PRELIMINARY RISK ASSESSMENT REPORT FOR STRATEGIC ECOLOGICAL CORRIDOR: LAND ADJACENT TO B5130, WREXHAM

TE1906-TE-00-XX-RP-GE-001-V02

25 FEBRUARY 2025

FINAL

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EXECUTIVE SUMMARY

Introduction	Tier Environmental was commissioned by Net World Sports to undertake a desk study and Phase I Preliminary Risk Assessment of the proposed ecological area referred to as the Strategic Ecological Corridor: Land adjacent to B5130, Wrexham. The Strategic Ecological Corridor includes an additional parcel of land to the north west which is covered by a separate ground conditions report. This has been submitted as part of the planning application. The purpose of this investigation was to establish land use history and review the available information to determine the geoenvironmental setting of the site and develop a preliminary conceptual site model with due consideration of potential soil and groundwater contamination, hazardous ground gases and mining.
Proposed land use	It is proposed that the site will be developed as a dedicated ecological area laid entirely to soft landscaping (including a series of bunds) and wildlife ponds, with no proposed buildings.
Site location and surrounding land uses	The site is located off the B5130, Isycoed, Wrexham, Wales, LL13 9RL, United Kingdom. The site is currently in use as agricultural fields. Surrounding land uses comprise of industrial to the west and residential properties to the east.
Site history	The site comprises agricultural fields since earliest records with ponds in the north and south of the site, and footpaths traversing the site. During the Second World War, the southwest of the site is recorded to be just within the wider boundary of the Royal Ordnance Factory Wrexham, which spanned over 1,400 acres west of the site. The field immediately west of the site records small structures (likely soil covered storage bunkers), although there is no evidence of onsite activities associated with ROF Wrexham. From 1949 onwards, the site saw the installation of land drains and infrastructure, with notable development to the southeast, including excavations and the creation of new drainage conduits. From the 1970s, industrial activity intensified in the surrounding area, with the establishment of factories, warehouses, and associated infrastructure, with electrical substation and tanks within 100m of the site. Wrexham Industrial Estate is fully established by the 1990s, the site remains undeveloped to present day.
Geology, hydrogeology and hydrology	The site is underlain by superficial deposits of Devensian Till (Secondary Undifferentiated Aquifer) and bedrock of the Kinnerton Sandstone Formation (Principal Aquifer), with the Salop Formation (Secondary A Aquifer) present in the extreme north-western area. No potable or non-potable water abstractions are recorded within 1km and the site is not with a Source Protection Zone. The nearest surface water features are streams in the north and south, and ponds located on-site, with surface water anticipated to follow the local topography. No significant groundwater was encountered in previous fieldwork during previous Tier investigations, and groundwater flow direction remains unknown but is expected to align with local topography. Nearby investigations have recorded low permeability superficial Till to >10m bgl which would provide significant protection to underlying aquifers. Given the absence of any significant historic land uses, the controlled waters environment is considered to be of low sensitivity.
Ground gases	There are no recorded landfills located within 250m of the Site. The only viable potential source of ground gases is therefore on-site localised Made Ground / potentially infilled ponds and off-site Made Ground, although no buildings are proposed for the development.
Radon requirements	Basic radon protection measures are not currently required for the proposed development.
Ecological sensitivity	The site does not lie within an ecologically sensitive area.
Potential contaminative features	On site localised Made Ground associated with historic agricultural land use and potentially infilled ponds. Surrounding land uses including the wider ROF Wrexham facility which may have partially included the western area of the site.
Mining and quarrying	The site is not located within a mining area or an area subject to historic quarrying.
Previous investigations	Tier Environmental conducted an investigation for the Net World Sports head office located 20m to the northwest of the site in 2021. Ground conditions recorded topsoil at depths between 0.23m and 0.38m below ground level, overlying firm to stiff clay (Till) to a maximum investigated depth of 10.45m. No significant contamination was identified, and soil concentrations of potential contaminants were below thresholds for human health risks. The site was classified as very low risk for ground gas, and no radon protection measures were deemed necessary. In addition, a third-party desk study report by SP Associates for an area of land immediately west of the site was available on planning records (Ref: S1761, dated September 2021).
Phosphorus	The site falls within a Phosphorus Sensitive SAC Freshwater catchment area associated with the River Dee. As such, due consideration during drainage strategy / design (if required) should be given with respect to this designation and any mitigation / avoidance measures.
Unexploded ordnance	The site is ultimately a low UXO risk. Despite mapping suggesting the south-western area of the site was within the wider ROF Wrexham facility, there is no evidence of on-site activities associated with ordnance manufacturing.
Waste soils classification	Based on the history of the site and the anticipated potential contaminants of concern it is considered unlikely that hazardous waste soil materials may be present beneath the site; however, this will be subject to confirmatory investigation, sampling, laboratory analysis and waste classification in accordance with the Guidance on the Classification and Assessment of Waste (WM3).

