Goldfinch
ENVIRONMENTAL LTD

PROPOSED RESIDENTIAL DEVELOPMENT
SALTMORE FARM
NEW INN ROAD
HINXWORTH
BALDOCK
NORTH HERTS.

PROPOSED RESIDENTIAL DEVELOPMENT SALTMORE FARM NEW INN ROAD HINXWORTH BALDOCK NORTH HERTS.

GEOENVIRONMENTAL DESK STUDY

Report Ref.: 0518/1

Prepared by :

D Sargeant
D Sargeant
BSc FGS

Date:

March 2018

Goldfinch Environmental Limited
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PROPOSED RESIDENTIAL DEVELOPMENT

SALTMORE FARM, NEW INN ROAD

HINXWORTH, BALDOCK

NORTH HERTS.

1. INTRODUCTION.

1.1 General.

This report describes the findings of a geoenvironmental desk study undertaken by Goldfinch Environmental Limited on the instruction of Mr & Mrs D R Smyth (the Client), via the offices of G C Planning Partnership, at a site within the curtilage of Saltmore Farm, New Inn Road, Hinxworth, Baldock, North Hertfordshire.

A site location plan has been included as Figure 1 with the proposed layout shown in Figure 2 towards the back of this report to assist the reader.

The Desk Study was required to support a planning application for the development of the site to a residential land use by establishment of a new residential dwelling.

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2. LIMITATIONS.

This report is for the sole reliance and use of the Client. Any Third Party coming into possession of this report relies on it at their risk, unless written permission is expressly sought from, and provided by, Goldfinch Environmental Limited. The author owes them no duty of care and skill. Goldfinch Environmental Ltd accepts no responsibility or liability for the consequences of this document being used for purposes other than that for which it was commissioned and the assessments provided herein should not be relied on as a legal opinion.

The findings and opinions expressed are relevant to the time of the site visit and information review and should not be relied upon to represent conditions at substantially later dates. The assessments and opinions given in this report are based upon information available at the time of the report. Where additional information comes available which may affect or identify a need to review our conclusions or assessments we request the opportunity (and reserve the right), to review the information and where warranted, modify our assessment / opinion in part or wholly, accordingly.

The purpose of this desk study report was to determine the historical use of the site and adjacent areas from searches of Public Registers and a review of available historical maps and included a site reconnaissance ('walkover') survey together with brief internet searches. The outcome of these activities is described below and this information was used to construct a conceptual model for the site from which a risk assessment was completed in the context of the proposed residential development of the site.

The risk assessment was based on the source-pathway-receptor framework, with respect to the geoenvironmental condition of the site in the context of various sensitive receptors. Goldfinch Environmental Ltd have based this desk study upon the sources given in this report, and believes them to be reliable but cannot and does not guarantee the authenticity or reliability of the data it has relied upon.

This desk study does not include any geotechnical considerations pertaining to the site as these were outside the agreed brief.

The recommendations given in this report are based on guidance and best practice in place at the time of issue of the report, the information available at the time of the investigation, the nature of the indicated proposed development and associated end user behaviour patterns. Should any of the foregoing change at any time, then this report should be reviewed in the context of proposed changes.

The absence of indicators in search data, or from on site observations does not rule out their presence in other parts of the site. This desk study report has been based on information supplied in the 'GroundSure' report and its component parts included at Appendix 1 towards the back of this report, discussions with the Client and in-house searches.

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3. LEGISLATIVE & REGULATORY SETTING.

The Environmental Protection Act of 1990 created the framework for the identification and remediation of contaminated land. The Act defines “contaminated land” as any land, which appears by the Local Authority to be “in such a condition, by reason of substances, in, on, or under the land that significant harm is being caused or there is significant possibility of such harm being caused, or, pollution of Controlled Waters is being, or is likely to be, caused”.

Land potentially affected by ‘contamination’ is a material consideration for planning purposes together with its relationship with ‘regulatory intervention’ (Part IIa), and ‘voluntary’ investigation (which includes redevelopment of sites which may be affected by contamination). The Model Procedures (CLR-11, Environment Agency 2004), provide a generic framework indicating key technical activities applicable in each of these contexts.

The management of land contamination broadly comprises three components that are identified as ‘Risk assessment’, ‘Options appraisal’ and ‘Implementation’. These, in turn, determine if any *un*acceptable risks exist, ascertain the most appropriate remediation strategy for the site and, finally, demonstrate that the strategy will be effective.

In accordance with this and other current guidance, where a ‘land quality’ risk assessment is required each ‘Relevant Pollutant Linkage’ (RPL, formerly referred to as “source-pathway-receptor” framework), is separately identified and a level of risk attached. This is documented in the form of a ‘Conceptual Model’.

The outcome of the assessment of established, plausible relevant pollutant linkages is used to determine qualitatively the need for further investigation, or remediation with ensuing mitigation of the determined unacceptable risk. (In accordance with the Model Procedures and Regulatory preference, detailed remedial measures should be provided in a separate phase).

The risk assessment takes account of the local environment, end user behaviour patterns, and the nature of the development in relation to proven ‘unacceptable’ risk. This is the approach advocated by current guidance (CLR-11 and BS10175 etc), and therefore has been adopted in the assessment of this site.

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4. SITE LOCATION AND DESCRIPTION.

4.1 Introduction

A site visit was carried out during 7 March 2018 the purpose being to:-

I. Collect additional/relevant information about the site its environs and any site-specific potential contaminants, pathways and receptors.

II. Record any aspects of the site not revealed by documentary searches. (e.g. the presence of above- or belowground hydrocarbon storage tanks.).

III. Collect any information that will assist in the planning of any subsequent phases of field investigation where the Desk Study deems this is necessary.

Approximate Grid Reference ^{5}22715, ^{2}39088 refers.

The site comprised a subrectangular plot of land on the northern side of the public highway approximately between the villages of Hinxworth (in the north east) and Astwick (in the south west).

Topographic levels at the site, by visual inspection, appeared to change little across the site.

At the time of the site walkover survey the site was capped with the footprint of a single building as can be seen in Photograph 1. The site was bounded by firmer ground on its southeastern side with soft soils on other sides.



Photograph 1: View of the site (Building) from the North.

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The barn had been constructed from a mix of materials around a timber frame and over a concrete floor, with a tiled roof and was being used to store a variety of items which included percussion bird alarms, timber, fence panels, steps, a small animal hutch, fencing wire, plastic bags, and agricultural vehicle tyres/wheels on a pallet.

Following visual inspection of the site there were no notable features with regard to land contamination. In addition, although the site had been subject to previous 'development' there was no apparent evidence of:~

1. The presence of Made Ground other than hard surfaced areas and building footprint as referred above.

2. The presence or storage of potentially leachable materials/chemicals.

3. Demolition or dispersal of *contaminated* rubble or other materials.

4. Importation of potentially contaminated fill onto the site.

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5. SITE HISTORY.

5.1 Historical Maps.

Where the attached maps are compiled from a composite of editions, the year of map upon which the majority of the site may be found is quoted below. These are reproduced at Appendix 1. Annotation, as it appears on the maps, is indicated by italics.

Land use in excess of 250m from the site is considered of potentially negligible to low risk to the application site and on that basis is generally excluded from the summary provided below (unless record review by this author suggests otherwise). However, should the reader require this additional detail, full disclosure records are included in Appendix 1 towards the back of this report.

(The reader should note at this point that occasionally on the older map editions the site boundaries can be slightly 'shifted' relative to more recent maps.).

1877 Edition {County Series - Scale 1:2 500}

The site was shown as a 'developed' plot of land in a rural environment. The site was encroached at its southern end by a building located slightly further to the south within the curtilage of Saltmore Farm.

A subcircular feature (possible pond) was note dto the north of the site.

There was no near development to the site.

1881 Edition {County Series - Scale 1:10 560}

The site and its immediate environs were not shown on this map edition.

1881-6 Edition {County Series - Scale 1:10 560}

The site and its immediate environs were not shown on this map edition.

1882 Edition {County Series - Scale 1:2 500}

There were no apparent further changes to the site at this scale of mapping.

1882 Edition {County Series - Scale 1:10 560}

There were possible minor changes to the site.

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There were no apparent chnages to the surrounding environs at this scale of mapping.

1898 Edition {County Series - Scale 1:2 500}

There were no apparent changes to the site.

There were no further pertinent land use changes to the immediate environs of the site.

1899 Edition {County Series - Scale 1:10 560}

There were no apparent changes to the site or its immediate environs at this scale of mapping.

1900 Edition {County Series - Scale 1:10 560}

There were no apparent changes to the site or its immediate environs at this scale of mapping.

1901 Edition {County Series - Scale 1:2 500}

There were no apparent changes to the site.

There were no apparent changes to the immediate environs of the site.

1903 Edition {County Series - Scale 1:10 560}

The site and its immediate environs were not shown on this map edition.

1920-1 Edition {County Series - Scale 1:10 560}

There were no apparent changes to the site.

There were no apparent changes to the immediate environs of the site.

1922 Edition {County Series - Scale 1:10 560}

There were no apparent changes to the site.

There were no apparent changes to the immediate environs of the site.

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1924 Edition {County Series - Scale 1:2 500}

There were no apparent changes to the site.

There were no apparent changes to the immediate environs of the site.

1947-8 Edition {County Series - Scale 1:10 560}

The site and its immediate environs were not shown on this map edition.

1948 Edition {County Series - Scale 1:10 560}

There were no apparent changes to the site.

There were no apparent changes to the immediate environs of the site.

1959-60 Edition {Provisional - Scale 1:10 560}

There were no apparent changes to the site.

There were no apparent changes to the immediate environs of the site.

1967 Edition {National Grid - Scale 1:2 500}

The site appeared to have undergone development as shown by an increase in the number of possible buildings on this map edition.

There were no apparent changes to the immediate environs of the site.

1968-9 Edition {Provisional - Scale 1:10 560}

The site appeared to have undergone development as shown by an increase in the number of possible buildings on this map edition.

There were no apparent changes to the immediate environs of the site.

1959-60 Edition {Provisional - Scale 1:10 560}

There were no apparent changes to the site.

There were no apparent changes to the immediate environs of the site.

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1969 Edition {Provisional - Scale 1:10 560}

There were no apparent changes to the site.

There were no apparent changes to the immediate environs of the site.

1985 Edition {National Grid - Scale 1:10 000}

There were no apparent changes to the site.

There were no apparent changes to the immediate environs of the site.

1993 Edition {Provisional - Scale 1:10 560}

There were no apparent changes to the site.

There were no apparent changes to the immediate environs of the site.

2002 Edition {Raster - Scale 1:10 000}

There were no apparent changes to the site.

There were no apparent changes to the immediate environs of the site.

2010 Edition {National Grid - Scale 1:10 000}

There were no further changes to the site.

There were no apparent changes to the surrounding environs with respect to land contamination.

2014 Edition {National Grid - Scale 1:10 000}

There were no apparent changes to the site or surrounding environs with respect to land contamination.

5.2 Public Registers.

A search of public register information has been made using an Internet-based system. A disclosure report is reproduced at Appendix 1. The following commentary is restricted

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to entries within a 250m search radius of the site. Appendix 1 should be referred to for details on entries beyond of this range.

5.2.1 Historical Industrial Sites

There were no records for the category 'Potentially Contaminative Uses identified from 1:10 000 scale mapping' within this dataset for the referred search radius.

There were two records for the category 'Additional Information – Historical Tank Database' within this dataset for the referred search radius. Supplied information indicated none of them were for the site, none were within 50m of the site and the remaining two were located between approximately 51-250m distant from the site and were given as '*Unspecified Tank*'.

There were no records for the category 'Additional Information – Historical Energy Features Database' within this dataset for the referred search radius.

There were no records for the category 'Additional Information – Historical Petrol and Fuel Site Database' within this dataset for the referred search radius.

There were no records for the category 'Additional Information – Historical Garage and Motor Vehicle Repair Database' within this dataset for the referred search radius.

There was one record for the category 'Potentially Infilled Land' within this dataset for the referred search radius. Supplied information indicated this was a 'Pond' located approximately 19m distant from the site. This can be seen on the most recent of the historic maps.

5.2.2 Environmental Permits, Incidents and Registers.

There were no records within this dataset for the referred search radius.

5.2.3 Landfill and Other Wastes.

There were no records within this category.

5.2.4 Current Land Uses.

There were no records within this dataset for the referred search radius.

5.2.4.i Petrol & Fuel Sites.

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There were no records within this dataset for the referred search radius.

5.2.5 Geology.

There were no records for the site within the category 'Artificial Ground and Made Ground'.

There were records listed within the category 'Superficial Ground and Drift Geology present beneath the site'. Supplied information indicated Sand and Gravel.

The Bedrock & Solid Geology was given as Chalk.

5.2.6 Hydrogeology and Hydrology.

For the category 'Are there any records of Strata Classification in the Superficial Geology within 500m of the site' a 'Yes' response was provided. Supplied information indicated the site was underlain by a '*Secondary A*' aquifer.

For the category 'Are there any records of Strata Classification in the Bedrock geology within 500m of the site' a 'Yes' response was provided. Supplied records showed that the site was underlain by a '*Principal*' aquifer.

There were no records for the category 'Groundwater Abstraction Licences' within the referred search radius for the site.

There were no records for the category 'Surface Water Abstraction Licences' within the referred search radius for the site.

There were no records for the category 'Potable Water Abstraction Licences' within the referred search radius for the site.

There were no records for the category 'Source Protection Zones' within the search radius for the site.

There was one record for the category 'Groundwater Vulnerability and Soil Leaching Potential' for the site. Supplied information indicated the soils underlying the site were classed as '*Major Aquifer/Intermediate Leaching Potential*'.

There were no records of Environment Agency information on River Quality available within 1500m of the site.

There was one record for the category 'Detailed River Networks' within the search radius for the site. The reader is referred to Section 6.10 of the Enviroinsight report towards the back of this Desk Study for further information.

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There were two 'Surface Water Features' reportedly within 250m of the study site that were not represented on mapping.

5.2.7 Flooding.

There were no Environment Agency Flood Zone 2 floodplains within 250m of the site.

There were no Environment Agency Flood Zone 3 floodplains within 250m of the site.

There was a 'Very Low' risk of flooding from Rivers and Sea for the site.

There were no Flood Defence areas within the search radius of 250m for the site.

There were no areas benefitting from Flood Defences within 250m of the site.

There were no areas used for Flood Storage within 250m of the site.

For the category 'What is the maximum BGS Groundwater Flooding Susceptibility within 50m of the study site'. The response 'Potential At Surface' was given in the supplied information.

For the category 'What is the BGS confidence rating for the Groundwater Flooding susceptibility areas' the provided response was 'High'.

5.2.8 Designated Environmentally Sensitive Sites.

There were no records for the site within this dataset except that the site was within two Nitrate Vulnerable Zones.

5.2.9 Natural Hazards.

Search records indicated there was a 'Very Low' maximum risk of natural ground subsidence.

5.2.10 Mining.

Searches indicated there were no coal mining areas within 75m of the site.

There were 'Non-Coal Mining areas' within 50m of the study site (Chalk).

There are no brine affected areas within 75m of the site.

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5.2.11 Radon.

Searches indicated that the site is in an area where less than 1% of properties are above the 'Action Level' therefore radon protection measures are not necessary in extensions and new dwellings.

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6. PRELIMINARY QUALITATIVE RISK ASSESSMENT.

6.1 Introduction.

There are three factors that are taken into account whilst undertaking a qualitative risk assessment. These have been described in Section 3 of this document. At the time of this report, the site had been proposed for residential development.

6.2 Conceptual Model.

Source (s) (Potential)	Pathway	Target	Risk
Soil: The site had existed as 'developed' accommodating single building since at least 1877 with no changes to the time of the site walkover survey carried out by this Author during 7 March 2018. There were no site-specific indicators of potential soil-borne contamination. Visual and olfactory indicators of potential contamination immediately nearby off site were not noted.	Dermal contact, ingestion and inhalation	Present users End users Construction workers General public	Low Low Low Low
	Wind erosion and atmospheric dispersion	Adjacent properties General public Ecological Systems Archaeological Sites & Monuments	Low Low Low n/a
	Leaching	Adjacent properties Shallow groundwater Services/construction materials Plant life Surface water Ecological Systems Arch. & Monuments	Low Low Low Low Low Low Low
Shallow groundwater: The site overlies '*Secondary A*' and '*Principal*' aquifers, which were not considered to be pollution sources.	Groundwater migration	Adjacent properties Deep groundwater Services/construction materials Plant life Ecological Systems Archaeological Sites & Monuments	Low Low Low n/a Low Low
	Dermal contact, ingestion and inhalation	Present users End users Construction workers General public	Low Low Low Neg-Low
Gas: Measurable (background) concentrations of ground gas would not (reasonably) be anticipated to be present as a result of historical site use or the underlying natural geology.	Direct inhalation Soil migration Services migration	End users Construction workers Buildings Ecological Systems Arch. Sites & Monuments	Low Low Low Low Neg

Negligible Risk Defined as the site should be considered suitable for present or future use and environmental setting. Contaminants unlikely to be present, which might have unacceptable impact on key targets.
Low Risk Defined as the site should be considered suitable for present or future use and environmental setting. Contaminants may be present but unlikely to have unacceptable impact on key targets.
Medium Risk Defined as the site may not be suitable for present or future use and environmental setting. Contaminants are probably present and might have unacceptable impact on key targets.
High Risk Defined as the site is probably or certainly not suitable for present or future use and environmental setting. Contaminants probably or certainly present and likely to have an unacceptable impact on key targets.

Notes: n/a = not applicable

The risk assessment follows below:-

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6.3 Targets.

Potential targets, in the context of the risk assessment (based on the relevant pollutant linkage), where a plausible pathway can be proven, are discussed as follows.

At the time of this report, the proposed scheme comprised residential development.

6.3.1 Human Health (Site Users & Construction Workers)

The site had a limited documented development history as described, which included its establishment. There is the potential for the presence of limited thicknesses of Made Ground in the form of concrete hardstanding within former building footprint(s), which would have provided a physical barrier between any potential sources of contamination resulting from on site activities thus protecting the underlying soils.

It is further reasonably considered that the Made Ground would be 'inert' and therefore not a source of contamination itself.

Based upon the foregoing and the final paragraph of this report, regarding 'unanticipated contamination:-

A *Low* risk has been identified until proven otherwise.

6.3.2 Services and Construction Materials

6.3.2.1 Concrete & Potable water supplies.

Adverse effects on services and construction materials may be anticipated where soils are impacted by localised raised/lowered pH values, PAH's, TPHs and metals contamination and where these are present in Made Ground materials. However, in this instance and based on the absence of Made Ground and the foregoing:-

A *Low* risk has been identified.

6.4 Landscaping & Planting

Based on the foregoing a '*Low*' risk is presented to this receptor from the Made Ground present at the site.

6.5 Groundwater (Controlled Waters)

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The site is underlain by '*Secondary A*' and 'Principal' aquifers. However, there remains the potential for small quantities of perched groundwater in any superficial fills (or Made Ground), where these are present. However, searches indicated in this instance that the presence of significant thicknesses of Made Ground would not be reasonably anticipated given the documented history of the site.

A *Low* risk to deeper groundwater has been identified.

6.6 Ground Gas

Measurable concentrations of soil gases (predominantly carbon dioxide) would not be reasonably anticipated to be present as a function of any made ground present. However, where present, any granular overburden would mitigate the risk of ground gas buildup via natural ventilation of ground gas to atmosphere.

On the basis of the foregoing:~

A *Low* risk has been identified.

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7. RECOMMENDATIONS FOLLOWING PRELIMINARY RISK ASSESSMENT.

7.1 Overview.

The desk study information (including the outcome of the walkover survey), showed the site had a limited documented developmental history since its establishment.

The site walkover survey and the searches carried out as part of this Desk Study indicated that there were no readily identifiable sources of contamination.

Made Ground was present in the form of the concrete floor of the building which is considered to be 'inert' and therefore (reasonably) are considered unlikely to pose an 'unacceptable' risk to the End User of the completed development.

On that basis, and subject to the final paragraph in this report (in blue text), the need for a Phase 2 intrusive investigation is considered *un*warranted.

The opinions and recommendations in this report are subject to the agreement of the Regulators.

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8. CONCLUSIONS.

This geoenvironmental desk study prepared by Goldfinch Environmental Limited was undertaken on the instruction of Mr & Mrs D R Smyth (the Client), via the offices of G C Planning Partnership, at a site within the curtilage of Saltmore Farm, New Inn Road, Hinxworth, Baldock, North Hertfordshire.

The site was proposed for residential development.

There were no notable features present in the context of land contamination other than inert Made Ground as described above.

The 'Superficial Ground and Drift Geology present beneath the site was given as Sand and Gravel.

The Bedrock & Solid Geology was given as Chalk.

An *overall Low* risk is associated with the site *subject to the final paragraph in this report.*

Recommendations for the need for further work (or otherwise) have been discussed in Section 7 of this report.

Also, at all times especially once any necessary groundworks have commenced, the final paragraph below applies regarding 'unanticipated' contamination.

The reader should note that the opinions, recommendations and conclusions in this report are subject to the agreement of the Local Authority who are the final arbiters in these matters.

Based on the foregoing, a *Low* risk to construction workers and services installations has been associated with the site until proven otherwise. Site personnel, particularly groundworkers, should follow sound health and safety welfare practices that will further mitigate this level of risk.

Should unanticipated contamination be suspected, or revealed during any groundworks, then the area should be temporarily isolated and further advice sought by a suitably independent qualified person and a management strategy for these occurrences should be submitted to the Local Authority for their approval prior to proceeding, as required by Regulatory Offices.

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FIGURES

Approximate Site Location

N

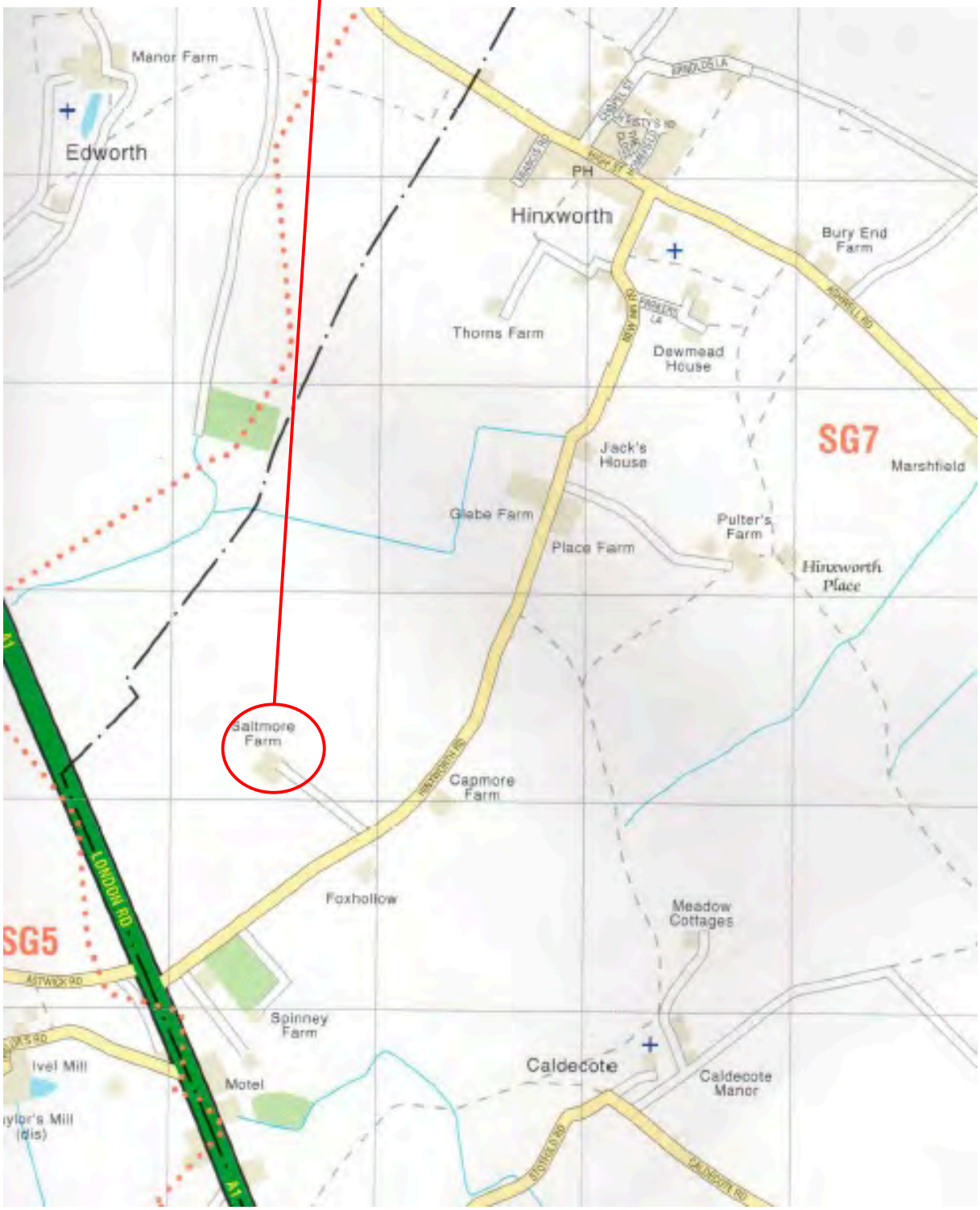

Figure 1	Site Location Plan	**Goldfinch** Environmental Ltd
Ref: 0518/1		

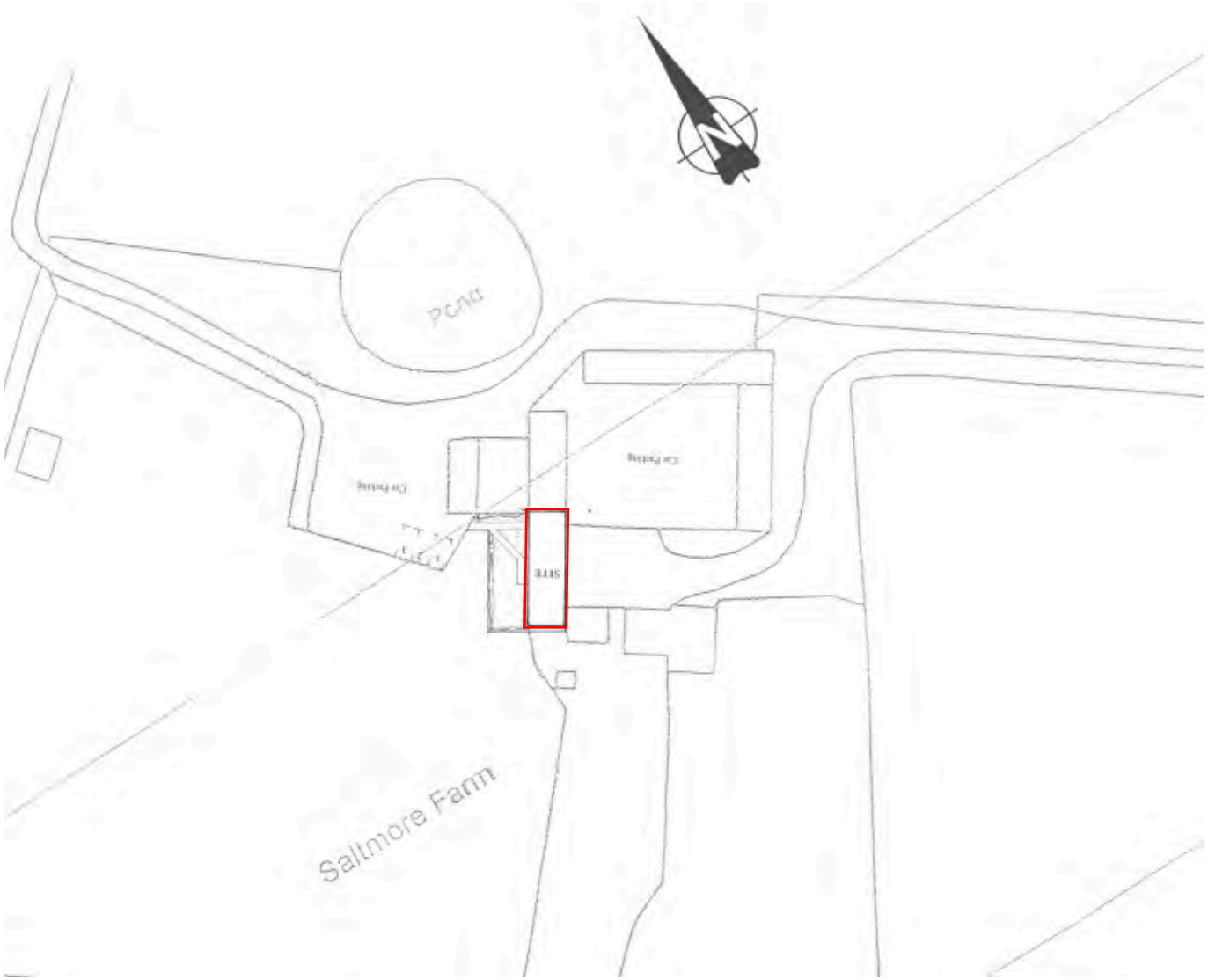

Figure 2	**Proposed Layout Plan**	**Goldfinch** Environmental Limited
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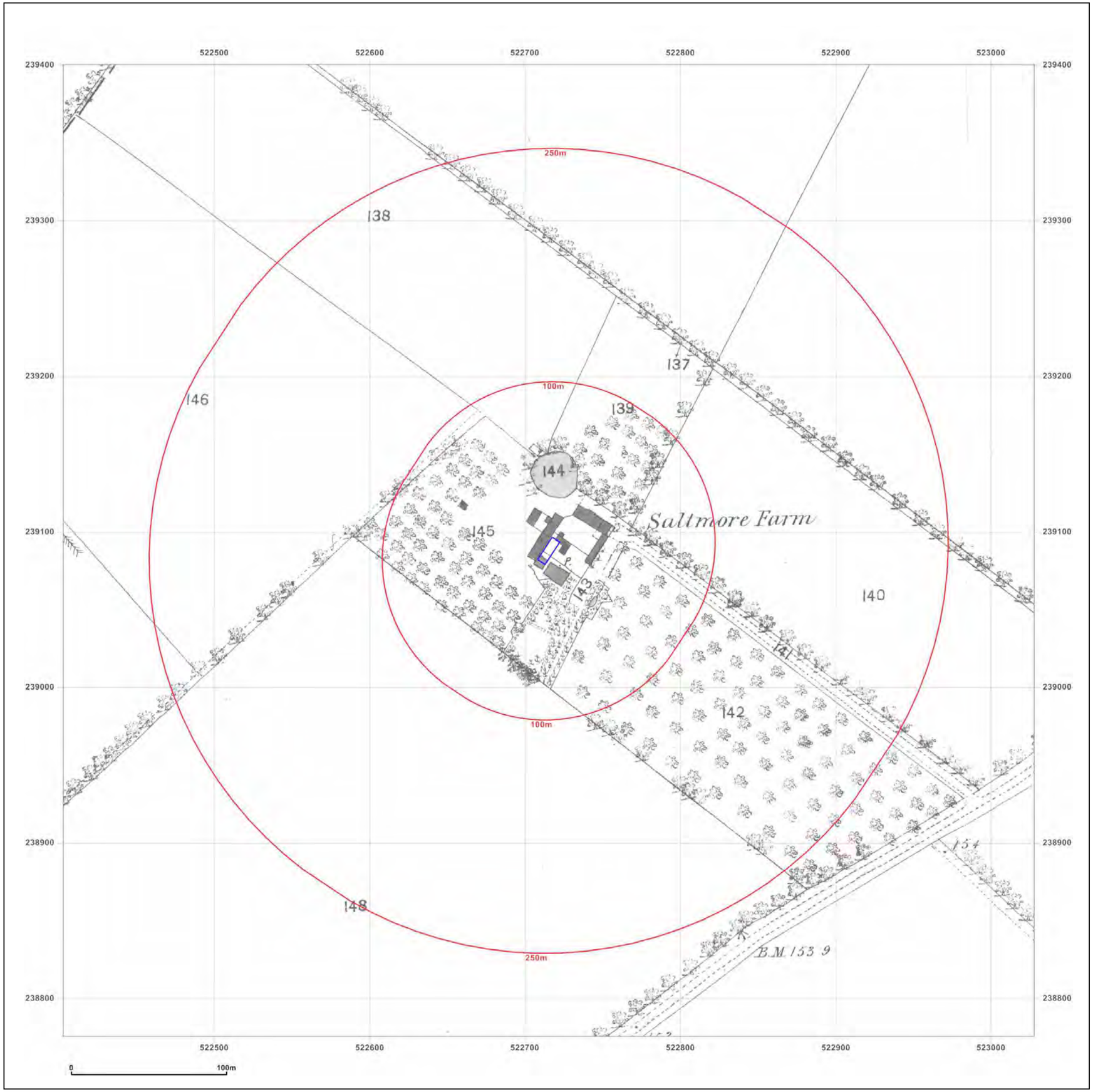
APPENDIX 1

