Discovery

Geotechnical & Environmental Engineers

DESK STUDY AND PRELIMINARY RISK ASSESSMENT, SHENINGTON

Carried Out For: **ELAN HOMES**

August 2021 **Report Reference: 21076J-QLO1**

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Carried Out For: **ELAN HOMES**

Discovery CE Limited
The Granary
Broadwell House Farm
Broadwell, Rugby
Warwickshire
CV23 8HF

Tel: 01926 813909
Fax: 01926 814909
Email: discovery@dce-services.co.uk
Web: www.dce-services.co.uk

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1 INTRODUCTION

1.1 Engagement of Discovery CE

Discovery CE (DCE) was instructed by Elan Homes to carry out a desk study and preliminary risk assessment at the land Stocking Lane, Shenington, Banbury.

The offer to carry out the work is contained in DCE proposal ref 21076J-QLO1 dated 7th July 2021 with the instruction to proceed contained in an email from Elan Homes dated 30th July 2021

1.2 Development Proposal

It is understood that the site is to be developed as a mixture of primarily detached and semi-detached houses, although no development layout has been provided.

1.3 Objectives

The objective of work presented in this report was to collate sufficient data to identify potential geotechnical and environmental hazards, and to allow a preliminary contaminated land risk assessment to be carried out.

More specifically the objectives are:

1. To assess the historical activities at the site though inspection of historical ordinance survey data, data held by statutory authorities or other readily available published data;
2. To assess the current land use through a site walkover survey;
3. To identify potential geotechnical hazards at the site through inspection of geotechnical reports, maps and memoirs and if available previous investigative works;
4. To identify likely contaminants of concern (CoCs) which may be present in the soils or groundwater beneath the site;
5. To identify potential pathways and receptors in the context of the contaminated land regime;
6. To carry out a preliminary risk assessment; and
7. To provide conclusions and recommendations.

The purpose of a preliminary risk assessment is to identify whether or not the potential sources, pathways and receptors may form viable pollutant linkages in the context of the contaminated land regime.

Recommendations have been based on the collation and review of available information on the condition of the land and will be cross referenced with statutory guidance such that decisions can be made on whether:

1. Ground instability is likely to be a risk;

2. There is a “possibility” that pollutant linkages exist on the land; and

3. There is sufficient information already available to enable the Local Authority to make a decision on whether the site is classified as contaminated land.

1.4 Study Scope of Work & Study Limitations

The current work comprised a walkover of the site and an assessment of relevant historical Ordnance Survey maps and readily available environmental records, all of which are published as part of a Groundsure report and presented in Appendix C and D respectively.

A qualitative assessment of the environmental risks associated with the site was undertaken in terms of a conceptual site model (CSM) in the form of a “Source, Pathway, Receptor” pollutant linkage. This approach was carried out in accordance with Land Contamination Risk Management (LCRM) guidelines dated April 2021. The preliminary risk assessment is shown in Appendix E.

This desk study covers the below ground risks associated with the ground conditions in the context of the readily available information indicated and its current use, but does not address environmental risks associated with the fabric of the buildings on site.

Reasonable standards of professional judgement were used to assess the available information and to develop and evaluate the CSM.

It is possible that there were deficiencies in the data assessed meaning that the Conceptual Site Model is incomplete. Therefore not all potential pollutant linkages may have been identified, or conversely the presence of non-existent potential pollutant linkages may have been concluded. As more and better data becomes available the conceptual site model should be updated and re-evaluated.

2 SOURCES OF INFORMATION

The primary sources of site information used in the desk study were:

1. GroundSure MapInsight (Small and Large Scale Historical Maps), Dated: 2 August 2021, Ref: DCE-8090278 (presented in Appendix C);

2. GroundSure Enviro + Geo Insight, Dated: 2 August 2021, Ref: DCE-8090279 (presented in Appendix D);

The following environmental information was provided in the Groundsure Report (CGSR). (Appendix D);

1. Environmental Permits, Incidents And Registers
2. Landfill and Other Waste Sites;
3. Current Land Uses;
4. Geology
5. Hydrogeology and Hydrology
6. Flooding
7. Designated Environmentally Sensitive Sites;
8. Natural Hazards;
9. Ground Workings;
10. Mining, Extraction and Natural Cavities
11. Natural Ground Subsidence;
12. Borehole Records;
13. Estimated Background Soil Chemistry and;
14. Ground Gas and Radon

The GSR pack also included historical maps relating to the site at a range of scale. It should be noted that this database is updated periodically and therefore it may not document recent developments or registrations in the site area or activities, which have not been declared. The available data has been reviewed and where deemed appropriate, been included in the Desk Study Review (Section 5 of this report).

3 THE SITE

3.1 Site Walkover and Description

The site is situated off of Stocking Lane (to the north of the site), in Shenington at approximate National Grid Reference 436889, 242743 as shown in Figure 1. The boundaries of the site are formed predominantly by thick hedgerows as seen in Plate 6, combined with fencing and a line of Oak trees to the south-west. Beyond the northern most border is Stocking Lane, to the north-east and east there are domestic properties and Rattlecombe Road, the southern border meets the agricultural land of Quarry Farm, the Shenington Church of England Primary School is beyond the western border.

Plate 1 Typical view of site from the northern boundary, facing south-east.

Plate 3 Typical view of site from the northern boundary, facing south-west.

Plate 2 Typical view of the south-eastern corner of the site facing north.

Plate 4 Typical view of the south-western corner of the site facing south.

Currently the site has no buildings or current occupants as shown in Plates 1, 2, 3 and 4. Horses, as seen in Plate 5, use the northern half of the site as pasture. The flat grassland is surrounded by electric fencing. The southern half is dense Wild Flower Shrubland which is also currently not in use. The site topography is flat and level compared to the surroundings.

Plate 5 Typical view of the south eastern border from Rattlecombe Road, facing north-west. The hedgerows acts as the border for the entirety of the site.

Plate 6 Typical view of the south-eastern border from Rattlecombe Road, facing north-west. The hedgerows acts at the border for the entirety of the site.

The site occupies an area of approximately 2.75 Ha. According to the British Geological Survey (BGS) the site is directly underlain by Marlstone Rock deposits. No drift is shown on site or in the vicinity.

Two off-site substations are present, one 24m to the south east, the other 4m to the north, north-east. The 'Old Quarry Farm' is present to the south west of the site as well as Selecto Part UK LTD to the east.

3.2 Development Proposal

It is understood that the proposed development will comprise a housing development consisting of a mixture of primarily detached and semi-detached houses, although no development layout has been provided. The site location is shown below in Figure 1.

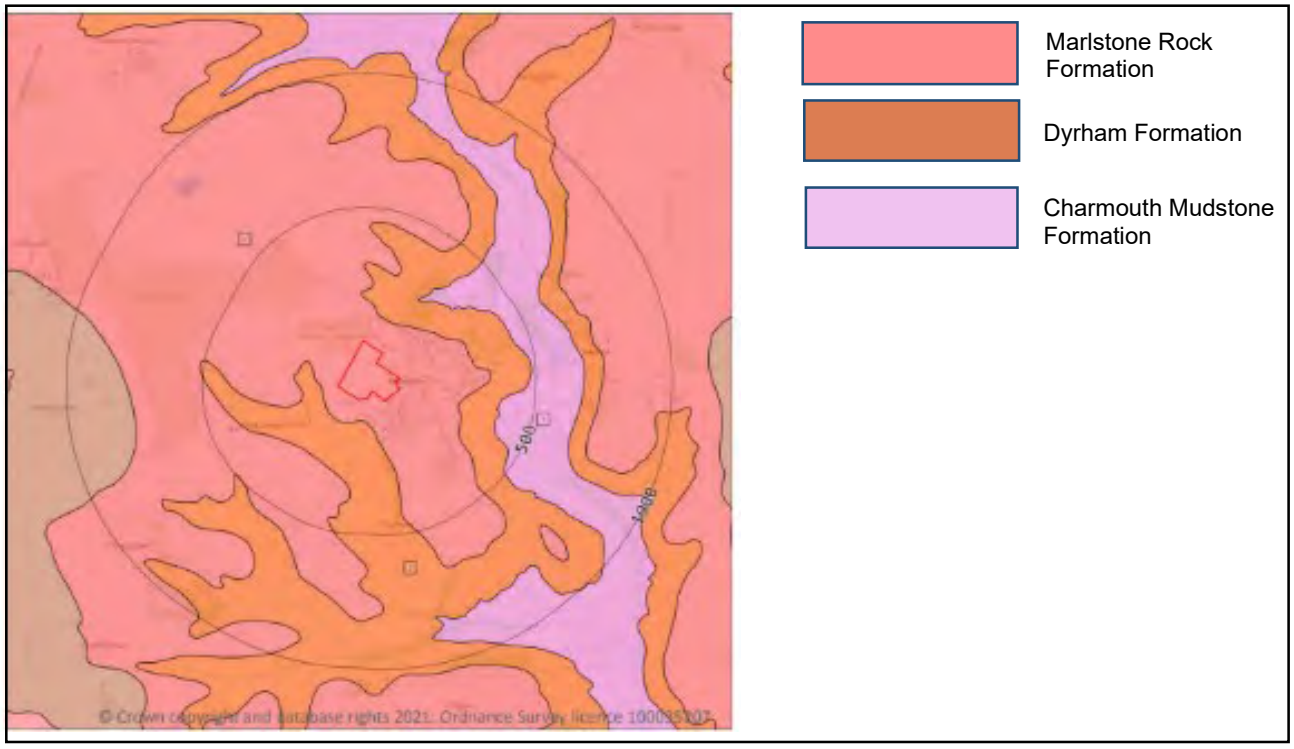
Figure 1 Site location and area of development

4 GEOLOGY AND HYDROGEOLOGY

4.1 Geology

British Geological Survey (BGS) sheet no 201 (1:50 000, New Series) indicates that the site's geology is predominantly a Marlstone Rock formation-composed of Ferruginous Limestone and Ironstone. The map in Figure 2 shows the geology of the site and its surrounding area.

Figure 2 Geological map for Shenington.



According to the Groundsure reports, no records of artificial or made ground have been found within this site.

There are no records within the Groundsure report relating to permeability of artificial ground within the study site.

There are no records of landslips within 500m of the study site.

4.2 Hydrogeology and Hydrology

The underlying bedrock has been classified by the EA as a Secondary (A) aquifer. The maximum permeability of the bedrock and solid geology is medium to low with a fracture flow type.

According to the data provided by Groundsure, the bedrock aquifer has been categorised with high vulnerability. Areas of higher vulnerability are able to easily transmit pollution to groundwater, characterised by high leaching soils and the absence of low permeability superficial deposits.

The definition of the aquifer type as described by the EA is described below:

> *"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"*

There are no records of any Groundwater Abstraction Licences, Potable Water Abstraction Licences, Surface Water Abstraction Licences or Source Protection Zones within 500m of the study site.

The nearest watercourse to the site is an inland river 129m to the south near Old Quarry Farm containing water year round (in normal circumstances).

The EA have graded the groundwater body (The Banbury Jurassic) at the site with an overall and chemical rating of 'Poor' as of 2015.

4.3 Flooding

Data provided by the Environment Agency and included as part of the Groundsure report indicate the site is not within an area at risk from flooding from rivers, sea or groundwater, grading it as 'Negligible', see Figure 3 below (Refer to Appendix D for further details).

Figure 3 Flood Risk Map

The British Geological Survey groundwater confidence rating in this area is High.

The definition of groundwater flooding and confidence rating is shown below:

> *"Groundwater flooding – 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."*

> *"Confidence rating – Defined on a threshold 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".*

5 SITE HISTORY

From inspection of historic maps (Appendix C) from the Groundsure report, County Series, Provisional and the National Grid, as well as Google Earth, the history of the development of the site is provided in Table 1 below.

Table 1 Summary of Historical Map Features

Year	Series	Scale	Notable on site features	Notable features around site
1881	County Series	1:10560	Site is an open parcel of land.	-'Old Quarry' approximately 4m to the south-west of site. Off-site but possibly on site too, not clear. -Wells to south-east just of site. -Shenington village to the east of site.
1881	County Series	1:2500	The site remains unchanged	-Two 'Old Quarry' markings north of site approximately 110m and 140m north of site
1900	County Series	1:2500	The site remains unchanged.	-Spring to the south-west of site. -Trough to the south-west of site.
1900 1905 1920	County Series, Provisional	1:10560	The site remains unchanged.	-Small reservoir 200m north-west of site on 1920 plan. -No other significant changes on or off site.
1922	County Series	1:2500	The site remains unchanged	-Windpump to the south-west of site.
1954	Provisional	1:10560	The site remains unchanged.	-Airfield 200m north-west of site.
1971	National Grid	1:2500	Site remains unchanged	-Windpump to south-west of site now disused. -Filling Station approximately10m beyond the south-eastern boundary. -Old Quarry now shown as 'Quarry Farm'- unclear if a part of site in 1971 plan. -Quarry (Old Quarry) to the south-west of site now disused.
1978 1993 1999 2001	National Grid, Google Earth	1:10000	According to the 1999 Google Earth plan (See Appendix C), the site was used for agricultural purposes, Tractor markings in field.	-Allotment Gardens to the south-east of site. -Shenington Village expanded to south and east. -Airfield now motor test track in 1978 plan.
2010 2021	National Grid	1:10000	The site remains unchanged.	-Shenington CE Primary School shown 50m north-west of site in 2010

The subject site was an open parcel of land believed to have been agricultural from 1881 onwards (earliest records). In 1999 we have visual evidence of Tractor markings on the site, confirming agricultural occupation. No clear development on site is shown on historical mapping, however an old quarry is shown beyond the south-western boundary on the earliest available map of 1881 and it is unclear if this encroached onto the subject site. In the 1971 map, Old Quarry was renamed Quarry Farm and the Quarry became disused. The historical data maps would suggest that notable features in the area around the site include a filling station approximately 10m to the south east in 1971, removed in 2003, the disused Quarry and Wind Pump on Quarry Farm to the south west, the Reservoir located 200m to the north-west and the later establishment of Shenington CE Primary School 50m in the same direction. Beyond the school, the airfield and later motor test track are shown on the 1954 maps and onwards, being approximately 200m from site.

The area surrounding the site was a combination of open land believed to be predominantly agricultural or unused before 1881, to the north east and east there were residential and domestic properties since records began. Shenington Village expanded to the south and east throughout the period of 1978-2001.

6 6. ENVIRONMENTAL DATA

6.1 Environmental Permits, Incidents and Register

To date there have been three environmental incidents summarised in Table 2 below.

Table 2 Environmental Incidents near site

Location	Details	Process
227m SW	Incident date: 26/09/2002 Incident Identification: 110634 Pollutant: Oils and Fuel Pollutant Description: Gas and Fuel Oils	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
227m SW	Incident date: 26/09/2002 Incident Identification: 110634 Pollutant: Specific Waste Materials Pollutant Description: Batteries	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
227m SW	Incident date: 26/09/2002 Incident Identification: 110634 Pollutant: Specific Waste Materials: Oil and Fuel Pollutant Description: Batteries: Gas and Fuel Oils	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

There are no other environmental permits, incidents or registers noted by the Groundsure report within 500m of the study site.

6.2 Landfill and Other Waste Sites

There are no recorded landfill sites within 250m of the study site. According to information gleaned from Groundsure there have been previous waste exemptions near site, they are summarised in Table 3 below.

Table 3 Previous Waste Exemptions

Location	Reference	Description
94m N	WEX235272	Treating waste exemption- Sorting and de-naturing of controlled drugs for disposal.
94m N	WEX085490	Treating of waste exemption- Sorting and de-naturing of controlled drugs for disposal.
262m SE	EPR/NE5049HL/A001	Both agricultural and non-agricultural waste- Use of waste in construction.
262m SE	EPR/NE5049HL/A001	Both agricultural and non-agricultural waste- Use of waste for a specific purpose.

There have also been two licensed discharges of treated sewage into controlled waters, both discharges happening 4m north-west of site.

6.3 Current Land Uses

There are five records of industrial sites within 250m of the study site taken from the Groundsure report, see Figure 4 for more details (See Appendix A).

1. Three water station pumps approximately 23m south west (B), 138m north east (2) and 210m (C) east of the site.

2. An electricity substation is located 24m south east of the site (Second substation- north east has not been recorded by Groundsure).

3. Selecto Part UK Ltd (1) (A Industrial Products Packaging Company) operates 54m east of the site.

Figure 4 Industrial sites within 250m of study site.

There is no record of any petrol and fuel sites or underground high pressure oil and gas pipelines within 500m of the study site within the Groundsure report, however a petrol filling station has been identified on historical mapping (See Section 5).

6.4 Designated Environmental Sensitive Sites

There are two nitrate vulnerable zones within the site area and boundary. This information was sourced from Natural England and Natural Resources Wales from the Groundsure report. The Environment Agency defines what is meant by a nitrate vulnerable zone:

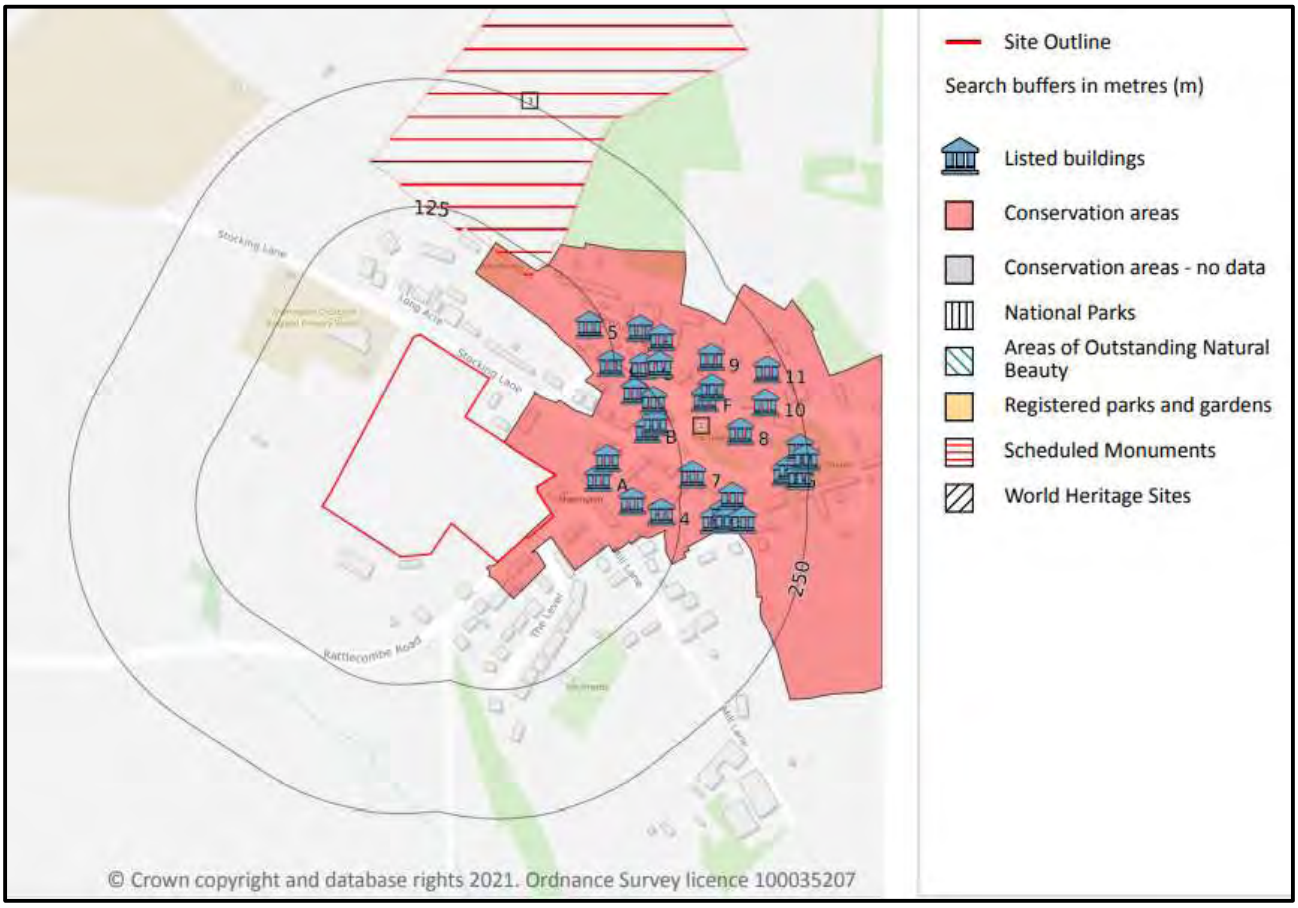
"The European Commission (EC) nitrates directive requires areas of land that drain into waters polluted by nitrates to be designated as Nitrate Vulnerable Zones (NVZs). Farmers with land in NVZs have to follow mandatory rules to tackle nitrate loss from agriculture".

A large area of the site to the north west is within an SSSI Impact Risk Zone, the developments requiring consultation are outlined below:

Infrastructure - *Airports, helipads and other aviation proposals.*

According to the Groundsure report a Conservation Area borders the site to the east and south-east, see Figure 5.

Figure 5 Visual and cultural designations near site.



There are no official environmental or ecological designations for the site.

There are no records of natural reserves, world heritage sites, Ramsar sites, or other environmental sites within 500m of the study site.

6.5 Natural Hazards

1. The maximum Shrink-Swell hazard rating identified on the study site is classed as Negligible. This suggests that ground conditions in the area are of predominantly low plasticity. No special actions are required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays;

2. The maximum Landslide hazard rating identified on the study site is Very Low. Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides;

3. The maximum Ground Dissolution and Soluble Rocks hazard rating identified on the study site is Negligible. Soluble rocks are not present in the search area. No special actions required to avoid problems due to soluble rocks.

4. The maximum Compressible Ground hazard rating identified on the study site is Negligible. No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits;

5. The maximum Collapsible Rocks hazard rating identified on the study site is Very Low. Deposits with potential to collapse when loaded and saturated are unlikely to be present.

6. The maximum Running Sand hazard rating identified on the study site is Negligible. Very low potential for running sand problems if water table rises or if sandy strata are exposed to water.

The information gained from the Groundsure Report in regard to natural hazards is information relating to the bedrock. For this reason, the information under natural hazards does not represent likely hazards for the entire study site.

6.6 Mining, Extraction and Natural Cavities

The information gleaned from this Groundsure report states that the study site is located within the specified search distance of an identified mining area. The report clearly shows that the study site is 89m south of a Britpit as well as a unspecified disused Quarry 4m south west of the site, 'Old Quarry' existing since records began.

The general vicinity of the site is within a Historical/ Mineral Planning Area. Groundsure confirms there were a couple of Iron ore and Ironstone surface mineral workings; one Ironstone extraction working on site and several Iron ore workings less than 100m away dated 28th February 1957.

There is no evidence of any non-coal mining cavities, natural cavities, brine extraction, JPB mining areas, gypsum extraction, tin mining or clay mining within 1000 m of the site boundary

6.7 Ground Workings

There are no current operational ground workings within the site boundary or within 250m of the study site.

Previous ground workings from the Groundsure report mostly highlight the unspecified 'Old Quarry' at 4m south west of the site throughout the different years of operating. Other land uses involve Reservoirs, a Grave Yard and unspecified pits beyond 100m from site.

6.8 Natural Ground Subsidence

The maximum hazard rating of natural subsidence within the study site boundary is classed as Very Low. However, this is based on bedrock, for this reason, it is unknown what the natural ground subsidence hazard rating is likely to be.

6.9 Borehole Records

There are no current boreholes recorded within the site boundary, there is a single 0-10m borehole 181m south east from site.

6.10 Estimated Background Soil Chemistry

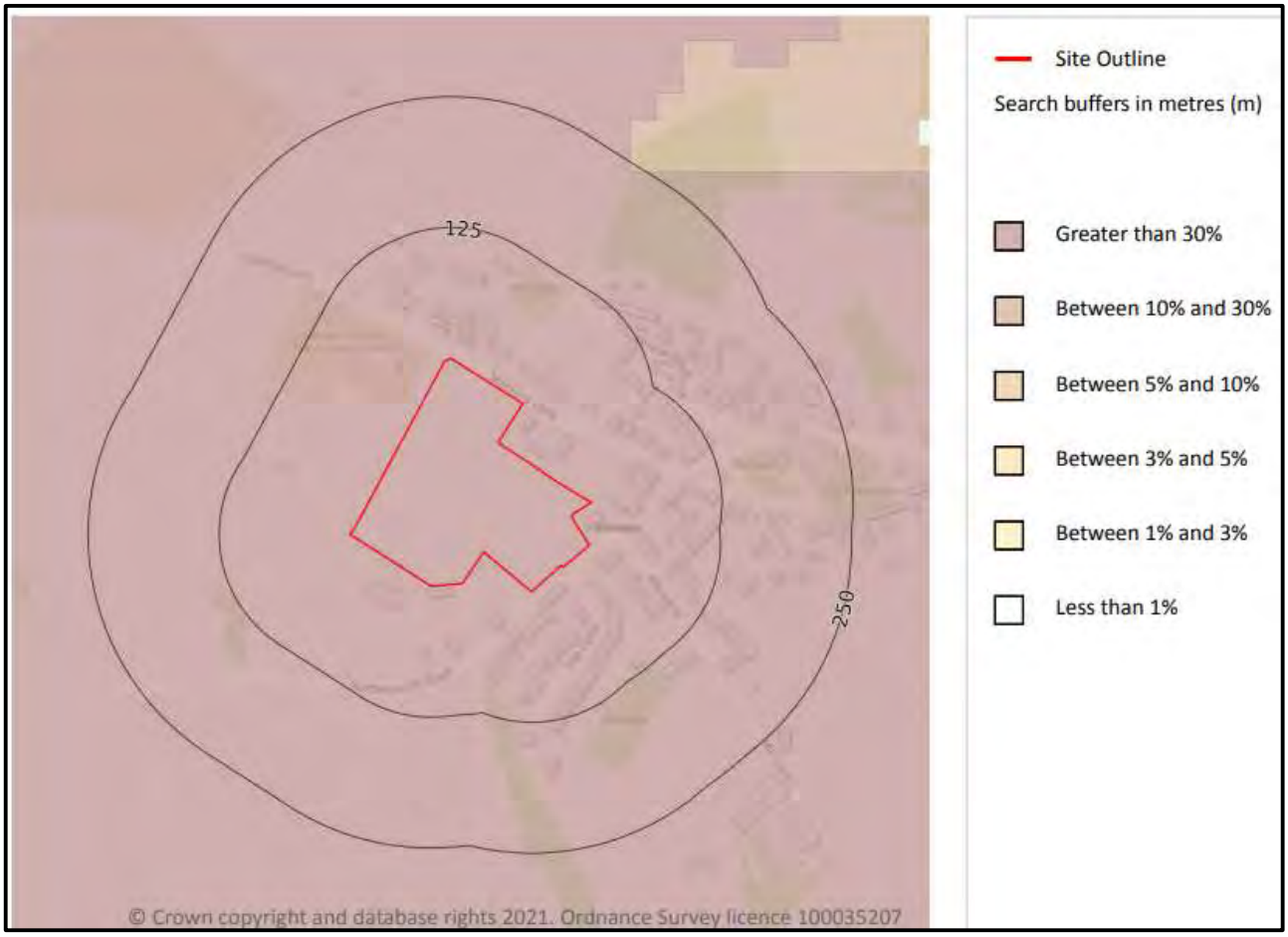
Records of background estimated soil chemistry within the site boundary taken from the Groundsure report:

- Arsenic (AS) >120 mg/kg
- Cadmium (Cd) 1.8 mg/kg
- Chromium (Cr) >180 mg/kg
- Nickel (N) >100 mg/kg
- Lead (Pb) 100 mg/kg

6.11 Ground Gas & Radon

The site is within an area where greater than 30% of dwellings are estimated to exceed the Radon Action Level, see Figure 6. Full Radon protection is required.

Figure 6 Estimated percentage of properties affected by Radon



7 PRELIMINARY RISK ASSESSMENT

In accordance with UK guidance and best practice, environmental risks are defined by a pollutant linkage. Hence there needs to be a source of pollution and a receptor on which it can have an adverse effect. In order to complete the linkage there needs to be a route, or pathway, by which the source can affect the receptor as follows:

Source → Pathway → Receptor

The risks have been assessed on the understanding that the proposed end use will be a housing development of primarily detached and semi-detached houses, although no development layout has been provided.

7.1 Conceptual Site Model

The generalisations used in generating the conceptual site model (CSM) are based on the former land use as agricultural farmland. The risks have been assessed on the understanding that the proposed end use will be for residential development.

7.2 Sources

A broad suite of CoCs have been selected based on this, the site history and the Groundsure BGS Estimated Background Soil Chemistry, including:

- Natural Geology- Arsenic and Radon
- Offsite Quarry- Soil gases (Methane and Carbon Dioxide)
- Offsite Quarry- Metals and Hydrocarbons (Arsenic, Cadmium, Chromium, Chromium VI, Copper, Nickel, Zinc, Selenium, Lead, Mercury, TPH, PAH)
- Offsite Petrol Station- Organics (TPH, PAH, BTE+, MTBE, VOCs, SVOCs)
- Onsite agricultural use- Pesticides and Herbicides

7.3 Pathways

The key pathway for migration of CoCs include the following:

Human Health

1. Ingestion of source soils or groundwaters;
2. Inhalation of source dusts and vapours; and
3. Direct skin exposure (dermal contact) with soils.

Environmental

As the site is situated on a overlying Secondary aquifer, the infiltration, leaching and dissolution of ground source chemicals into underlying groundwater is unknown. It is not known how permeable the ground is. However, the following potential environmental pathways exist:

1. On site vertical leaching of CoCs in soils to shallow groundwater; and
2. Lateral migration of impacted groundwater towards surface water receptors.
3. Lateral migration of impacted groundwater from offsite sources towards site.

7.4 Receptors

The key potential receptors identified are:

Human Health

1. Current and future site users; and
2. Site development and maintenance workers

Environmental

1. Groundwater directly beneath the site.
2. Unnamed river 129m to the south-west of site.
3. Vulnerable soils on site.

7.5 Potential Pollutant Linkages

Potential pollutant linkages are listed with their associated risk ratings in Appendix E. The assessment was undertaken in accordance with CIRIA guidance “Contaminated Land Risk Assessment: A Guide to Good Practice”, C552 (2001).

7.6 Risk Evaluation - Proposed End Use

Risks against the proposed end-use have been evaluated and several risks greater low have been identified as detailed on Table 4 below.. A detailed table of the assessed linkages is provided in Appendix E.

Table 4: Pollutant Linkages Rated Greater than LOW.

Linkage ID	Source Description	Pathway Description	Receptor Description	Risk Rating	Comments/Mitigation
L16	Natural Geology-Arsenic	Ingestion	Future site users.	MODERATE	The natural geology (Ferruginous Limestone and Ironstone) of the site has caused for abnormally high concentrations of Arsenic to be present. May be affecting future site users. Highly recommend site investigation.
L17	Natural Geology-Arsenic	Inhalation	Future site users.	MODERATE	The natural geology of the site has caused for abnormally high concentrations of Arsenic to be present on site. May be affecting future site users. Highly recommend site investigation.
L18	Natural Geology-Arsenic	Direct skin exposure (dermal contact)	Future site users.	MODERATE	The natural geology (Ferruginous Limestone and Ironstone) of the site has caused for abnormally high concentrations of Arsenic to be present. May be affecting future site users. Highly recommend site investigation.
L25	Natural Geology-Radon	Inhalation	Future site users.	MODERATE	The natural geology (Ferruginous Limestone and Ironstone) of the site has caused for abnormally high concentrations of Radon gas to be present on site. May be affecting future site users. Highly recommend site investigation.
L4	Contaminants of Concern (organic contaminants) from historical site uses from pesticides and herbicides	Ingestion	Future site users.	MODERATE -LOW	Pesticides and Herbicides may have been applied to the site if previously used for agricultural purposes. Any proposed development will cover some of the site soils but residents will have unfettered access to soils in gardens. Recommend site investigation.
L6	Contaminants of Concern (organic contaminants) from historical site uses from pesticides and herbicides	Direct skin exposure (dermal contact)	Future site users.	MODERATE -LOW	Pesticides and Herbicides may have been applied to the site if previously used for agricultural purposes. Any proposed development will cover some of the site soils but residents will have unfettered access to soils in gardens. Recommend site investigation.
L24	Natural Geology-Radon	Inhalation	Current site users.	MODERATE -LOW	The natural geology (Ferruginous Limestone and Ironstone) of the site has caused for abnormally high concentrations of Radon gas to be present on site. May be affecting future site users. Highly recommend site investigation.
L26	Natural Geology-Radon	Inhalation	Site development and maintenance workers.	MODERATE -LOW	The natural geology (Ferruginous Limestone and Ironstone) of the site has caused for abnormally high concentrations of Radon gas to be present on site. May be affecting future site users. Highly recommend site investigation
L28	Soil gases from possible backfilled former quarry	Inhalation	Future site users.	MODERATE -LOW	Possible gases such as Methane and Carbon Dioxide are potentially being produced from the possible backfilled former quarry. Potential hazard to future site users. Recommend site investigation.

Linkage ID	Source Description	Pathway Description	Receptor Description	Risk Rating	Comments/Mitigation
L33	Metals and Hydrocarbons from possible backfilled former quarry encroaching onto site	Ingestion	Future site users.	MODERATE -LOW	Metals and Hydrocarbons such as Arsenic, Cadmium, Chromium, Chromium VI, Copper, Nickel, Zinc, Selenium, Lead, Mercury, TPH, PAH originating from the backfilled quarry could all be present on site.
L42	Metals and Hydrocarbons from possible backfilled former quarry encroaching onto site	Lateral migration of impacted groundwater	Groundwater below the site (– Secondary A aquifer).	MODERATE -LOW	Contaminants being produced by the possible backfilled former quarry could be affecting the groundwater underneath the site. The groundwater moving via lateral migration onto site.
L47	PCBs from offsite substations	Vertical leaching of contaminants	Groundwater below the site (– Secondary A aquifer).	MODERATE -LOW	PCBs from the two offsite substations could potentially leach into the vulnerable Secondary A aquifer and ground water below site.
L48	Sulphates and low pH in groundwater.	Direct Contact	Proposed buildings/Foundations/Services.	MODERATE -LOW	Groundwater with low pH and high sulphates may affect proposed buildings, foundations and services built on site.

