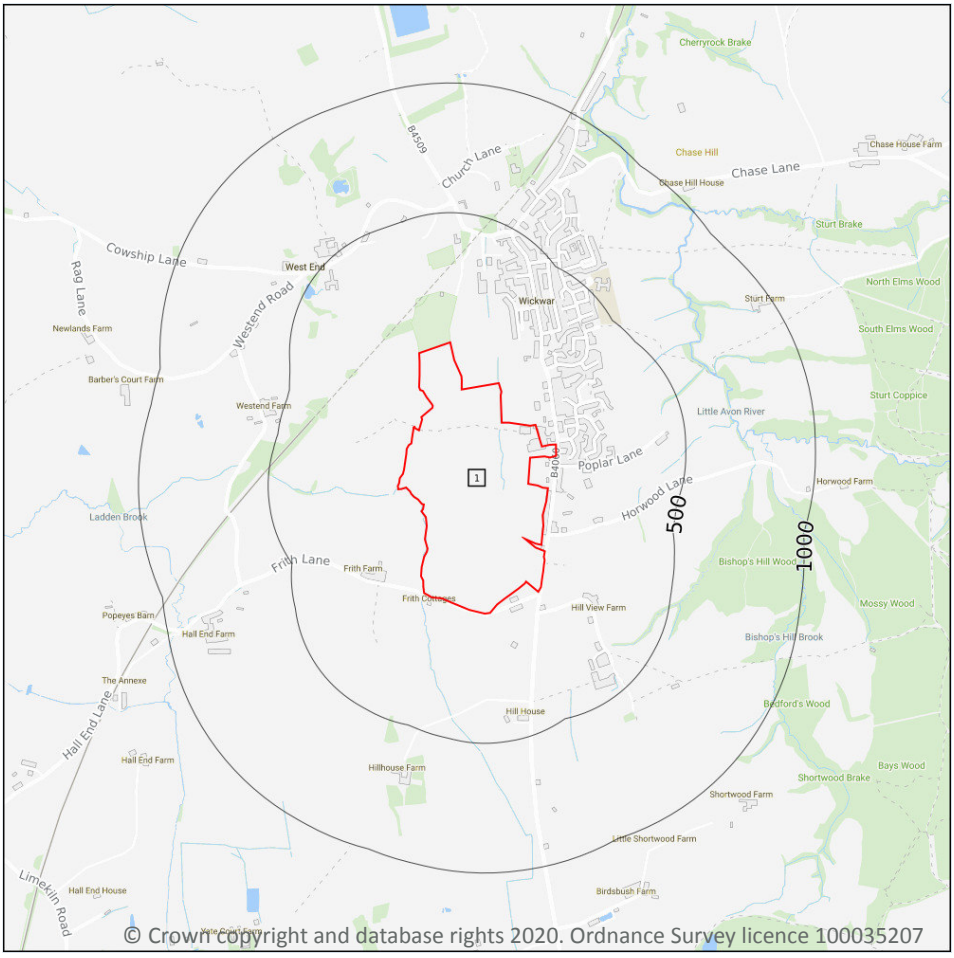
14.6 Bedrock faults and other linear features (10k)

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 86**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**No coverage**	**Full**	**Full**	**Full**	**EW251_malmesbury_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

15.4 Superficial geology (50k)

Records within 500m	0

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.

This data is sourced from the British Geological Survey.

15.5 Superficial 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 superficial deposits (the zone between the land surface and the water table).

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.

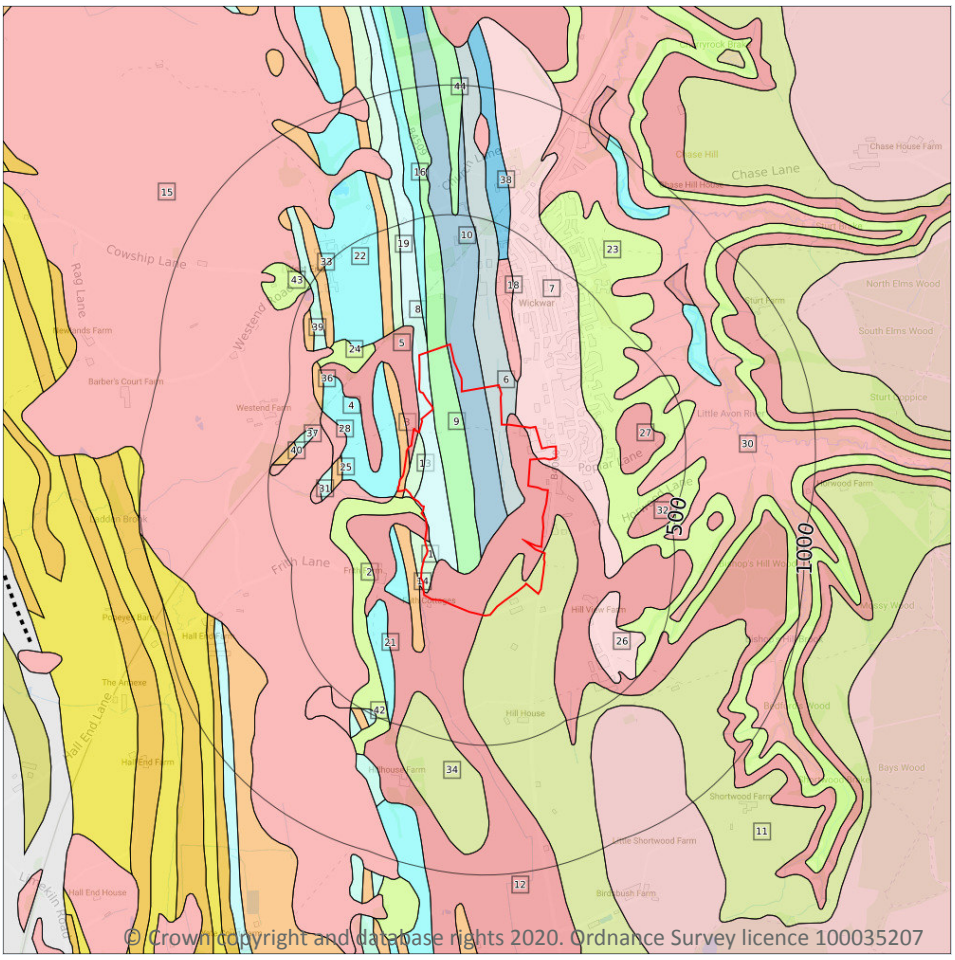
15.7 Landslip permeability (50k)