'Groundsure' Report



Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: County Series

Map date: **1877**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1877
Revised 1877
Edition N/A
Copyright N/A
Levelled N/A

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Groundsure Insights
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E: info@groundsure.com
W: www.groundsure.com

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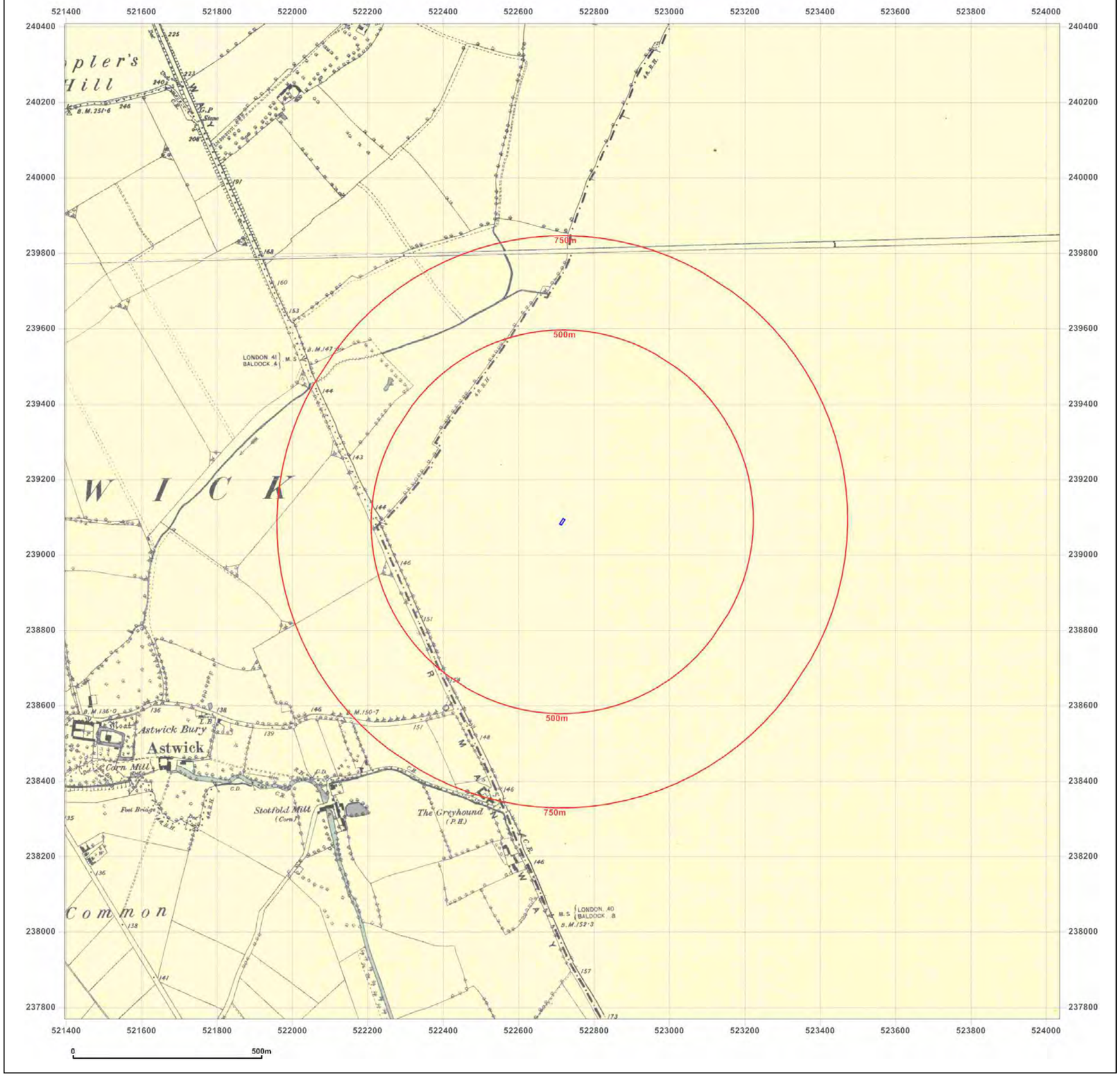
Production date: 28 February 2018

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: County Series

Map date: **1881**

Scale: 1:10,560

Printed at: 1:10,560

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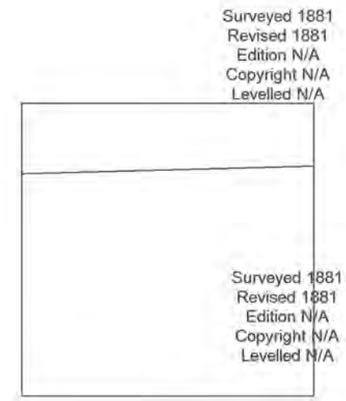

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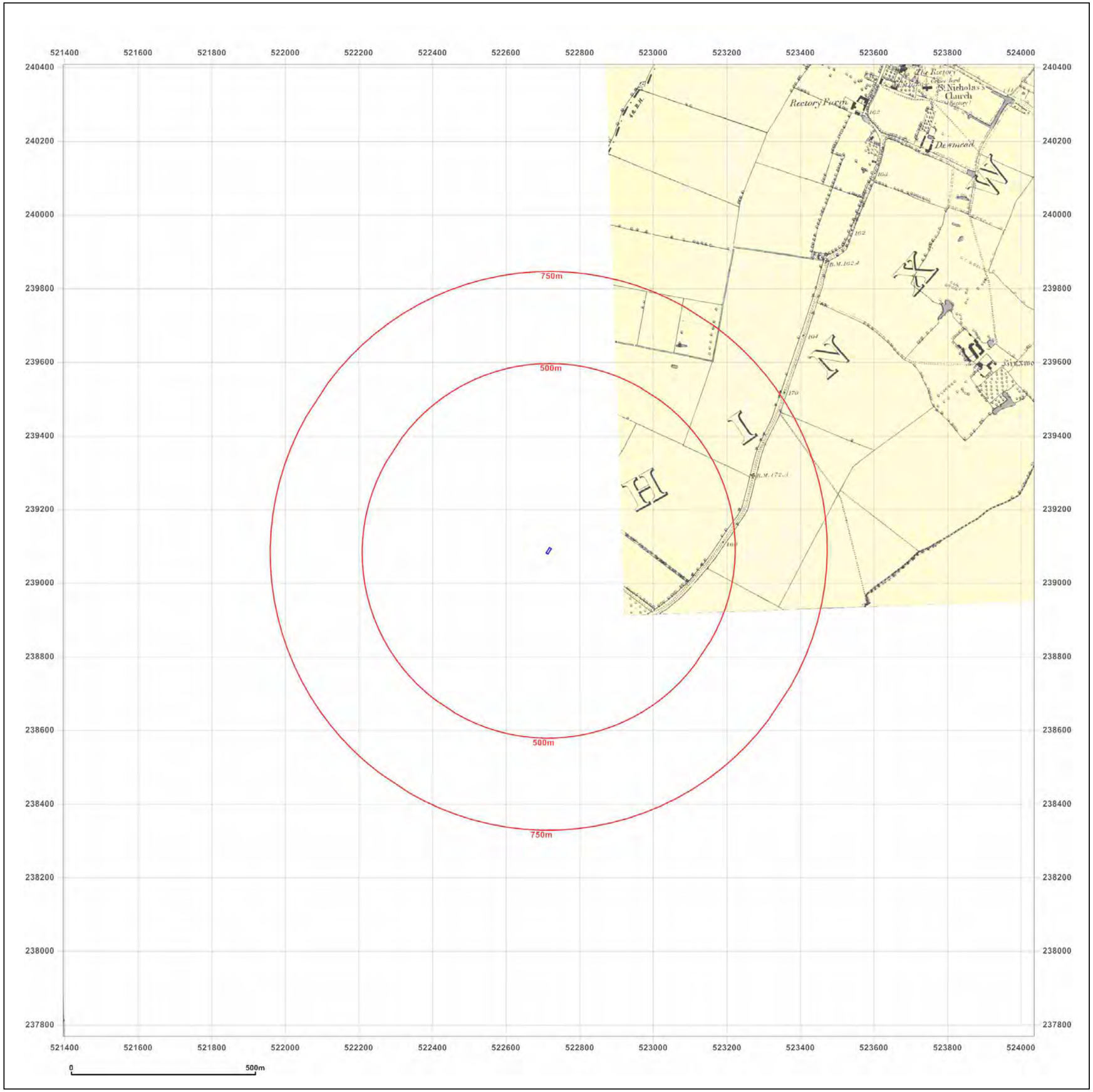

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: County Series

Map date: **1881-1886**

Scale: 1:10,560

Printed at: 1:10,560

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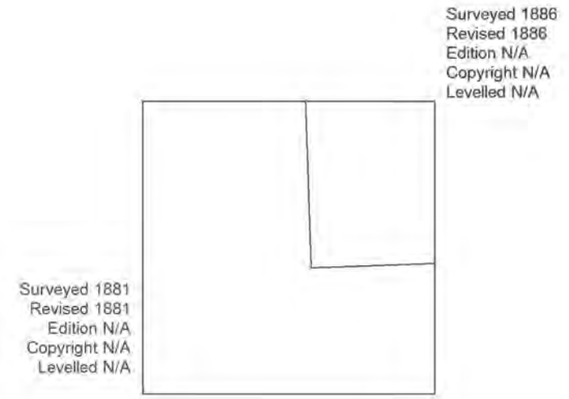

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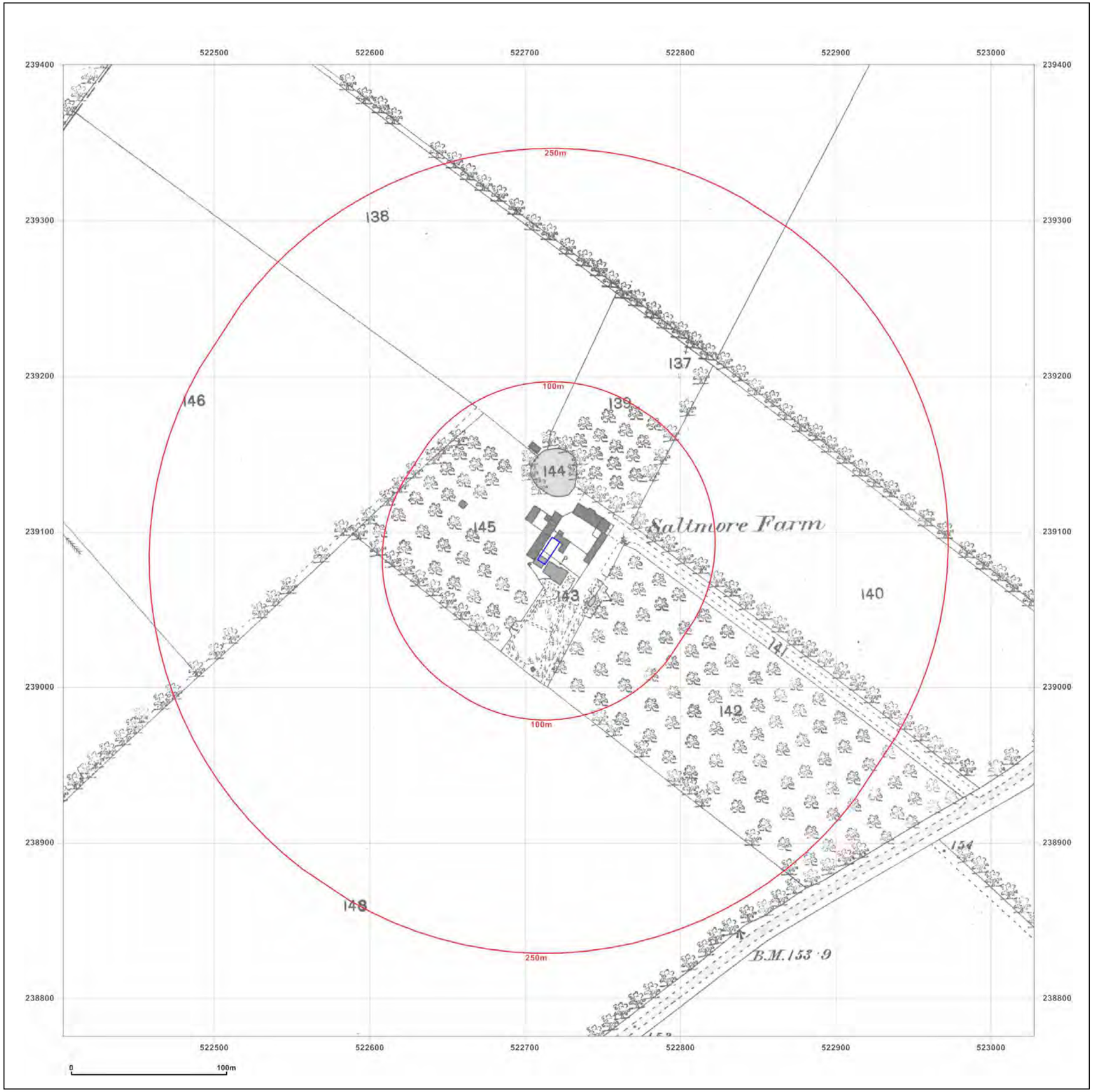

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: County Series

Map date: **1882**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1882
Revised 1882
Edition N/A
Copyright N/A
Levelled N/A

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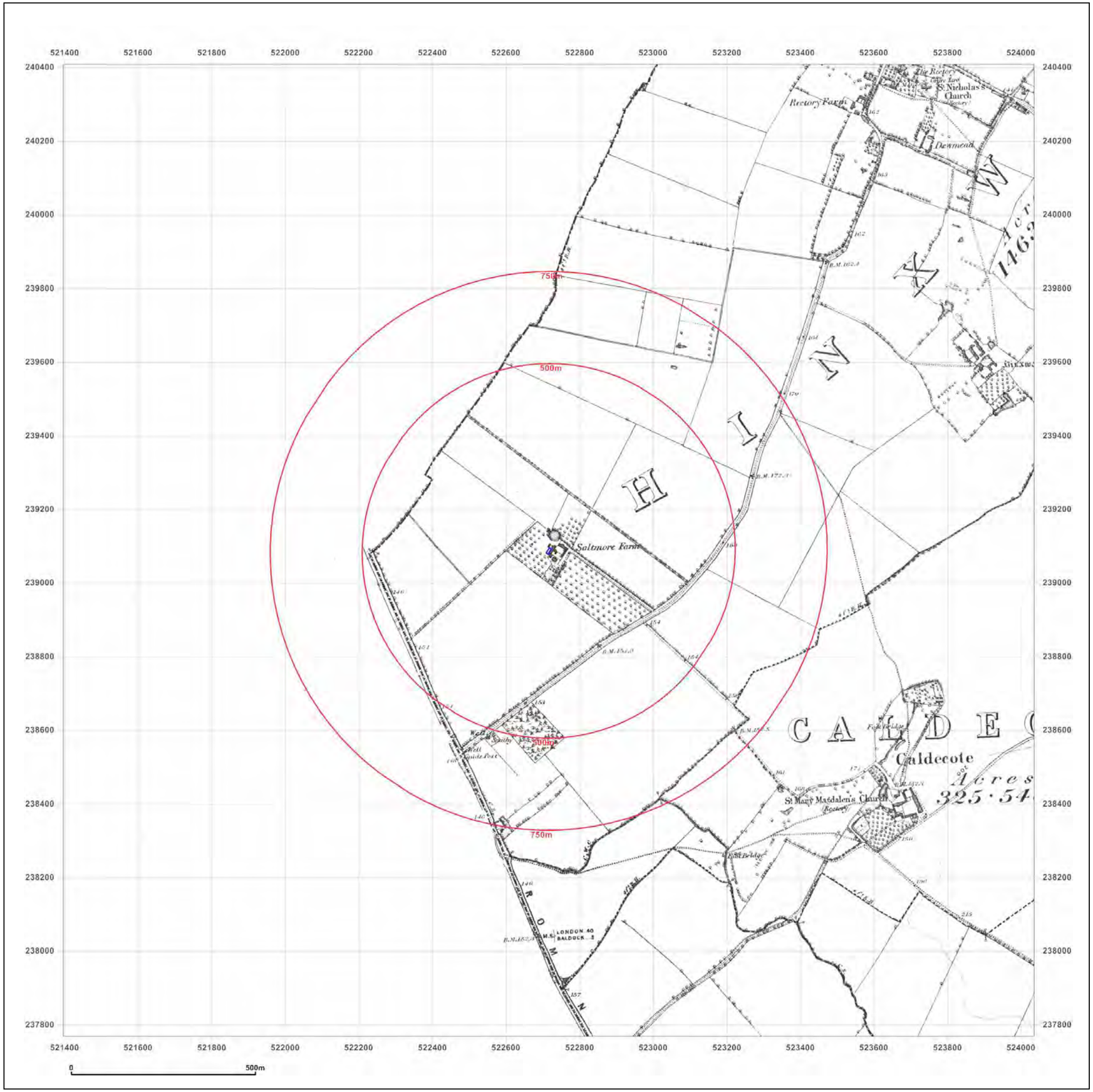

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: County Series

Map date: **1882**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1877
Revised 1877
Edition 1882
Copyright N/A
Levelled N/A

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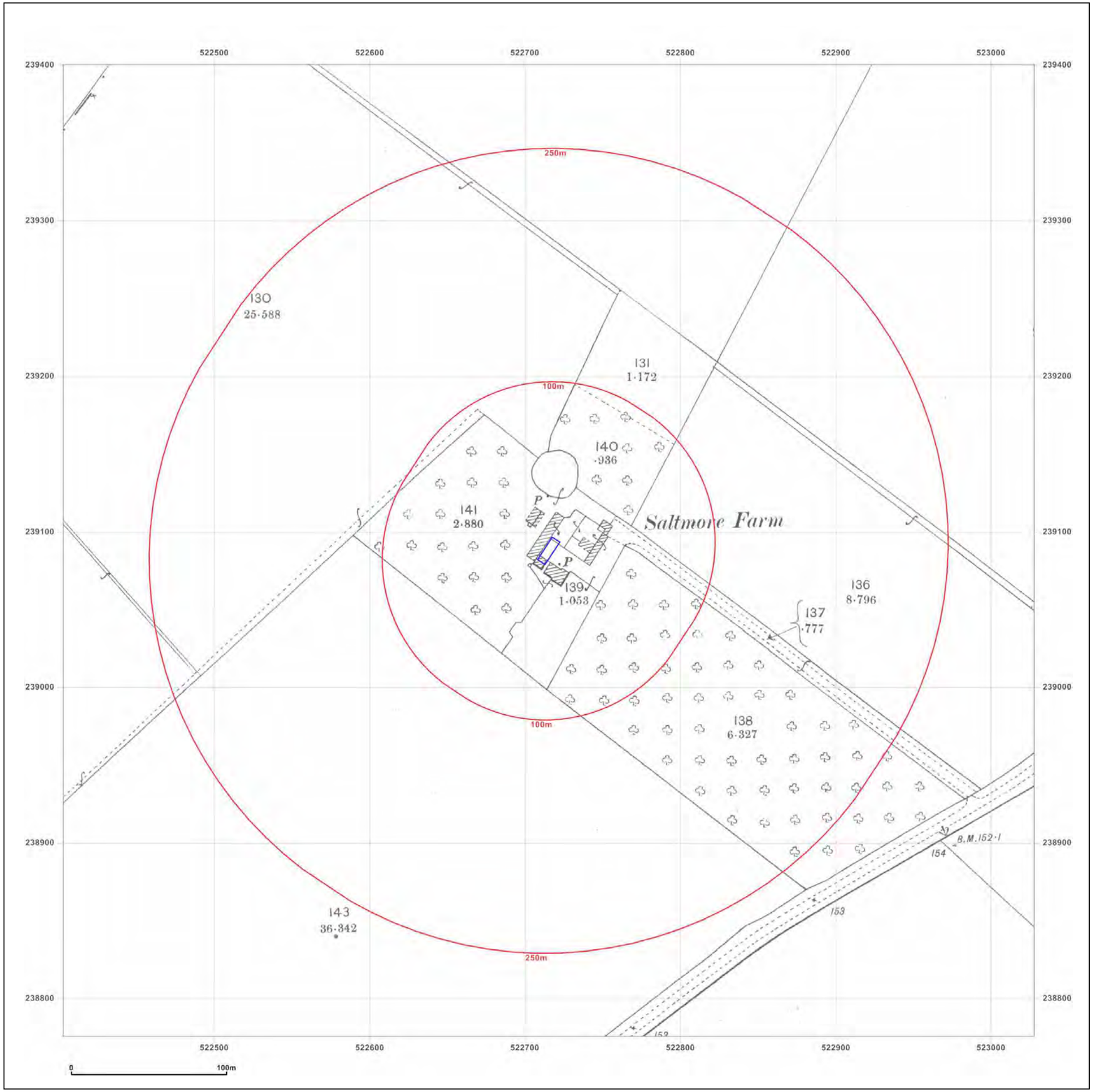

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: County Series

Map date: **1898**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1898
Revised 1898
Edition N/A
Copyright N/A
Levelled N/A

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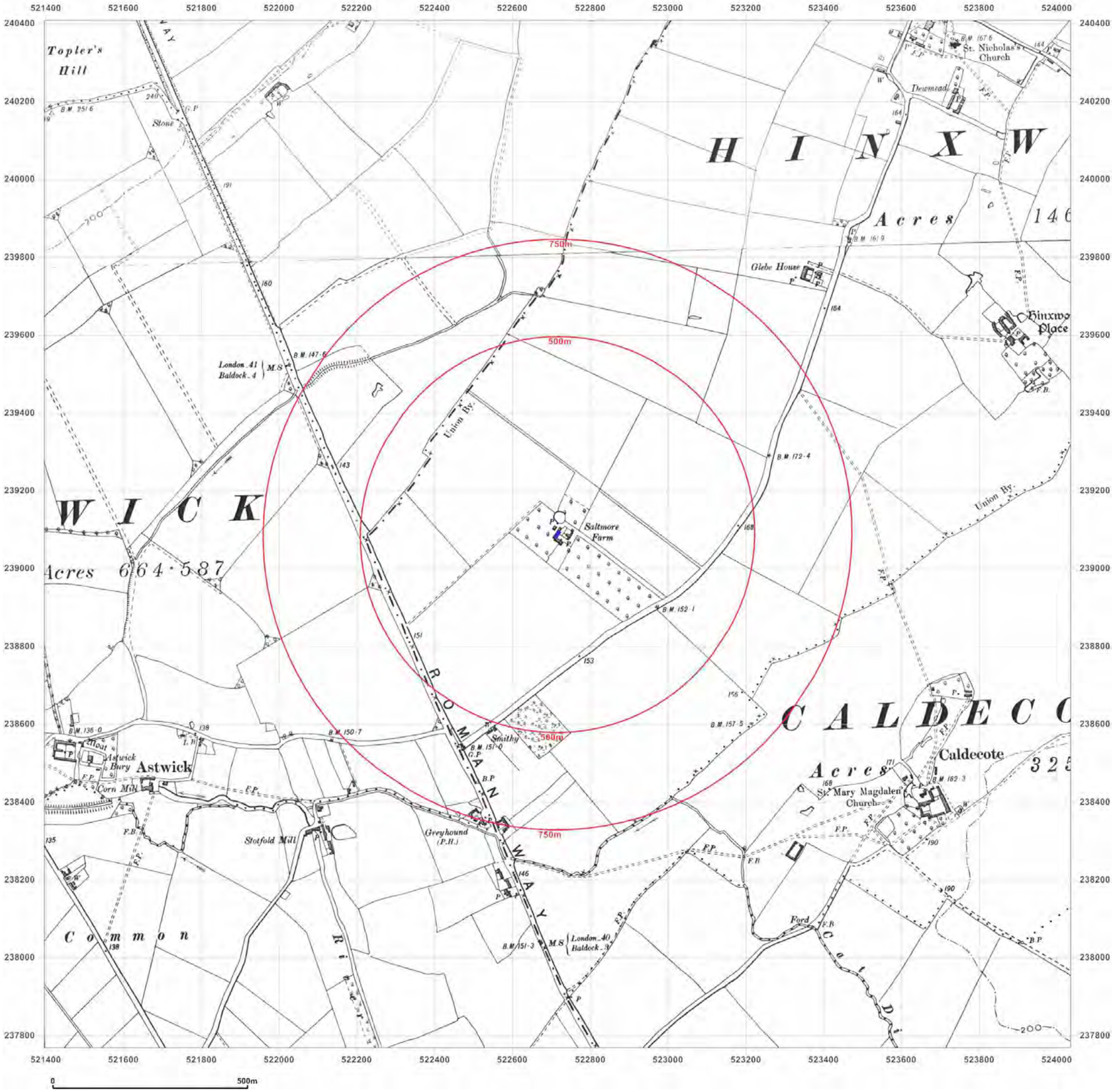


Groundsure INSIGHTS

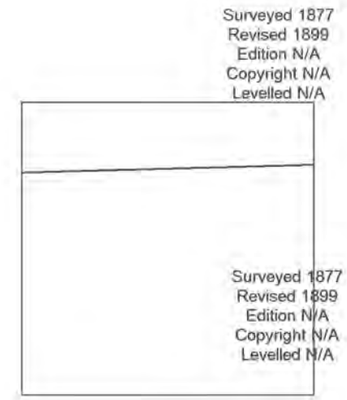
Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: County Series
Map date: **1899**
Scale: 1:10,560
Printed at: 1:10,560

N
W E
S



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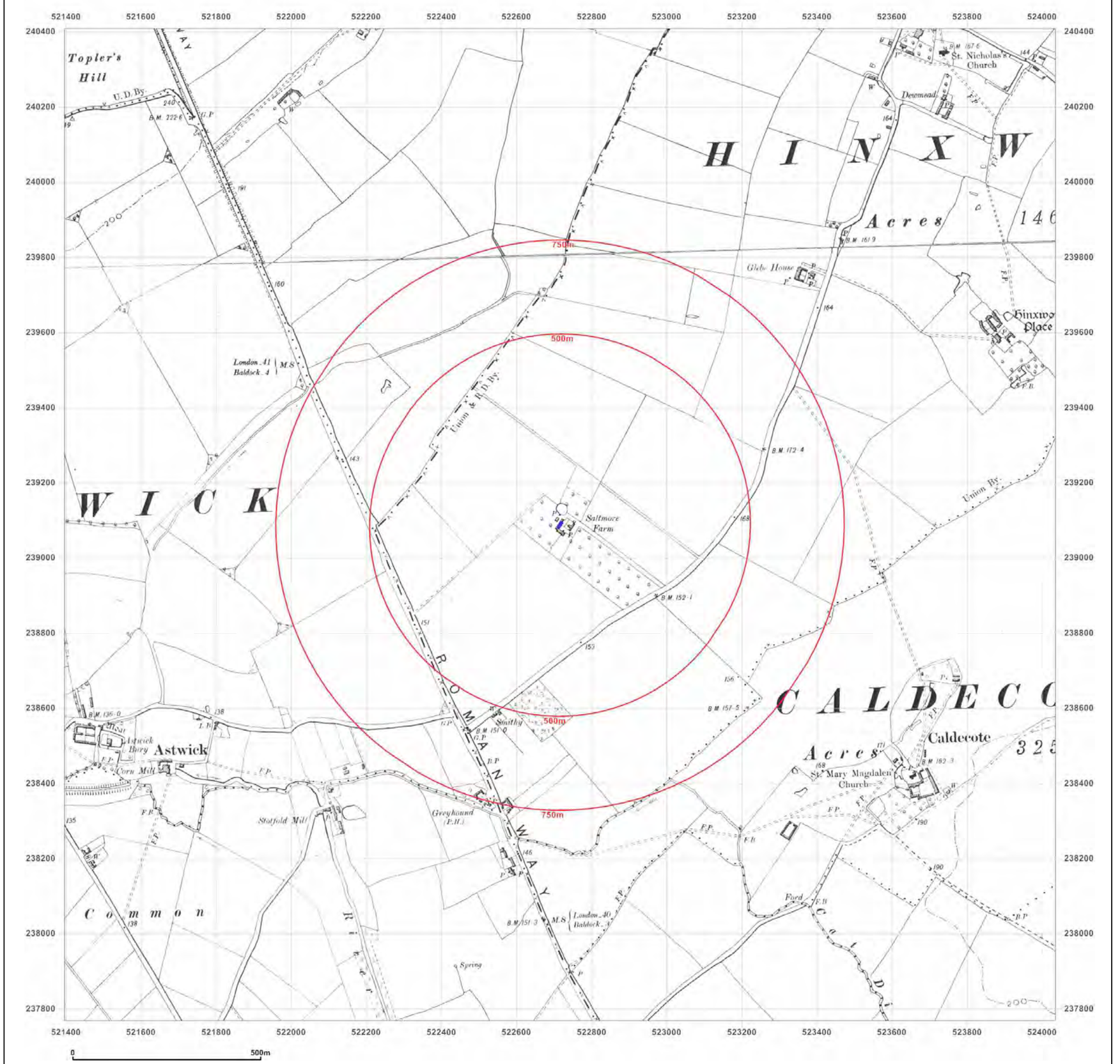

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: County Series

Map date: **1900**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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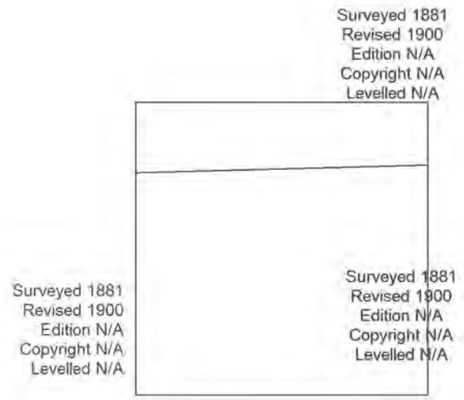

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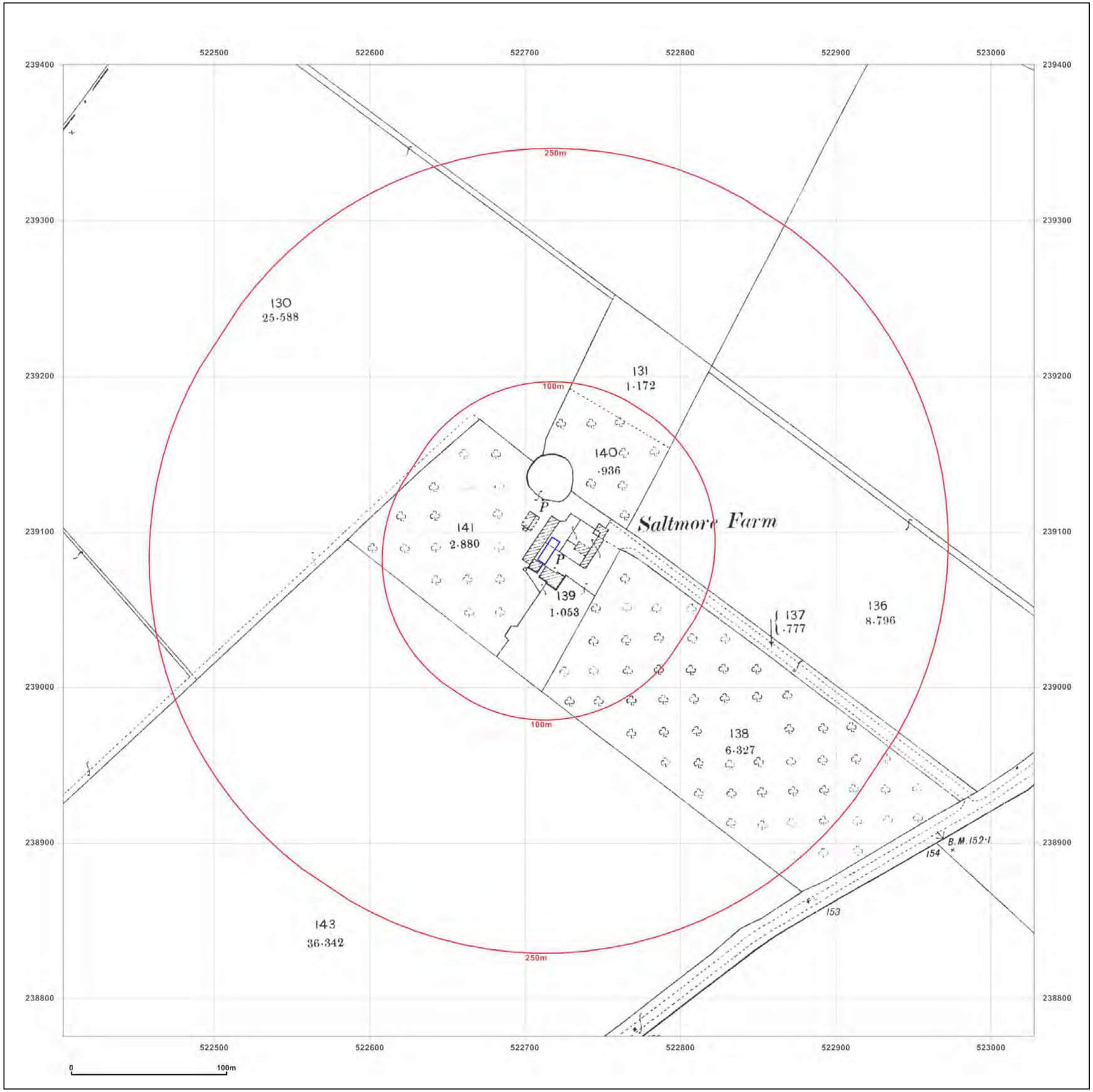

