

Elemental GI Ltd

REPORT: PHASE 1 GEO-ENVIRONMENTAL ASSESSMENT FOR SITE OFF BLACK HOLE DROVE, WEST PINCHBECK, SPALDING

CLIENT: OGLESBY & LIMB LIMITED

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PHASE I GEO-ENVIRONMENTAL ASSESSMENT: SITE OFF BLACK HOLE DROVE, WEST PINCHBECK, SPALDING

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SEMI-TECHNICAL SUMMARY

The reader is referred to the terms and conditions which accompany this report, and which are presented at the end of this document.

This semi-technical summary provides a brief overview of the main conditions which have been noted on site. These features / factors (alongside others) are explained fully in the following report and the following should therefore not be referred to in isolation. **No reliance should be placed on this summary until the whole report has been read in full.**

Ground Conditions	The site looks like it should be underlain by made ground in the areas associated with the gravel track, rear of shed and beneath the footprint of the shed and then underlain by natural cohesive soils comprising clays and silts. The underlying natural soils should be inspected and analysed to confirm foundation requirements including (but not limited to) their volume change potential and sulphate classification.
Contamination	Potential minor contamination issues have been identified at / around the site which may require further investigation. A gravel area and track are found in the northern and western areas of the site outside of the shed. The shed is built of asbestos cement materials with exposed brick footings. Asbestos cement debris is present on the surface of the ground around the base of the shed in some areas. Waste and demolition materials are also noted near to the shed in some areas. The southern area of the site is shown to have been raised to create a level platform higher than the surrounding fields. This potentially shows the placement of materials indicating made ground.
Other Issues	-
Recommendations	▪ Completion of a targeted / shallow Phase II geo-environmental intrusive site investigation to confirm the quality of near-surface soil; and ▪ Confirmation of the deeper ground profile and strength to confirm foundation recommendations.

1.0 INTRODUCTION

1.1 Report Status

Elemental GI Ltd were appointed by Oglesby & Limb Limited (hereafter referred to as 'the Client') to undertake a Phase I Geo-Environmental Assessment for the site off Black Hole Drove, West Pinchbeck, Spalding (hereafter referred to as 'the site').

This report has been prepared on the understanding that the site is to undergo 'conversion of agricultural barn to dwelling'.

This report has been prepared in accordance with our notes concerning the terms and conditions of these works and of our engagement, which are presented at the end of this report.

Should the development proposals alter, then the recommendations in this report may be subject to change. Whilst it may be utilised by others for reference purposes at the Client's discretion, it has not been prepared for any other purposes (e.g. waste classification etc.) and therefore additional works may be required by third parties dependent upon their own requirements / works.

1.2 Previous Reports

Elemental GI Ltd have not been made aware of any previous environmental / geotechnical reports by the Client.

2.0 SITE SETTING

2.1 Location

The address and location of the subject site are shown in Table 2.0 below:

Table 2.0: Site Location and Dimensions

Site Address	Site off Black Hole Drove, West Pinchbeck, Spalding, PE11 3QL.
National Grid Ref.	517926, 325284.
Area (Approx.)	0.05 ha.
Access	Site can be accessed off Black Hole Drove.



2.2 Description

The following general observations have been made concerning the site and surrounding areas:

2.2.1 Site:

- The site forms an irregularly shaped but broadly rectangular parcel of land;
- The site currently supports an asbestos cement-clad agricultural shed with exposed brick footings exposed / visible along the base of the shed's eastern wall. The shed houses agricultural machinery. A vent is noted at the back of the shed leading into a wooden chamber inside indicating a possible bulb drier. The shed has concrete flooring which shows no evidence of staining or odour;
- No evidence of any bulk storage of any fuels or chemicals was noted on-site;
- Gravel surfacing is noted outside the shed in the northern and western areas of the site with grass in the southern area;
- The site is shown to be generally flat. However slopes are present adjacent to the south-eastern boundary and in close proximity to the southern boundary. It appears that the rear / southern area of the site has been raised to create a level platform which is higher that the surrounding fields;
- Asbestos cement debris is noted around the shed on the ground in some areas; and
- General waste materials are noted outside, alongside the base of the shed in the southern area of the site with demolition materials also noted near the north-eastern boundary of the site.

2.2.2 Surrounding Area:

- The site is set within a predominantly agricultural area with some residential housing also present locally;
- Land to the north of the site supports Black Hole Drove, drains and agricultural fields;
- Land to the east of the site supports agricultural fields and drains with a residential dwelling nearby;
- The platform continues off-site to the south and supports a single plastic 12,000 litre water tank. The ground then drops away down a small slope to meet an adjacent agricultural field.
- Land to the west of the site supports a gravel track beyond which residential housing and a paddock are found; and
- Land in the wider area surrounding the site supports Agricultural fields and drains with some residential housing.

3.0 ENVIRONMENTAL DATABASE AND GEOLOGICAL SETTING

3.1 Geology, Hydrogeology and Mining

Table 3.1 presents the geological information reviewed for the site, which has been obtained from publicly available records and / or site-specific environmental database reports.

Table 3.1: Geological and Hydrogeological Information

Category	Entries and Notes*
Hydrogeology & Hydrology	The drift deposits recorded beneath the site are classified as an 'Unproductive Aquifer'. The bedrock geology recorded beneath the site is classified as an 'Unproductive Aquifer'. 1 No. entry relating to abstractions are recorded within a 250m radius of the site relating to ground water abstraction for irrigation 72m south-west of the site. 2 No. entries relating to potable abstractions are recorded within a 2000m radius of the site relating to potable water supply 1079m north of the site. The site is recorded to be within an Environment Agency Zone 2 source protection zone for the total catchment. 15 No. entries relating to water networks are recorded within a 250m radius of site relating to various unnamed drains / ditches from 5m north of the site. 7 No. entries relating to surface water features are recorded within a 250m radius of site relating to various unnamed drains / ditches. Records relating to the site's flood risk are presented within the Environmental Database Report which is in Appendix IV. This report should not be used for flood risk assessment purposes.
Underlying Ground / Geology	No records of artificial and made ground are recorded beneath the site on available 1:50,000 scale geological mapping. Drift deposits are recorded beneath the site on 1:50,000 scale mapping comprising Tidal Flat Deposits (clay and silt) This is generally recorded to comprise *"… mud flat and sand flat deposits, form extensive nearly horizontal marshy land in the intertidal zone that is alternately covered and uncovered by the rise and fall of the tide. They consist of unconsolidated sediment, mainly mud and/or sand. They may form the top surface of a deltaic deposit…".* The solid geology beneath the site on 1:50,000 scale mapping is recorded as Oxford Clay Formation, mudstone. This is generally recorded to comprise *"… Silicate-mudstone, grey, generally smooth to slightly silty, with sporadic beds of argillaceous limestone nodules...".* No entries relating to geological faults are recorded within a 250m radius of the site on 1:50,000 scale mapping.

Table 3.1: Geological and Hydrogeological Information (cont.)

Natural Ground Stability Hazards	The site has been classified as having a moderate hazard rating for running sand and compressible deposit hazards. The site has been classified as having a low hazard rating for shrink swell clay hazards. The site has been classified as having a very low hazard rating for landslide hazards. The site has been classified as having a negligible / 'no' hazard rating for collapsible deposit and ground dissolution of soluble rock hazards.
Mining, Ground Workings and Natural Cavities	No natural cavity entries are recorded within a 250m radius of the site. No 'BritPit' entries are recorded within a 250m radius of the site. No surface ground workings entries are recorded within a 250m radius of site. No coal mining or non-coal mining extraction or brine extraction areas are recorded within 250m of the site.
Background Chemistry	Background chemistry for the site does not highlight any significantly elevated natural contaminants.

* This table has been prepared using information from the site-specific environmental report which is included in Appendix IV. Please refer to this for full information on the above.

3.2 Environmental Database Information

An environmental database report has been procured for the site. Elemental GI Ltd have reviewed this report and have summarised the entries below which are considered likely to warrant further consideration as potential sources within the site-specific CSM (conceptual site model). In general all entries within a 250m radius of the site's boundary have been considered and assessed as part of this review.

We will have omitted entries in the table below where they are not considered to be feasible sources due to varying factors, which often includes their age, size and distance from site.

Table 3.2: Environmental Data

Category	Entries and Notes*
Historical Land Uses	No records of historical land uses are identified within a 250m radius of the site (e.g. historical industry, historical tanks etc).
Waste and Landfill	18 No. records of waste exemptions are identified within a 250m radius of the site. These include the deposit of waste from dredging of inland waters, deposit of agricultural waste, disposal by incineration, burning waste, preparatory treatments, treatment of waste wood and spreading waste 120m north-east and 141 north-east of the site at Royce Farm.
Current Industrial Land Uses	1 No. entry for recent industrial land uses is identified within a 250m radius of the site relating to a tool repair business 16m west of the site.
Sensitive Land Uses	The site is recorded to be set within a nitrate vulnerable zone and an SSSI impact risk zone.

* This table has been prepared using information from the site-specific environmental report which is included in Appendix IV. Please refer to this for full information on the above.

3.3 Radon and Ground Gas

The site is in an area where less than 1% of homes are estimated to be at or above the Action Level. Therefore, radon protective measures are not required, subject to regulatory approval.

At this stage the following potential sources of ground gas have been identified:

- The slopes adjacent to the south-eastern boundary and in close proximity to the southern boundary show that the rear / southern area of the site has been raised to create a level platform which is higher that the surrounding fields. This may have involved filling of the ground with unknown materials; and
- Organic materials which may have accumulated beneath and around the nearby drains /watercourses running alongside the northern boundary.

4.0 SITE HISTORY

Historical maps dating back to 1887 have been obtained for the site, and are presented in Appendix V. The main features on site and in surrounding land areas have been reviewed and are summarised in in Tables 4.1a and 4.1b below.

Table 4.1a: Summary of Site History On-Site

OS Map Date Range(s)	Principal Features On-Site
1887 - 1978	• The site is shown to be within an open field.
1978 - Present	• The site is now shown to contain 1 No. rectangular structure. • A track is shown in the southern area of the site and is shown to enter from the site's central southern boundary towards the structure.

Table 4.1b: Summary of Site History Off-Site

OS Map Date Range(s)	Principal Features Surrounding the Site
1887 - 1904	• A road (Black Hole Drove) is shown adjacent to the site to the north. • The site is surrounded entirely by open fields and drains. • Structures are shown west of the site. • A pump is shown west of the site.
1904 - 1978	• A well is shown west of the site.
1978 - 2001	• The pump and well are no longer shown west of the site. • 2 No. structures are shown adjacent to the site to the west. • A small open field is shown west of the site. • Tracks are shown adjacent to the site to the west and to the south following a south-westerly direction.
2001 - Present	• A structure is now shown north-east of the site.

Elemental GI Ltd have summarised the main features of the site and surrounding land within the table above, including features which may need to be considered with regards to future development. However, reference should be made to the historic maps presented within Appendix V for full information. It must be noted that this historic mapping is unlikely to present an exhaustive record of the site's development history, and considerable periods of time may have elapsed between successive Ordnance Survey map editions. It is therefore possible that some features / activities may have gone unrecorded.

5.0 PHASE I GROUND MODEL

5.1 Expected Ground Conditions

The site is recorded to be underlain by Tidal Flat Deposits (clay and silt) which is underlain by Oxford Clay Formation (mudstone). It is recorded to be set upon an 'Unproductive Aquifer' aquifer which is underlain by an 'Unproductive Aquifer'. We would therefore expect the site to be underlain by made ground in the areas associated with the gravel track and beneath / around the footprints of the shed and then underlain by natural cohesive soils comprising clays and silts. Groundwater may be expected during site works (subject to seasonal variations).

BGS logs are not available for the local area and therefore no records are available to confirm the expected ground profile.

Mining / Stability

The site has been classified as having a moderate hazard rating for running sand and compressible deposit hazards.

The site has been classified as having a low hazard rating for shrink swell clay hazards.

The site has been classified as having a very low hazard rating for landslide hazards.

The site has been classified as having a negligible / 'no' hazard rating for collapsible deposit and ground dissolution of soluble rock hazards.

No coal or other mining issues have been identified at this stage in accordance with the enclosed Environmental Data Report.

5.2 Ground Gas Conceptual Site Model (CSM)

The site is in an area where less than 1% of homes are estimated to be at or above the Action Level. Therefore, radon protective measures are not required, subject to regulatory approval.

With regards to potential ground gas risks, the following potential *sources* have been identified for additional consideration:

- The slopes adjacent to the south-eastern boundary and in close proximity to the southern boundary show that the rear / southern area of the site has been raised to create a level platform which is higher that the surrounding fields. This may have involved filling of the ground with unknown materials; and
- Organic materials which may have accumulated beneath and around the nearby drains /watercourses running alongside the northern boundary.

Following a review of the site's geological setting, the following potential *pathways* have been identified for additional consideration:

- Made ground in the area may potentially include granular material, which may permit the free lateral migration of ground gas in the local area;
- Services and utilities may also be present around and beneath the site. These may form a preferential pathway for ground gas migration; and
- A ditch is shown running adjacent to the site's northern boundary, which may form a preferential pathway for ground gas migration.

With regards to the proposed end-use at the site (as described in Section 1.0), residential end-users and the structures within which they will live have been considered as the main potential receptors at the site.

From the above it has been provisionally concluded that feasible sources, pathways and receptors may exist at / around the site. This provisional pollutant linkage has been considered alongside the following potential mitigating factors:

- The made ground which is beneath / around the site is likely to have been in place for a considerable period of time which may have reduced the amount of gas it can generate;
- The made ground which forms the raised area at the site was exposed at the surface in places. This appears to comprise mainly inert building materials (e.g. brick fragments) in a clay /silt matrix, and no degradable materials where noted; and
- The natural soils in the general area are recorded to be cohesive. If significant cohesive soils are present, then this is highly likely to significantly reduce the migration potential of ground gas / vapours through natural soils.

At this stage it is considered that feasible risks from ground gas are not likely to be present at the site, and further investigations are not considered necessary. It is recommended that the Client forwards this report to the regulators (as appropriate e.g. Council, NHBC) to confirm their agreement with this conclusion.

5.3 Human Health CSM

The site was developed within an open field to support a large shed in the 1970's which supports the current layout.

A gravel area and track are found in the northern and western areas of the site outside of the shed. The shed is built of asbestos cement materials with exposed brick footings. Asbestos cement debris is found on the surface of the ground around the base of the shed in some areas. Waste materials are also noted near to the shed in some areas. The southern area of

the site is shown to have been raised to create a level platform higher than the surrounding fields. This potentially shows the placement of materials indicating made ground.

In accordance with our standard risk assessment methodology (presented at the end of this report), the following sources, pathways and receptors have been identified at the subject site at this stage:

Table 5.1: Preliminary Human Health CSM

Potential Onsite Sources	**Pathways**	**Receptors**	**Risk Rating[#]**
Asbestos Cement-Clad Shed	• Migration in Soils • Groundwater • Direct Contact • Plant Uptake • Dust Inhalation • Ingestion	• End Users • Groundwater	LOW / MODERATE
Asbestos Cement Debris	• Migration in Soils • Groundwater • Direct Contact • Plant Uptake • Dust Inhalation • Ingestion	• End Users • Groundwater	LOW / MODERATE
General Waste Materials	• Migration in Soils • Groundwater • Direct Contact • Plant Uptake • Dust Inhalation • Ingestion	• End Users • Groundwater	VERY LOW
Gravel Track	• Migration in Soils • Groundwater • Direct Contact • Plant Uptake • Dust Inhalation • Ingestion	• End Users • Groundwater	VERY LOW
Raised Ground (Possible Made Ground)	• Migration in Soils • Groundwater • Direct Contact • Plant Uptake • Dust Inhalation • Ingestion	• End Users • Groundwater	VERY LOW / LOW
Potential Offsite Sources			
Demolition Materials	• Dust Inhalation	• End Users	VERY LOW
Gravel Track	• Dust Inhalation	• End Users	VERY LOW
Raised Ground (Possible Made Ground)	• Dust Inhalation	• End Users	VERY LOW

[#] Risk ratings are described in Table A1 within the 'Standard Risk Assessment – Considerations and Methodology' section at the end of this report.

5.3.1 Potential Pollutant Linkages:

For a potential pollutant linkage to be present, feasible potential sources, pathways and receptors must be present or possible. With reference to the proposed end use, feasible minor potential pollutant linkages have been identified at the site as outlined in table 5.1 above.

Investigation works are therefore considered necessary to confirm if these are ongoing (or possible in future) so that appropriate remedial recommendations may be established.

5.4 Controlled Waters CSM:

The site is primarily set upon an 'Unproductive Aquifer' which is underlain by an 'Unproductive Aquifer'. The site is recorded to be within an Environment Agency Zone 2 Source Protection Zone. There is 1 No. abstraction licence recorded within a 500m radius of the site relating to ground water abstraction for irrigation 72m south-west of the site. 2 No. potable abstractions are recorded within a 2000m radius of the site relating to potable water supply 1079m north of the site. There are 15. No water networks recorded within a 500m radius of the site relating to various unnamed drains / ditches from 5m north of the site. There are 7. No surface water features recorded within a 500m radius of the site relating to various unnamed drains / ditches from 5m north of the site.

The site appears to be situated within an area of low / moderate sensitivity in relation to controlled waters. It is therefore recommended that the findings of any future site investigation works should be considered on this basis, and a revised assessment of the site's controlled waters CSM should be undertaken thereafter.

5.5 Model Status and Uncertainty:

The potential significant linkages discussed in this section are based on available data reviewed to date.

6.0 RECOMMENDATIONS

A review of the available site information (as discussed herein) has been undertaken to inform the following conclusions and recommendations. However, this report should be submitted to the appropriate regulators (and other stakeholders, as necessary) by the Client prior to the start of any irrecoverable works associated with the site.

6.1 Foundations

The underlying natural soils should be inspected and analysed to confirm foundation requirements including (but not limited to) their volume change potential and sulphate classification.

6.2 Drainage

At this stage it is considered likely that the site will be underlain by made ground in the areas associated with the gravel track, rear of shed and beneath the footprint of the shed and then underlain by natural cohesive soils comprising clays and silts. Testing of on-site natural soils is not considered to be worthwhile at this stage.

6.3 Mining

Potential mining issues have not been identified at this stage.

6.4 Contamination

Potential minor contamination issues have been identified at / around the site which may require further investigation. A gravel area and track are found in the northern and western areas of the site outside of the shed. The shed is built of asbestos cement materials with exposed brick footings. Asbestos cement debris is found on the surface of the ground around the base of the shed in some places. Waste and demolition materials are also noted near to the shed in some places. The southern area of the site is shown to have been raised to create a level platform higher than the surrounding fields. This potentially shows the placement of materials indicating made ground.

6.5 Ground Gas and Radon

Potential minor ground gas sources have been identified at / around the site. The slopes adjacent to the south-eastern boundary and in close proximity to the southern boundary show that the rear / southern area of the site has been raised to create a level platform which is higher that the surrounding fields. This may have involved filling of the ground with unknown materials. Organic materials may have accumulated beneath and around the nearby drains /watercourses running alongside the northern boundary.

However at this stage it is considered that feasible risks from ground gas are not likely to be present at the site, and further investigations are not considered necessary.

Please see section 5.2 for information relating to radon risks at the site.

6.6 Further Works

At this stage the following further works will be necessary, subject to comments from the Regulatory Authorities:

- Completion of a targeted / shallow Phase II geo-environmental intrusive site investigation to confirm the quality of near-surface soil; and
- Confirmation of the deeper ground profile and strength to confirm foundation recommendations.

Terms and Conditions

We have obtained and reviewed information relating to the site, but this may not be complete, and liability cannot be accepted for information not available to Elemental GI Ltd at the time of writing this report. This report has been written in consideration of construction / development proposals (or similar) as described in Section 1.0 of this report. If any of these proposals change (e.g. layout), then this report may be subject to change.

This report has been prepared for the sole use and reliance of the Client. No other third party may rely upon or reproduce the content of this report without our prior written approval. If any unauthorised third party comes into possession of this report, they rely upon it entirely at their own risk and the authors do not owe them any warranty, duty of care or skill.

Our report, including the conclusions and recommendations, are considered reasonable based on the findings of the Phase I assessment. However, these cannot be guaranteed to gain regulatory approval and therefore the Client should submit it to them (as necessary) for their comments and approval prior to undertaking any irrecoverable works associated with the subject site.

The findings and recommendations made in this report are based on published information (as presented in the accompanying appendices). Elemental GI Ltd cannot accept responsibility for the reliability and authenticity of published information or reports prepared by third parties. There may be conditions prevailing on site which have not been revealed by this assessment and which have not been taken into account by this report. Responsibility cannot be accepted for any conditions not revealed by this investigation and assessment. It should be noted that groundwater levels etc. may vary due to seasonal and other effects. Whilst it may be utilised by others for reference purposes at the Client's discretion, it has not been prepared for any other purposes (e.g. waste classification, drainage excavations etc.) and therefore additional works may be required by third parties dependent upon their own requirements / works. Any works which are proposed at greater depths than reported herein may require confirmatory investigation works as necessary.

The conclusions and recommendations presented herein are considered reasonable based on the assessments of the site undertaken by Elemental GI Ltd. However, these cannot be guaranteed to gain regulatory approval and therefore copies of this report should be sent to the appropriate regulatory authorities and / or other organisations (as appropriate) by the Client for their comments and approval prior to undertaking any irrecoverable works associated with the site.

The possibility of significant variation in ground conditions existing between / beneath test locations / depths cannot be discounted and must be considered within the design proposals for the subject site. All soakaway designs should be approved by the relevant statutory authority prior to implementation and must adhere to the standard design and ground setting requirements, upon which your appointed drainage design engineers should advise you.

Where comments / recommendations have been made relating to specific depths it cannot be guaranteed that ground conditions shall be similar at surrounding / underlying depths, which should be taken into consideration as necessary by other.

With respect to the document to which this sheet is appended, the warranty provided with our works / reports etc. shall only apply once all invoices that we have sent in relation to the same site / project discussed herein (i.e. the site discussed within this document) have been paid by the Client

Elemental GI Ltd – Our Standard Risk Assessment Approach

We have used various guidelines and current legislation in the preparation of this report. This includes (but is not limited to) the following:

- **DEFRA / EA document 'Contaminated Land Report 11 (CLR11) Model Procedures for the Management of Land Contamination' (2004) [*withdrawn but used for general reference purposes*];**
- **NHBC / EA / CIEH document 'Guidance for the Safe Development of Housing on Land Affected by Contamination' (2008);**
- **DEFRA 'Environmental Protection Act 1990: Part 2A – Contaminated Land Statutory Guidance (2012); and**
- **Environment Agency 'Land contamination risk management (LCRM)' (2020, last updated April 2021) held at:**
  - **https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm**

Construction of Conceptual Site Model

Elemental GI Ltd have based our standard risk assessment methodology upon current legislation and prevailing best practice and available guidance. This includes the assessment of potentially contaminated land in terms of 'significant pollutants' and 'pollutant linkages', using SOURCE-PATHWAY-RECEPTOR' scenarios for the site. For a pollutant linkage to exist all three of these elements must be present. These have been clearly defined in the guidance as follows:

- …..potential source as 'a contaminant which is in, or under the land and which has the potential to cause significant harm or to cause pollution of controlled waters'.
- …..potential pathway as 'one or more routes or means by, or through, which a receptor is being exposed to, or affected by a contaminant, or could be so exposed or affected'.
- …..potential receptor as 'a living organism, a group of living organisms, an ecological system or a piece of property which is being or could be, harmed by a contaminant or controlled waters which are being, or could be, polluted by a contaminant'.

Within this report, common pathways including (but not limited to) the following have been considered (amended on a site-specific basis):

- Ingestion of soil;
- Ingestion of site-grown vegetables;
- Ingestion of site-reared livestock / fish;
- Dermal contact with soils;
- Inhalation of vapours;
- Inhalation of soil-derived dust.

Receptors will be considered on a site-specific basis, but will usually include the current / future users of the site itself as well as users of surrounding sites. Other receptors including controlled waters will also be considered and assessed.

Risk Assessment Methodology

Our risk assessment methodology is based upon a phased approach which is created through the construction of the sites conceptual site model, and which takes the following steps (taken from LCRM Guidance):

1. *Identify the hazard – establish contaminant sources.*
2. *Assess the hazard – use a source-pathway-receptor (S-P-R) linkage approach to find out if there is the potential for unacceptable risk.*
3. *Estimate the risk – predict what degree of harm or pollution might result and how likely it is to occur by using the tiered approach to risk assessment.*
4. *Evaluate the risk – decide whether a risk is unacceptable.*

The meaning of the terms are:

- *hazard – a property or situation that in particular circumstances could lead to harm or pollution;*
- *risk – a combination of the probability, or frequency of occurrence of a defined hazard and the magnitude of the consequences of the occurrence;*
- *risk assessment – the formal process of identifying, assessing and evaluating the health and environmental risks that may be associated with a hazard;*
- *risk management – the formal process to identify, assess and determine the risks, and to select and take action to mitigate them.*

Our definitions and classification matrix for risk descriptions have been taken from the NHBC document "Guidance for the Safe Development of Housing on Land Affected by Contamination" (Ref. R&D P66, dated 2008)

Table A1: Risk Categorisation (Adapted from Table 1.8 of NHBC, R&D P66 (2008))

Probability (Likelihood)		Consequence			
		Severe	Medium	Mild	Minor
	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate / Low Risk
	Likely	High Risk	Moderate Risk	Moderate / Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate / Low Risk	Low Risk	Very Low Risk
	Not likely	Moderate / Low Risk	Low Risk	Very Low Risk	Very Low Risk

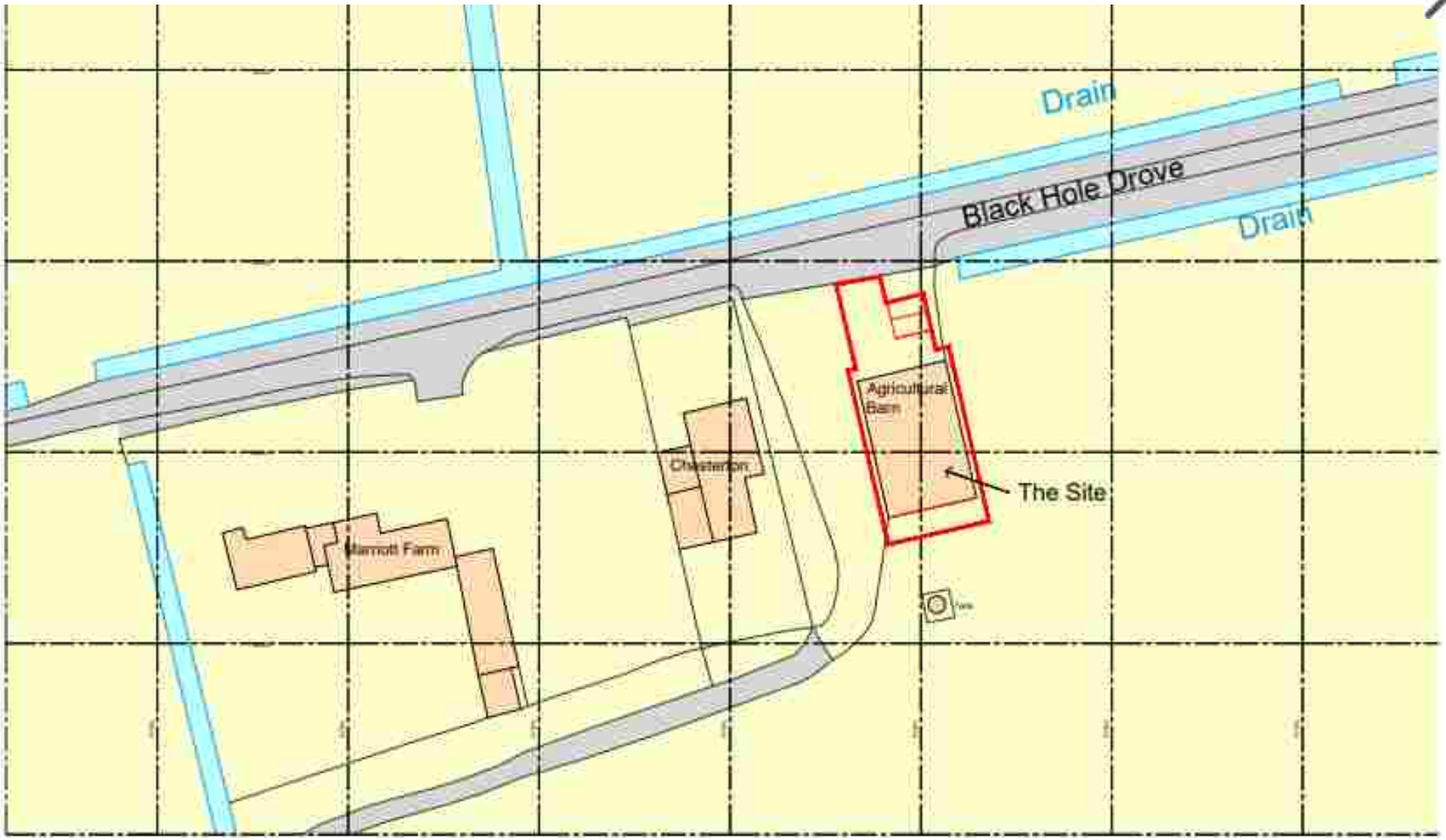
The R&D P66 document goes on to provide further descriptions of these risk levels, which are also reproduced below:

Table A2: Risk Level Descriptions (Adapted from Table 1.9 of NHBC, R&D P66 (2008))

Term	Description
Very High Risk	A high probability exists that severe / significant harm could arise to someone or something from the hazard which has been identified. Remedial action is required.
High Risk	Harm is likely to arise to someone or something from the hazard which has been identified. Remedial action is usually required.
Moderate Risk	Harm could potentially arise to someone or something from the hazard which has been identified without remedial action, although it is considered to be relatively unlikely that such harm would be severe.
Low Risk	Harm could theoretically arise to someone or something from the hazard which has been identified without remedial action, although it is considered that any effects would be mild.
Very Low Risk	Harm is not likely to arise to someone or something from the hazard which has been identified.