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	44

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 89**

ID	Location	LEX Code	Description	Rock age
1	On site	CDM-DLMDST	CLIFTON DOWN MUDSTONE FORMATION - DOLOMITE-MUDSTONE	VISEAN
2	On site	BAN-MDST	BLUE ANCHOR FORMATION - MUDSTONE	NORIAN
3	On site	CHSA-SDST	CROMHALL SANDSTONE FORMATION - SANDSTONE	VISEAN

ID	Location	LEX Code	Description	Rock age
4	**On site**	**CDL-LMST**	**CLIFTON DOWN LIMESTONE FORMATION - LIMESTONE**	**VISEAN**
5	**On site**	**WBCT-MDST**	**WESTBURY FORMATION AND COTHAM MEMBER (UNDIFFERENTIATED) - MUDSTONE**	**RHAETIAN**
6	**On site**	**AVO-MDLM**	**AVON GROUP - MUDSTONE AND LIMESTONE, INTERBEDDED**	**TOURNAISIAN**
7	**On site**	**TSG-SDST**	**TINTERN SANDSTONE FORMATION - SANDSTONE**	**FAMENNIAN**
8	**On site**	**GUO-LMOOL**	**GULLY OOLITE FORMATION - LIMESTONE, OOIDAL**	**VISEAN**
9	**On site**	**BRL-DOLO**	**BLACK ROCK LIMESTONE SUBGROUP - DOLOSTONE**	**TOURNAISIAN**
10	**On site**	**BRL-LMST**	**BLACK ROCK LIMESTONE SUBGROUP - LIMESTONE**	**TOURNAISIAN**
11	**On site**	**LPWC-LSMD**	**LANGPORT MEMBER AND WILMCOTE LIMESTONE MEMBER (UNDIFFERENTIATED) - LIMESTONE AND MUDSTONE, INTERBEDDED**	**RHAETIAN**
12	**On site**	**WBCT-MDST**	**WESTBURY FORMATION AND COTHAM MEMBER (UNDIFFERENTIATED) - MUDSTONE**	**RHAETIAN**
13	**On site**	**CDM-DLMDST**	**CLIFTON DOWN MUDSTONE FORMATION - DOLOMITE-MUDSTONE**	**VISEAN**
14	11m W	CHSA-SDST	CROMHALL SANDSTONE FORMATION - SANDSTONE	VISEAN
15	27m SW	MMG-MDSS	MERCIA MUDSTONE GROUP - MUDSTONE, SILTSTONE AND SANDSTONE	-
16	39m N	CDL-LMST	CLIFTON DOWN LIMESTONE FORMATION - LIMESTONE	VISEAN
17	54m W	CDL-LMST	CLIFTON DOWN LIMESTONE FORMATION - LIMESTONE	VISEAN
18	66m NE	MMMF-CONG	MERCIA MUDSTONE GROUP (MARGINAL FACIES) - CONGLOMERATE	-
19	127m NW	CDM-DLMDST	CLIFTON DOWN MUDSTONE FORMATION - DOLOMITE-MUDSTONE	VISEAN
20	134m NW	CHSA-SDST	CROMHALL SANDSTONE FORMATION - SANDSTONE	VISEAN
21	154m W	CDL-LMST	CLIFTON DOWN LIMESTONE FORMATION - LIMESTONE	VISEAN
22	154m NW	CDL-LMST	CLIFTON DOWN LIMESTONE FORMATION - LIMESTONE	VISEAN
23	165m E	BAN-MDST	BLUE ANCHOR FORMATION - MUDSTONE	NORIAN
24	170m W	BAN-MDST	BLUE ANCHOR FORMATION - MUDSTONE	NORIAN
25	217m W	CHSA-SDST	CROMHALL SANDSTONE FORMATION - SANDSTONE	VISEAN
26	223m SE	TSG-SDST	TINTERN SANDSTONE FORMATION - SANDSTONE	FAMENNIAN

ID	Location	LEX Code	Description	Rock age
27	233m E	WBCT-MDST	WESTBURY FORMATION AND COTHAM MEMBER (UNDIFFERENTIATED) - MUDSTONE	RHAETIAN
28	235m W	MMMF-CONG	MERCIA MUDSTONE GROUP (MARGINAL FACIES) - CONGLOMERATE	-
29	257m W	OHL-LMOOL	OXWICH HEAD LIMESTONE FORMATION - LIMESTONE, OOIDAL	VISEAN
30	294m NE	MMG-MDSS	MERCIA MUDSTONE GROUP - MUDSTONE, SILTSTONE AND SANDSTONE	-
31	297m W	MMMF-CONG	MERCIA MUDSTONE GROUP (MARGINAL FACIES) - CONGLOMERATE	-
32	326m E	WBCT-MDST	WESTBURY FORMATION AND COTHAM MEMBER (UNDIFFERENTIATED) - MUDSTONE	RHAETIAN
33	333m W	CHSA-SDST	CROMHALL SANDSTONE FORMATION - SANDSTONE	VISEAN
34	357m S	LPWC-LSMD	LANGPORT MEMBER AND WILMCOTE LIMESTONE MEMBER (UNDIFFERENTIATED) - LIMESTONE AND MUDSTONE, INTERBEDDED	RHAETIAN
35	357m W	OHL-LMOOL	OXWICH HEAD LIMESTONE FORMATION - LIMESTONE, OOIDAL	VISEAN
36	360m W	CHSA-SDST	CROMHALL SANDSTONE FORMATION - SANDSTONE	VISEAN
37	361m W	OHL-LMOOL	OXWICH HEAD LIMESTONE FORMATION - LIMESTONE, OOIDAL	VISEAN
38	375m NE	AVO-LMST	AVON GROUP - LIMESTONE	TOURNAISIAN
39	407m W	CHSA-SDST	CROMHALL SANDSTONE FORMATION - SANDSTONE	VISEAN
40	410m W	CHSA-SDST	CROMHALL SANDSTONE FORMATION - SANDSTONE	VISEAN
41	435m W	MMMF-CONG	MERCIA MUDSTONE GROUP (MARGINAL FACIES) - CONGLOMERATE	-
42	486m SW	OHL-LMOOL	OXWICH HEAD LIMESTONE FORMATION - LIMESTONE, OOIDAL	VISEAN
43	491m NW	BAN-MDST	BLUE ANCHOR FORMATION - MUDSTONE	NORIAN
44	498m N	BRL-DOLO	BLACK ROCK LIMESTONE SUBGROUP - DOLOSTONE	TOURNAISIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	16