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: County Series

Map date: **1901**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

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

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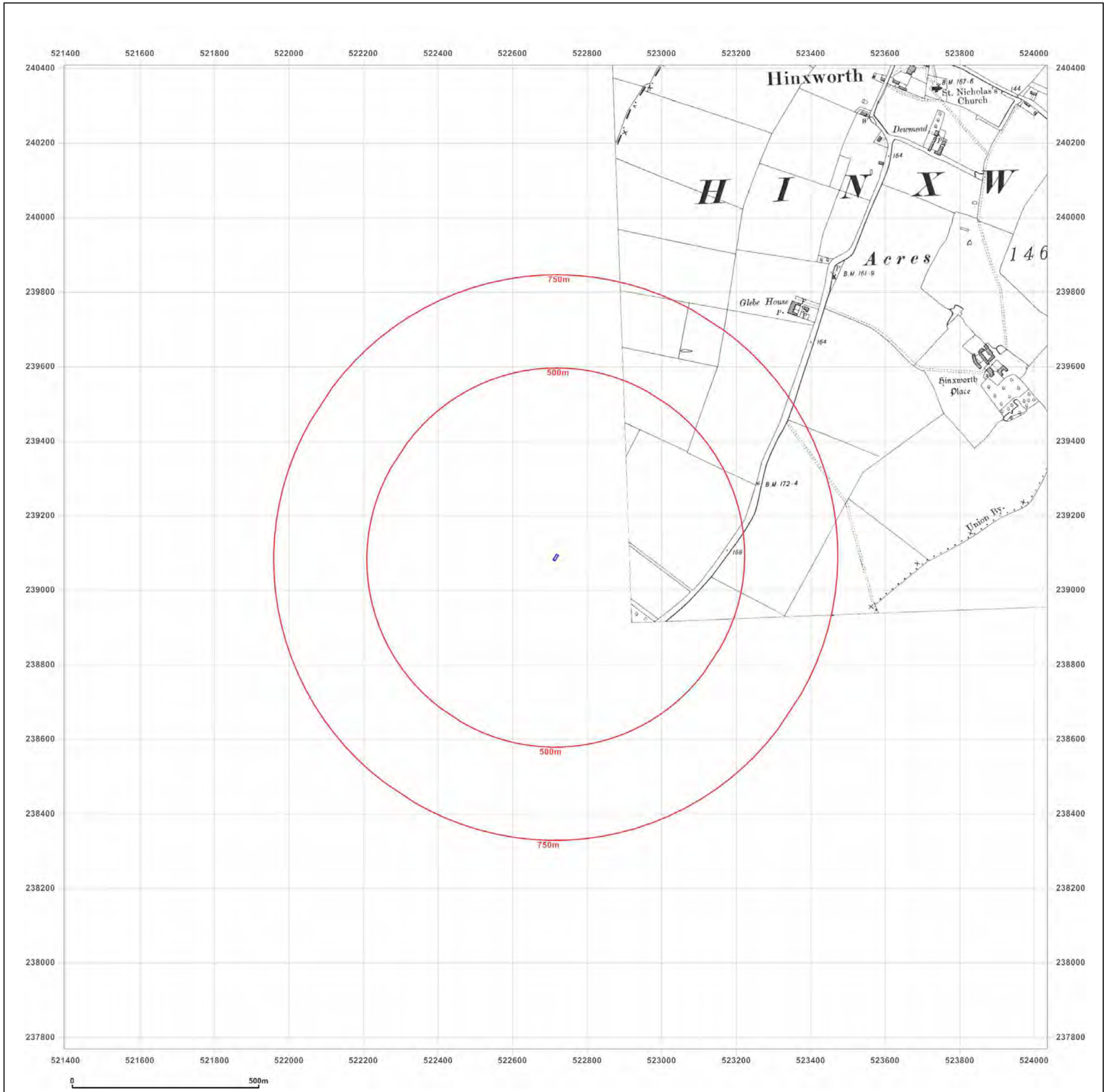

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: County Series

Map date: **1903**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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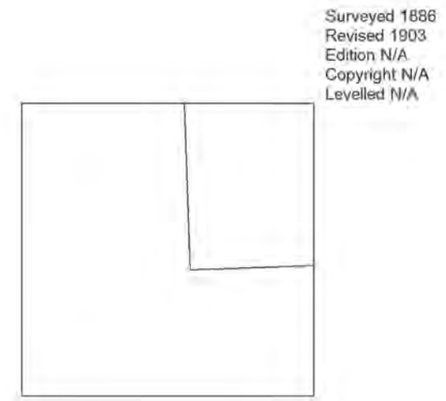

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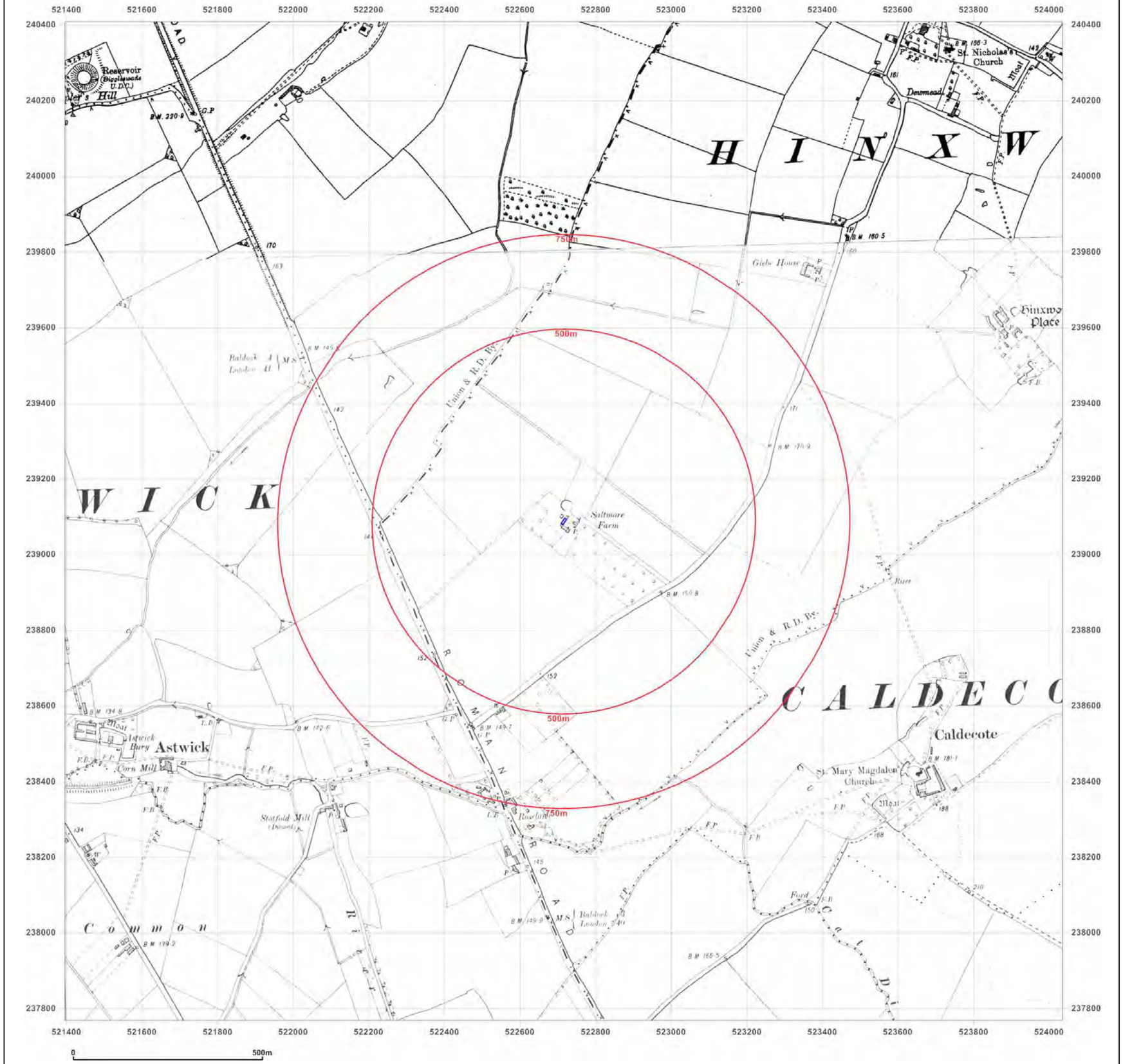

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: County Series

Map date: **1920-1921**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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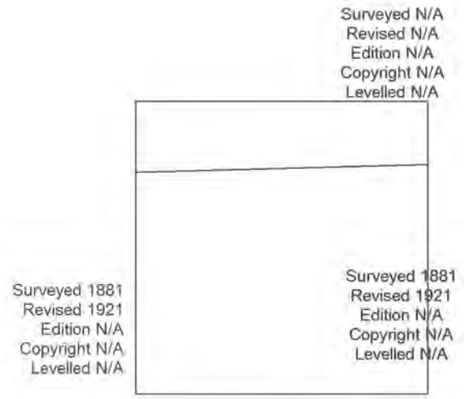

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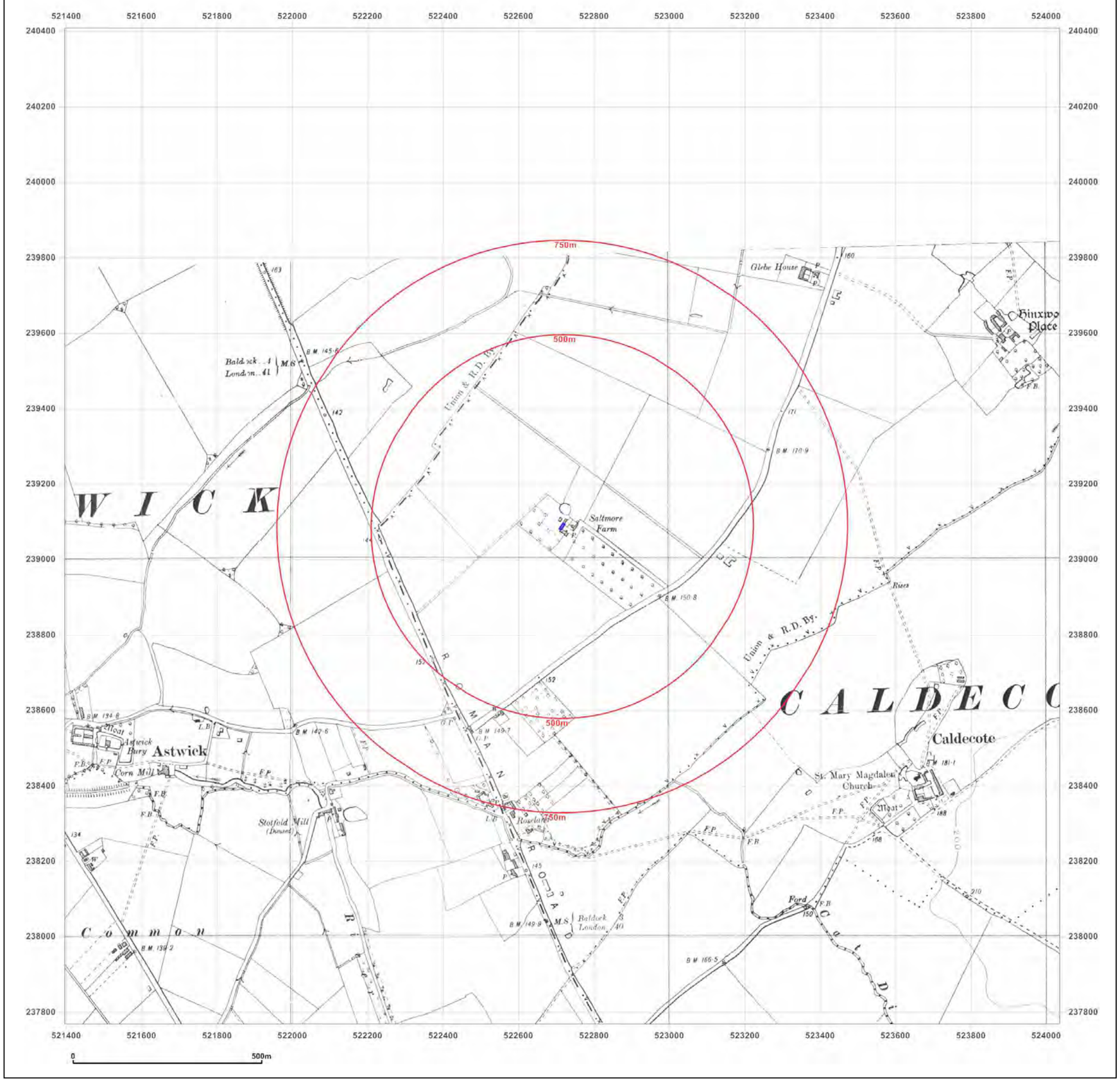

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: County Series

Map date: **1922**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1881
Revised 1922
Edition N/A
Copyright N/A
Levelled N/A

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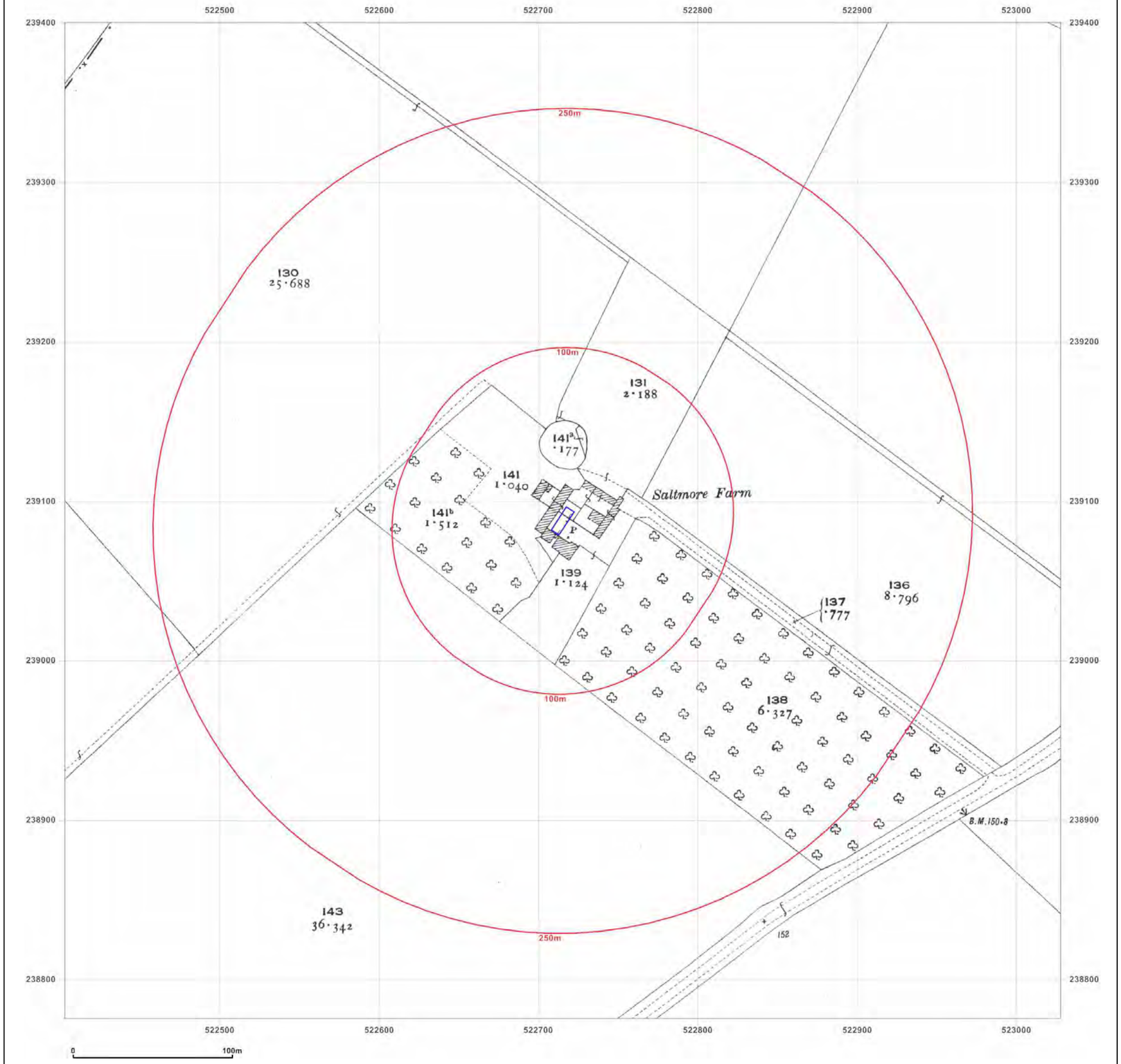

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: County Series

Map date: **1924**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1924
Revised 1924
Edition N/A
Copyright N/A
Levelled N/A

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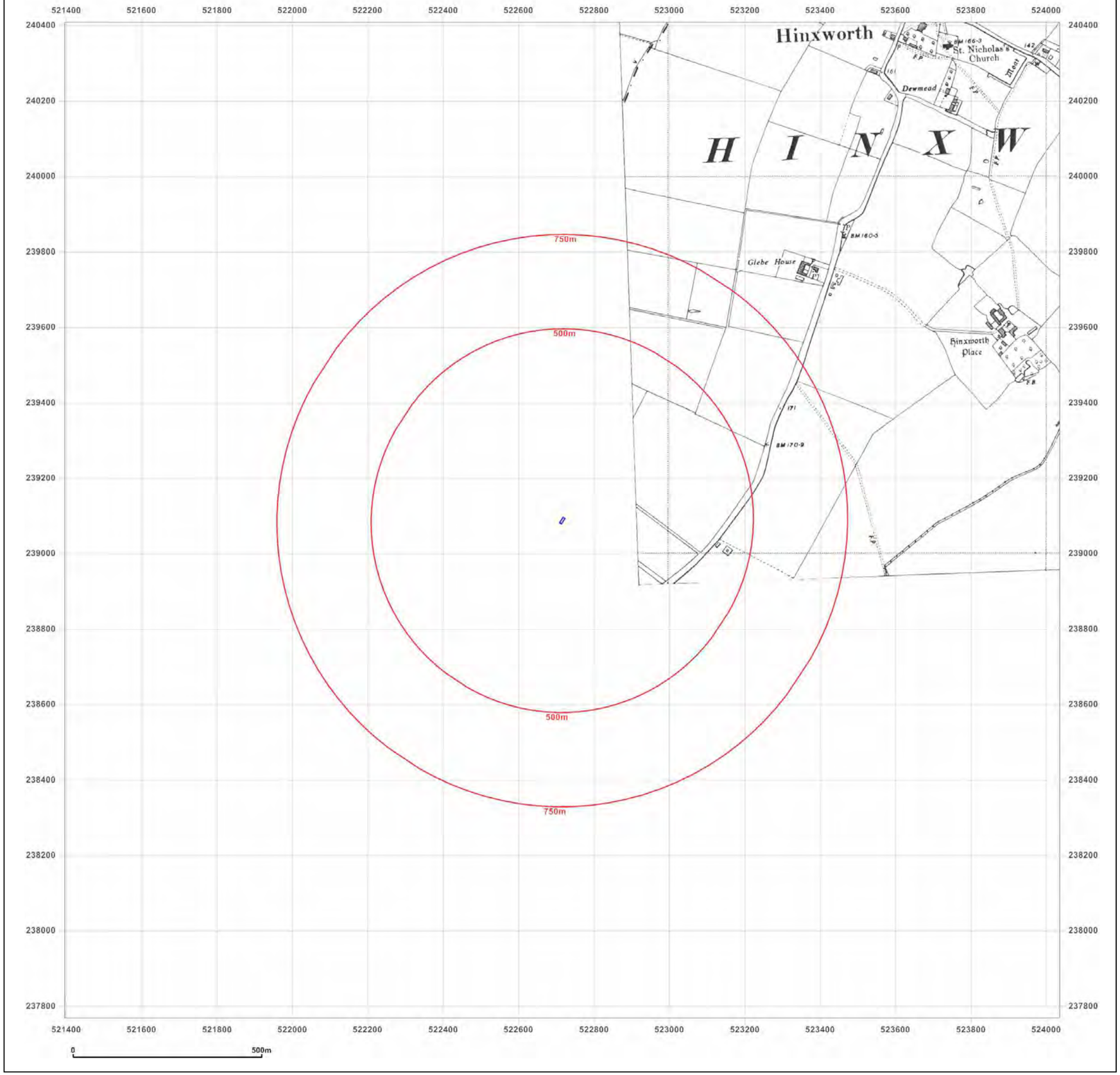

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: County Series

Map date: **1947-1948**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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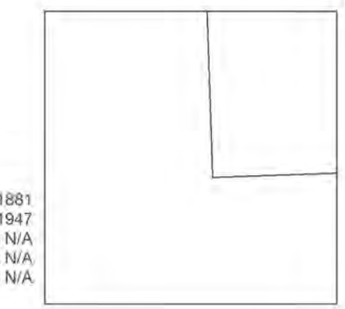
Surveyed 1886
Revised 1948
Edition 1948
Copyright N/A
Levelled N/A



Surveyed 1881
Revised 1947
Edition N/A
Copyright N/A
Levelled N/A

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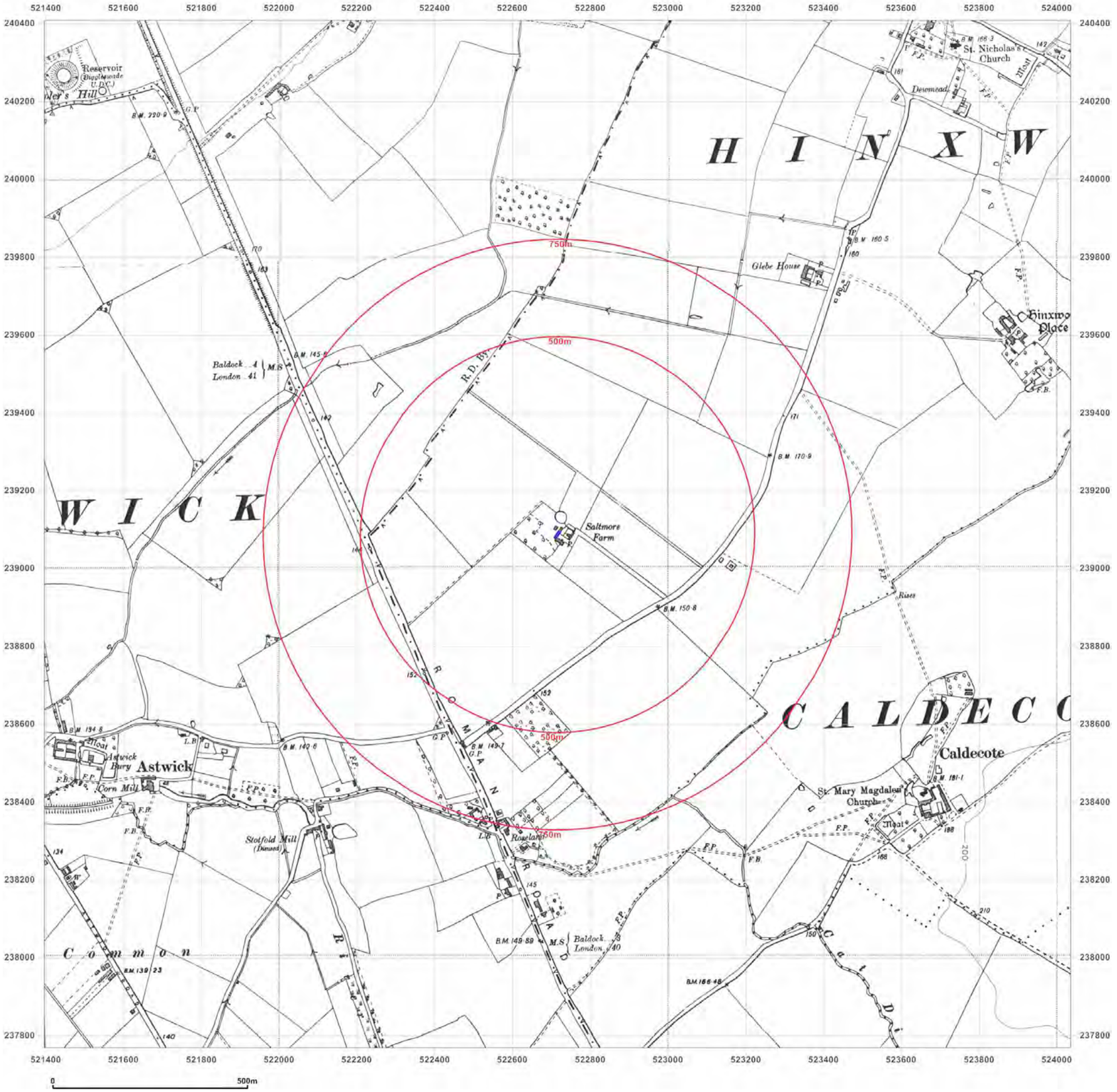

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: County Series
Map date: **1948**
Scale: 1:10,560
Printed at: 1:10,560

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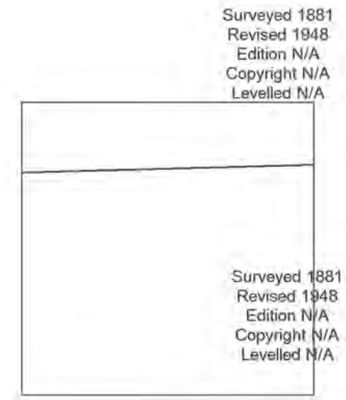

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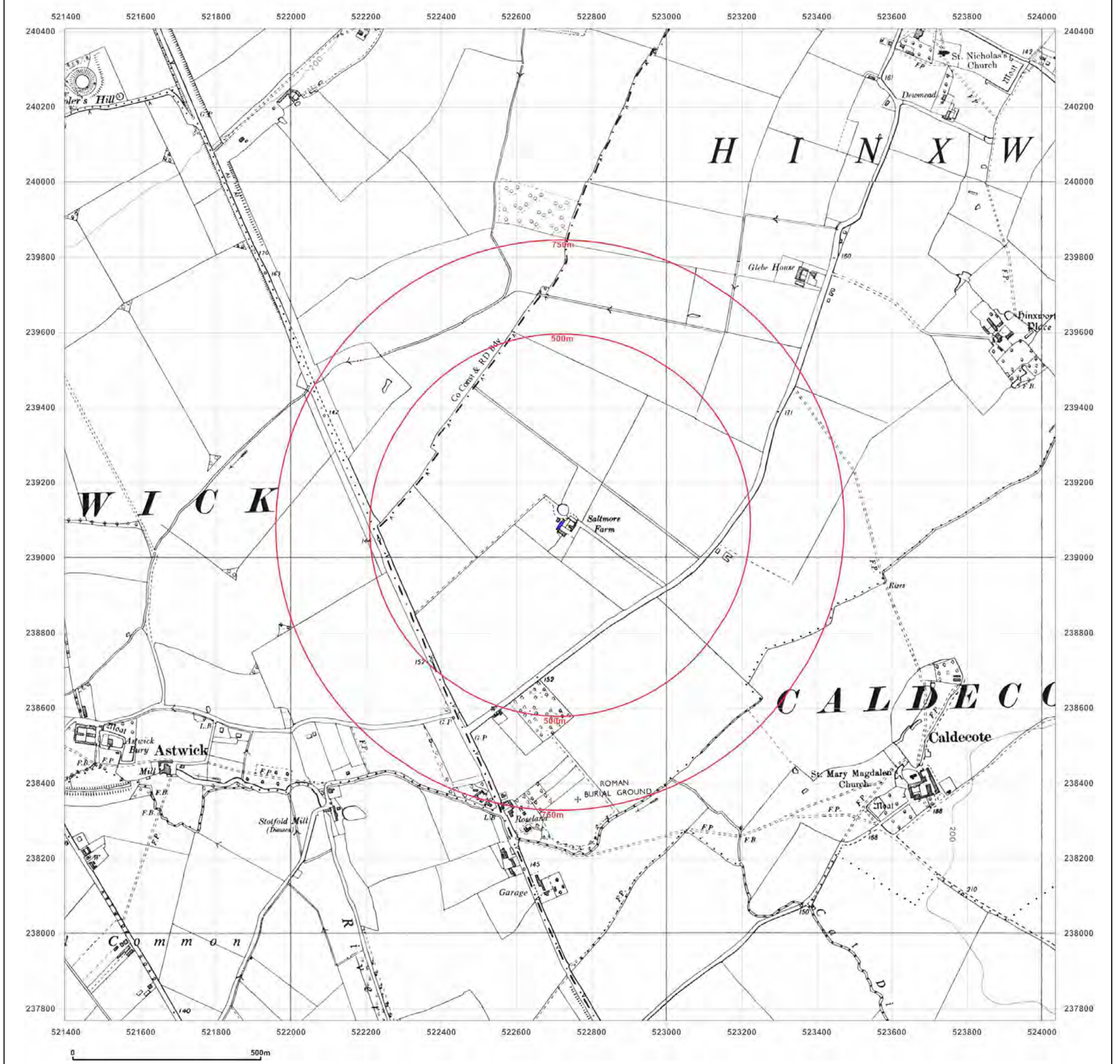

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: Provisional
Map date: **1959-1960**
Scale: 1:10,560
Printed at: 1:10,560

N
W E
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Surveyed N/A
Revised 1959
Edition N/A
Copyright 1960
Levelled N/A

Surveyed N/A
Revised 1959
Edition N/A
Copyright N/A
Levelled N/A

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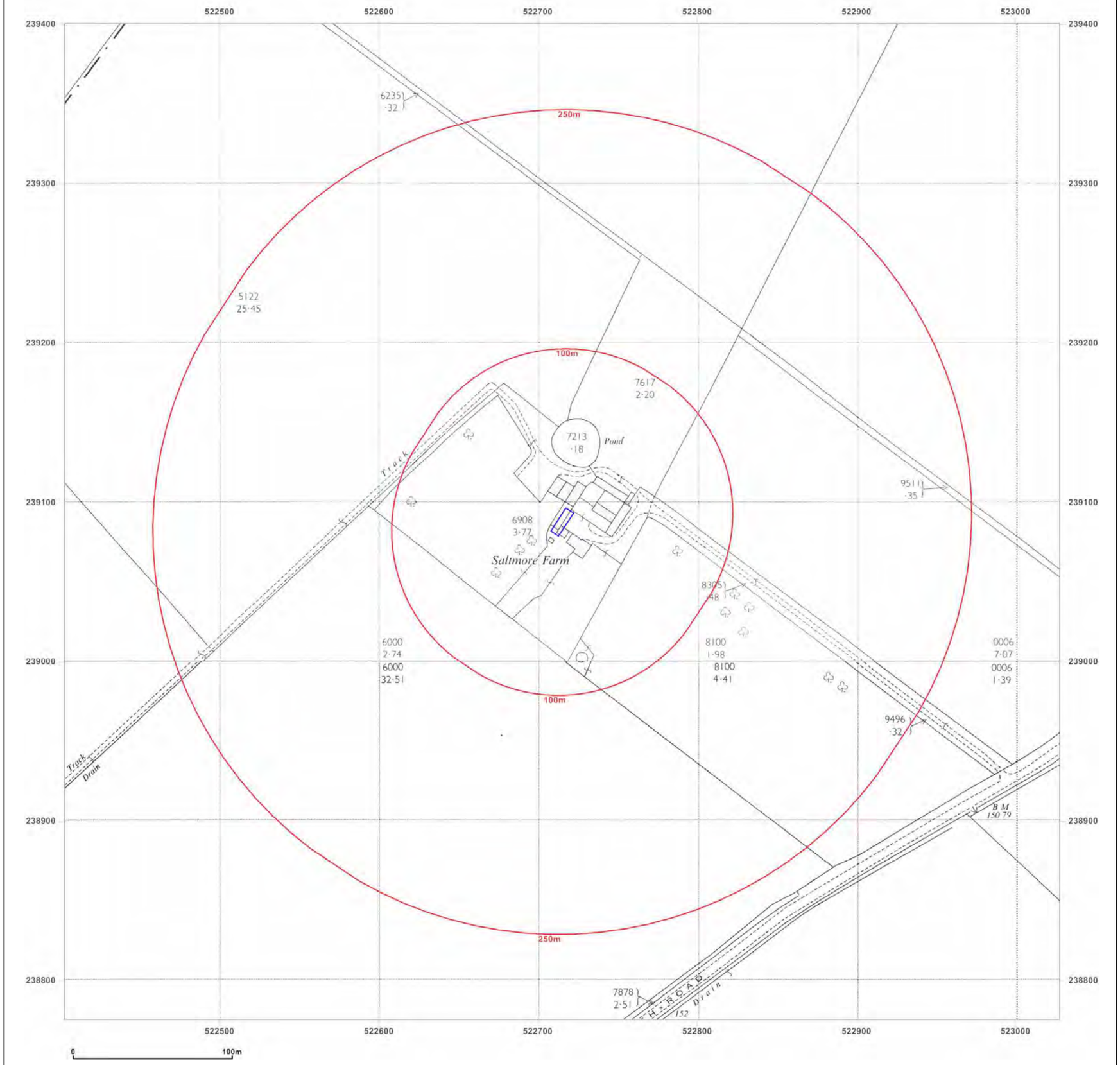