APPENDIX I

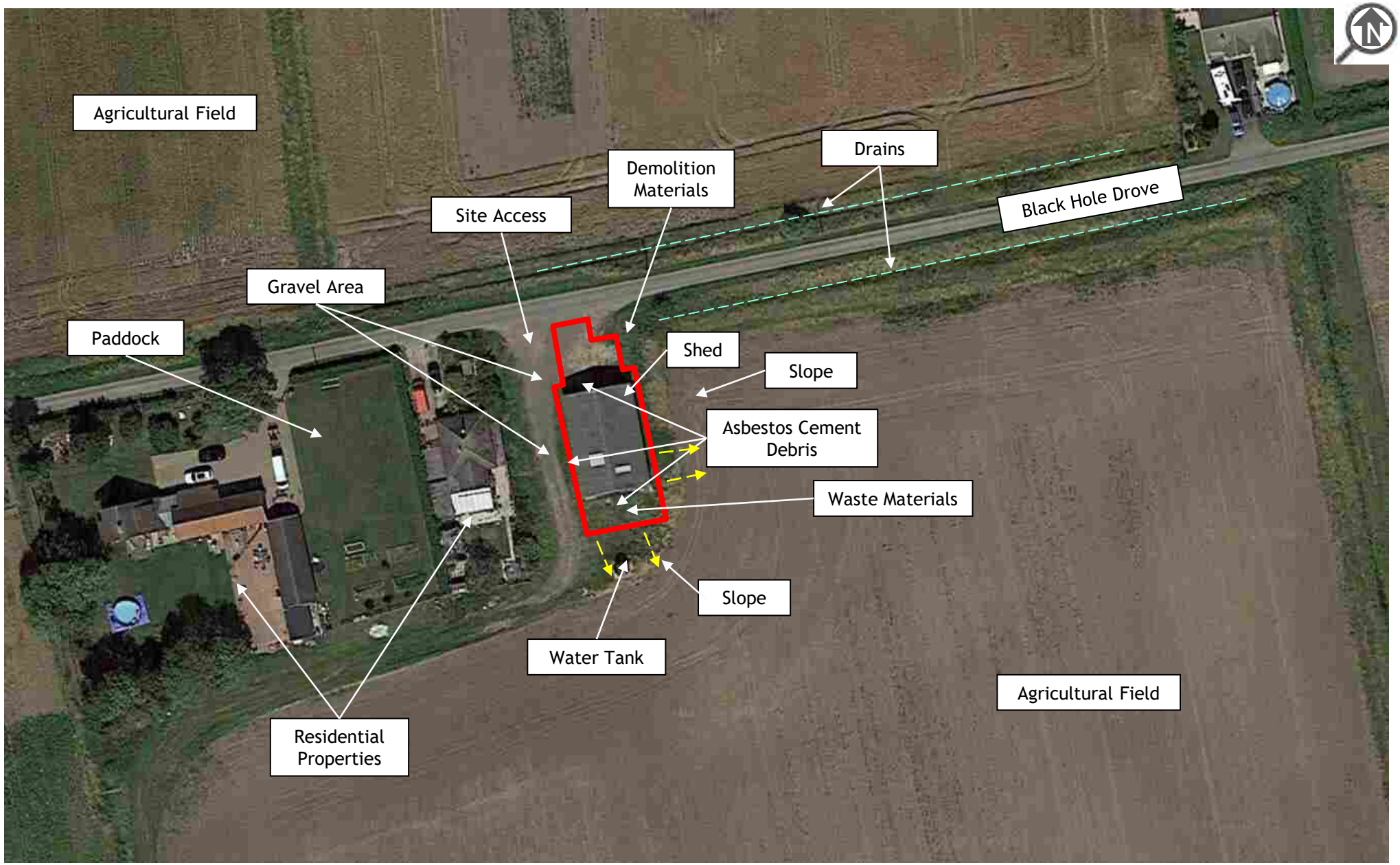
Existing Site Layout Plan



CLIENT:	TITLE:	DATE:	SCALE@SIZE:	
O&L	Existing Site Layout Plan	April 2023	NOT TO SCALE	Elemental GI Ltd
		DRAWING No: E23127_001	DESIGN/DRAWN: JR	

APPENDIX II

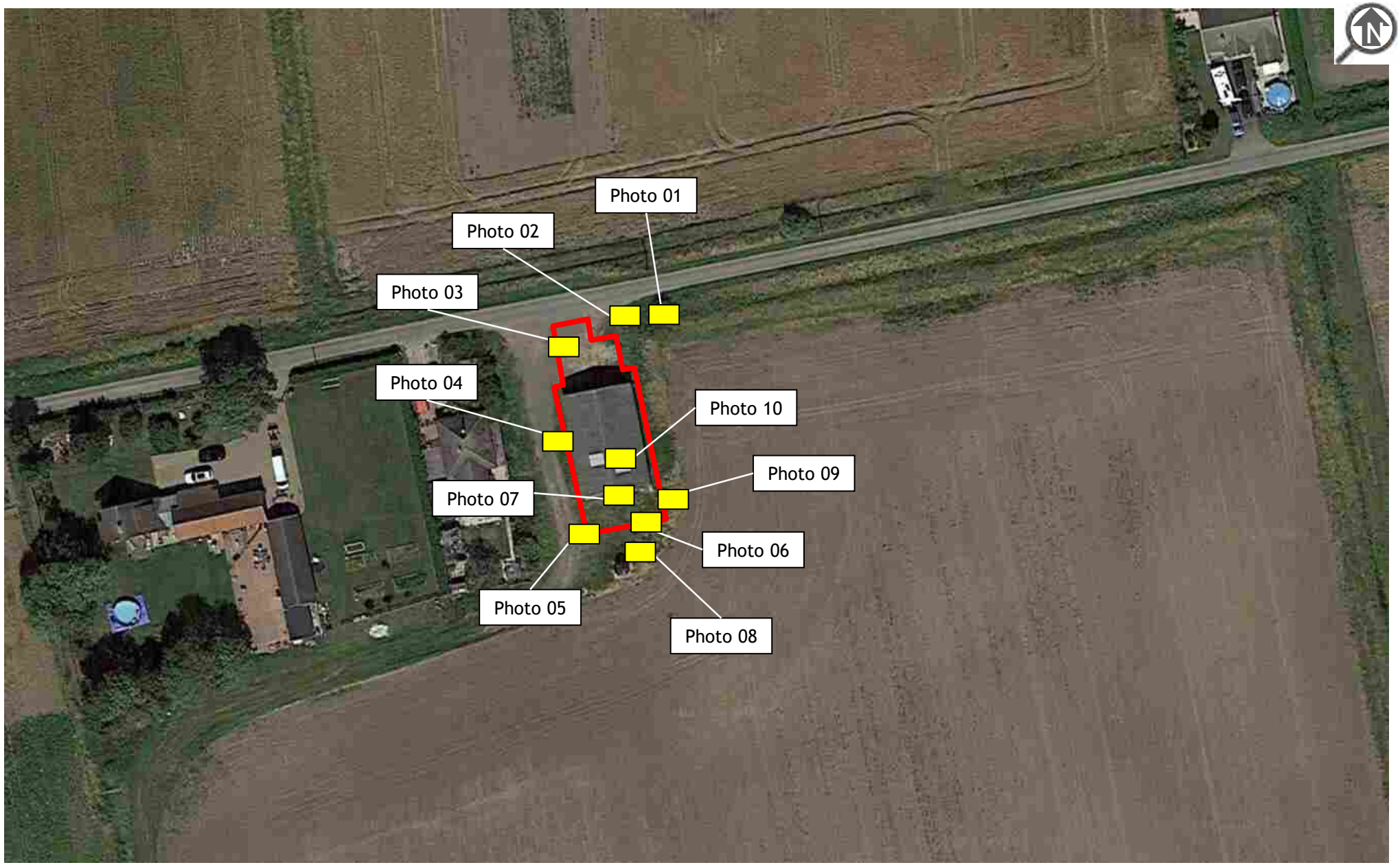
Site Features Plan



CLIENT:	TITLE:	DATE:	SCALE@SIZE:	
O&L	Site Features Plan	April 2023	NOT TO SCALE	Elemental GI Ltd
		DRAWING No: E23127_002	DESIGN/DRAWN: JR	

APPENDIX III

General Photographic Record



CLIENT: O&L	TITLE: General Site Photographs	DATE: April 2023	SCALE@SIZE: NOT TO SCALE
		DRAWING No: E23127_003	DESIGN/DRAWN: JR

Elemental GI Ltd



Photo 1 – Ditch Adjacent to the North-Eastern Boundary of the Site.



Photo 2 – Demolition Materials near to the North-eastern Boundary of the Site.



Photo 3 – View Overlooking Shed and Gravel Area Southwards.



Photo 4 – Photo of Asbestos Cement Debris Alongside the Base of the Asbestos Cement-Clad Shed.

CLIENT:	TITLE:	DATE:	SCALE@SIZE:	
O&L	General Site Photographs	April 2023	NOT TO SCALE	Elemental GI Ltd
		DRAWING No: E23127_003a	DESIGN/DRAWN: JR	



Photo 5 – View Overlooking Gravel Track and Shed Northwards.



Photo 6 – View of Shed Facing North-Westwards.



Photo 7 – Waste Materials in Southern Area of Site Alongside the Base of the Shed.



Photo 8 – Photo of Water Tank and Raised Ground Level in Southern Area of the Site.

CLIENT:	TITLE:	DATE:	SCALE@SIZE:	
O&L	General Site Photographs	April 2023	NOT TO SCALE	Elemental GI Ltd
		DRAWING No: E23127_003b	DESIGN/DRAWN: JR	



Photo 9 – Photo of Sloped Ground Alongside the South-Eastern Boundary of the Site.



Photo 10 – Photo of Shed Contents Facing Northwards.

CLIENT:	TITLE:	DATE:	SCALE@SIZE:	
O&L	General Site Photographs	April 2023	NOT TO SCALE	Elemental GI Ltd
		DRAWING No: E23127_003c	DESIGN/DRAWN: JR	

APPENDIX IV

Environmental Data Report

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

BLACK HOLE DROVE, WEST PINCHBECK,

Order Details

Date: 05/04/2023

Your ref: E23127

Our Ref: GS-WB5-2S6-HYU-TLZ

Site Details

Location: 517926 325284

Area: 0.05 ha

Authority: South Holland District Council



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Summary of findings p. 2

OS MasterMap site plan p.13

Aerial image p. 8

groundsure.com/insightuserguide

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

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	1.1	Historical industrial land uses	0	0	0	0	-
14	1.2	Historical tanks	0	0	0	0	-
14	1.3	Historical energy features	0	0	0	0	-
15	1.4	Historical petrol stations	0	0	0	0	-
15	1.5	Historical garages	0	0	0	0	-
15	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
16	2.1	Historical industrial land uses	0	0	0	0	-
16	2.2	Historical tanks	0	0	0	0	-
16	2.3	Historical energy features	0	0	0	0	-
16	2.4	Historical petrol stations	0	0	0	0	-
17	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
18	3.1	Active or recent landfill	0	0	0	0	-
18	3.2	Historical landfill (BGS records)	0	0	0	0	-
19	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
19	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
19	3.5	Historical waste sites	0	0	0	0	-
19	3.6	Licensed waste sites	0	0	0	0	-
19	**3.7**	**Waste exemptions**	0	0	18	9	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
23	**4.1**	**Recent industrial land uses**	0	1	0	-	-
24	4.2	Current or recent petrol stations	0	0	0	0	-
24	4.3	Electricity cables	0	0	0	0	-
24	4.4	Gas pipelines	0	0	0	0	-
24	4.5	Sites determined as Contaminated Land	0	0	0	0	-

24	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
25	4.7	Regulated explosive sites	0	0	0	0	-
25	4.8	Hazardous substance storage/usage	0	0	0	0	-
25	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
25	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
25	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
26	4.12	Radioactive Substance Authorisations	0	0	0	0	-
26	**4.13**	**Licensed Discharges to controlled waters**	0	0	0	2	-
26	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
26	4.15	Pollutant release to public sewer	0	0	0	0	-
27	4.16	List 1 Dangerous Substances	0	0	0	0	-
27	4.17	List 2 Dangerous Substances	0	0	0	0	-
27	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
27	4.19	Pollution inventory substances	0	0	0	0	-
27	4.20	Pollution inventory waste transfers	0	0	0	0	-
28	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
29	**5.1**	**Superficial aquifer**	Identified (within 500m)				
30	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
31	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
32	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
32	5.5	Groundwater vulnerability- local information	None (within 0m)				
33	**5.6**	**Groundwater abstractions**	0	0	1	0	14
37	**5.7**	**Surface water abstractions**	0	0	0	0	25
42	**5.8**	**Potable abstractions**	0	0	0	0	2
43	**5.9**	**Source Protection Zones**	1	0	0	1	-
43	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
44	**6.1**	**Water Network (OS MasterMap)**	0	4	11	-	-

46	6.2	Surface water features	0	2	5	-	-
46	6.3	WFD Surface water body catchments	1	-	-	-	-
46	6.4	WFD Surface water bodies	0	0	0	-	-
47	6.5	WFD Groundwater bodies	0	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
48	7.1	Risk of flooding from rivers and the sea	Medium (within 50m)				
49	7.2	Historical Flood Events	0	0	0	-	-
49	7.3	Flood Defences	0	0	0	-	-
49	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
49	7.5	Flood Storage Areas	0	0	0	-	-
50	7.6	Flood Zone 2	Identified (within 50m)				
51	7.7	Flood Zone 3	Identified (within 50m)				
Page	Section	Surface water flooding					
52	8.1	Surface water flooding	1 in 30 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding					
54	9.1	Groundwater flooding	Negligible (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
55	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
55	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
55	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
55	10.4	Special Protection Areas (SPA)	0	0	0	0	0
56	10.5	National Nature Reserves (NNR)	0	0	0	0	0
56	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
56	10.7	Designated Ancient Woodland	0	0	0	0	0
56	10.8	Biosphere Reserves	0	0	0	0	0
57	10.9	Forest Parks	0	0	0	0	0
57	10.10	Marine Conservation Zones	0	0	0	0	0
57	10.11	Green Belt	0	0	0	0	0
57	10.12	Proposed Ramsar sites	0	0	0	0	0

57	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
58	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
58	10.15	Nitrate Sensitive Areas	0	0	0	0	0
58	**10.16**	**Nitrate Vulnerable Zones**	1	0	0	0	3
59	**10.17**	**SSSI Impact Risk Zones**	1	-	-	-	-
60	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
61	11.1	World Heritage Sites	0	0	0	-	-
61	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
61	11.3	National Parks	0	0	0	-	-
61	11.4	Listed Buildings	0	0	0	-	-
62	11.5	Conservation Areas	0	0	0	-	-
62	11.6	Scheduled Ancient Monuments	0	0	0	-	-
62	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
63	**12.1**	**Agricultural Land Classification**	Grade 1 (within 250m)				
64	12.2	Open Access Land	0	0	0	-	-
64	12.3	Tree Felling Licences	0	0	0	-	-
64	12.4	Environmental Stewardship Schemes	0	0	0	-	-
64	**12.5**	**Countryside Stewardship Schemes**	1	0	1	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
65	13.1	Priority Habitat Inventory	0	0	0	-	-
65	13.2	Habitat Networks	0	0	0	-	-
65	13.3	Open Mosaic Habitat	0	0	0	-	-
65	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
66	**14.1**	**10k Availability**	Identified (within 500m)				
67	14.2	Artificial and made ground (10k)	0	0	0	0	-
68	14.3	Superficial geology (10k)	0	0	0	0	-

68	14.4	Landslip (10k)	0	0	0	0	-
69	14.5	Bedrock geology (10k)	0	0	0	0	-
69	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
70	**15.1**	**50k Availability**	Identified (within 500m)				
71	15.2	Artificial and made ground (50k)	0	0	0	0	-
71	15.3	Artificial ground permeability (50k)	0	0	-	-	-
72	**15.4**	**Superficial geology (50k)**	1	0	2	1	-
73	**15.5**	**Superficial permeability (50k)**	Identified (within 50m)				
73	15.6	Landslip (50k)	0	0	0	0	-
73	15.7	Landslip permeability (50k)	None (within 50m)				
74	**15.8**	**Bedrock geology (50k)**	1	0	0	0	-
75	**15.9**	**Bedrock permeability (50k)**	Identified (within 50m)				
75	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
76	16.1	BGS Boreholes	0	0	0	-	-
Page	Section	Natural ground subsidence					
77	**17.1**	**Shrink swell clays**	Low (within 50m)				
78	**17.2**	**Running sands**	Moderate (within 50m)				
79	**17.3**	**Compressible deposits**	Moderate (within 50m)				
80	**17.4**	**Collapsible deposits**	Negligible (within 50m)				
81	**17.5**	**Landslides**	Very low (within 50m)				
82	**17.6**	**Ground dissolution of soluble rocks**	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
83	18.1	Natural cavities	0	0	0	0	-
83	18.2	BritPits	0	0	0	0	-
83	18.3	Surface ground workings	0	0	0	-	-
83	18.4	Underground workings	0	0	0	0	0
84	18.5	Historical Mineral Planning Areas	0	0	0	0	-

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

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

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
88	**20.1**	**BGS Estimated Background Soil Chemistry**	1	0	-	-	-
88	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
88	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-

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

Recent aerial photograph



Capture Date: 14/05/2019

Site Area: 0.05ha

Recent site history - 2016 aerial photograph



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Capture Date: 30/04/2016

Site Area: 0.05ha

Recent site history - 2015 aerial photograph



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Capture Date: 06/04/2015

Site Area: 0.05ha

Recent site history - 2007 aerial photograph



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Capture Date: 12/09/2007

Site Area: 0.05ha

Recent site history - 1999 aerial photograph

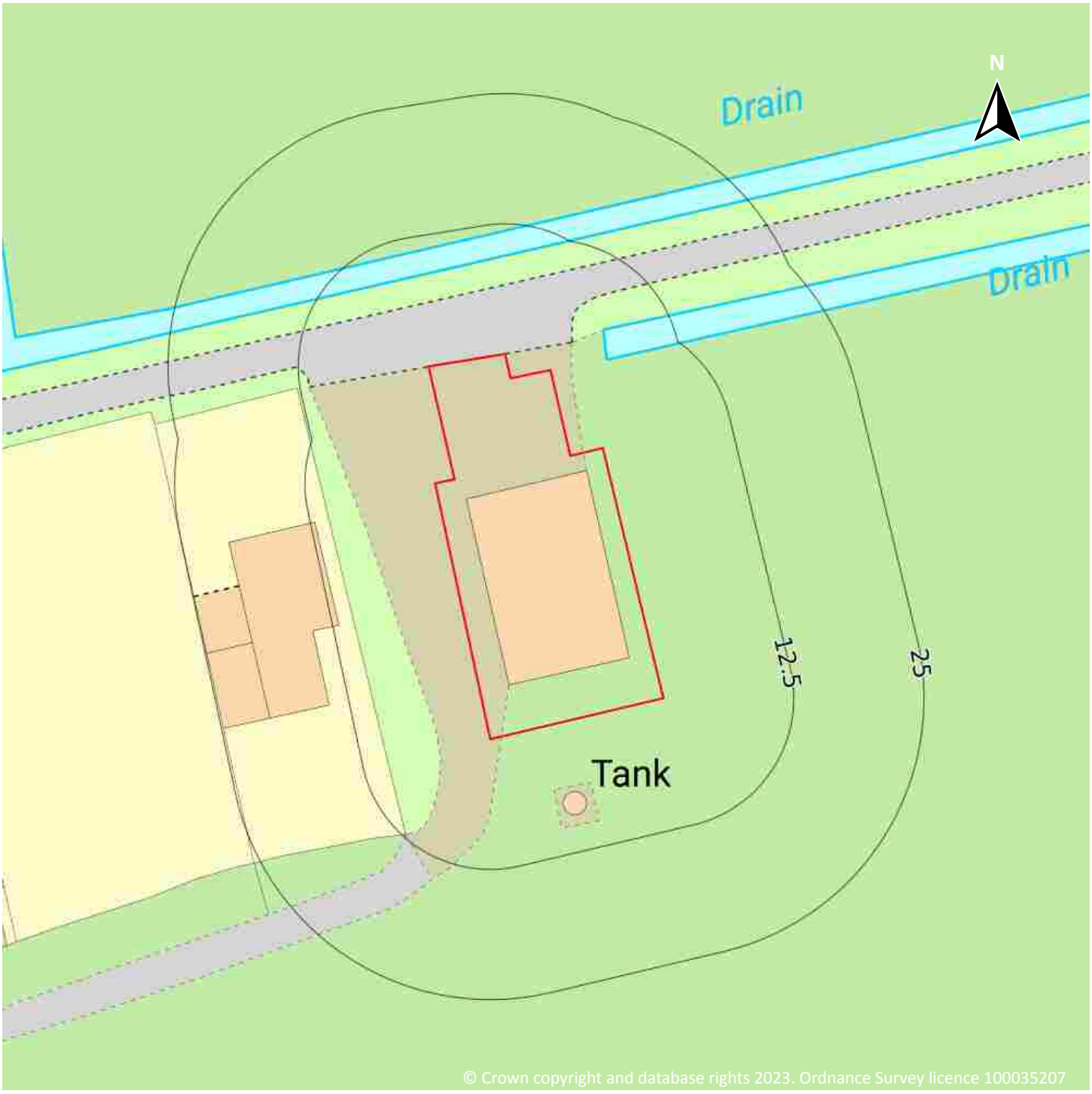


Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2023. All Rights Reserved.

Capture Date: 05/06/1999

Site Area: 0.05ha

OS MasterMap site plan



Site Area: 0.05ha

1 Past land use

1.1 Historical industrial land uses

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m	0

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

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

2 Past land use - un-grouped

2.1 Historical industrial land uses

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

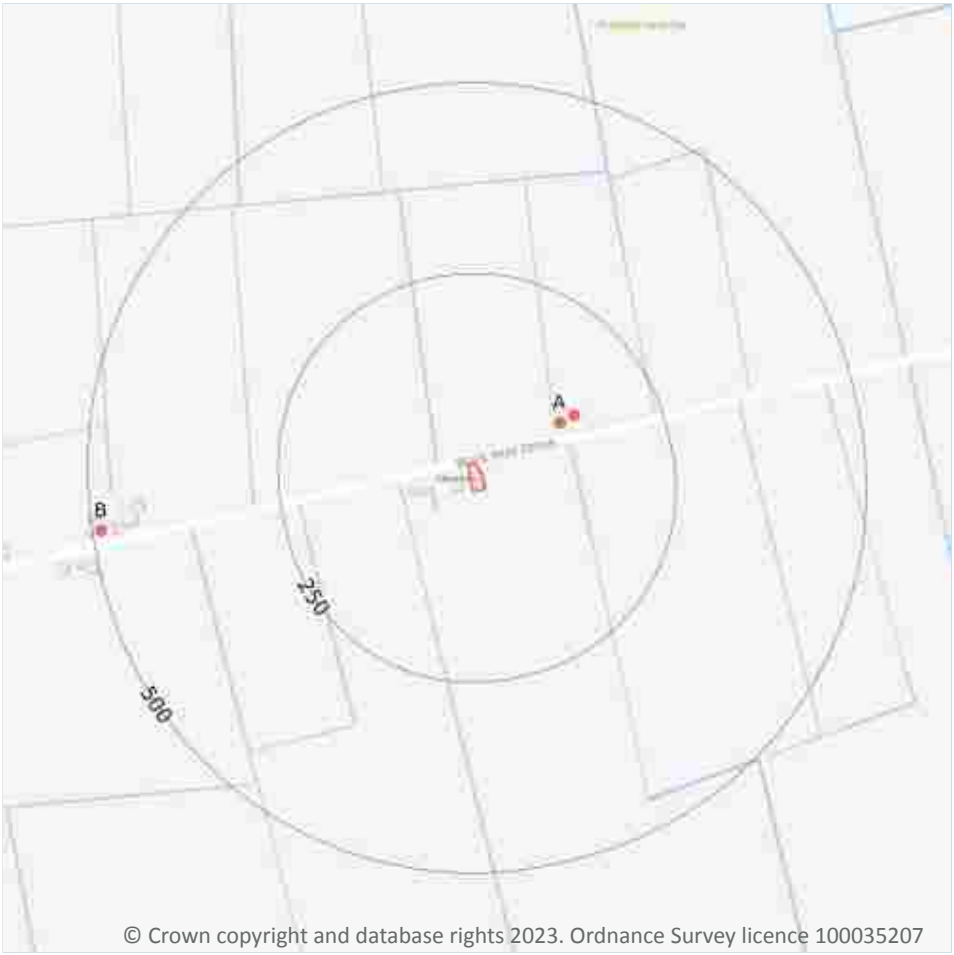
2.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



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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	27