It should be noted that the risks summarised within the preliminary risk assessment are based on possible contaminations that could have occurred both on and off of site. However, it is anticipated from the site history that the extent of any contamination will be very low at source concentrations. Similarly, there may be the potential for ground gases to be present which may adversely affect the proposed residential development.

It is recommended that an intrusive investigation is undertaken prior to development. Such an investigation should include a suitable number of exploratory hole locations from which samples should be recovered (both soil and water) and analysed for the suite of contaminants listed in Section 7.2. The exploratory holes should be completed with gas and groundwater monitoring wells sufficient to characterise the ground gas regime and groundwater levels.

A ground investigation should be undertaken to determine whether the identified risks greater than **LOW** are actually present on site.

7.7 Risk Evaluation – Current Users

The risk to current users has been assessed as **VERY LOW**.

7.8 Risk Evaluation – Site Development Workers

Several risks greater than **LOW** have been identified with respect to construction workers as detailed in Appendix E. Ground investigation works are recommended to quantify the minimal risk which is likely to be mitigated through provision of appropriate PPE during construction or if necessary, remediation works. Any contractors undertaking works at the site should carry out appropriate risk assessments and provide suitable PPE based of the risks identified.

7.9 Statutory Risks

Under Part 2A of the Environmental Protection Act 1990 (Section 78A(2)) ***Contaminated Land*** is defined as:

> *"any land which appears to the LOCAL AUTHORITY in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that –*
>
> *"(a) SIGNIFICANT HARM is being caused or there is a SIGNIFICANT POSSIBILITY of such harm being caused; or*
>
> *"(b) POLLUTION OF CONTROLLED WATERS is being, or is likely to be, caused".*

The significant possibility of significant harm (SPOSH) is difficult to define and at the time of writing DEFRA has begun a consultation and review in order to clarify what SPOSH means. Notwithstanding, SPOSH must be defined and applied by the relevant local authority or by the EA in the case of special sites (typically heavily polluted sites such as large gas works, military sites, etc). From the preliminary evaluation of risks it is unlikely that the land at the site would be determined by the local authority as Contaminated Land under the Part 2A regime.

The National Planning Policy Framework (NPPF - 2012) puts the onus on local planning authorities to develop their own guidance and processes for dealing with potentially contaminated land under planning. This was revised and updated in 2019.

The key paragraphs from NPPF - 2019 relating to planning and dealing with land contamination are listed below.

170. Planning policies and decisions should contribute to and enhance the natural and local environment by:
- a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
- d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should,
- f) wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
- g) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

178. Planning policies and decisions should ensure that:
- a) a site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation including land remediation (as well as potential impacts on the natural environment arising from that remediation);
- b) after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990; and
- c) adequate site investigation information, prepared by a competent person, is available to inform these assessments.

179. Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner.

183. The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities.

Therefore, early engagement with the local authority and their environmental health/pollution control staff is advised.

8 DESK STUDY SUMMARY & RECOMMENDATIONS

A summary of research undertaken within this report includes a site walkover, investigation of historical maps and environmental data, and a review of British Geological Maps.

Findings from this investigation include;

1. The site was historically agricultural land before it was merged into the current boundaries from 1971 onwards. Following on from the changes to the site's boundaries, there was little to no changes made. The site may potentially be affected by off-site historical sources of contaminants, including Radon and Arsenic, but the primary concern is whether the site was subject to inorganic contaminants when used for agricultural purposes; this may have affected soil composition and the groundwater within the vulnerable Secondary Aquifer.

2. The site walkover suggests the site is fairly derelict, the northern half of it being a flat and featureless pasture for Horses, the other half being Wild Flower Shrubland currently not in use. Put simply the site is a large unoccupied field.

3. The study of environmental data has indicated that the majority of receptors are very unlikely to be affected by the off-site sources. The environmental data has suggested all standard/ positive readings when it comes to Flooding susceptibility, groundwater vulnerability and flooding, natural ground subsidence as well as mining and ground working presence in this area.

4. The geology underlying the site is Marlstone Rock deposits, there is no superficial drift geology on site.

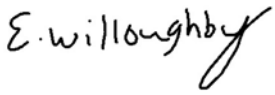
Receptors on site will be current and future site users, including construction and maintenance workers. Environmental receptors have been identified to be the groundwater directly beneath the site, as well as the nearby unnamed river to the south.

The preliminary risk assessment concluded that a low risk of pollutant linkages will occur on site, however ground gas monitoring wells are recommended to ensure this is the case.

Prior to any development it is recommended that an intrusive site investigation is carried out focusing on the following factors:

1. Determining the nature/ existence of the materials across the site;
2. Geotechnical characterisation of the site for the foundations, floor slab and hardstanding design;
3. Chemical analysis of soil and groundwater across the site.
4. Gas and groundwater monitoring.

For **Discovery CE Limited**



Elliot Willoughby
BSc (Hons)
Assistant Geo-Environmental Engineer

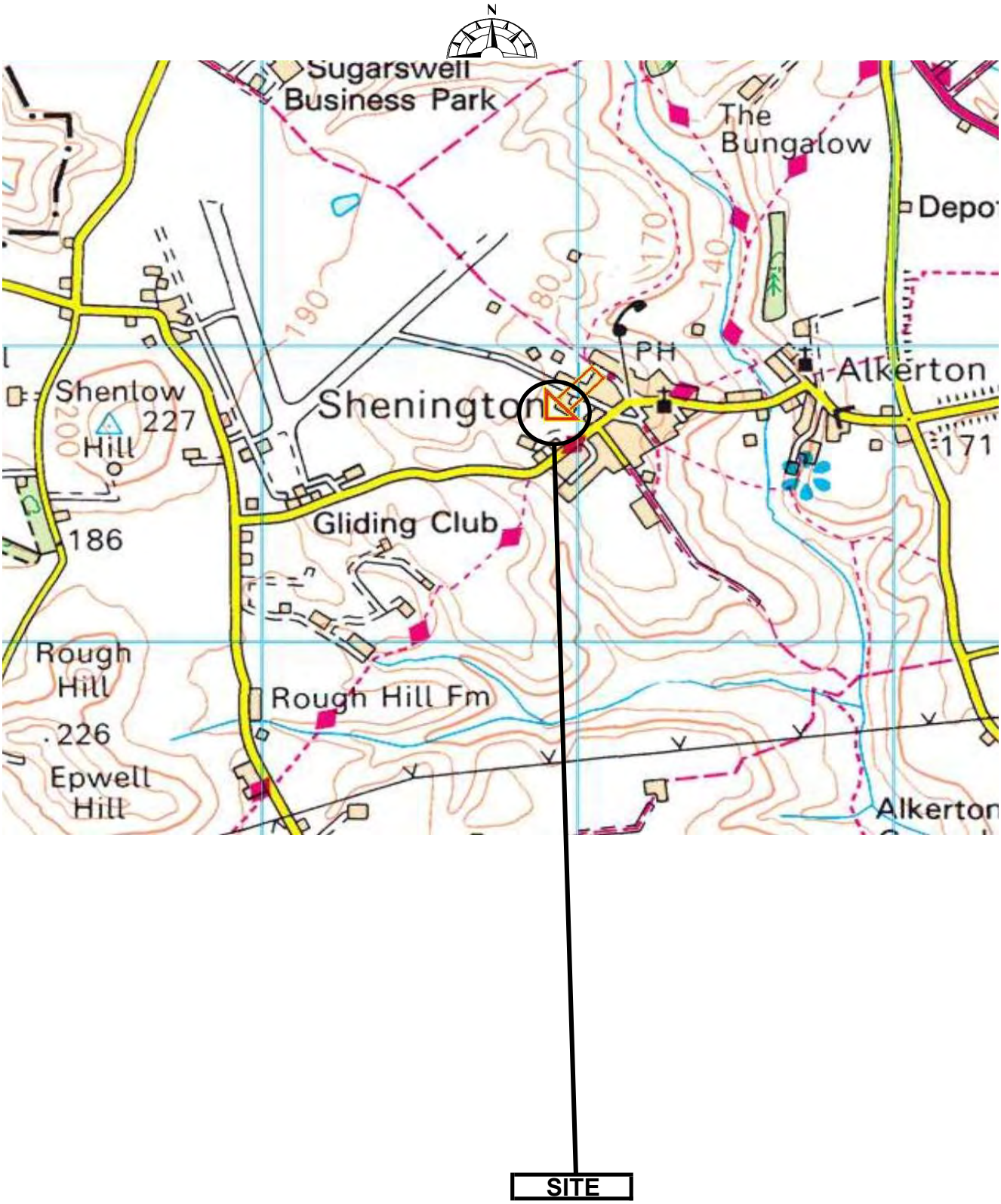
Cathal Gillespie
BEng MSc (Eng)
Director

APPENDIX A - FIGURES

Discovery CE
Geotechnical & Environmental Engineers
The Granary, Broadwell House Farm
Broadwell, Rugby CV238HF
www.dce-services.co.uk

Project	SHENINGTON BANBURY
Title	KEY PLAN
Client	ELAN HOMES

Project Number	21076J
Sheet No	1 of 1
Date	11/08/2021



Notes

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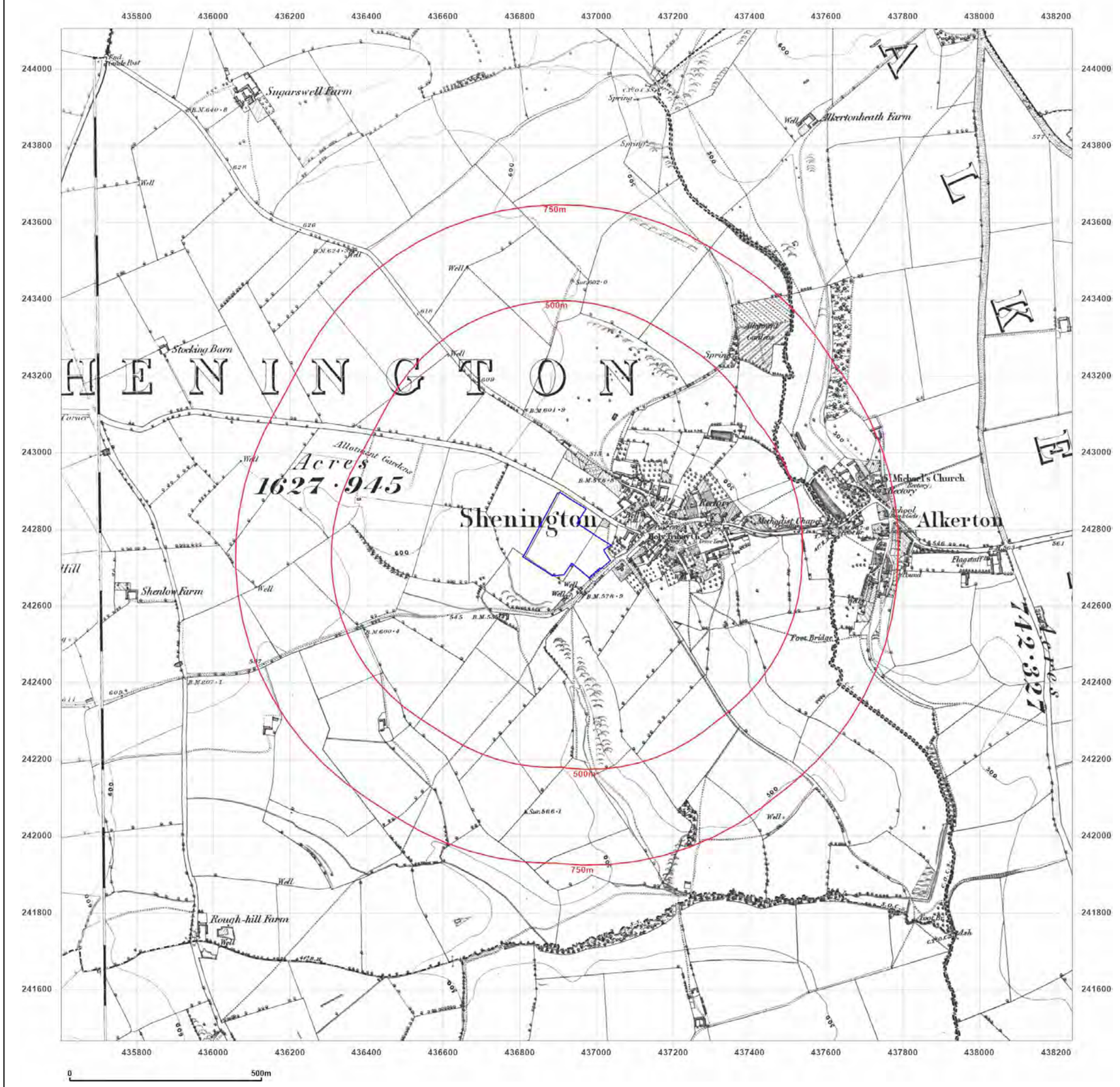
Figure

A1

APPENDIX B - HISTORICAL MAPS



Discovery

Geotechnical & Environmental Engineers

Site Details:

436889, 242743

Client Ref: 21076J
Report Ref: DCE-8090278
Grid Ref: 436922, 242785

Map Name: County Series

Map date: **1881**

Scale: 1:10,560

Printed at: 1:10,560

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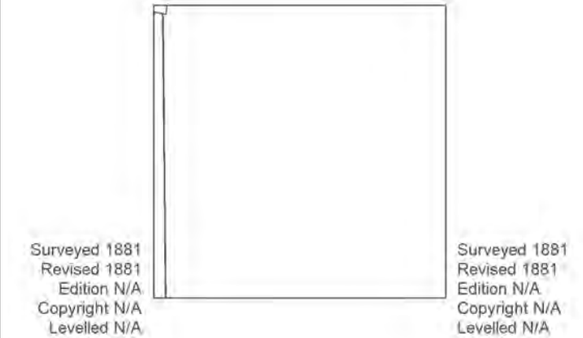

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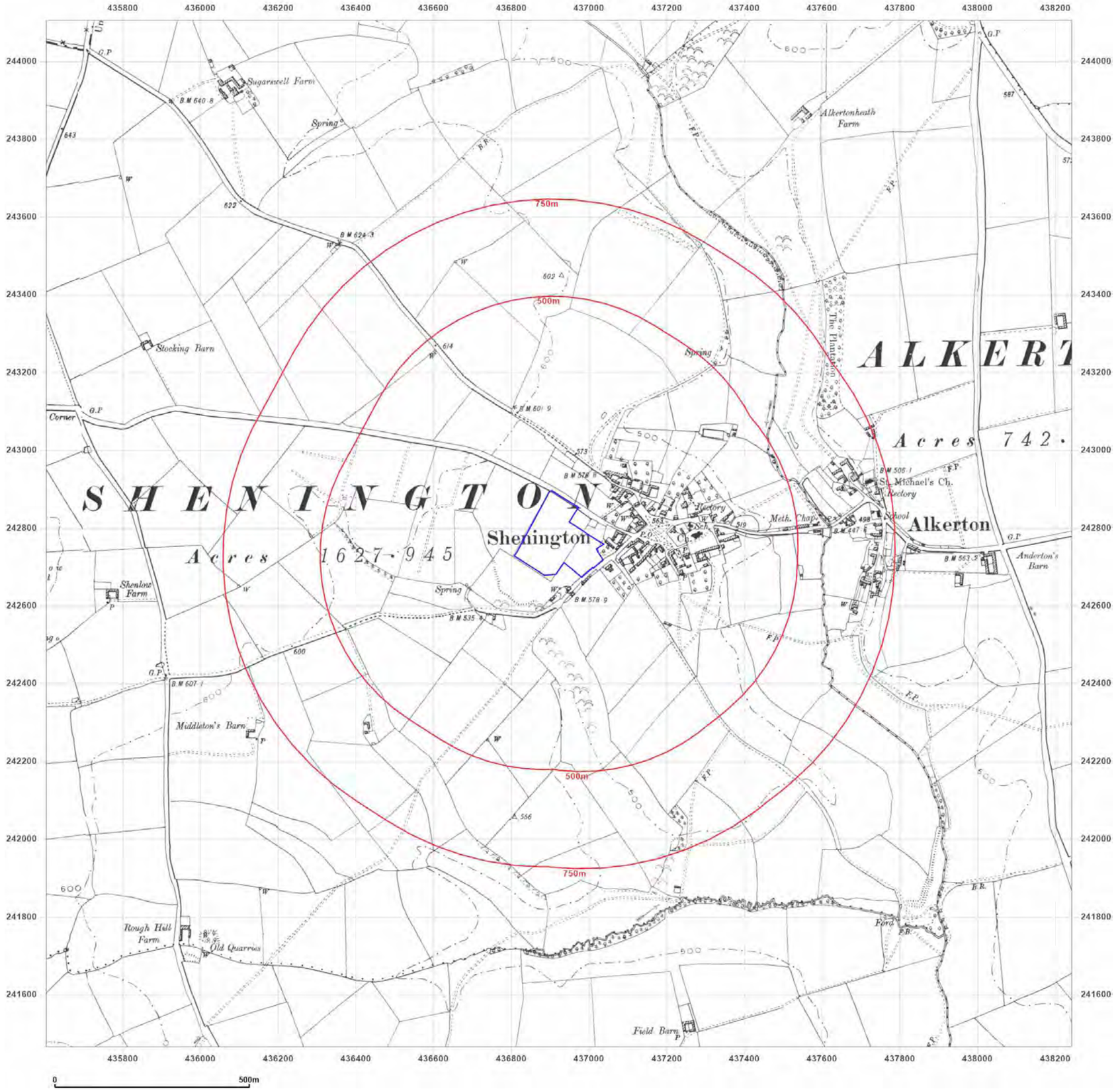

Discovery

Geotechnical & Environmental Engineers

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436889, 242743

Client Ref: 21076J
Report Ref: DCE-8090278
Grid Ref: 436922, 242785

Map Name: County Series

Map date: **1899-1900**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1880
Revised 1900
Edition N/A
Copyright N/A
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Surveyed 1880
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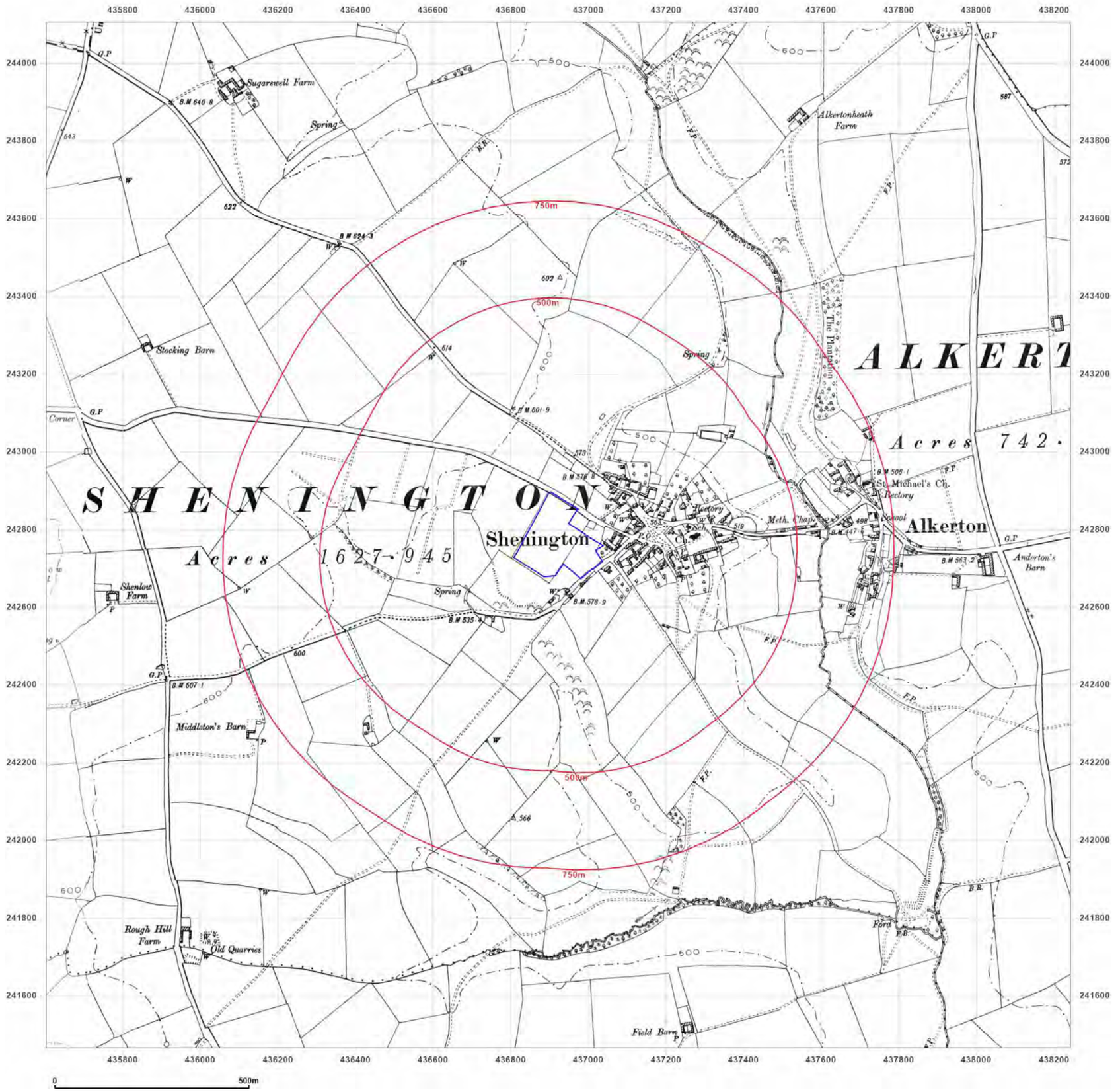

Discovery

Geotechnical & Environmental Engineers

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436889, 242743

Client Ref: 21076J
Report Ref: DCE-8090278
Grid Ref: 436922, 242785

Map Name: County Series

Map date: **1900-1905**

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Printed at: 1:10,560

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Revised 1905
Edition 1905
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Revised N/A
Edition N/A
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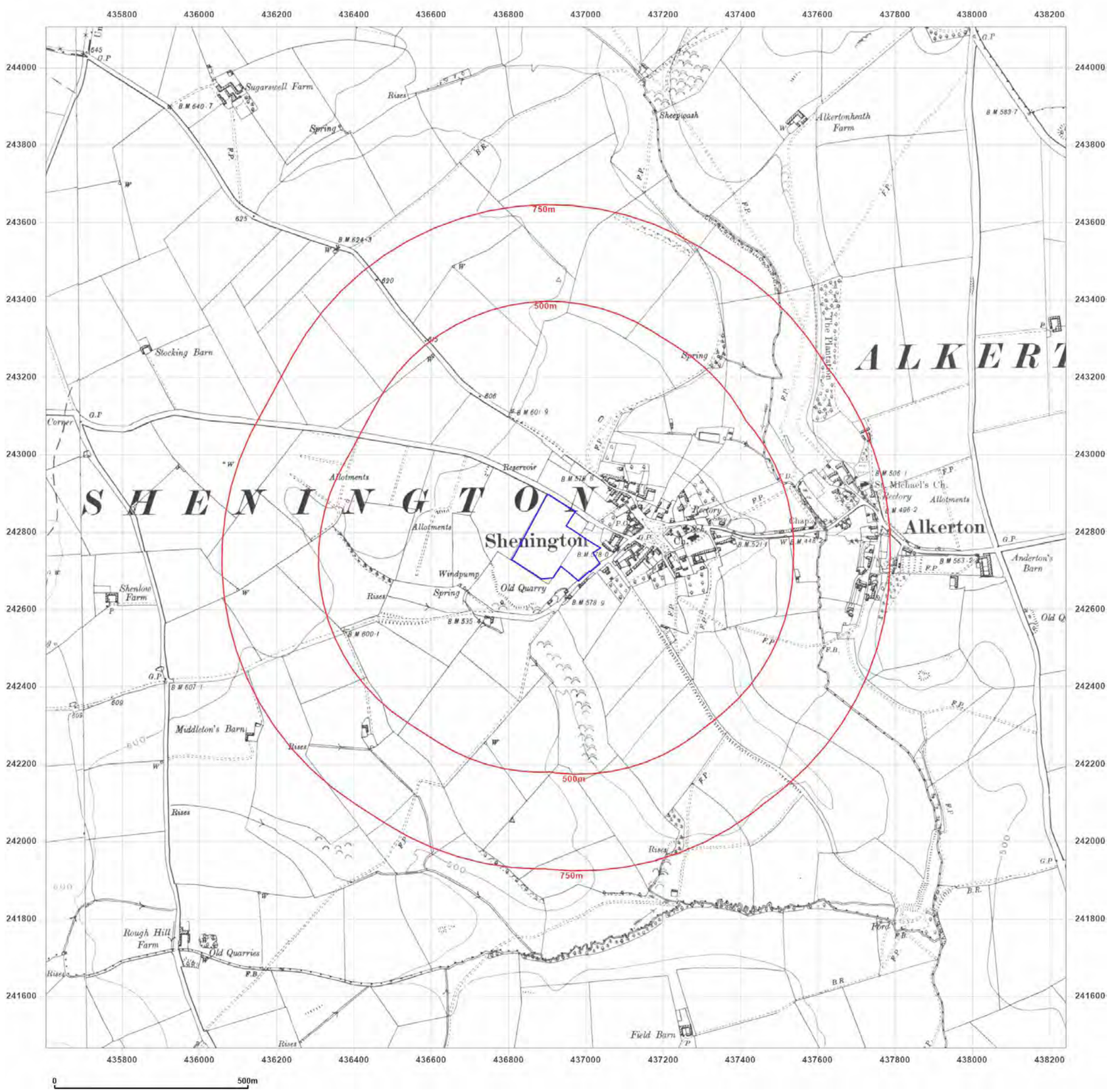

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Client Ref: 21076J
Report Ref: DCE-8090278
Grid Ref: 436922, 242785

Map Name: County Series

Map date: **1920**

Scale: 1:10,560

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Revised 1920
Edition N/A
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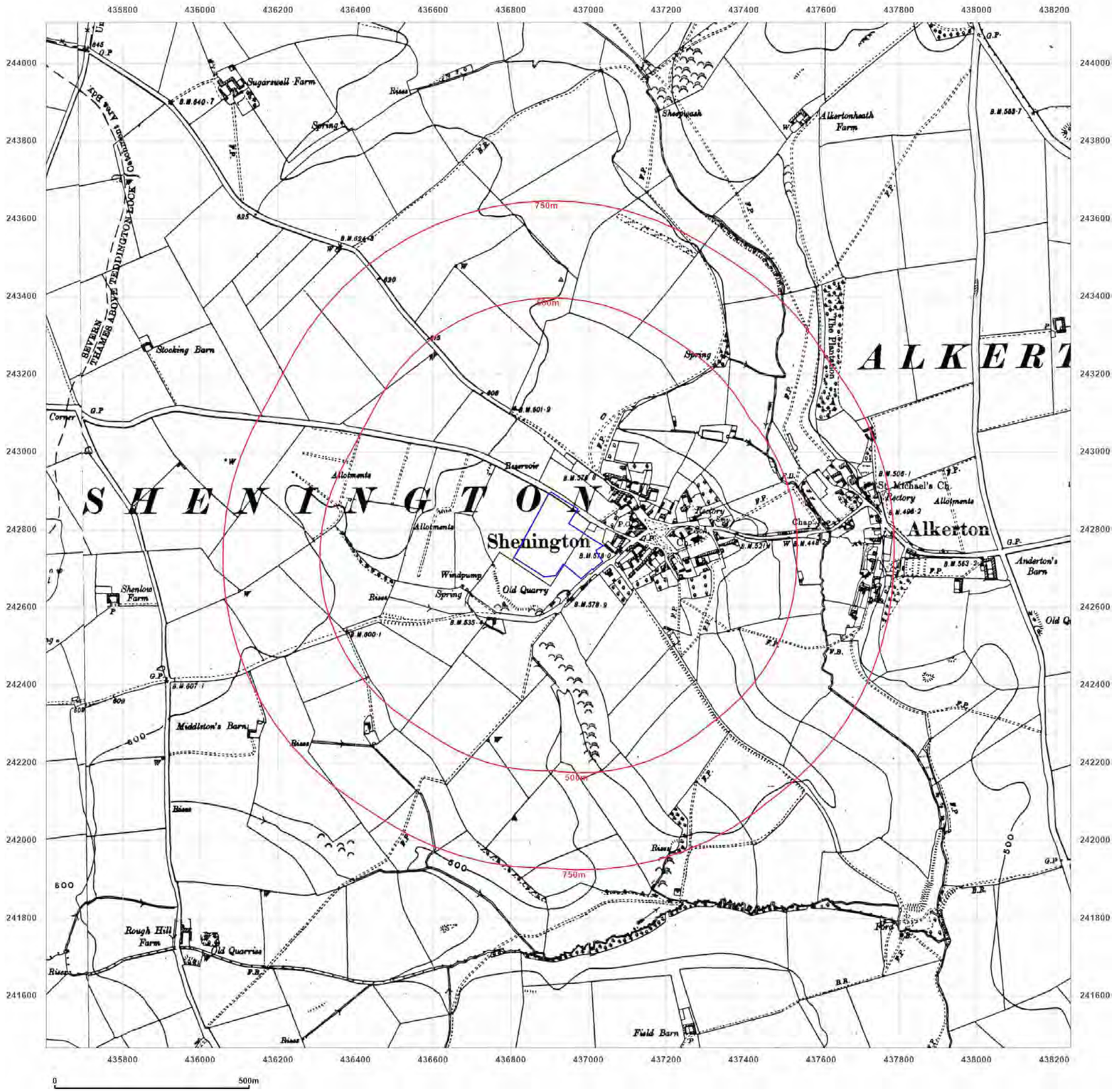

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436889, 242743

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Report Ref: DCE-8090278
Grid Ref: 436922, 242785

Map Name: County Series

Map date: **1923**

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Revised N/A
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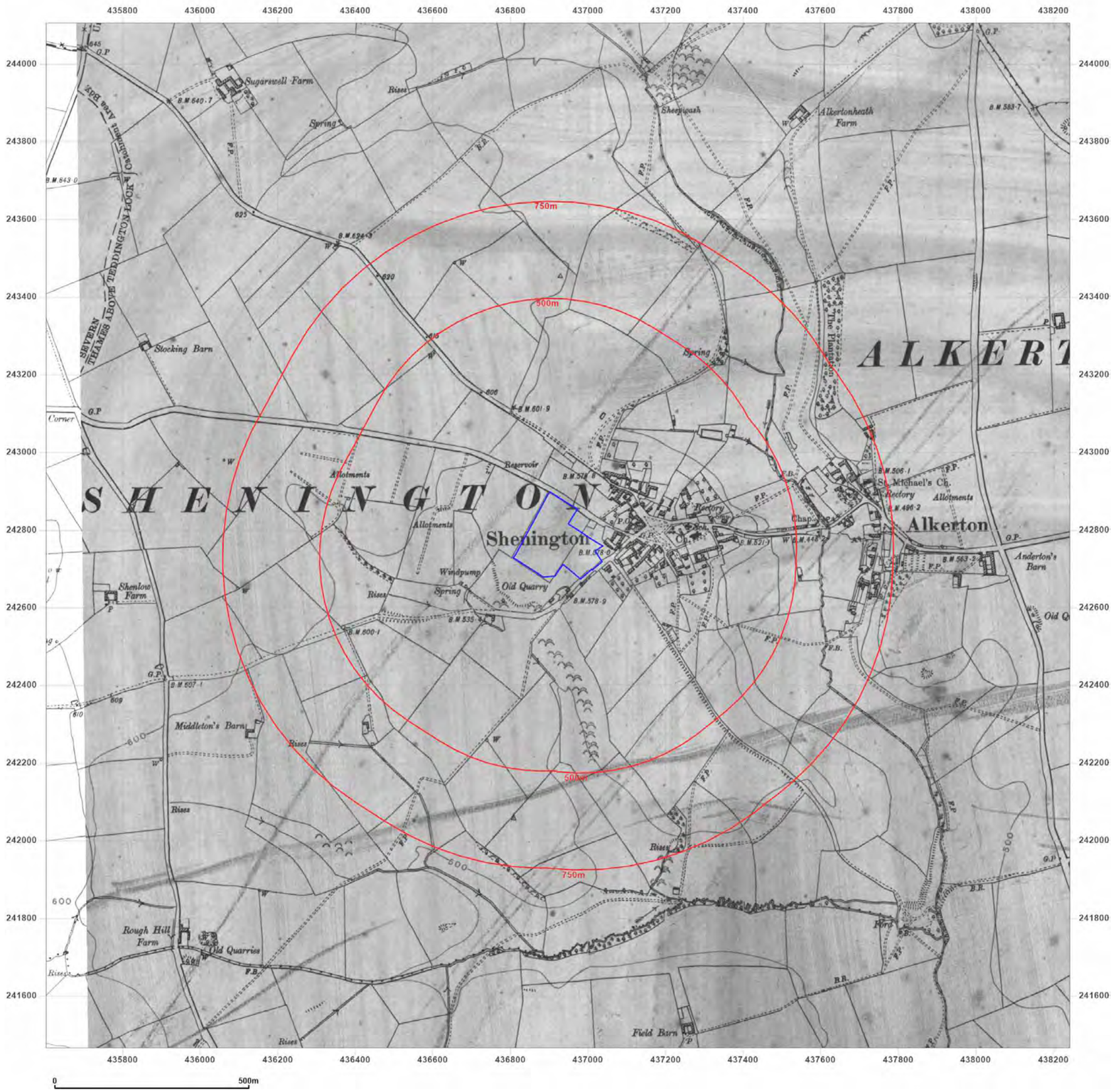

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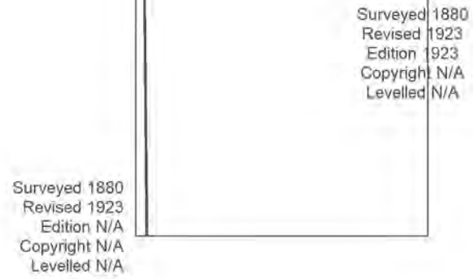