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Fracture**	**Very High**	**High**
On site	**Fracture**	**Very High**	**High**
On site	**Fracture**	**High**	**Moderate**
On site	**Fracture**	**Low**	**Low**
On site	**Fracture**	**Very High**	**High**
On site	**Fracture**	**Low**	**Low**
On site	**Fracture**	**Moderate**	**Low**
On site	**Fracture**	**Very High**	**High**
On site	**Fracture**	**Very High**	**High**
On site	**Fracture**	**Low**	**Low**
On site	**Fracture**	**Very High**	**High**
On site	**Fracture**	**Moderate**	**Moderate**
On site	**Fracture**	**High**	**Low**
11m SW	Fracture	High	Moderate
27m NW	Fracture	Moderate	Low
39m N	Fracture	Very 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

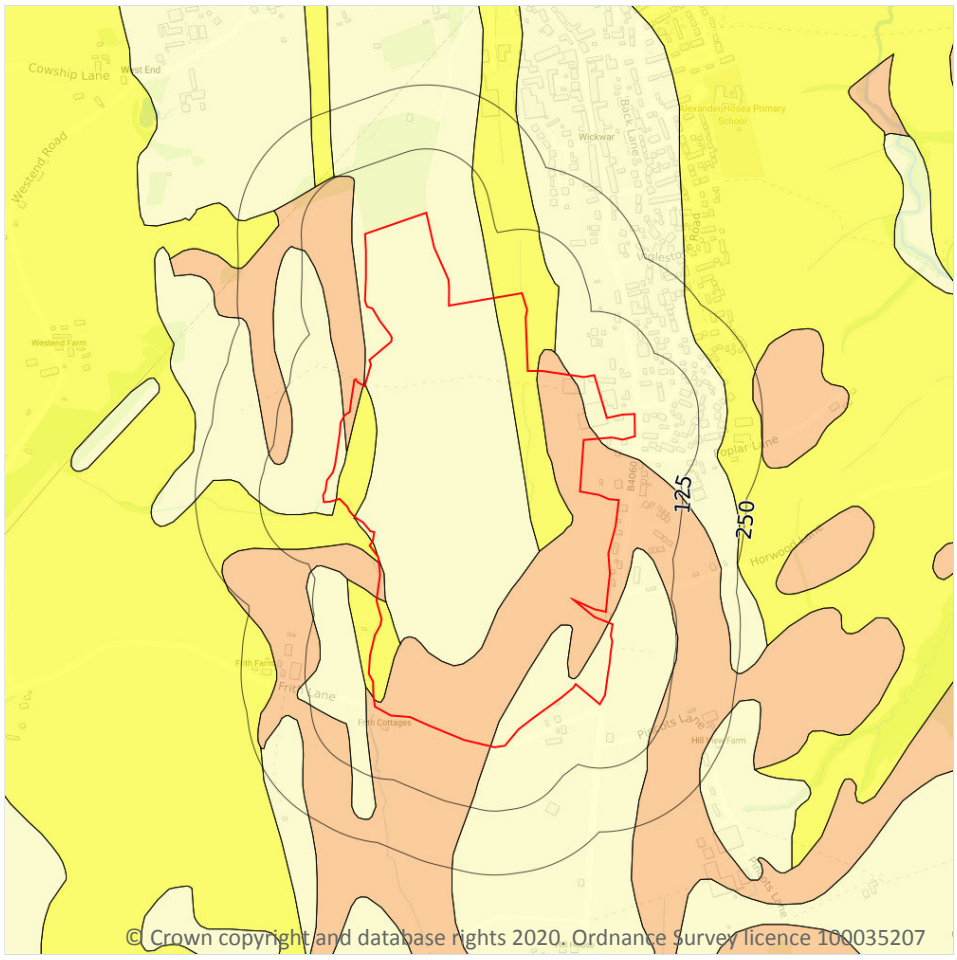
16.1 BGS Boreholes

Records within 250m	0

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

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

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

17.1 Shrink swell clays

Records within 50m	4

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).

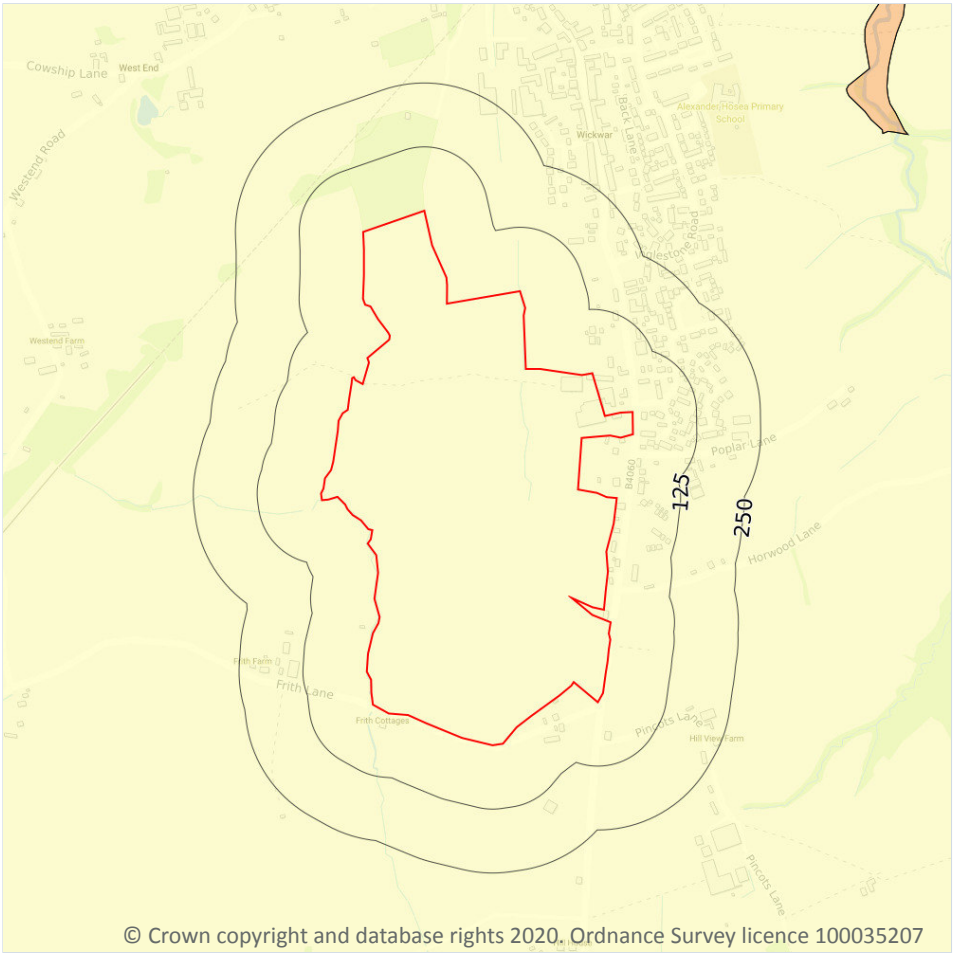
Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 94**