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

Features are displayed on the Waste and landfill map on **page 18**

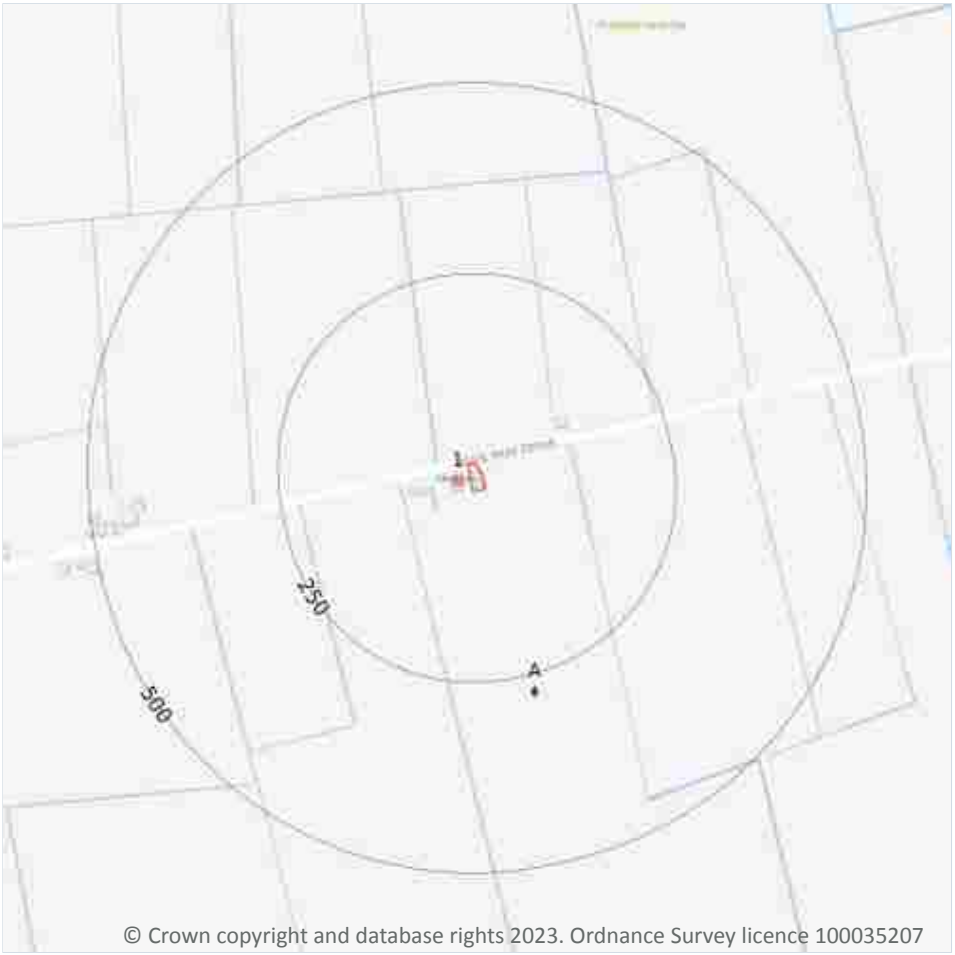
ID	Location	Site	Reference	Category	Sub-Category	Description
A	120m NE	Royce Farm, Black Hole Drove, West Pinchbeck, Spalding, PE11 3QL	WEX066117	Disposing of waste exemption	On a farm	Deposit of waste from dredging of inland waters
A	120m NE	Royce Farm, Black Hole Drove, West Pinchbeck, Spalding, PE11 3QL	WEX066117	Disposing of waste exemption	On a farm	Deposit of agricultural waste consisting of plant tissue under a Plant Health notice
A	120m NE	Royce Farm, Black Hole Drove, West Pinchbeck, Spalding, PE11 3QL	WEX066117	Disposing of waste exemption	On a farm	Disposal by incineration
A	120m NE	Royce Farm, Black Hole Drove, West Pinchbeck, Spalding, PE11 3QL	WEX066117	Disposing of waste exemption	On a farm	Burning waste in the open
A	120m NE	Royce Farm, Black Hole Drove, West Pinchbeck, Spalding, PE11 3QL	WEX066117	Treating waste exemption	On a farm	Preparatory treatments (baling, sorting, shredding etc)
A	120m NE	Royce Farm, Black Hole Drove, West Pinchbeck, Spalding, PE11 3QL	WEX066117	Treating waste exemption	On a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
A	120m NE	Royce Farm, Black Hole Drove, West Pinchbeck, Spalding, PE11 3QL	WEX066117	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
A	120m NE	Royce Farm, Black Hole Drove, West Pinchbeck, Spalding, PE11 3QL	WEX066117	Using waste exemption	On a farm	Burning of waste as a fuel in a small appliance
A	120m NE	Royce Farm, Black Hole Drove, West Pinchbeck, Spalding, PE11 3QL	WEX066117	Using waste exemption	On a farm	Use of waste for a specified purpose
A	141m NE	Royce Farm Black Hole Drove West Pinchbeck LINCOLNSHIRE PE11 3QL	EPR/CF0838GB/A001	Disposing of waste exemption	Agricultural Waste Only	Deposit of waste from dredging of inland waters
A	141m NE	Royce Farm Black Hole Drove West Pinchbeck LINCOLNSHIRE PE11 3QL	EPR/CF0838GB/A001	Disposing of waste exemption	Agricultural Waste Only	Deposit of agricultural waste consisting of plant tissue under a Plant Health notice
A	141m NE	Royce Farm Black Hole Drove West Pinchbeck LINCOLNSHIRE PE11 3QL	EPR/CF0838GB/A001	Disposing of waste exemption	Agricultural Waste Only	Disposal by incineration
A	141m NE	Royce Farm Black Hole Drove West Pinchbeck LINCOLNSHIRE PE11 3QL	EPR/CF0838GB/A001	Disposing of waste exemption	Agricultural Waste Only	Burning waste in the open

ID	Location	Site	Reference	Category	Sub-Category	Description
A	141m NE	Royce Farm Black Hole Drove West Pinchbeck LINCOLNSHIRE PE11 3QL	EPR/CF0838GB/A001	Treating waste exemption	Agricultural Waste Only	Preparatory treatments (baling, sorting, shredding etc)
A	141m NE	Royce Farm Black Hole Drove West Pinchbeck LINCOLNSHIRE PE11 3QL	EPR/CF0838GB/A001	Treating waste exemption	Agricultural Waste Only	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
A	141m NE	Royce Farm Black Hole Drove West Pinchbeck LINCOLNSHIRE PE11 3QL	EPR/CF0838GB/A001	Using waste exemption	Agricultural Waste Only	Spreading waste on agricultural land to confer benefit
A	141m NE	Royce Farm Black Hole Drove West Pinchbeck LINCOLNSHIRE PE11 3QL	EPR/CF0838GB/A001	Using waste exemption	Agricultural Waste Only	Burning of waste as a fuel in a small appliance
A	141m NE	Royce Farm Black Hole Drove West Pinchbeck LINCOLNSHIRE PE11 3QL	EPR/CF0838GB/A001	Using waste exemption	Agricultural Waste Only	Use of waste for a specified purpose
B	490m W	Royce Farm, Black Hole Drove, West Pinchbeck, Spalding, PE11 3QL	WEX217243	Using waste exemption	On a Farm	Burning of waste as a fuel in a small appliance
B	490m W	Royce Farm, Black Hole Drove, West Pinchbeck, Spalding, PE11 3QL	WEX217243	Disposing of waste exemption	On a Farm	Burning waste in the open
B	490m W	Royce Farm, Black Hole Drove, West Pinchbeck, Spalding, PE11 3QL	WEX217243	Disposing of waste exemption	On a Farm	Disposal by incineration
B	490m W	Royce Farm, Black Hole Drove, West Pinchbeck, Spalding, PE11 3QL	WEX217243	Disposing of waste exemption	On a Farm	Deposit of agricultural waste consisting of plant tissue under a Plant Health notice
B	490m W	Royce Farm, Black Hole Drove, West Pinchbeck, Spalding, PE11 3QL	WEX217243	Disposing of waste exemption	On a Farm	Deposit of waste from dredging of inland waters
B	490m W	Royce Farm, Black Hole Drove, West Pinchbeck, Spalding, PE11 3QL	WEX217243	Treating waste exemption	On a Farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
B	490m W	Royce Farm, Black Hole Drove, West Pinchbeck, Spalding, PE11 3QL	WEX217243	Treating waste exemption	On a Farm	Preparatory treatments (baling, sorting, shredding etc)
B	490m W	Royce Farm, Black Hole Drove, West Pinchbeck, Spalding, PE11 3QL	WEX217243	Using waste exemption	On a Farm	Spreading waste on agricultural land to confer benefit

ID	Location	Site	Reference	Category	Sub-Category	Description
B	490m W	Royce Farm, Black Hole Drove, West Pinchbeck, Spalding, PE11 3QL	WEX217243	Using waste exemption	On a Farm	Use of waste for a specified purpose

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

4 Current industrial land use



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Site Outline

Search buffers in metres (m)

Recent industrial land uses

Licensed Discharges to controlled waters

4.1 Recent industrial land uses

Records within 250m	1

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 23**

ID	Location	Company	Address	Activity	Category
1	16m W	Keen Kutz	Chesterson, Black Hole Drove, Pinchbeck, Spalding, Lincolnshire, PE11 3QL	Tool Repairs	Repair and Servicing

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m	0

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

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

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

Records within 500m	0

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

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m	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 23**

ID	Location	Address	Details	
A	272m S	THE COTTAGE, BLACKHOLE DROVE, PINCHBECK	Effluent Type: UNSPECIFIED Permit Number: PR3LFU838 Permit Version: 1 Receiving Water: Land	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 11/10/1976 Effective Date: 11/10/1976 Revocation Date: 01/10/1996
A	272m S	THE COTTAGE, BLACKHOLE DROVE, PINCHBECK	Effluent Type: UNSPECIFIED Permit Number: PR3NFA1287 Permit Version: 1 Receiving Water: -	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 02/01/1900 Effective Date: 02/01/1900 Revocation Date: 23/04/1991

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0

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

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

4.15 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m	0

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

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

4.17 List 2 Dangerous Substances

Records within 500m	0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	0

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

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

4.19 Pollution inventory substances

Records within 500m	0

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

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

4.20 Pollution inventory waste transfers

Records within 500m	0

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

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

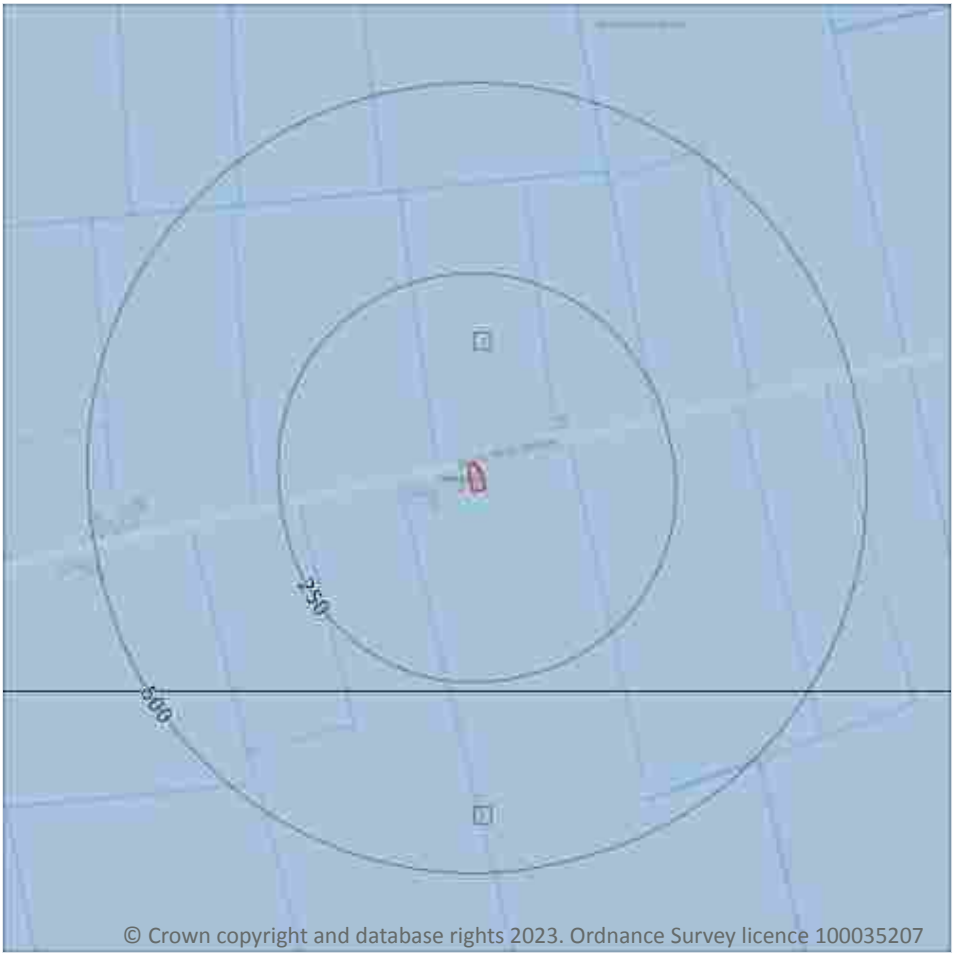
4.21 Pollution inventory radioactive waste

Records within 500m	0

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

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

5 Hydrogeology - Superficial aquifer



Site Outline

Search buffers in metres (m)

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

5.1 Superficial aquifer

Records within 500m	2

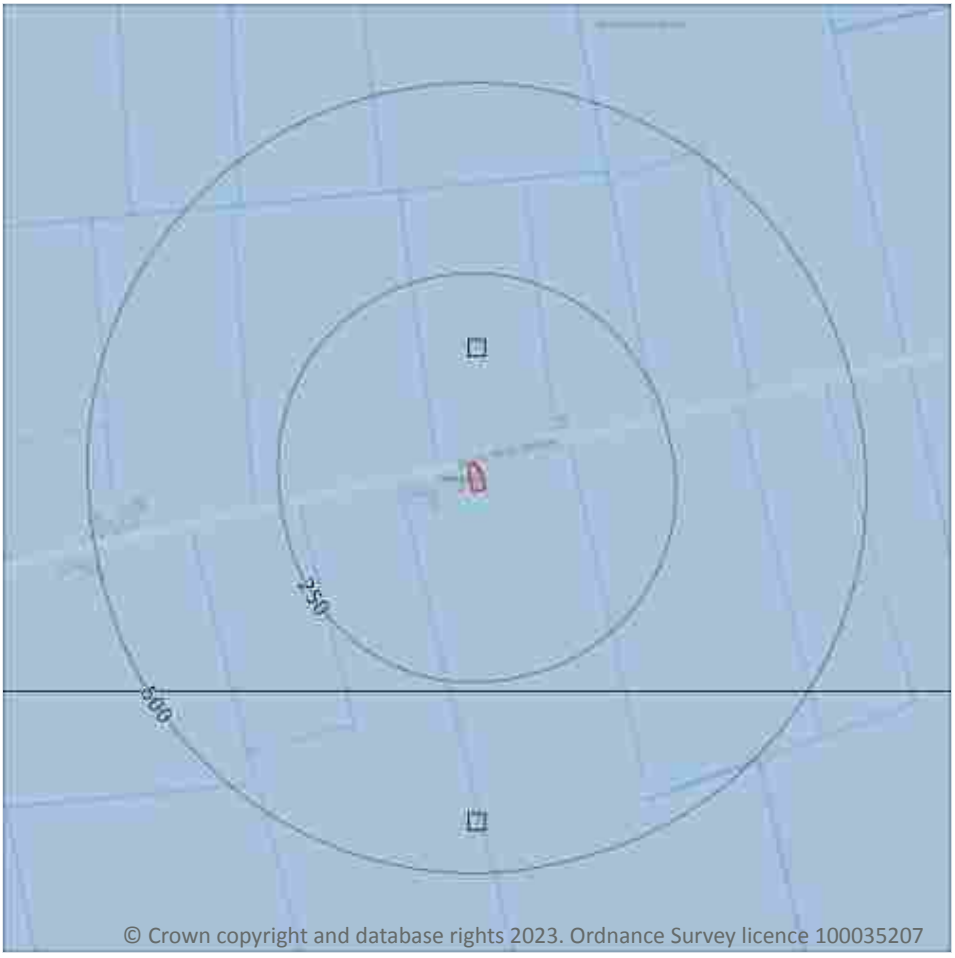
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 29**

ID	Location	Designation	Description
1	**On site**	**Unproductive**	**These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow**
2	261m S	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

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

Bedrock aquifer



Site Outline

Search buffers in metres (m)

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

5.2 Bedrock aquifer

Records within 500m	2

Aquifer status of groundwater held within bedrock geology.

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

ID	Location	Designation	Description
1	**On site**	**Unproductive**	**These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow**
2	261m S	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

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

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

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

Bedrock vulnerability

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

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	1

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

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

Features are displayed on the Groundwater vulnerability map on **page 31**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	**Summary Classification: Unproductive aquifer (may have productive aquifer beneath) Combined classification: Unproductive Bedrock Aquifer, Unproductive Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: <300mm/year**	**Vulnerability: Unproductive Aquifer type: Unproductive Thickness: 3-10m Patchiness value: >90% Recharge potential: Low**	**Vulnerability: Unproductive Aquifer type: Unproductive 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	0

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

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

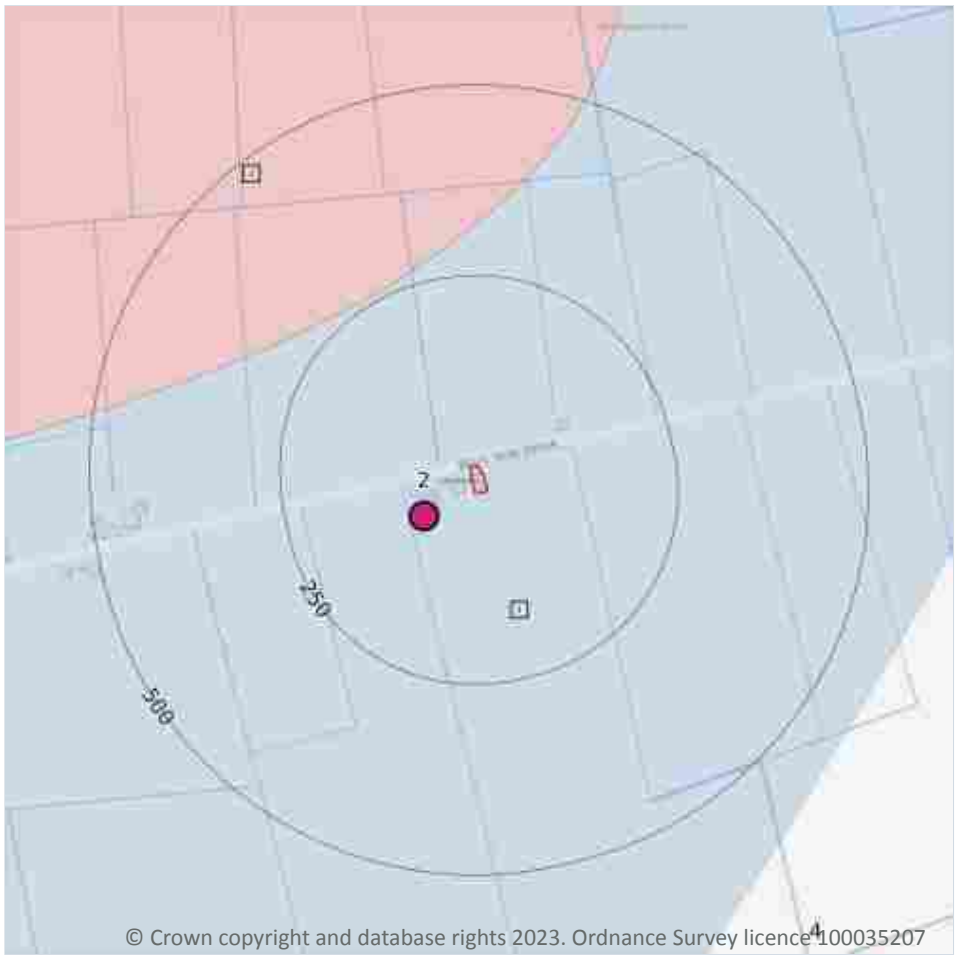
5.5 Groundwater vulnerability- local information

Records on site	0

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

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

Abstractions and Source Protection Zones



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Site Outline

Search buffers in metres (m)

Source Protection Zone 1
Inner catchment

Source Protection Zone 2
Outer catchment

Source Protection Zone 3
Total catchment

Source Protection Zone 4
Zone of Special Interest

Source Protection Zone 1c
Inner catchment - confined aquifer

Source Protection Zone 2c
Outer catchment - confined aquifer

Source Protection Zone 3c
Total catchment - confined aquifer

Drinking water abstraction licences

Drinking water abstraction licences
Polygon features

Drinking water abstraction licences
Linear features

Groundwater abstraction licence (point)

Groundwater abstraction licence (area)

Groundwater abstraction licence (linear)

Surface Water Abstractions (point)

Surface Water Abstractions (area)

Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m	15

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 33**

ID	Location	Details	
2	72m SW	Status: Active Licence No: AN/030/0012/042 Details: Trickle Irrigation - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: POINT A WELL AT PINCHBECK FEN, SPALDING Data Type: Point Name: G & D Matthews Limited Easting: 517852 Northing: 325233	Annual Volume (m^3): 8,240 Max Daily Volume (m^3): 1,080 Original Application No: NPS/NA/001323 Original Start Date: 15/03/2022 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 15/03/2022 Version End Date: -
-	1079m N	Status: Active Licence No: 4/30/12/*G/0034 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: PINCHBECK P.S. BOREHOLE 1 Data Type: Point Name: Anglian Water Services Ltd Easting: 517600 Northing: 326330	Annual Volume (m^3): 3,318,653 Max Daily Volume (m^3): 9,092 Original Application No: NPS/WR/030434 Original Start Date: 01/04/1966 Expiry Date: - Issue No: 106 Version Start Date: 12/06/2020 Version End Date: -
-	1079m N	Status: Active Licence No: 4/30/12/*G/0034 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: PINCHBECK P.S. BOREHOLE 2 Data Type: Point Name: Anglian Water Services Ltd Easting: 517600 Northing: 326330	Annual Volume (m^3): 3,318,653 Max Daily Volume (m^3): 9,092 Original Application No: NPS/WR/030434 Original Start Date: 01/04/1966 Expiry Date: - Issue No: 106 Version Start Date: 12/06/2020 Version End Date: -
-	1302m N	Status: Historical Licence No: 4/30/12/*G/0040B Details: Spray Irrigation - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: ATKINSONS BORE G Data Type: Point Name: J E ATKINSON & SON Easting: 517900 Northing: 326600	Annual Volume (m^3): 154567 Max Daily Volume (m^3): 1932 Original Application No: - Original Start Date: 01/03/1978 Expiry Date: - Issue No: 100 Version Start Date: 01/07/1993 Version End Date: -
-	1302m N	Status: Historical Licence No: 4/30/12/*G/0040B Details: Transfer Between Sources (Pre Water Act 2003) Direct Source: GROUND WATER SOURCE OF SUPPLY Point: ATKINSONS BORE G Data Type: Point Name: J E ATKINSON & SON Easting: 517900 Northing: 326600	Annual Volume (m^3): 154567 Max Daily Volume (m^3): 1932 Original Application No: - Original Start Date: 01/03/1978 Expiry Date: - Issue No: 100 Version Start Date: 01/07/1993 Version End Date: -

ID	Location	Details	
-	1302m N	Status: Historical Licence No: 4/30/12/*G/0040B Details: Spray Irrigation - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: ATKINSONS BORE G Data Type: Point Name: J E ATKINSON & SON Easting: 517960 Northing: 326600	Annual Volume (m^3): 154567 Max Daily Volume (m^3): 1932 Original Application No: - Original Start Date: 01/03/1978 Expiry Date: - Issue No: 102 Version Start Date: 17/06/2008 Version End Date: -
-	1302m N	Status: Historical Licence No: 4/30/12/*G/0040B Details: Transfer Between Sources (Pre Water Act 2003) Direct Source: GROUND WATER SOURCE OF SUPPLY Point: ATKINSONS BORE G Data Type: Point Name: J E ATKINSON & SON Easting: 517960 Northing: 326600	Annual Volume (m^3): 154567 Max Daily Volume (m^3): 1932 Original Application No: - Original Start Date: 01/03/1978 Expiry Date: - Issue No: 102 Version Start Date: 17/06/2008 Version End Date: -
-	1307m N	Status: Active Licence No: 4/30/12/*G/0040B Details: Transfer Between Sources (Pre Water Act 2003) Direct Source: GROUND WATER SOURCE OF SUPPLY Point: ATKINSONS BORE G Data Type: Point Name: J E ATKINSON & SON Easting: 517972 Northing: 326605	Annual Volume (m^3): 259,572 Max Daily Volume (m^3): 4,552 Original Application No: NPS/NA/001471 Original Start Date: 01/03/1978 Expiry Date: - Issue No: 105 Version Start Date: 15/03/2022 Version End Date: -
-	1307m N	Status: Active Licence No: 4/30/12/*G/0040B Details: Spray Irrigation - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: ATKINSONS BORE G Data Type: Point Name: J E ATKINSON & SON Easting: 517972 Northing: 326605	Annual Volume (m^3): 259,572 Max Daily Volume (m^3): 4,552 Original Application No: NPS/NA/001471 Original Start Date: 01/03/1978 Expiry Date: - Issue No: 105 Version Start Date: 15/03/2022 Version End Date: -
-	1307m N	Status: Active Licence No: 4/30/12/*G/0040B Details: Trickle Irrigation - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: ATKINSONS BORE G Data Type: Point Name: J E ATKINSON & SON Easting: 517972 Northing: 326605	Annual Volume (m^3): 259,572 Max Daily Volume (m^3): 4,552 Original Application No: NPS/NA/001471 Original Start Date: 01/03/1978 Expiry Date: - Issue No: 105 Version Start Date: 15/03/2022 Version End Date: -

ID	Location	Details	
-	1347m W	Status: Historical Licence No: 4/30/12/*G/0013 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: HACCONBY FARMING CO. BORE 2 Data Type: Point Name: HACCONBY FARMING COMPANY Easting: 516600 Northing: 325600	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/03/1974 Expiry Date: - Issue No: 100 Version Start Date: 01/07/1990 Version End Date: -
-	1397m N	Status: Active Licence No: AN/030/0012/037 Details: Trickle Irrigation - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: POINT A FROM LIMESTONE AT NORTHGATE, SPALDING Data Type: Point Name: G & D Matthews Limited Easting: 517951 Northing: 326695	Annual Volume (m^3): 25,402 Max Daily Volume (m^3): 1,080 Original Application No: NPS/NA/001254 Original Start Date: 15/03/2022 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 15/03/2022 Version End Date: -
-	1726m SW	Status: Active Licence No: 4/30/12/*G/0180A Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BONNER & CO. BORE PINCHBECK Data Type: Point Name: WILLOUGHBY FARM PARTNERSHIP Easting: 517000 Northing: 323800	Annual Volume (m^3): 8,865 Max Daily Volume (m^3): 718.28 Original Application No: - Original Start Date: 01/05/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/11/1990 Version End Date: -
-	1920m SW	Status: Historical Licence No: 4/30/12/*G/0090A Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: FORTY FOOT FM BORE MORTON FEN Data Type: Point Name: FRANK RICHARDSON & SON LTD Easting: 516800 Northing: 323700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/06/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/06/1970 Version End Date: -
-	1920m SW	Status: Active Licence No: 4/30/12/*G/0090A Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: FORTY FOOT FM BORE, MORTON FEN Data Type: Point Name: FRANK RICHARDSON & SON LTD Easting: 516800 Northing: 323700	Annual Volume (m^3): 7,213 Max Daily Volume (m^3): 469.83 Original Application No: - Original Start Date: 01/06/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2004 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	**25**

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 33**

ID	Location	Details	
4	734m S	Status: Active Licence No: AN/030/0012/038 Details: Trickle Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: LEAVESLAKE DRAIN D Data Type: Line Name: G & D Matthews Limited Easting: 519807 Northing: 325175	Annual Volume (m^3): 72,884 Max Daily Volume (m^3): - Original Application No: NPS/NA/001255 Original Start Date: 15/03/2022 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 15/03/2022 Version End Date: -
-	1193m W	Status: Active Licence No: AN/030/0012/013 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: ABSTRACTION A - SOUTH FORTY FOOT DRAIN AND HIGHER LODE DRAIN Data Type: Line Name: G & D Matthews Limited Easting: 516750 Northing: 325021	Annual Volume (m^3): 80,000 Max Daily Volume (m^3): 4,800 Original Application No: NPS/WR/025520 Original Start Date: 14/06/2018 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 01/04/2021 Version End Date: -
-	1193m W	Status: Active Licence No: AN/030/0012/038 Details: Trickle Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: SOUTH FORTY FOOT DRAIN 'A' Data Type: Line Name: G & D Matthews Limited Easting: 516750 Northing: 325021	Annual Volume (m^3): 72,884 Max Daily Volume (m^3): - Original Application No: NPS/NA/001255 Original Start Date: 15/03/2022 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 15/03/2022 Version End Date: -
-	1294m SW	Status: Active Licence No: AN/030/0012/038 Details: Trickle Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: MORTON ENGINE DRAIN C Data Type: Line Name: G & D Matthews Limited Easting: 516751 Northing: 324703	Annual Volume (m^3): 72,884 Max Daily Volume (m^3): - Original Application No: NPS/NA/001255 Original Start Date: 15/03/2022 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 15/03/2022 Version End Date: -