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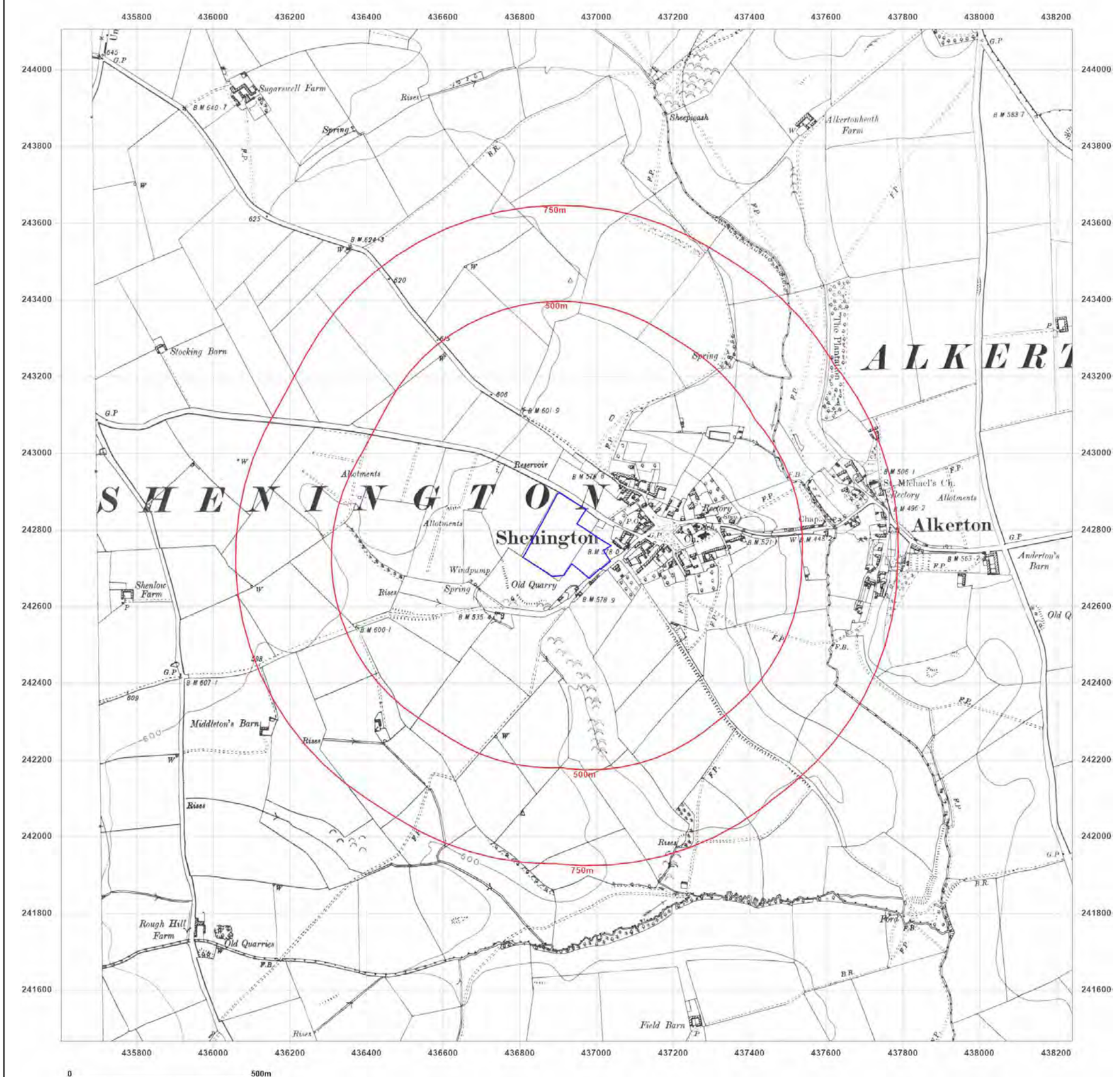

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Map Name: County Series

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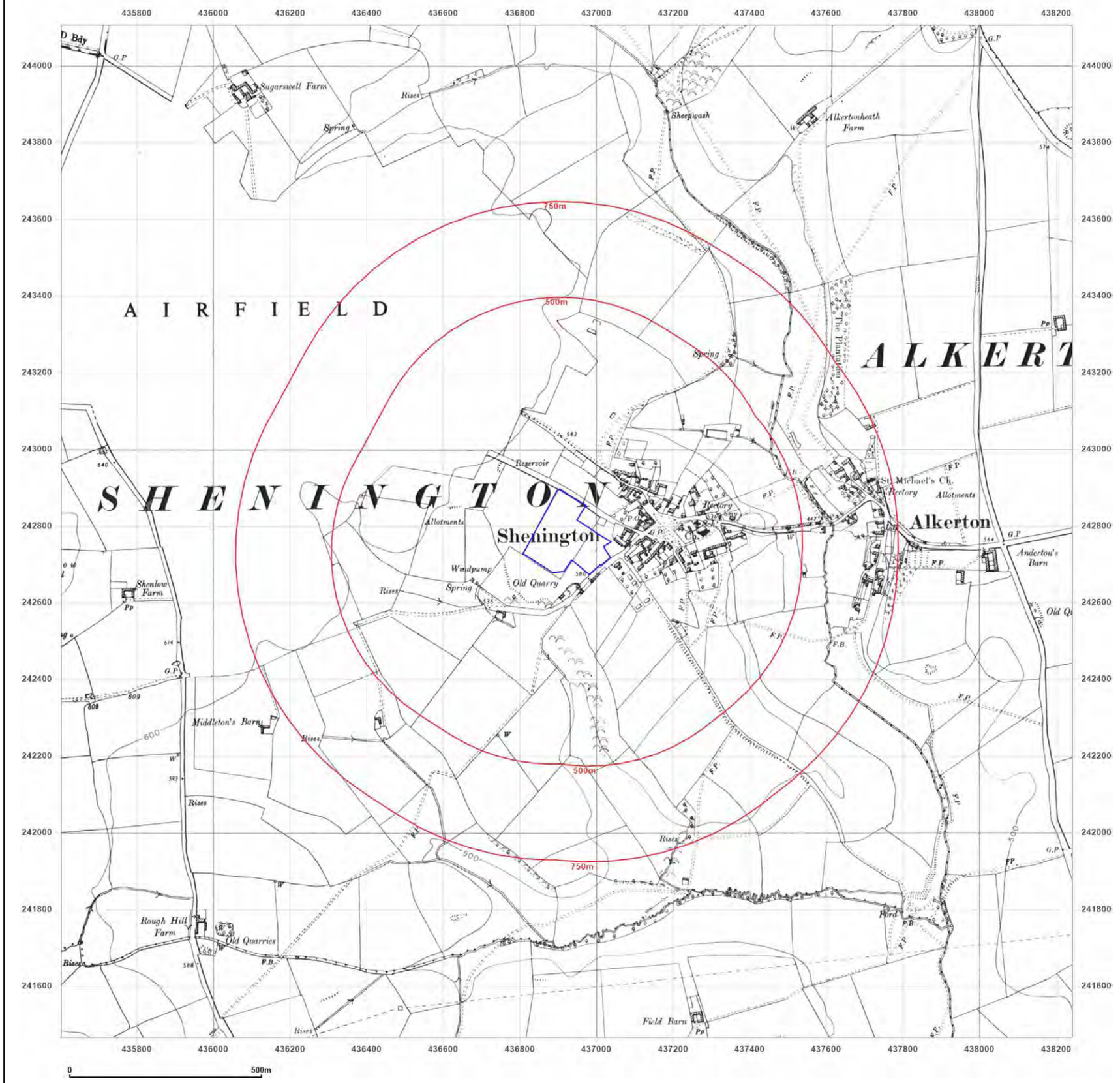

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Report Ref: DCE-8090278
Grid Ref: 436922, 242785

Map Name: Provisional

Map date: **1954**

Scale: 1:10,560

Printed at: 1:10,560

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Revised 1949
Edition N/A
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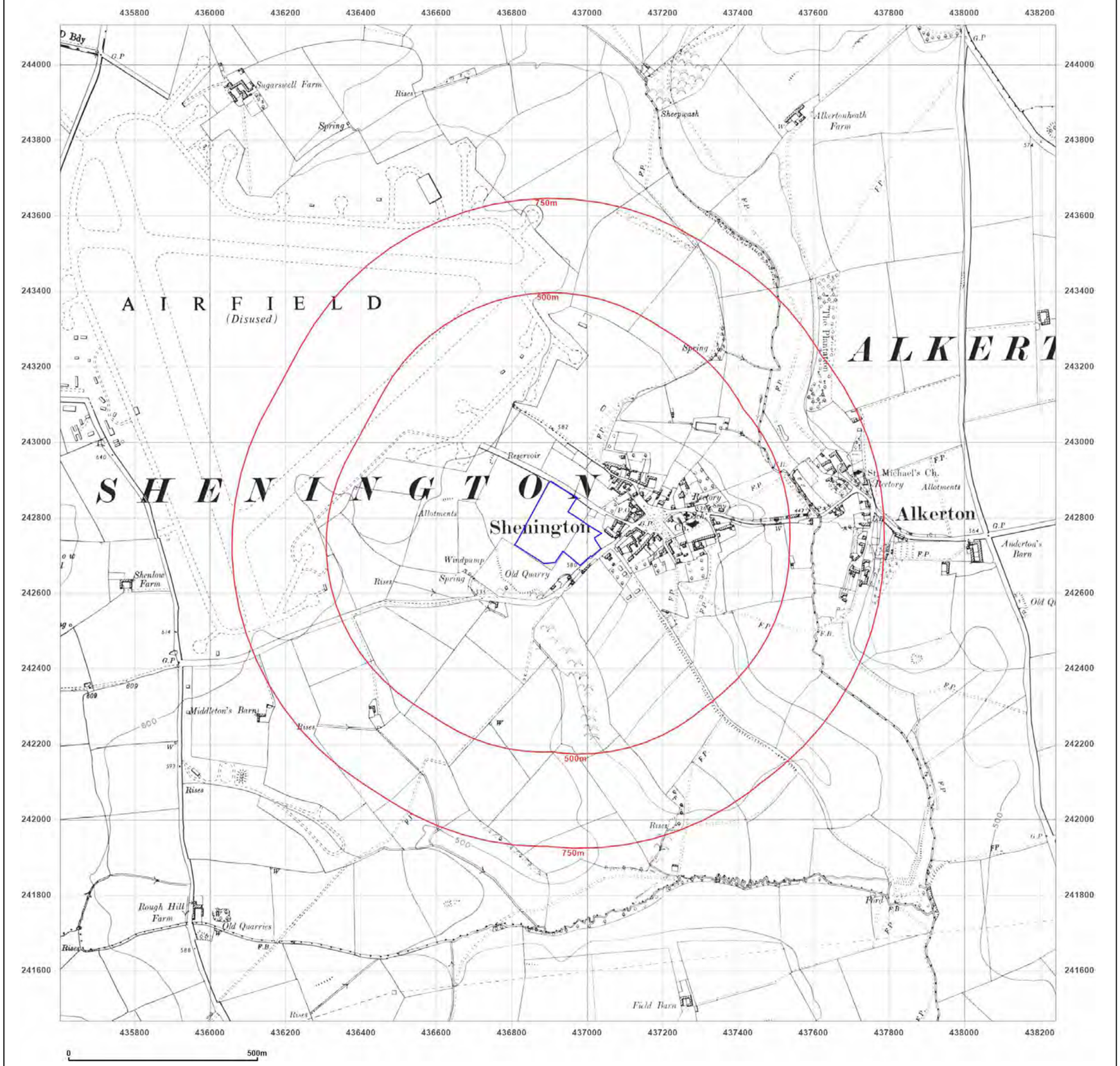

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Site Details:

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Map Name: Provisional

Map date: **1965**

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Printed at: 1:10,560

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Revised 1949
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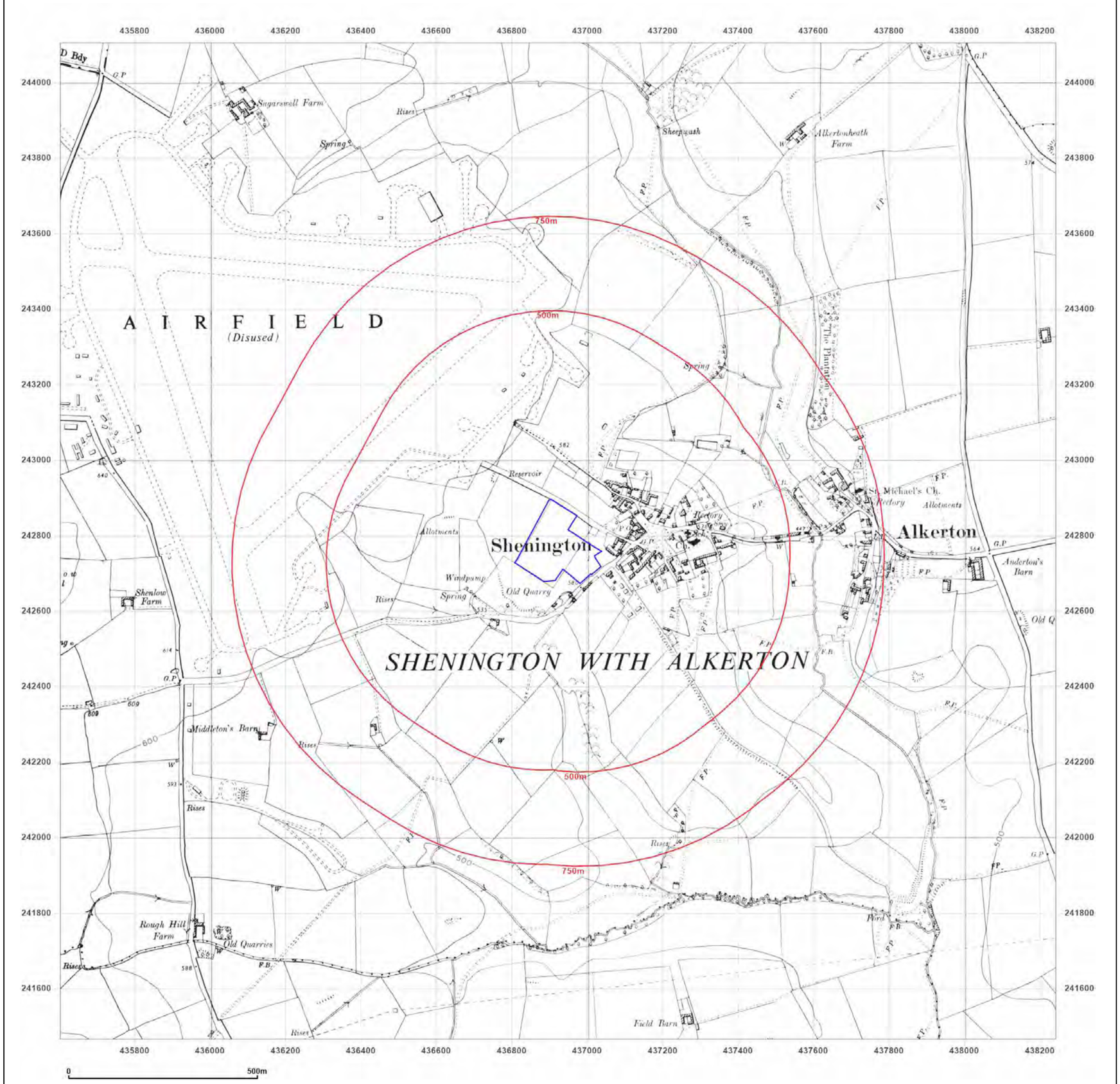

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Site Details:

436889, 242743

Client Ref: 21076J
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Grid Ref: 436922, 242785

Map Name: Provisional

Map date: **1971**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1949
Revised 1949
Edition N/A
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Levelled N/A

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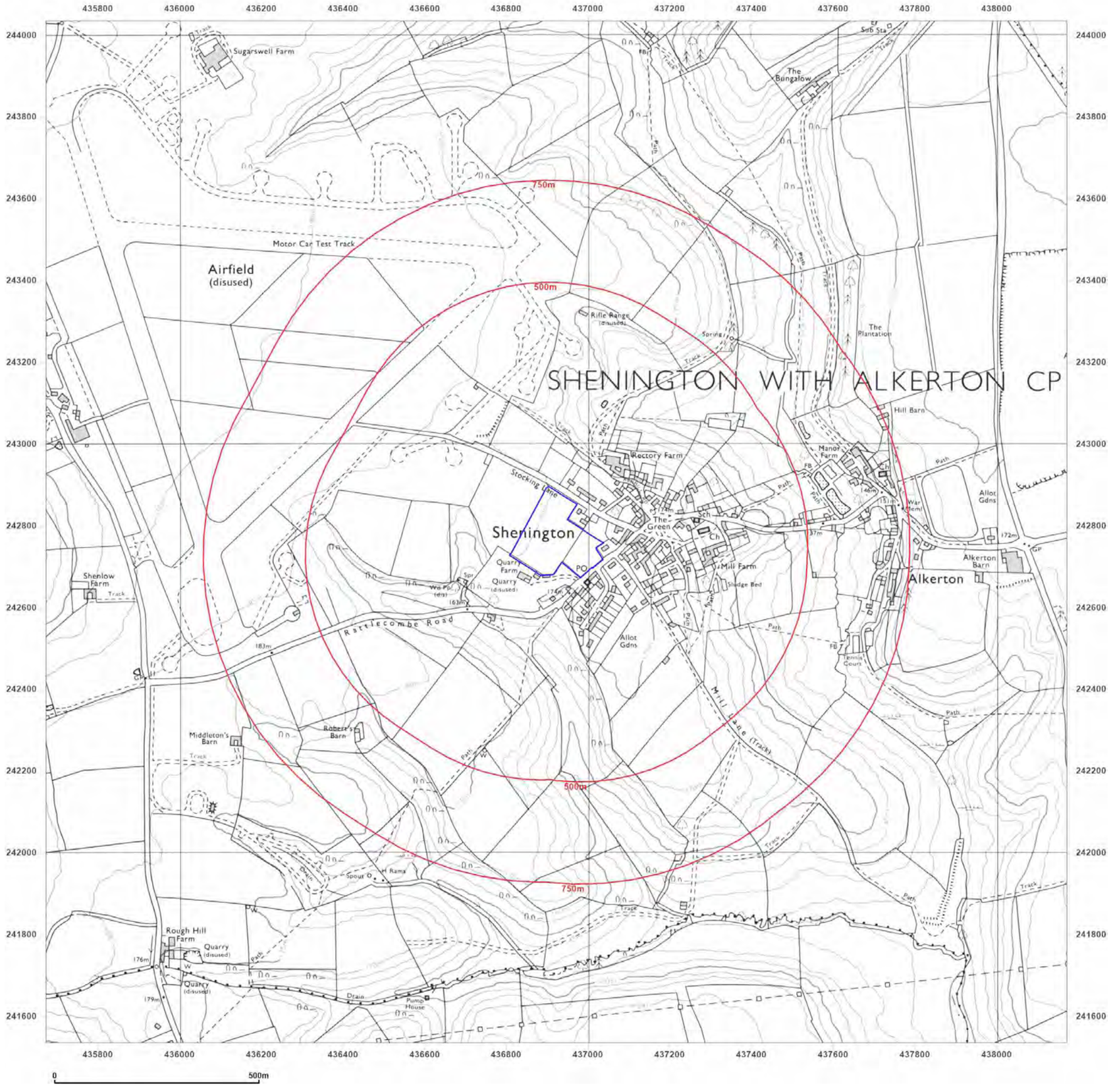

Discovery

Geotechnical & Environmental Engineers

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Client Ref: 21076J
Report Ref: DCE-8090278
Grid Ref: 436922, 242785

Map Name: National Grid

Map date: **1978**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1972
Revised 1978
Edition N/A
Copyright 1978
Levelled 1969

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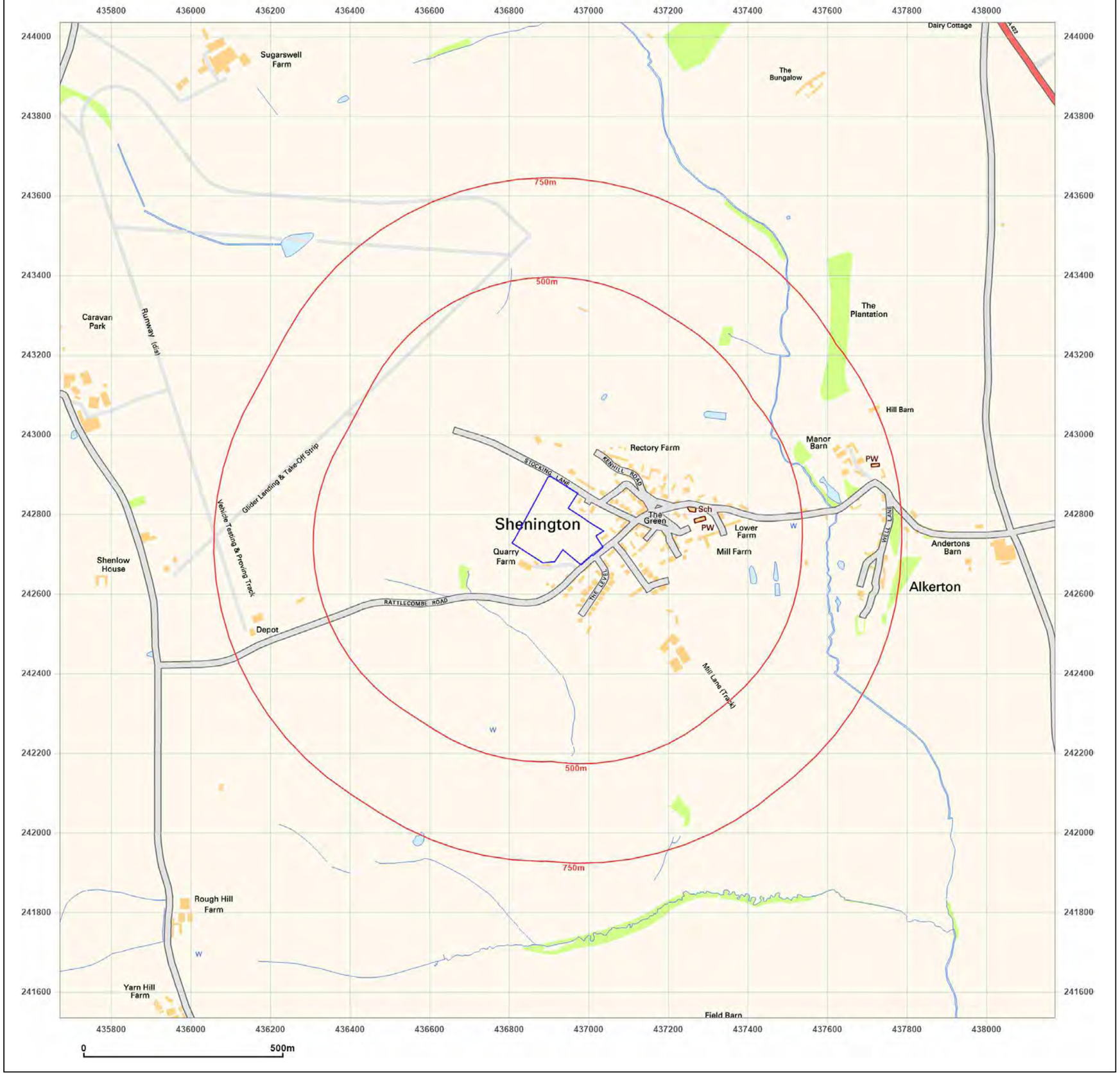

Discovery

Geotechnical & Environmental Engineers

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436889, 242743

Client Ref: 21076J
Report Ref: DCE-8090278
Grid Ref: 436922, 242785

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

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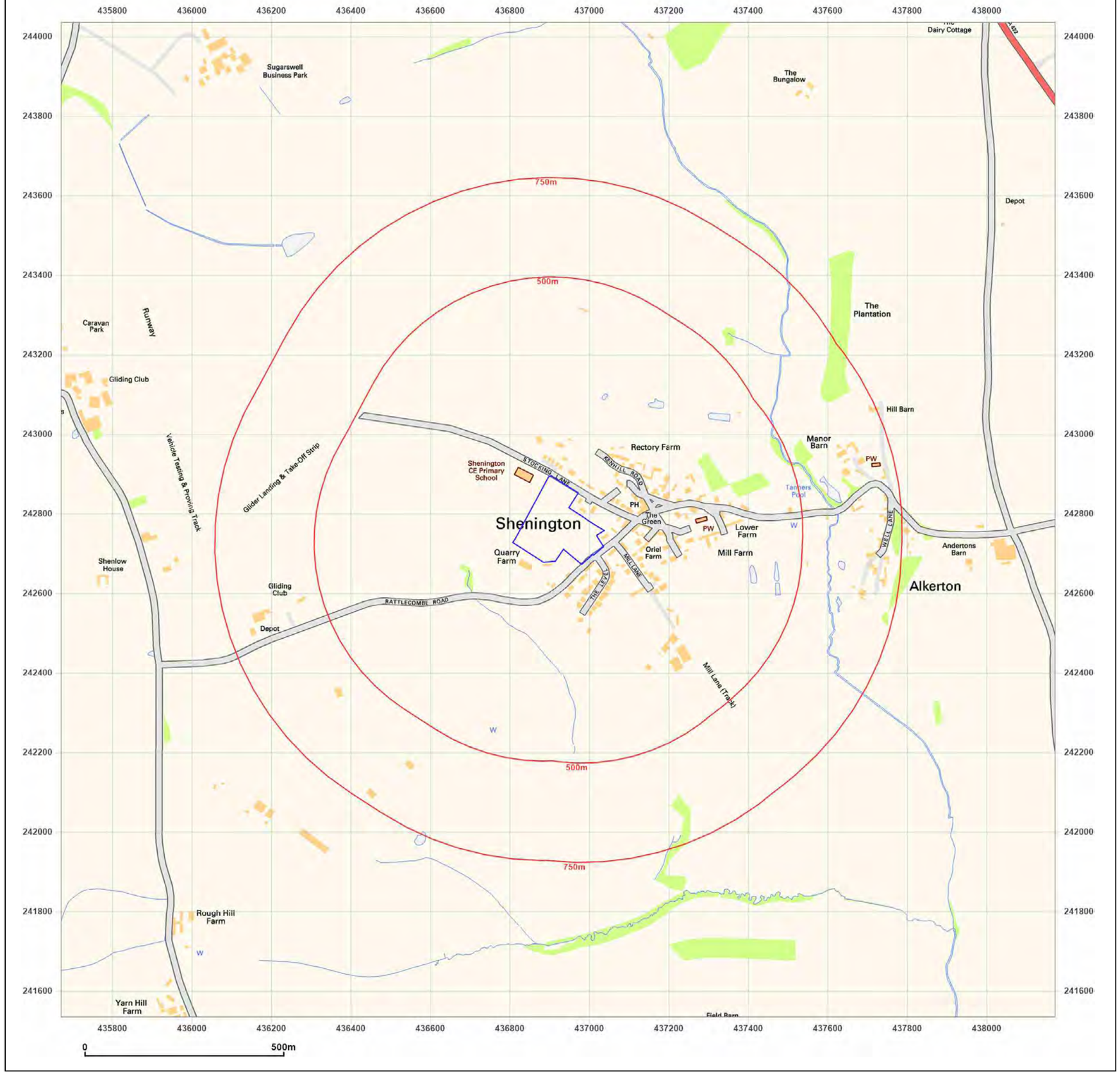

Discovery

Geotechnical & Environmental Engineers

Site Details:

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Client Ref: 21076J
Report Ref: DCE-8090278
Grid Ref: 436922, 242785

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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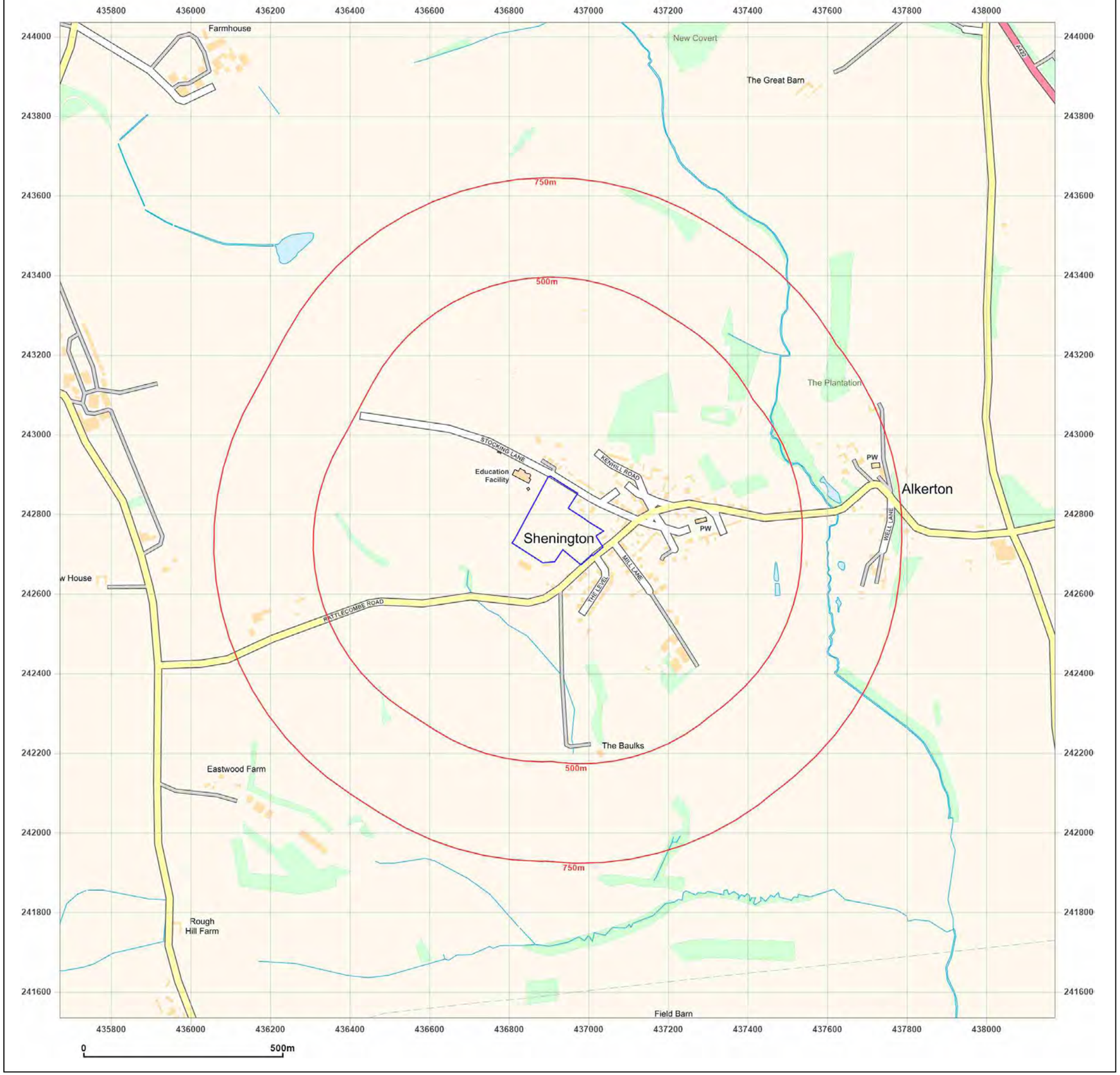

Discovery

Geotechnical & Environmental Engineers

Site Details:

436889, 242743

Client Ref: 21076J
Report Ref: DCE-8090278
Grid Ref: 436922, 242785

Map Name: National Grid

Map date: **2021**

Scale: 1:10,000

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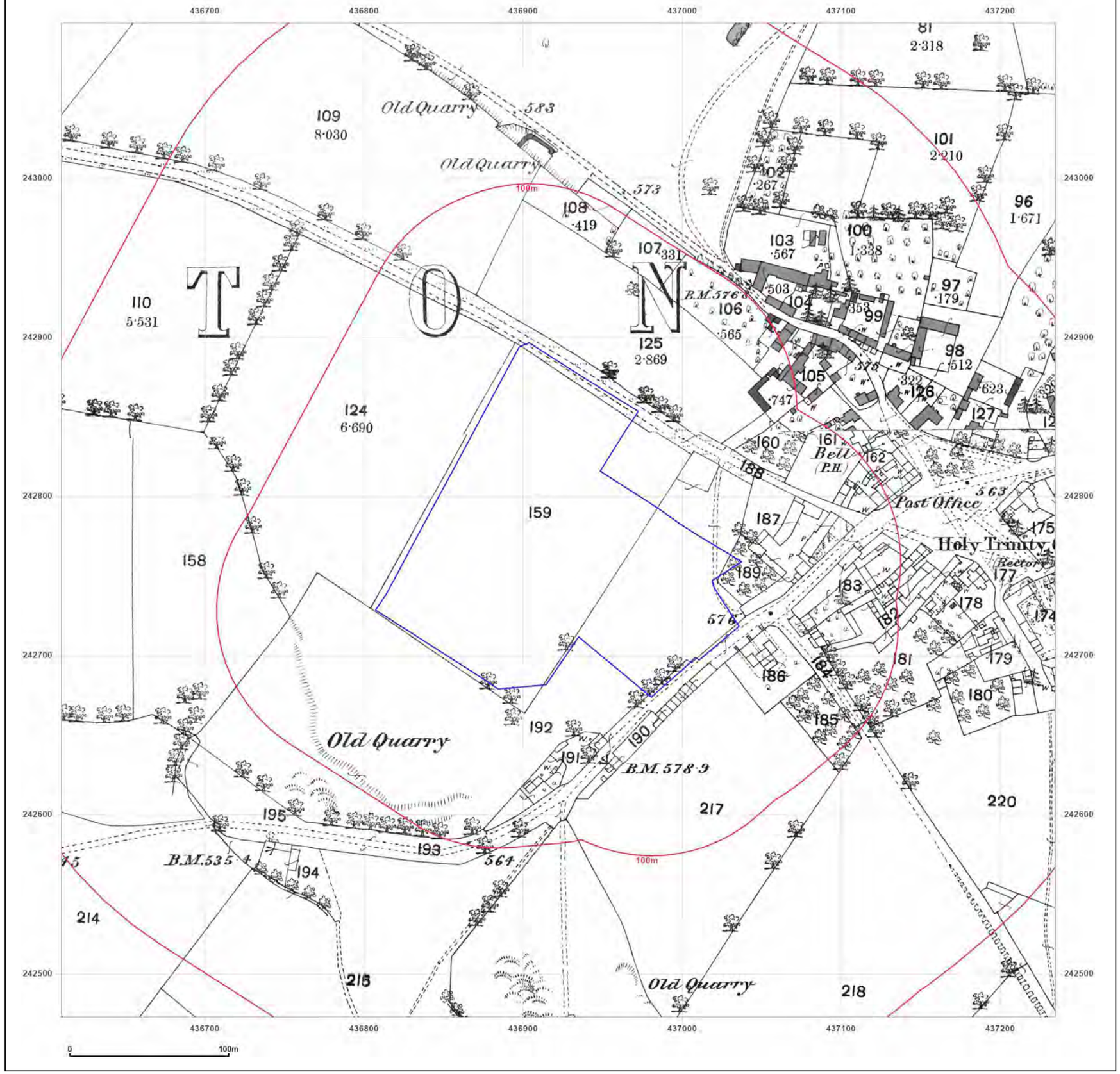