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: National Grid

Map date: **1967**

Scale: 1:2,500

Printed at: 1:2,500

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W E
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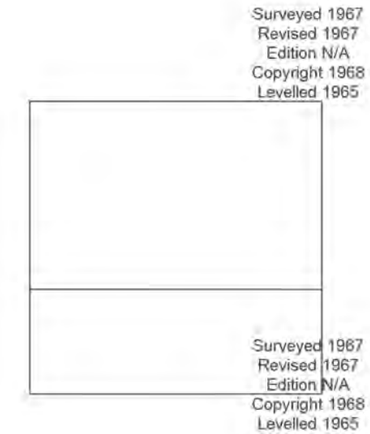

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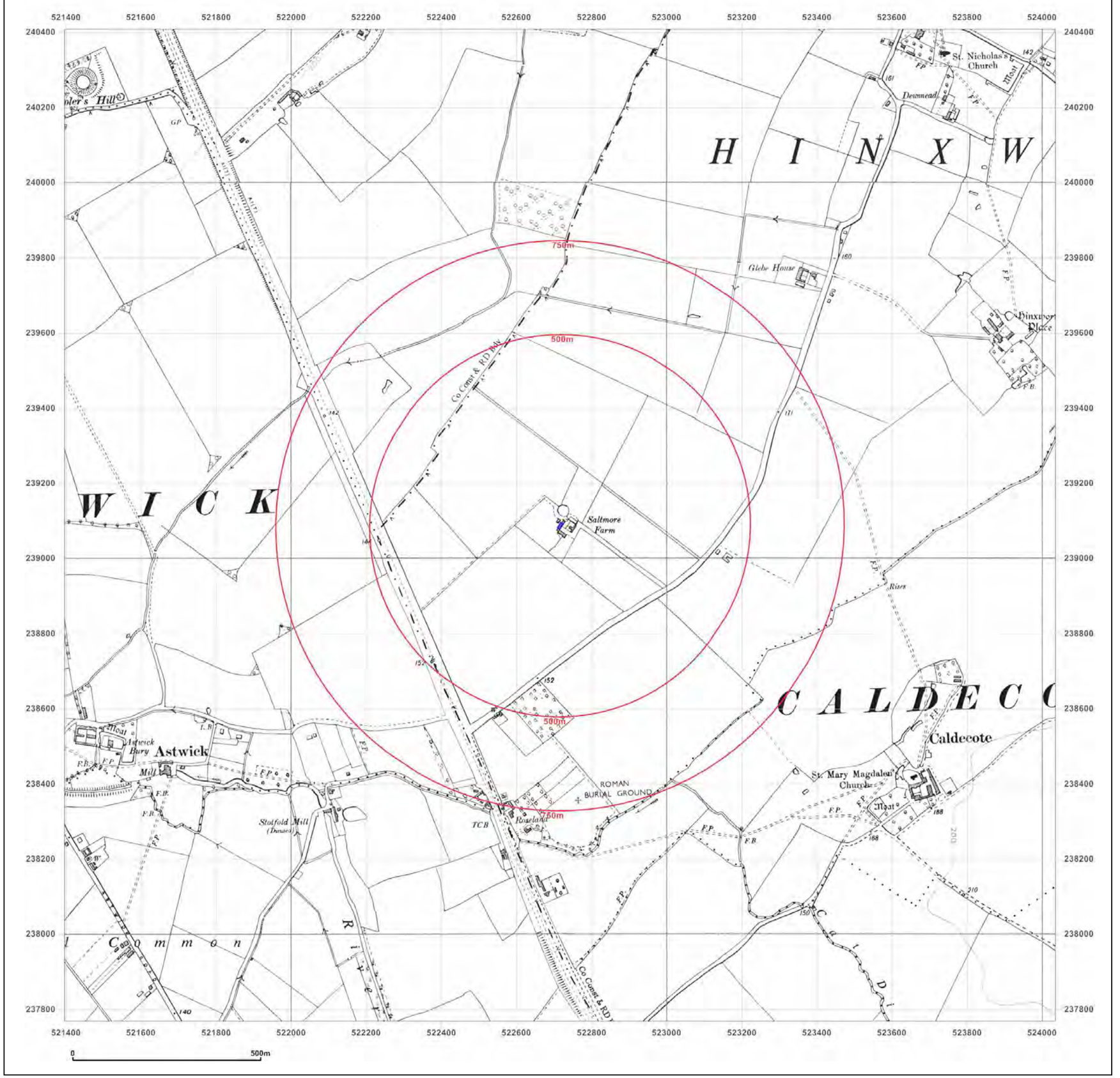

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: Provisional

Map date: **1968-1969**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed N/A
Revised 1969
Edition N/A
Copyright 1960
Levelled N/A

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

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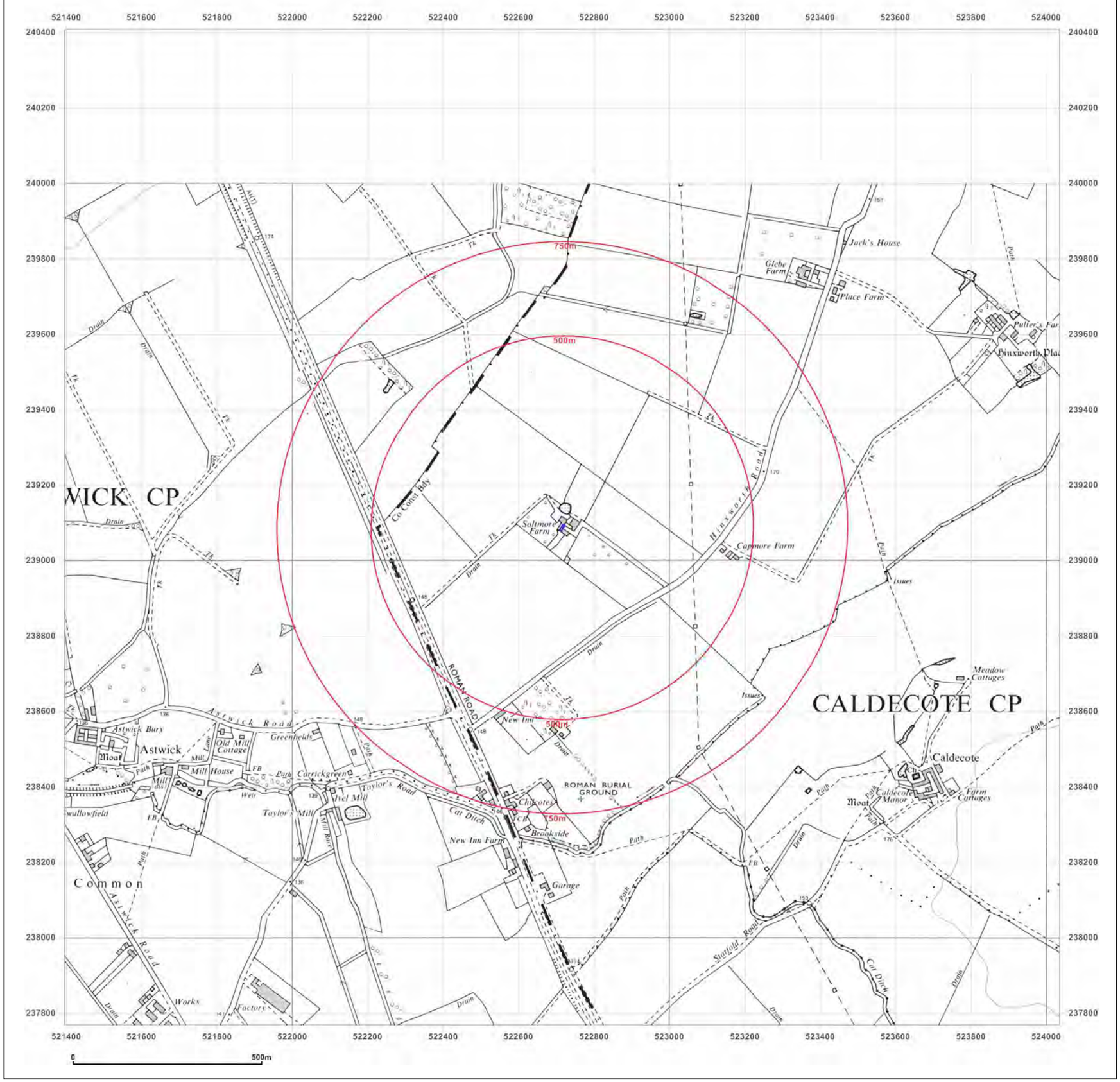

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: Provisional
Map date: **1969**
Scale: 1:10,560
Printed at: 1:10,560

N
W E
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Surveyed 1969
Revised 1969
Edition N/A
Copyright N/A
Levelled N/A

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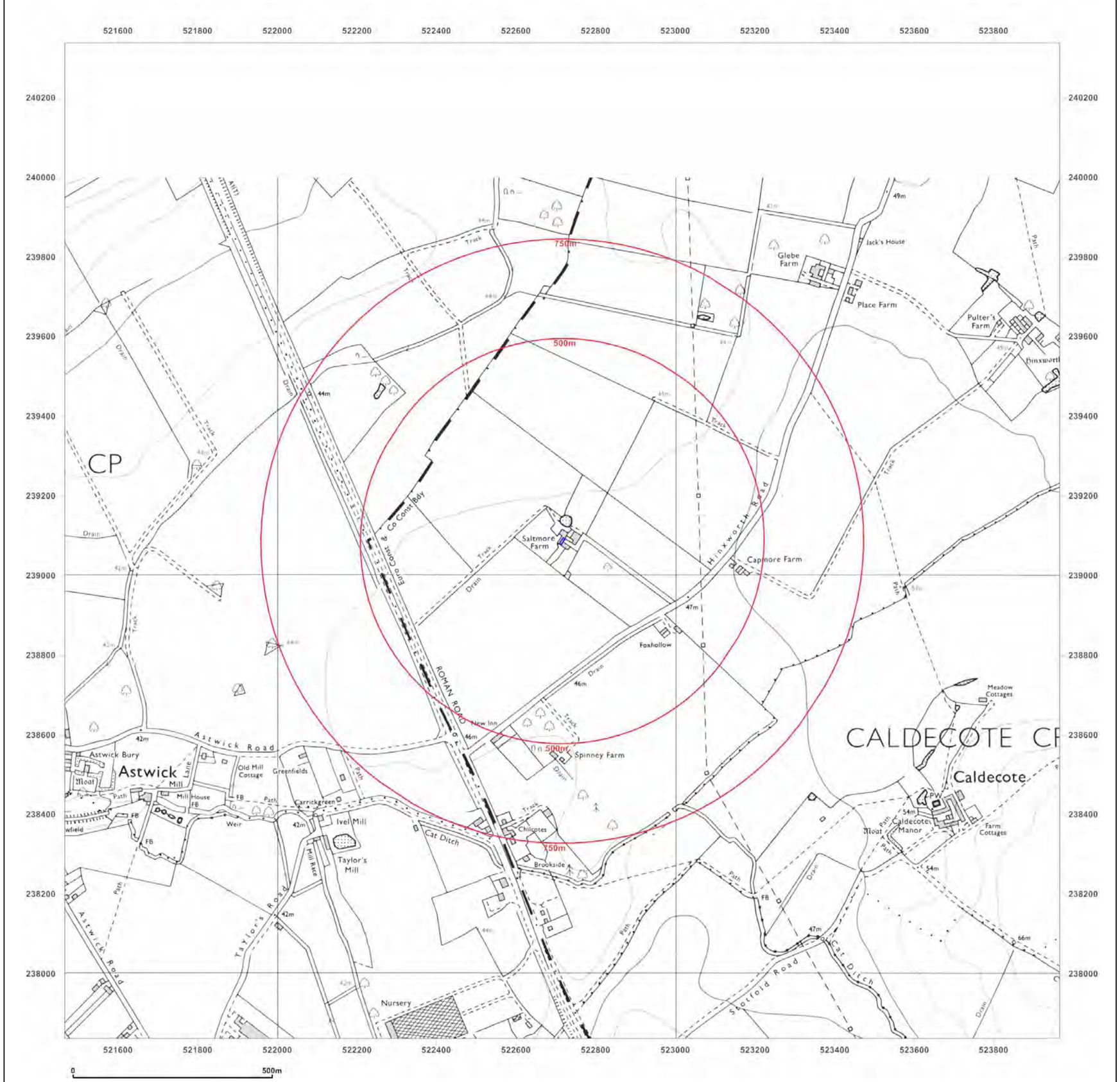

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: National Grid

Map date: **1985**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

Surveyed 1983
Revised 1985
Edition N/A
Copyright N/A
Levelled N/A

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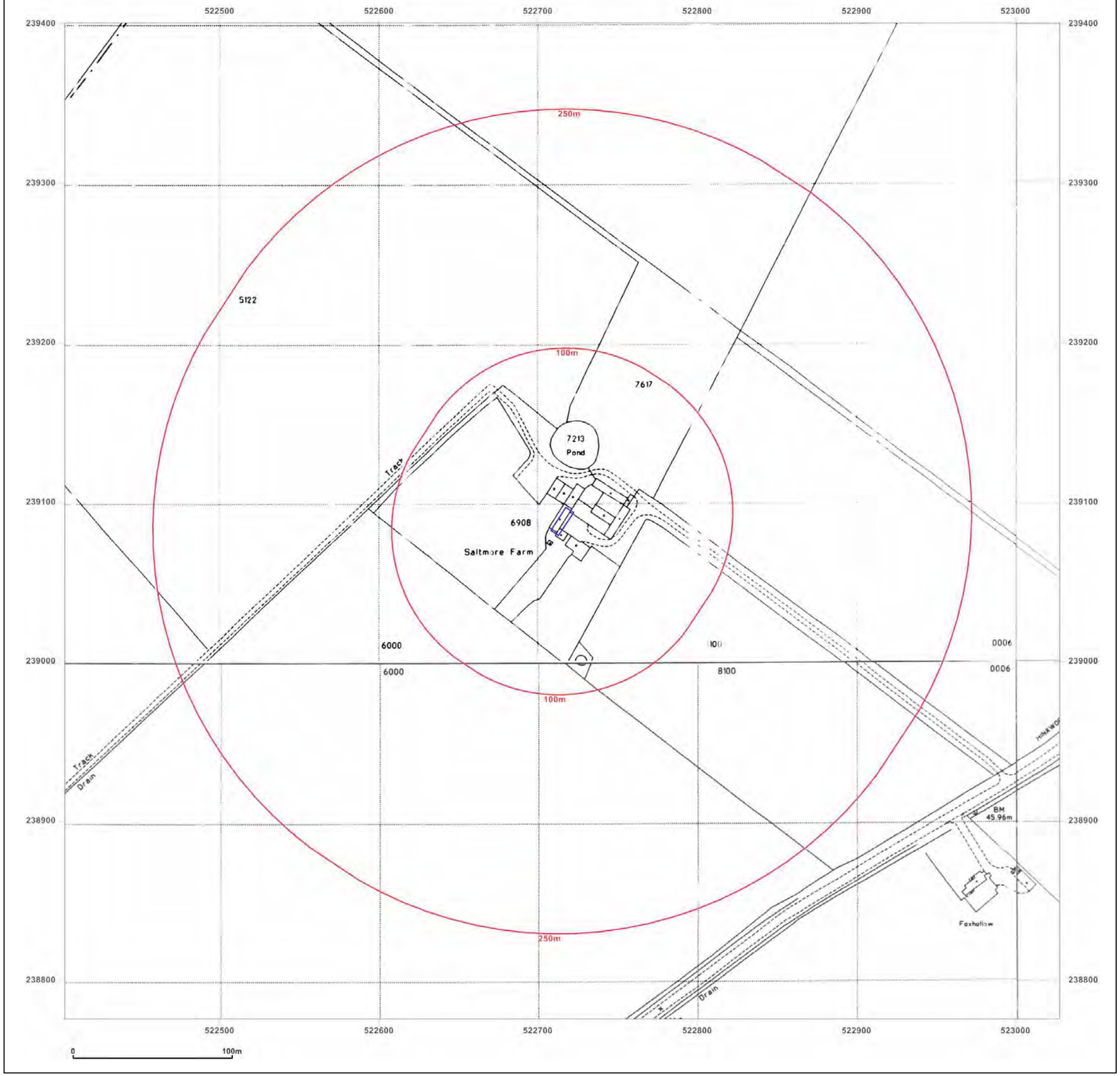

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: National Grid

Map date: **1993**

Scale: 1:2,500

Printed at: 1:2,500

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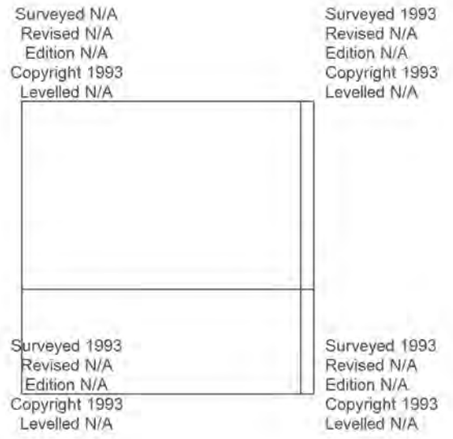

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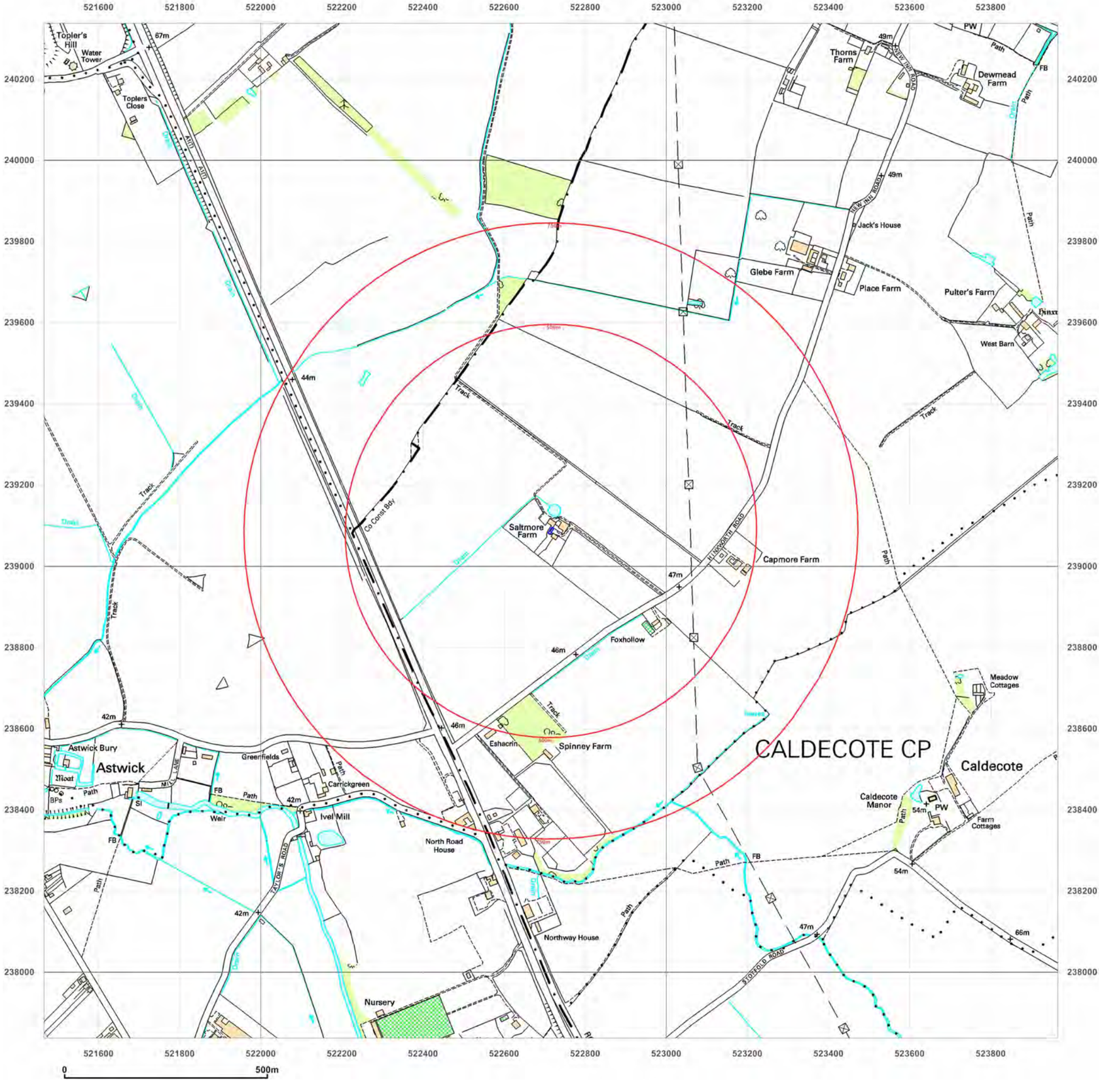

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: 1:10,000 Raster
Map date: **2002**
Scale: 1:10,000
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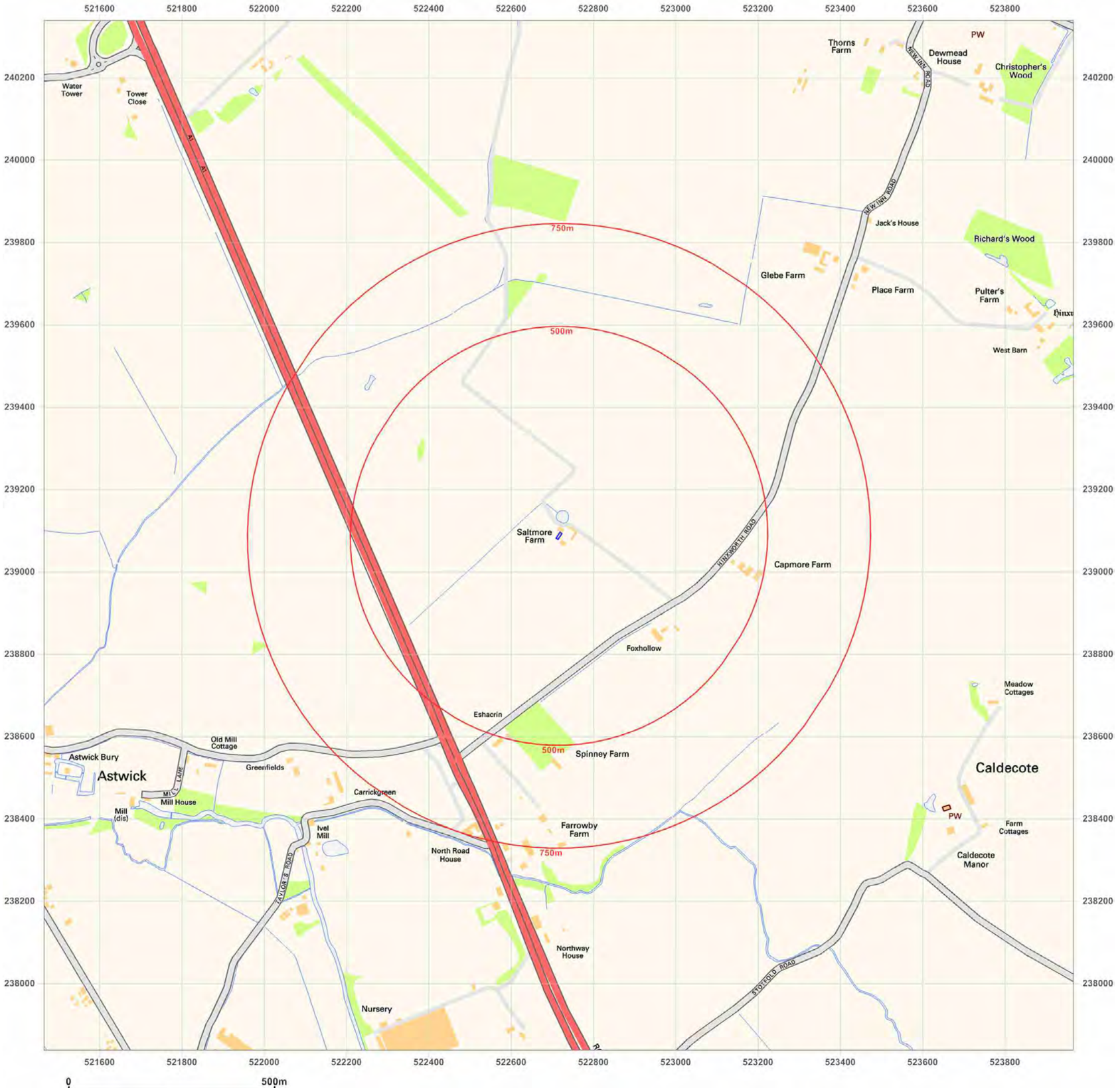

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

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

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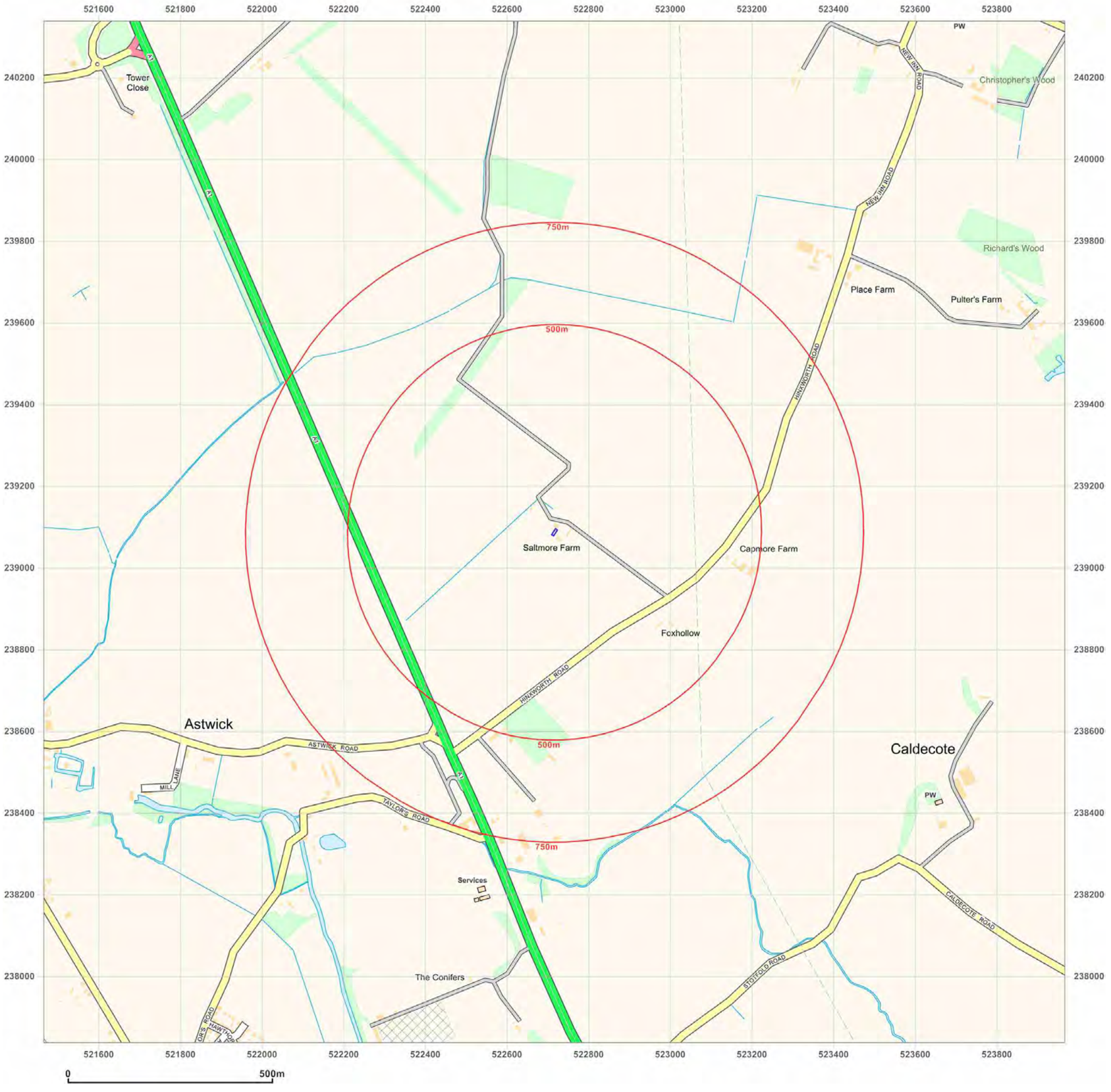

Groundsure INSIGHTS

Site Details:

SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Client Ref: 0518-ds
Report Ref: GS-2391-4770269
Grid Ref: 522715, 239088

Map Name: National Grid
Map date: 2014
Scale: 1:10,000
Printed at: 1:10,000

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Goldfinch Environmental Limited

19, Palmer Street,
Bury St Edmunds,
Suffolk, IP31 3BZ

Groundsure Reference:	GS-2391-4770267
Your Reference:	0518-ds
Report Date	28 Feb 2018
Report Delivery Method:	Email - pdf

Enviro Insight

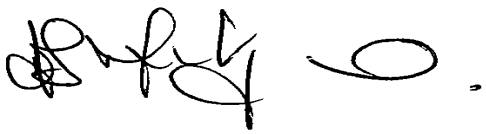
Address: SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,



Managing Director
Groundsure Limited

Enc.
Groundsure Enviroinsight

Enviro Insight

Address:	**SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ**
Date:	**28 Feb 2018**
Reference:	**GS-2391-4770267**
Client:	**Goldfinch Environmental Limited**

NW N NE

W E



SW S SE

Aerial Photograph Capture date:	16-Apr-2015
Grid Reference:	522715,239088
Site Size:	0.01ha

Report Reference: GS-2391-4770267
Client Reference: 0518-ds

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Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	0	0	0	0
1.2 Additional Information – Historical Tank Database	0	0	2	0
1.3 Additional Information – Historical Energy Features Database	0	0	0	0
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	0
1.6 Potentially Infilled Land	0	1	0	0

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	0
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	0	0
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	0
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	0	0	1
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	0	0

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	0	0	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	No
5.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	Yes
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology	0-500m
6.1 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?	Yes
6.2 Are there any records of Strata Classification in the Bedrock Geology within 500m of the study site?	Yes

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	2
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	1	0	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site?	No	No	No	No	Yes	No
6.10 Detailed River Network entries within 500m of the site	0	1	0	3	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	Yes	Yes	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Are there any Enviroment Agency Zone 2 floodplains within 250m of the study site?	No
7.2 Are there any Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	No
7.3 What is the Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site?	Very Low
7.4 Are there any Flood Defences within 250m of the study site?	No
7.5 Are there any areas benefiting from Flood Defences within 250m of the study site?	No
7.6 Are there any areas used for Flood Storage within 250m of the study site?	No
7.7 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Potential at Surface
7.8 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	High

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	0	0
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	0
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	2	0	0	0	3	9
8.14 Records of Green Belt land	0	0	0	0	0	0

Section 9: Natural Hazards

9.1 What is the maximum risk of natural ground subsidence?	Very Low
9.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site?	Negligible
9.1.2 What is the maximum Landslides hazard rating identified on the study site?	Very Low
9.1.3 What is the maximum Soluble Rocks hazard rating identified on the study site?	Very Low
9.1.4 What is the maximum Compressible Ground hazard rating identified on the study site?	Negligible
9.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site?	Very Low
9.1.6 What is the maximum Running Sand hazard rating identified on the study site?	Very Low
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining

10.1 Are there any coal mining areas within 75m of the study site?	No
10.2 Are there any Non-Coal Mining areas within 50m of the study site boundary?	Yes
10.3 Are there any brine affected areas within 75m of the study site?	No

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licenses, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

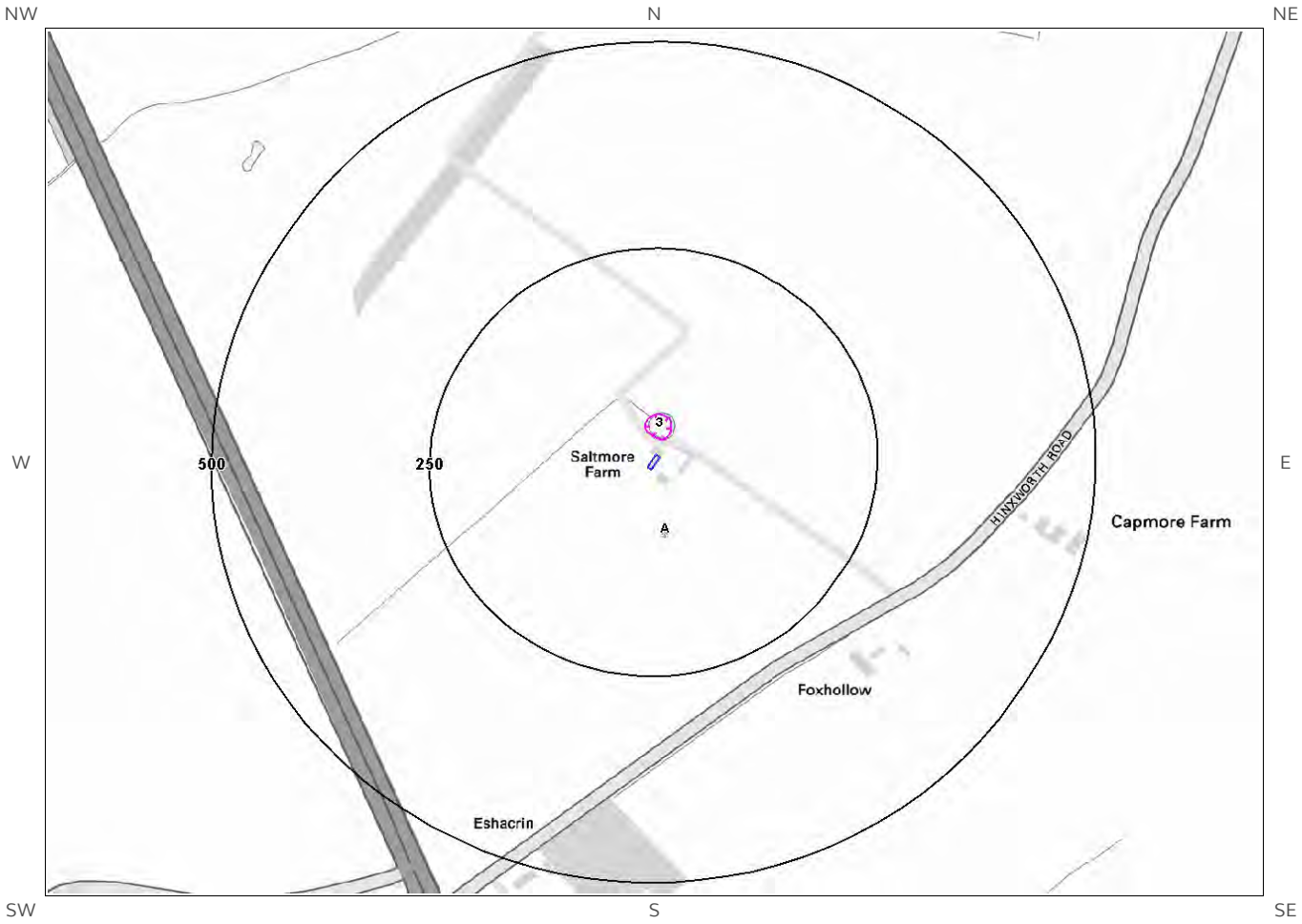
Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier “A” on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as “Not Shown”.