ID	Location	Details	
-	1325m W	Status: Historical Licence No: 4/30/12/*S/0014 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: DROVE PUMP DRN(&DYKES)HACCONBY Data Type: Line Name: HACCONBY FARMING COMPANY Easting: 514700 Northing: 325670	Annual Volume (m^3): 7517 Max Daily Volume (m^3): 900 Original Application No: - Original Start Date: 01/03/1974 Expiry Date: - Issue No: 100 Version Start Date: 01/09/1997 Version End Date: -
-	1326m W	Status: Active Licence No: AN/030/0012/027 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: HACONBY DROVE PUMP DRAIN AT HACONBY Data Type: Line Name: J E Atkinson & Son Easting: 515671 Northing: 325702	Annual Volume (m^3): 2,820.38 Max Daily Volume (m^3): 337.50 Original Application No: NPS/WR/031545 Original Start Date: 01/08/2019 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 01/08/2019 Version End Date: -
-	1326m W	Status: Active Licence No: AN/030/0012/027 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: FIELD DYKES AT HACONBY B - D Data Type: Line Name: J E Atkinson & Son Easting: 516592 Northing: 326236	Annual Volume (m^3): 2,820.38 Max Daily Volume (m^3): 337.50 Original Application No: NPS/WR/031545 Original Start Date: 01/08/2019 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 01/08/2019 Version End Date: -
-	1365m SW	Status: Active Licence No: 4/30/12/*S/0180 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: LEAVESLAKE DRAIN PINCHBECK Data Type: Point Name: WILLOUGHBY FARM PARTNERSHIP Easting: 517200 Northing: 324100	Annual Volume (m^3): 18,411 Max Daily Volume (m^3): 3,491.40 Original Application No: NPS/WR/008184 Original Start Date: 01/05/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2011 Version End Date: -
-	1475m SW	Status: Active Licence No: 4/30/12/*S/0090 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: SOUTH FORTY FOOT MORTON FEN Data Type: Line Name: FRANK RICHARDSON & SON LTD Easting: 516900 Northing: 323500	Annual Volume (m^3): 2,273 Max Daily Volume (m^3): 272.76 Original Application No: - Original Start Date: 01/06/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/05/1976 Version End Date: -

ID	Location	Details	
-	1600m W	Status: Active Licence No: AN/030/0012/027 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: FIELD DYKES AT HACONBY G - H Data Type: Line Name: J E Atkinson & Son Easting: 516331 Northing: 326182	Annual Volume (m^3): 2,820.38 Max Daily Volume (m^3): 337.50 Original Application No: NPS/WR/031545 Original Start Date: 01/08/2019 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 01/08/2019 Version End Date: -
-	1616m NW	Status: Historical Licence No: 4/30/12/*S/0014 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: HACCONBY LODE(&DYKES)HACCONBY Data Type: Line Name: HACCONBY FARMING COMPANY Easting: 513800 Northing: 326120	Annual Volume (m^3): 7517 Max Daily Volume (m^3): 900 Original Application No: - Original Start Date: 01/03/1974 Expiry Date: - Issue No: 100 Version Start Date: 01/09/1997 Version End Date: -
-	1620m NW	Status: Active Licence No: AN/030/0012/027 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: HACCONBY LODE AT HACONBY Data Type: Line Name: J E Atkinson & Son Easting: 515634 Northing: 326011	Annual Volume (m^3): 2,820.38 Max Daily Volume (m^3): 337.50 Original Application No: NPS/WR/031545 Original Start Date: 01/08/2019 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 01/08/2019 Version End Date: -
-	1624m W	Status: Active Licence No: 4/30/12/*S/0090 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: LANE DYKE(&TRIBS) MORTON FEN Data Type: Line Name: FRANK RICHARDSON & SON LTD Easting: 513100 Northing: 324900	Annual Volume (m^3): 2,273 Max Daily Volume (m^3): 272.76 Original Application No: - Original Start Date: 01/06/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/05/1976 Version End Date: -
-	1652m NW	Status: Active Licence No: 4/30/12/*S/0086 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: HACCONBY LODE DUNSBY FEN Data Type: Line Name: J E ATKINSON & SON Easting: 515400 Northing: 326000	Annual Volume (m^3): 11,365 Max Daily Volume (m^3): 113.65 Original Application No: - Original Start Date: 01/05/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/10/1994 Version End Date: -

ID	Location	Details	
-	1700m SW	Status: Active Licence No: 4/30/12/*S/0180 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: SOUTH FORTY FOOT PINCHBECK Data Type: Point Name: WILLOUGHBY FARM PARTNERSHIP Easting: 516900 Northing: 323900	Annual Volume (m^3): 18,411 Max Daily Volume (m^3): 3,491.40 Original Application No: NPS/WR/008184 Original Start Date: 01/05/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2011 Version End Date: -
-	1754m SW	Status: Active Licence No: AN/030/0012/038 Details: Trickle Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: MORTON DROVE DRAIN B Data Type: Line Name: G & D Matthews Limited Easting: 516901 Northing: 323832	Annual Volume (m^3): 72,884 Max Daily Volume (m^3): - Original Application No: NPS/NA/001255 Original Start Date: 15/03/2022 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 15/03/2022 Version End Date: -
-	1781m SW	Status: Active Licence No: 4/30/12/*S/0090 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: MORTON DRAIN(&TRIBS)MORTON FEN Data Type: Line Name: FRANK RICHARDSON & SON LTD Easting: 512900 Northing: 323600	Annual Volume (m^3): 2,273 Max Daily Volume (m^3): 272.76 Original Application No: - Original Start Date: 01/06/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/05/1976 Version End Date: -
-	1792m E	Status: Active Licence No: AN/030/0012/036 Details: Trickle Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: A-B DRAIN KNOWN AS STAR LODE AND HAMMOND BECK AT NORTHGATE Data Type: Line Name: G & D Matthews Limited Easting: 519671 Northing: 325715	Annual Volume (m^3): 21,547 Max Daily Volume (m^3): 1,080 Original Application No: NPS/NA/001253 Original Start Date: 15/03/2022 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 15/03/2022 Version End Date: -
-	1882m W	Status: Active Licence No: AN/030/0012/027 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: FIELD DYKES AT HACONBY E - F Data Type: Line Name: J E Atkinson & Son Easting: 516005 Northing: 326112	Annual Volume (m^3): 2,820.38 Max Daily Volume (m^3): 337.50 Original Application No: NPS/WR/031545 Original Start Date: 01/08/2019 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 01/08/2019 Version End Date: -

ID	Location	Details	
-	1896m NE	Status: Active Licence No: AN/030/0012/045 Details: Trickle Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: REACH H-I DRAINS WITHIN BLACK SLUICE IDB Data Type: Line Name: R BRATLEY (QUADRING) LTD Easting: 518449 Northing: 328184	Annual Volume (m^3): 96,922 Max Daily Volume (m^3): 1,290 Original Application No: NPS/NA/001707 Original Start Date: 17/03/2022 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 17/03/2022 Version End Date: -
-	1945m W	Status: Historical Licence No: 4/30/12/*S/0280 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: LANE DYKE & FIELD DYKES Data Type: Line Name: J H DORRINGTON & SON (DUNSBY) Easting: 514770 Northing: 325000	Annual Volume (m^3): 6121 Max Daily Volume (m^3): 736 Original Application No: - Original Start Date: 01/09/1997 Expiry Date: - Issue No: 100 Version Start Date: 01/09/1997 Version End Date: -
-	1948m SW	Status: Active Licence No: 4/30/12/*S/0180 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: SOUTH FORTY FOOT PINCHBECK Data Type: Point Name: WILLOUGHBY FARM PARTNERSHIP Easting: 516900 Northing: 323600	Annual Volume (m^3): 18,411 Max Daily Volume (m^3): 3,491.40 Original Application No: NPS/WR/008184 Original Start Date: 01/05/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2011 Version End Date: -
-	1975m NE	Status: Active Licence No: AN/030/0012/039 Details: Trickle Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: BETWEEN POINTS A AND B AT HIGHER LODE AND HAMMOND BECK Data Type: Line Name: G & D Matthews Limited Easting: 519482 Northing: 326521	Annual Volume (m^3): 20,970 Max Daily Volume (m^3): 1,080 Original Application No: NPS/NA/001258 Original Start Date: 15/03/2022 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 15/03/2022 Version End Date: -
-	1986m SW	Status: Historical Licence No: 4/30/12/*S/0068 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: UNNAMED DRAIN TWENTY Data Type: Line Name: C W DOBBS & SON LTD Easting: 516100 Northing: 322700	Annual Volume (m^3): 11365 Max Daily Volume (m^3): 409.15 Original Application No: - Original Start Date: 01/06/1972 Expiry Date: - Issue No: 100 Version Start Date: 01/03/1995 Version End Date: -

ID	Location	Details	
-	1986m SW	Status: Historical Licence No: 4/30/12/*S/0068 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: SOUTH FORTY FOOT DRAIN TWENTY Data Type: Line Name: C W DOBBS & SON LTD Easting: 517100 Northing: 322500	Annual Volume (m^3): 11365 Max Daily Volume (m^3): 409.15 Original Application No: - Original Start Date: 01/06/1972 Expiry Date: - Issue No: 100 Version Start Date: 01/03/1995 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	**2**

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 33**

ID	Location	Details	
-	1079m N	Status: Active Licence No: 4/30/12/*G/0034 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: PINCHBECK P.S. BOREHOLE 1 Data Type: Point Name: Anglian Water Services Ltd Easting: 517600 Northing: 326330	Annual Volume (m^3): 3,318,653 Max Daily Volume (m^3): 9,092 Original Application No: NPS/WR/030434 Original Start Date: 01/04/1966 Expiry Date: - Issue No: 106 Version Start Date: 12/06/2020 Version End Date: -
-	1079m N	Status: Active Licence No: 4/30/12/*G/0034 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: PINCHBECK P.S. BOREHOLE 2 Data Type: Point Name: Anglian Water Services Ltd Easting: 517600 Northing: 326330	Annual Volume (m^3): 3,318,653 Max Daily Volume (m^3): 9,092 Original Application No: NPS/WR/030434 Original Start Date: 01/04/1966 Expiry Date: - Issue No: 106 Version Start Date: 12/06/2020 Version End Date: -

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

5.9 Source Protection Zones

Records within 500m	2

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 33**

ID	Location	Type	Description
1	**On site**	**2**	**Outer catchment**
3	259m NW	1	Inner catchment

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

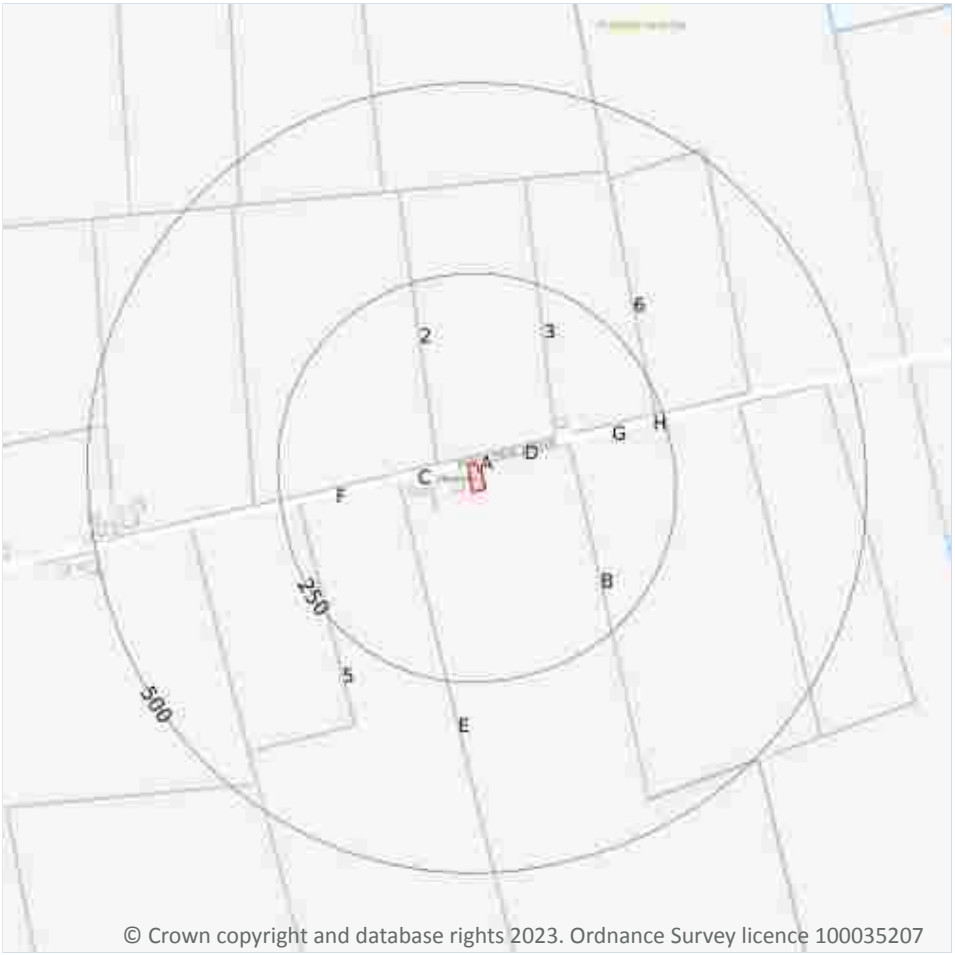
5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

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

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

6 Hydrology



Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	**15**

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

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

ID	Location	Type of water feature	Ground level	Permanence	Name
B	5m N	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
A	9m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
2	41m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	41m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	60m NE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
3	67m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	91m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	96m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
F	105m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
G	129m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
5	224m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
H	230m E	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
H	238m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
6	240m E	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
H	240m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	**7**

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

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

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	**1**

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

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

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	**On site**	**River**	**Black Sluice IDB draining to the South Forty Foot Drain**	**GB205030051515**	**South Forty Foot Drain**	**Witham**

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

6.4 WFD Surface water bodies

Records identified	**1**

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

water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

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

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	1188m W	River	Black Sluice IDB draining to the South Forty Foot Drain	GB205030051515	Moderate	Fail	Moderate	2019

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

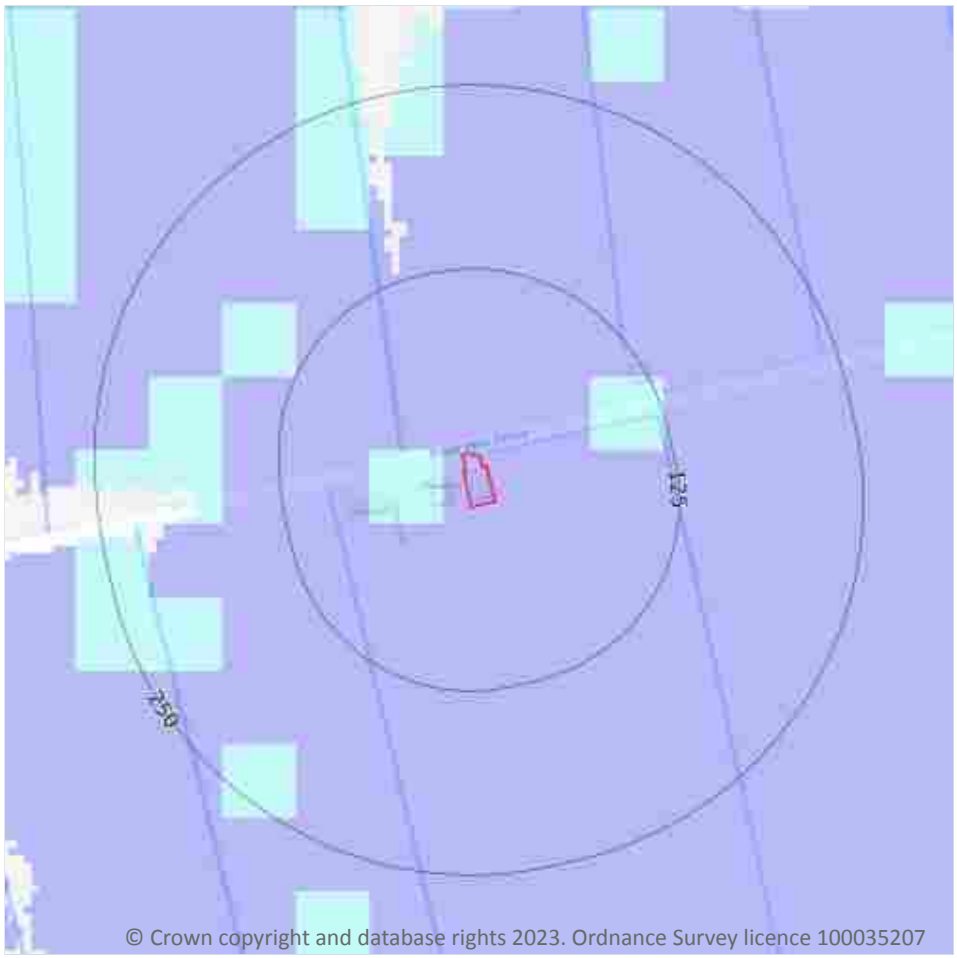
6.5 WFD Groundwater bodies

Records on site	0

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

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

7 River and coastal flooding



Site Outline

Search buffers in metres (m)

River and coastal flooding:

High

Medium

Low

Very Low

Historical Flood Events

Areas Used for Flood Storage

Areas Benefiting from Flood Defences

Flood Defences

7.1 Risk of flooding from rivers and the sea

Records within 50m	2

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

Features are displayed on the River and coastal flooding map on **page 48**

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

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

7.2 Historical Flood Events

Records within 250m	**0**

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

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

7.3 Flood Defences

Records within 250m	**0**

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	**0**

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

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

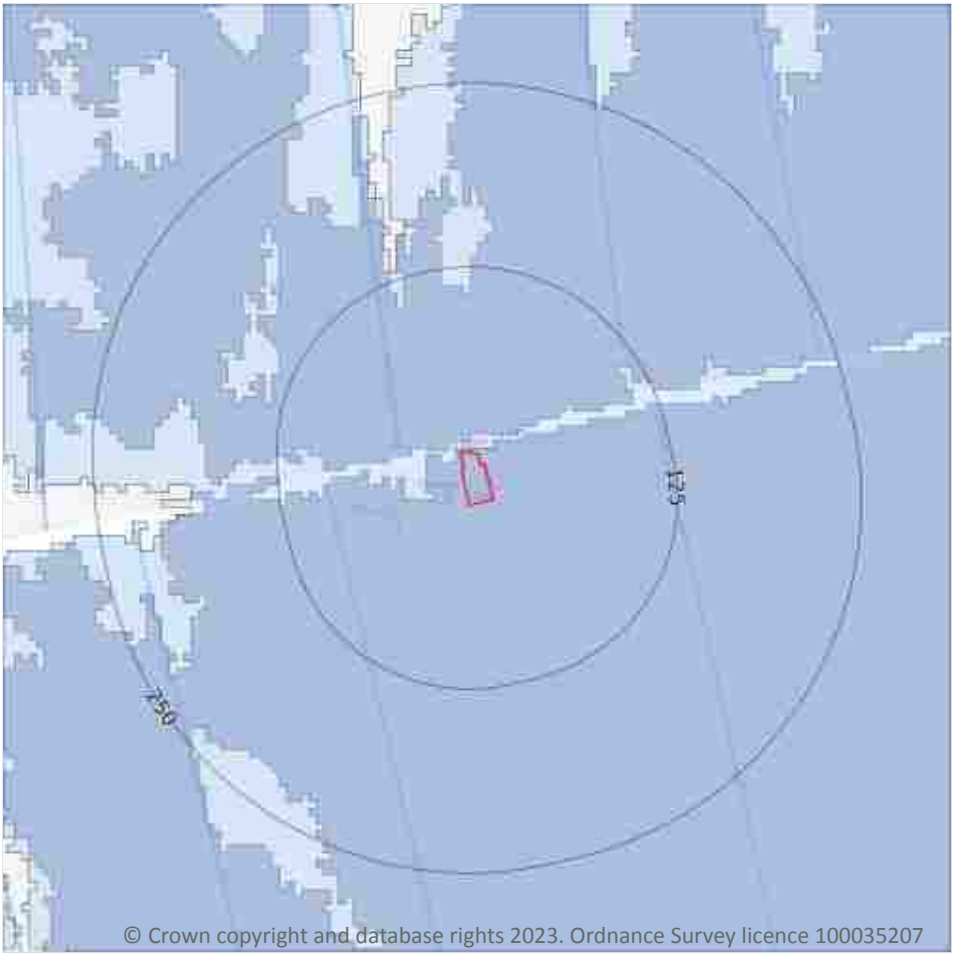
7.5 Flood Storage Areas

Records within 250m	**0**

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

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

River and coastal flooding - Flood Zones



Site Outline

Search buffers in metres (m)

Flood zone 2

Flood zone 3

7.6 Flood Zone 2

Records within 50m	1

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

Features are displayed on the River and coastal flooding map on **page 48**

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

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

7.7 Flood Zone 3

Records within 50m	1

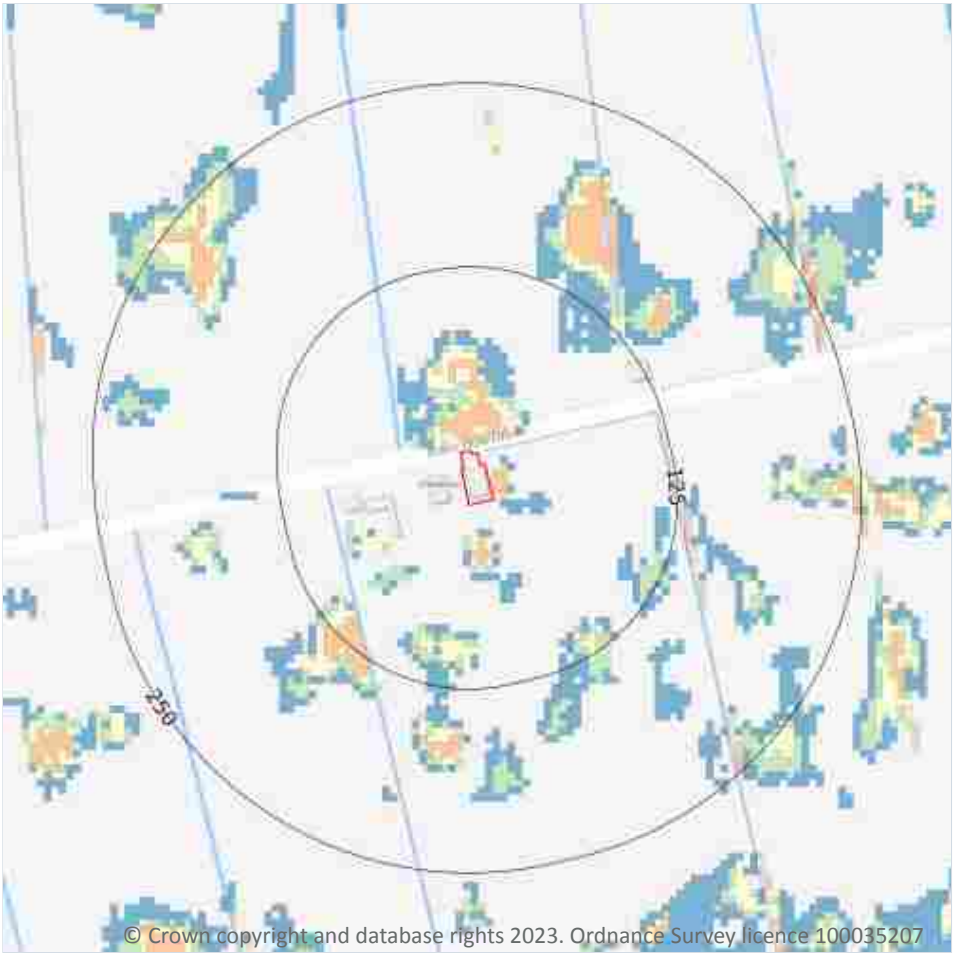
Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

Features are displayed on the River and coastal flooding map on **page 48**

Location	Type
On site	**Zone 3 - (Fluvial /Tidal Models)**

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

8 Surface water flooding



Site Outline
Search buffers in metres (m)

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

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

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

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

8.1 Surface water flooding

Highest risk on site	**Negligible**
Highest risk within 50m	**1 in 30 year, 0.1m - 0.3m**

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

Features are displayed on the Surface water flooding map on **page 52**

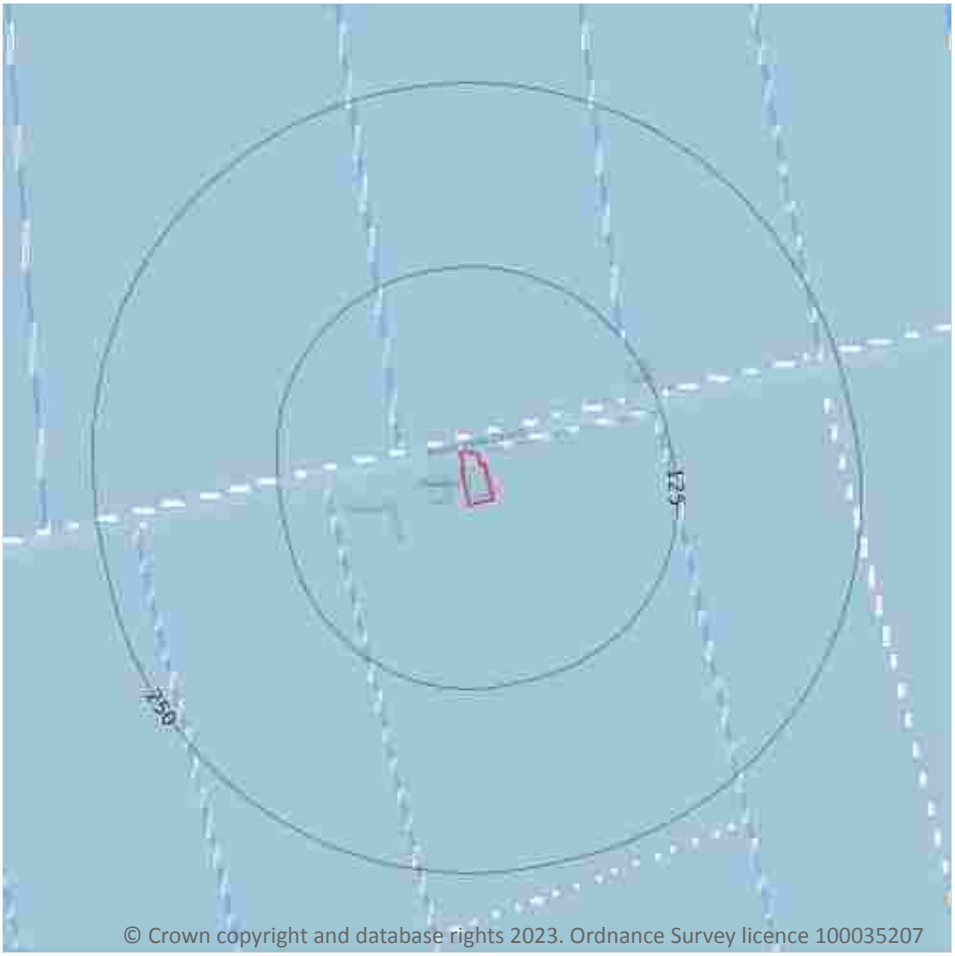
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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

Return period	Maximum modelled depth
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



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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 54**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m	0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	0