Location	Hazard rating	Details
On site	**Negligible**	**Ground conditions predominantly non-plastic.**
On site	**Very low**	**Ground conditions predominantly low plasticity.**
On site	**Low**	**Ground conditions predominantly medium plasticity.**

Location	Hazard rating	Details
11m W	Negligible	Ground conditions predominantly non-plastic.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

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

17.2 Running sands

Records within 50m	1

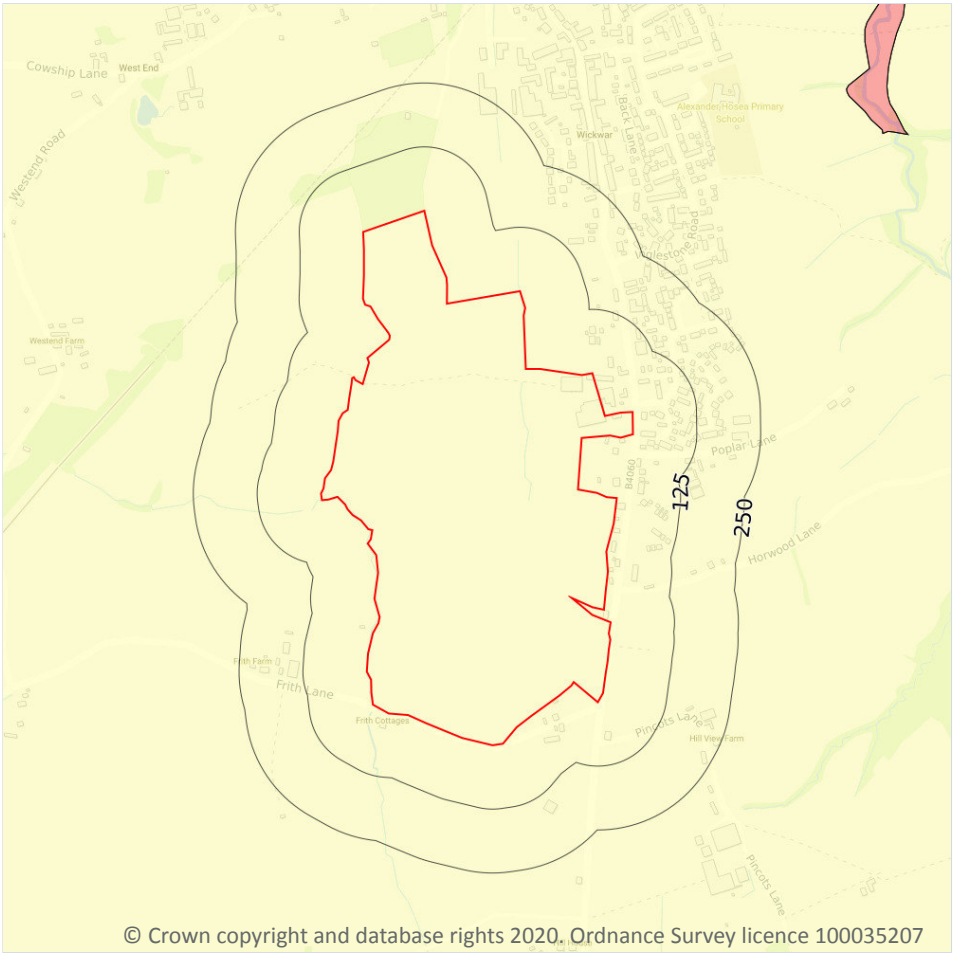
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 96**

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

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

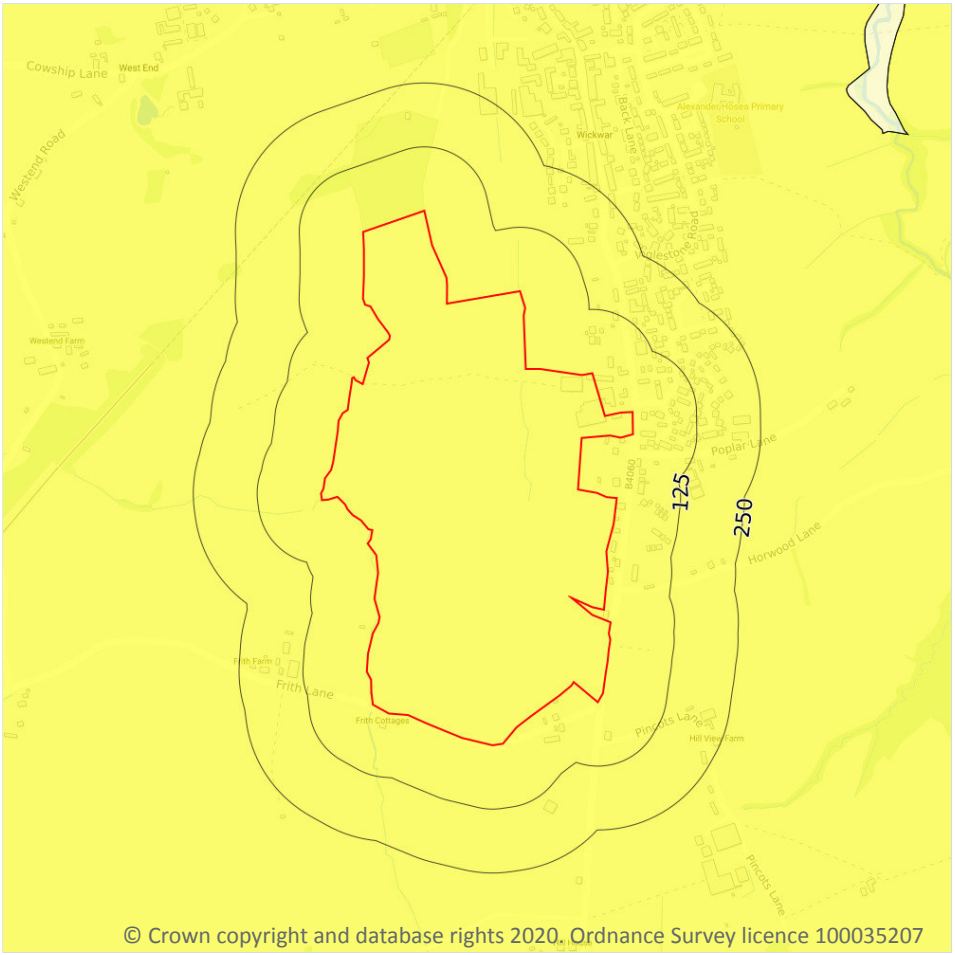
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 97**