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Historical Land Use



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Site Outline

250
500
Search Buffers (m)

Historical 1:10,000 and 1:10,560 scale mapping

Industrial Land Use

Potentially Infilled Land

Historical 1:2,500, 1:1,250 and 1:500 scale mapping

Energy Features

Petrol Stations

Tanks

Garages

1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 0

Database searched and no data found.

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary: 2

ID	Distance (m)	Direction	Use	Date
1A	74	S	Unspecified Tank	1967
2A	81	S	Unspecified Tank	1993

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary: 0

Database searched and no data found.

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary: 0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 0

Database searched and no data found.

1.6 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 1

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
3	19	N	Pond	1899

2. Environmental Permits, Incidents and Registers Map



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Site Outline

250
500
Search Buffers (m)

Recorded Pollution Incident

Dangerous Substances (List 1)

Dangerous Substances (List 2)

Water Industry Referrals

Licenced Discharge Consents

Red List Discharge Consents

RAS 3 & 4 Authorisations

Part A(1) Authorised Processes and Historic IPC Authorisations

Part A(2) and Part B Authorised Processes

COMAH / NIHHS Sites

Sites Determined as Contaminated Land

Hazardous Substance Consents and Enforcements

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

0

Database searched and no data found.

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site: 0

Database searched and no data found.

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations: 0

Database searched and no data found.

2.1.8 Records of Licensed Discharge Consents within 500m of the study site: 0

Database searched and no data found.

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site: 0

Database searched and no data found.

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site: 0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site: 0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

0

Database searched and no data found.

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

Database searched and no data found.

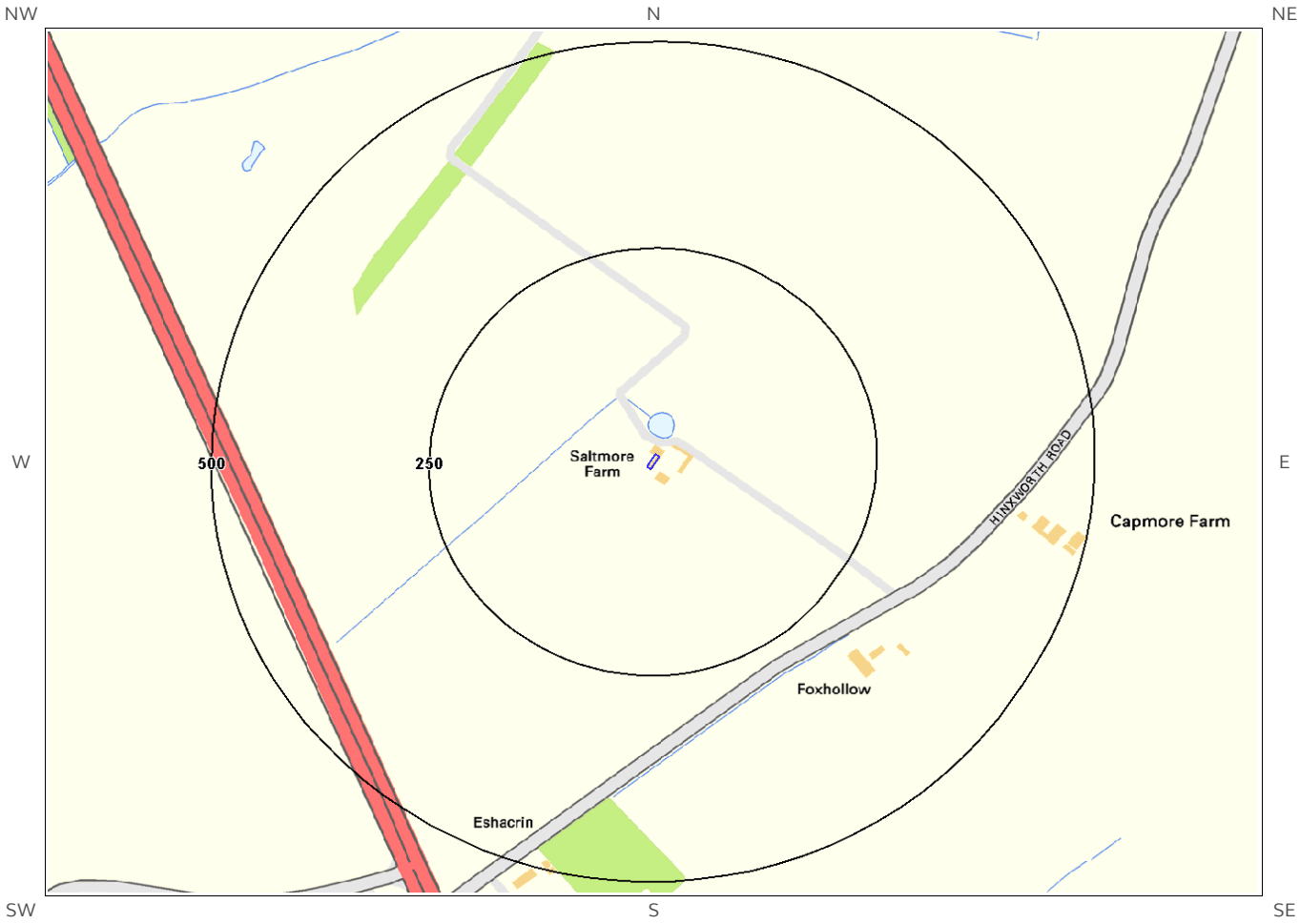
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site? 0

Database searched and no data found.

---

3. Landfill and Other Waste Sites Map



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Site Outline

250
500
Search Buffers (m)

EA/NRW Active Landfill

EA/NRW Historic Landfill

BGS / DoE Survey Landfill

Historic and Planned Waste Sites

EA/NRW Licensed Waste Site

Local Authority/Historical Mapping Landfill Records

3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

1

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1038	SW	522100 237900	Site Address: Dingemans, Taylors Road, Stotfold Waste Licence: - Site Reference: 14/1990 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: Great North Road, Stotfold, Hitchin, Hertfordshire Operator: - Licence Holder: Spring Time Nursery First Recorded: 31-May-1990 Last Recorded: 31-Dec-1990

3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

0

Database searched and no data found.

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

0

Database searched and no data found.

3.2 Other Waste Sites

3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

0

Database searched and no data found.

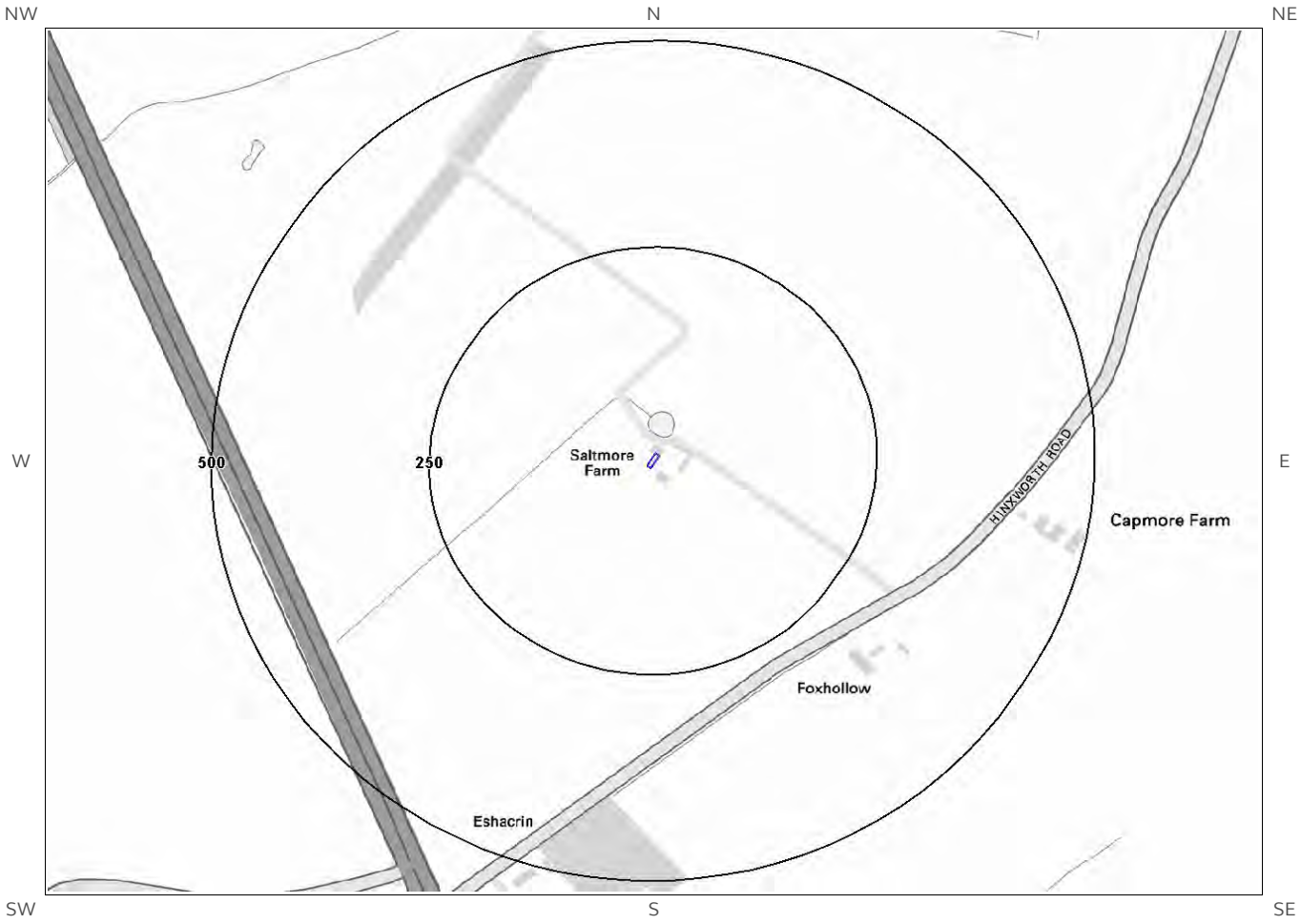
3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

0

Database searched and no data found.

---

4. Current Land Use Map



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Site Outline

250
500
Search Buffers (m)

Current Industrial Sites

Petrol & Fuel Sites

Electricity Transmission Cables

Gas Transmission Pipelines

4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 0

Database searched and no data found.

4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: 0

Database searched and no data found.

4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site: 0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site: 0

Database searched and no data found.

---

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

5.2 Superficial Ground and Drift Geology

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
GFDMP-XSV	GLACIOFLUVIAL DEPOSITS, MID PLEISTOCENE	SAND AND GRAVEL

5.3 Bedrock and Solid Geology

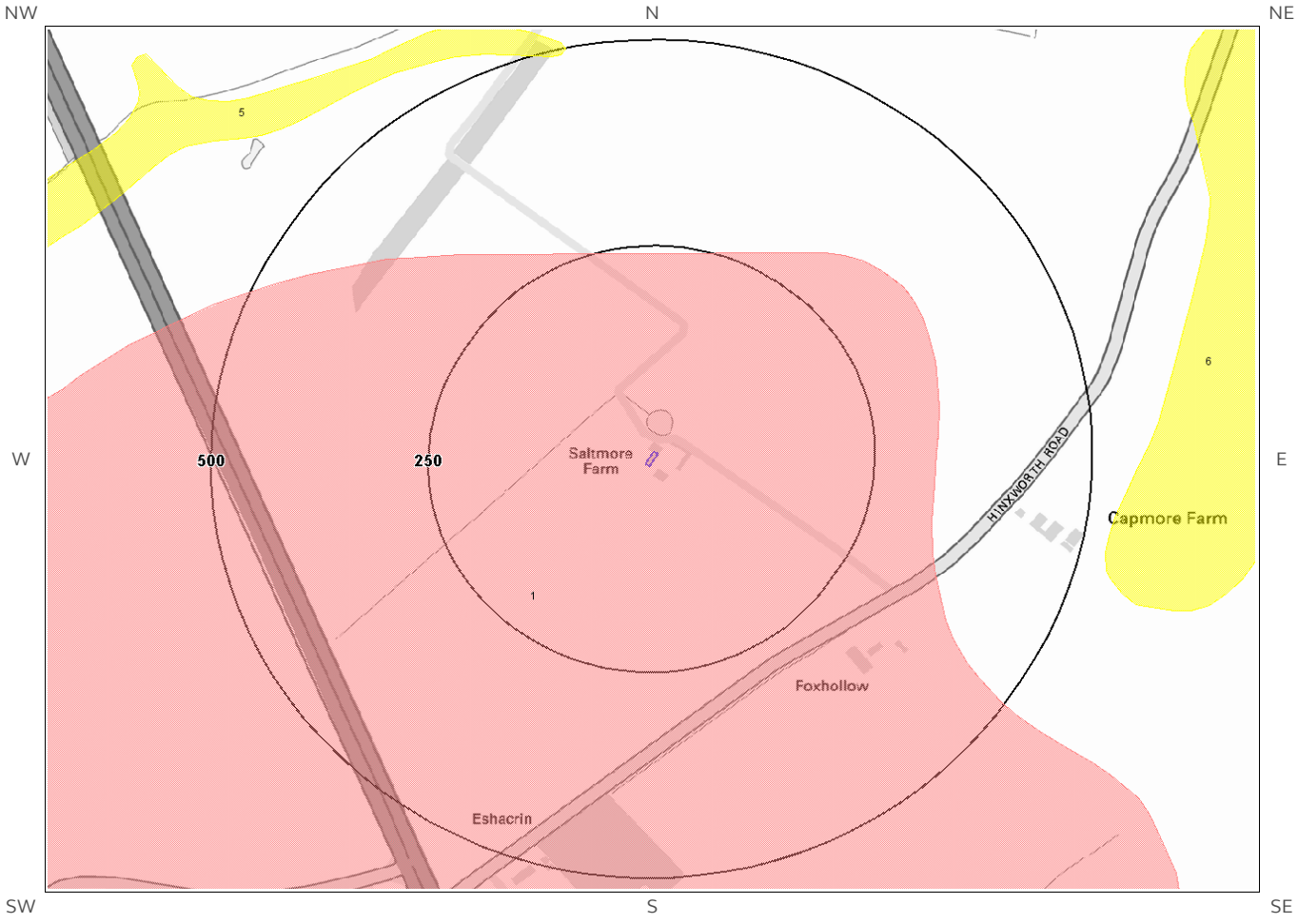
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
WMCH-CHLK	WEST MELBURY MARLY CHALK FORMATION	CHALK

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

6a. Aquifer Within Superficial Geology



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Site Outline

250
500
Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

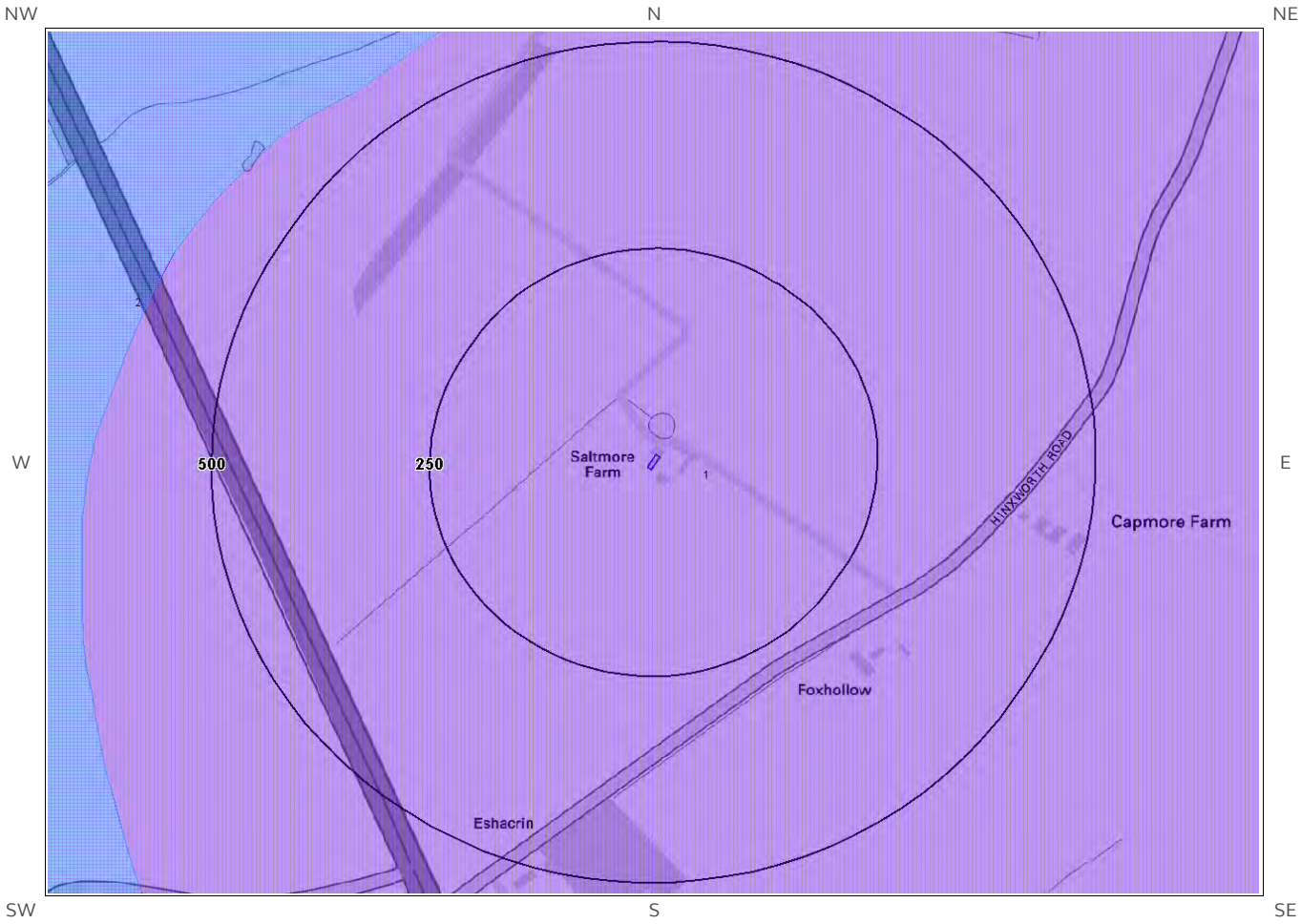
Secondary (B) Aquifer - Lower Permeability Layers

Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

6b. Aquifer Within Bedrock Geology and Abstraction Licenses



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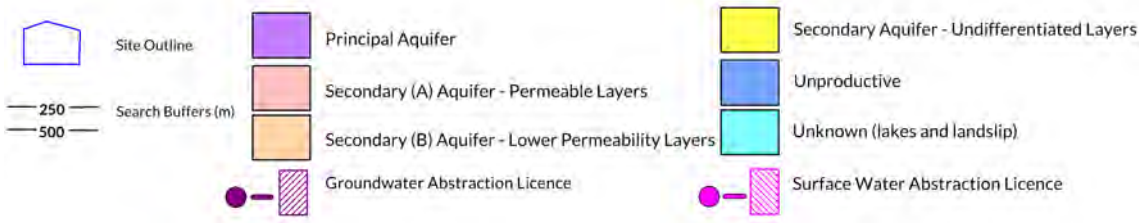
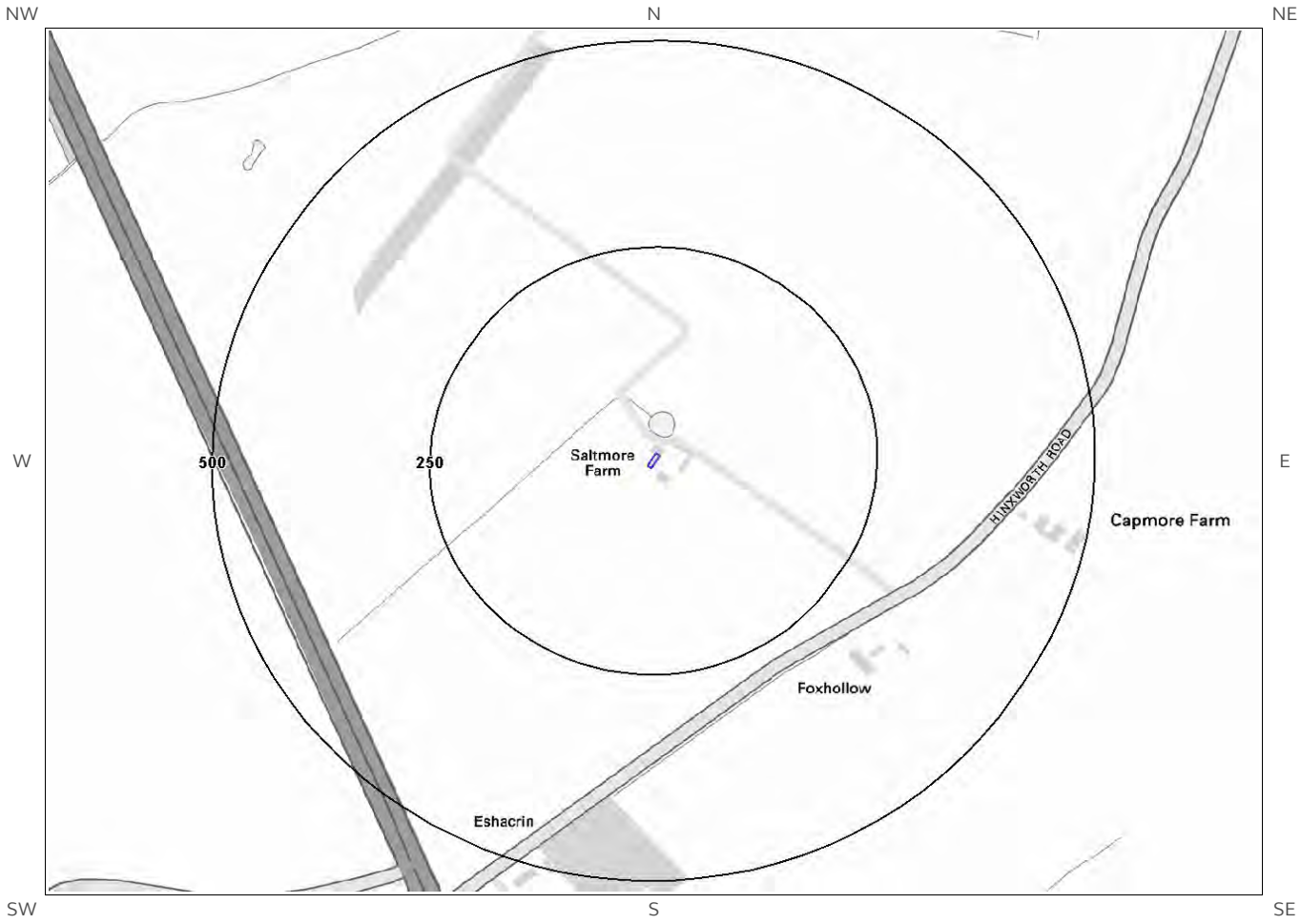


6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses



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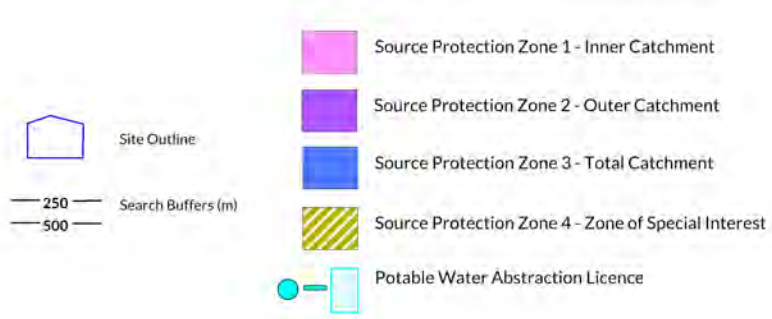
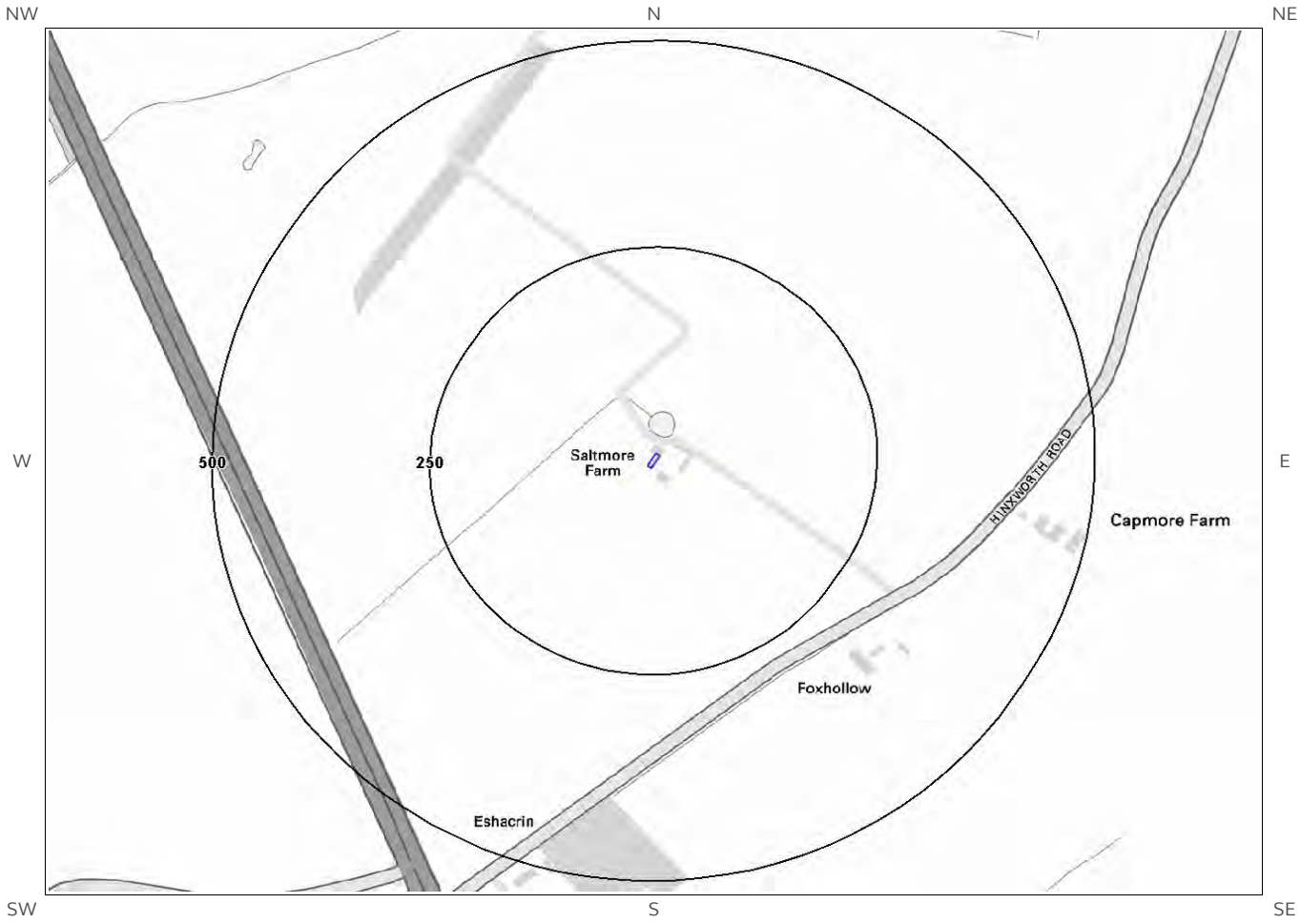


6d. Hydrogeology – Source Protection Zones within confined aquifer



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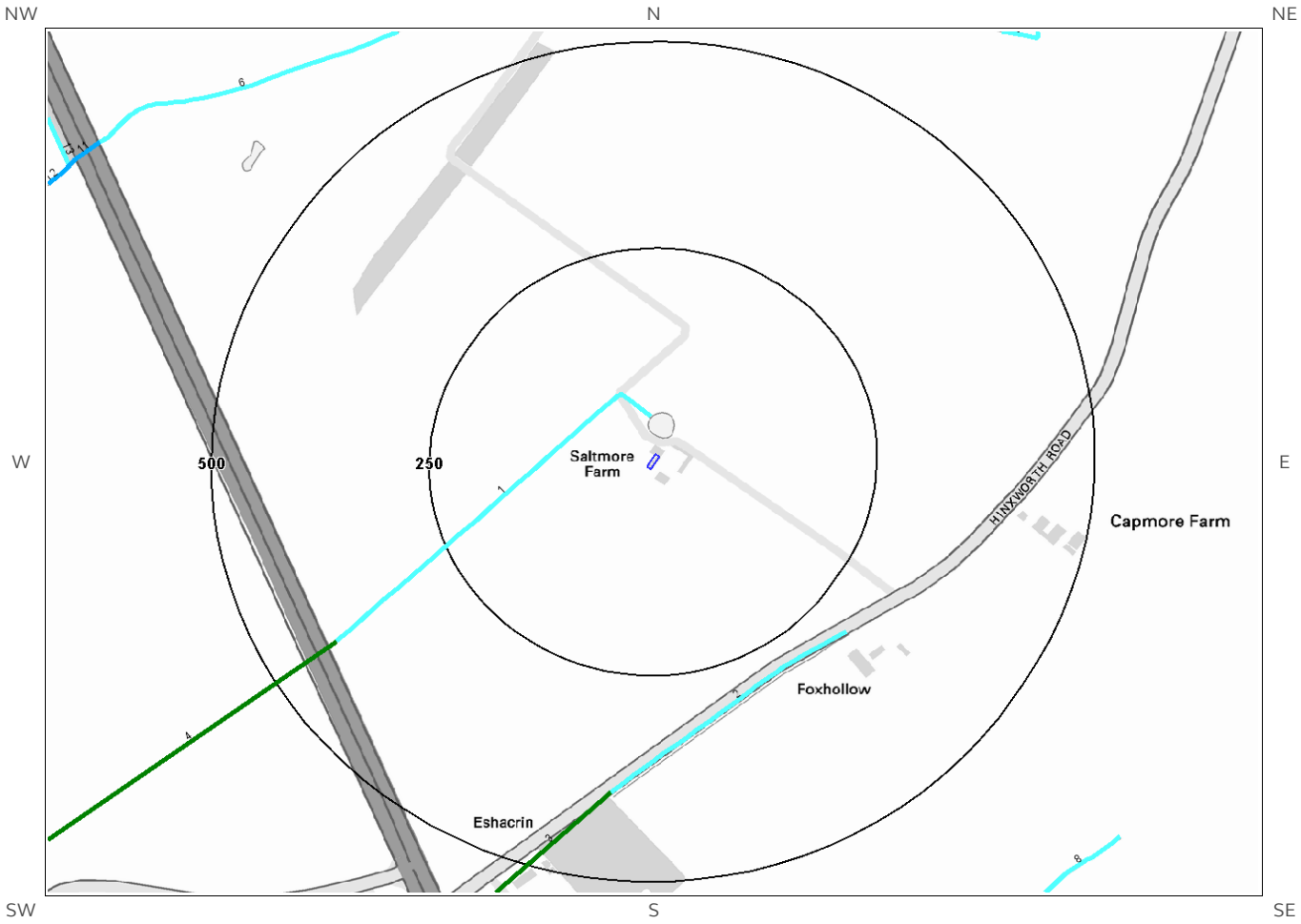
6e. Hydrology – Detailed River Network and River Quality



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Site Outline

250
500
Search Buffers (m)

Primary River
Secondary River
Tertiary River
Lake/Reservoir
Underground River (inferred)
General Quality Assessment: Biology
General Quality Assessment: Chemistry

Canal
Canal Tunnel
Culvert
Multiple Channel Culvert
Underground River (Potential Sewer)
Underground River (local knowledge)

6.Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Are there records of strata classification within the superficial geology at or in proximity to the property? Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
5	493	N	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

6.2 Aquifer within Bedrock Deposits

Are there records of strata classification within the bedrock geology at or in proximity to the property? Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

6.3 Groundwater Abstraction Licences

Are there any Groundwater Abstraction Licences within 2000m of the study site? No

Database searched and no data found.