Materials re-use	Subject to volumetric fill requirements and a future assessment of suitability of re-use (both chemically and geotechnically), some materials may be considered for potential re-use in line with an appropriate end-of-waste protocol such as WRAP Quality Protocol for Aggregates from Inert Waste, U1 Exemption or a Materials Management Plan in accordance with the CL:AIRE Definition of Waste Code of Practice (DoWCoP). Please note that any previously landfilled or mining waste materials may not be appropriately subject to consideration under DoWCoP and may not be re-used under DoWCoP unless sufficient lines of evidence and agreement with the local Environment Agency Waste Team can be sought beforehand. In addition, Section 4.10 of this report includes statements with respect to re-use of excavated and stockpiled clean naturally occurring soils within the site and re-use on other sites. These statements are designed to provide a clear intention to reuse any clean, naturally occurring soils derived from future excavations at this site (which may also include temporary future stockpiling these materials).
Further works	A limited Ground Investigation to comprise: • Trial pitting to determine the nature and extent of any Made Ground and natural deposits across the site, focusing on areas closest to historic industrial uses, and to facilitate soil sampling for environmental and geotechnical testing. • Soakaway/infiltration testing to determine whether the proposed ponds will need to be lined. • Geoenvironmental chemical testing on selected soil samples for metals, pH, speciated PAH, speciated TPH, phenol, sulphate, TOC and asbestos screens in order to assess potential risks to human health based on historical land uses on and within close proximity to the site and to assist with basic waste characterisation.

1. INTRODUCTION

Tier Environmental was commissioned by Mauna Kea Limited (a fully owned subsidiary of Net Worlds Sports) to undertake a Land Contamination Risk Management (LCRM) Preliminary Risk Assessment for an area of land referred to as Ecological Site East of Net World Sports Head Office, located at Holt Road, Bowling Bank, Isycoed, Wrexham, Wales, LL13 9RL, United Kingdom (the "site").

The full title of this report, a *'Stage 1 - LCRM Tier 1 Preliminary Risk Assessment Report'*, is in accordance with that described in the Land Contamination Risk Management guidance (available at https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm) which has superseded CLR 11.

1.1. Proposed Development

Under current proposals the development will comprise a dedicated ecological area by the creation of ponds (less than 1.5m deep) and landscaped bunds. As such, in accordance with the *'Updated technical background to the CLEA model'* (Environment Agency, 2009) and *'Suitable 4 Use Levels'* (LQM / CIEH 2015) the proposed generic land use for this development is public open space.

1.2. Previous Reports

Tier Environmental have previously completed a Ground Investigation Report for an area of land circa 20m northwest of the sit (Ref:TE1456GIR1.3, dated July 2021). In addition, a third-party desk study report by SP Associates for an area of land immediately west of the site was available on planning records (Ref: S1761, dated September 2021).

1.3. Objectives

Taking into account the proposed development of the site, the objectives of this appraisal were:

- To determine the historical and current land use.
- To establish the environmental setting of the site.
- To evaluate whether past mining or other extractive industries could have an influence on the site.
- To review previous pertinent third party reports.
- To determine likely ground and groundwater conditions.
- To determine the potential risks to human health and the wider environment.
- To determine potential risks posed to the site from hazardous ground gases and / or vapours.
- To derive a Preliminary Conceptual Site Model.

1.4. Assumptions

The following assumptions are made in this report:

- It is assumed that ground levels will not change significantly from those described in this report or as shown on proposed development drawings. If this is not the case, then amendments to the recommendations made in this report may be required.

- Any references to observations of suspected asbestos-containing materials are for information only and should be verified by a suitably qualified asbestos specialist and/or confirmed by laboratory analysis.
- The use of the term 'Topsoil' within this report is based on a visual identification only and that these materials have not been classified in accordance with BS3882:2015.
- The use of the terms ‘shallow’ and ‘deep’ within this report (from a geotechnical perspective) assume *typically* between ground level to circa 3.00m below ground level (bgl) for ‘shallow’ and greater than 3.00m bgl regarded as ‘deep’.
- The comments and opinions presented in this report are based on the findings of the desk study, review of third party information, and a review of ground conditions encountered during previous intrusive investigation works, performed by Tier Environmental. There may be other conditions prevailing on the site which have not been revealed by this investigation and which have not been taken into account by this report at this stage.
- Responsibility cannot be accepted for any conditions not revealed by this investigation. Any diagram or opinion on the possible configuration of the findings is conjectural and given for guidance only. Confirmation of ground conditions should be undertaken if deemed necessary.

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2. SITE DETAILS AND DESCRIPTION

Table 2.1 Current Site Overview.