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

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

10.7 Designated Ancient Woodland

Records within 2000m	0

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

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

10.8 Biosphere Reserves

Records within 2000m	0

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

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

10.9 Forest Parks

Records within 2000m	0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

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

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

10.11 Green Belt

Records within 2000m	0

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

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

10.12 Proposed Ramsar sites

Records within 2000m	0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

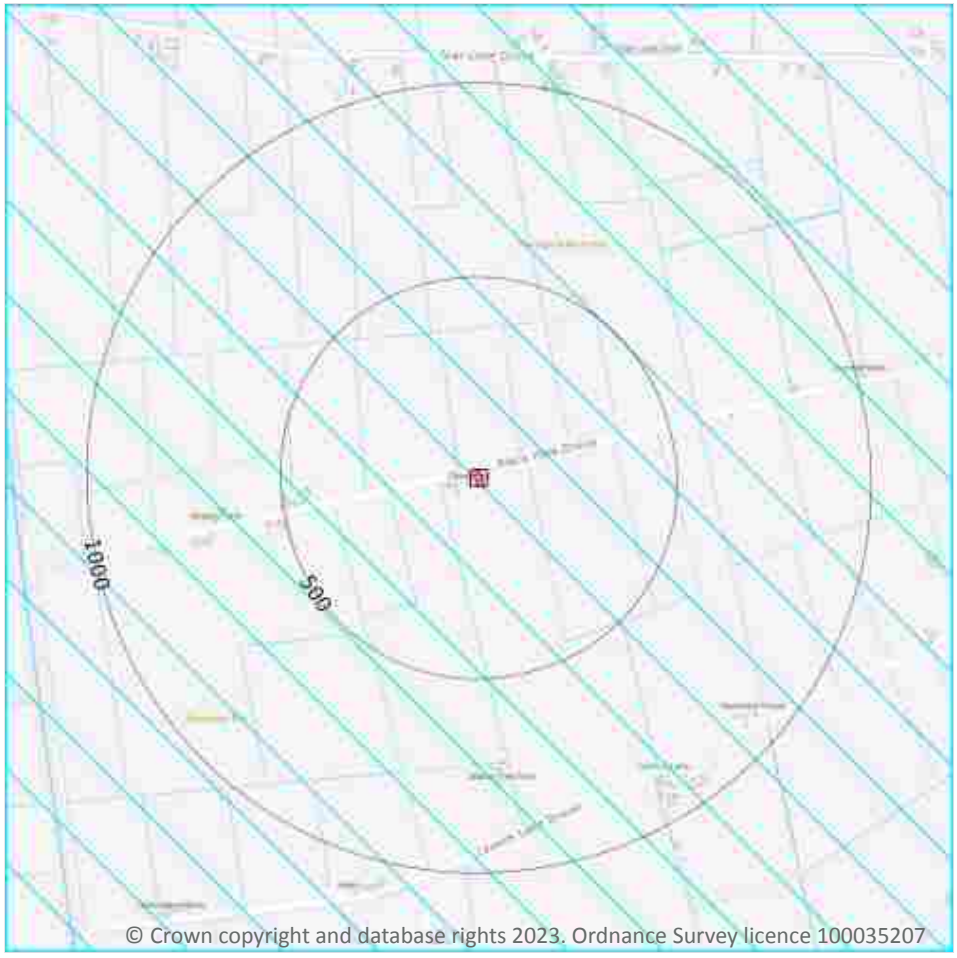
Records within 2000m	4

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

Location	Name	Type	NVZ ID	Status
On site	**Black Sluice IDB draining to the South Forty Foot Drain NVZ**	**Surface Water**	**669**	**Existing**
684m N	Black Sluice IDB draining to the South Forty Foot Drain NVZ	Surface Water	669	Existing
1892m SE	Glen NVZ	Surface Water	378	Existing
1908m SE	Vernatt's Drain NVZ	Surface Water	379	Existing

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

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

10.17 SSSI Impact Risk Zones

Records on site	1

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

Features are displayed on the SSSI Impact Zones and Units map on **page 59**

ID	Location	Type of developments requiring consultation
1	On site	**Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 4000m². Combustion - General combustion processes >50mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	0

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

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

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	0

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

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

11.5 Conservation Areas

Records within 250m	0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m	0

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

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

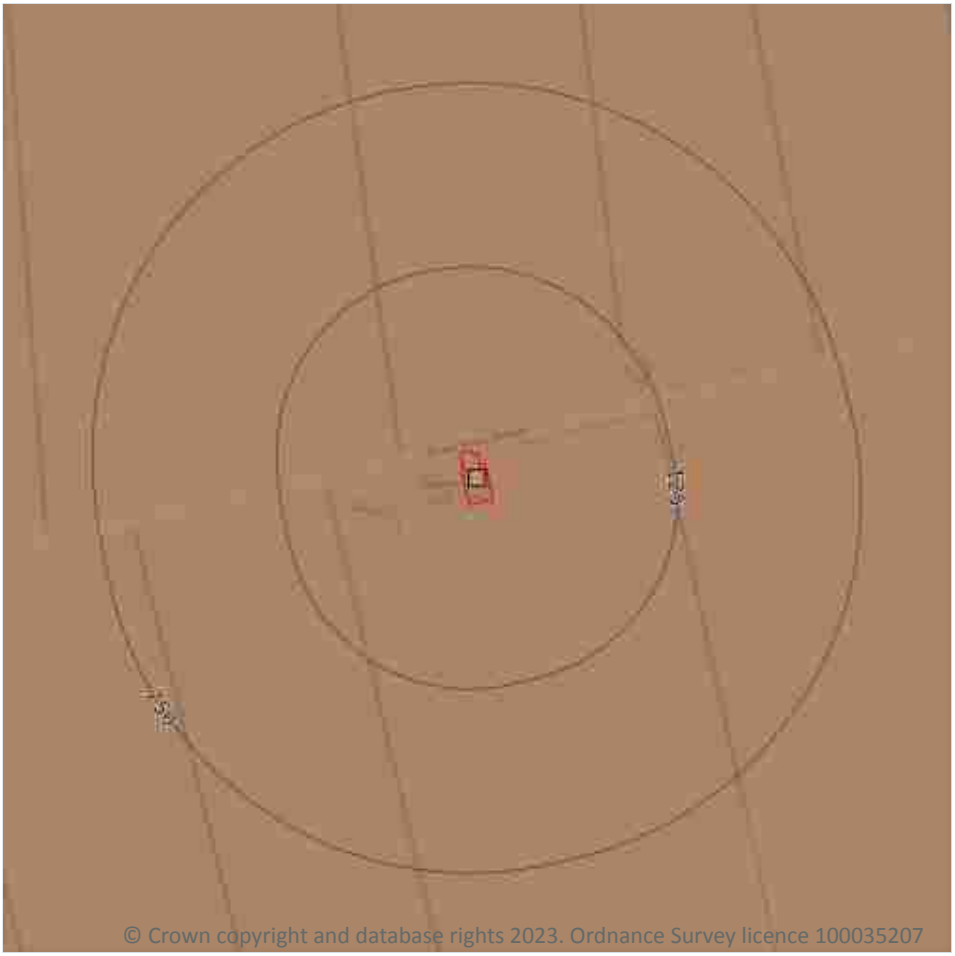
11.7 Registered Parks and Gardens

Records within 250m	0

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

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

12 Agricultural designations



Site Outline

Search buffers in metres (m)

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

12.1 Agricultural Land Classification

Records within 250m	1

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

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

ID	Location	Classification	Description
1	On site	Grade 1	**Excellent quality agricultural land. Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.**

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	0

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

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

12.3 Tree Felling Licences

Records within 250m	0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	2

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

Location	Reference	Scheme	Start Date	End Date
On site	**545149**	**Countryside Stewardship (Middle Tier)**	**01/01/2017**	**31/12/2021**
225m W	545149	Countryside Stewardship (Middle Tier)	01/01/2017	31/12/2021

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m	0

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

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.

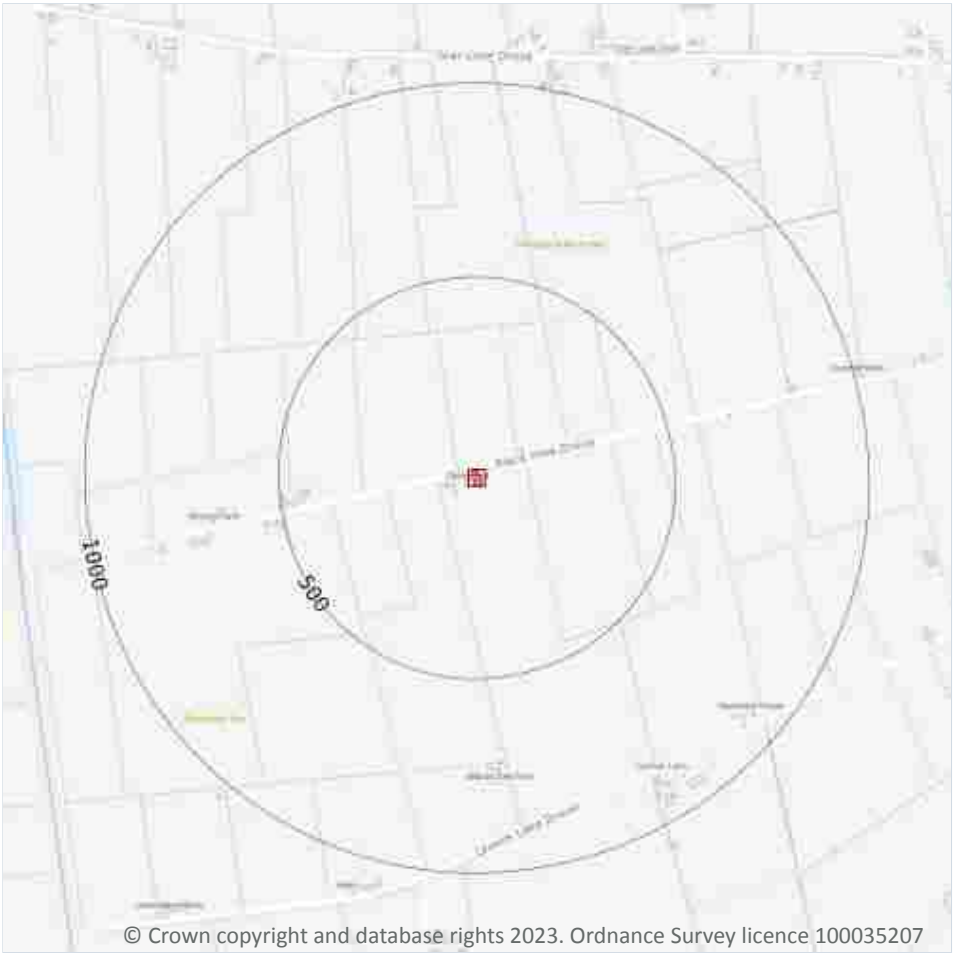
13.4 Limestone Pavement Orders

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 66**

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.

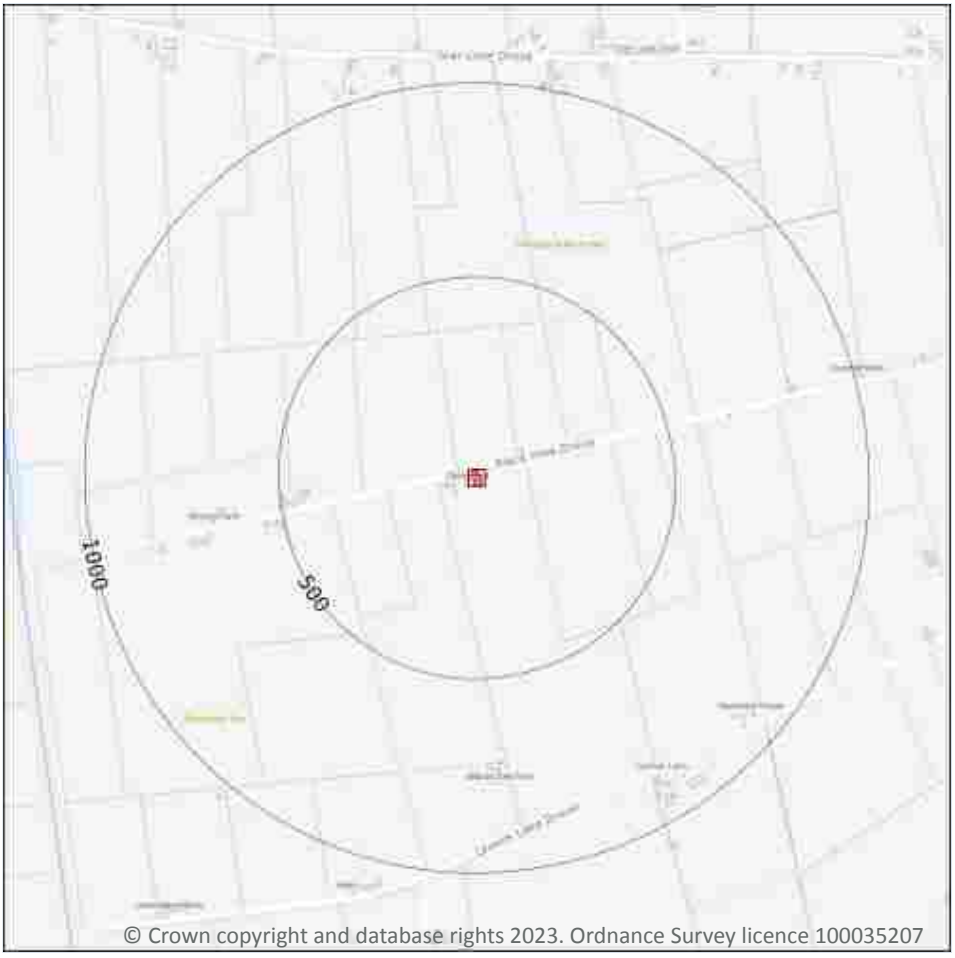
14.6 Bedrock faults and other linear features (10k)

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 70**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**EW144_spalding_v4**

This data is sourced from the British Geological Survey.

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

15.2 Artificial and made ground (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

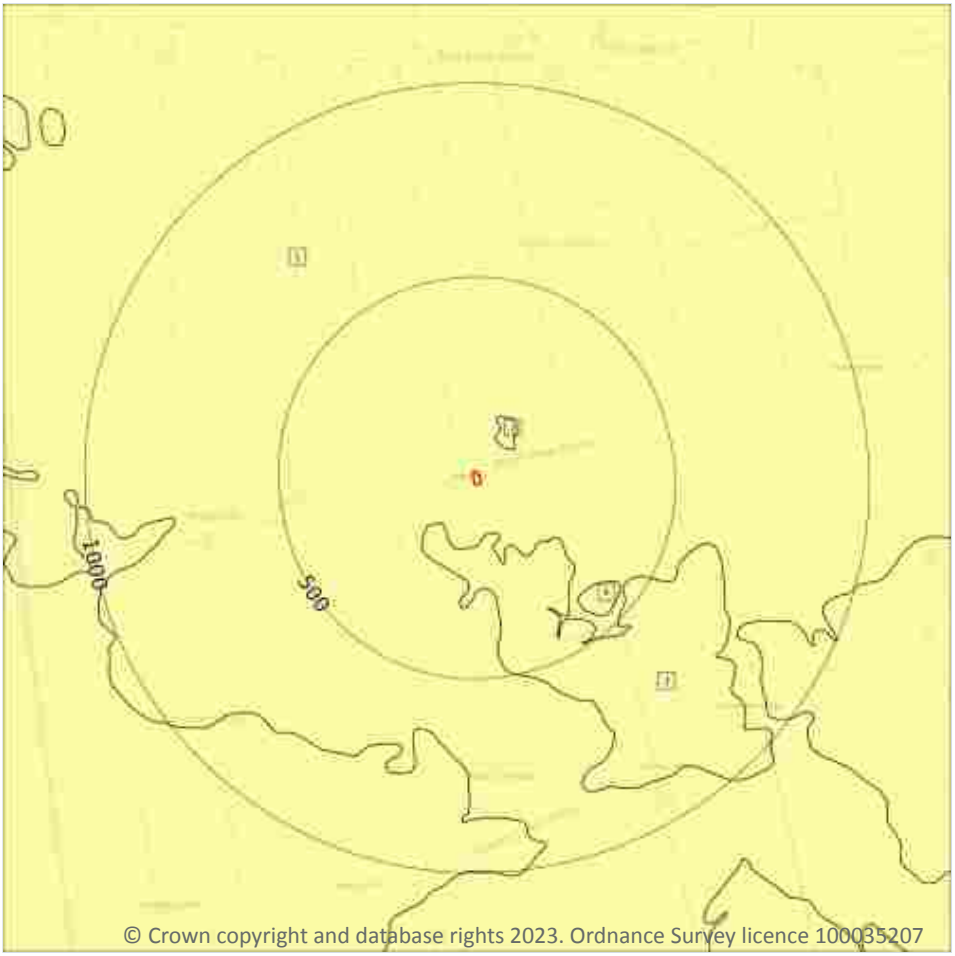
15.3 Artificial ground permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m **4**

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

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

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TFD-XCZ**	**TIDAL FLAT DEPOSITS**	**CLAY AND SILT**
2	91m NE	TFD1-XCZ	TIDAL FLAT DEPOSITS, 1	CLAY AND SILT
3	130m S	TFD1-XCZ	TIDAL FLAT DEPOSITS, 1	CLAY AND SILT
4	383m SE	TFD1-XCZ	TIDAL FLAT DEPOSITS, 1	CLAY AND SILT

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Intergranular**	**Low**	**Very Low**

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

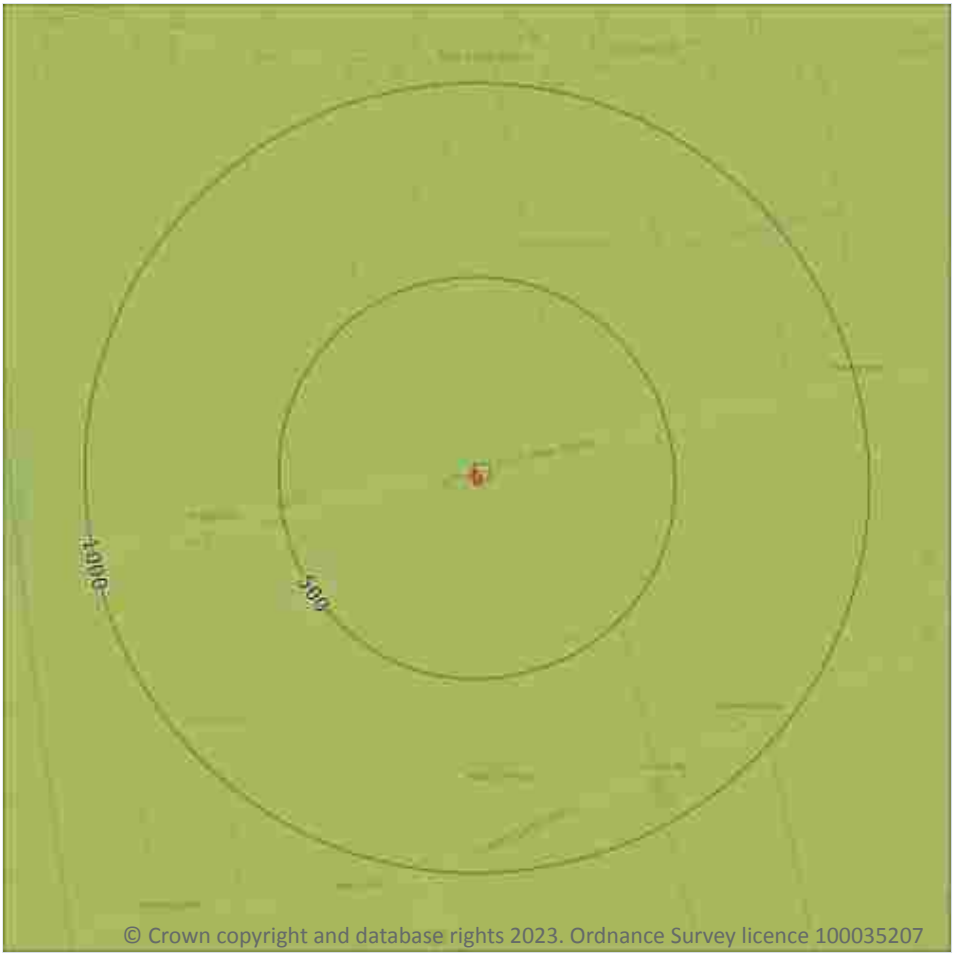
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 74**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**OXC-MDST**	**OXFORD CLAY FORMATION - MUDSTONE**	**CALLOVIAN**

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Fracture**	**Low**	**Very Low**

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

16 Boreholes

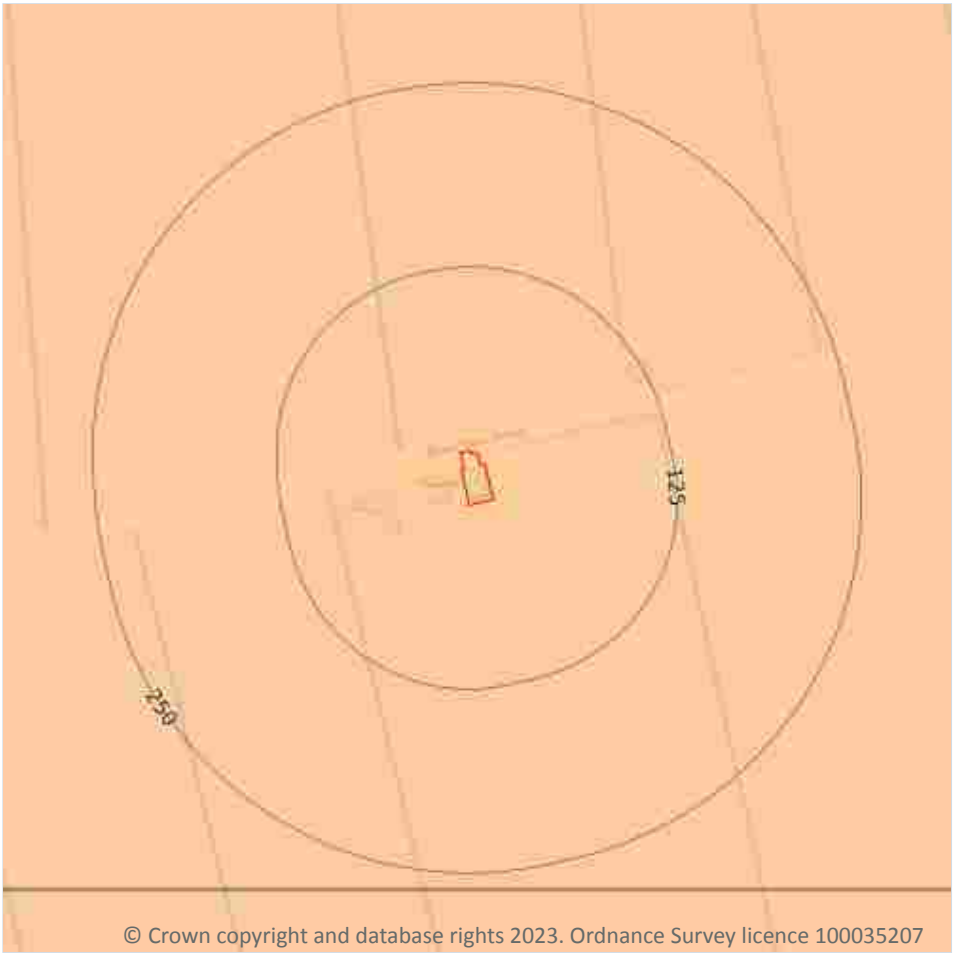
16.1 BGS Boreholes

Records within 250m	0

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

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



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Site Outline

Search buffers in metres (m)

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

17.1 Shrink swell clays

Records within 50m	1

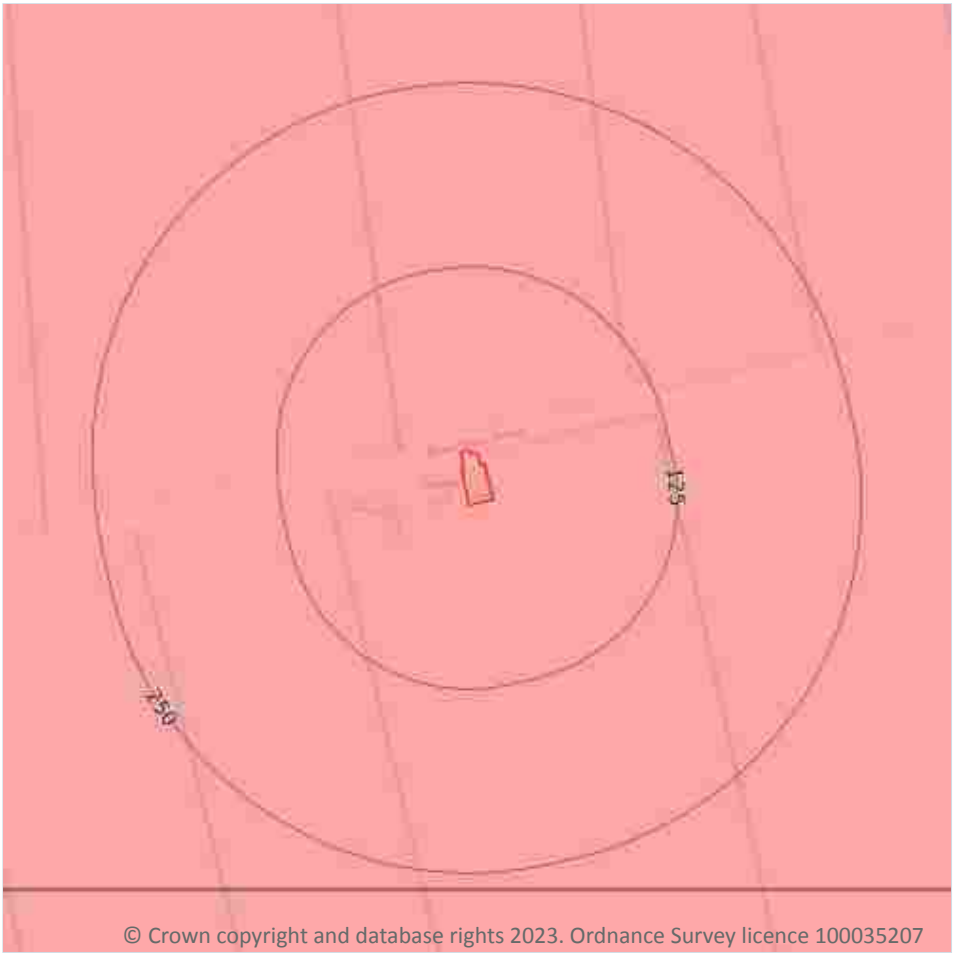
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 77**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

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

17.2 Running sands

Records within 50m	1

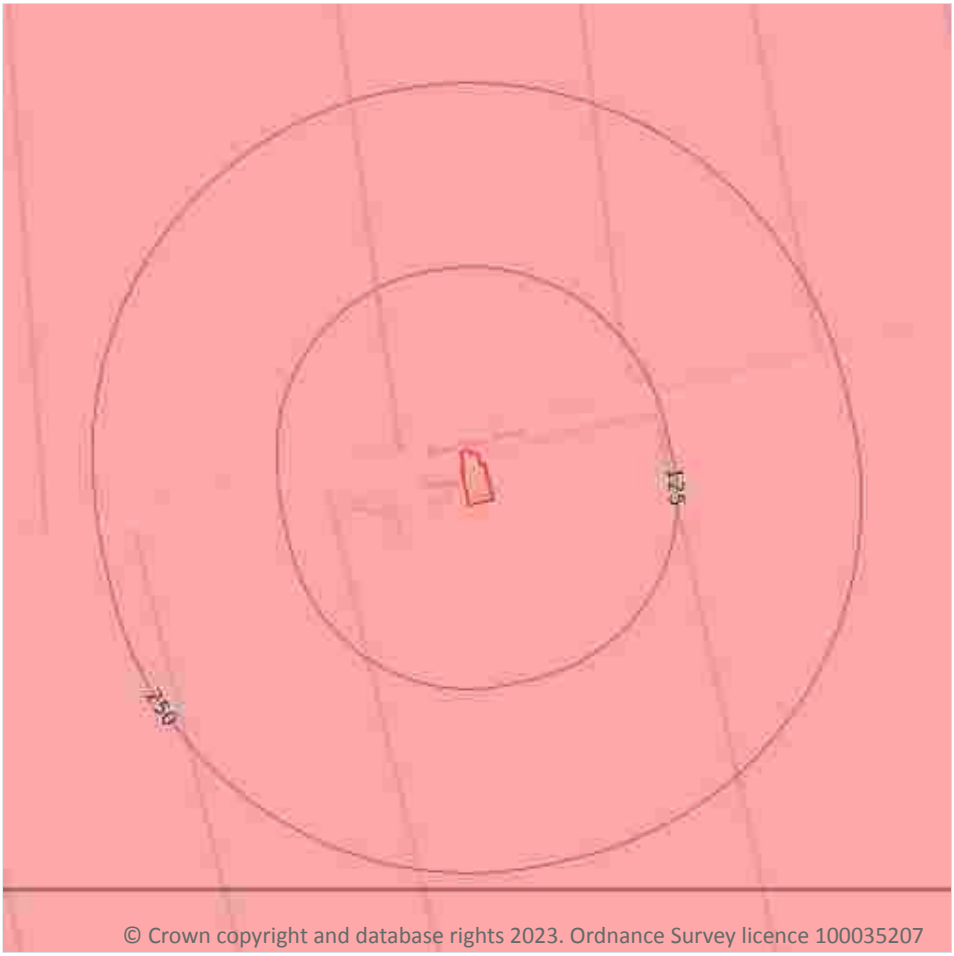
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 78**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



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Site Outline

Search buffers in metres (m)