6.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 2000m of the study site? Yes

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details	
Not shown	1196	SE	523400 238100	Status: Historical Licence No: 6/33/14/*S/0065 Details: Spray Irrigation - Direct Direct Source: Surface Water Source Of Supply Point: Cat Ditch - Newnham '5' Data Type: Point Name: A E & W A FARR LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 1/5/1993 Expiry Date: 30/09/2002 Issue No: 100 Version Start Date: 1/5/1993 Version End Date:
Not shown	1871	W	519500 238500	Status: Active Licence No: 6/33/14/*S/0011 Details: Spray Irrigation - Direct Direct Source: Surface Water Source Of Supply Point: River Ivel N Of Church End Data Type: Line Name: L V DAVISON & SON	Annual Volume (m^3): 13635 Max Daily Volume (m^3): 1363.63 Application No: - Original Start Date: 1/12/1967 Expiry Date: - Issue No: 101 Version Start Date: 24/2/2000 Version End Date:

6.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site? No

Database searched and no data found.

6.6 Source Protection Zones

Are there any Source Protection Zones within 500m of the study site? No

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Are there any Source Protection Zones within the Confined Aquifer within 500m of the study site? No

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Is there any Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site? Yes

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Major Aquifer/Intermediate Leaching Potential	I1	Soils which can possibly transmit a wide range of pollutants.
84	N	Major Aquifer/High Leaching Potential	H1	Soils which readily transmit liquid discharges because they are shallow or susceptible to rapid flow directly to rock, gravel or groundwater.

6.9 River Quality

Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site? Yes

6.9.1 Biological Quality:

Biological Quality data describes water quality in terms of 83 groups of macroinvertebrates, some of which are pollution sensitive. The results are graded from A ('Very Good') to F ('Bad').

The following Biological Quality records are shown on the Hydrology Map (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
Not shown	914	SW	522100 238400	River Name: Ivel Reach: Newnham Road Bridge ..... Confl. Ivel End/Start of Stretch: End of Stretch NGR	B	B	B	A	A

6.9.2 Chemical Quality:

Chemical quality data is based on the General Quality Assessment Headline Indicators scheme (GQAHI). In England, each chemical sample is measured for ammonia and dissolved oxygen. In Wales, the samples are measured for biological oxygen demand (BOD), ammonia and dissolved oxygen. The results are graded from A ('Very Good') to F ('Bad').

The following Chemical Quality records are shown on the Hydrology Map (6e):

					Chemical Quality Grade				
ID	Distance (m)	Direction	NGR	River Quality Grade	2005	2006	2007	2008	2009
Not shown	914	SW	522100 238400	River Name: Cat Ditch Reach: Newnham Road Bridge .. Confl. Ivel End/Start of Stretch: End of Stretch NGR	B	B	A	A	A

6.10 Detailed River Network

Are there any Detailed River Network entries within 500m of the study site? Yes

The following Detailed River Network records are represented on the Hydrology Map (6e):

ID	Distance (m)	Direction	Details	
1	46	N	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
2	284	SE	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
3	394	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined
4	415	SW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined

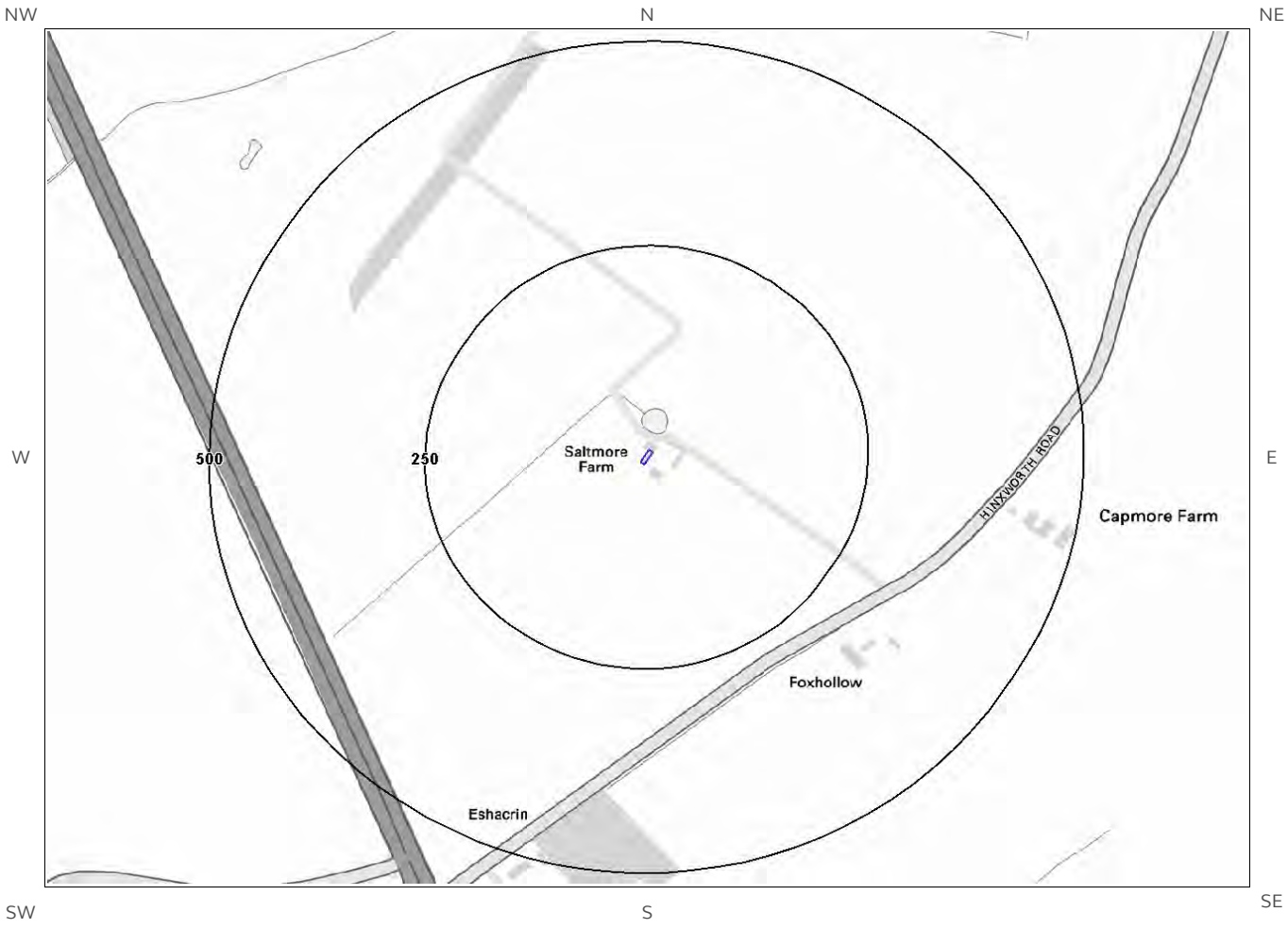
6.11 Surface Water Features

Are there any surface water features within 250m of the study site? Yes

The following surface water records are not represented on mapping:

Distance (m)	Direction
46	N
81	NW

7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



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Site Outline

100
250
Search Buffers (m)

Zone 2 Floodplain

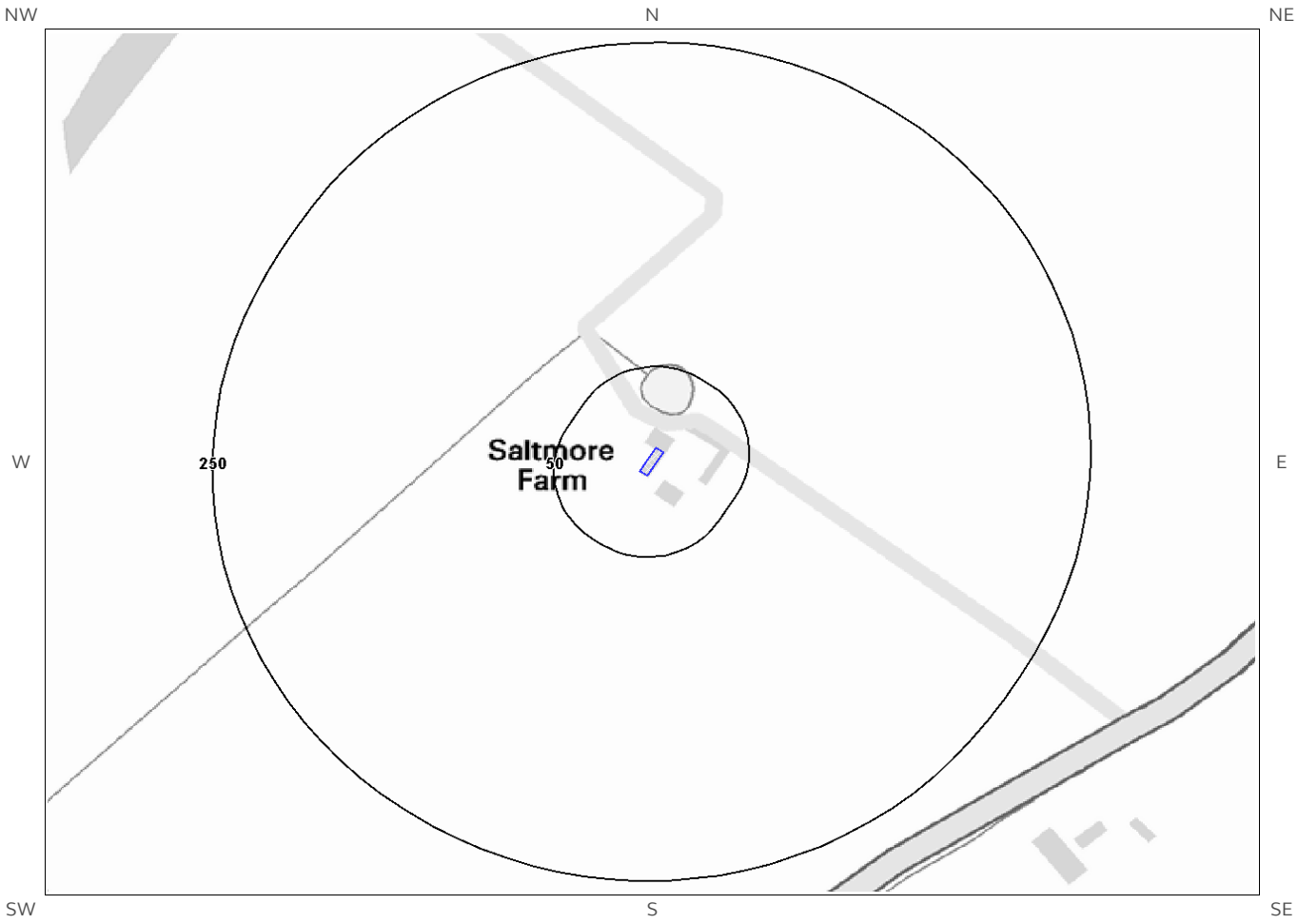
Zone 3 Floodplain

Flood Defences

Area used for Flood Storage

Area Benefiting from Flood Defences

7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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Site Outline

100
250
Search Buffers (m)

RoFRaS Rating

Very Low

Low

Medium

High

7 Flooding

7.1 River and Coastal Zone 2 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 2 floodplain? No

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

Database searched and no data found.

7.2 River and Coastal Zone 3 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 3 floodplain? No

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

Database searched and no data found.

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

What is the highest risk of flooding onsite? Very Low

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

7.4 Flood Defences

Are there any Flood Defences within 250m of the study site? No

Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site? No

7.6 Areas benefiting from Flood Storage

Are there any areas used for Flood Storage within 250m of the study site? No

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? Yes

Does this relate to Clearwater Flooding or Superficial Deposits Flooding? Clearwater Flooding

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?

Potential at Surface

Where potential for groundwater flooding to occur at surface is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

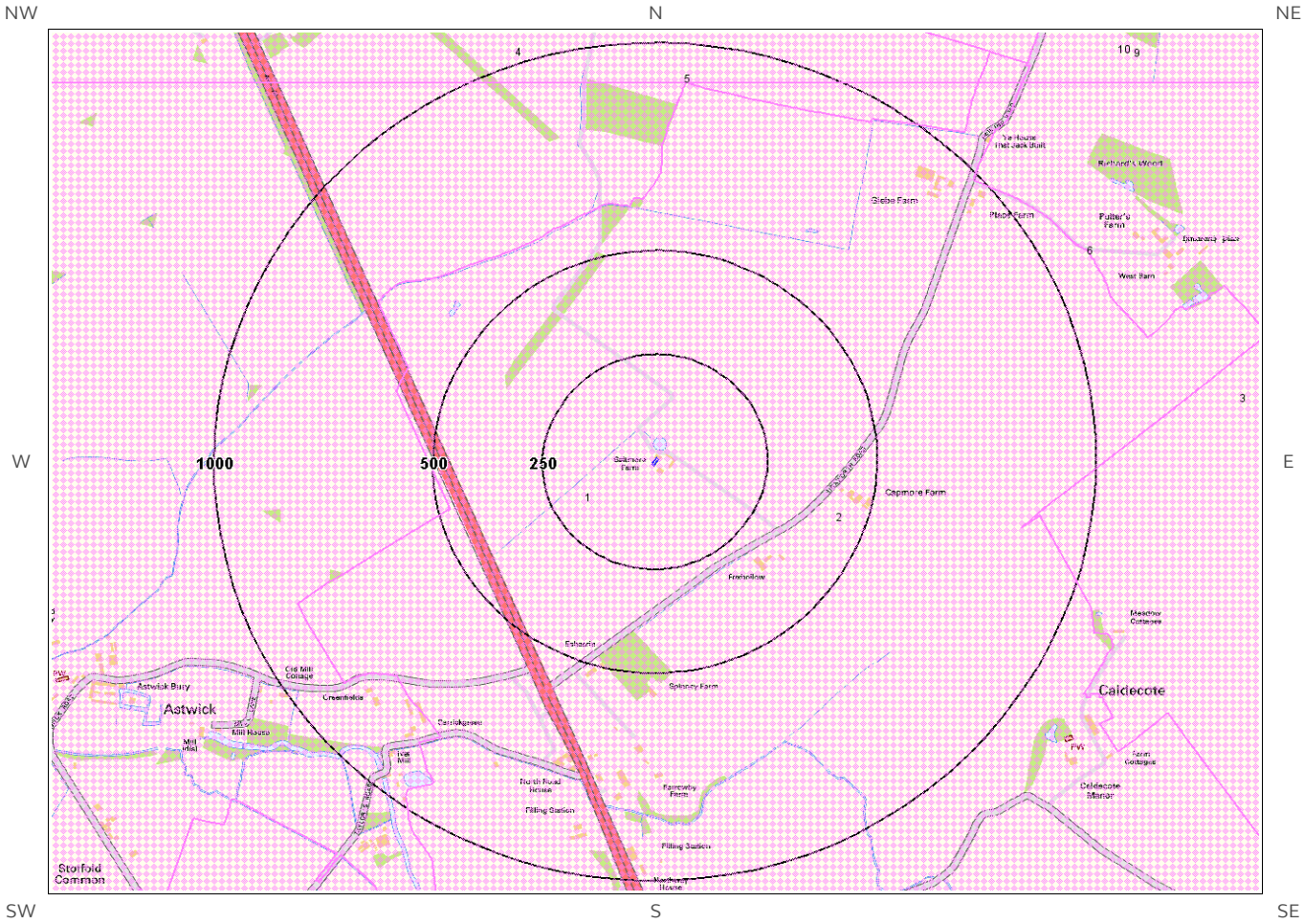
7.8 Groundwater Flooding Confidence Areas

What is the British Geological Survey confidence rating in this result? High

Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

8. Designated Environmentally Sensitive Sites Map



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- Site Outline
- 100 / 250 Search Buffers (m)
- AONB
- National Park
- SSSI
- Special Protection Areas
- Nitrate Vulnerable Zones
- Green Belt
- Environmentally Sensitive Areas
- Special Areas of Conservation
- World Heritage Sites
- Nitrate Sensitive Areas
- Ancient Woodland
- National Nature Reserve
- Local Nature Reserves
- Ramsar Sites

8. Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site?	Yes

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

0

Database searched and no data found.

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

8.6 Records of Ancient Woodland within 2000m of the study site:

0

Database searched and no data found.

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

0

Database searched and no data found.

8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

14

The following Nitrate Vulnerable Zone records produced by DEFRA are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NVZ Name	Data Source
1	0	On Site	Existing	DEFRA
2	0	On Site	Existing	DEFRA
3	845	E	Existing	DEFRA
4	903	N	Existing	DEFRA
5	906	N	Existing	DEFRA
6	1103	NE	Existing	DEFRA
7	1107	E	Existing	DEFRA
8	1128	SE	Existing	DEFRA
9	1164	NE	Existing	DEFRA
10	1185	NE	Existing	DEFRA
Not shown	1666	N	Existing	DEFRA
Not shown	1669	N	Existing	DEFRA
Not shown	1671	N	Existing	DEFRA
Not shown	1933	SE	Existing	DEFRA

8.14 Records of Green Belt land within 2000m of the study site:

0

Database searched and no data found.

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a Groundsure Geo Insight, available from our website. The following information has been found:

9.1.1 Shrink Swell

What is the maximum Shrink-Swell*[*] hazard rating identified on the study site? Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.

9.1.2 Landslides

What is the maximum Landslide* hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

9.1.3 Soluble Rocks

What is the maximum Soluble Rocks* hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Significant soluble rocks are present. Problems unlikely except with considerable surface or subsurface water flow. No special actions required to avoid problems due to soluble rocks. No special ground investigation required or increased construction costs are likely. An increase in financial risk due to potential problems with soluble rocks is unlikely.

* This indicates an automatically generated 50m buffer and site.

9.1.4 Compressible Ground

What is the maximum Compressible Ground* hazard rating identified on the study site? Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

9.1.5 Collapsible Rocks

What is the maximum Collapsible Rocks* hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

9.1.6 Running Sand

What is the maximum Running Sand*[*] hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

* This indicates an automatically generated 50m buffer and site.

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

9.2.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing
ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

10. Mining

10.1 Coal Mining

Are there any coal mining areas within 75m of the study site? No

Database searched and no data found.

10.2 Non-Coal Mining

Are there any Non-Coal Mining areas within 50m of the study site boundary? Yes

The following non-coal mining information is provided by the BGS:

Distance (m)	Direction	Name	Commodity	Assessment of likelihood
0.0	On Site	Not available	Chalk	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered

Past underground mine workings are uncommon, localised and of limited area. The rock types present in this area are such that minor mineral veins may be present within them on which it is possible that there have been attempts to work these by underground methods and/or it is possible that small scale underground extraction of other materials may have occurred. All such occurrences are likely to be restricted in size and infrequent. It should be noted, however, that there is always the possibility of the existence of other sub-surface excavations, such as wells, cess pits, follies, air raid shelters/bunkers and other military structures etc. that could affect surface ground stability but which are outside the scope of this dataset. However, if in a coalfield area you should still consider a Coal Authority mining search for the area of interest.

10.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site? No
Guidance: No Guidance Required.

Contact Details

Groundsure Helpline
Telephone: 08444 159 000
info@groundsure.com

British Geological Survey Enquiries
Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk

Environment Agency
National Customer Contact Centre, PO Box 544
Rotherham, S60 1BY
Tel: 03708 506 506
Web: **www.environment-agency.gov.uk**
Email: enquiries@environment-agency.gov.uk

Public Health England
Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
www.gov.uk/phe
Email:**enquiries@phe.gov.uk**
Main switchboard**: 020 7654 8000**

The Coal Authority
200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Ordnance Survey
Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505

Local Authority
Authority: North Hertfordshire District Council
Phone: 01462 474000
Web: http://www.north-herts.gov.uk/
Address: Council Offices, Gernon Road, Letchworth Garden Ci,

Gemapping PLC
Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444

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https://www.groundsure.com/terms-and-conditions-sept-2016

Groundsure
LOCATION INTELLIGENCE

Goldfinch Environmental Limited

19, Palmer Street,
Bury St Edmunds,
Suffolk, IP31 3BZ

Groundsure Reference:	GS-2391-4770268
Your Reference:	0518-ds
Report Date	28 Feb 2018
Report Delivery Method:	Email - pdf

Geo Insight

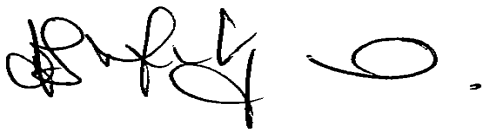
Address: SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Geo Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,



Managing Director
Groundsure Limited

Enc.
Groundsure Geo Insight

Geo Insight

Address:	**SALTMORE FARM, NEW INN ROAD, HINXWORTH, SG7 5EZ**
Date:	**28 Feb 2018**
Reference:	**GS-2391-4770268**
Client:	**Goldfinch Environmental Limited**

NW N NE

W E



SW S SE

Aerial Photograph Capture date:	16-Apr-2015
Grid Reference:	522715,239088
Site Size:	0.01ha

Groundsure
LOCATION INTELLIGENCE

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Overview of Findings

The Groundsure Geo Insight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 and 1:10,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Non-coal mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and Groundsure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Geology 1:10,000 Scale		
1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	No
	1.2.2 Are there any records of landslip within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and linear features	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale?	No

Section 2: Geology 1:50,000 Scale		
2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	No
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	No
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	Yes
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	Yes
	2.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features	2.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	2.3.2 Are there any records relating to permeability of bedrock ground within the study site boundary?	Yes
	2.3.3 Are there any records of linear features within 500m of the study site boundary?	No

Section 3: Radon

3. Radon	3.1Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
	3.2Radon Protection	No radon protective measures are necessary.

Section 4: Ground Workings	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	0	1	0	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
4.3 Current Ground Workings	0	0	0	0	0

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	0	0	0
5.2 Coal Mining	0	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
5.4 Non-Coal Mining*	1	0	0	0	1
5.5 Non–Coal Mining Cavities	0	0	0	0	0
5.5 Natural Cavities	0	0	0	0	0

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Tin Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0

Section 6: Natural Ground Subsidence	On-site
6.1 Shrink-Swell Clay	Negligible
6.2 Landslides	Very Low
6.3 Ground Dissolution of Soluble Rocks	Very Low
6.4 Compressible Deposits	Negligible
6.5 Collapsible Deposits	Very Low
6.5 Running Sand	Very Low

Section 7: Borehole Records	On-site	0-50m	51-250
7 BGS Recorded Boreholes	0	0	0

Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250
8 Records of Background Soil Chemistry	1	0	0

Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500
9.1 Tunnels	0	0	0	Not Searched
9.2 Historical Railway and Tunnel Features	0	0	0	Not Searched
9.3 Historical Railways	0	0	0	Not Searched
9.4 Active Railways	0	0	0	Not Searched
9.5 Railway Projects	0	0	0	0

1:10,000 Scale Availability



1_10,000 Availability Legend

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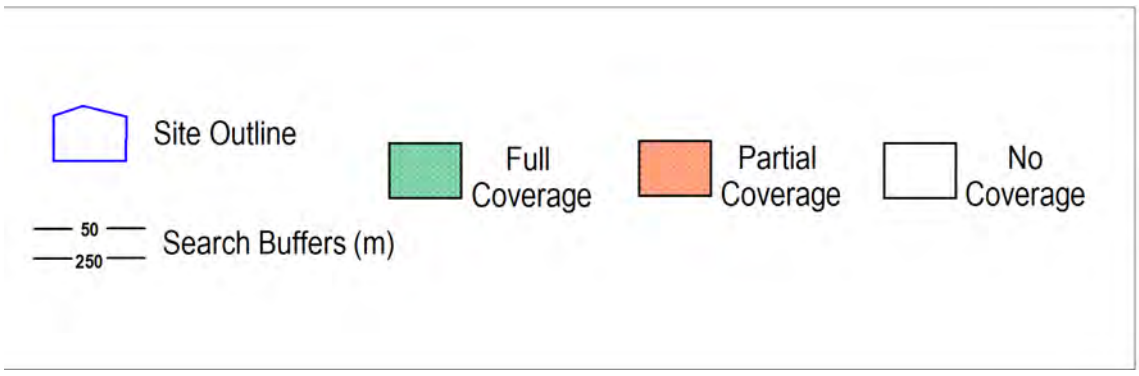


Availability of 1:10,000 Scale Geology Mapping

The following information represents the availability of the key components of the 1:10,000 scale geological data.

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	No deposits are mapped	No coverage	No coverage	No coverage

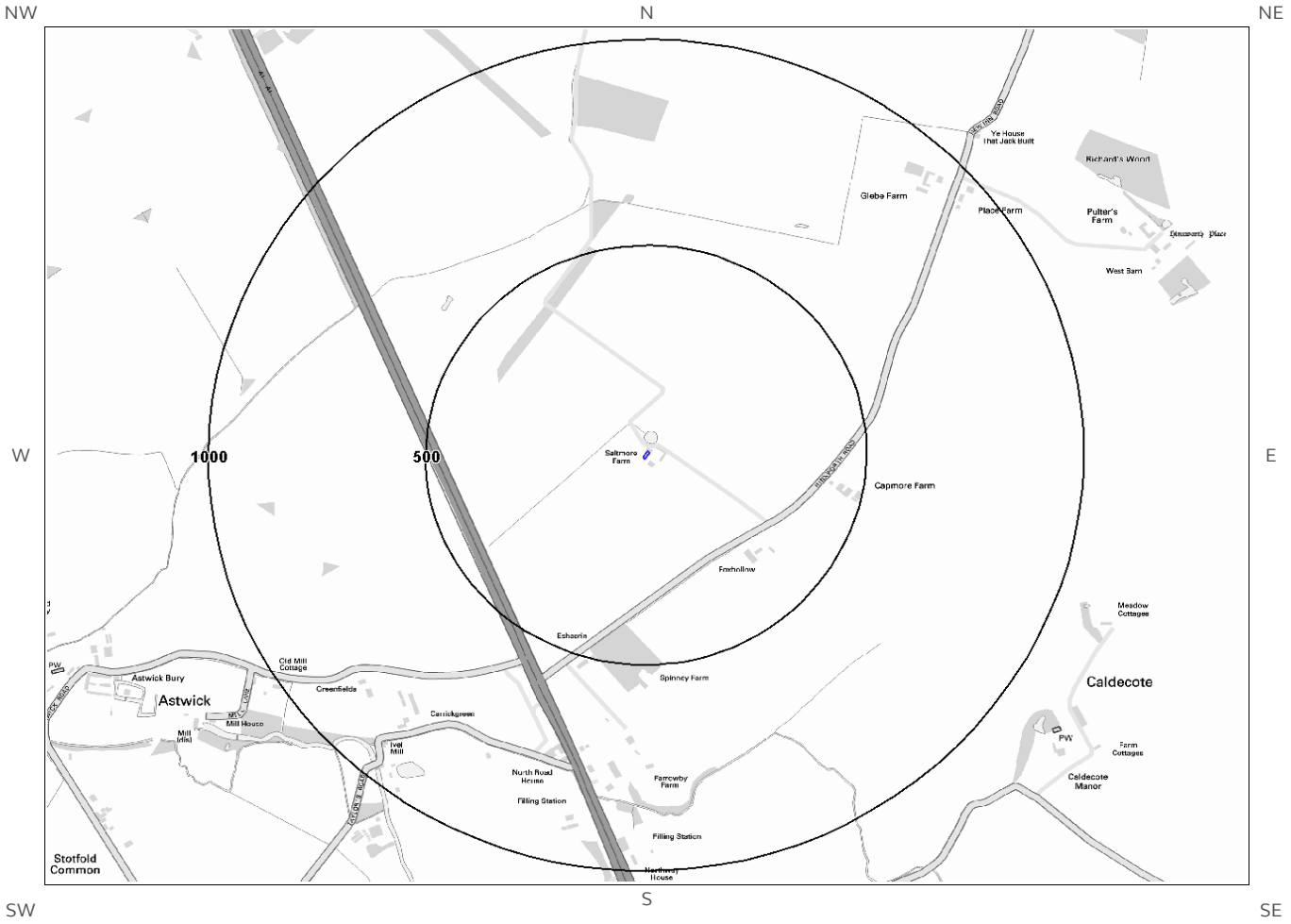
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not all themes are mapped or available on every map sheet. Therefore a coverage layer showing the availability of the four themes is presented above.