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

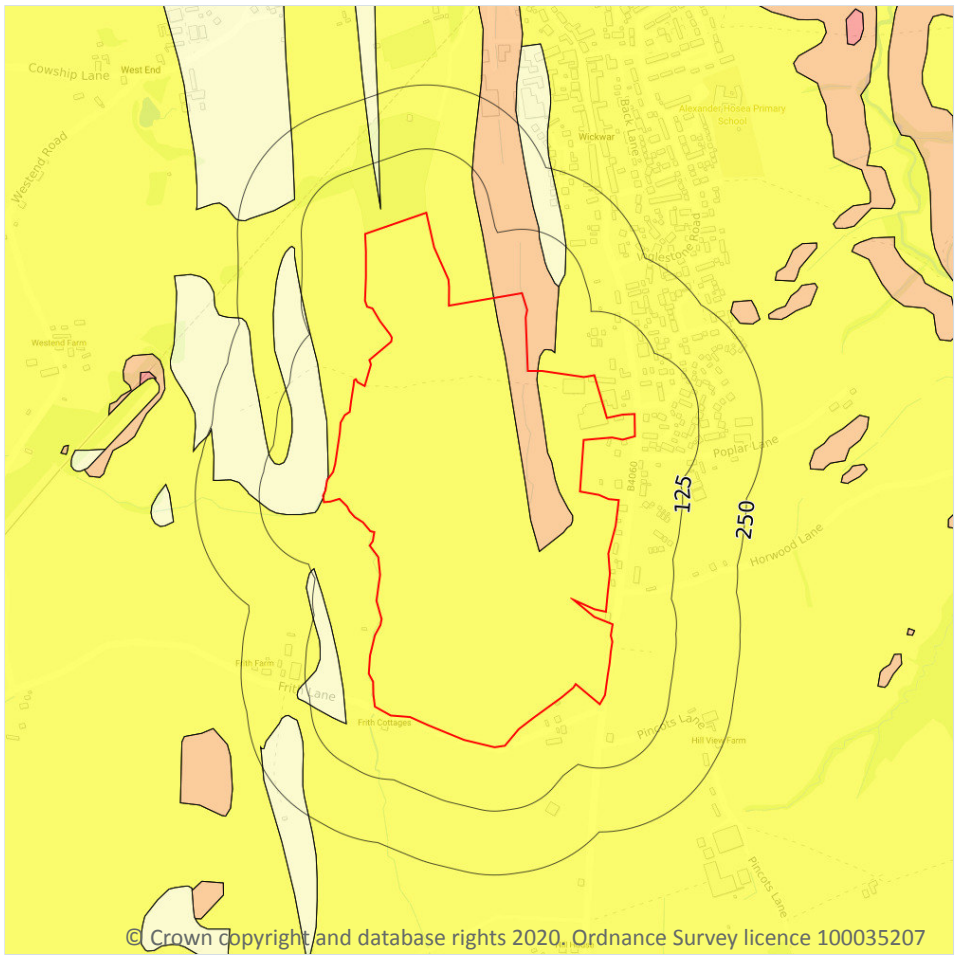
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 98**

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	4

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.

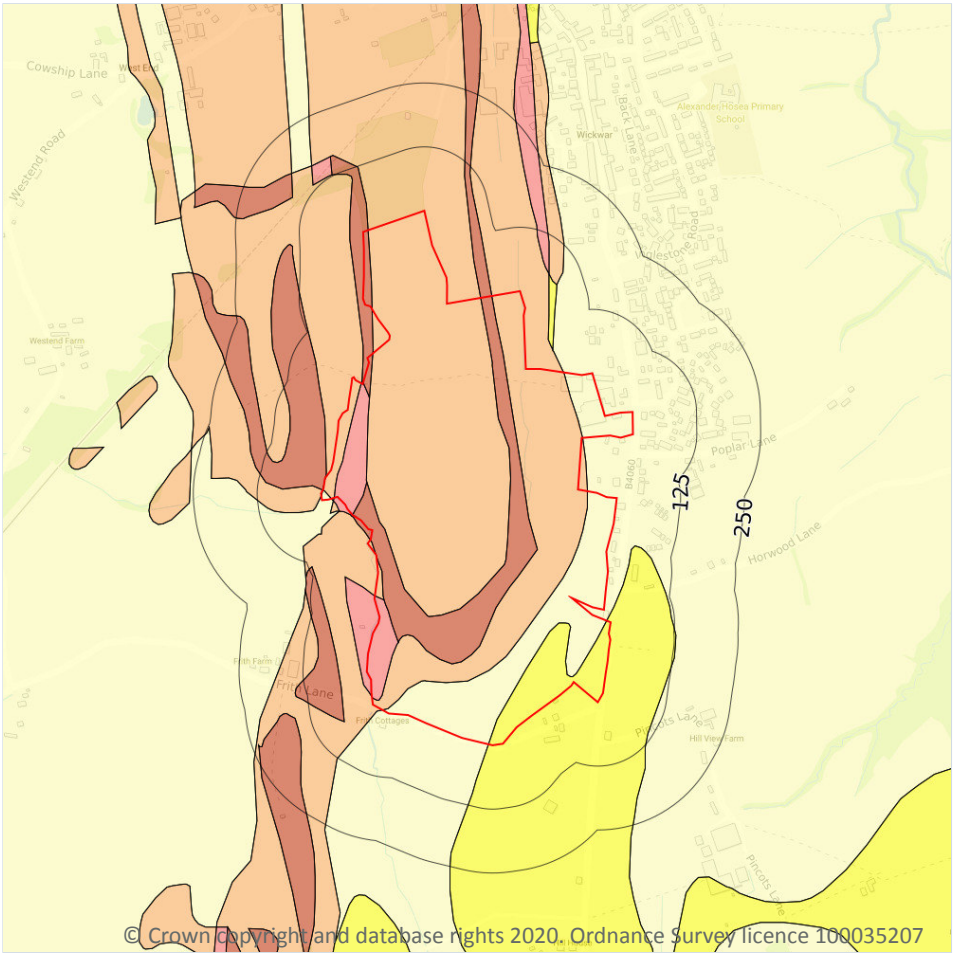
Features are displayed on the Natural ground subsidence - Landslides map on **page 99**