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

17.3 Compressible deposits

Records within 50m	1

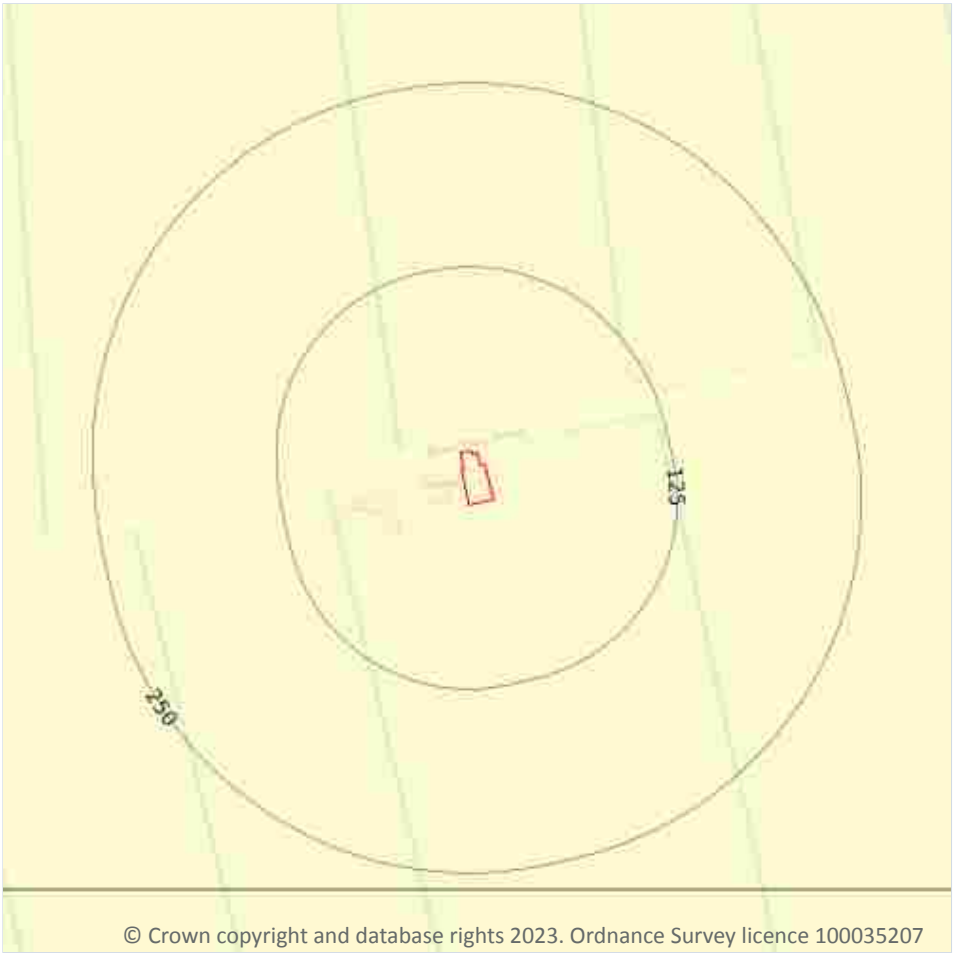
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

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

Location	Hazard rating	Details
On site	**Moderate**	**Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



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Site Outline

Search buffers in metres (m)

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

17.4 Collapsible deposits

Records within 50m	**1**

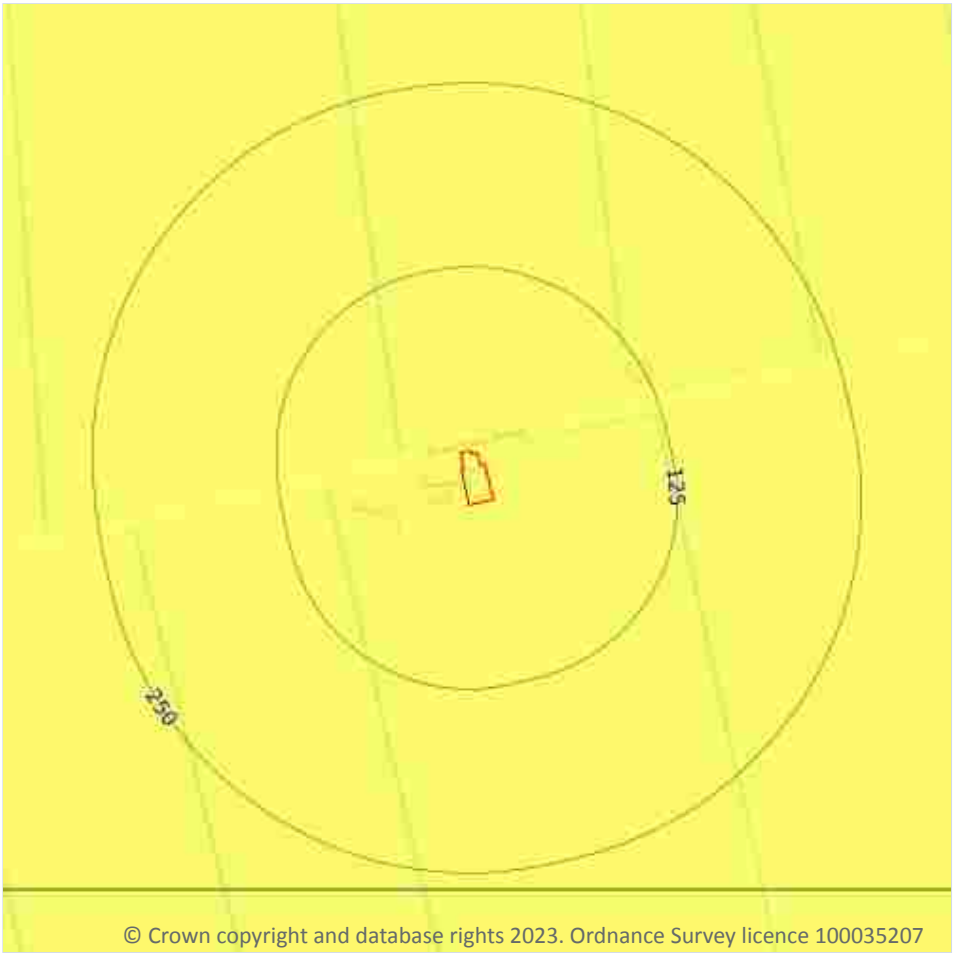
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

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

Location	Hazard rating	Details
On site	**Negligible**	**Deposits with potential to collapse when loaded and saturated are believed not to be present.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

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

17.5 Landslides

Records within 50m	1

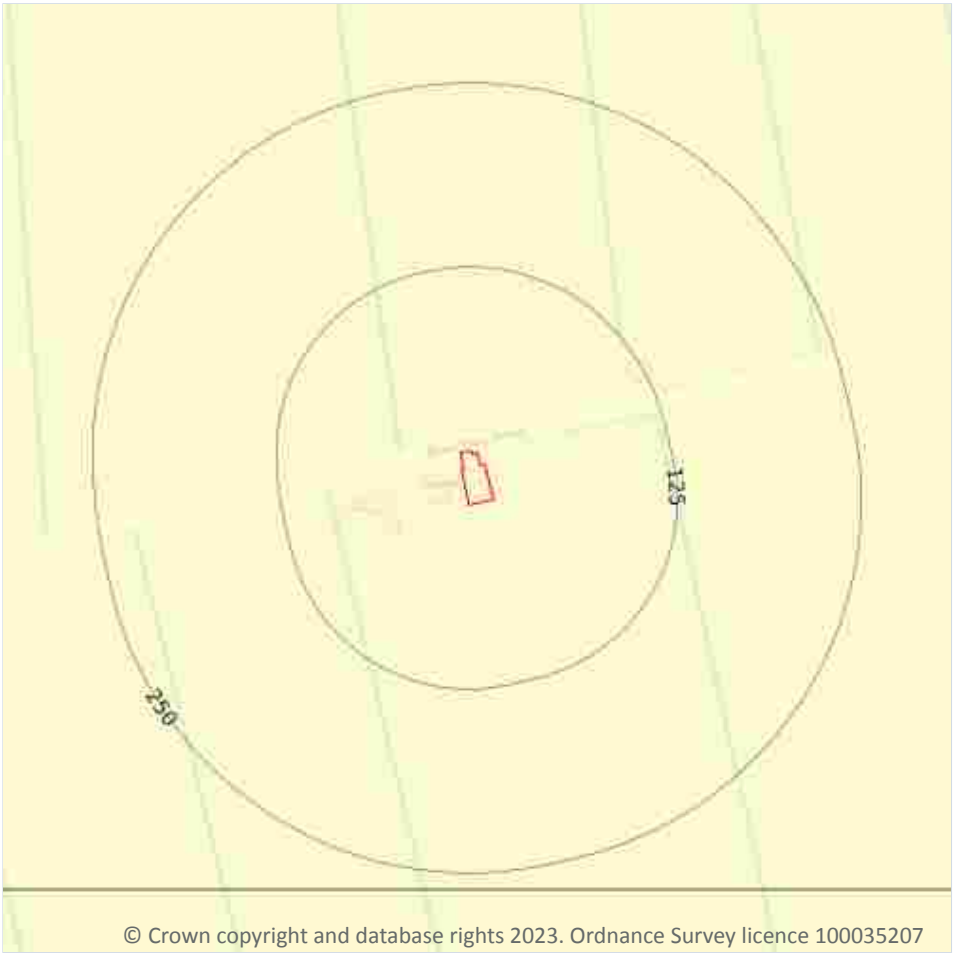
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 81**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



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Site Outline

Search buffers in metres (m)

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

17.6 Ground dissolution of soluble rocks

Records within 50m	1

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

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 82**

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

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities

18.1 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	0

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.

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	0

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

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	0

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

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	0

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

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site	0

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0

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

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0

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

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

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

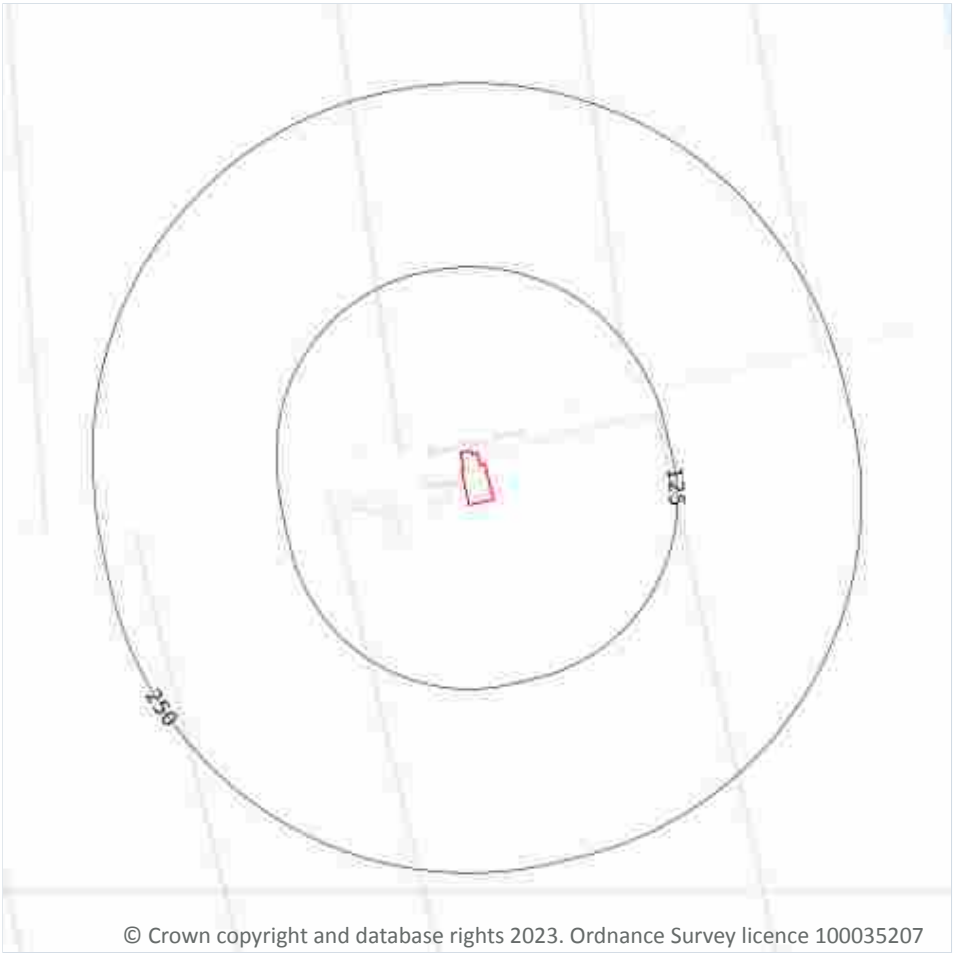
18.13 Clay mining

Records on site	0

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

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

19 Radon



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Site Outline

Search buffers in metres (m)

Greater than 30%

Between 10% and 30%

Between 5% and 10%

Between 3% and 5%

Between 1% and 3%

Less than 1%

19.1 Radon

Records on site	1

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

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

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

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

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	1

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**40 - 60 mg/kg**	**15 - 30 mg/kg**

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

21.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	0

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

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

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

This data is sourced from HS2 ltd.

Data providers

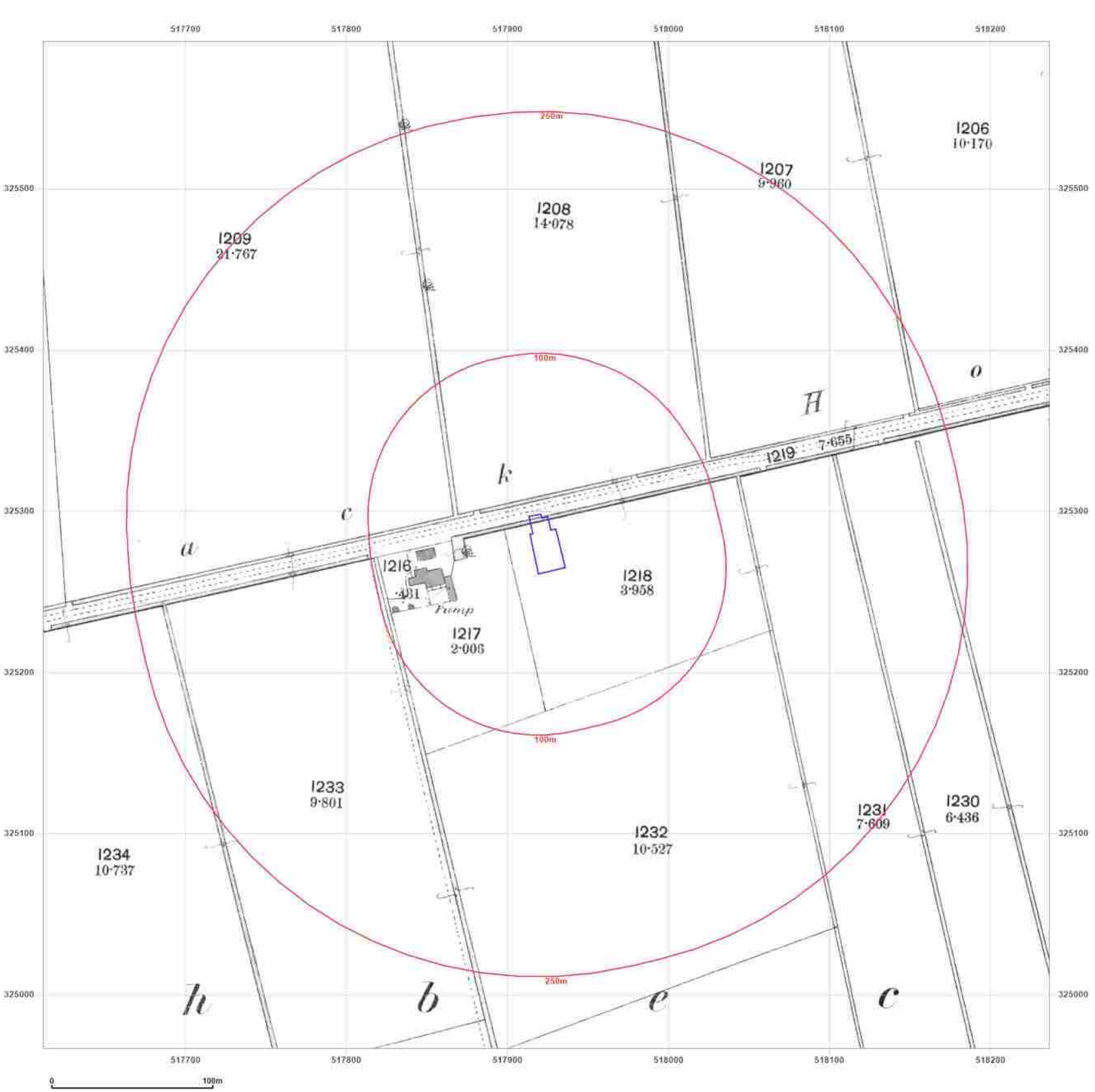
Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see https://www.groundsure.com/sources-reference.

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APPENDIX V

Historical Mapping



Groundsure INSIGHTS

Site Details:

BLACK HOLE DROVE, WEST PINCHBECK

Client Ref: E23127
Report Ref: GS-IUT-1FO-8YZ-S2U
Grid Ref: 517924, 325279

Map Name: County Series
Map date: **1888**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed 1888
Revised 1888
Edition N/A
Copyright N/A
Levelled N/A

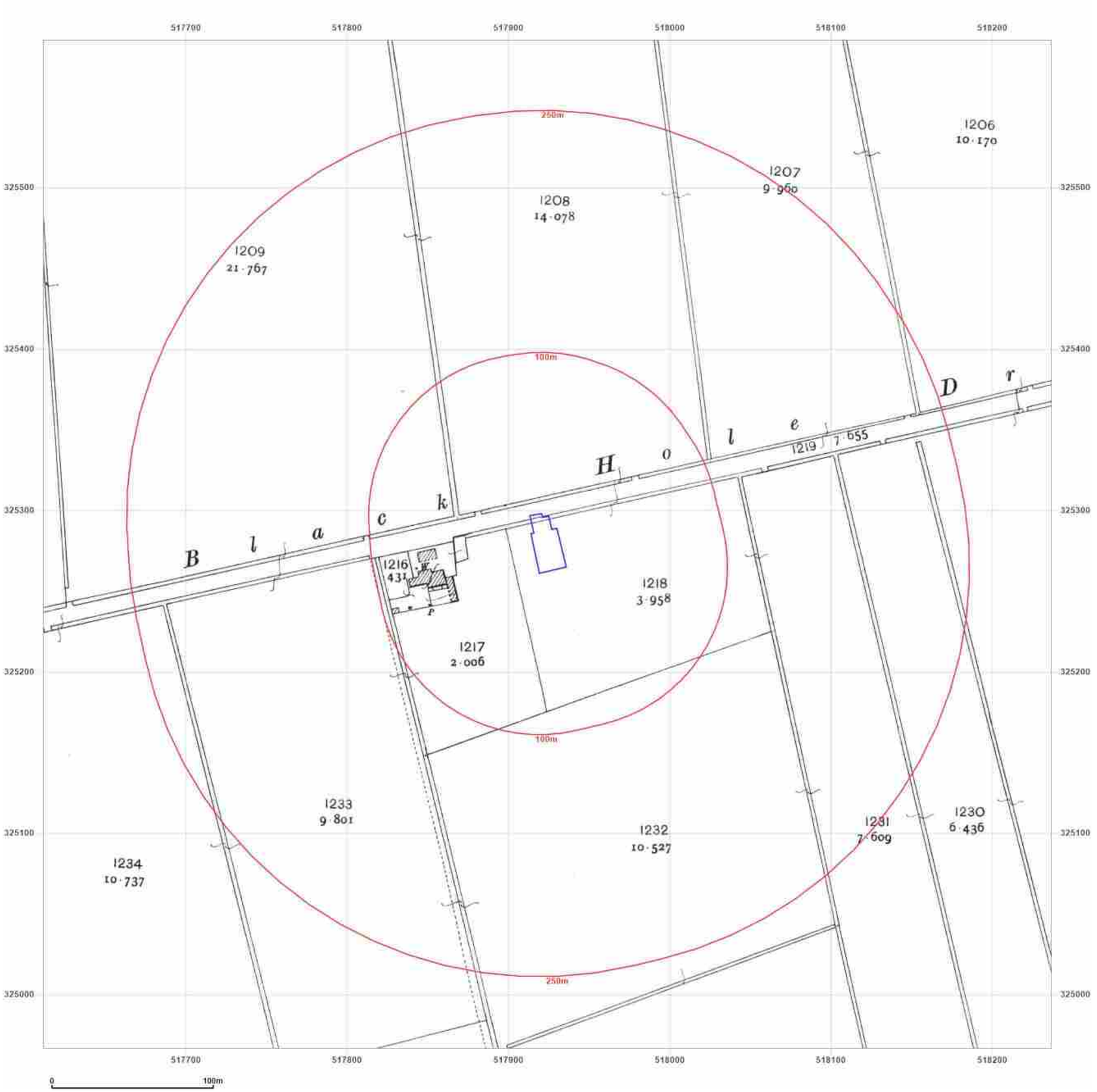
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Groundsure INSIGHTS

Site Details:

BLACK HOLE DROVE, WEST PINCHBECK

Client Ref: E23127
Report Ref: GS-IUT-1FO-8YZ-S2U
Grid Ref: 517924, 325279

Map Name: County Series
Map date: **1904**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed 1904
Revised 1904
Edition N/A
Copyright N/A
Levelled N/A

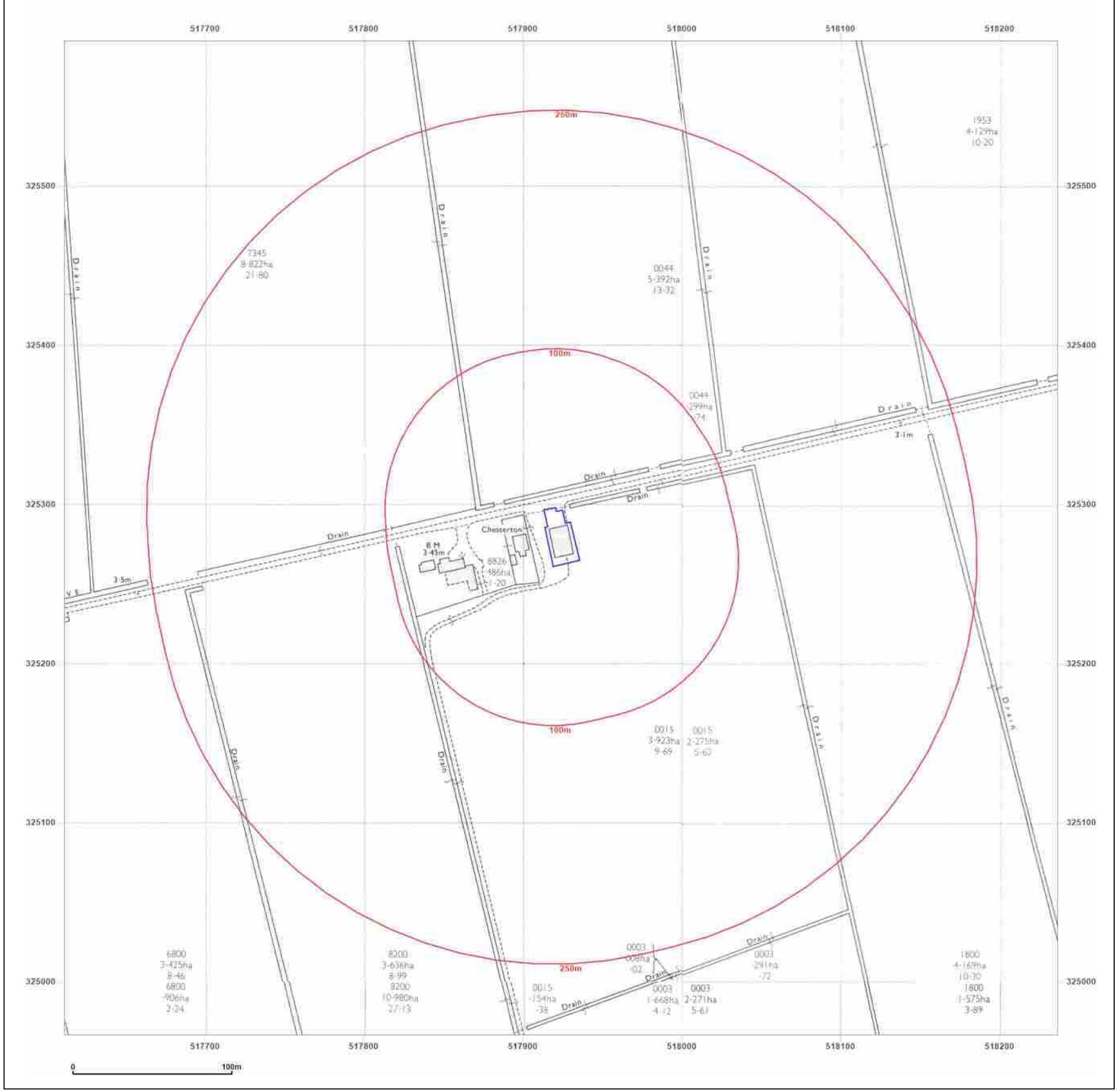
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Site Details:

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Client Ref: E23127
Report Ref: GS-IUT-1FO-8YZ-S2U
Grid Ref: 517924, 325279

Map Name: National Grid

Map date: **1978**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1977
Revised 1977
Edition N/A
Copyright 1978
Levelled 1965

Surveyed 1977
Revised 1977
Edition N/A
Copyright 1978
Levelled 1966

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Edition N/A
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Levelled 1966

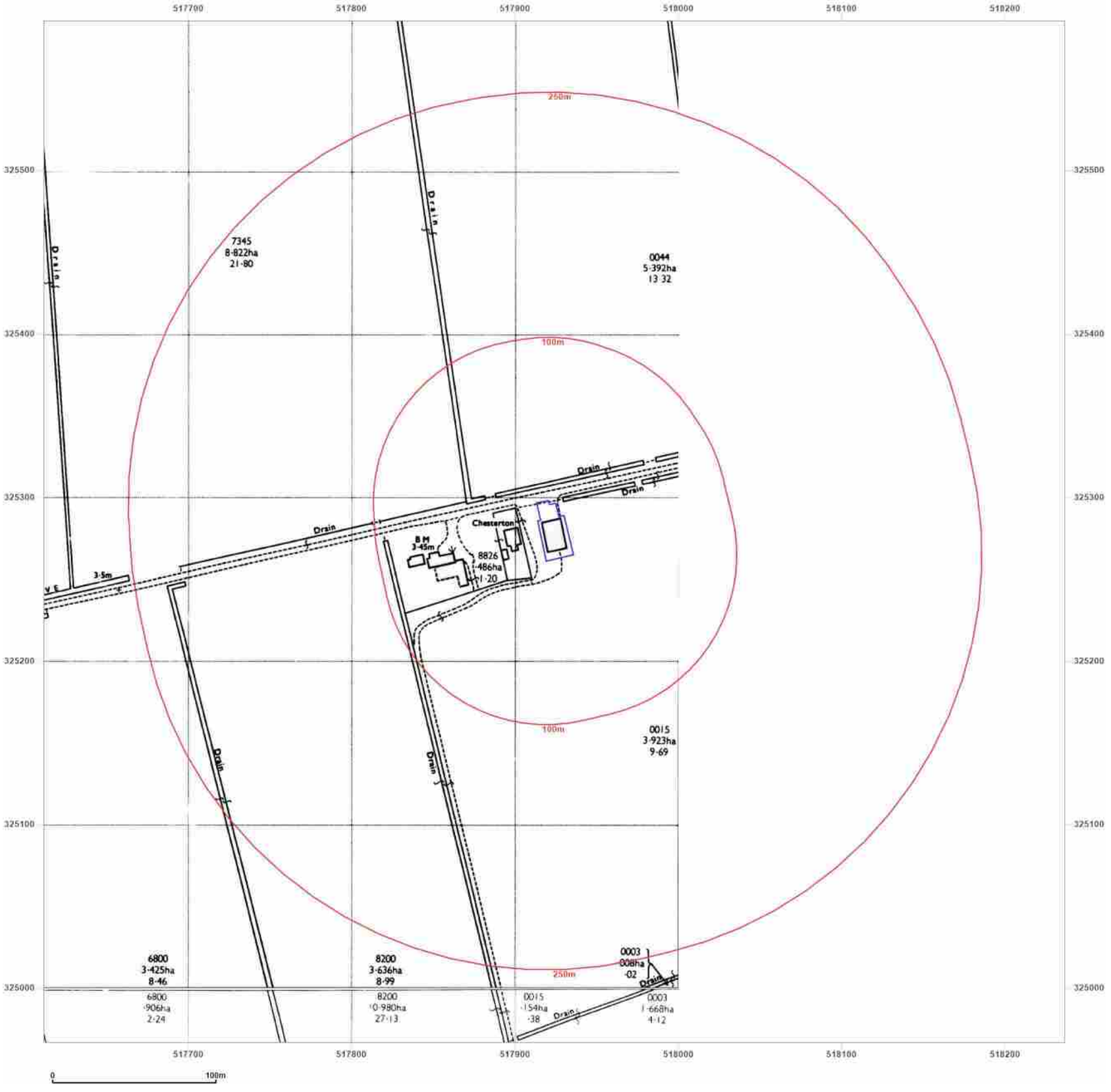
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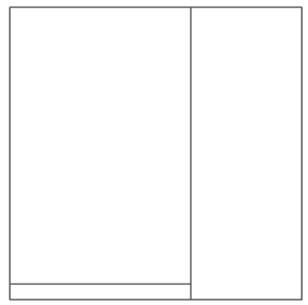
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Grid Ref: 517924, 325279