The definitions of coverage are as follows:

Geology	Full Coverage	Partial Coverage	No Coverage
Bedrock	The whole tile has been mapped	Some but not all the tile has been mapped	No coverage
Superficial	The whole tile has been mapped	Some but not all of the tile has been mapped	No coverage
Artificial	Some deposits are mapped on this tile	-	No deposits are mapped
Mass Movement	Some deposits are mapped on this tile	-	No coverage

1 Geology (1:10,000 scale).

1.1 Artificial Ground map (1:10,000 scale)



Artificial Ground Legend

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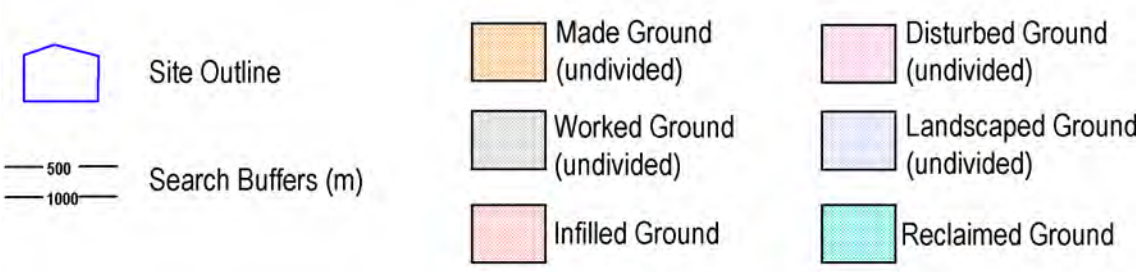


1. Geology 1:10,000 scale

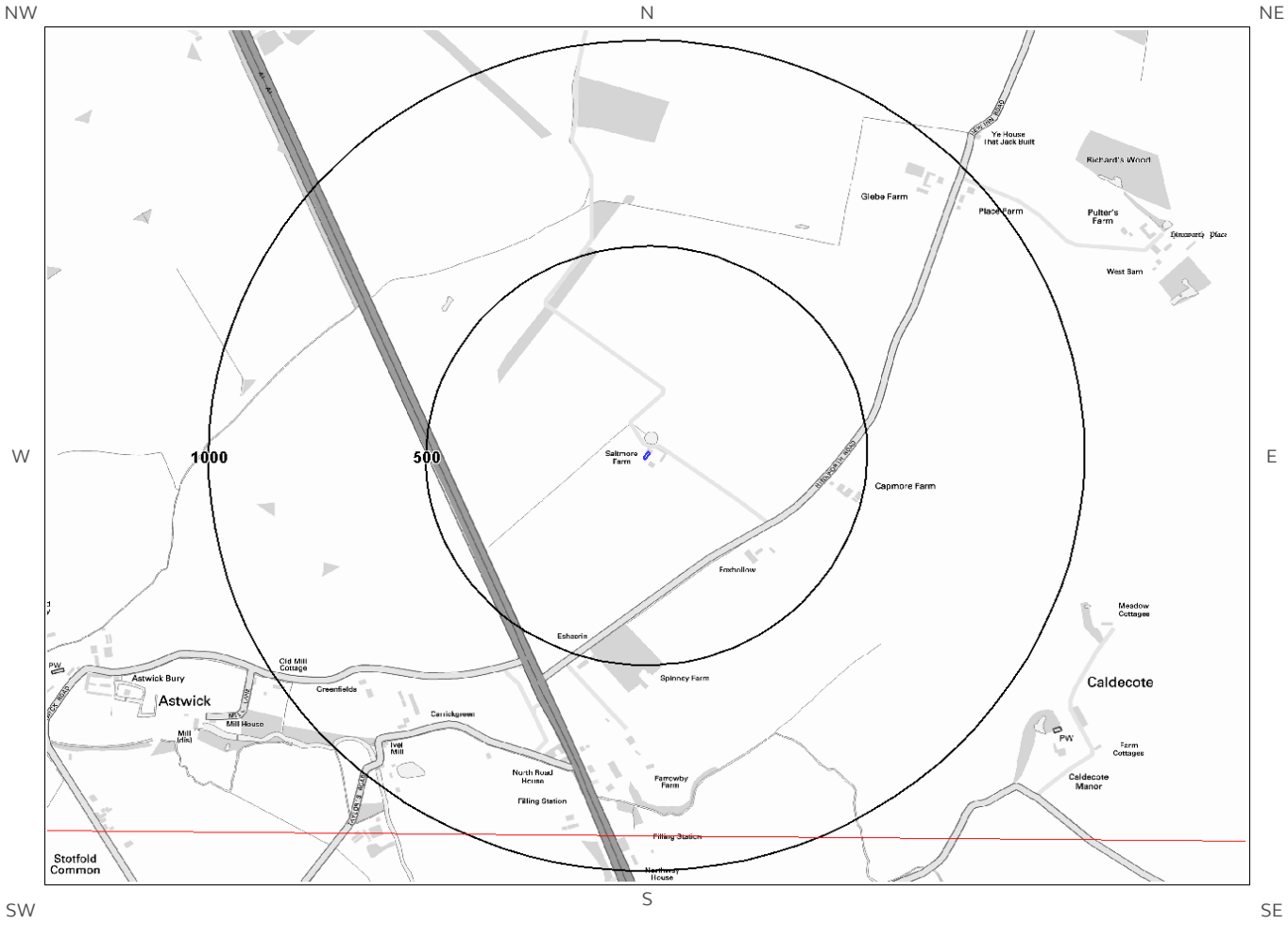
1.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

Are there any records of Artificial/ Made Ground within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found.

1.2 Superficial Deposits and Landslips map (1:10,000 scale)



Artificial Ground Legend

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Site Outline

500
1000
Search Buffers (m)

1.2 Superficial Deposits and Landslips

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found.

1.2.2 Landslip

Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale?

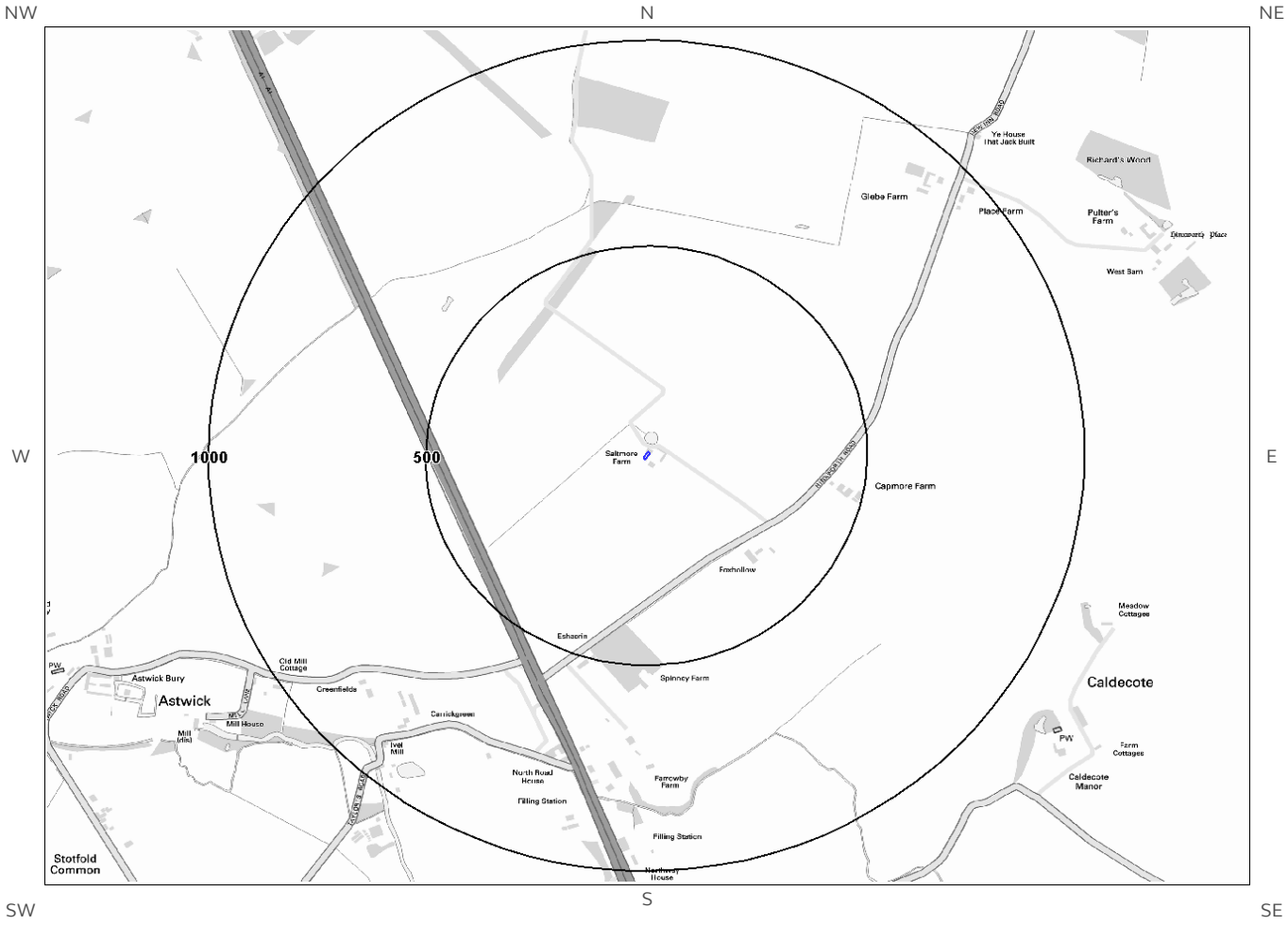
No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:10,000 scale

This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

1.3 Bedrock and linear features map (1:10,000 scale)



Bedrock and linear features Legend

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Site Outline

500
1000
Search Buffers (m)

1.3 Bedrock and linear features

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

1.3.1 Bedrock/ Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary at 1:10,000 scale.

Database searched and no data found at this scale.

1.3.2 Linear features

Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found at this scale.

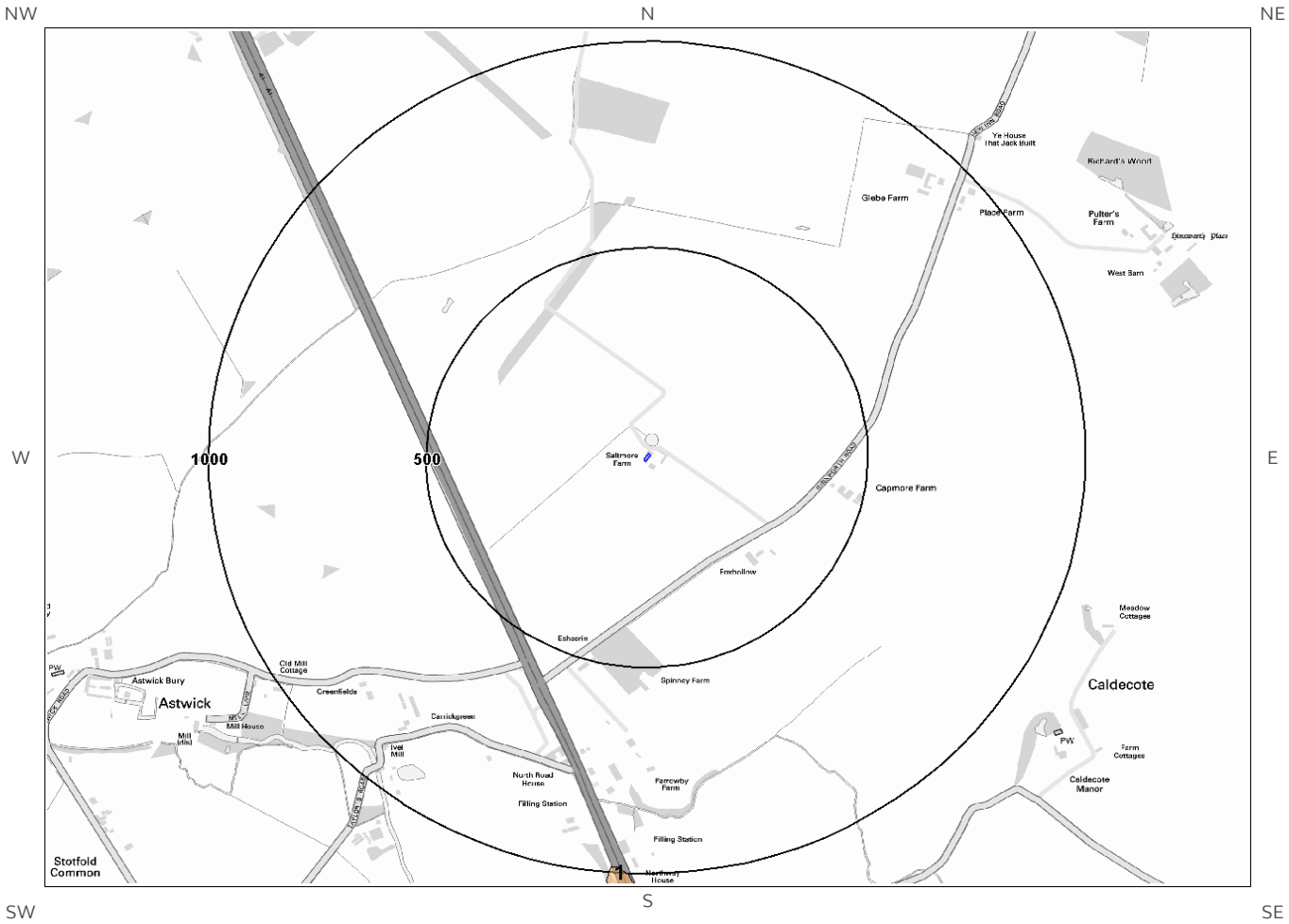
The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of great Britain at 1:10,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

---

2 Geology 1:50,000 Scale

2.1 Artificial Ground map



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Site Outline

500
1000
Search Buffers (m)

Made Ground (undivided)

Disturbed Ground (undivided)

Worked Ground (undivided)

Landscaped Ground (undivided)

Infilled Ground

Reclaimed Ground

2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 204

2.1.1 Artificial/ Made Ground

Are there any records of Artificial/ Made Ground within 500m of the study site boundary? No

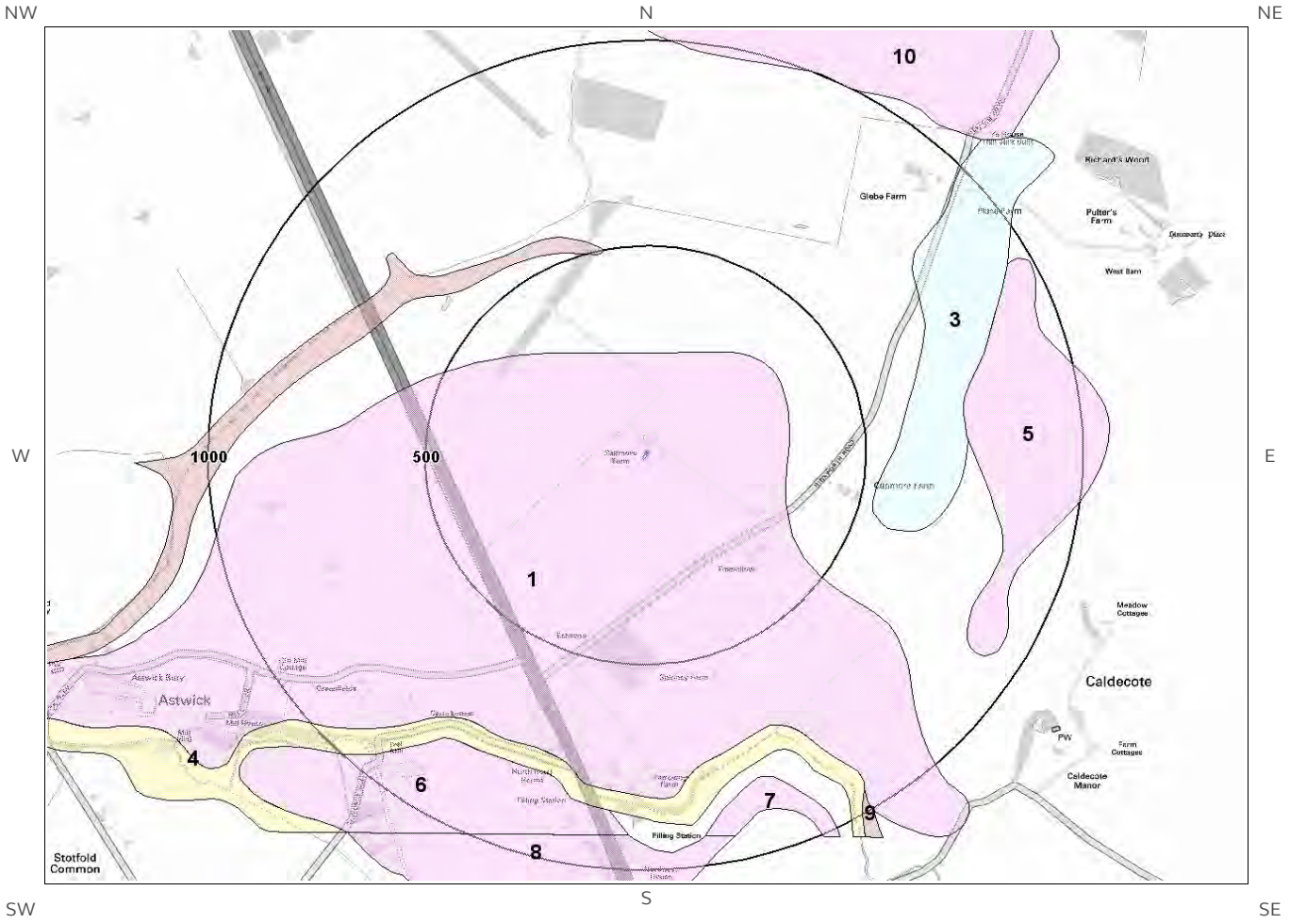
Database searched and no data found.

2.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.

2.2 Superficial Deposits and Landslips map (1:50,000 scale)



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Site Outline

500
1000
Search Buffers (m)

2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? Yes

ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	GFDMP-XSV	GLACIOFLUVIAL DEPOSITS, MID PLEISTOCENE	SAND AND GRAVEL
2	493.0	N	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL

2.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Intergranular	Very High	High

2.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

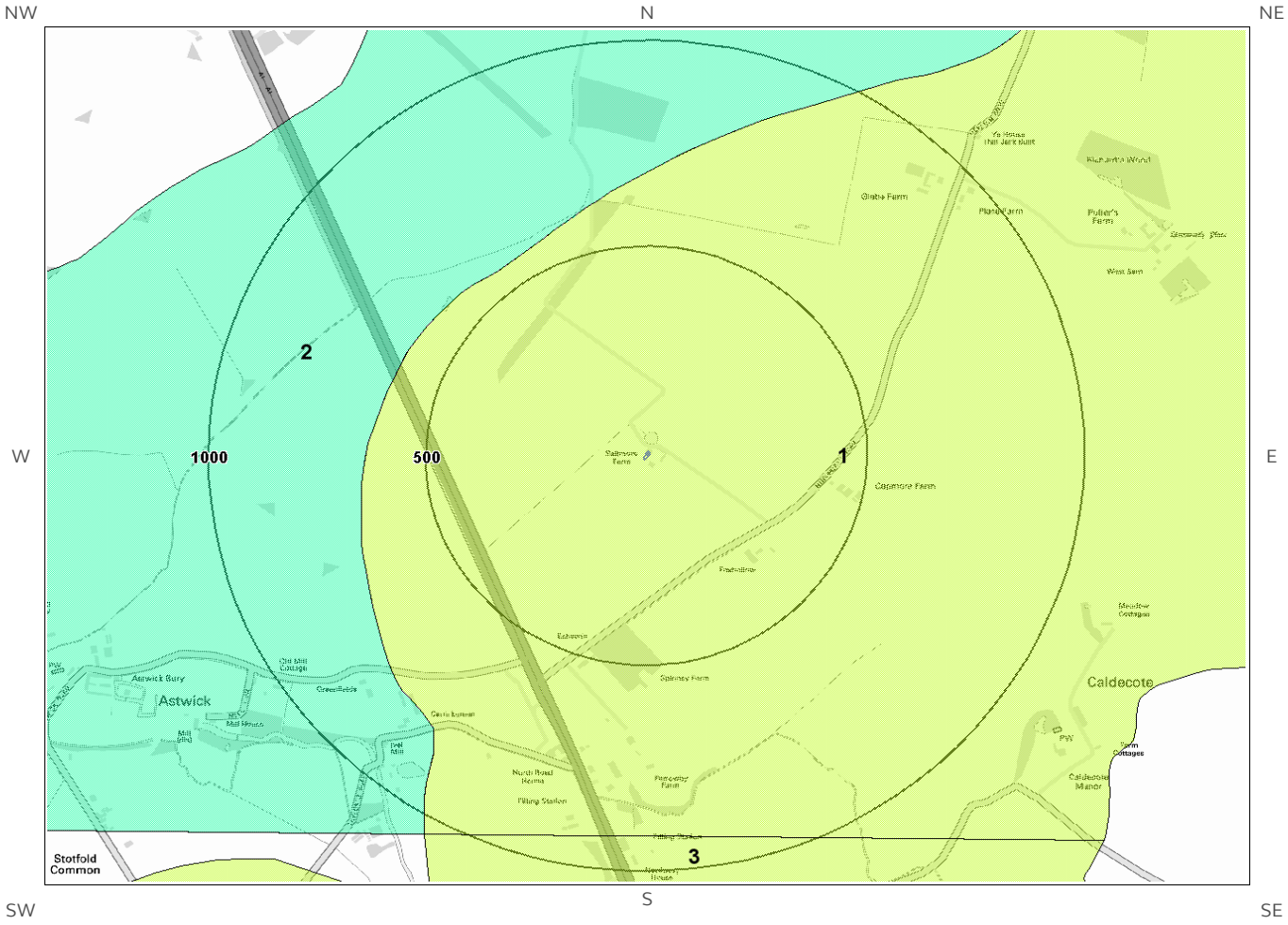
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

Are there any records relating to permeability of landslips within the study site boundary? No

Database searched and no data found.

2.3 Bedrock and linear features map (1:50,000 scale)



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Site Outline

500
1000
Search Buffers (m)

2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 204

2.3.1 Bedrock/Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary:

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	WMCH-CHLK	WEST MELBURY MARLY CHALK FORMATION - CHALK	CENOMANIAN

2.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site boundary? Yes

Distance	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Fracture	Very High	High

2.3.3 Linear features

Are there any records of linear features within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nation wide coverage.

3 Radon Data

3.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

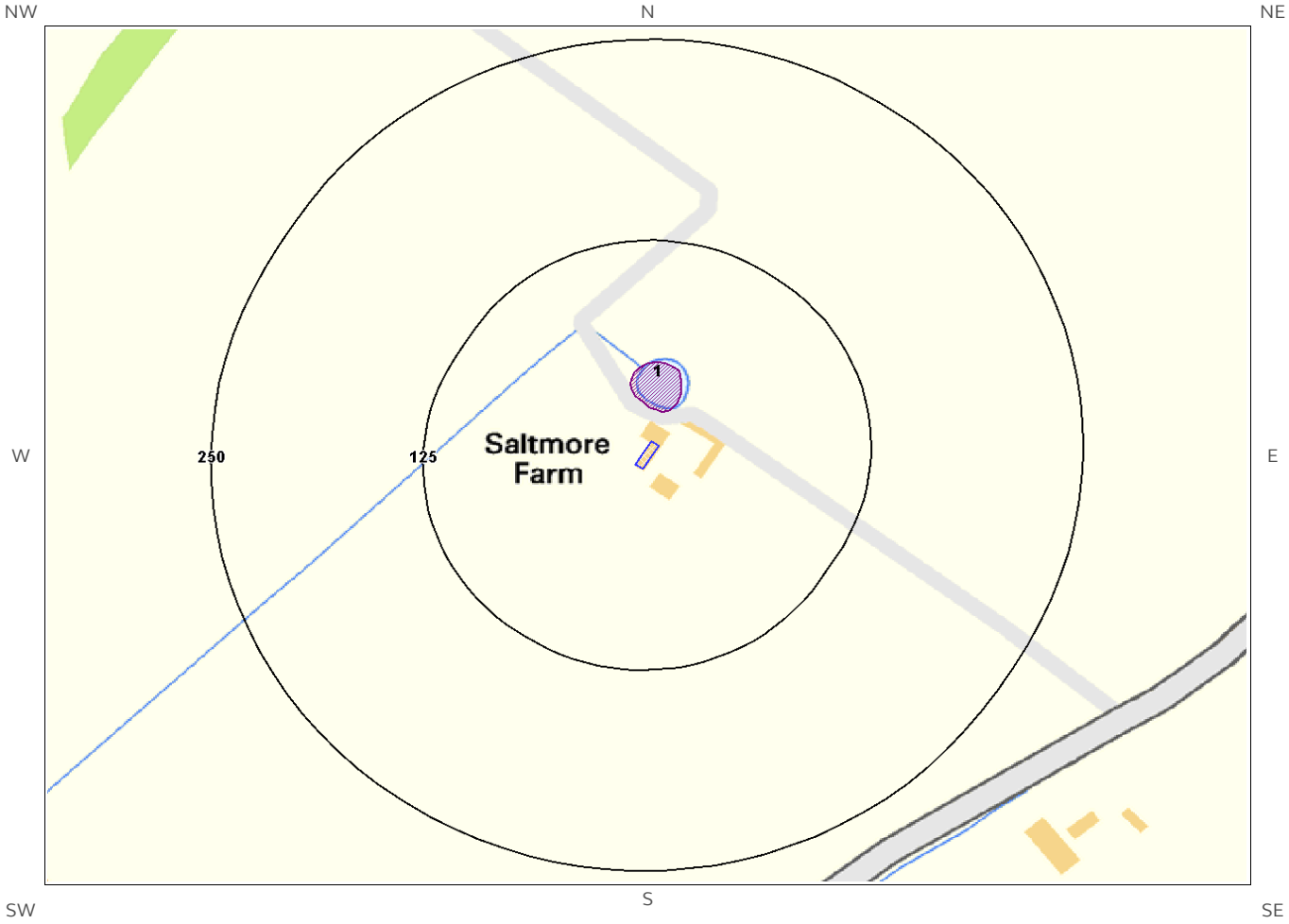
The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

3.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

---

4 Ground Workings map



Ground Workings Legend

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Site Outline

125
250
Search Buffers (m)

Historic Surface Ground Workings

Historic Underground Workings

Current Ground Workings

4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on Groundsure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Use	Date
1	19.0	N	522720 239130	Pond	1899

4.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the Groundsure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? No

Database searched and no data found.

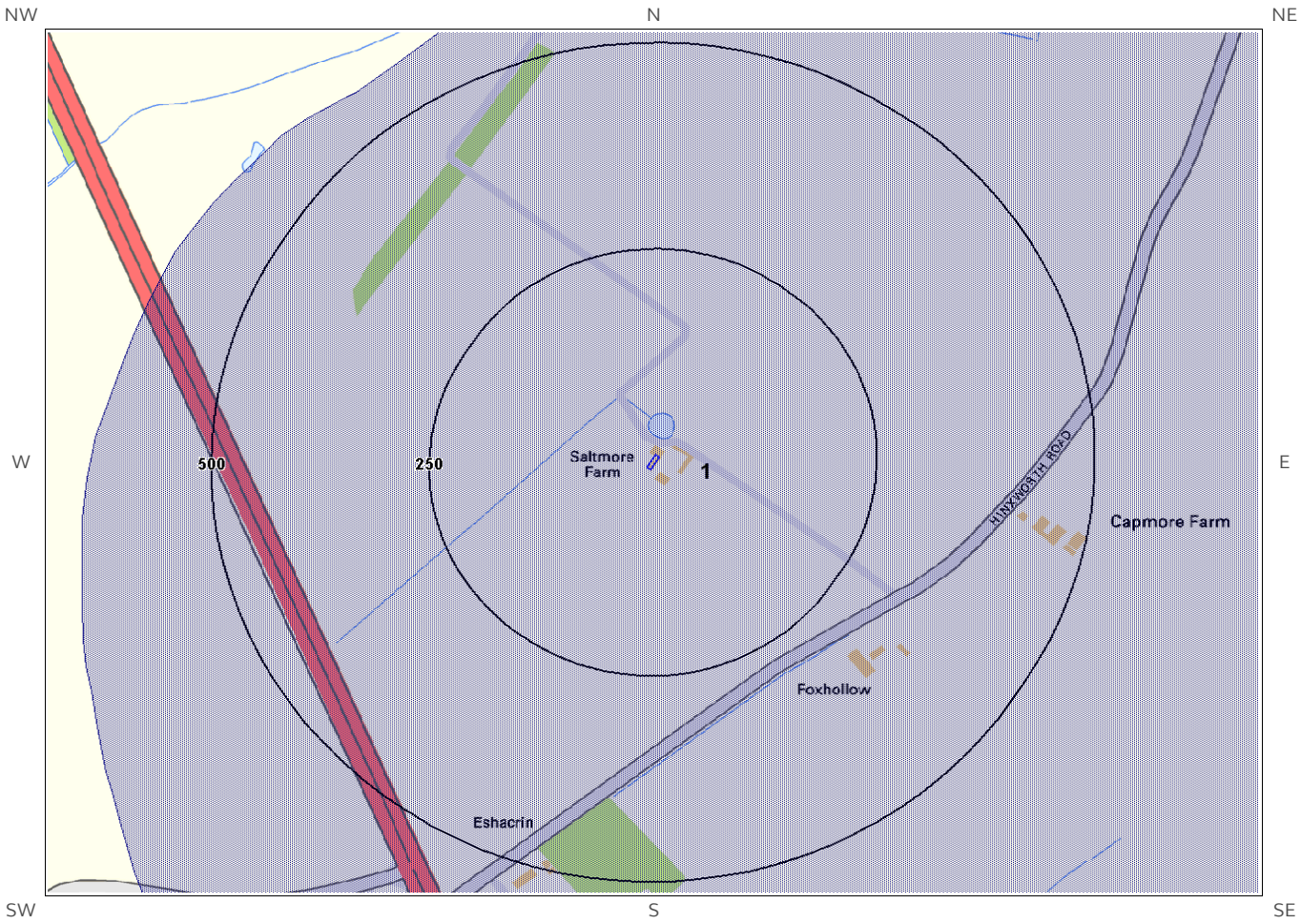
4.3 Current Ground Workings

This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

Are there any BGS Current Ground Workings within 1000m of the study site boundary? No

Database searched and no data found.

5 Mining, Extraction & Natural Cavities map



Mining, Extraction and Natural Cavities Legend

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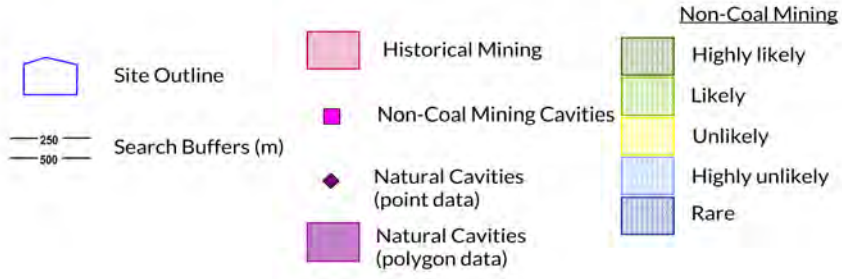


5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

This dataset is derived from Groundsure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? No

The following information provided by JPB is not represented on mapping: Database searched and no data found.

5.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? Yes

The following non-coal mining information is provided by the BGS:

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	0.0	On Site	Not available	Chalk	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
Not shown	769.0	SE	Not available	Chalk	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered

5.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled "Review of mining instability in Great Britain, 1990" PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.6 Natural Cavities

This dataset provides information based on the Peter Brett Associates natural cavities database. The dataset is made up of points and polygons. Where polygons are used these represent an area in which it is expected the cavities could be found. It does not indicate that cavities are present everywhere within the polygon, and caution should be used in the interpretation of this data.

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.7 Brine Extraction

This data provides information from the Coal Authority issued on behalf of the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level..