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

Location	Hazard rating	Details
On site	**Very low**	**Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.**
On site	**Low**	**Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.**
39m N	Negligible	Slope instability problems are not thought to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

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	7

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.

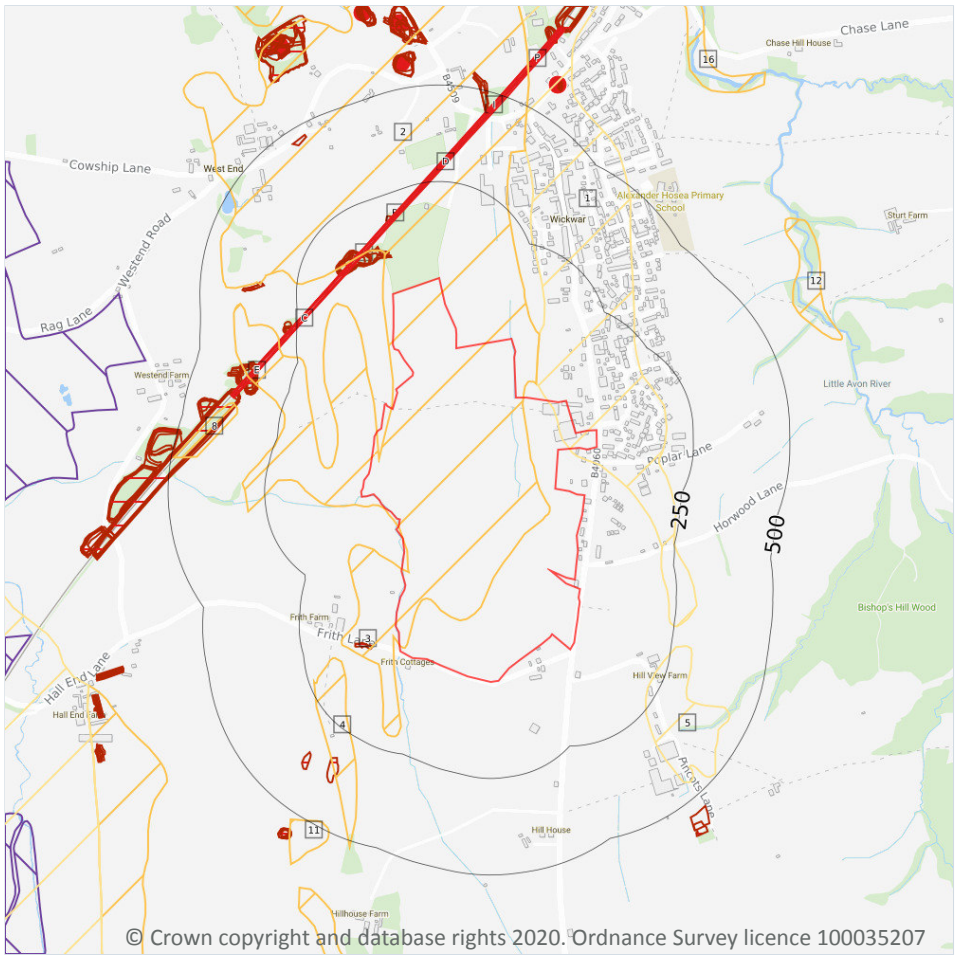
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 101**

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.**

Location	Hazard rating	Details
On site	**Very low**	**Soluble rocks are present within the ground. Few dissolution features are likely to be present. Potential for difficult ground conditions or localised subsidence are at a level where they need not be considered.**
On site	**Low**	**Soluble rocks are present within the ground. Some dissolution features may be present. Potential for difficult ground conditions are at a level where they may be considered, localised subsidence need not be considered except in exceptional circumstances.**
On site	**Moderate**	**Soluble rocks are present within the ground. Many dissolution features may be present. Potential for difficult ground conditions are at a level where they should be considered. Potential for subsidence is at a level where it may need to be considered.**
On site	**High**	**Soluble rocks are present within the ground. Numerous dissolution features may be present. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered.**
5m S	Low	Soluble rocks are present within the ground. Some dissolution features may be present. Potential for difficult ground conditions are at a level where they may be considered, localised subsidence need not be considered except in exceptional circumstances.
41m N	Very low	Soluble rocks are present within the ground. Few dissolution features are likely to be present. Potential for difficult ground conditions or localised subsidence are at a level where they need not be considered.

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



Site Outline

Search buffers in metres (m)

- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities

Non Coal Mining

- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m	0

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

This data is sourced from Peter Brett Associates (PBA).