Discovery

Geotechnical & Environmental Engineers

Site Details:

436889, 242743

Client Ref: 21076J
Report Ref: DCE-8090278
Grid Ref: 436922, 242785

Map Name: County Series

Map date: **1881**

Scale: 1:2,500

Printed at: 1:2,500

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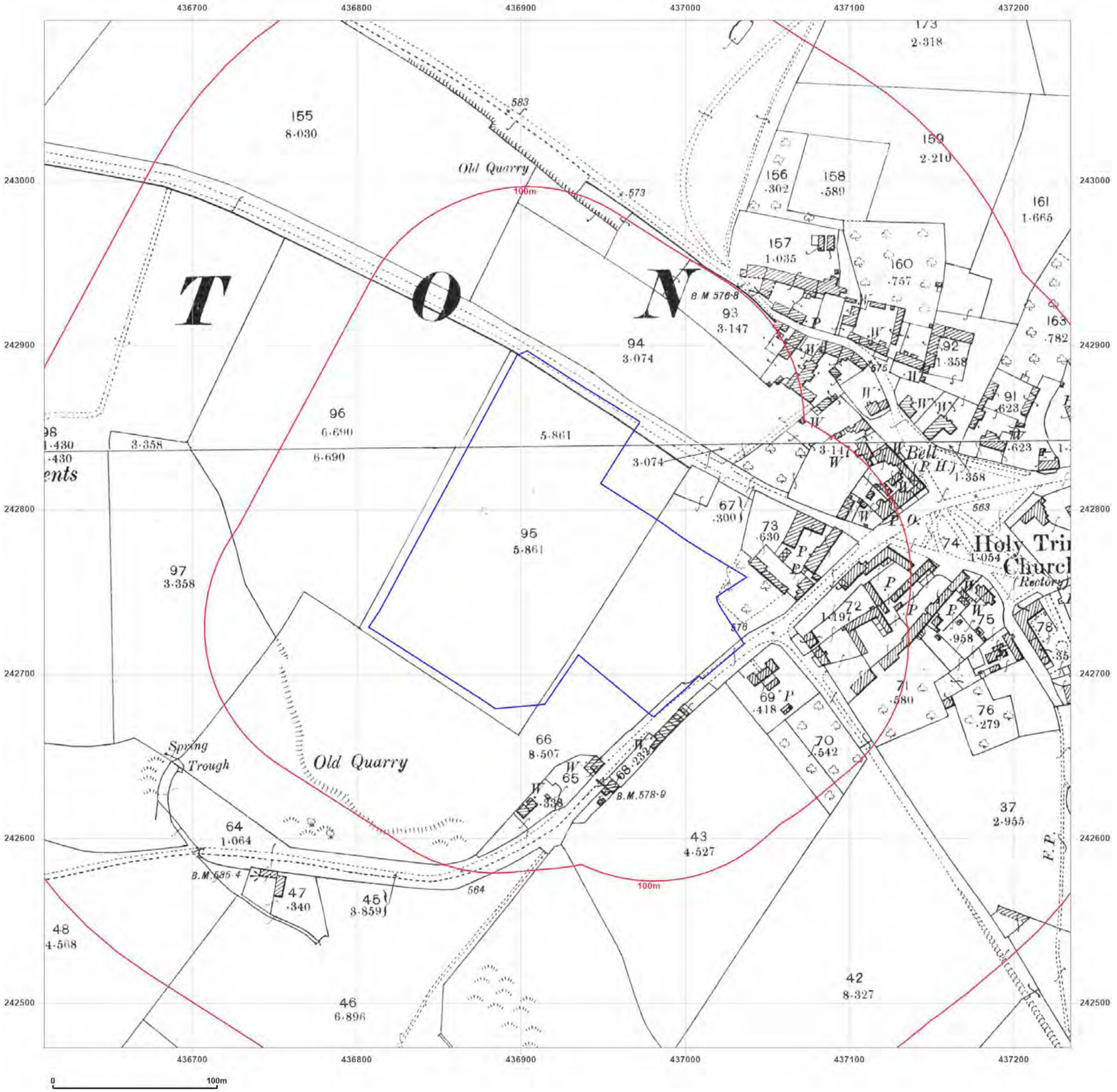

Discovery

Geotechnical & Environmental Engineers

Site Details:

436889, 242743

Client Ref: 21076J
Report Ref: DCE-8090278
Grid Ref: 436922, 242785

Map Name: County Series

Map date: **1900**

Scale: 1:2,500

Printed at: 1:2,500

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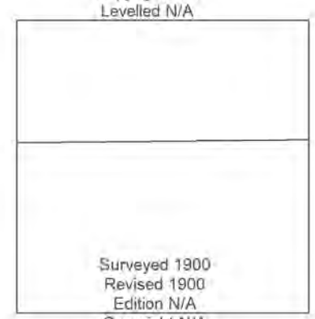
Surveyed 1900
Revised 1900
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1900
Revised 1900
Edition N/A
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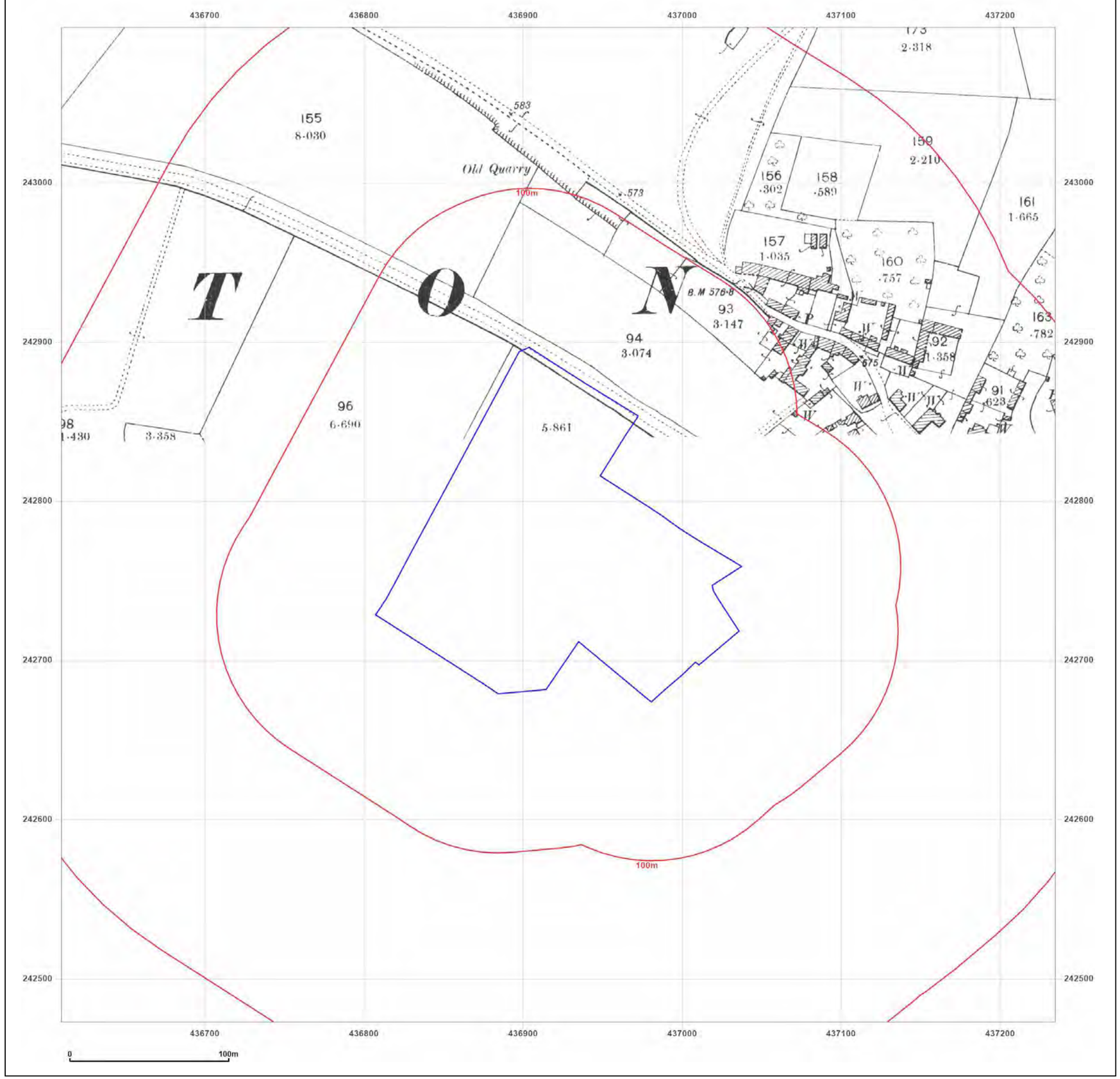

Discovery
Geotechnical & Environmental Engineers

Site Details:

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Client Ref: 21076J
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Grid Ref: 436922, 242785

Map Name: County Series
Map date: **1900**
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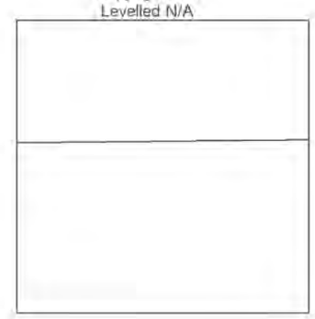
Revised 1900
Edition N/A
Copyright N/A
Levelled N/A



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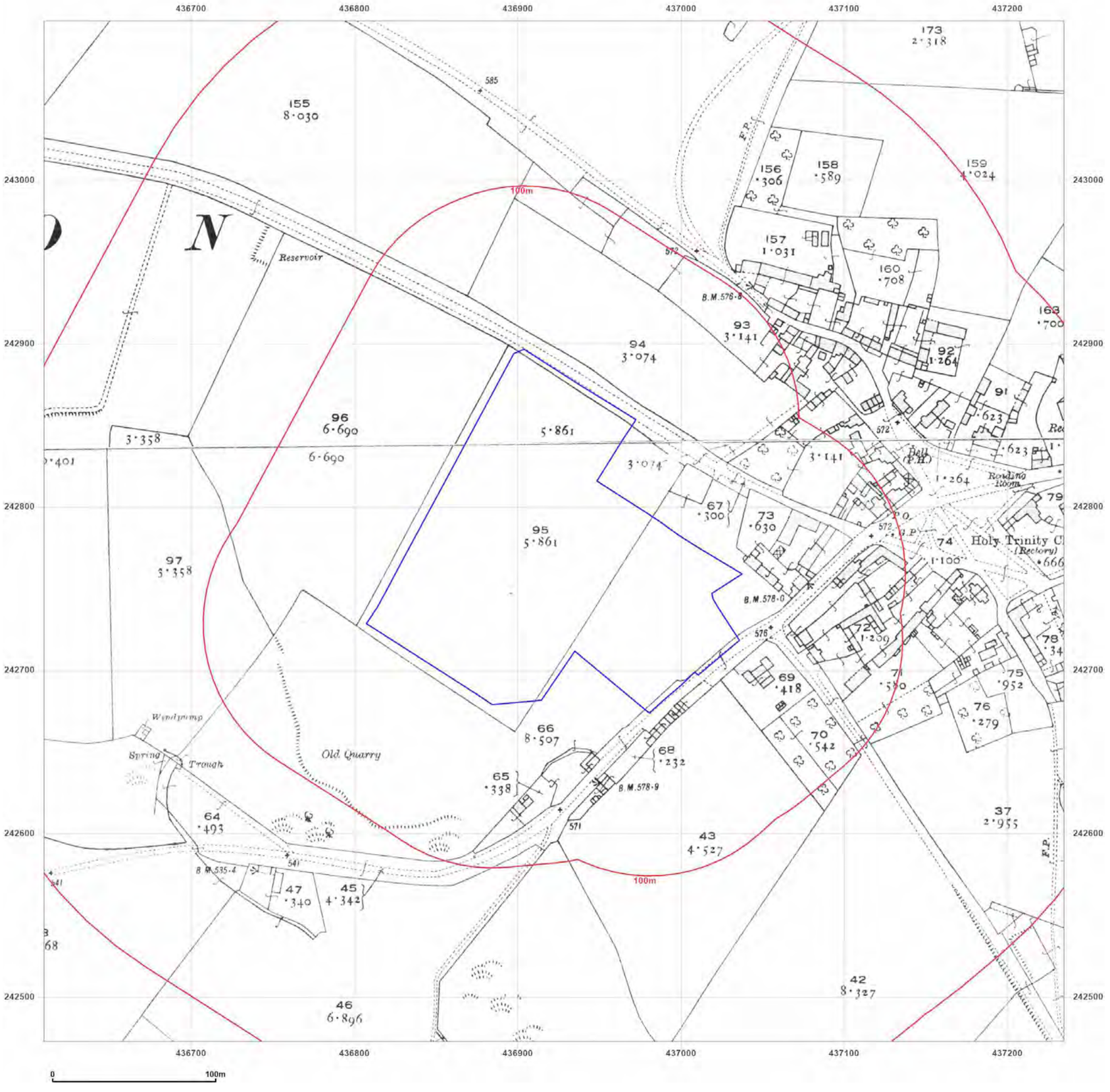

Discovery
Geotechnical & Environmental Engineers

Site Details:

436889, 242743

Client Ref: 21076J
Report Ref: DCE-8090278
Grid Ref: 436922, 242785

Map Name: County Series

Map date: **1922**

Scale: 1:2,500

Printed at: 1:2,500

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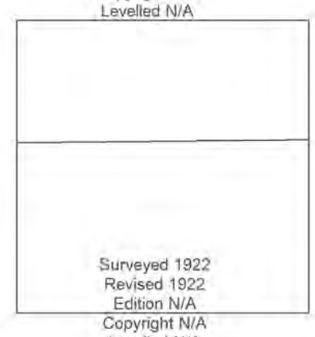
Surveyed 1922
Revised 1922
Edition N/A
Copyright N/A
Levelled N/A



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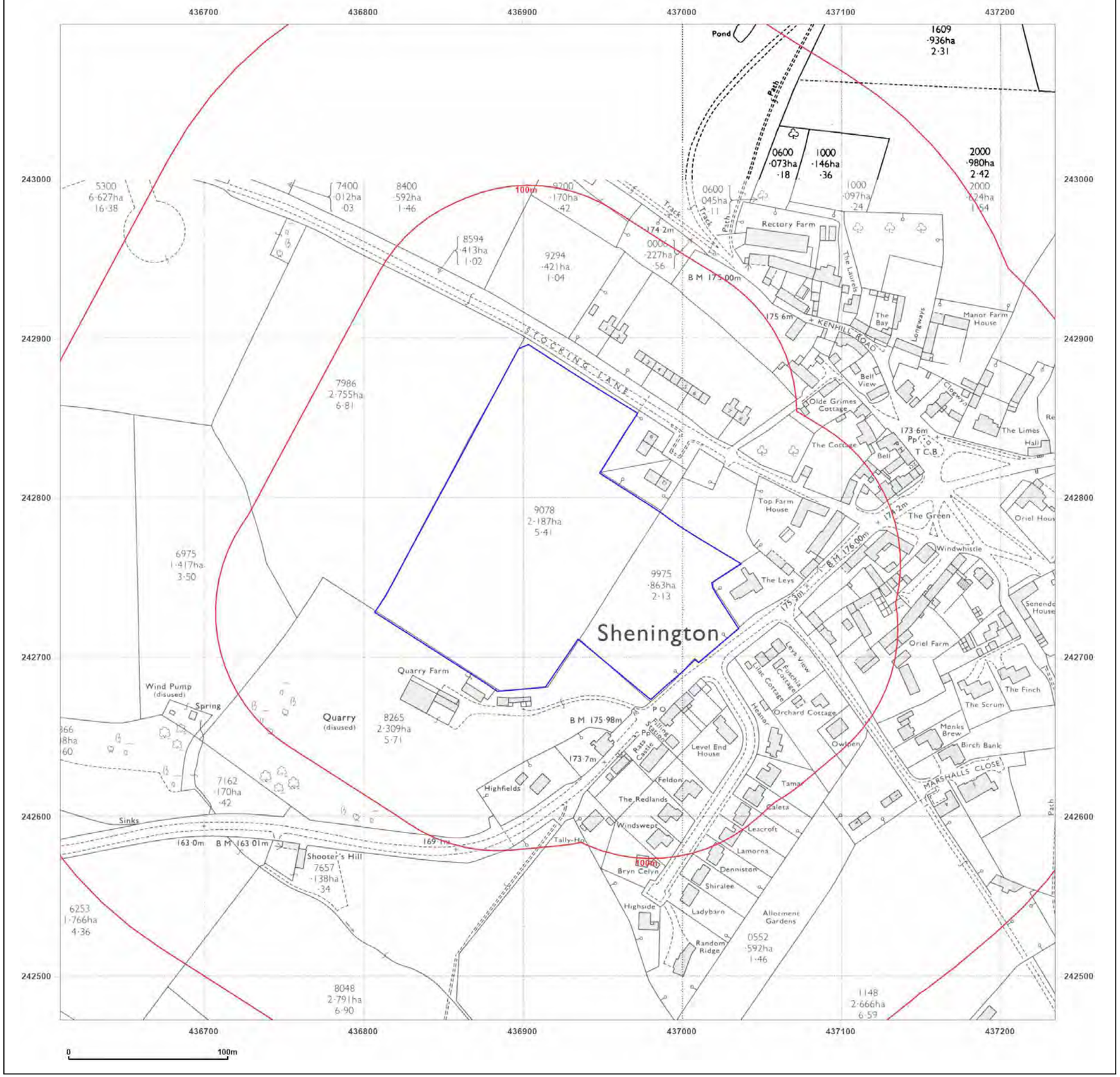

Discovery
Geotechnical & Environmental Engineers

Site Details:

436889, 242743

Client Ref: 21076J
Report Ref: DCE-8090278
Grid Ref: 436922, 242785

Map Name: National Grid
Map date: **1971**
Scale: 1:2,500
Printed at: 1:2,500

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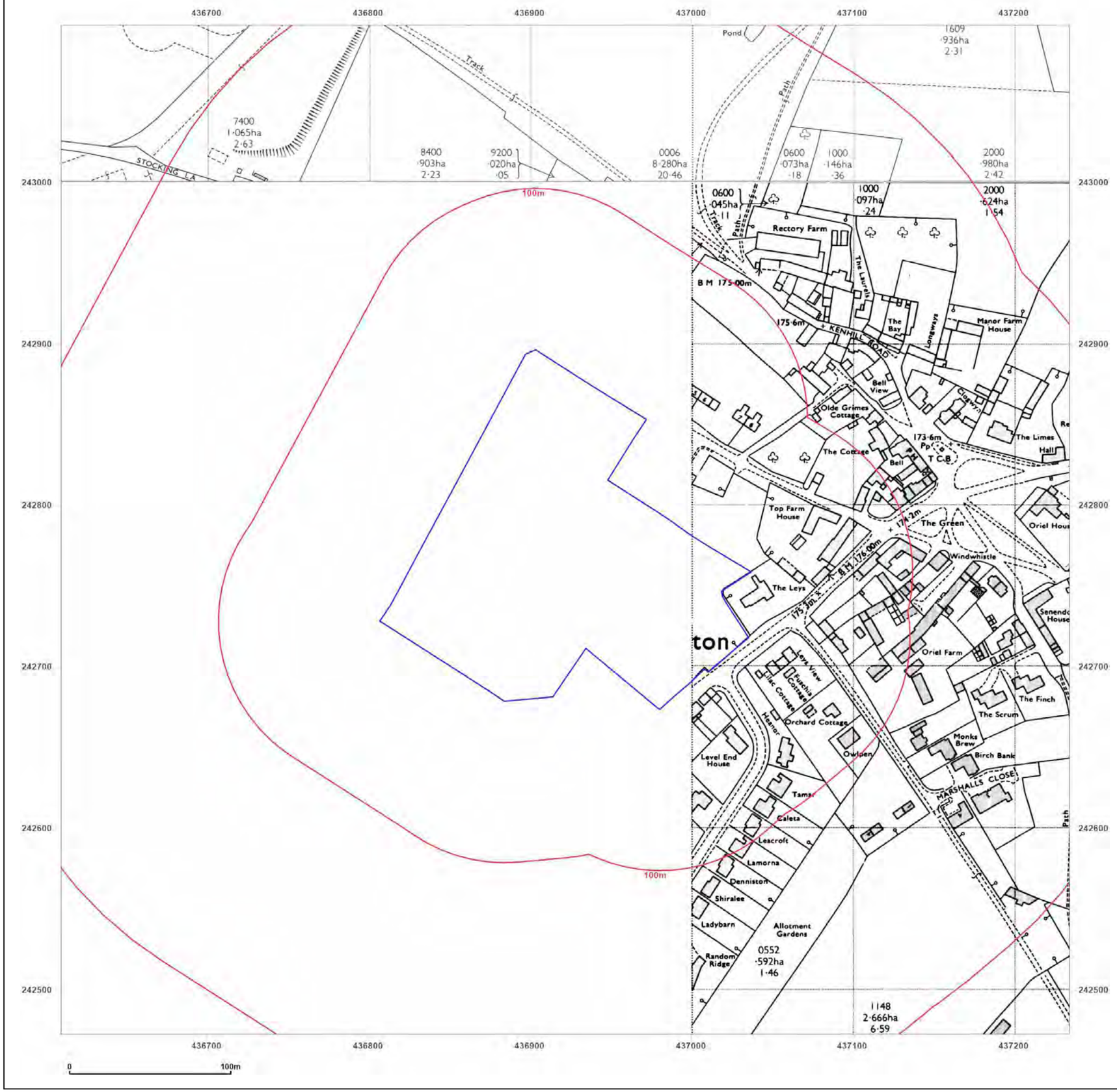

Discovery

Geotechnical & Environmental Engineers

Site Details:

436889, 242743

Client Ref: 21076J
Report Ref: DCE-8090278
Grid Ref: 436922, 242785

Map Name: National Grid

Map date: **1970-1972**

Scale: 1:2,500

Printed at: 1:2,500

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Revised 1970
Edition N/A
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Levelled 1967

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

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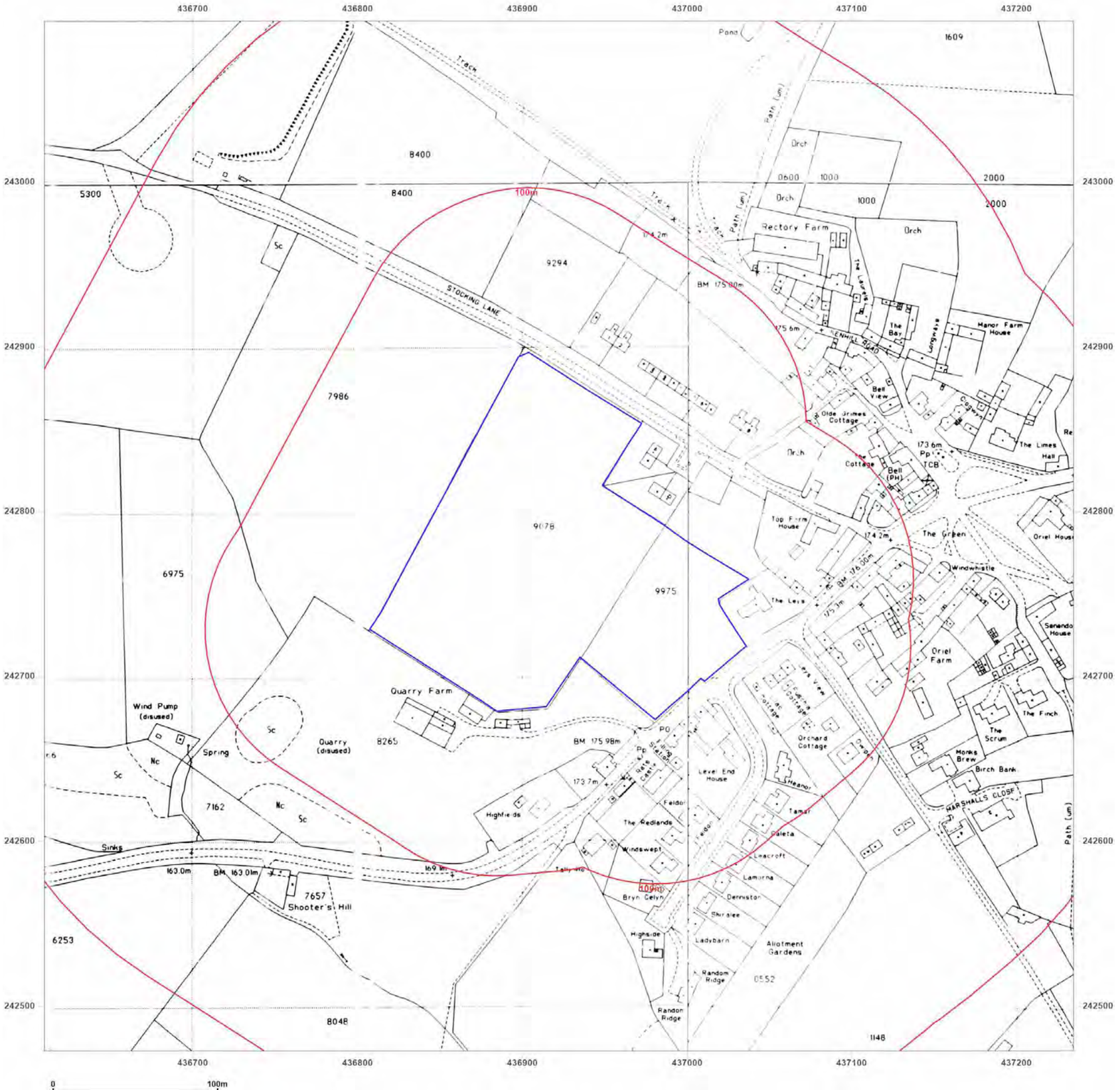

Discovery

Geotechnical & Environmental Engineers

Site Details:

436889, 242743

Client Ref: 21076J
Report Ref: DCE-8090278
Grid Ref: 436922, 242785

Map Name: National Grid

Map date: **1993**

Scale: 1:2,500

Printed at: 1:2,500

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Edition N/A
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Revised N/A
Edition N/A
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Production date: 02 August 2021

Map legend available at:
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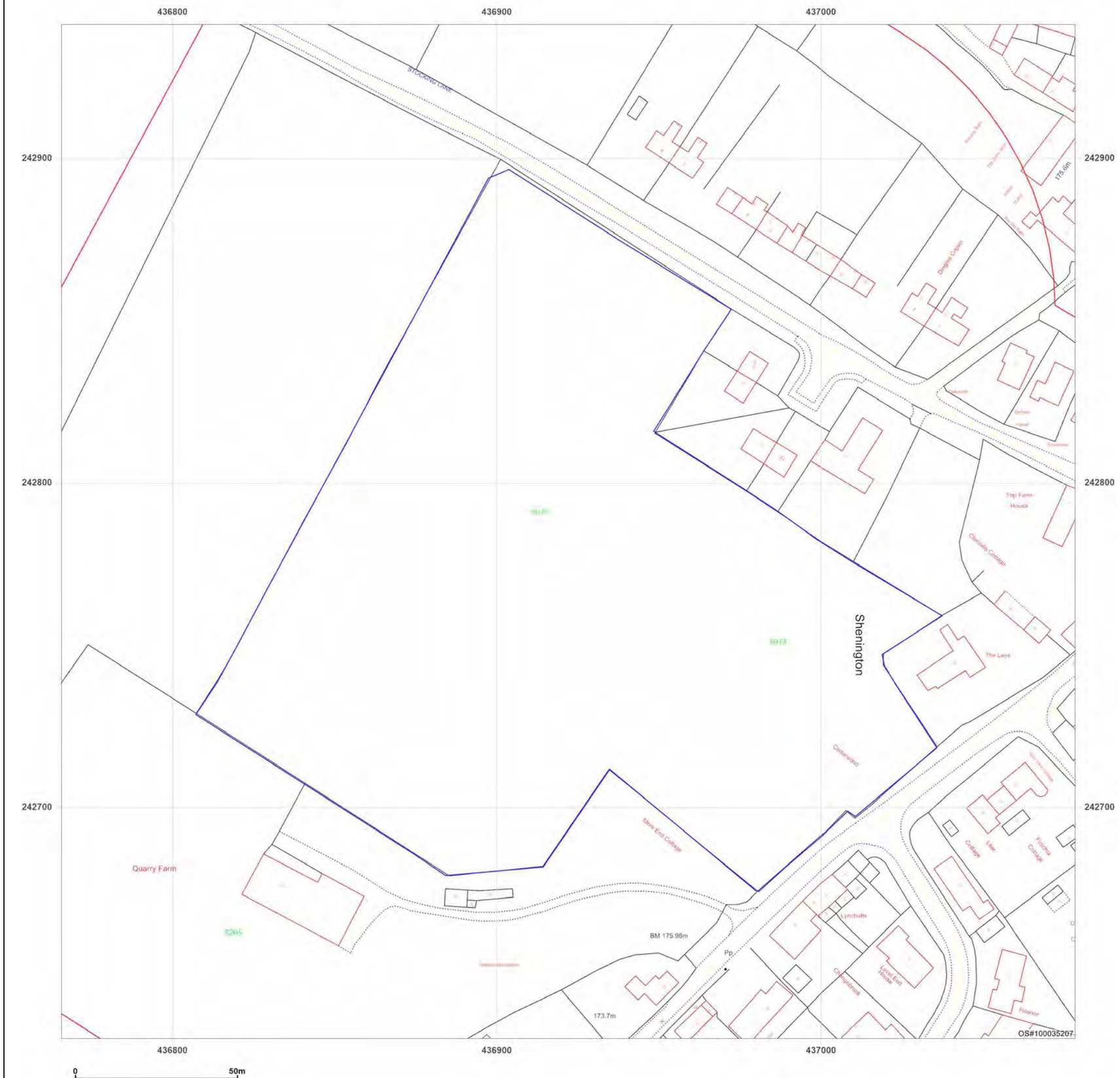

Discovery
Geotechnical & Environmental Engineers

Site Details:

436889, 242743

Client Ref: 21076J
Report Ref: DCE-8090278
Grid Ref: 436922, 242785

Map Name: LandLine
Map date: **2003**
Scale: 1:1,250
Printed at: 1:1,250

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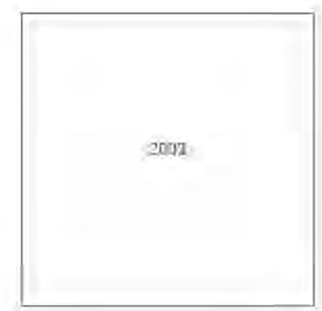

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Production date: 02 August 2021

Map legend available at:
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APPENDIX C - ENVIRONMENTAL DATA

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

436889, 242743

Order Details

Date: 02/08/2021

Your ref: 21076J

Our Ref: DCE-8090279

Client: Discovery CE Limited

Site Details

Location: 436923 242788

Area: 2.81 ha

Authority: Cherwell District Council

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

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	**1.1**	**Historical industrial land uses**	0	4	8	7	-
15	1.2	Historical tanks	0	0	0	0	-
16	1.3	Historical energy features	0	0	0	0	-
16	**1.4**	**Historical petrol stations**	0	1	0	0	-
16	1.5	Historical garages	0	0	0	0	-
17	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
18	**2.1**	**Historical industrial land uses**	0	5	9	7	-
19	2.2	Historical tanks	0	0	0	0	-
20	2.3	Historical energy features	0	0	0	0	-
20	**2.4**	**Historical petrol stations**	0	1	0	0	-
20	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
21	3.1	Active or recent landfill	0	0	0	0	-
21	3.2	Historical landfill (BGS records)	0	0	0	0	-
22	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
22	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
22	3.5	Historical waste sites	0	0	0	0	-
22	3.6	Licensed waste sites	0	0	0	0	-
22	**3.7**	**Waste exemptions**	0	0	2	2	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
24	**4.1**	**Recent industrial land uses**	0	2	3	-	-
25	4.2	Current or recent petrol stations	0	0	0	0	-
25	4.3	Electricity cables	0	0	0	0	-
25	4.4	Gas pipelines	0	0	0	0	-
25	4.5	Sites determined as Contaminated Land	0	0	0	0	-

26	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
26	4.7	Regulated explosive sites	0	0	0	0	-
26	4.8	Hazardous substance storage/usage	0	0	0	0	-
26	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
26	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
27	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
27	4.12	Radioactive Substance Authorisations	0	0	0	0	-
27	**4.13**	**Licensed Discharges to controlled waters**	0	2	1	0	-
28	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
28	4.15	Pollutant release to public sewer	0	0	0	0	-
28	4.16	List 1 Dangerous Substances	0	0	0	0	-
28	4.17	List 2 Dangerous Substances	0	0	0	0	-
28	**4.18**	**Pollution Incidents (EA/NRW)**	0	0	3	0	-
29	4.19	Pollution inventory substances	0	0	0	0	-
29	4.20	Pollution inventory waste transfers	0	0	0	0	-
29	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
30	**5.1**	**Superficial aquifer**	Identified (within 500m)				
31	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
33	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
34	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
34	5.5	Groundwater vulnerability- local information	None (within 0m)				
35	**5.6**	**Groundwater abstractions**	0	0	0	0	15
39	5.7	Surface water abstractions	0	0	0	0	0
39	**5.8**	**Potable abstractions**	0	0	0	0	9
42	5.9	Source Protection Zones	0	0	0	0	-
42	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
43	**6.1**	**Water Network (OS MasterMap)**	0	0	3	-	-