Are there any Tin Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.10 Clay Mining

This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

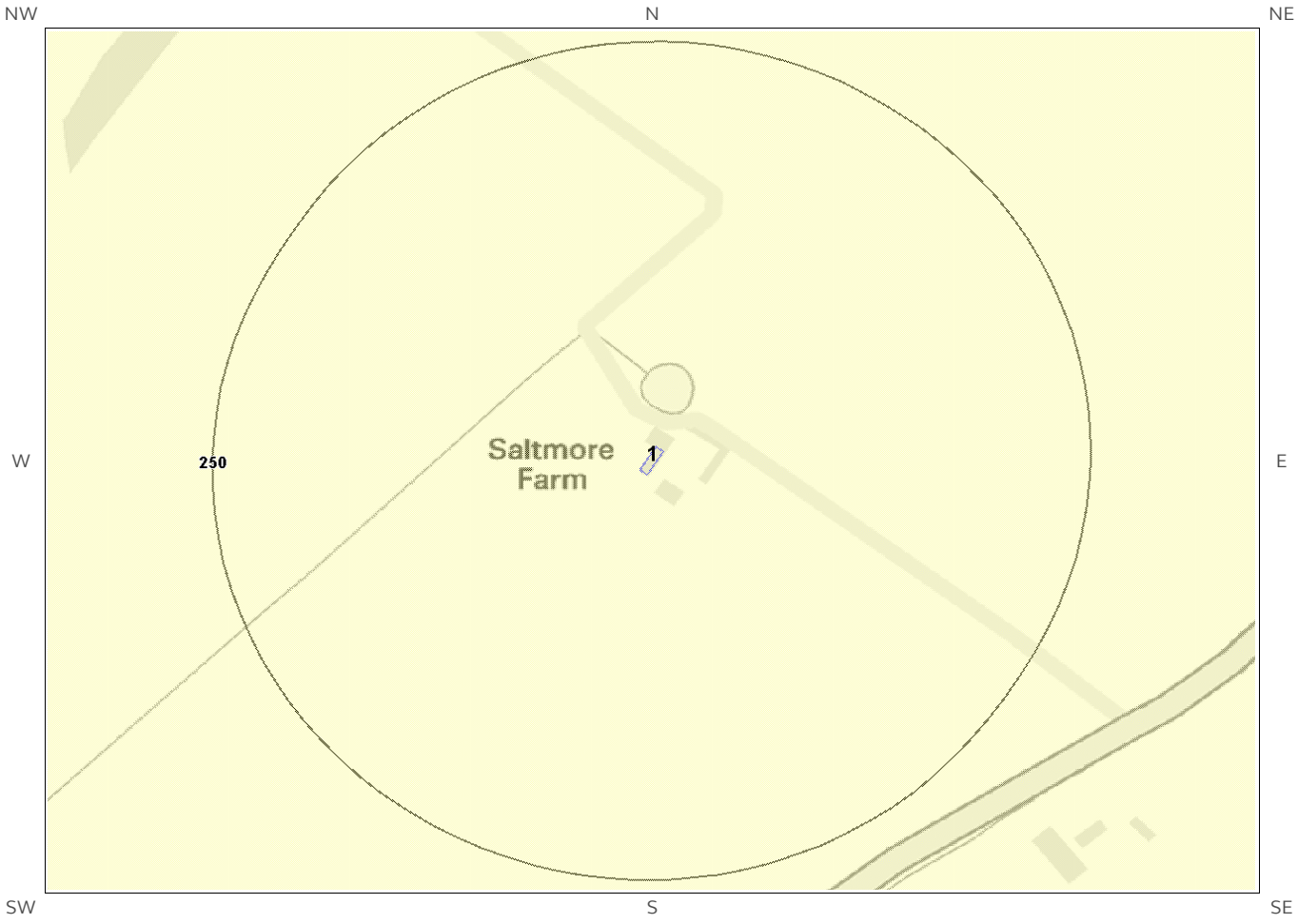
Are there any Clay Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

---

6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map



Shrink Swell Clay Legend

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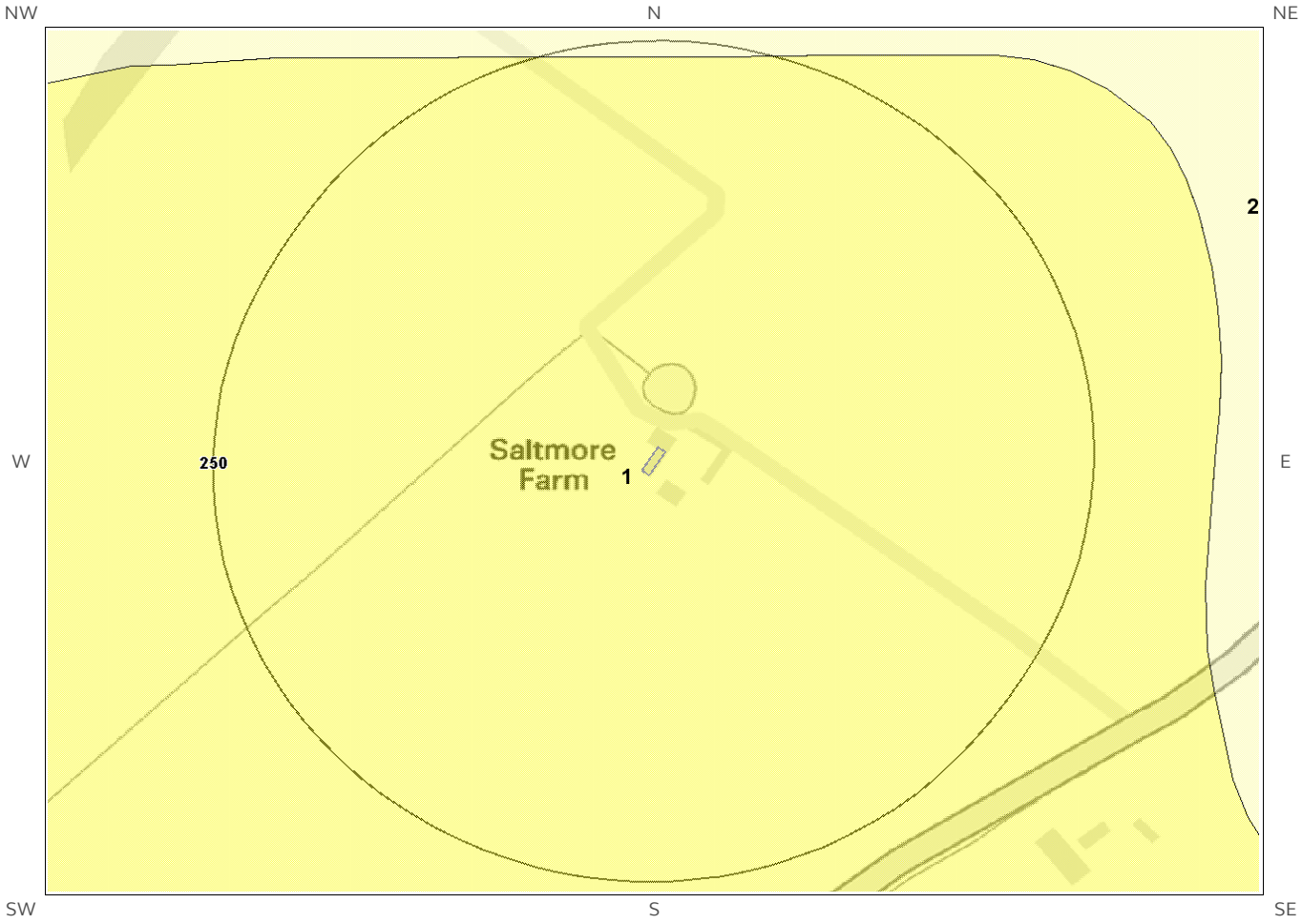
6.2 Landslides map



Landslides Legend

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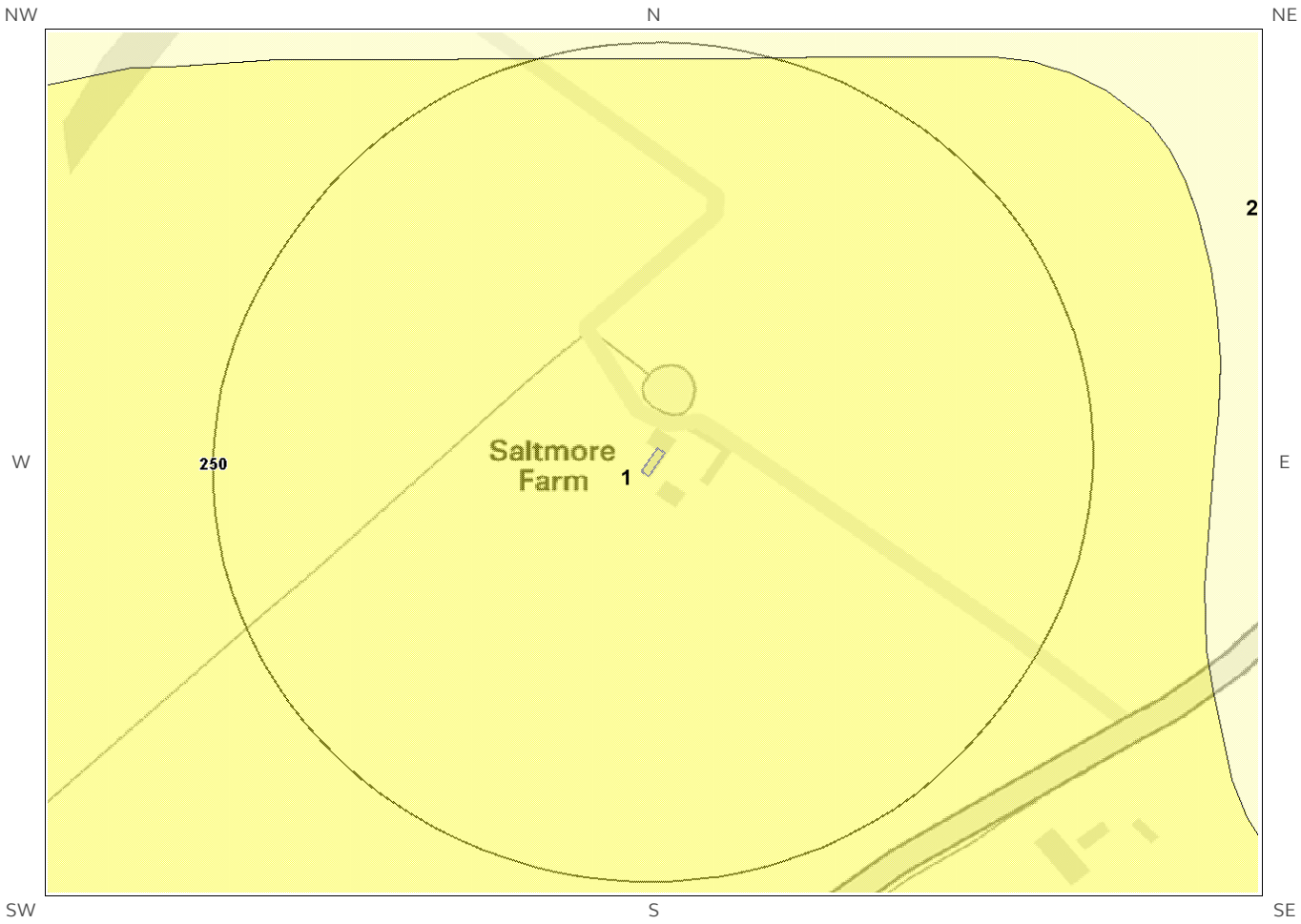
6.3 Ground Dissolution of Soluble Rocks map



Ground Dissolution Soluble Rocks Legend

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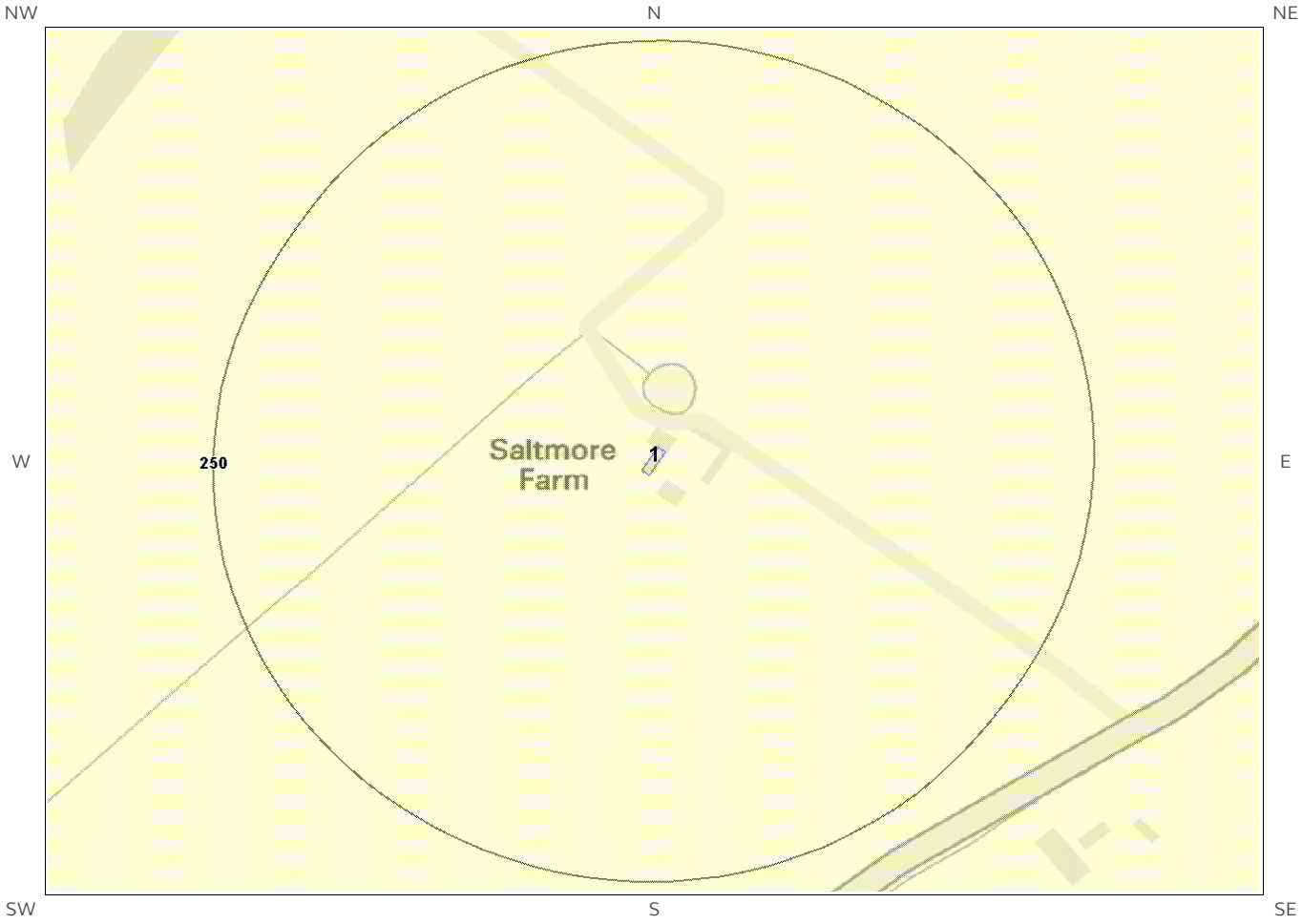
6.4 Compressible Deposits map



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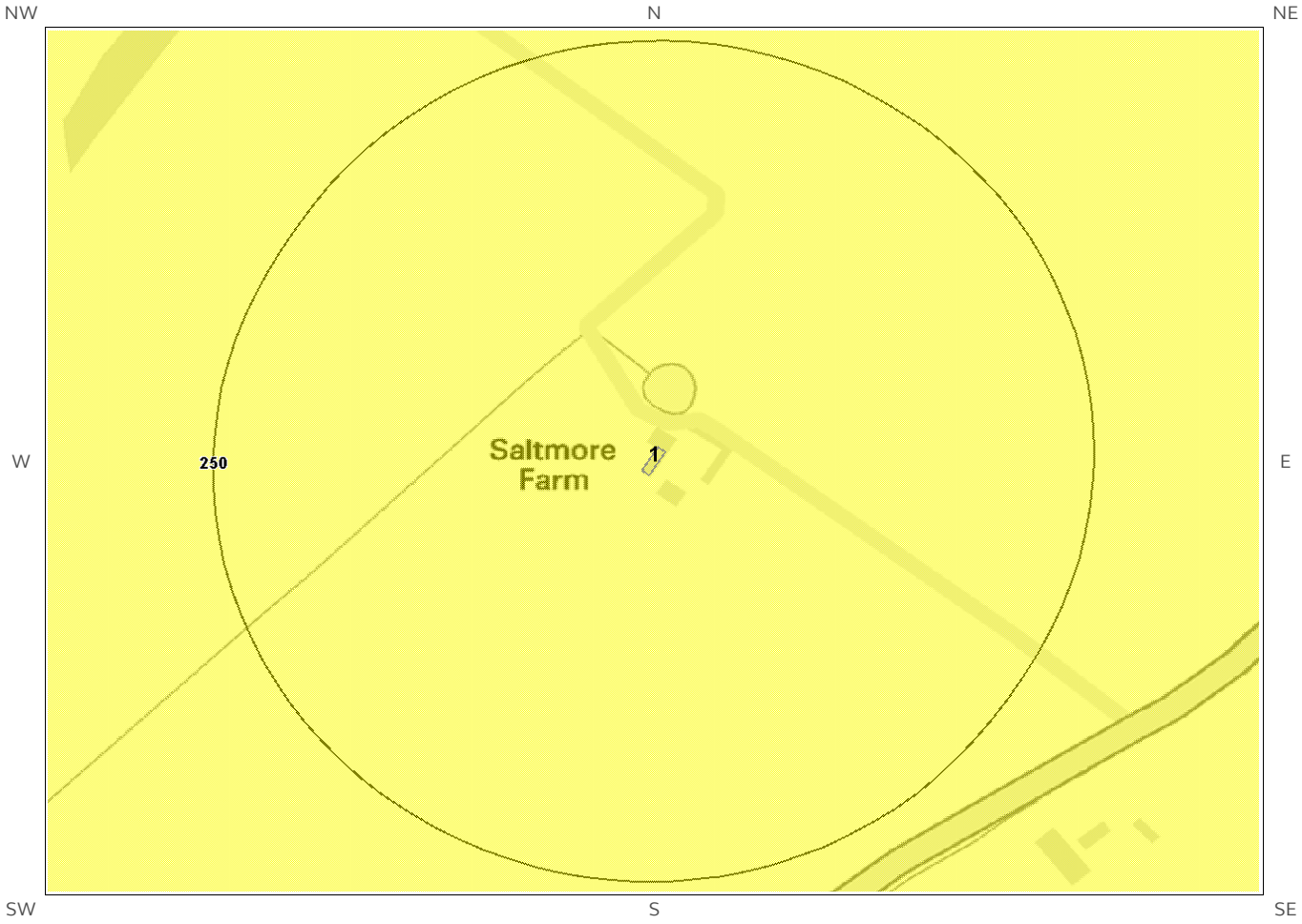
Compressible Deposits Legend



6.5 Collapsible Deposits map



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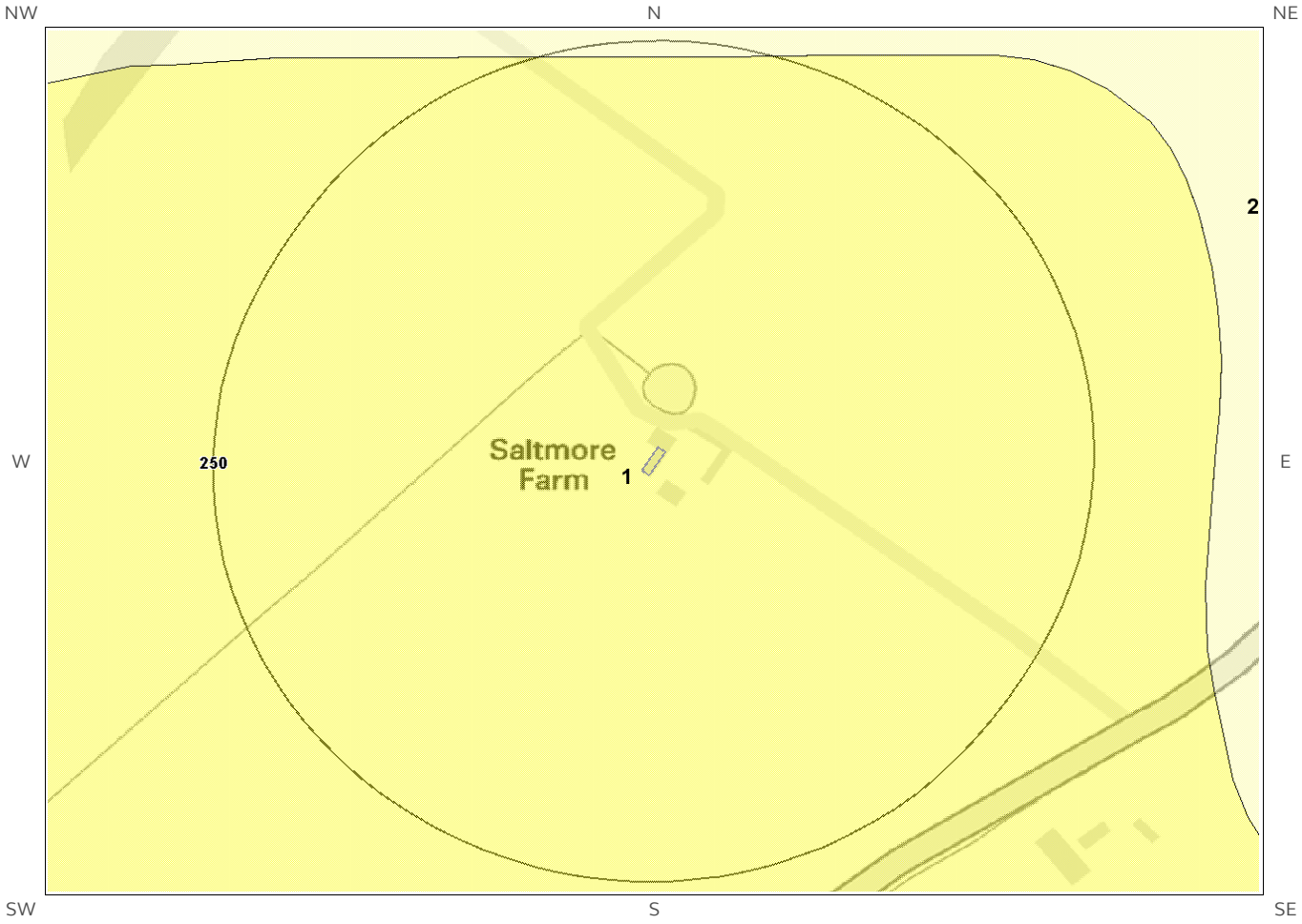
Collapsible Deposits Legend



6.6 Running Sand map



Running Sand Legend

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6 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site*[*] boundary? Very Low

6.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

6.3 Ground Dissolution of Soluble Rocks

The following Ground Dissolution information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Significant soluble rocks are present. Problems unlikely except with considerable surface or subsurface water flow. No special actions required to avoid problems due to soluble rocks. No special ground investigation required or increased construction costs are likely. An increase in financial risk due to potential problems with soluble rocks is unlikely.

* This includes an automatically generated 50m buffer zone around the site

6.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

6.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

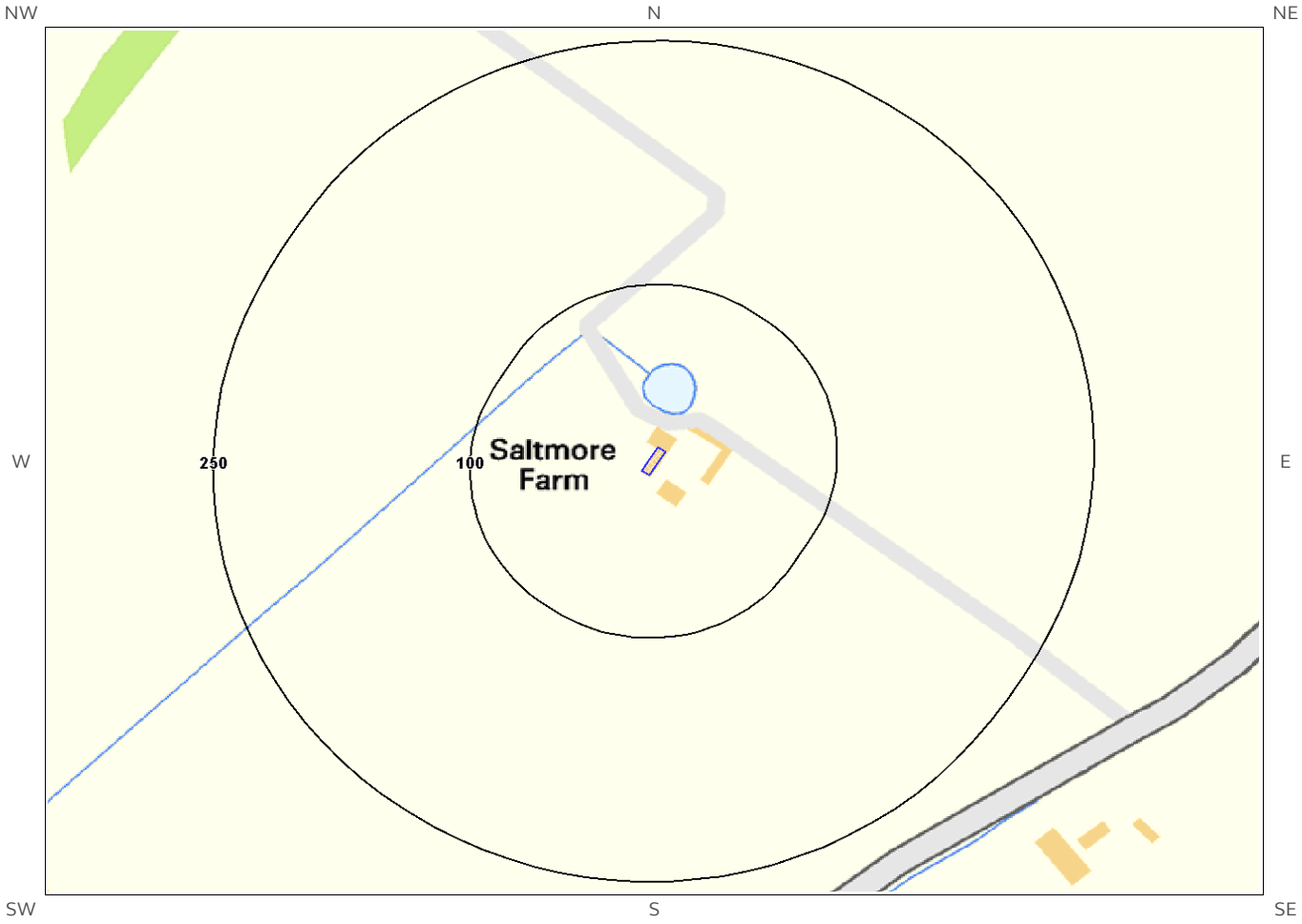
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

6.6 Running Sands

The following Running Sands information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

7 Borehole Records map



Borehole Records Legend

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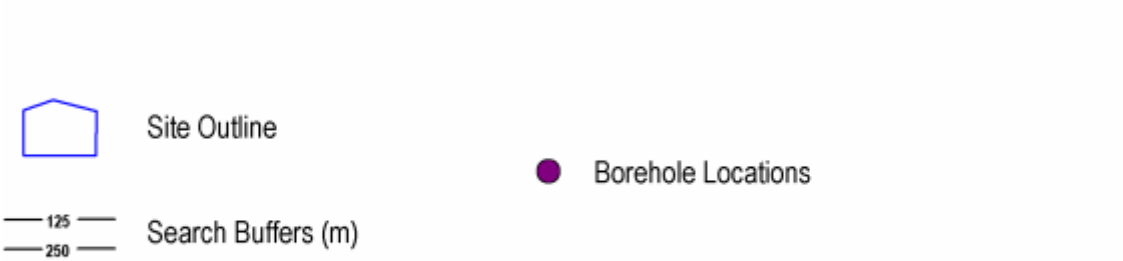


7 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary: 0

Database searched and no data found.

8 Estimated Background Soil Chemistry

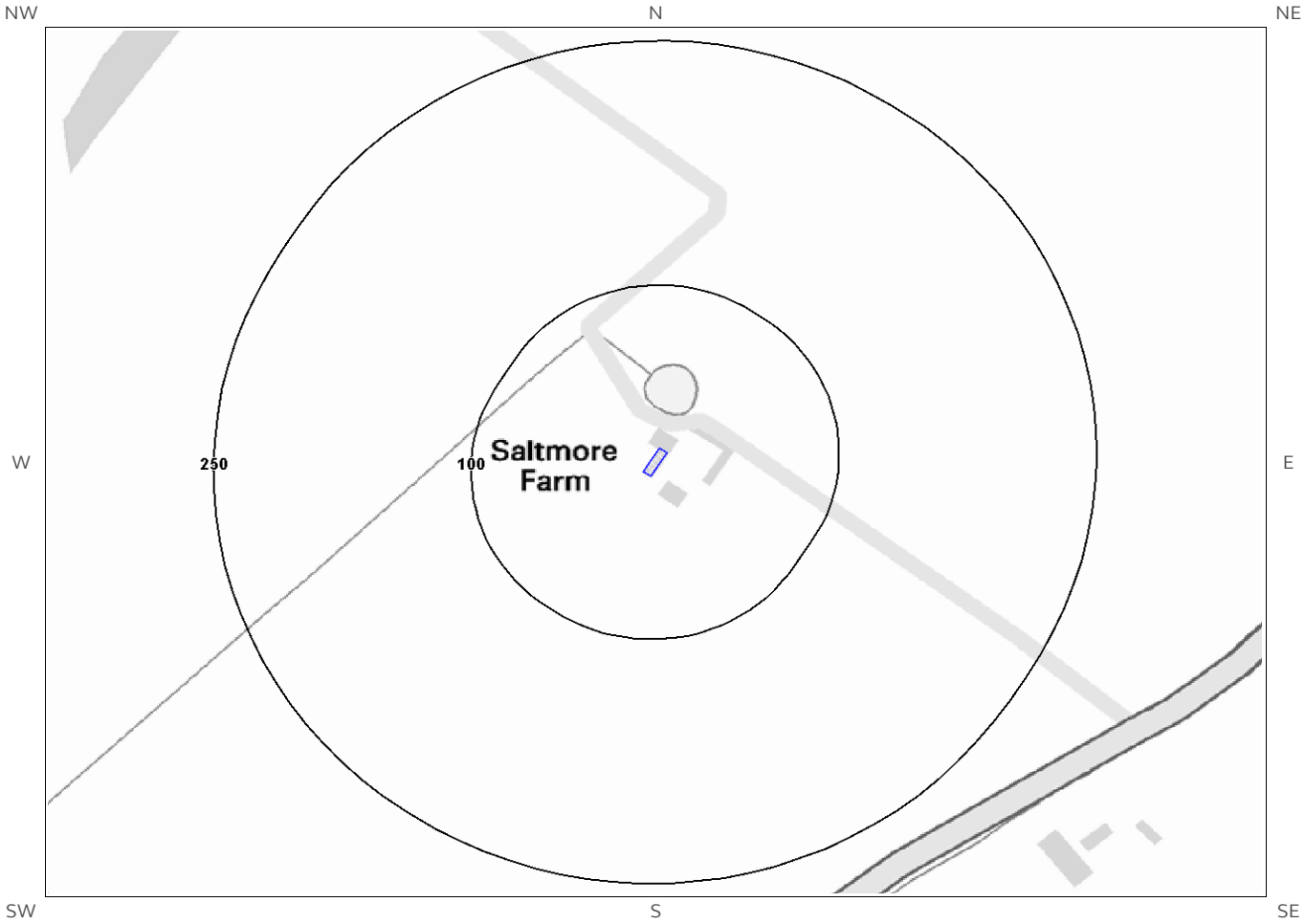
Records of background estimated soil chemistry within 250m of the study site boundary: 1

For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	RuralSoil	15 - 25 mg/kg	<1.8 mg/kg	40 - 60 mg/kg	30 - 45 mg/kg	<100 mg/kg

*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

9 Railways and Tunnels map



Railways and Tunnels Legend

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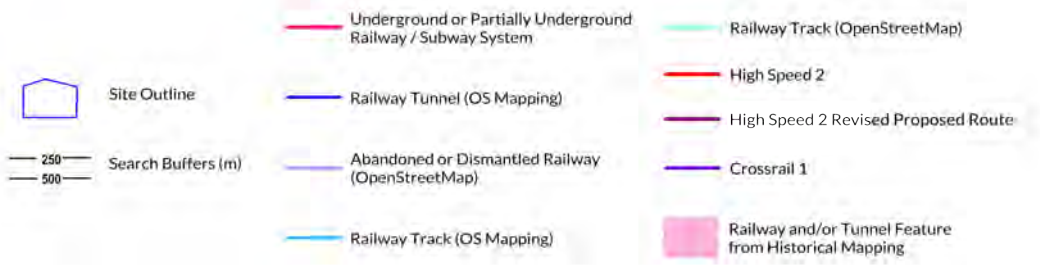

9 Railways and Tunnels

9.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary?	No
Have any underground railway lines been identified within 250m of the study site boundary?	No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary?	No
Have any other railway tunnels been identified within 250m of the site boundary?	No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.2 Historical Railway and Tunnel Features

This data is derived from Groundsure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary?	No
Have any historical railway or tunnel features been identified within 250m of the study site boundary?	No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? No

Have any historical railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? No

Have any active railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail 1 .

Is the study site within 5km of the route of the High Speed 2 rail project? No

Is the study site within 500m of the route of the Crossrail 1 rail project? No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a Groundsure HS2 and Crossrail 1 Report.

The route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Please note that this assessment takes account of both the original Phase 2b proposed route and the amended route proposed in 2016. As the Phase 2b route is still under consultation, Groundsure are providing information on both options until the final route is formally confirmed. Practitioners should take account of this uncertainty when advising clients.

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