18.2 BritPits

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	9

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 103**

ID	Location	Land Use	Year of mapping	Mapping scale
3	72m W	Ponds	1881	1:10560
A	92m N	Unspecified Ground Workings	1923	1:10560
A	92m N	Unspecified Ground Workings	1923	1:10560
A	94m N	Unspecified Ground Workings	1900	1:10560
A	95m NW	Unspecified Heaps	1949	1:10560
A	100m NW	Unspecified Ground Workings	1886	1:10560
A	101m NW	Refuse Heap	1881	1:10560
A	102m NW	Unspecified Heap	1980	1:10000
B	180m N	Unspecified Heap	1886	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	40

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 103**

ID	Location	Land Use	Year of mapping	Mapping scale
B	125m NW	Tunnel	1923	1:10560
B	126m NW	Tunnel	1949	1:10560
B	126m NW	Tunnel	1980	1:10000
B	128m NW	Tunnel	1923	1:10560
B	128m NW	Tunnel	1881	1:10560
A	132m NW	Air Shaft	1923	1:10560
A	132m NW	Air Shaft	1923	1:10560
A	133m NW	Air Shaft	1881	1:10560
A	134m NW	Air Shaft	1949	1:10560
A	134m NW	Air Shaft	1980	1:10000
B	178m N	Air Shaft	1949	1:10560
B	178m N	Air Shaft	1980	1:10000
B	179m N	Air Shaft	1923	1:10560
B	183m N	Air Shaft	1923	1:10560
B	183m N	Air Shaft	1881	1:10560
C	244m W	Air Shaft	1923	1:10560
C	245m W	Air Shaft	1923	1:10560
C	245m W	Air Shaft	1881	1:10560
C	248m W	Air Shaft	1949	1:10560
C	248m W	Air Shaft	1980	1:10000
D	283m N	Air Shaft	1949	1:10560
D	283m N	Air Shaft	1980	1:10000
D	284m N	Air Shaft	1923	1:10560
D	287m N	Air Shaft	1923	1:10560
D	287m N	Air Shaft	1881	1:10560
E	351m W	Air Shaft	1923	1:10560
E	352m W	Air Shaft	1923	1:10560
E	352m W	Air Shaft	1881	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
E	353m W	Air Shaft	1949	1:10560
E	353m W	Air Shaft	1980	1:10000
I	449m N	Air Shafts	1949	1:10560
I	449m N	Air Shaft	1980	1:10000
I	451m N	Air Shafts	1923	1:10560
I	455m N	Air Shafts	1923	1:10560
I	455m N	Air Shaft	1881	1:10560
P	601m NE	Air Shafts	1949	1:10560
P	601m NE	Air Shaft	1980	1:10000
P	601m NE	Air Shafts	1923	1:10560
P	607m NE	Air Shafts	1923	1:10560
P	607m NE	Air Shaft	1881	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	10

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 103**

ID	Location	Name	Commodity	Class	Likelihood
1	**On site**	**Not available**	**Vein Mineral**	**A**	**Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered**
2	**On site**	**Not available**	**Vein Mineral**	**B**	**Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered**
4	154m W	Not available	Vein Mineral	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
5	223m SE	Not available	Vein Mineral	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered
8	361m W	Not available	Vein Mineral	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
11	486m SW	Not available	Vein Mineral	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
12	605m NE	Not available	Vein Mineral	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
14	654m SW	Not available	Vein Mineral	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
15	810m W	Not available	Vein Mineral	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered
16	822m NE	Not available	Vein Mineral	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	0

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

This data is sourced from Peter Brett Associates (PBA).

18.8 JPB mining areas

Records on site	0

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0

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

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0

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

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

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Mining Searches UK.

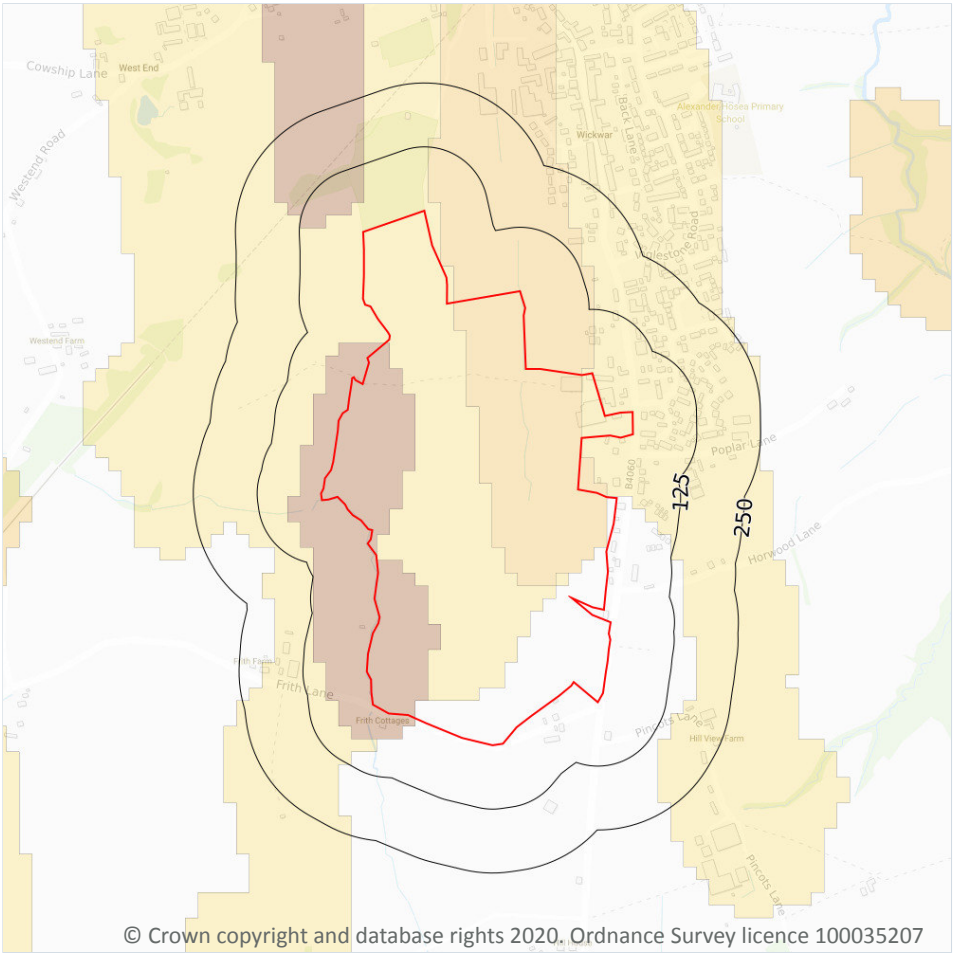
18.13 Clay mining

Records on site	0

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

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

19 Radon



Site Outline

Search buffers in metres (m)