Map Name: National Grid
Map date: **1978**
Scale: 1:2,500
Printed at: 1:2,500

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



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Revised N/A
Edition N/A
Copyright N/A
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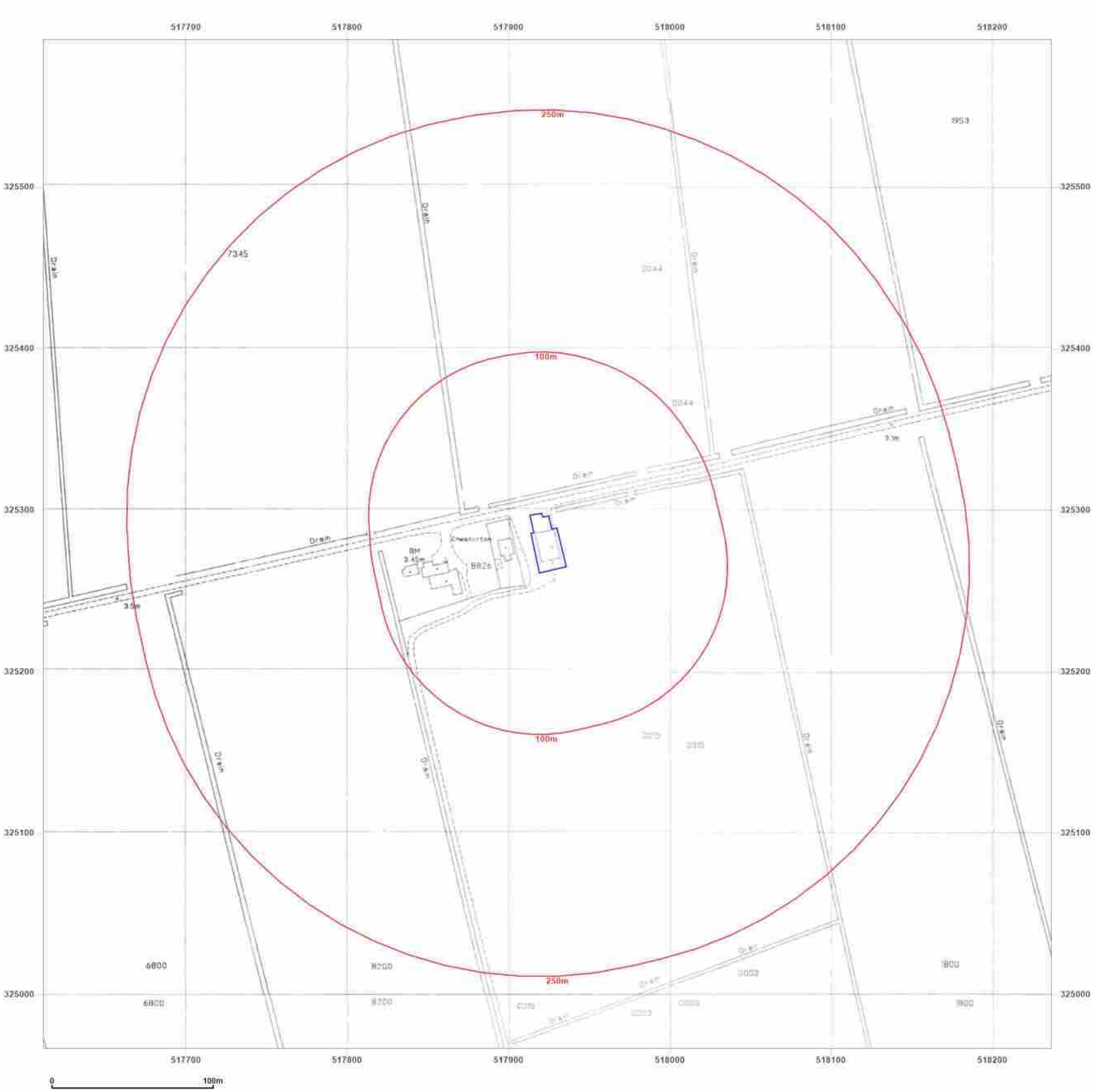
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Site Details:

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Report Ref: GS-IUT-1FO-8YZ-S2U
Grid Ref: 517924, 325279

Map Name: National Grid

Map date: **1994**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1994
Revised N/A
Edition N/A
Copyright 1994
Levelled N/A

Surveyed 1994
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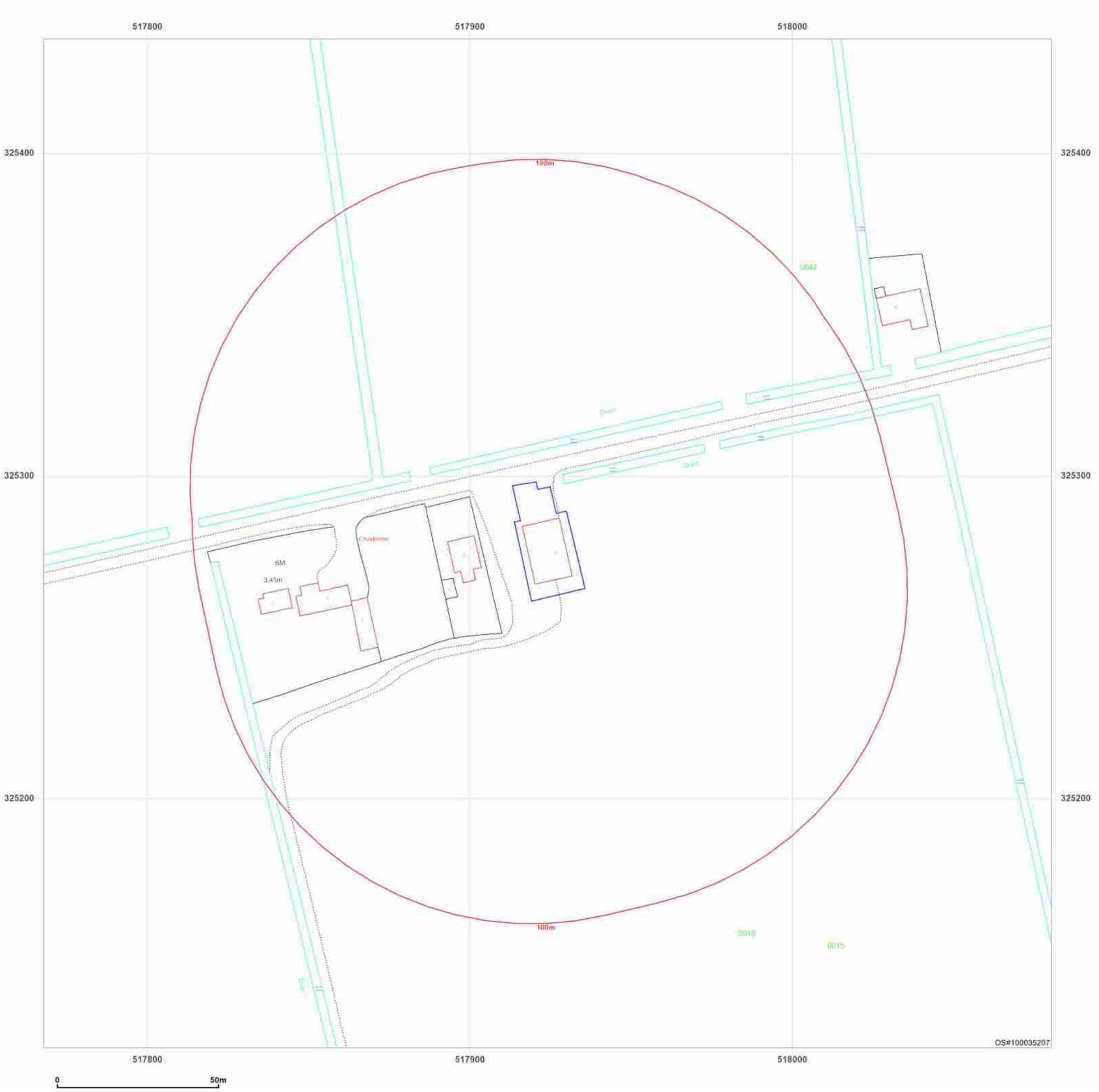
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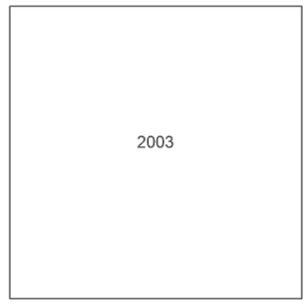
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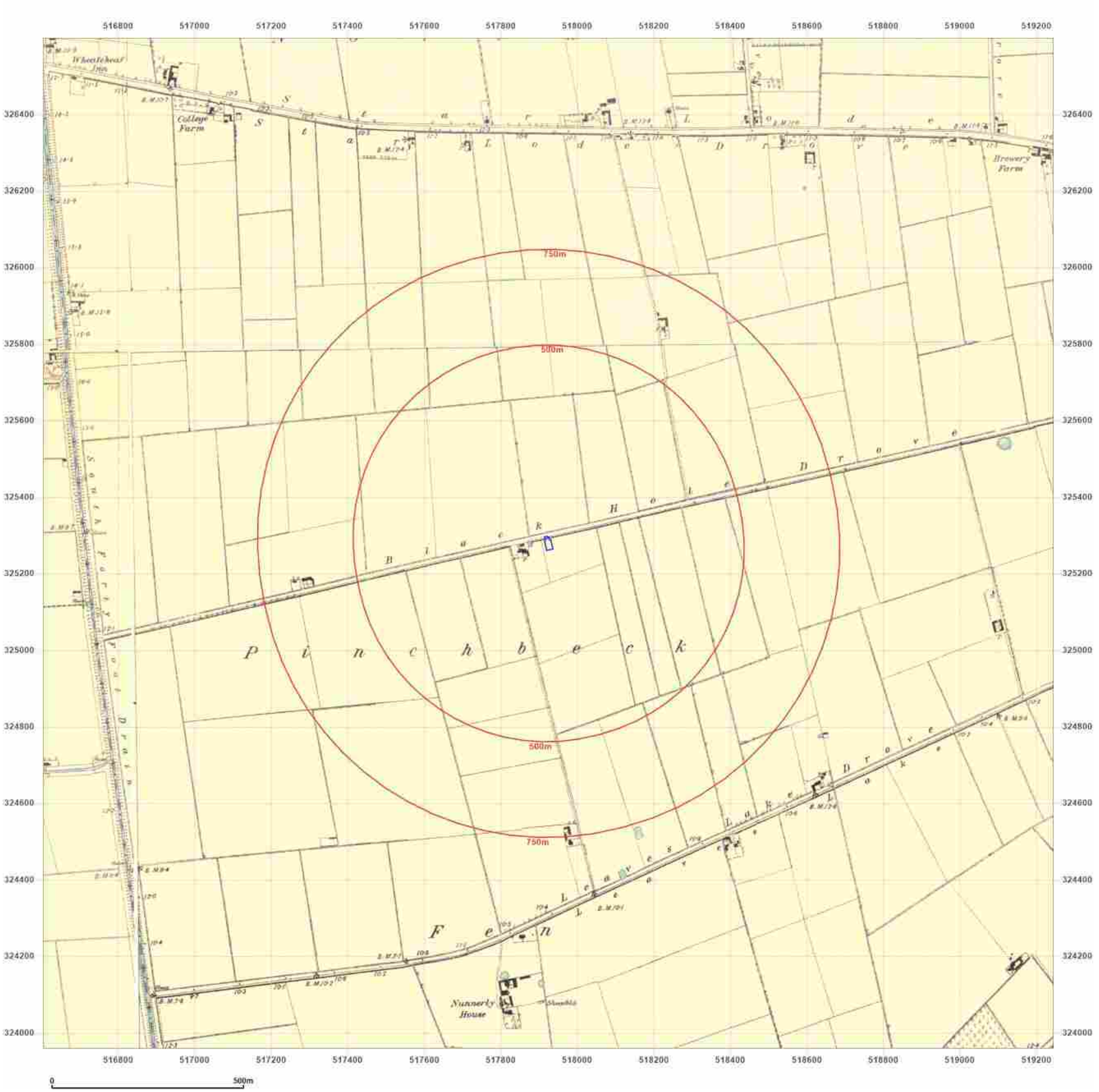
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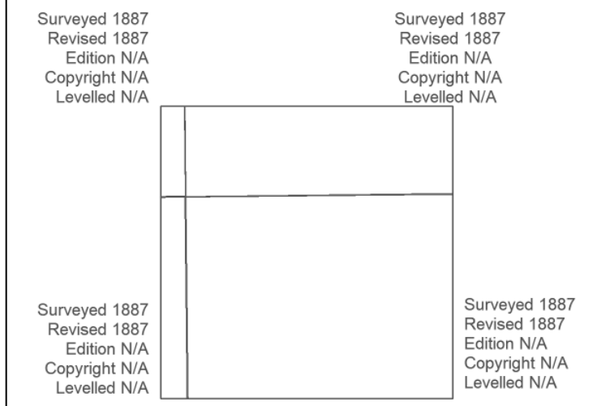
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Grid Ref: 517924, 325279

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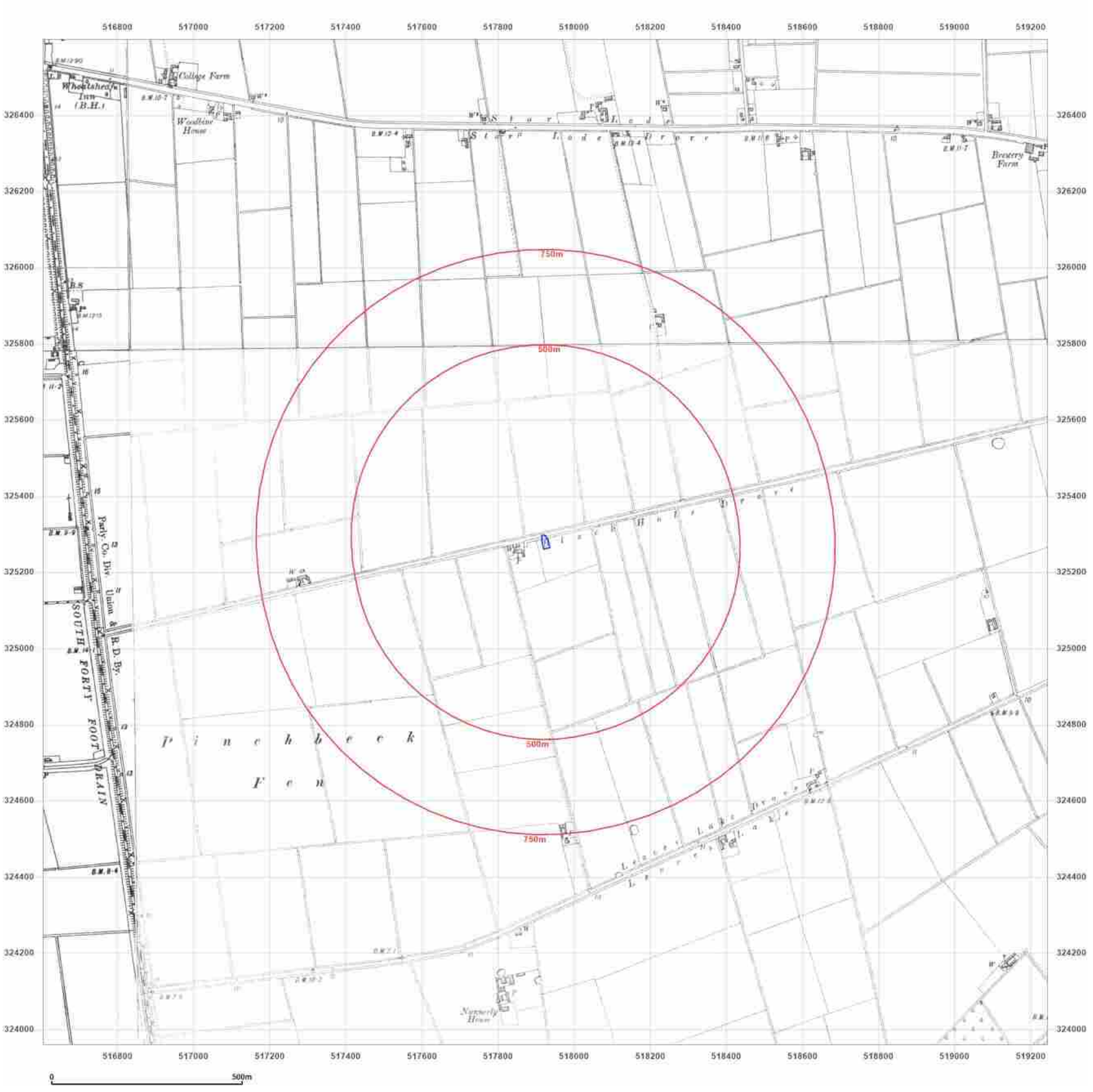
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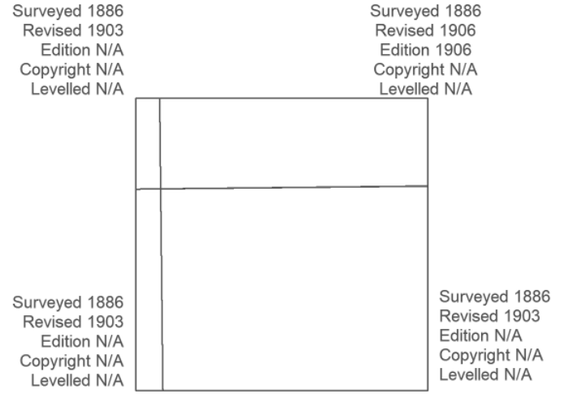
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Report Ref: GS-IUT-1FO-8YZ-S2U
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Map Name: County Series
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Printed at: 1:10,560

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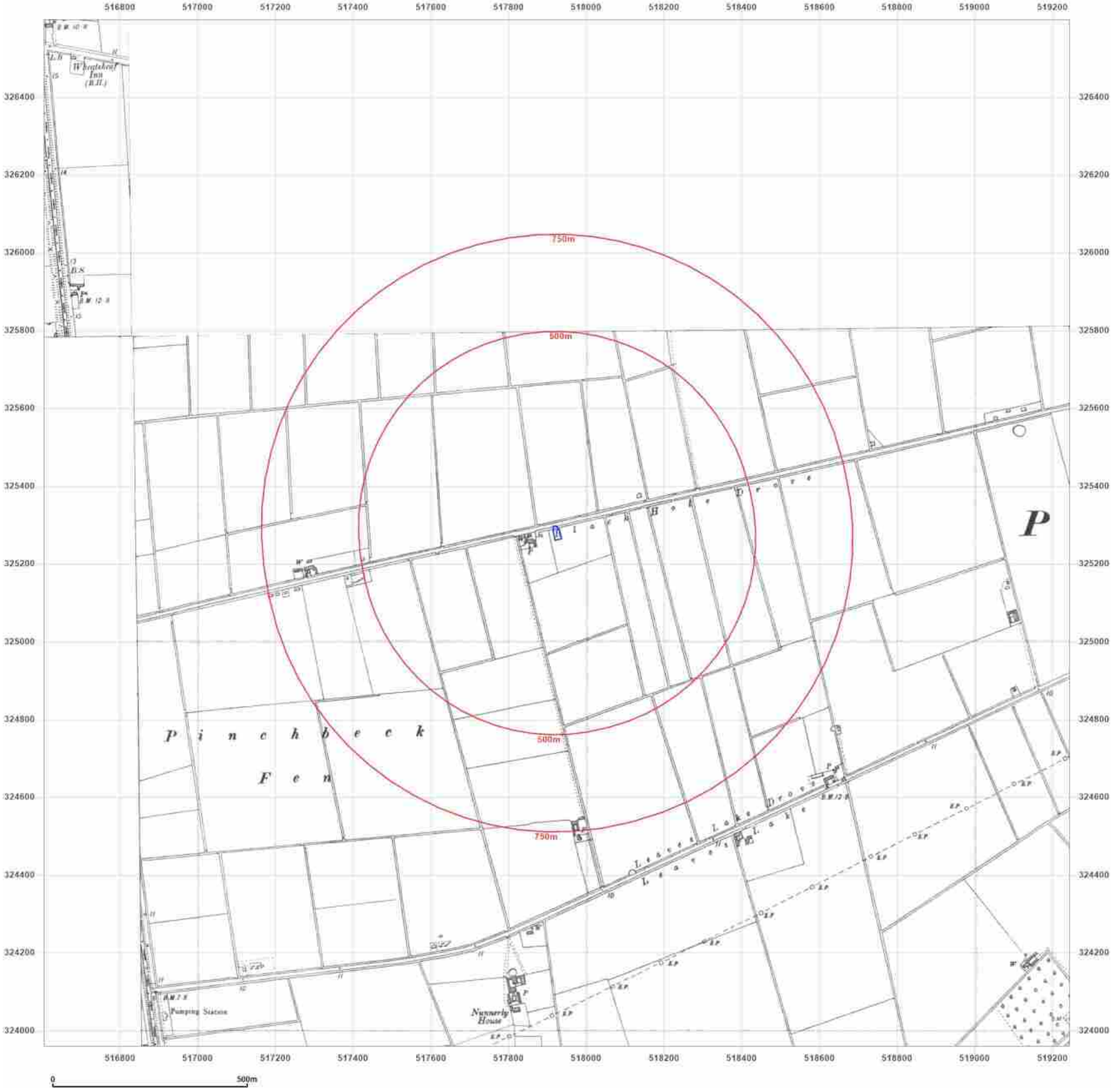
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Report Ref: GS-IUT-1FO-8YZ-S2U
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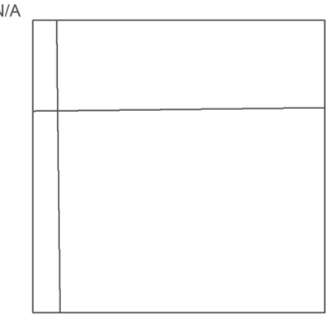
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Printed at: 1:10,560

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Surveyed 1886
Revised 1906
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1886
Revised 1903
Edition N/A
Copyright N/A
Levelled N/A

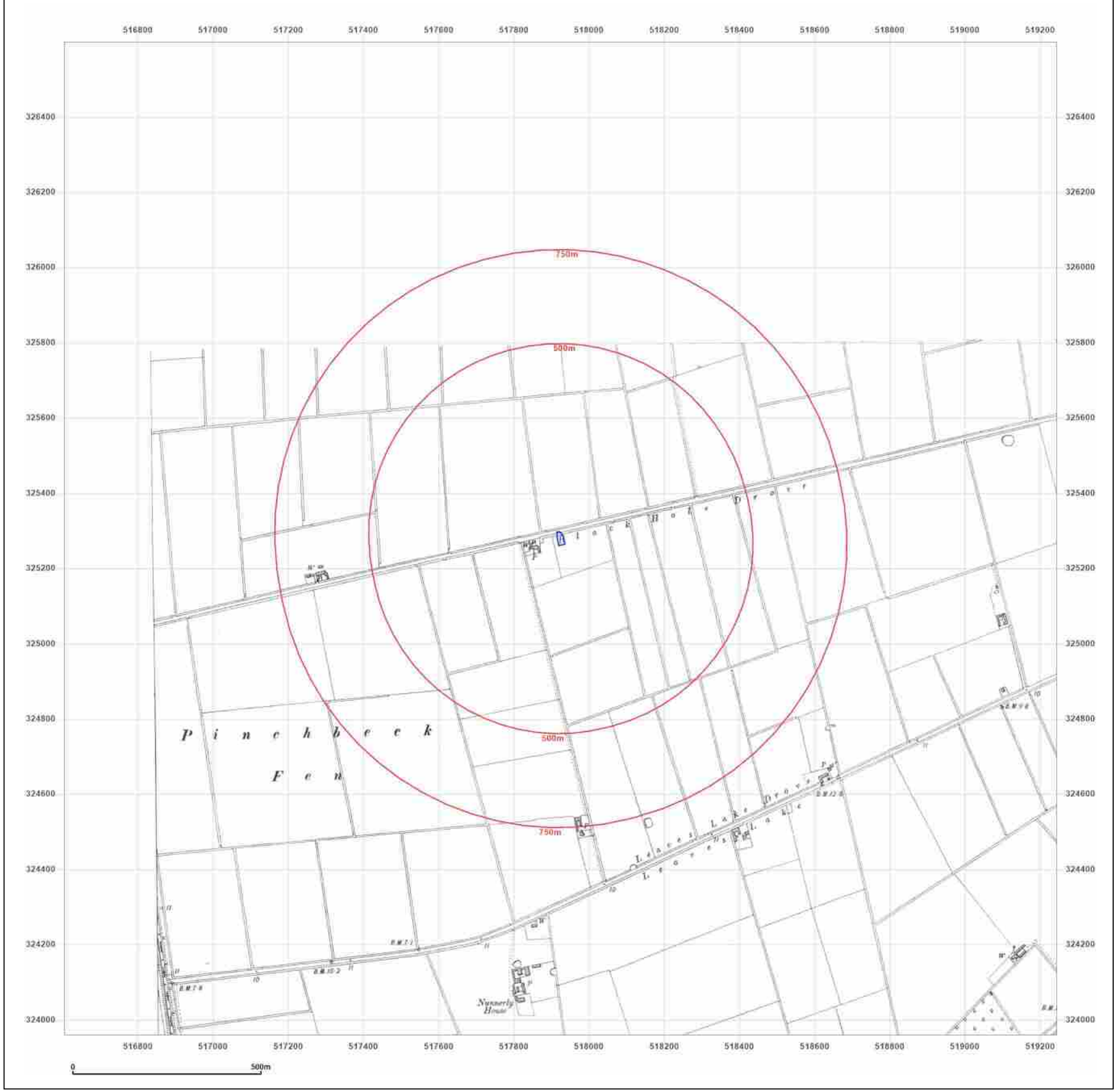
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Groundsure INSIGHTS

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BLACK HOLE DROVE, WEST PINCHBECK

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Report Ref: GS-IUT-1FO-8YZ-S2U
Grid Ref: 517924, 325279