44	6.2	Surface water features	0	0	2	-	-
44	6.3	WFD Surface water body catchments	1	-	-	-	-
45	6.4	WFD Surface water bodies	0	0	0	-	-
45	6.5	WFD Groundwater bodies	1	-	-	-	-

Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
46	7.1	Risk of Flooding from Rivers and Sea (RoFRaS)	None (within 50m)				
46	7.2	Historical Flood Events	0	0	0	-	-
46	7.3	Flood Defences	0	0	0	-	-
46	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
47	7.5	Flood Storage Areas	0	0	0	-	-
48	7.6	Flood Zone 2	None (within 50m)				
48	7.7	Flood Zone 3	None (within 50m)				

Page	Section	Surface water flooding	
49	8.1	Surface water flooding	Negligible (within 50m)

Page	Section	Groundwater flooding	
50	9.1	Groundwater flooding	Negligible (within 50m)

Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
51	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
51	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
51	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
51	10.4	Special Protection Areas (SPA)	0	0	0	0	0
52	10.5	National Nature Reserves (NNR)	0	0	0	0	0
52	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
52	10.7	Designated Ancient Woodland	0	0	0	0	0
52	10.8	Biosphere Reserves	0	0	0	0	0
53	10.9	Forest Parks	0	0	0	0	0
53	10.10	Marine Conservation Zones	0	0	0	0	0
53	10.11	Green Belt	0	0	0	0	0
53	10.12	Proposed Ramsar sites	0	0	0	0	0

53	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
54	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
54	10.15	Nitrate Sensitive Areas	0	0	0	0	0
54	**10.16**	**Nitrate Vulnerable Zones**	2	0	0	0	1
55	**10.17**	**SSSI Impact Risk Zones**	1	-	-	-	-
56	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
57	11.1	World Heritage Sites	0	0	0	-	-
58	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
58	11.3	National Parks	0	0	0	-	-
58	**11.4**	**Listed Buildings**	0	1	30	-	-
60	**11.5**	**Conservation Areas**	1	0	0	-	-
61	**11.6**	**Scheduled Ancient Monuments**	0	0	1	-	-
61	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
62	**12.1**	**Agricultural Land Classification**	Grade 3 (within 250m)				
63	12.2	Open Access Land	0	0	0	-	-
63	12.3	Tree Felling Licences	0	0	0	-	-
64	12.4	Environmental Stewardship Schemes	0	0	0	-	-
64	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
65	**13.1**	**Priority Habitat Inventory**	0	0	2	-	-
66	13.2	Habitat Networks	0	0	0	-	-
66	13.3	Open Mosaic Habitat	0	0	0	-	-
66	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
67	**14.1**	**10k Availability**	Identified (within 500m)				
68	14.2	Artificial and made ground (10k)	0	0	0	0	-
69	**14.3**	**Superficial geology (10k)**	0	0	0	1	-

70	14.4	Landslip (10k)	0	0	0	0	-
71	14.5	Bedrock geology (10k)	1	0	2	0	-
72	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
73	15.1	50k Availability	Identified (within 500m)				
74	15.2	Artificial and made ground (50k)	0	0	0	0	-
74	15.3	Artificial ground permeability (50k)	0	0	-	-	-
75	15.4	Superficial geology (50k)	0	0	0	1	-
76	15.5	Superficial permeability (50k)	None (within 50m)				
76	15.6	Landslip (50k)	0	0	0	0	-
76	15.7	Landslip permeability (50k)	None (within 50m)				
77	15.8	Bedrock geology (50k)	1	0	1	1	-
78	15.9	Bedrock permeability (50k)	Identified (within 50m)				
78	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
79	16.1	BGS Boreholes	0	0	1	-	-
Page	Section	Natural ground subsidence					
80	17.1	Shrink swell clays	Negligible (within 50m)				
81	17.2	Running sands	Negligible (within 50m)				
82	17.3	Compressible deposits	Negligible (within 50m)				
83	17.4	Collapsible deposits	Very low (within 50m)				
84	17.5	Landslides	Very low (within 50m)				
85	17.6	Ground dissolution of soluble rocks	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
87	18.1	Natural cavities	0	0	0	0	-
88	18.2	BritPits	0	0	1	0	-
88	18.3	Surface ground workings	0	5	11	-	-
89	18.4	Underground workings	0	0	0	0	0
89	18.5	Historical Mineral Planning Areas	3	1	8	2	-

90	18.6	Non-coal mining	0	0	0	0	0
90	18.7	Mining cavities	0	0	0	0	0
90	18.8	JPB mining areas	None (within 0m)				
91	18.9	Coal mining	None (within 0m)				
91	18.10	Brine areas	None (within 0m)				
91	18.11	Gypsum areas	None (within 0m)				
91	18.12	Tin mining	None (within 0m)				
91	18.13	Clay mining	None (within 0m)				

Page	Section	Radon	
92	**19.1**	**Radon**	Greater than 30% (within 0m)

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
93	**20.1**	**BGS Estimated Background Soil Chemistry**	3	0	-	-	-
93	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
93	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-

Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
94	21.1	Underground railways (London)	0	0	0	-	-
94	21.2	Underground railways (Non-London)	0	0	0	-	-
94	21.3	Railway tunnels	0	0	0	-	-
94	21.4	Historical railway and tunnel features	0	0	0	-	-
94	21.5	Royal Mail tunnels	0	0	0	-	-
95	21.6	Historical railways	0	0	0	-	-
95	21.7	Railways	0	0	0	-	-
95	21.8	Crossrail 1	0	0	0	0	-
95	21.9	Crossrail 2	0	0	0	0	-
95	21.10	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 24/08/2019

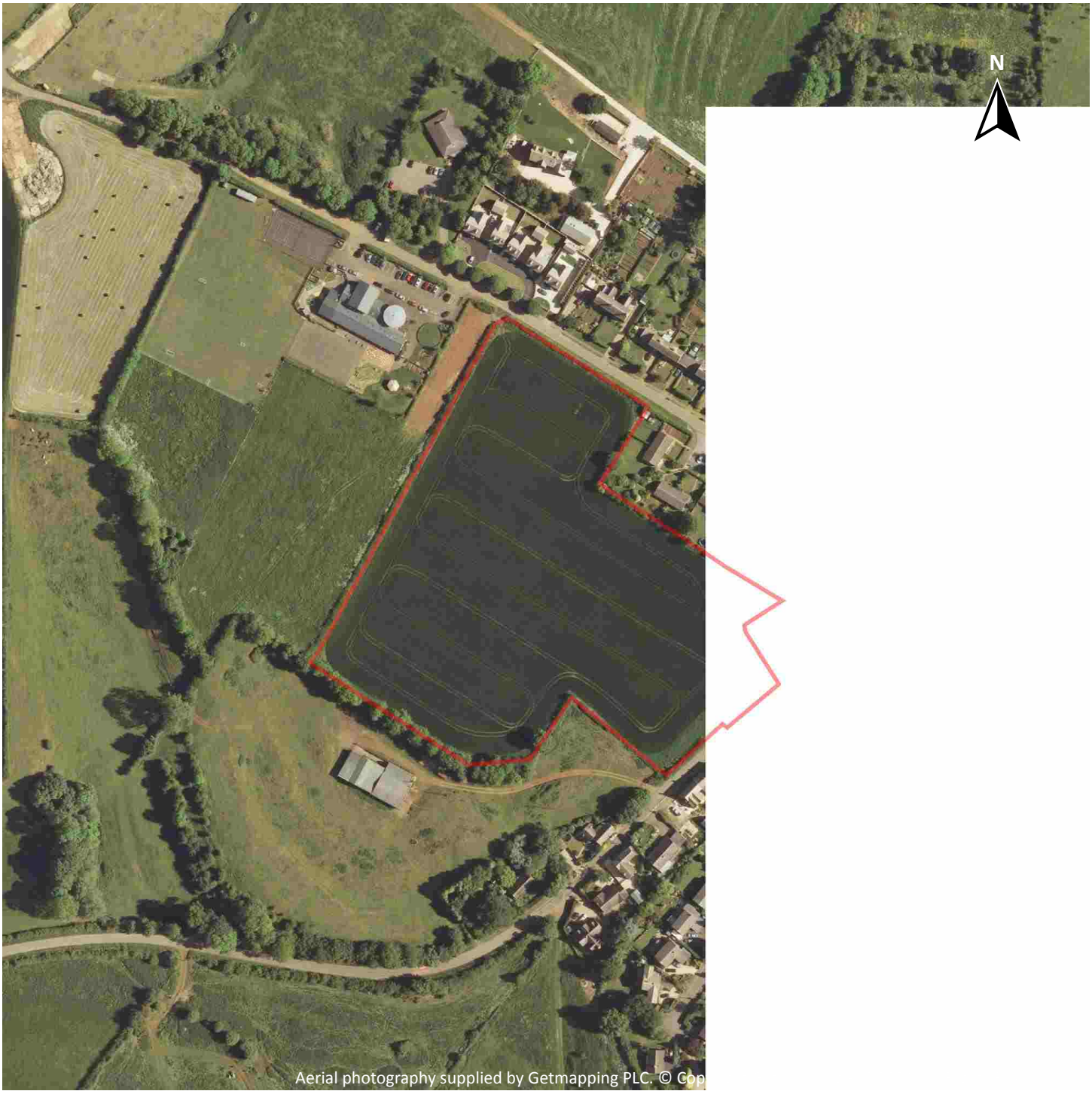
Site Area: 2.81ha

Recent site history - 2016 aerial photograph

Capture Date: 04/05/2016

Site Area: 2.81ha

Recent site history - 2013 aerial photograph



Capture Date: 09/07/2013

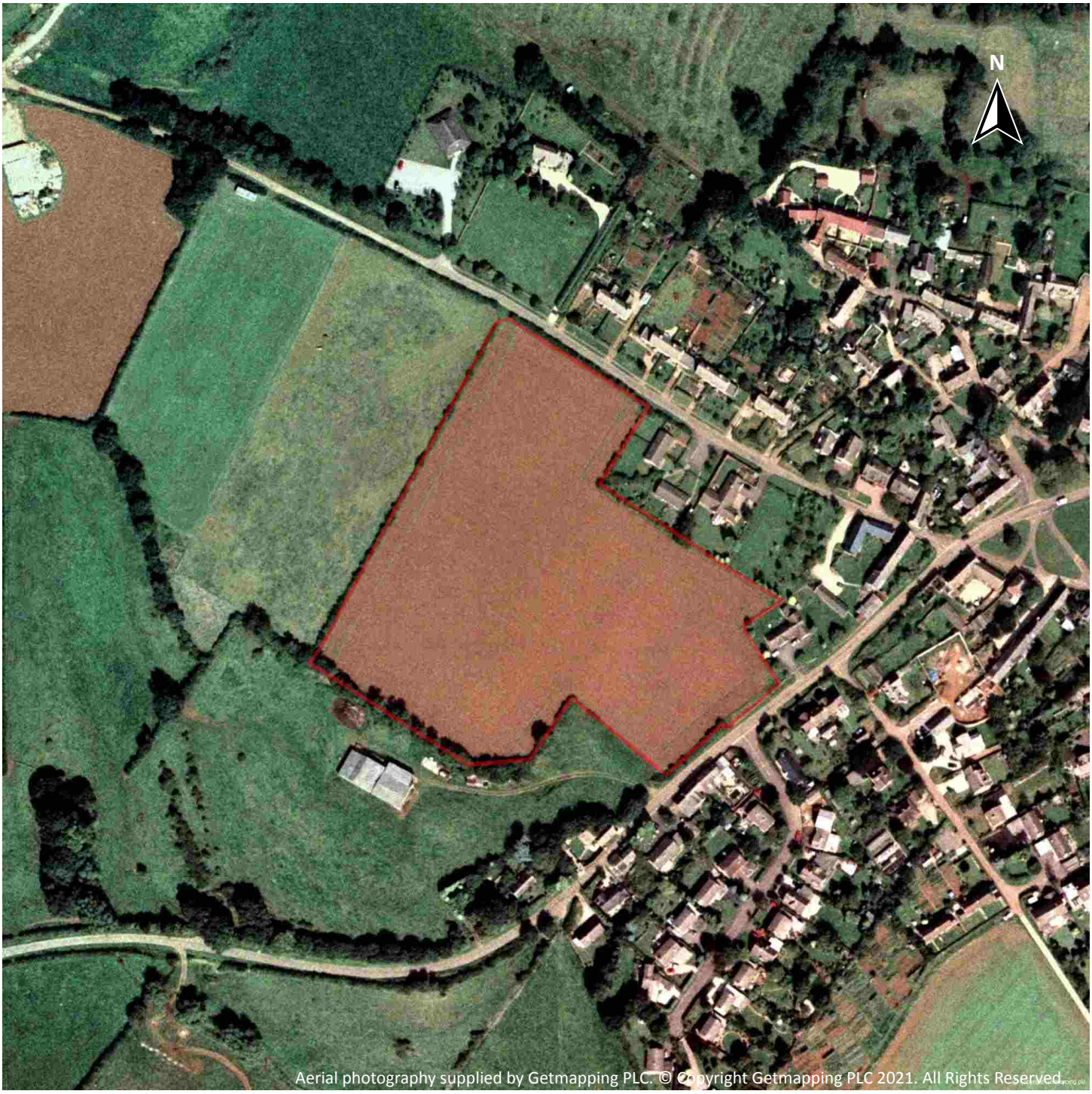
Site Area: 2.81ha

Recent site history - 2006 aerial photograph

Capture Date: 04/11/2006

Site Area: 2.81ha

Recent site history - 1999 aerial photograph



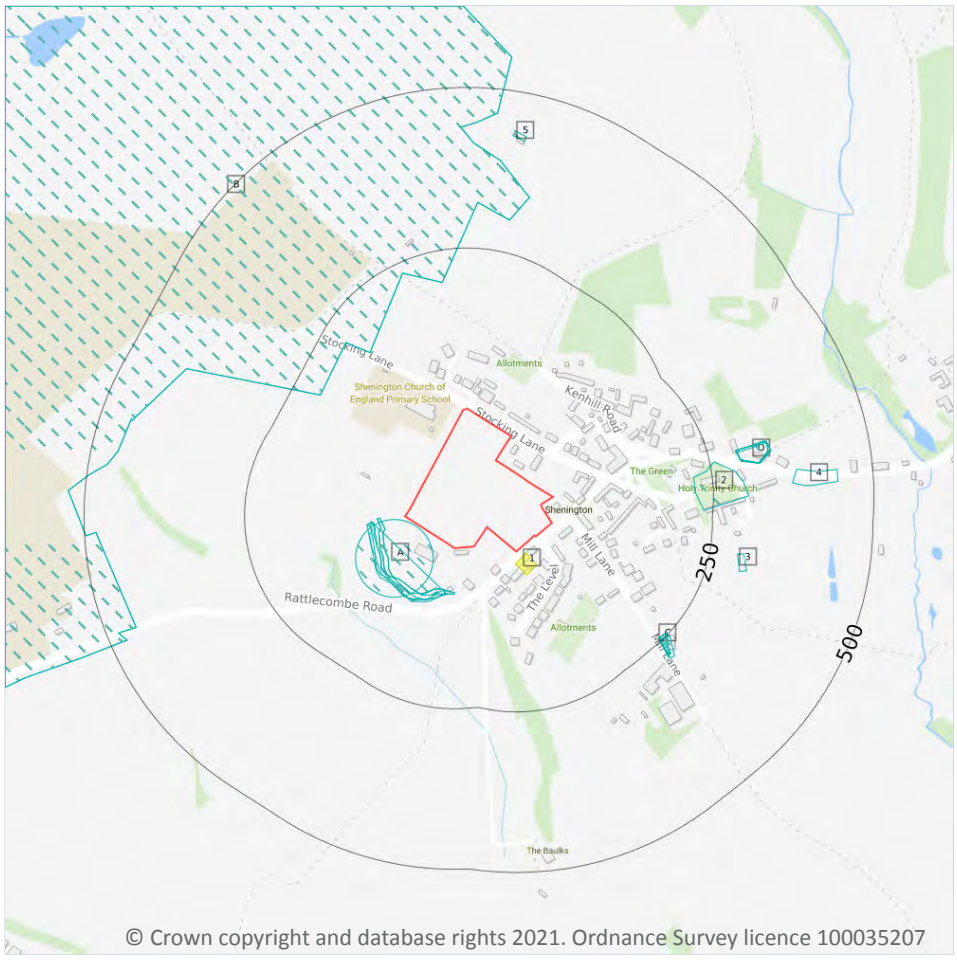
Capture Date: 18/10/1999

Site Area: 2.81ha

OS MasterMap site plan

Site Area: 2.81ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical petrol stations

1.1 Historical industrial land uses

Records within 500m	19

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

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
A	4m SW	Unspecified Disused Quarry	1976	1774931

ID	Location	Land use	Dates present	Group ID
A	37m SW	Unspecified Ground Workings	1881	1755332
A	37m SW	Unspecified Old Quarry	1923	1794012
A	42m SW	Unspecified Old Quarry	1954	1783459
A	51m W	Unspecified Old Quarry	1920	1814822
B	171m NW	Airfield	1954	1758364
B	171m NW	Disused Airfield	1976	1763633
2	221m E	Grave Yard	1881	1763000
C	245m SE	Unspecified Pit	1923	1786970
C	246m SE	Unspecified Ground Workings	1920	1755330
C	247m SE	Unspecified Pit	1923	1796144
C	249m SE	Unspecified Pit	1954	1835015
D	293m E	Smithy	1920	1835691
3	293m E	Sludge Bed	1976	1760508
D	294m E	Smithy	1923	1822529
D	294m E	Smithy	1923	1798488
D	295m E	Smithy	1954	1782456
4	374m E	Cuttings	1881	1751553
5	426m N	Disused Rifle Range	1976	1760514

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	1

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

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
1	11m SE	Filling Station	1971	2941

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

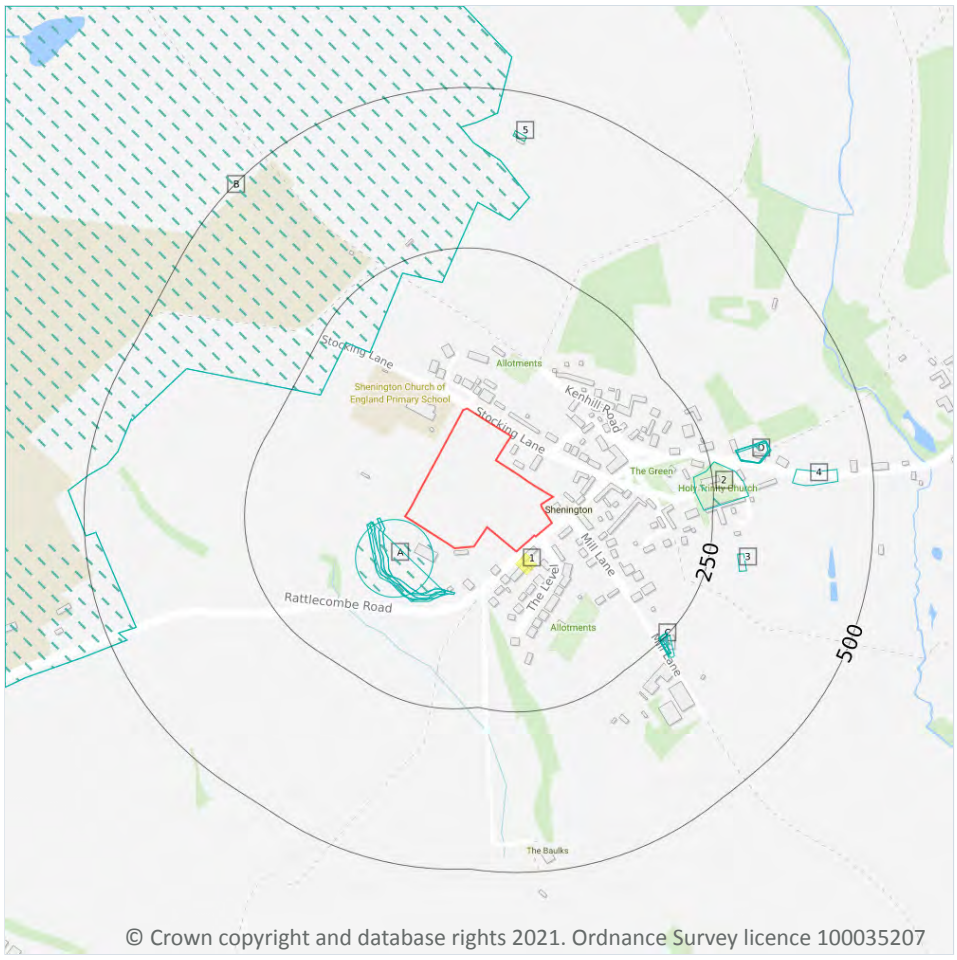
1.6 Historical military land

Records within 500m	0

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

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

2 Past land use - un-grouped



2.1 Historical industrial land uses

Records within 500m	21

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

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

ID	Location	Land Use	Date	Group ID
A	4m SW	Unspecified Disused Quarry	1976	1774931
A	37m SW	Unspecified Old Quarry	1923	1794012
A	37m SW	Unspecified Ground Workings	1881	1755332

ID	Location	Land Use	Date	Group ID
A	42m SW	Unspecified Old Quarry	1954	1783459
A	50m W	Unspecified Old Quarry	1923	1794012
A	51m W	Unspecified Old Quarry	1920	1814822
B	171m NW	Airfield	1954	1758364
B	171m NW	Disused Airfield	1976	1763633
2	221m E	Grave Yard	1881	1763000
C	245m SE	Unspecified Pit	1923	1786970
C	245m SE	Unspecified Pit	1923	1786970
C	246m SE	Unspecified Ground Workings	1920	1755330
C	247m SE	Unspecified Pit	1923	1796144
C	249m SE	Unspecified Pit	1954	1835015
D	293m E	Smithy	1920	1835691
3	293m E	Sludge Bed	1976	1760508
D	294m E	Smithy	1923	1822529
D	294m E	Smithy	1923	1798488
D	295m E	Smithy	1954	1782456
4	374m E	Cuttings	1881	1751553
5	426m N	Disused Rifle Range	1976	1760514

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	1

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

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

ID	Location	Land Use	Date	Group ID
1	11m SE	Filling Station	1971	2941

This data is sourced from Ordnance Survey / Groundsure.

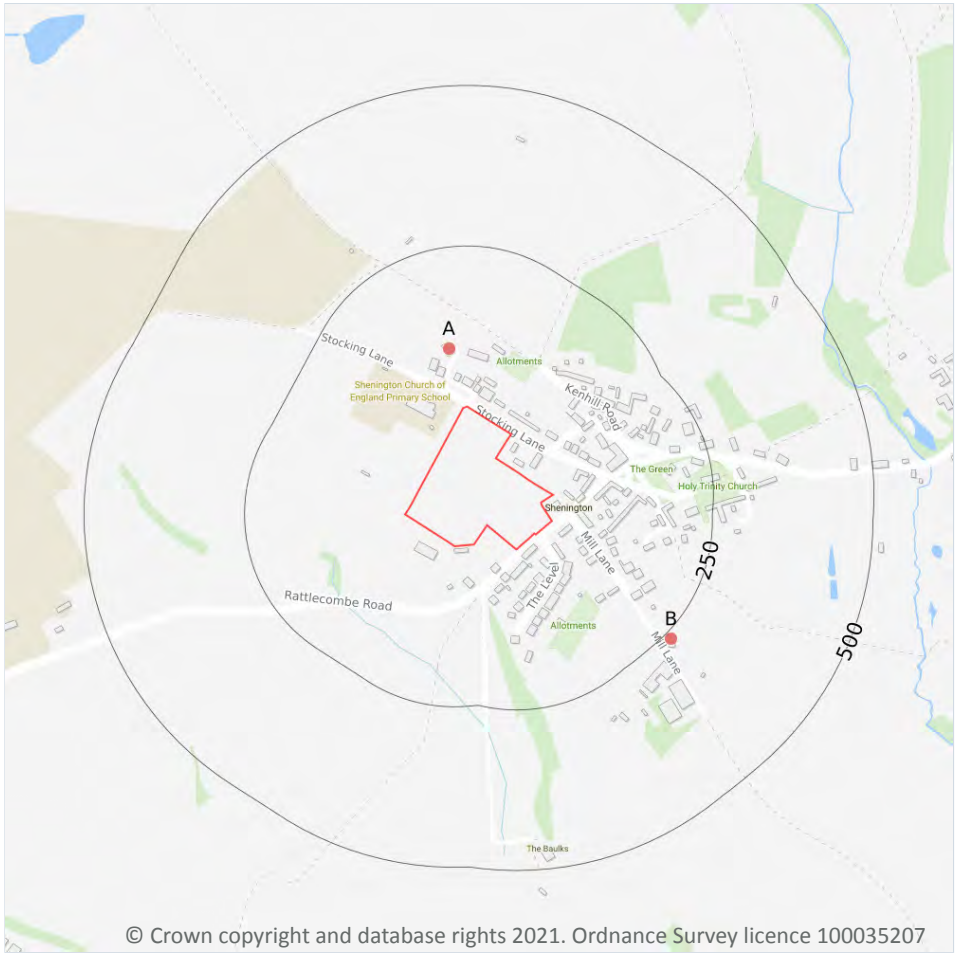
2.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



Site Outline

Search buffers in metres (m)

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

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

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

3.5 Historical waste sites

Records within 500m	0

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

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

3.6 Licensed waste sites

Records within 500m	0

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

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

3.7 Waste exemptions

Records within 500m	4

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

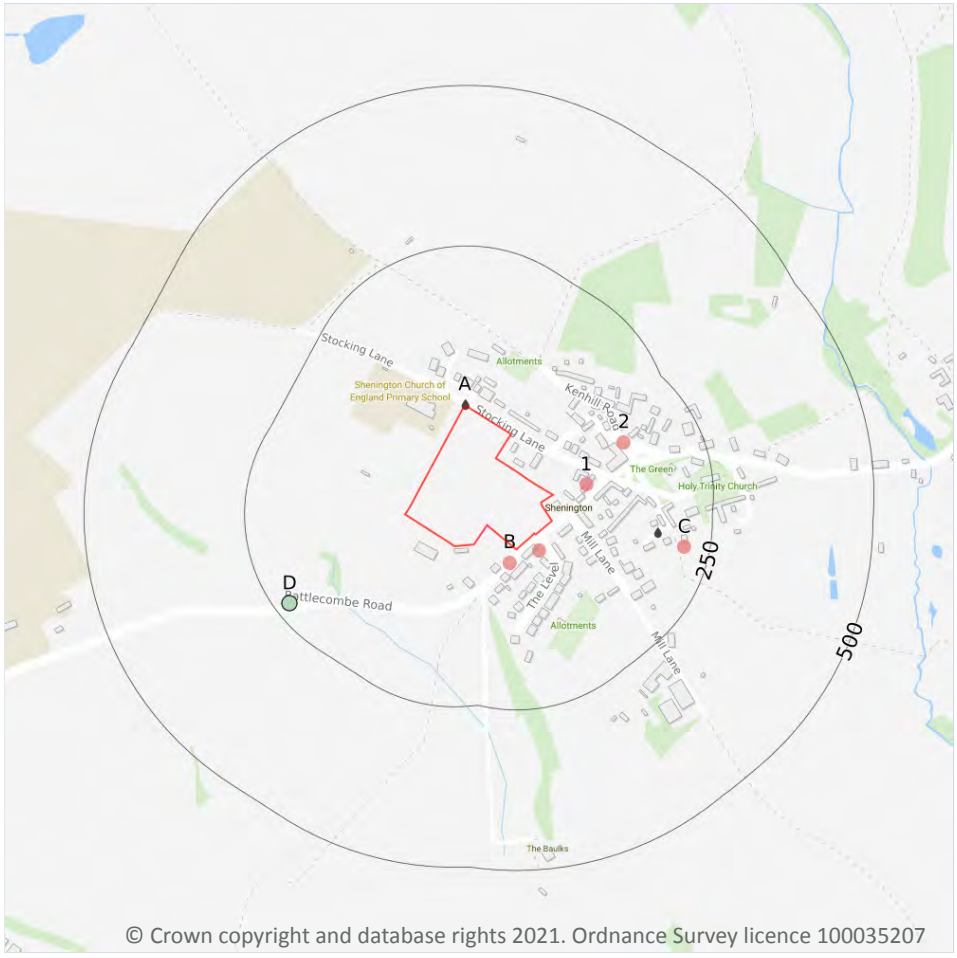
Features are displayed on the Waste and landfill map on **page 21**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	94m N	STOCKING LANE, SHENINGTON, BANBURY, OX15 6NF	WEX235272	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal

ID	Location	Site	Reference	Category	Sub-Category	Description
A	94m N	STOCKING LANE, SHENINGTON, BANBURY, OX15 6NF	WEX085490	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
B	262m SE	Mill Farm House Mill Lane BANBURY Oxfordshire OX15 6NB	EPR/NE5049HL/A001	Using waste exemption	Both agricultural and non-agricultural waste	Use of waste in construction
B	262m SE	Mill Farm House Mill Lane BANBURY Oxfordshire OX15 6NB	EPR/NE5049HL/A001	Using waste exemption	Both agricultural and non-agricultural waste	Use of waste for a specified purpose

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

4 Current industrial land use



Site Outline

Search buffers in metres (m)

Recent industrial land uses

Licensed Discharges to controlled waters

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	5

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 24**

ID	Location	Company	Address	Activity	Category
B	23m SW	Pump	Oxfordshire, OX15	Water Pumping Stations	Industrial Features
B	24m SE	Electricity Sub Station	Oxfordshire, OX15	Electrical Features	Infrastructure and Facilities
1	54m E	Selecto Part UK Ltd	Top Farm House, Shenington, Banbury, Oxfordshire, OX15 6LZ	Packaging	Industrial Products

ID	Location	Company	Address	Activity	Category
2	138m NE	Pump	Oxfordshire, OX15	Water Pumping Stations	Industrial Features
C	210m E	Pump	Oxfordshire, OX15	Water Pumping Stations	Industrial Features

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m	0

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

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

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

Records within 500m	0

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

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m	3

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

Features are displayed on the Current industrial land use map on **page 24**

ID	Location	Address	Details	
A	4m NW	NEW SURGERY, STOCKING LANE, SHENING, NEW SURGERY STOCKING LANE SHEN, INGTON BANBURY OXFORDSHIRE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CNTW.0733 Permit Version: 2 Receiving Water: MARLSTONE ROCK BED	Status: TRANSFERRED FROM WATER ACT 1989 Issue date: 10/10/1990 Effective Date: 24/05/2006 Revocation Date: 31/03/2019
A	4m NW	NEW SURGERY, STOCKING LANE, SHENING, NEW SURGERY STOCKING LANE SHEN, INGTON BANBURY OXFORDSHIRE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CNTW.0733 Permit Version: 1 Receiving Water: MARLSTONE ROCK BED	Status: TRANSFERRED FROM WATER ACT 1989 Issue date: 10/10/1990 Effective Date: 10/10/1990 Revocation Date: 23/05/2006
C	165m E	NEW DAIRY UNIT, MILL FARM, SHENINGT, NEW DAIRY UNIT MILL FARM SHENI, NGTON BANBURY OXON	Effluent Type: AGRICULTURE - FISH FARMING - NOT WATER COMPANY Permit Number: CTWC.1608 Permit Version: 1 Receiving Water: GREAT OOLITE	Status: REVOKED - UNSPECIFIED Issue date: 08/05/1987 Effective Date: 08/05/1987 Revocation Date: 05/04/1995

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0

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

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

4.15 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m	0

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

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

4.17 List 2 Dangerous Substances

Records within 500m	0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	3

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

Features are displayed on the Current industrial land use map on **page 24**

ID	Location	Details	
D	227m SW	Incident Date: 26/09/2002 Incident Identification: 110634 Pollutant: Oils and Fuel Pollutant Description: Gas and Fuel Oils	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
D	227m SW	Incident Date: 26/09/2002 Incident Identification: 110634 Pollutant: Specific Waste Materials Pollutant Description: Batteries	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
D	227m SW	Incident Date: 26/09/2002 Incident Identification: 110634 Pollutant: Specific Waste Materials:Oils and Fuel Pollutant Description: Batteries:Gas and Fuel Oils	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m	0

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

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

4.20 Pollution inventory waste transfers

Records within 500m	0

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

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

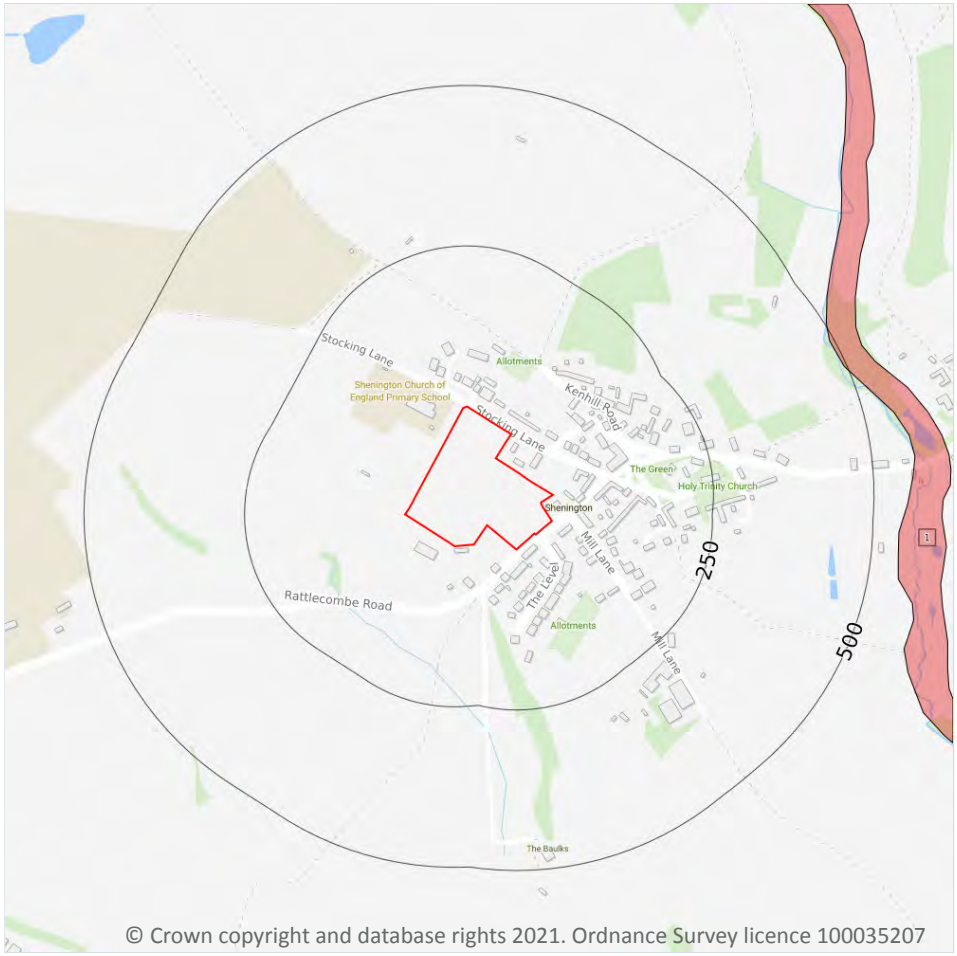
4.21 Pollution inventory radioactive waste