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

19.1 Radon

Records on site	4

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

Features are displayed on the Radon map on **page 110**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Between 3% and 5%**	**Basic**
On site	**Between 1% and 3%**	**None**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Between 10% and 30%**	**Full**
On site	**Less than 1%**	**None****

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

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	57

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 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**50 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**50 - 100 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**50 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**50 - 100 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**50 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**50 - 100 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**50 - 100 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**50 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**50 - 100 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 - 25 mg/kg	No data	100 mg/kg	50 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	50 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	50 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	50 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	50 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg
On site	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg
On site	25 - 35 mg/kg	No data	100 - 200 mg/kg	50 - 100 mg/kg	1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	50 mg/kg	1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg
On site	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**25 - 35 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**90 - 120 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**50 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**25 - 35 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**90 - 120 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**50 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**50 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**35 - 45 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**90 - 120 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**25 - 35 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**90 - 120 mg/kg**	**30 - 45 mg/kg**
On site	**25 - 35 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**90 - 120 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**50 - 100 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**25 - 35 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**90 - 120 mg/kg**	**30 - 45 mg/kg**
11m NW	15 - 25 mg/kg	No data	100 - 200 mg/kg	50 - 100 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
11m SW	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
11m NW	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg
24m SE	35 - 45 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
27m W	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
28m NW	25 - 35 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg
31m E	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg
39m N	15 - 25 mg/kg	No data	100 mg/kg	50 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
43m SE	35 - 45 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
48m SE	35 - 45 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

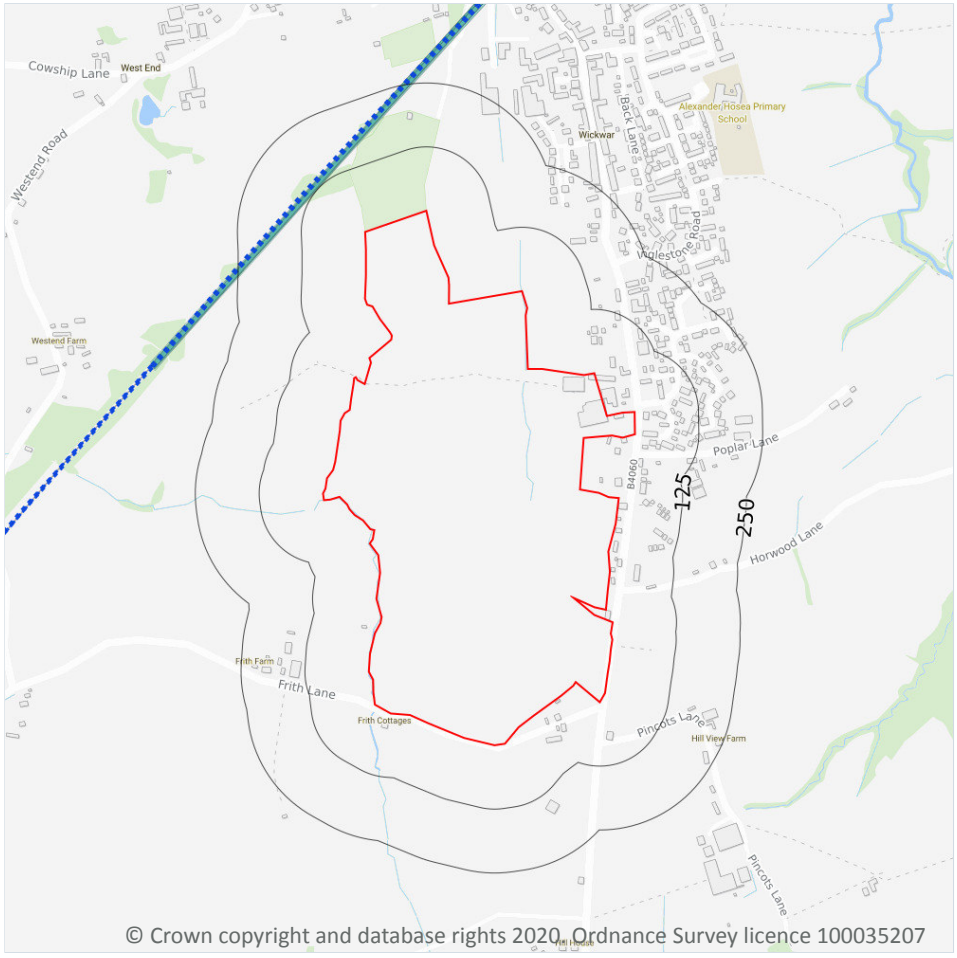
20.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects



Site Outline

Search buffers in metres (m)

- Crossrail 1 Stations
- Crossrail 1 Route
- Crossrail 1 Worksites
- Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

21.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	**1**

Railway tunnels taken from contemporary Ordnance Survey mapping.

Features are displayed on the Railway infrastructure and projects map on **page 116**

Location	Type
136m NW	Railway Tunnel

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	**17**

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

Features are displayed on the Railway infrastructure and projects map on **page 116**

Location	Land Use	Year of mapping	Mapping scale
125m NW	Tunnel	1923	10560
125m NW	Tunnel	1886	10560
126m NW	Tunnel	1949	10560
126m NW	Tunnel	1980	10000
128m NW	Tunnel	1923	10560
128m NW	Tunnel	1881	10560
129m NW	Tunnel	1900	10560
130m NW	Tunnel	1966	2500
131m NW	Tunnel	1989	2500
202m N	Tunnel	1966	2500
202m N	Tunnel	1996	2500
202m N	Tunnel	1997	2500
202m N	Tunnel	1993	2500

Location	Land Use	Year of mapping	Mapping scale
204m N	Tunnel	1981	2500
204m N	Tunnel	1988	2500
204m N	Tunnel	1990	2500
204m N	Tunnel	1991	2500

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	2

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

Features are displayed on the Railway infrastructure and projects map on **page 116**

Location	Name	Type
136m NW	Cross Country Route	rail
141m NW	Cross Country Route	rail

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

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

This data is sourced from HS2 ltd.

Data providers

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

Terms and conditions

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