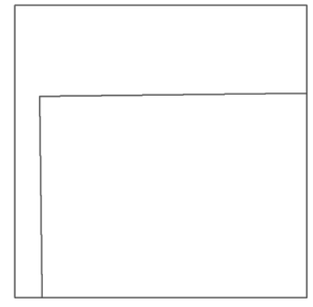
Map Name: County Series

Map date: **1906**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1886
Revised 1906
Edition 1906
Copyright N/A
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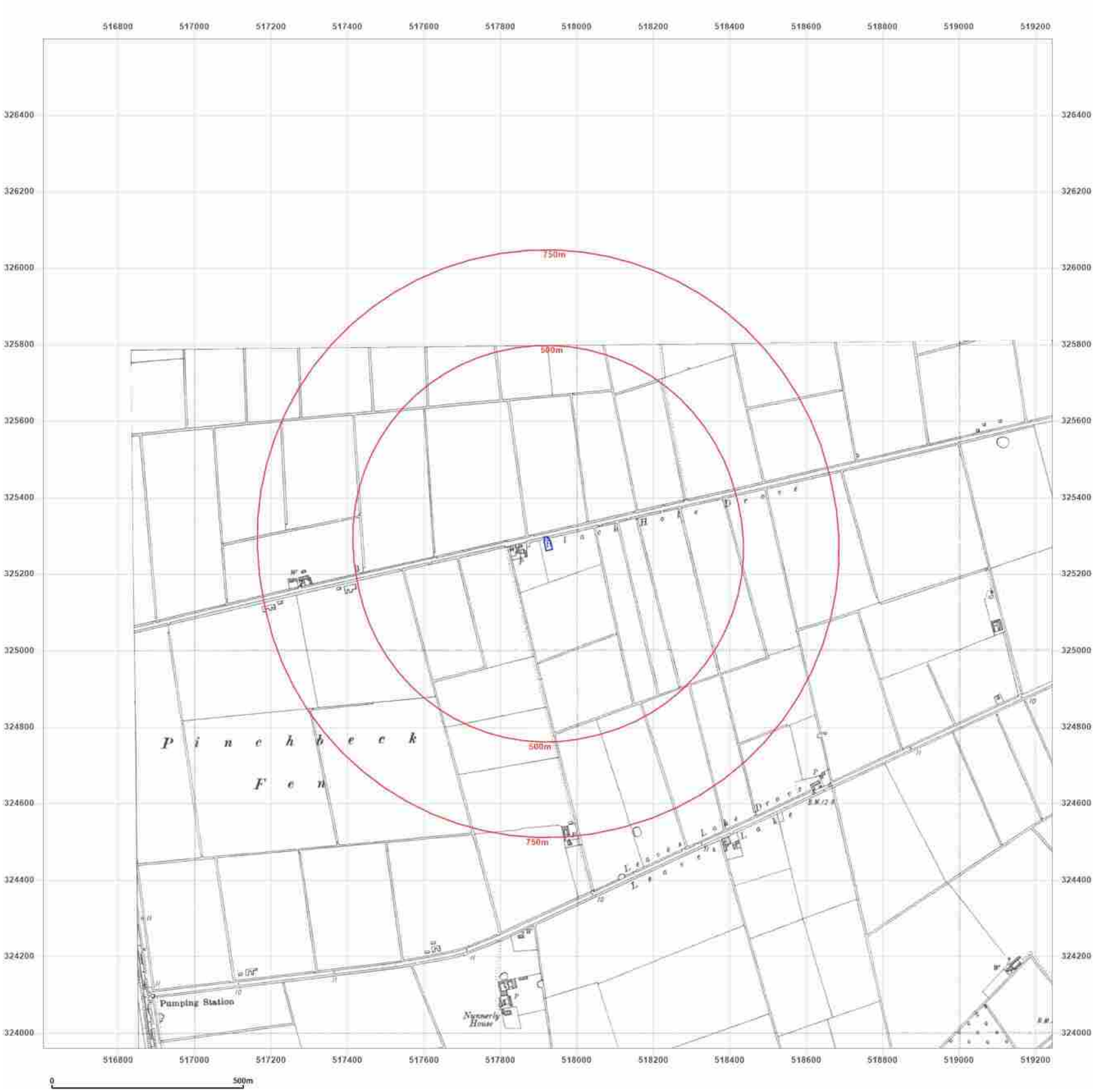
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Groundsure INSIGHTS

Site Details:

BLACK HOLE DROVE, WEST PINCHBECK

Client Ref: E23127
Report Ref: GS-IUT-1FO-8YZ-S2U
Grid Ref: 517924, 325279

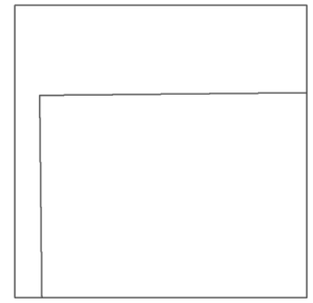
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Surveyed 1886
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

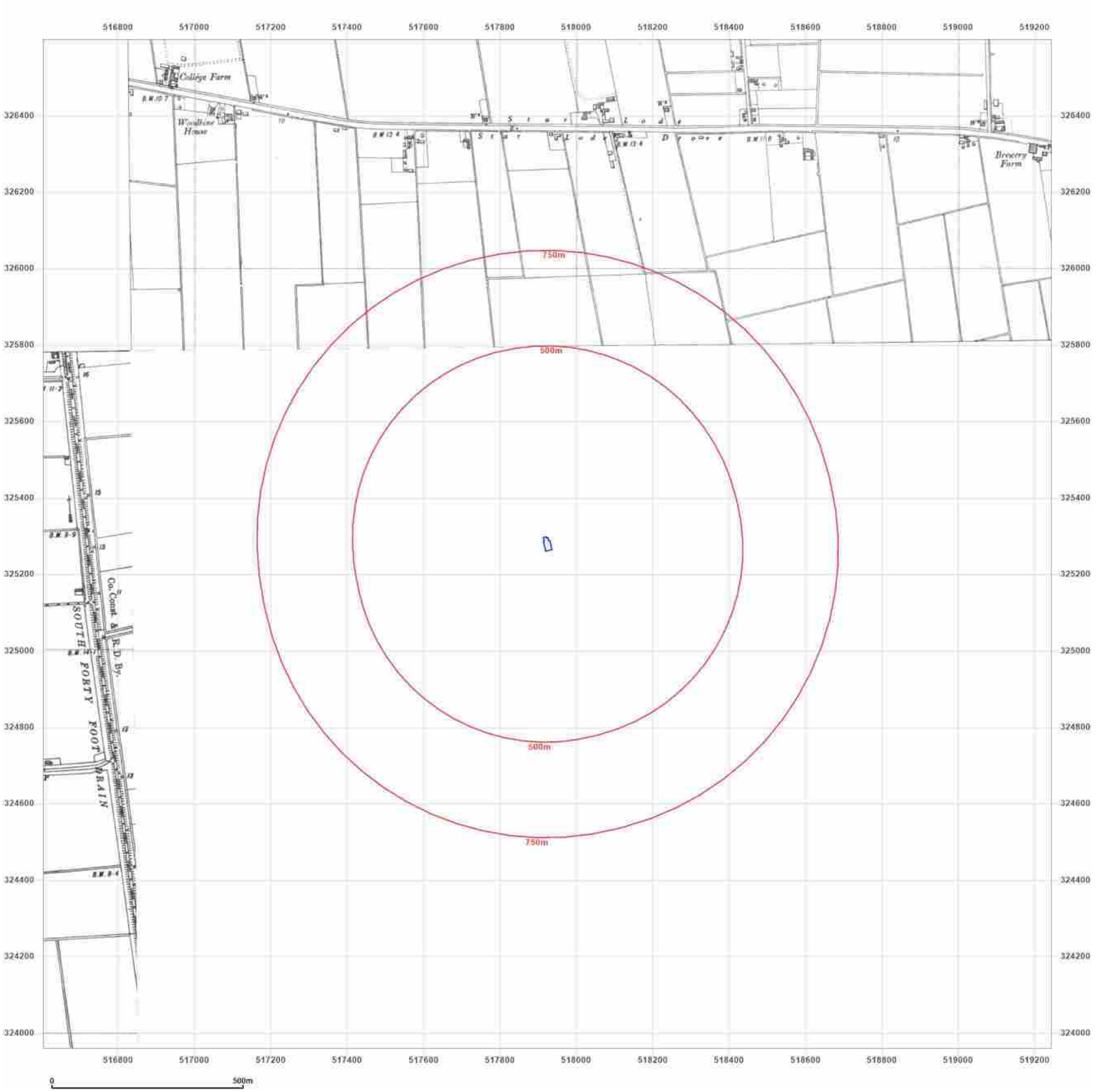
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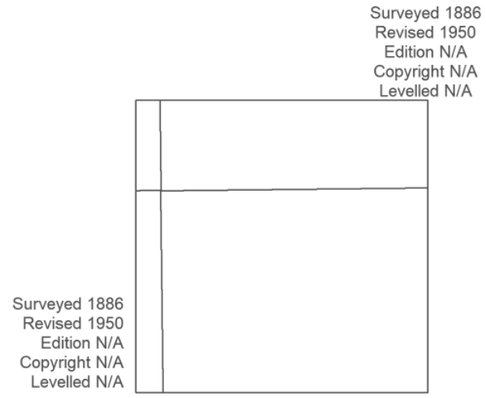
Site Details:

BLACK HOLE DROVE, WEST PINCHBECK

Client Ref: E23127
Report Ref: GS-IUT-1FO-8YZ-S2U
Grid Ref: 517924, 325279

Map Name: County Series
Map date: **1950**
Scale: 1:10,560
Printed at: 1:10,560

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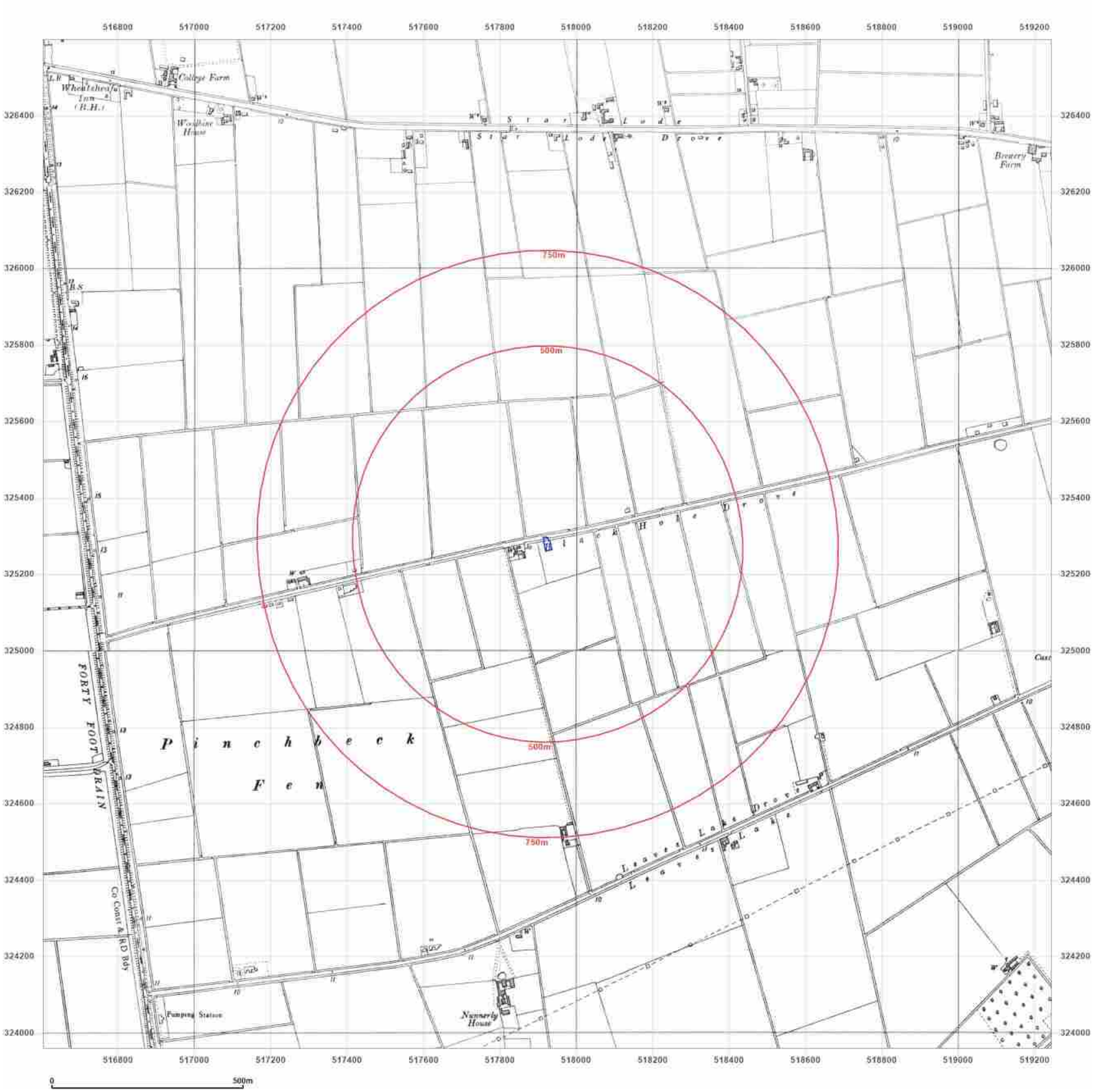
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Site Details:

BLACK HOLE DROVE, WEST PINCHBECK

Client Ref: E23127
Report Ref: GS-IUT-1FO-8YZ-S2U
Grid Ref: 517924, 325279

Map Name: Provisional
Map date: **1950**
Scale: 1:10,560
Printed at: 1:10,560

N
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Surveyed 1950
Revised 1950
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1950
Revised 1950
Edition N/A
Copyright N/A
Levelled N/A

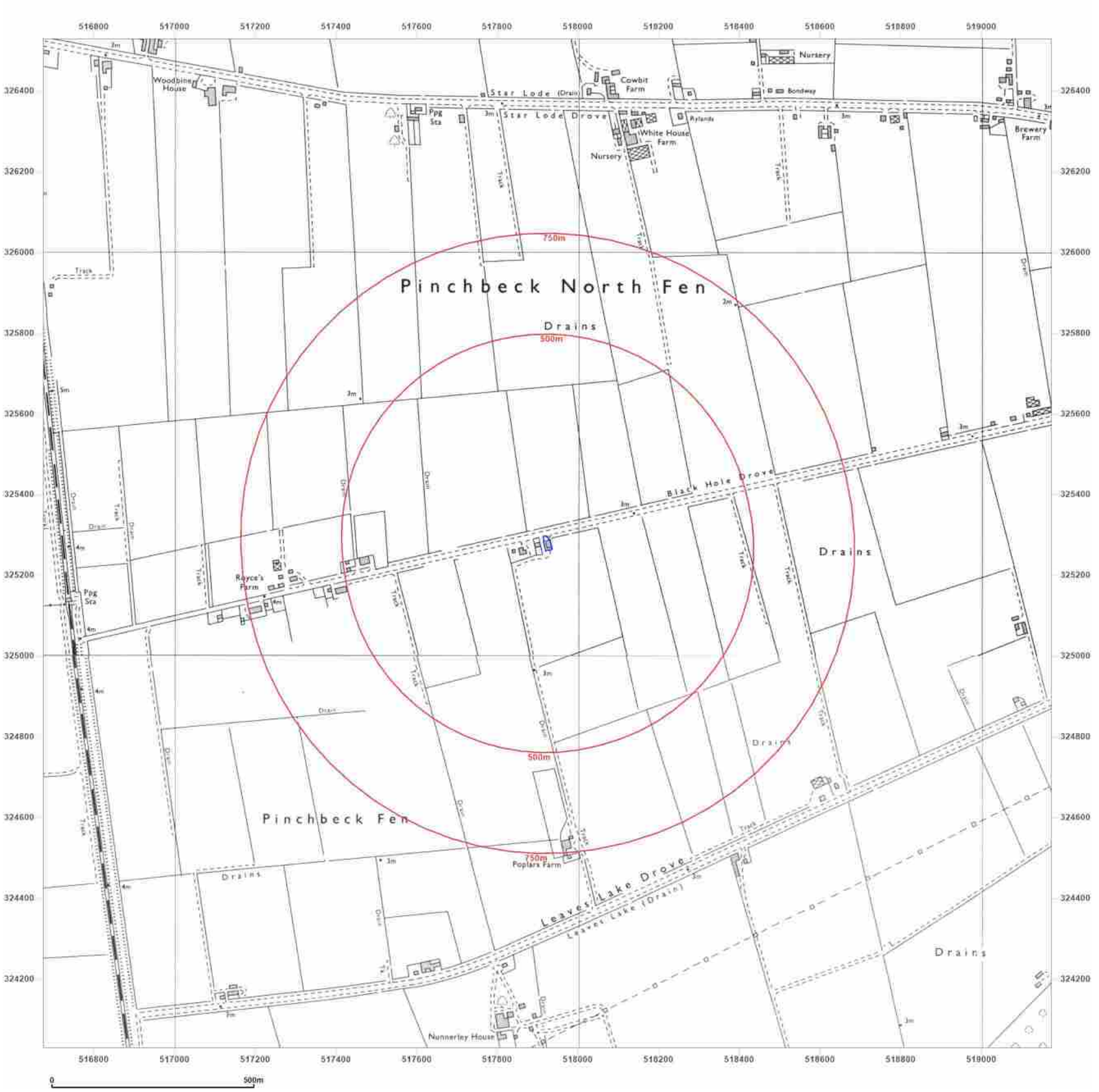
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Site Details:

BLACK HOLE DROVE, WEST PINCHBECK

Client Ref: E23127
Report Ref: GS-IUT-1FO-8YZ-S2U
Grid Ref: 517924, 325279

Map Name: National Grid

Map date: **1983**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1977
Revised 1983
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1977
Revised 1983
Edition N/A
Copyright N/A
Levelled N/A

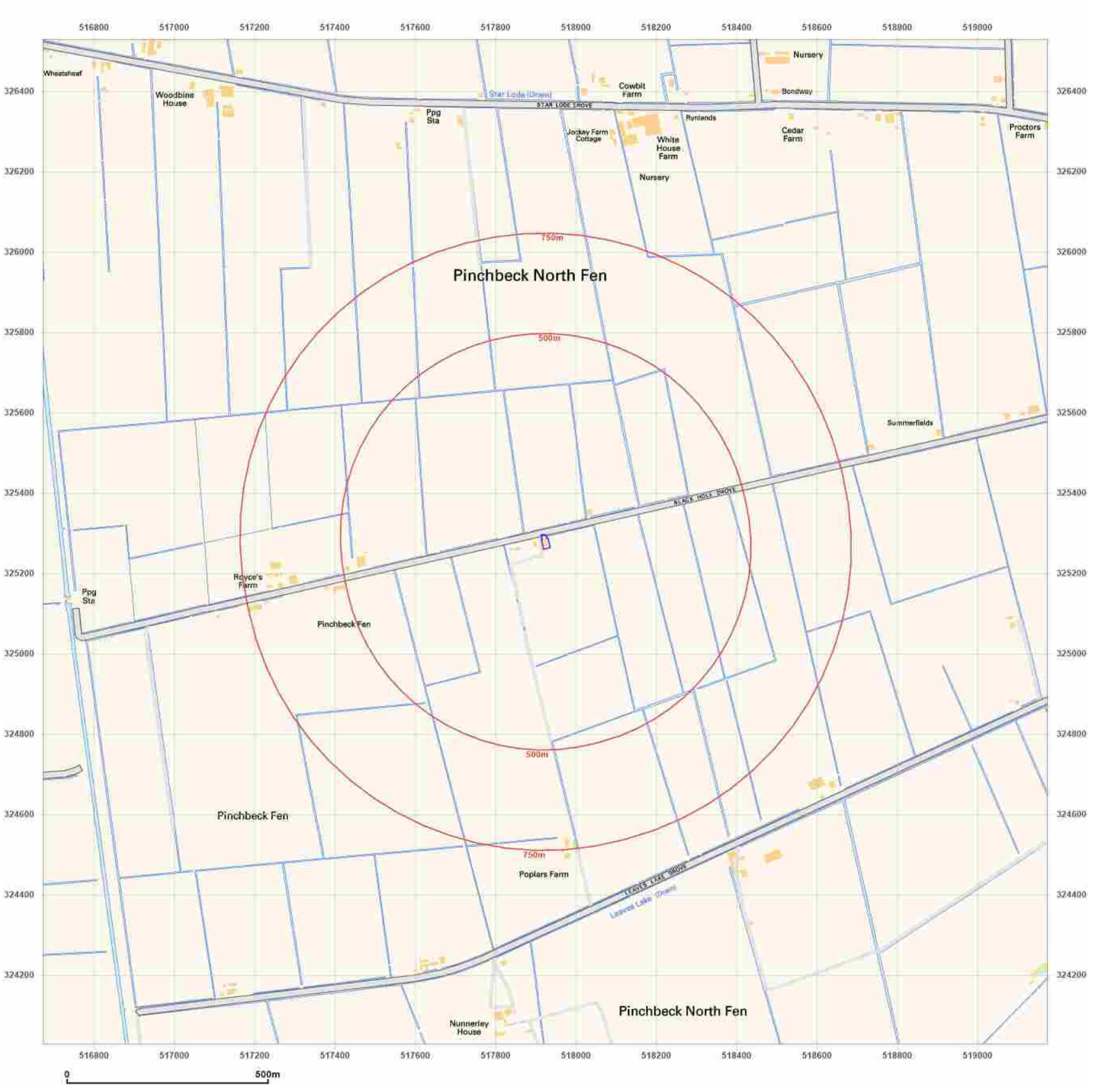
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Site Details:

BLACK HOLE DROVE, WEST PINCHBECK

Client Ref: E23127
Report Ref: GS-IUT-1FO-8YZ-S2U
Grid Ref: 517924, 325279

Map Name: National Grid
Map date: **2001**
Scale: 1:10,000
Printed at: 1:10,000

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2001

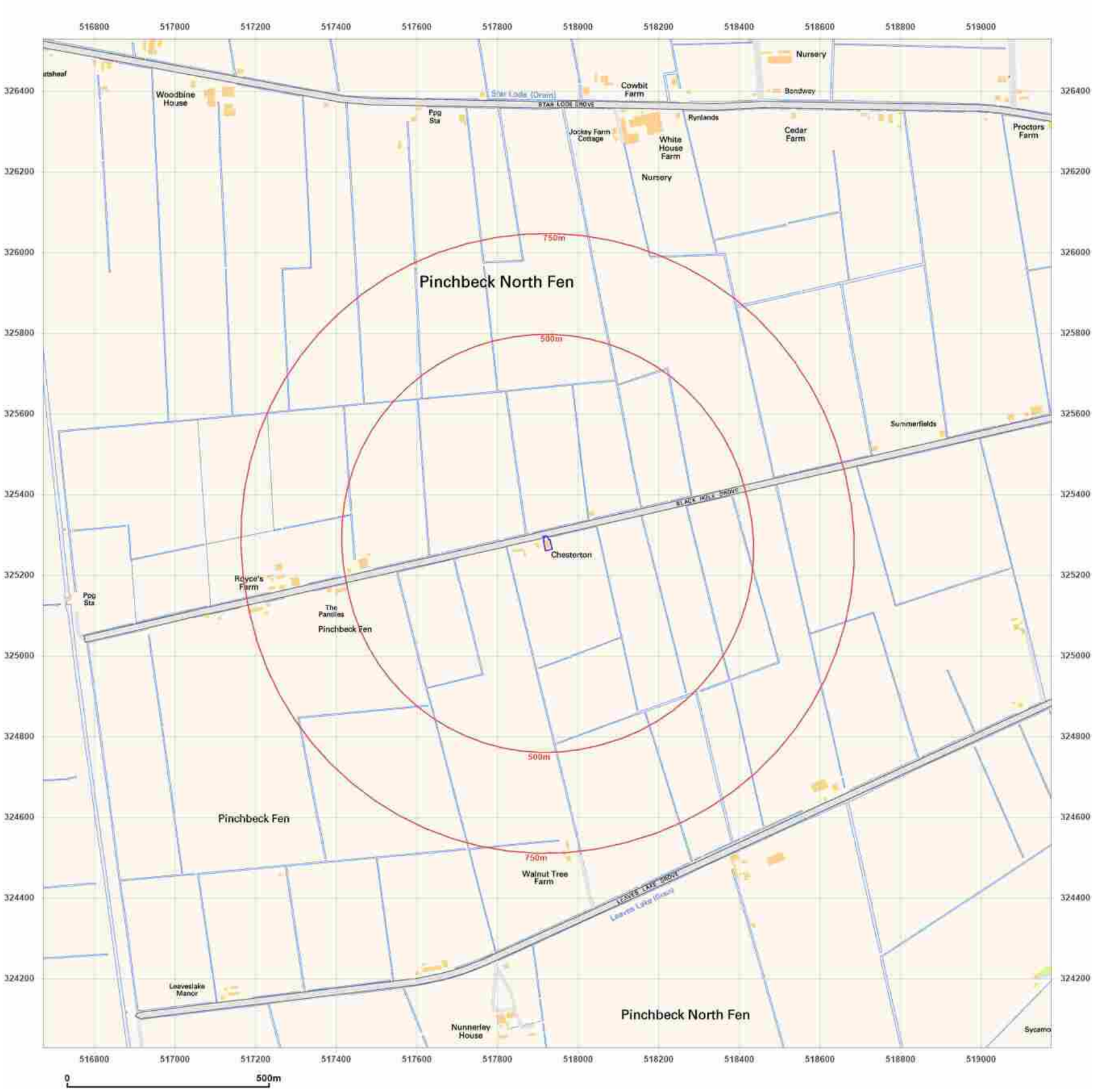
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Site Details:

BLACK HOLE DROVE, WEST PINCHBECK

Client Ref: E23127
Report Ref: GS-IUT-1FO-8YZ-S2U
Grid Ref: 517924, 325279

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

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2010

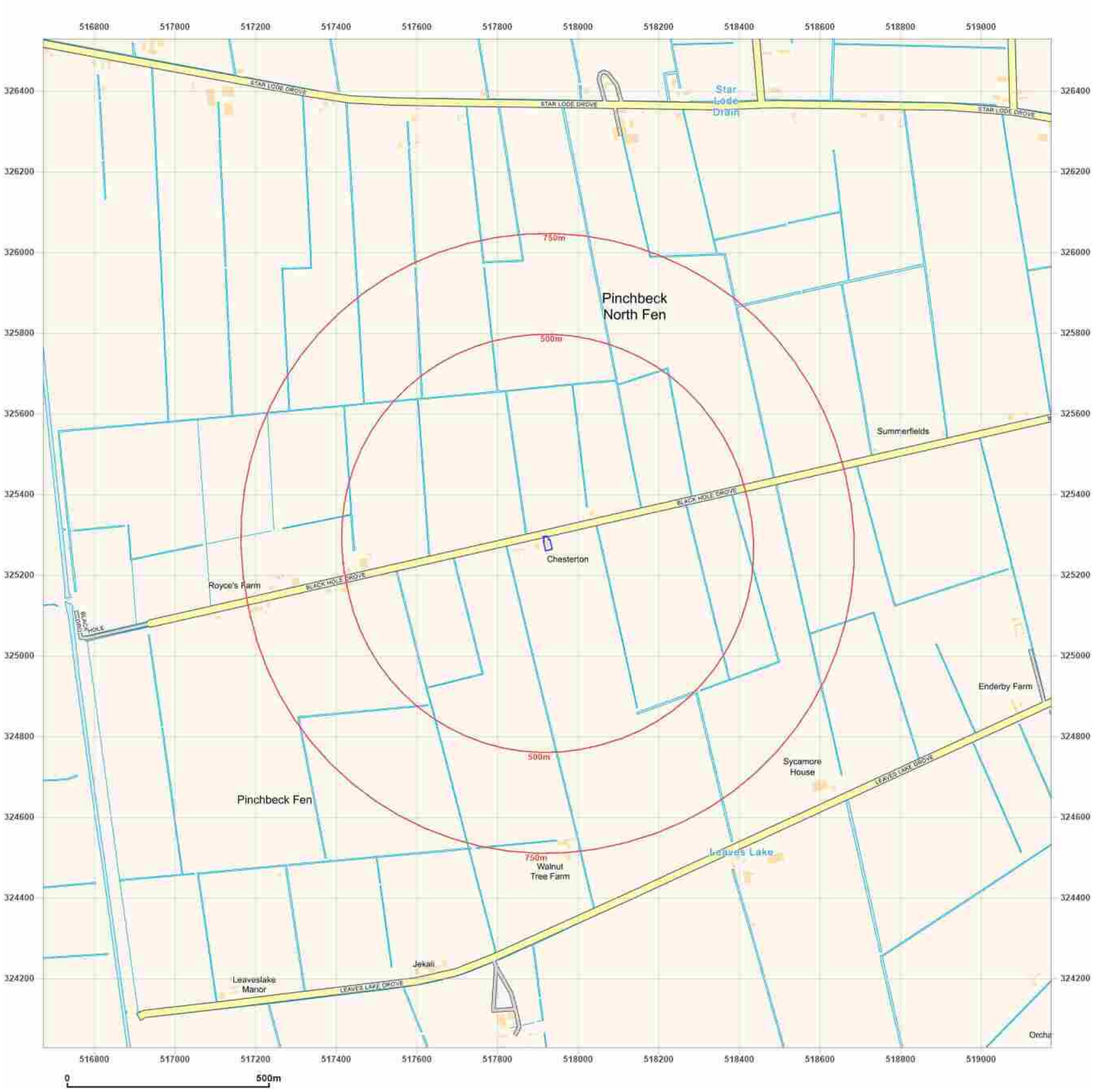
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Site Details:

BLACK HOLE DROVE, WEST PINCHBECK

Client Ref: E23127
Report Ref: GS-IUT-1FO-8YZ-S2U
Grid Ref: 517924, 325279

Map Name: National Grid
Map date: **2023**
Scale: 1:10,000
Printed at: 1:10,000

N
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