Records within 500m	0

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

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

5 Hydrogeology - Superficial aquifer



Site Outline

Search buffers in metres (m)

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

5.1 Superficial aquifer

Records within 500m	1

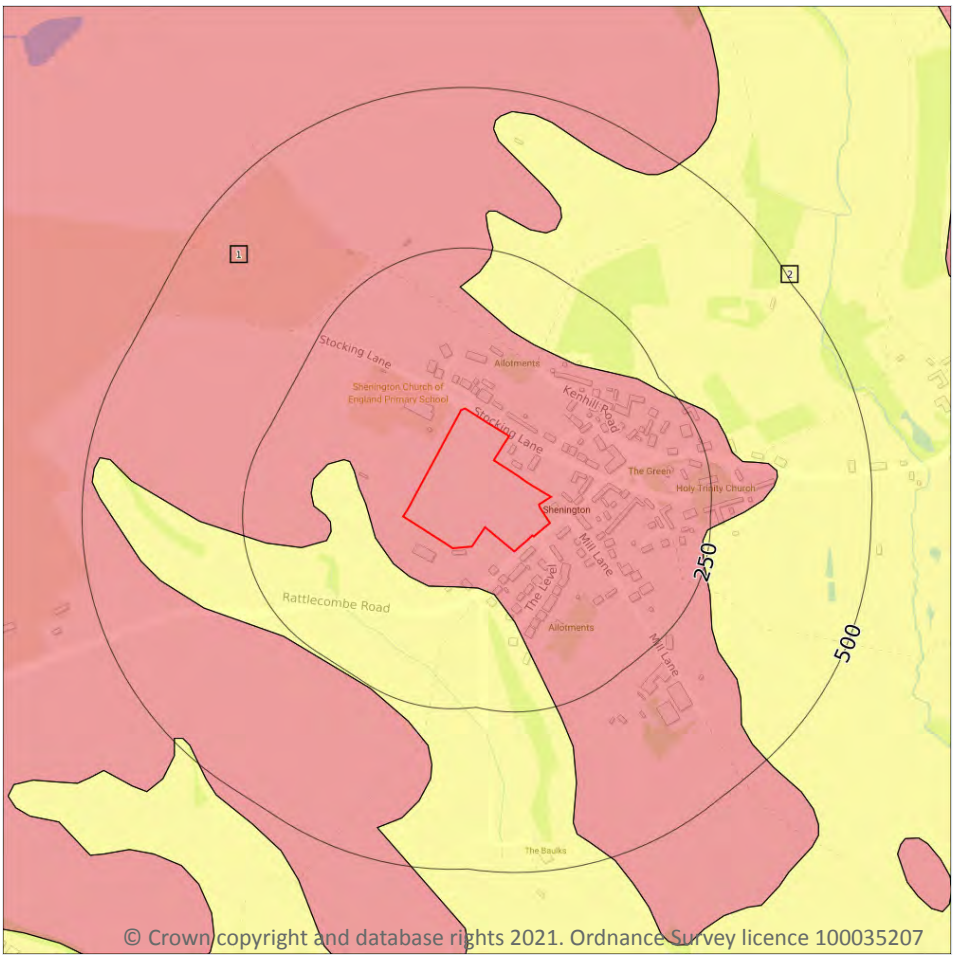
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 30**

ID	Location	Designation	Description
1	493m NE	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

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

Bedrock aquifer



Site Outline

Search buffers in metres (m)

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

5.2 Bedrock aquifer

Records within 500m	2

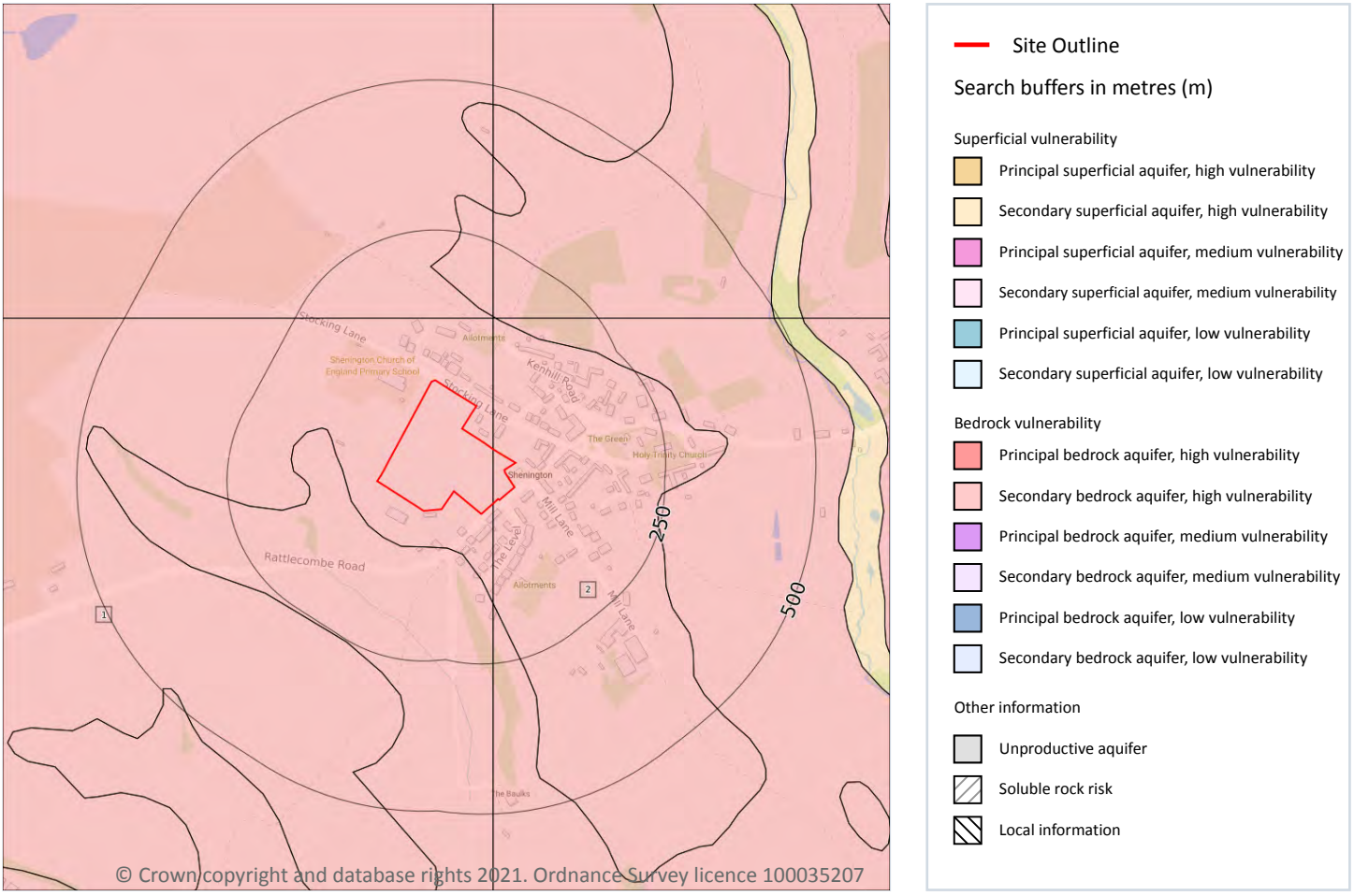
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 31**

ID	Location	Designation	Description
1	**On site**	**Secondary A**	**Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers**
2	51m W	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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

Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m	2

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

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

Features are displayed on the Groundwater vulnerability map on **page 33**

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

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0

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

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

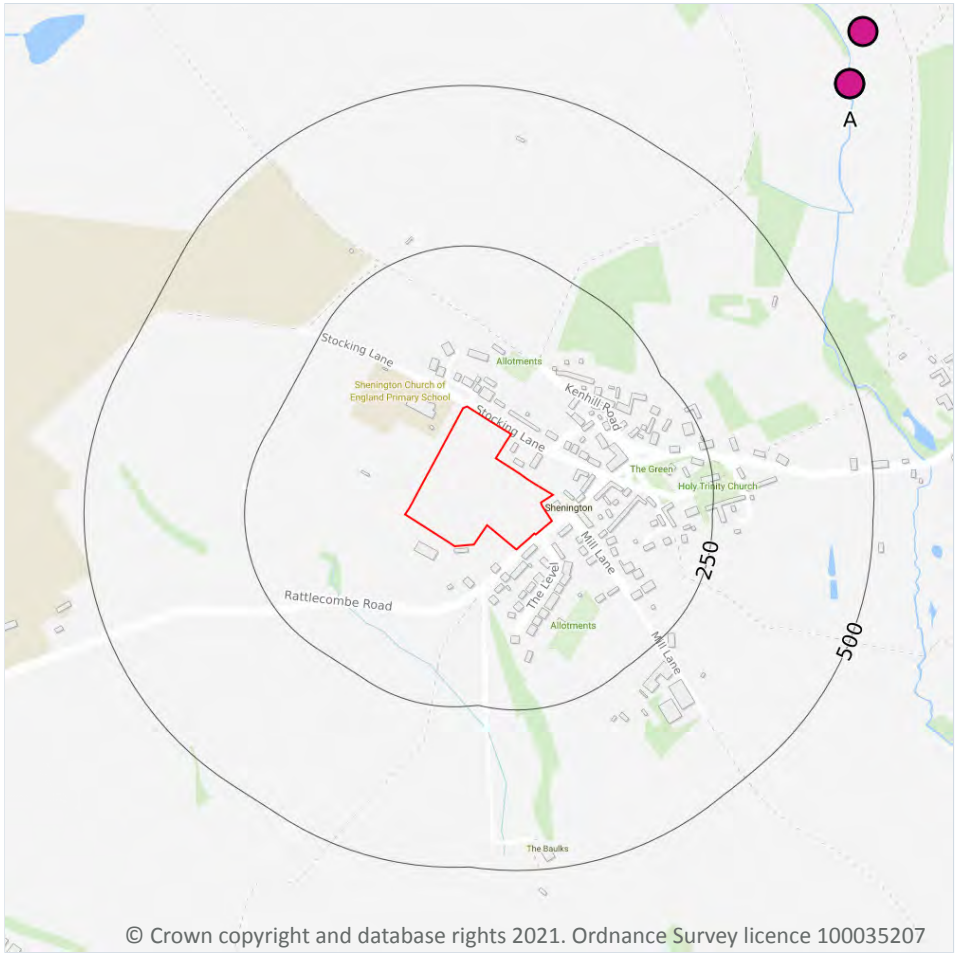
5.5 Groundwater vulnerability- local information

Records on site	0

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

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

Abstractions and Source Protection Zones



Site Outline

Search buffers in metres (m)

- Source Protection Zone 1 — Inner catchment
- Source Protection Zone 2 — Outer catchment
- Source Protection Zone 3 — Total catchment
- Source Protection Zone 4 — Zone of Special Interest
- Source Protection Zone 1c — Inner catchment - confined aquifer
- Source Protection Zone 2c — Outer catchment - confined aquifer
- Source Protection Zone 3c — Total catchment - confined aquifer
- Drinking water abstraction licences
- Drinking water abstraction licences — Polygon features
- Drinking water abstraction licences — Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m	15

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 35**

ID	Location	Details	
A	759m NE	Status: Historical Licence No: 28/39/14/0303 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE, BANBURY, OXON SPRING T Data Type: Point Name: J REES, N SAMUEL & THE ALLIANCE ASSURANCE Easting: 437500 Northing: 243400	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 100 Version Start Date: 07/12/1994 Version End Date: -
A	759m NE	Status: Active Licence No: 28/39/14/0303 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE, BANBURY, OXON SPRING T Data Type: Point Name: UPTON FARM Easting: 437500 Northing: 243400	Annual Volume (m^3): 25,000 Max Daily Volume (m^3): 85 Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -
-	807m NE	Status: Historical Licence No: 28/39/14/0303 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE, BANBURY, OXON SPRING S Data Type: Point Name: J REES, N SAMUEL & THE ALLIANCE ASSURANCE Easting: 437300 Northing: 243600	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 100 Version Start Date: 07/12/1994 Version End Date: -
-	807m NE	Status: Active Licence No: 28/39/14/0303 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE, BANBURY, OXON SPRING S Data Type: Point Name: UPTON FARM Easting: 437300 Northing: 243600	Annual Volume (m^3): 25,000 Max Daily Volume (m^3): 85 Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -

ID	Location	Details	
C	832m NE	Status: Active Licence No: 28/39/14/0303 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE - E Data Type: Point Name: UPTON FARM Easting: 437520 Northing: 243480	Annual Volume (m^3): 25,000 Max Daily Volume (m^3): 85 Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -
-	860m NE	Status: Active Licence No: 28/39/14/0303 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE - D Data Type: Point Name: UPTON FARM Easting: 437300 Northing: 243660	Annual Volume (m^3): 25,000 Max Daily Volume (m^3): 85 Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -
-	868m SW	Status: Historical Licence No: 28/39/14/0165 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: RPOUGH HILL FARM, SHENINGTON (CATCHPIT - A) Data Type: Point Name: COURT Easting: 436500 Northing: 241900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 13/02/1967 Expiry Date: - Issue No: 100 Version Start Date: 13/02/1967 Version End Date: -
-	1517m N	Status: Historical Licence No: 28/39/14/0303 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE, BANBURY, OXON SPRING Q Data Type: Point Name: J REES, N SAMUEL & THE ALLIANCE ASSURANCE Easting: 436700 Northing: 244400	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 100 Version Start Date: 07/12/1994 Version End Date: -

ID	Location	Details	
-	1517m N	Status: Active Licence No: 28/39/14/0303 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE, BANBURY, OXON SPRING Q Data Type: Point Name: UPTON FARM Easting: 436700 Northing: 244400	Annual Volume (m^3): 25,000 Max Daily Volume (m^3): 85 Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -
-	1530m NW	Status: Historical Licence No: 18/54/14/0144 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Groundwater Midlands Region Point: SHENINGTON QUARRY - BOREHOLE Data Type: Point Name: TRUSTEES OF THE NEEDLER D4 SETTLEMENT Easting: 435650 Northing: 243780	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 31/03/1994 Version End Date: -
-	1548m N	Status: Active Licence No: 28/39/14/0303 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE - B Data Type: Point Name: UPTON FARM Easting: 436780 Northing: 244440	Annual Volume (m^3): 25,000 Max Daily Volume (m^3): 85 Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -
-	1706m N	Status: Active Licence No: 28/39/14/0303 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE - P Data Type: Point Name: UPTON FARM Easting: 436800 Northing: 244600	Annual Volume (m^3): 25,000 Max Daily Volume (m^3): 85 Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -
-	1715m N	Status: Active Licence No: 28/39/14/0303 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE - A Data Type: Point Name: UPTON FARM Easting: 436820 Northing: 244610	Annual Volume (m^3): 25,000 Max Daily Volume (m^3): 85 Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -

ID	Location	Details	
-	1715m N	Status: Historical Licence No: 28/39/14/0303 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE, BANBURY, OXON, SPRING P Data Type: Point Name: J REES, N SAMUEL & THE ALLIANCE ASSURANCE Easting: 436700 Northing: 244600	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 100 Version Start Date: 07/12/1994 Version End Date: -
-	1715m N	Status: Historical Licence No: 28/39/14/0303 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE, BANBURY, OXON, SPRING P Data Type: Point Name: J REES, N SAMUEL & THE ALLIANCE ASSURANCE Easting: 436700 Northing: 244600	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 100 Version Start Date: 07/12/1994 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	**0**

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

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

5.8 Potable abstractions

Records within 2000m	**9**

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 35**

ID	Location	Details	
A	759m NE	Status: Historical Licence No: 28/39/14/0303 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE, BANBURY, OXON SPRING T Data Type: Point Name: J REES, N SAMUEL & THE ALLIANCE ASSURANCE Easting: 437500 Northing: 243400	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 100 Version Start Date: 07/12/1994 Version End Date: -
-	807m NE	Status: Historical Licence No: 28/39/14/0303 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE, BANBURY, OXON SPRING S Data Type: Point Name: J REES, N SAMUEL & THE ALLIANCE ASSURANCE Easting: 437300 Northing: 243600	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 100 Version Start Date: 07/12/1994 Version End Date: -
C	832m NE	Status: Active Licence No: 28/39/14/0303 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE - E Data Type: Point Name: UPTON FARM Easting: 437520 Northing: 243480	Annual Volume (m^3): 25,000 Max Daily Volume (m^3): 85 Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -
-	860m NE	Status: Active Licence No: 28/39/14/0303 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE - D Data Type: Point Name: UPTON FARM Easting: 437300 Northing: 243660	Annual Volume (m^3): 25,000 Max Daily Volume (m^3): 85 Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -

ID	Location	Details	
-	1517m N	Status: Historical Licence No: 28/39/14/0303 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE, BANBURY, OXON SPRING Q Data Type: Point Name: J REES, N SAMUEL & THE ALLIANCE ASSURANCE Easting: 436700 Northing: 244400	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 100 Version Start Date: 07/12/1994 Version End Date: -
-	1530m NW	Status: Historical Licence No: 18/54/14/0144 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Groundwater Midlands Region Point: SHENINGTON QUARRY - BOREHOLE Data Type: Point Name: TRUSTEES OF THE NEEDLER D4 SETTLEMENT Easting: 435650 Northing: 243780	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 31/03/1994 Version End Date: -
-	1548m N	Status: Active Licence No: 28/39/14/0303 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE - B Data Type: Point Name: UPTON FARM Easting: 436780 Northing: 244440	Annual Volume (m^3): 25,000 Max Daily Volume (m^3): 85 Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -
-	1715m N	Status: Active Licence No: 28/39/14/0303 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE - A Data Type: Point Name: UPTON FARM Easting: 436820 Northing: 244610	Annual Volume (m^3): 25,000 Max Daily Volume (m^3): 85 Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -

ID	Location	Details	
-	1715m N	Status: Historical Licence No: 28/39/14/0303 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: THAMES GROUNDWATER Point: UPTON ESTATE, BANBURY, OXON, SPRING P Data Type: Point Name: J REES, N SAMUEL & THE ALLIANCE ASSURANCE Easting: 436700 Northing: 244600	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 08/08/1988 Expiry Date: - Issue No: 100 Version Start Date: 07/12/1994 Version End Date: -

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

5.9 Source Protection Zones

Records within 500m	**0**

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

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

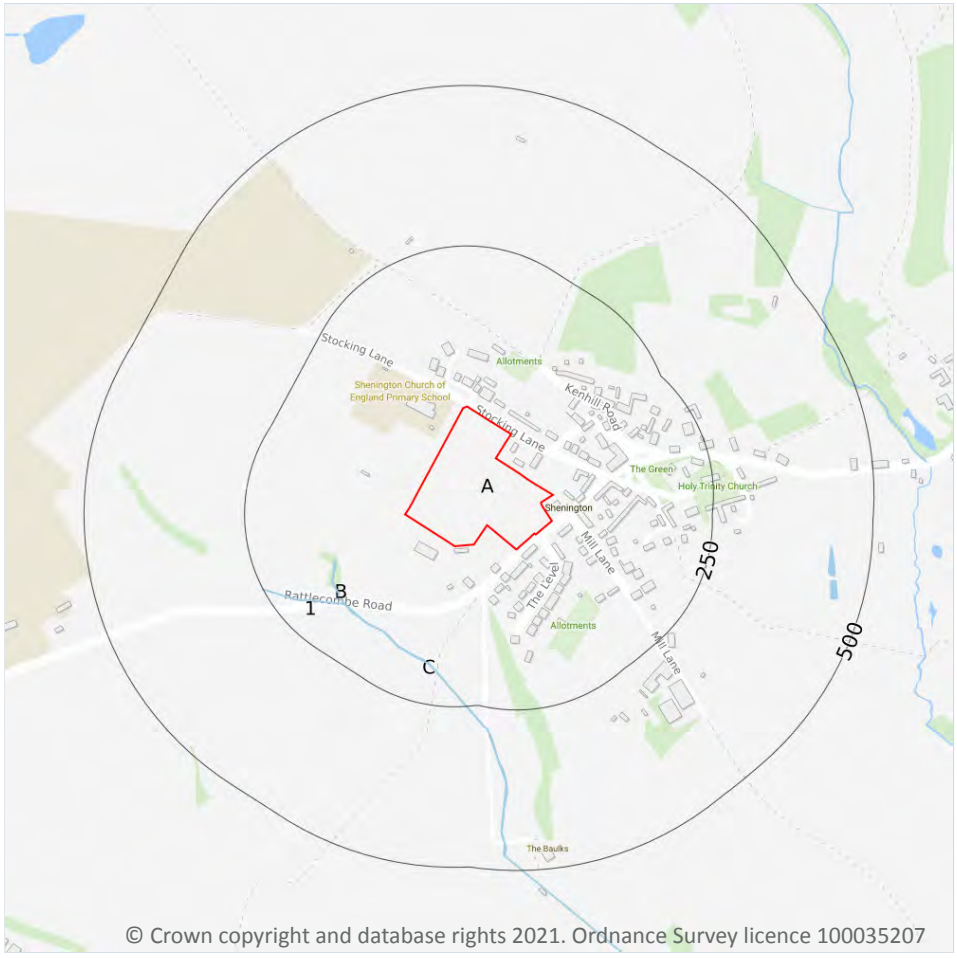
5.10 Source Protection Zones (confined aquifer)

Records within 500m	**0**

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

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

6 Hydrology



Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	**3**

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

Features are displayed on the Hydrology map on **page 43**

ID	Location	Type of water feature	Ground level	Permanence	Name
B	129m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
1	168m SW	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-
C	168m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	**2**

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

Features are displayed on the Hydrology map on **page 43**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	**1**

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

Features are displayed on the Hydrology map on **page 43**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	**On site**	**River WB catchment**	**Shutford Stream (Source to Sor Brook)**	**GB106039037300**	**Cherwell**	**Cherwell and Ray**

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

6.4 WFD Surface water bodies

Records identified	1

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

Features are displayed on the Hydrology map on **page 43**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	1304m SE	River	Shutford Stream (Source to Sor Brook)	GB106039037300	Poor	Good	Poor	2016

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

6.5 WFD Groundwater bodies

Records on site	1

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

Features are displayed on the Hydrology map on **page 43**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	**On site**	**Banbury Jurassic**	**GB40602G600200**	**Poor**	**Poor**	**Good**	**2015**

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

7 River and coastal flooding

7.1 Risk of Flooding from Rivers and Sea (RoFRaS)

Records within 50m	0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance).

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

7.2 Historical Flood Events

Records within 250m	0

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

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

7.3 Flood Defences

Records within 250m	0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

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

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

7.5 Flood Storage Areas

Records within 250m	0

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

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

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0

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

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

7.7 Flood Zone 3

Records within 50m	0

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

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

8 Surface water flooding

8.1 Surface water flooding

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

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

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

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

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding

Site Outline

Search buffers in metres (m)

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

9.1 Groundwater flooding

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

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

Features are displayed on the Groundwater flooding map on **page 50**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m	0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	0

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

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

10.7 Designated Ancient Woodland

Records within 2000m	0

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

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

10.8 Biosphere Reserves

Records within 2000m	0

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

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

10.9 Forest Parks

Records within 2000m	0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

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

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

10.11 Green Belt

Records within 2000m	0

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

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

10.12 Proposed Ramsar sites

Records within 2000m	0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

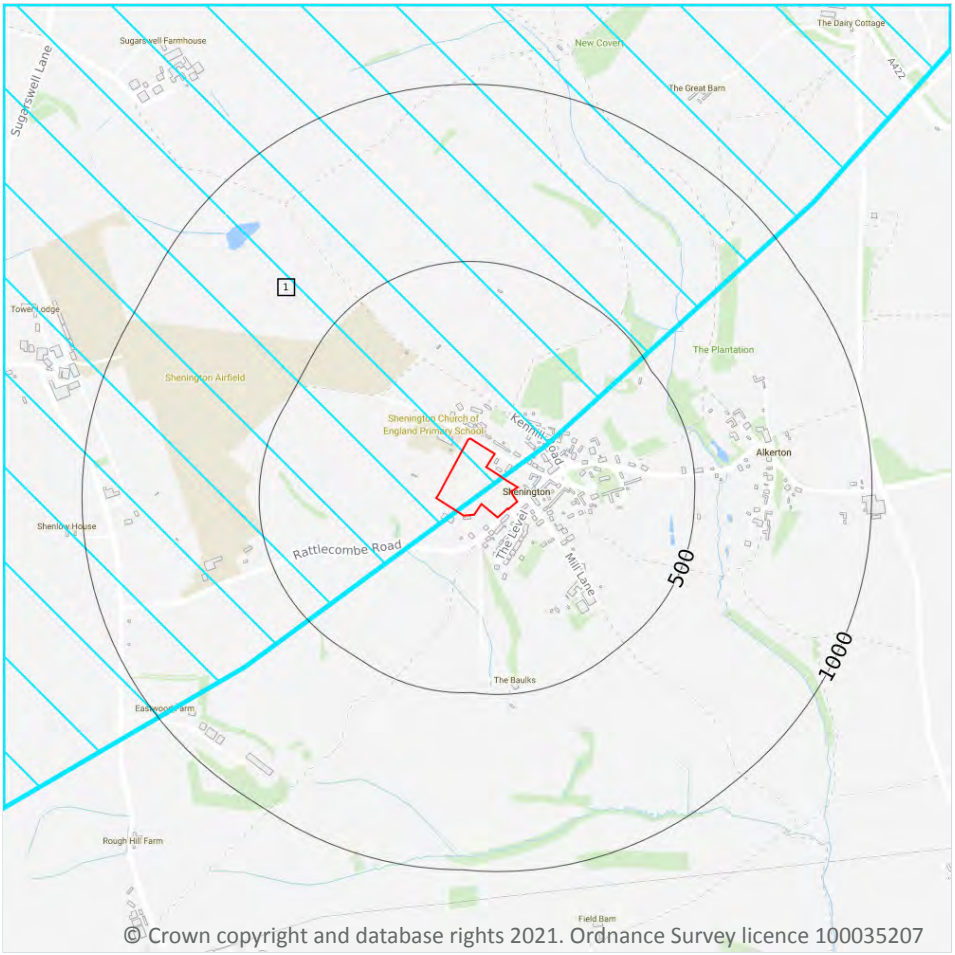
Records within 2000m	3

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

Location	Name	Type	NVZ ID	Status
On site	**Balscote**	**Groundwater**	**G164**	**Existing**
On site	**Cherwell (Ray to Thames) and Woodeaton Brook NVZ**	**Surface Water**	**S472**	**Existing**
1074m SW	River Avon (to confluence with River Severn) NVZ	Surface Water	S590	Existing

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

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

10.17 SSSI Impact Risk Zones

Records on site	1

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

Features are displayed on the SSSI Impact Zones and Units map on **page 55**

ID	Location	Type of developments requiring consultation
1	**On site**	**Infrastructure - Airports, helipads and other aviation proposals.**

This data is sourced from Natural England.

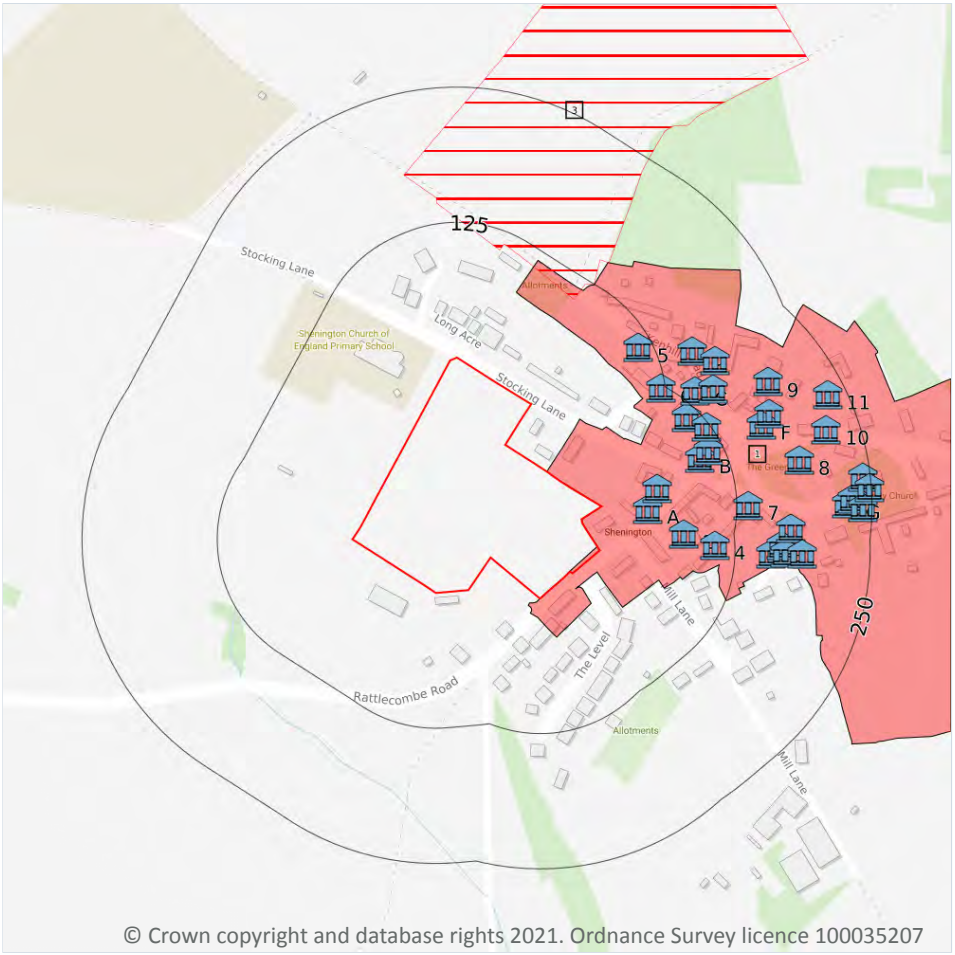
10.18 SSSI Units

Records within 2000m	0

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

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

11 Visual and cultural designations



Site Outline

Search buffers in metres (m)

Listed buildings

Conservation areas

Conservation areas - no data

National Parks

Areas of Outstanding Natural Beauty

Registered parks and gardens

Scheduled Monuments

World Heritage Sites

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	31

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

Features are displayed on the Visual and cultural designations map on **page 57**

ID	Location	Name	Grade	Reference Number	Listed date
A	43m E	Clematis Cottage, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1300355	20/09/1988
A	54m E	Top Farmhouse, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1369584	20/09/1988
2	79m E	Longworth, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1369589	20/09/1988

ID	Location	Name	Grade	Reference Number	Listed date
B	101m NE	Knapp House, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1369608	20/09/1988
4	107m E	Oriel Farmhouse, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1184111	20/09/1988
B	111m NE	Nutshell And Glasfryn, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1046813	20/09/1988
5	112m NE	Amber Thatch, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1200298	20/09/1988
B	114m NE	The Cottage, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1369607	20/09/1988
6	121m E	Olde Grimes Cottage, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1046814	20/09/1988
B	121m NE	The Bell Inn, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1046812	20/09/1988
7	136m E	Ivydene, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1046851	20/09/1988
C	138m NE	Village Shop And Bell View, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1046811	20/09/1988
C	149m NE	Ye Olde Manor House, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1046843	20/09/1988
D	157m E	The Bay And The Old Almhouse, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1300836	20/09/1988
E	158m E	April Cottage, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1300278	20/09/1988
F	166m NE	Wall To The Limes, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1046844	20/09/1988
E	168m E	Green End Cottage, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1184089	20/09/1988
D	171m NE	Longwalls, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1046839	20/09/1988
E	171m E	Mizpah Cottage, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1369588	20/09/1988
E	176m E	Senendone House, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1184081	20/09/1988
F	177m NE	The Limes, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1183944	20/09/1988

ID	Location	Name	Grade	Reference Number	Listed date
E	187m E	Barn And Nag's Stable Abutting And To South Of Seredone House, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1046850	20/09/1988
8	188m E	Oriel House, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1046845	20/09/1988
9	192m NE	Barn, Cottage And Stable Range Approximately 5 Metres North West Of The Limes, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1183953	20/09/1988
10	220m E	Wall To Cotman House Fronting Main Road, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1369585	20/09/1988
G	227m E	Headstone Dated 1700, Approximately 25 Metres South West Of Tower, Church Of Holy Trinity, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1046848	20/09/1988
G	232m E	Chest Tomb Dated 1831, Approximately 11 Metres South West Of Porch, Church Of Holy Trinity, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1369586	20/09/1988
11	233m NE	Cotman House, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1200304	20/09/1988
G	242m E	Group Of 3 Boldly Carved Headstones Approximately 29 Metres South Of Porch, Church Of Holy Trinity, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1184069	20/09/1988
G	243m E	Church Of Holy Trinity, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II*	1183960	08/12/1955
G	248m E	Chest Tomb Approximately 5 Metres South Of Porch, Church Of Holy Spirit, Shenington With Alkerton, Cherwell, Oxfordshire, OX15	II	1184064	20/09/1988

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

11.5 Conservation Areas

Records within 250m	**1**

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

Features are displayed on the Visual and cultural designations map on **page 57**

ID	Location	Name	District	Date of designation
1	**On site**	**Shenington with Alkerton**	**Cherwell**	**09/02/2009**

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

11.6 Scheduled Ancient Monuments

Records within 250m	**1**

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

Features are displayed on the Visual and cultural designations map on **page 57**

ID	Location	Ancient monument name	Reference number
3	103m NE	Lyncheted ridge and furrow N of Shenington	1006328

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

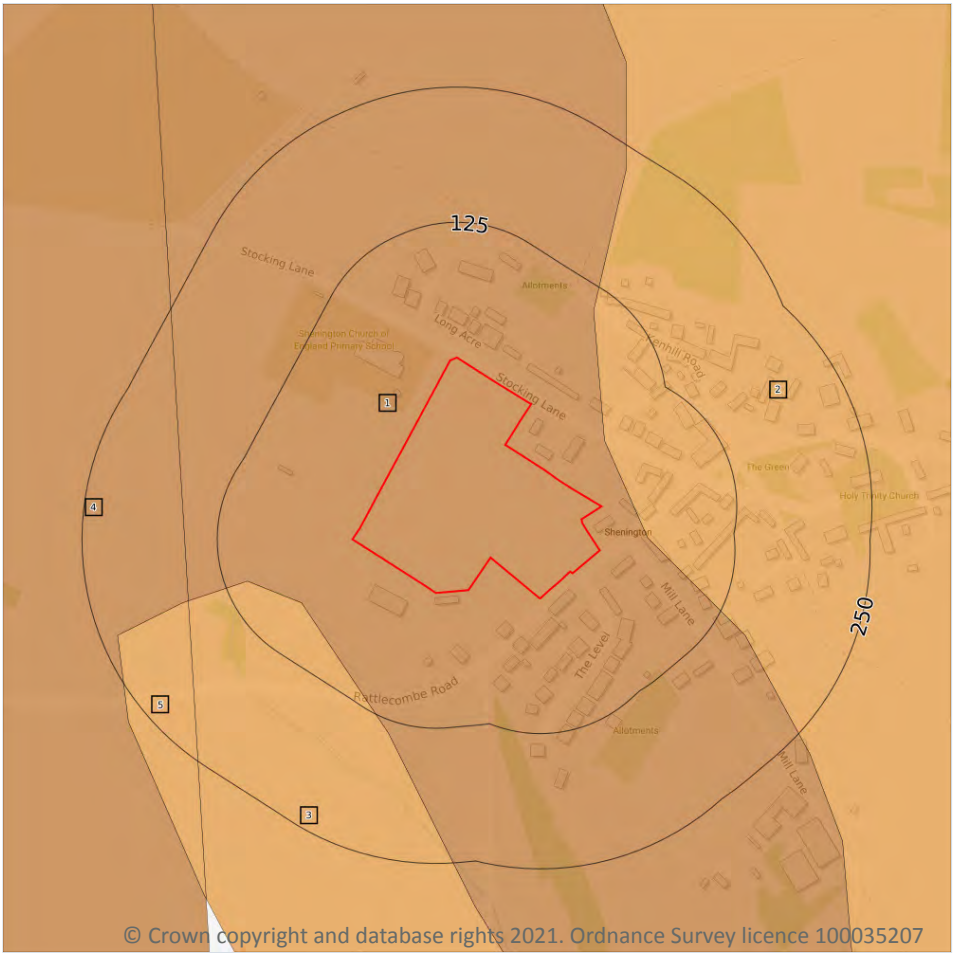
11.7 Registered Parks and Gardens

Records within 250m	**0**

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

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

12 Agricultural designations



Site Outline

Search buffers in metres (m)

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

12.1 Agricultural Land Classification

Records within 250m	5

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

Features are displayed on the Agricultural designations map on **page 62**

ID	Location	Classification	Description
1	**On site**	**Grade 2**	**Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.**
2	27m NE	Grade 3	Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.
3	75m SW	Grade 3	Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.
4	155m W	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.
5	162m W	Grade 3	Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	**0**

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

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

12.3 Tree Felling Licences

Records within 250m	**0**

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

13 Habitat designations

Site Outline

Search buffers in metres (m)

Priority Habitat Inventory
Open Mosaic Habitat
Limestone Pavement Orders

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

13.1 Priority Habitat Inventory

Records within 250m	2

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

Features are displayed on the Habitat designations map on **page 65**

ID	Location	Main Habitat	Other habitats
1	161m NE	Traditional orchard	Main habitat: TORCH (INV > 50%)
2	230m E	Traditional orchard	Main habitat: TORCH (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

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

This data is sourced from Natural England.

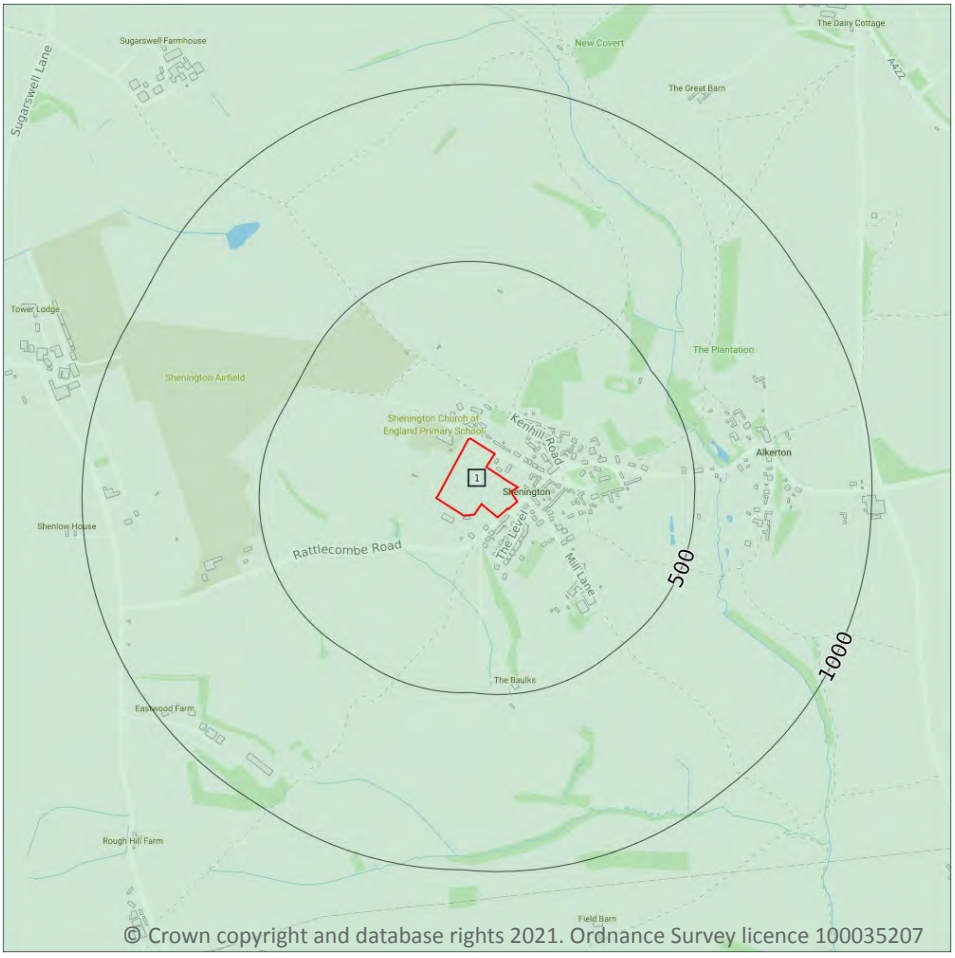
13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



Site Outline

Search buffers in metres (m)

Full coverage

Partial coverage

No coverage

14.1 10k Availability

Records within 500m	1

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

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

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**SP34SE**

This data is sourced from the British Geological Survey.

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

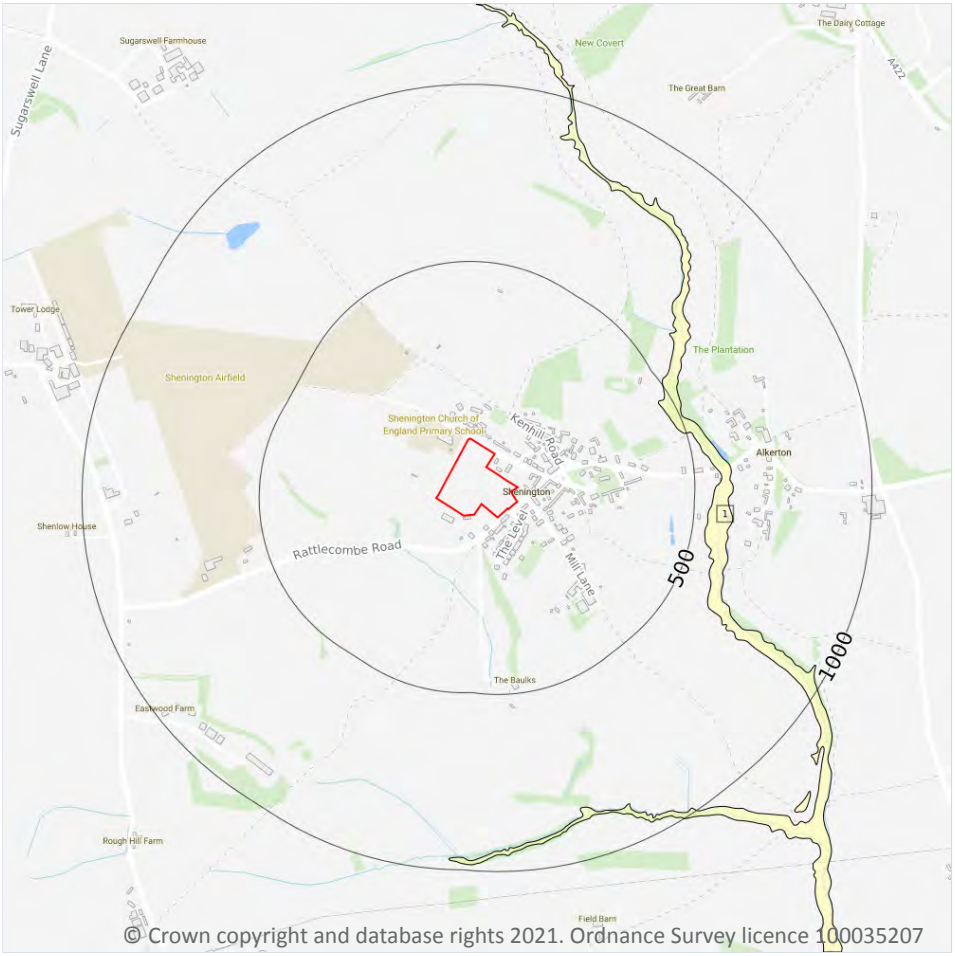
14.2 Artificial and made ground (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m	1

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 69**

ID	Location	LEX Code	Description	Rock description
1	463m NE	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel

This data is sourced from the British Geological Survey.

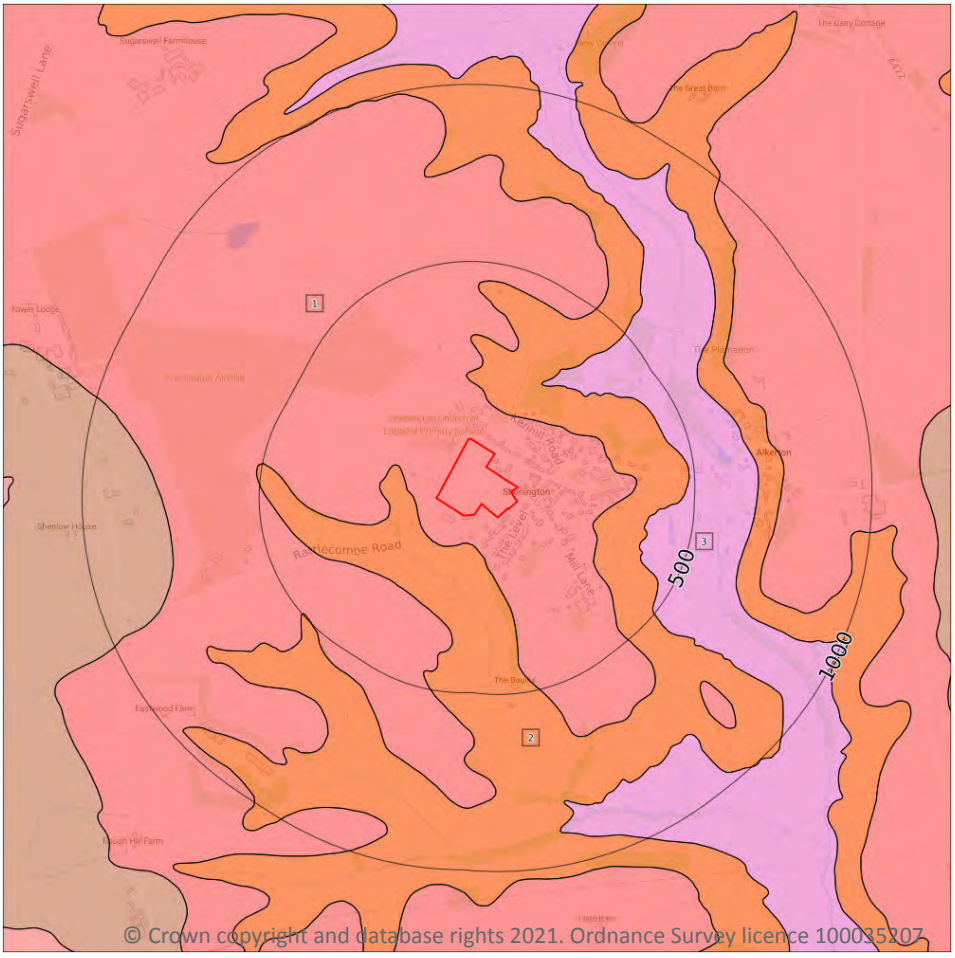
14.4 Landslip (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m **3**

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 71**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**MRB-FLIR**	**Marlstone Rock Formation - Ferruginous Limestone And Ironstone**	**Toarcian Age - Pliensbachian Age**
2	59m W	DYS-SIMD	Dyrham Formation - Siltstone And Mudstone, Interbedded	Pliensbachian Age
3	237m NE	CHAM-MDST	Charmouth Mudstone Formation - Mudstone	Pliensbachian Age - Sinemurian Age

This data is sourced from the British Geological Survey.

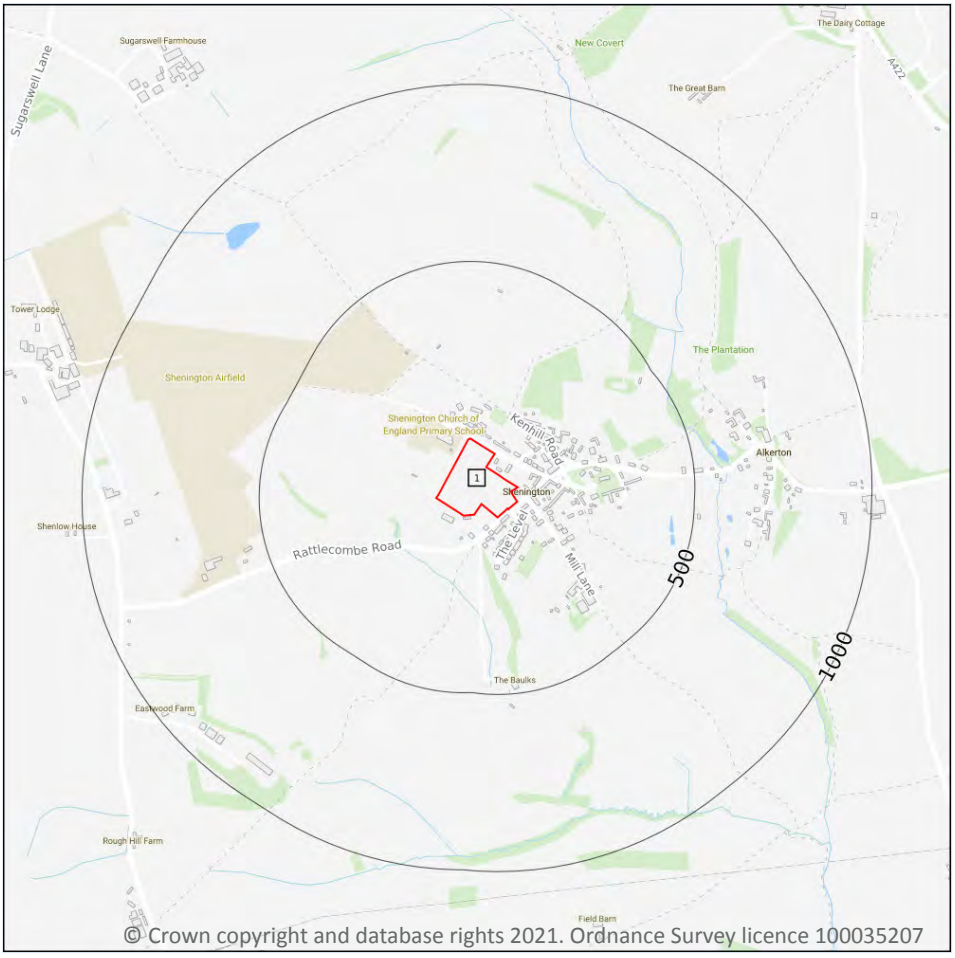
14.6 Bedrock faults and other linear features (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 73**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**EW201_banbury_v4**

This data is sourced from the British Geological Survey.

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

15.2 Artificial and made ground (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

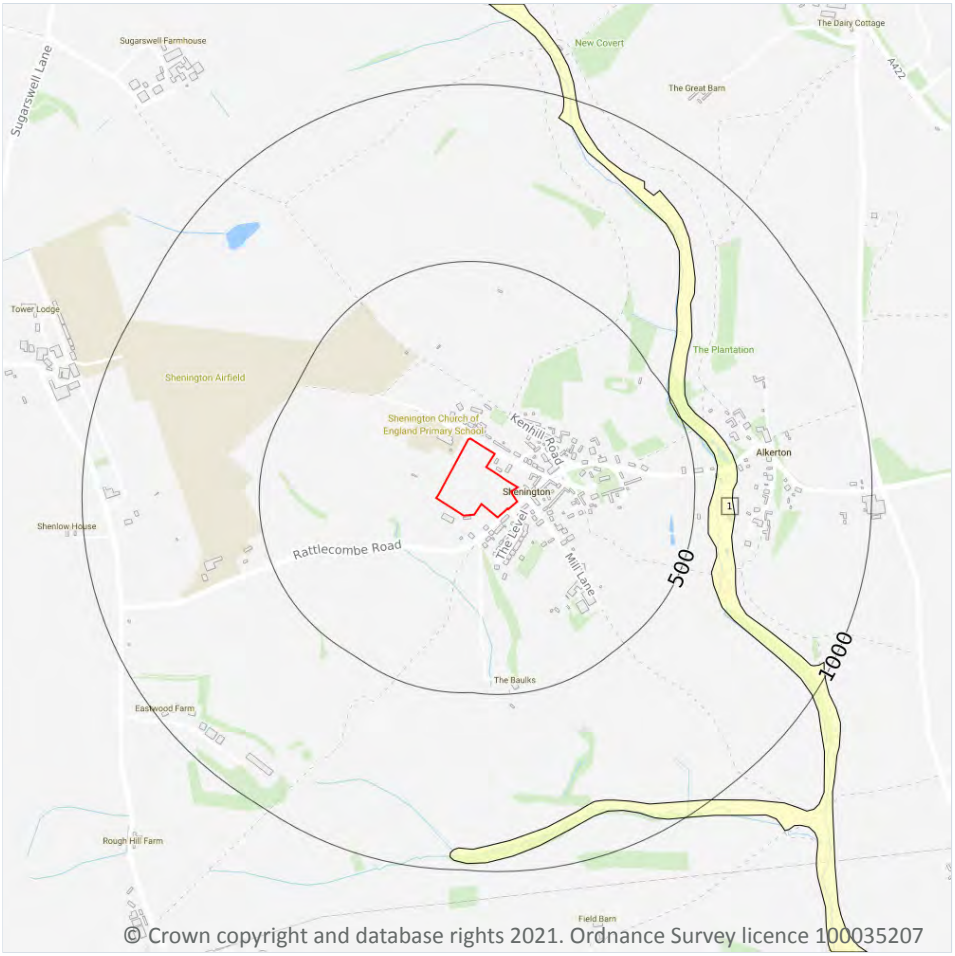
15.3 Artificial ground permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 75**

ID	Location	LEX Code	Description	Rock description
1	493m NE	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

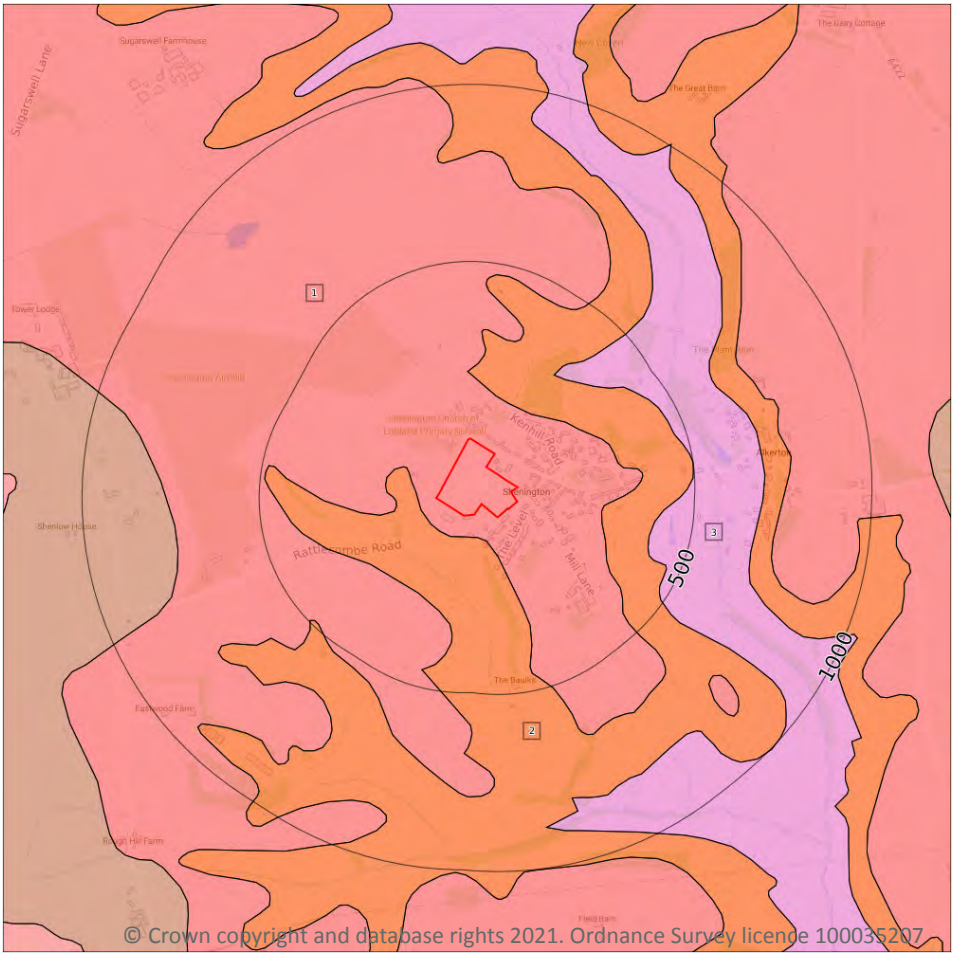
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m	3

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 77**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**MRB-FLIR**	**MARLSTONE ROCK FORMATION - FERRUGINOUS LIMESTONE AND IRONSTONE**	**PLIENSBACHIAN**
2	51m W	DYS-SIMD	DYRHAM FORMATION - SILTSTONE AND MUDSTONE, INTERBEDDED	PLIENSBACHIAN

ID	Location	LEX Code	Description	Rock age
3	279m NE	CHAM-MDST	CHARMOUTH MUDSTONE FORMATION - MUDSTONE	SINEMURIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	**1**

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

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

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	**0**

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

This data is sourced from the British Geological Survey.

16 Boreholes

Site Outline

Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

16.1 BGS Boreholes

Records within 250m	1

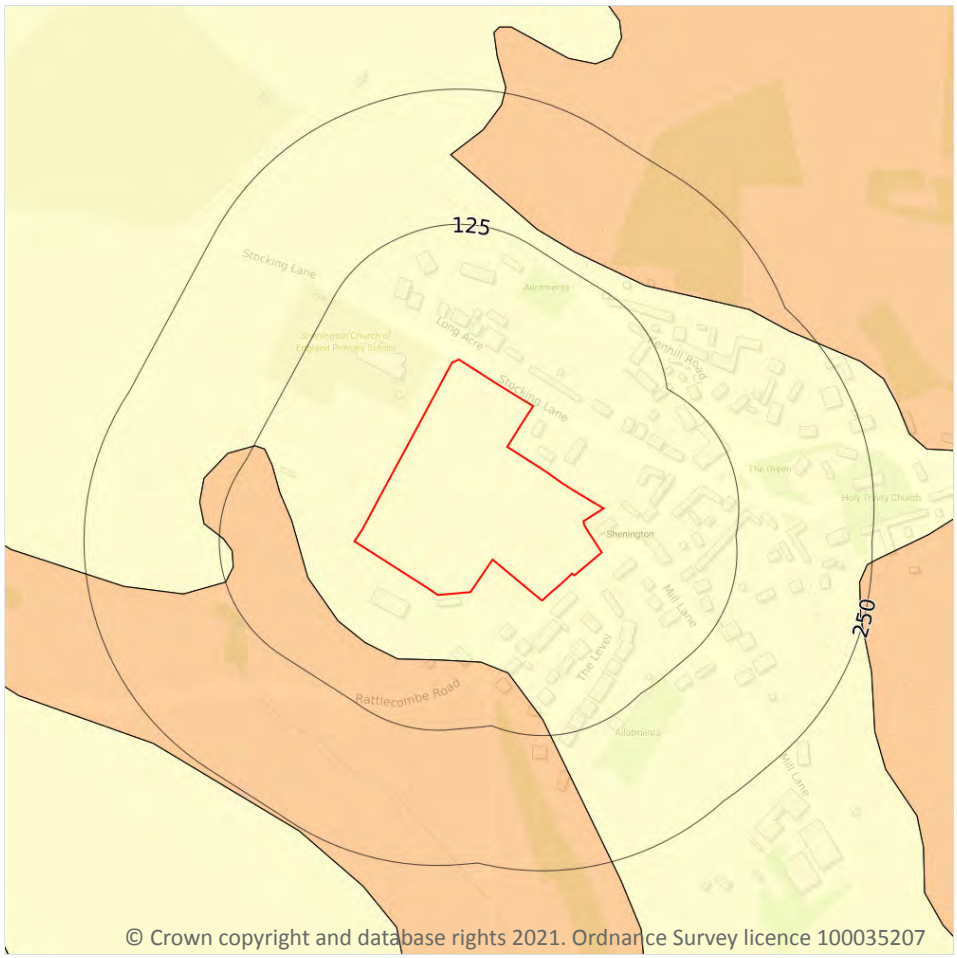
The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several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

Features are displayed on the Boreholes map on **page 79**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	181m SE	437180 242610	3 MARSHALLS CLOSE TP1	2.5	N	320576

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

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

17.1 Shrink swell clays

Records within 50m	1

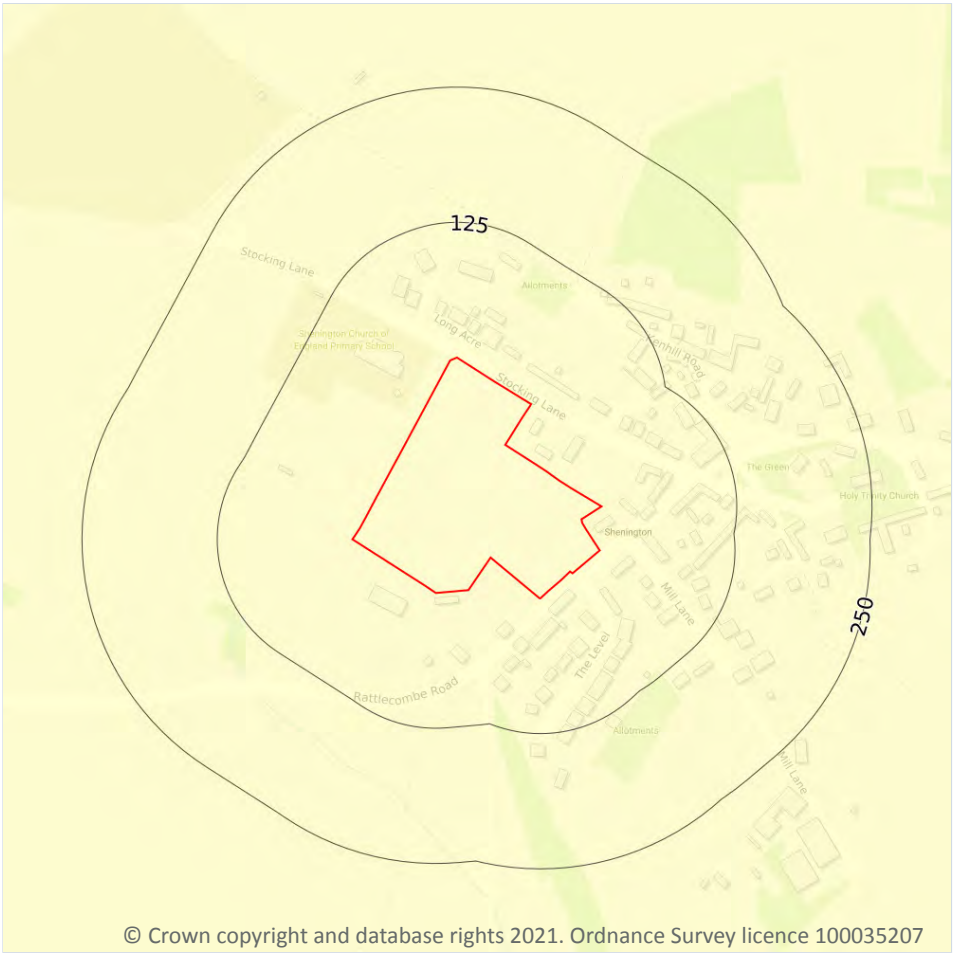
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 80**

Location	Hazard rating	Details
On site	**Negligible**	**Ground conditions predominantly non-plastic.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

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

17.2 Running sands

Records within 50m	1

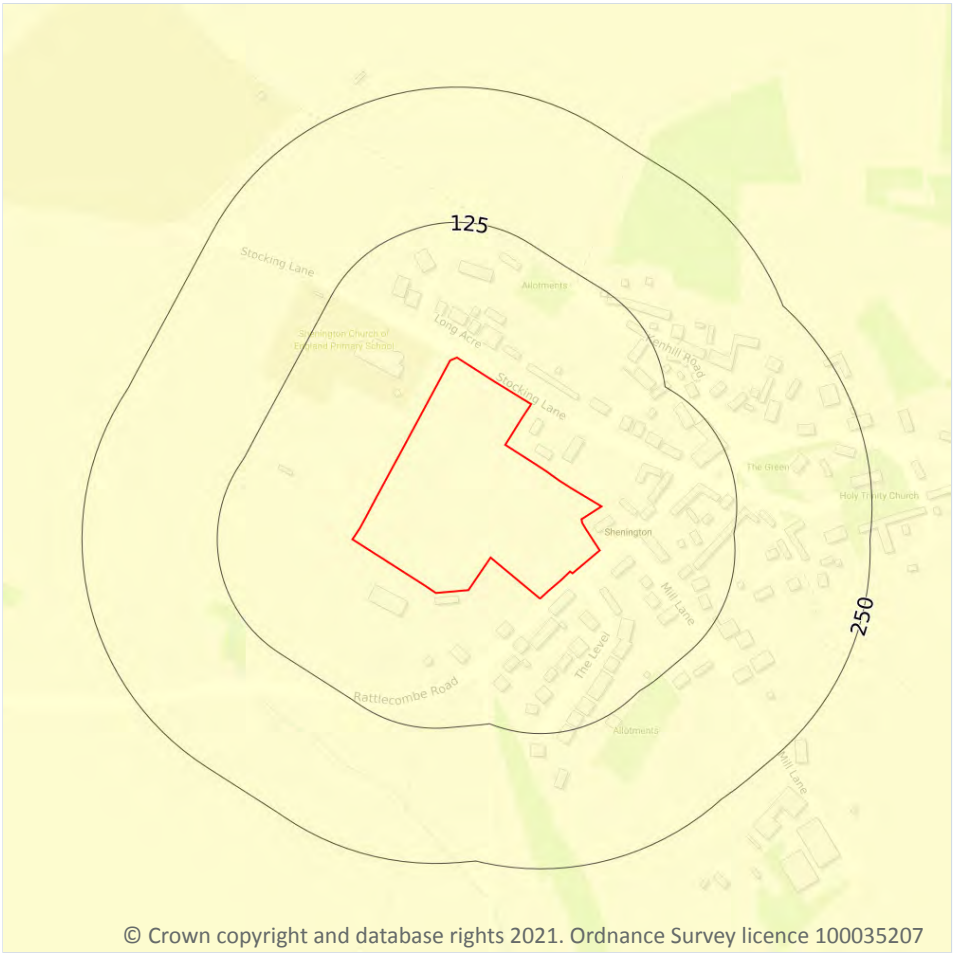
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

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

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

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

17.3 Compressible deposits

Records within 50m	1

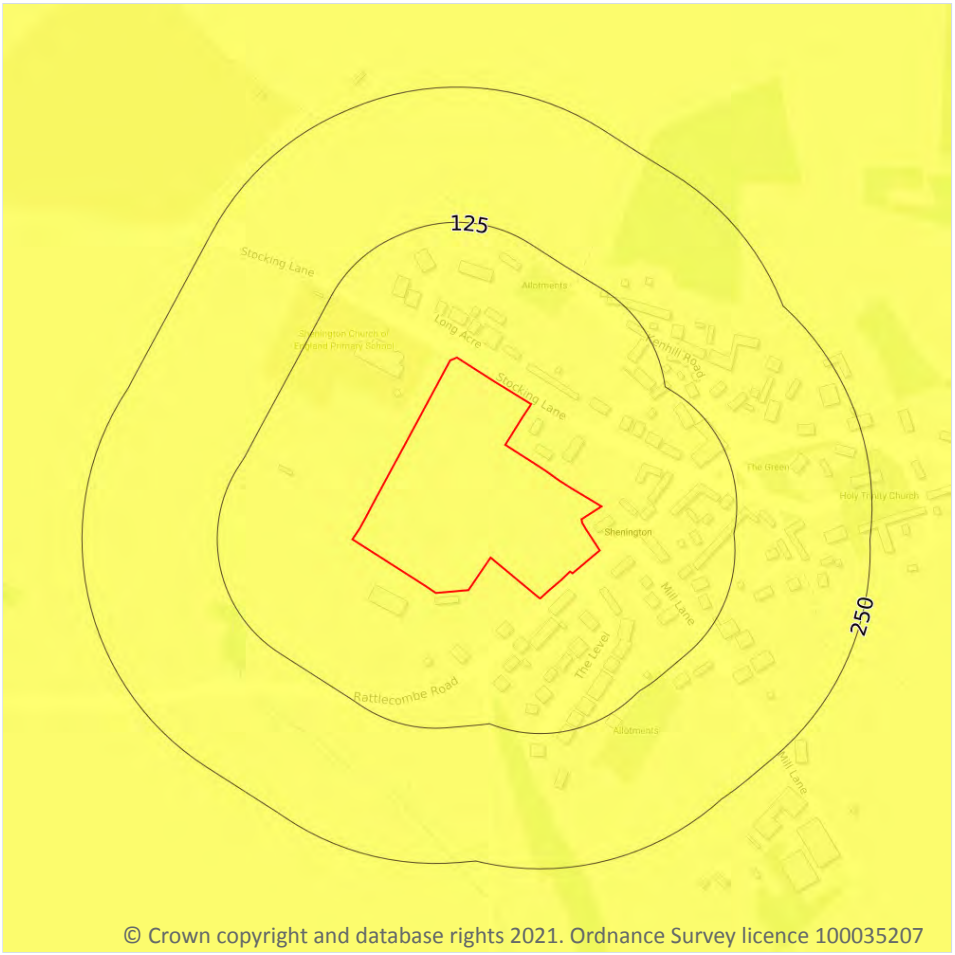
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 82**

Location	Hazard rating	Details
On site	**Negligible**	**Compressible strata are not thought to occur.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



Site Outline

Search buffers in metres (m)

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

17.4 Collapsible deposits

Records within 50m	1

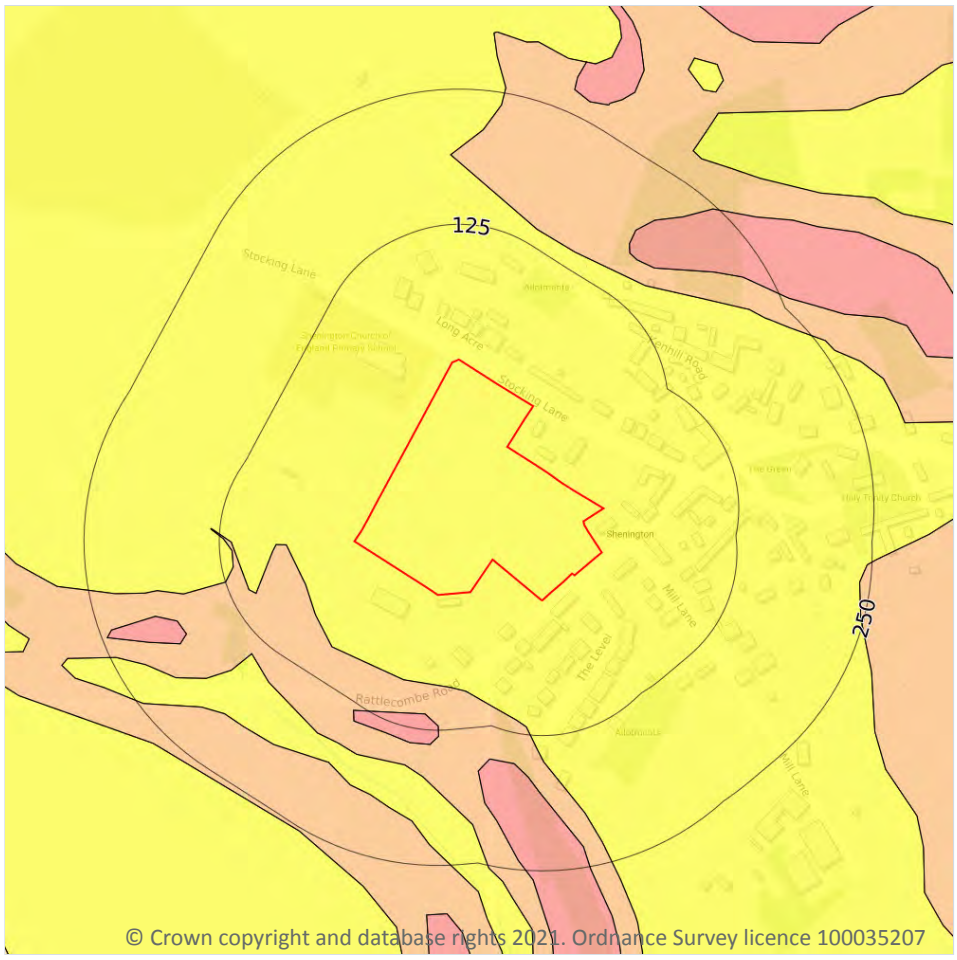
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 83**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

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

17.5 Landslides

Records within 50m	1

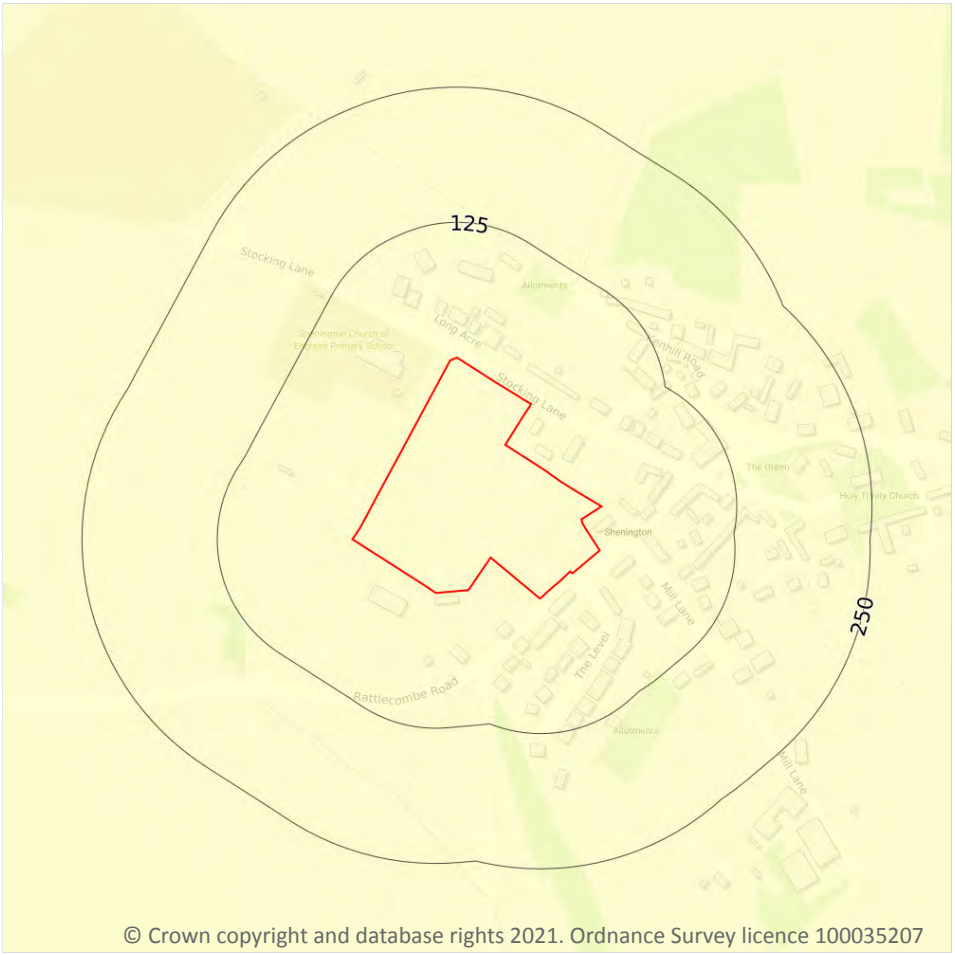
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 84**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

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

17.6 Ground dissolution of soluble rocks

Records within 50m	1

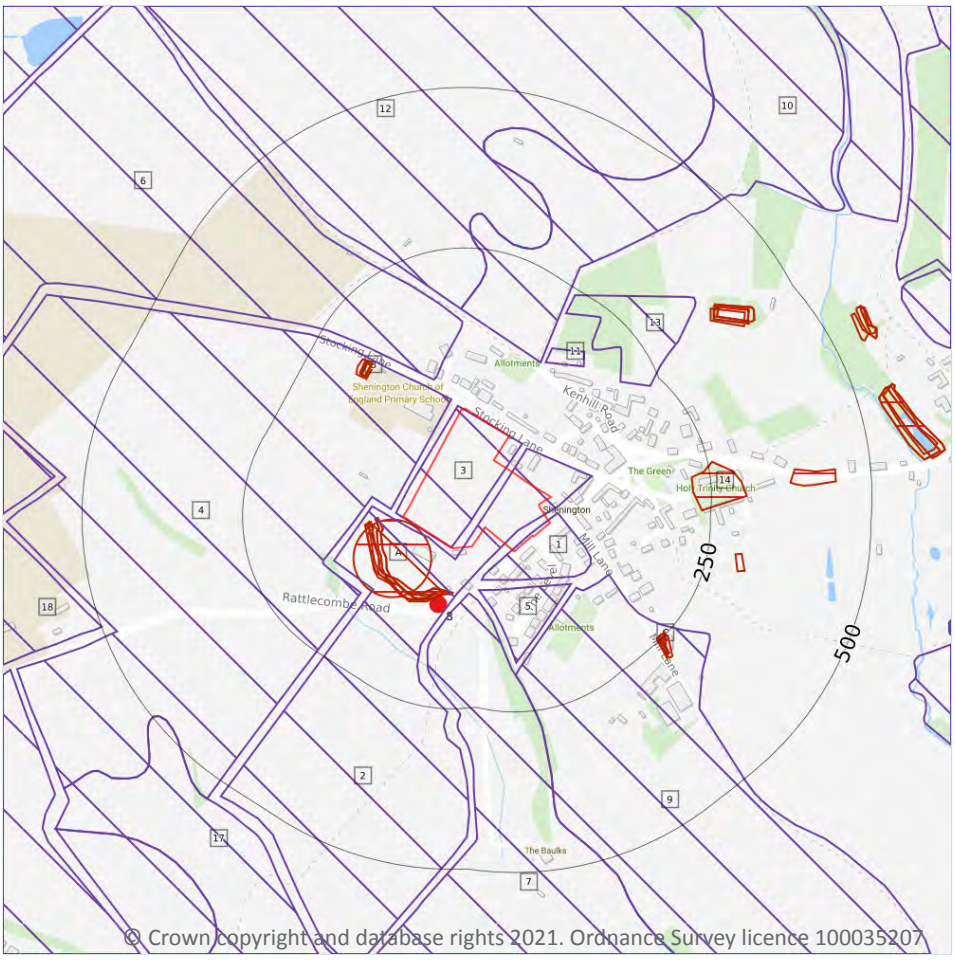
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 85**

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

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



18.1 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m	1

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 87**

ID	Location	Details	Description
8	89m S	Name: Rattlecombe Road Address: Shenington, BANBURY, Oxfordshire Commodity: Clay & Shale Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	16

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 87**

ID	Location	Land Use	Year of mapping	Mapping scale
A	4m SW	Unspecified Disused Quarry	1976	1:10000
A	37m SW	Unspecified Old Quarry	1923	1:10560
A	37m SW	Unspecified Ground Workings	1881	1:10560
A	42m SW	Unspecified Old Quarry	1954	1:10560
A	50m W	Unspecified Old Quarry	1923	1:10560
A	51m W	Unspecified Old Quarry	1920	1:10560
B	153m NW	Reservoir	1954	1:10560
B	155m NW	Reservoir	1923	1:10560
B	156m NW	Reservoir	1920	1:10560
B	157m NW	Reservoir	1923	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
14	221m E	Grave Yard	1881	1:10560
C	245m SE	Unspecified Pit	1923	1:10560
C	245m SE	Unspecified Pit	1923	1:10560
C	246m SE	Unspecified Ground Workings	1920	1:10560
C	247m SE	Unspecified Pit	1923	1:10560
C	249m SE	Unspecified Pit	1954	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	**0**

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

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	**14**

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 87**

ID	Location	Site Name	Mineral	Type	Planning Status	Planning Status Date
1	**On site**	**Shenington**	**Iron ore**	**Surface mineral working**	**Refused**	**28/2/57**
2	**On site**	**Shenington**	**Ironstone**	**Surface mineral working**	**Valid**	**Not available**
3	**On site**	**Shenington**	**Iron ore**	**Surface mineral working**	**Refused**	**28/2/57**
4	22m NW	Shenington	Iron ore	Surface mineral working	Valid	28/2/57
5	57m S	Shenington	Iron ore	Surface mineral working	Valid	28/2/57
6	64m NW	Shenington	Iron ore	Surface mineral working	Application	18/10/63
7	72m S	Shenington	Iron ore	Surface mineral working	Withdrawn	21/7/56
9	104m SE	Shenington	Iron ore	Surface mineral working	Application	18/10/63

ID	Location	Site Name	Mineral	Type	Planning Status	Planning Status Date
10	124m NE	Shenington	Iron ore	Surface mineral working	Valid	28/2/57
11	128m NE	Shenington	Iron ore	Surface mineral working	Refused	28/2/57
12	155m N	Shenington	Iron ore	Surface mineral working	Valid	28/2/57
13	188m NE	Shenington	Iron ore	Surface mineral working	Refused	28/2/57
17	487m SW	Shenington	Iron ore	Surface mineral working	Valid	28/2/57
18	500m W	Shenington	Ironstone	Surface mineral working	Withdrawn	Not available

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	0

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

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	0

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

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site	0

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0

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

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0

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

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

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Mining Searches UK.

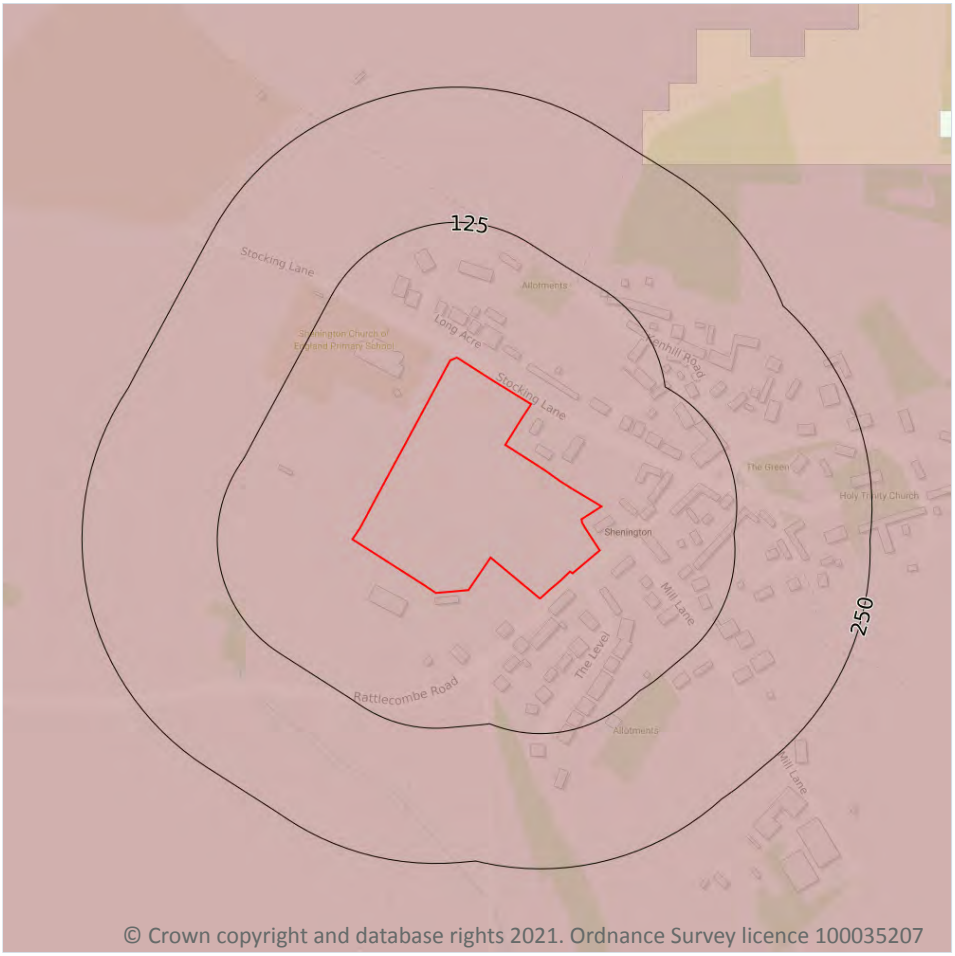
18.13 Clay mining

Records on site	0

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

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

19 Radon



Site Outline

Search buffers in metres (m)

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

19.1 Radon

Records on site	1

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

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

Location	Estimated properties affected	Radon Protection Measures required
On site	**Greater than 30%**	**Full**

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

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	3

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**>120 mg/kg**	**> 6 mg/kg**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**>180 mg/kg**	**>100 mg/kg**
On site	**>120 mg/kg**	**> 6 mg/kg**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**>180 mg/kg**	**>100 mg/kg**
On site	**>120 mg/kg**	**> 6 mg/kg**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**>180 mg/kg**	**>100 mg/kg**

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

21.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	0

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

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

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

This data is sourced from HS2 ltd.

Data providers

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

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: https://www.groundsure.com/terms-and-conditions-jan-2020/.

APPENDIX D - PRELIMINARY QUALITATIVE RISK ASSESSMENT

Project Name :	Shenington		
Project Number :	21076J		
Client Name :	ELAN HOMES		
Drafted by:	EW	**Date:**	26/08/2021
Reviewed by:	CG	**Date:**	26/08/2021

Discovery CE
Geotechnical & Environmental Engineers
THE GRANARY
BROADWELL HOUSE FARM
BROADWELL
WARWICKSHIRE
CV21 8HF
TEL: 01926 813909
FAX: 01926 814909

LINKAGE	SOURCE		PATHWAY		RECEPTOR		CURRENT RISK ESTIMATE		CURRENT	Comments/ Recommendations
ID	ID	Description	ID	Description	ID	Description	Consequence	Likelihood	RISK ESTIMATE	
L1	S01	Contaminants of Concern (organic contaminants) from historical site uses from pesticides and herbicides	P01	Ingestion	R01	Current site users.	Medium	Unlikely	LOW	Pesticides and Herbicides may have been applied to the site if previoulsy used for agricultural purposes, affecting current site users.
L2	S01	Contaminants of Concern (organic contaminants) from historical site uses from pesticides and herbicides	P02	Inhalation	R01	Current site users.	Medium	Unlikely	LOW	Pesticides and Herbicides may have been applied to the site if previoulsy used for agricultural purposes, affecting current site users.
L3	S01	Contaminants of Concern (organic contaminants) from historical site uses from pesticides and herbicides	P03	Direct skin exposure (dermal contact)	R01	Current site users.	Medium	Unlikely	LOW	Pesticides and Herbicides may have been applied to the site if previoulsy used for agricultural purposes, affecting current site users.
L4	S01	Contaminants of Concern (organic contaminants) from historical site uses from pesticides and herbicides	P01	Ingestion	R02	Future site users.	Medium	Low Likelihood	MODERATE-LOW	Pesticides and Herbicides may have been applied to the site if previoulsy used for agricultural purposes. Any proposed development will cover some of the site soils but residents will have unfetted access to soils in gardens. Recommend site investigation.
L5	S01	Contaminants of Concern (organic contaminants) from historical site uses from pesticides and herbicides	P02	Inhalation	R02	Future site users.	Medium	Unlikely	LOW	Pesticides and Herbicides may have been applied to the site if previoulsy used for agricultural purposes. Any proposed development will cover some of the site soils but residents will have unfetted access to soils in gardens. Recommend site investigation.
L6	S01	Contaminants of Concern (organic contaminants) from historical site uses from pesticides and herbicides	P03	Direct skin exposure (dermal contact)	R02	Future site users.	Medium	Low Likelihood	MODERATE-LOW	Pesticides and Herbicides may have been applied to the site if previoulsy used for agricultural purposes. Any proposed development will cover some of the site soils but residents will have unfetted access to soils in gardens. Recommend site investigation.
L7	S01	Contaminants of Concern (organic contaminants) from historical site uses from pesticides and herbicides	P01	Ingestion	R03	Site development and maintenance workers.	Medium	Unlikely	LOW	Pesticides and Herbicides may have been applied to the site if previoulsy used for agricultural purposes. Any proposed development will cover some of the site soils but site development and maintenace workers will have unfetted access to soils in gardens. Recommend site investigation.
L8	S01	Contaminants of Concern (organic contaminants) from historical site uses from pesticides and herbicides	P02	Inhalation	R03	Site development and maintenance workers.	Medium	Unlikely	LOW	Pesticides and Herbicides may have been applied to the site if previoulsy used for agricultural purposes. Any proposed development will cover some of the site soils but site development and maintenace workers will have unfetted access to soils in gardens. Recommend site investigation.
L9	S01	Contaminants of Concern (organic contaminants) from historical site uses from pesticides and herbicides	P03	Direct skin exposure (dermal contact)	R03	Site development and maintenance workers.	Medium	Unlikely	LOW	Pesticides and Herbicides may have been applied to the site if previoulsy used for agricultural purposes. Any proposed development will cover some of the site soils but site development and maintenace workers will have unfetted access to soils in gardens. Recommend site investigation.

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Geotechnical & Environmental Engineers
THE GRANARY
BROADWELL HOUSE FARM
BROADWELL
WARWICKSHIRE
CV21 8HF
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ID	ID	Description	ID	Description	ID	Description	Consequence	Likelihood	RISK ESTIMATE	
L13	S03	Natural Geology- Arsenic	P01	Ingestion	R01	Current site users.	Medium	Unlikely	LOW	The natural geology (Ferruginous Limestone and Ironstone) of the site has caused for abnormally high concetrations of Arsenic to be present. May be affecting current site users. Highly recommend site investigation.
L14	S03	Natural Geology- Arsenic	P02	Inhalation	R01	Current site users.	Medium	Unlikely	LOW	The natural geology (Ferruginous Limestone and Ironstone) of the site has caused for abnormally high concetrations of Arsenic to be present. May be affecting current site users. Highly recommend site investigation.
L15	S03	Natural Geology- Arsenic	P03	Direct skin exposure (dermal contact)	R01	Current site users.	Medium	Unlikely	LOW	The natural geology (Ferruginous Limestone and Ironstone) of the site has caused for abnormally high concetrations of Arsenic to be present. May be affecting current site users. Highly recommend site investigation.
L16	S03	Natural Geology- Arsenic	P01	Ingestion	R02	Future site users.	Medium	Likely	MODERATE	The natural geology (Ferruginous Limestone and Ironstone) of the site has caused for abnormally high concetrations of Arsenic to be present. May be affecting future site users. Highly recommend site investigation.
L17	S03	Natural Geology- Arsenic	P02	Inhalation	R02	Future site users.	Medium	Likely	MODERATE	The natural geology of the site has caused for abnormally high concetrations of Arsenic to be present on site. May be affecting future site users. Highly recommend site investigation.
L18	S03	Natural Geology- Arsenic	P03	Direct skin exposure (dermal contact)	R02	Future site users.	Medium	Likely	MODERATE	The natural geology (Ferruginous Limestone and Ironstone) of the site has caused for abnormally high concetrations of Arsenic to be present. May be affecting future site users. Highly recommend site investigation.
L19	S03	Natural Geology- Arsenic	P01	Ingestion	R03	Site development and maintenance workers.	Medium	Unlikely	LOW	The natural geology (Ferruginous Limestone and Ironstone) of the site has caused for abnormally high concetrations of Arsenic to be present. May be affect site and maintenance workers. Highly recommend site investigation.
L20	S03	Natural Geology- Arsenic	P02	Inhalation	R03	Site development and maintenance workers.	Medium	Unlikely	LOW	The natural geology (Ferruginous Limestone and Ironstone) of the site has caused for abnormally high concetrations of Arsenic to be present. May be affect site and maintenance workers. Highly recommend site investigation.
L21	S03	Natural Geology- Arsenic	P03	Direct skin exposure (dermal contact)	R03	Site development and maintenance workers.	Medium	Unlikely	LOW	The natural geology (Ferruginous Limestone and Ironstone) of the site has caused for abnormally high concetrations of Arsenic to be present. May be affect site and maintenance workers. Highly recommend site investigation.
L24	S05	Natural Geology- Radon	P02	Inhalation	R01	Current site users.	Medium	Low Likelihood	MODERATE-LOW	The natural geology (Ferruginous Limestone and Ironstone) of the site has caused for abnormally high concentrations of Radon gas to be present on site. May be affecting future site users. Highly recommend site investigation.

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ID	ID	Description	ID	Description	ID	Description	Consequence	Likelihood	RISK ESTIMATE	
L25	S05	Natural Geology- Radon	P02	Inhalation	R02	Future site users.	Medium	Likely	MODERATE	The natural geology (Ferruginous Limestone and Ironstone) of the site has caused for abnormally high concentrations of Radon gas to be present on site. May be affecting future site users. Highly recommend site investigation.
L26	S05	Natural Geology- Radon	P02	Inhalation	R03	Site development and maintenance workers.	Medium	Low Likelihood	MODERATE-LOW	The natural geology (Ferruginous Limestone and Ironstone) of the site has caused for abnormally high concentrations of Radon gas to be present on site. May be affecting future site users. Highly recommend site investigation
L27	S04	Soil gases from possible backfilled former quarry	P02	Inhalation	R01	Current site users.	Medium	Unlikely	LOW	Possible gases such as Methane and Carbon Dioxide are poetentially being produced from the possible backfilled former quarry. Potential hazard to current site users. Reccommend site investigation.
L28	S04	Soil gases from possible backfilled former quarry	P02	Inhalation	R02	Future site users.	Medium	Low Likelihood	MODERATE-LOW	Possible gases such as Methane and Carbon Dioxide are poetentially being produced from the possible backfilled former quarry. Potential hazard to future site users. Recommend site investigation.
L29	S04	Soil gases from possible backfilled former quarry	P02	Inhalation	R03	Site development and maintenance workers.	Medium	Unlikely	LOW	Possible gases such as Methane and Carbon Dioxide are poetentially being produced from the possible backfilled former quarry. Potential hazard to site maintenance workers. Recommend site investigation.
L30	S06	Metals and Hydrocarbons from possible backfilled former quarry encroaching onto site	P01	Ingestion	R01	Current site users.	Medium	Unlikely	LOW	Metals and Hydrocarbons such as Arsenic, Cadmium, Chromium, Chromium VI, Copper, Nickel, Zinc, Selenium, Lead, Mercury, TPH, PAH originating from the backfilled quarry could all be present on site
L31	S06	Metals and Hydrocarbons from possible backfilled former quarry encroaching onto site	P02	Inhalation	R01	Current site users.	Medium	Unlikely	LOW	Metals and Hydrocarbons such as Arsenic, Cadmium, Chromium, Chromium VI, Copper, Nickel, Zinc, Selenium, Lead, Mercury, TPH, PAH originating from the backfilled quarry could all be present on site
L32	S06	Metals and Hydrocarbons from possible backfilled former quarry encroaching onto site	P03	Direct skin exposure (dermal contact)	R01	Current site users.	Medium	Unlikely	LOW	Metals and Hydrocarbons such as Arsenic, Cadmium, Chromium, Chromium VI, Copper, Nickel, Zinc, Selenium, Lead, Mercury, TPH, PAH originating from the backfilled quarry could all be present on site
L33	S06	Metals and Hydrocarbons from possible backfilled former quarry encroaching onto site	P01	Ingestion	R02	Future site users.	Medium	Low Likelihood	MODERATE-LOW	Metals and Hydrocarbons such as Arsenic, Cadmium, Chromium, Chromium VI, Copper, Nickel, Zinc, Selenium, Lead, Mercury, TPH, PAH originating from the backfilled quarry could all be present on site
L34	S06	Metals and Hydrocarbons from possible backfilled former quarry encroaching onto site	P02	Inhalation	R02	Future site users.	Medium	Unlikely	LOW	Metals and Hydrocarbons such as Arsenic, Cadmium, Chromium, Chromium VI, Copper, Nickel, Zinc, Selenium, Lead, Mercury, TPH, PAH originating from the backfilled quarry could all be present on site
L35	S06	Metals and Hydrocarbons from possible backfilled former quarry encroaching onto site	P03	Direct skin exposure (dermal contact)	R02	Future site users.	Medium	Unlikely	LOW	Metals and Hydrocarbons such as Arsenic, Cadmium, Chromium, Chromium VI, Copper, Nickel, Zinc, Selenium, Lead, Mercury, TPH, PAH originating from the backfilled quarry could all be present on site

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LINKAGE	SOURCE		PATHWAY		RECEPTOR		CURRENT RISK ESTIMATE		CURRENT	Comments/ Recommendations
ID	ID	Description	ID	Description	ID	Description	Consequence	Likelihood	RISK ESTIMATE	
L36	S06	Metals and Hydrocarbons from possible backfilled former quarry encroaching onto site	P01	Ingestion	R03	Site development and maintenance workers.	Medium	Unlikely	LOW	Metals and Hydrocarbons such as Arsenic, Cadmium, Chromium, Chromium VI, Copper, Nickel, Zinc, Selenium, Lead, Mercury, TPH, PAH originating from the backfilled quarry could all be present on site.
L37	S06	Metals and Hydrocarbons from possible backfilled former quarry encroaching onto site	P02	Inhalation	R03	Site development and maintenance workers.	Medium	Unlikely	LOW	Metals and Hydrocarbons such as Arsenic, Cadmium, Chromium, Chromium VI, Copper, Nickel, Zinc, Selenium, Lead, Mercury, TPH, PAH originating from the backfilled quarry could all be present on site.
L38	S06	Metals and Hydrocarbons from possible backfilled former quarry encroaching onto site	P03	Direct skin exposure (dermal contact)	R03	Site development and maintenance workers.	Medium	Unlikely	LOW	Metals and Hydrocarbons such as Arsenic, Cadmium, Chromium, Chromium VI, Copper, Nickel, Zinc, Selenium, Lead, Mercury, TPH, PAH originating from the backfilled quarry could all be present on site.
L39	S07	Offsite Petrol Station	P02	Inhalation	R01	Current site users.	Medium	Unlikely	LOW	Risk of inhalation of vapours from impacted groundwater. Vapors from offsite petrol station contaminating the Secondary (A) Aquifer and Marlstone Rock Formation (Ferruginious Limestone and Ironstone).
L40	S07	Offsite Petrol Station	P02	Inhalation	R02	Future site users.	Medium	Unlikely	LOW	Risk of inhalation of vapours from impacted groundwater. Vapors from offsite petrol station contaminating the Secondary (A) Aquifer and Marlstone Rock Formation (Ferruginious Limestone and Ironstone).
L41	S07	Offsite Petrol Station	P02	Inhalation	R03	Site development and maintenance workers.	Medium	Unlikely	LOW	Risk of inhalation of vapours from impacted groundwater. Vapors from offsite petrol station contaminating the Secondary (A) Aquifer and Marlstone Rock Formation (Ferruginious Limestone and Ironstone).
L42	S06	Metals and Hydrocarbons from possible backfilled former quarry encroaching onto site	P05	Lateral migration of impacted groundwater	R04	Groundwater below the site (– Secondary A aquifer).	Medium	Low Likelihood	MODERATE-LOW	Contaminants being produced by the possible backfilled former quarry could be affecting the groundwater underneath the site. The groundwater moving via lateral migration onto site.
L43	S06	Metals and Hydrocarbons from possible backfilled former quarry encroaching onto site	P05	Lateral migration of impacted groundwater	R05	Surface waters (un-named river to southwest).	Medium	Unlikely	LOW	Contaminants being produced by the possible backfilled former quarry could be affecting the surface water within the un-named river to the south-west.
L44	S02	PCBs from offsite substations	P08	Volatilisation of impacted groundwater	R01	Current site users.	Medium	Unlikely	LOW	PCBs from the two offsite substations could poetentially leach into soils on site.
L45	S02	PCBs from offsite substations	P08	Volatilisation of impacted groundwater	R02	Future site users.	Medium	Unlikely	LOW	PCBs from the two offsite substations could poetentially leach into soils on site.
L46	S02	PCBs from offsite substations	P04	Vertical leaching of contaminants	R03	Site development and maintenance workers.	Mild	Unlikely	VERY LOW	PCBs from the two offsite substations could poetentially leach into soils on site.
L47	S02	PCBs from offsite substations	P04	Vertical leaching of contaminants	R04	Groundwater below the site (– Secondary A aquifer).	Medium	Low Likelihood	MODERATE-LOW	PCBs from the two offsite substations could poetentially leach into the vulnerable Secondary A aquifer and ground water below site.

Project Name :	Shenington		
Project Number :	21076J		
Client Name :	ELAN HOMES		
Drafted by:	EW	**Date:**	26/08/2021
Reviewed by:	CG	**Date:**	26/08/2021

Discovery CE
Geotechnical & Environmental Engineers
THE GRANARY
BROADWELL HOUSE FARM
BROADWELL
WARWICKSHIRE
CV21 8HF
TEL: 01926 813909
FAX: 01926 814909

LINKAGE	SOURCE		PATHWAY		RECEPTOR		CURRENT RISK ESTIMATE		CURRENT	Comments/ Recommendations
ID	ID	Description	ID	Description	ID	Description	Consequence	Likelihood	RISK ESTIMATE	
L48	S08	Sulphates and low pH in groundwater.	-	Direct Contact	R06	Proposed buildings/Foundations/Services.	Mild	Likely	MODERATE-LOW	Groundwater with low pH and high sulphates may affect proposed buildings, foundations and services built on site.