Site name	Ecological site east of Net World Sports' head office
Site address	Land off the B5130, Isycoed, Wrexham, Wales, LL13 9RL, United Kingdom. A site location plan is included as Drawing No. TE1906-TE-00-XX-DR-GE-001-V01 within Appendix A.
National Grid Reference (NGR)	339655 350228
Approximate site area	14.9 ha
Site shape	The site is split into two distinct areas connected via hedgerows. The northern area is square shaped and the southern area is approximately rectangular.
Current land use on the site	The site is agricultural with grassed fields. The agricultural fields are delineated by trees and hedgerows. Across the entire site, 3 No. ponds are present via satellite imagery (2 No. ponds in the south and 1 No. pond in the north). Underground service drawings have not been provided to Tier Environmental; however, there remains a potential for such features to be present beneath the site. Access onto the site is via gates located along the B5130.
Surrounding land uses	The site is surrounded by agricultural land in the north, east and south with residential properties located along the B5130 in the vicinity to the east. To the west of the site, is located Wrexham Industrial Estate, with the Net World Sports warehouse located approximately 110m northwest of the northern site boundary.
General topography and ground levels	In the northern area of the site, the topography ranges from 75m AOD in the east to 88m AOD in the west. In the southern area of the site, the topography ranges from85m AOD in the north to 110m AOD in the south.

An aerial photograph (from the Groundsure report) of the site and site boundary is shown below. The site comprises two distinct parcels of land. For the purpose of the Groundsure report these have been connected by a single line which passes through third party land; this land is not part of this risk assessment nor the planning application.

Figure 2.1 Recent Aerial Photograph from Groundsure



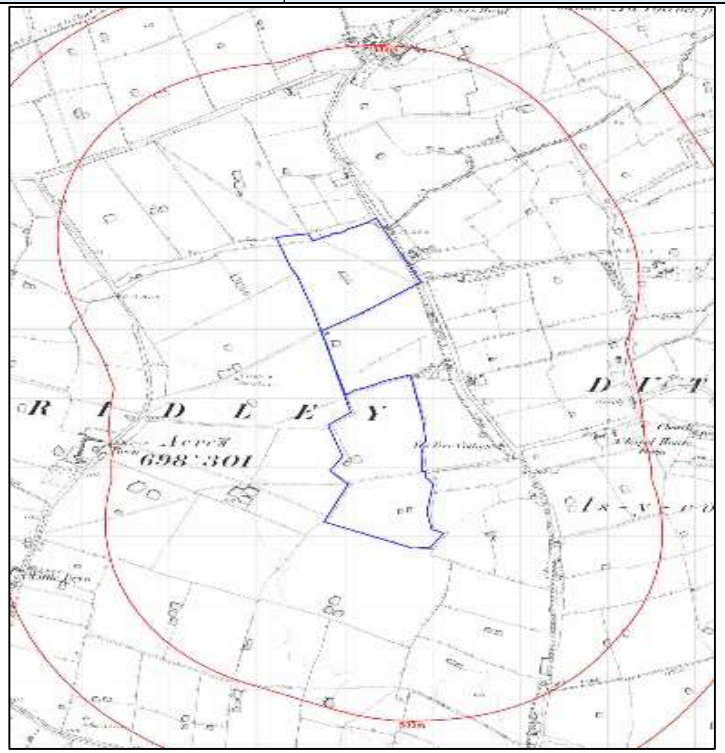
3. SITE HISTORY

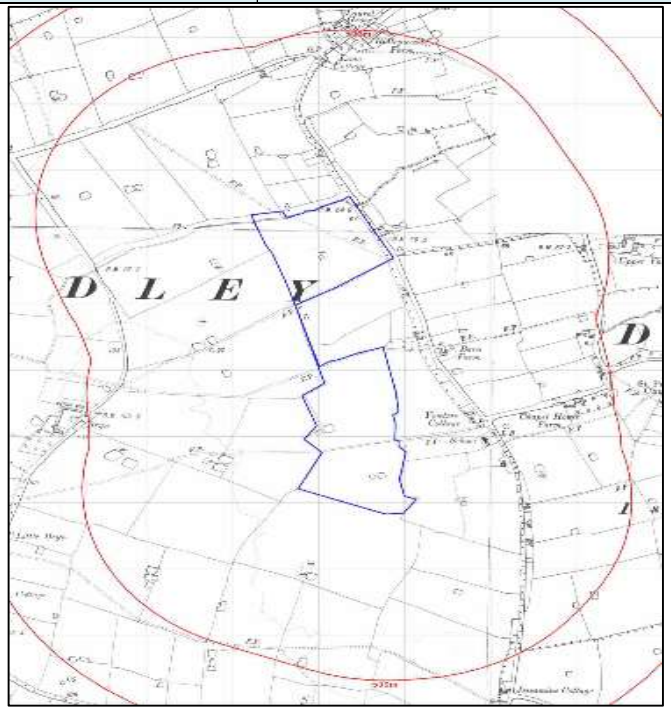
3.1. Site History Review

Extracts of Ordnance Survey (OS) plans dated from 1872 to 2025 were reviewed. These were obtained as part of the Groundsure report for the site, which is presented in Appendix B. In addition, historic aerial photography on Google Earth has been reviewed.

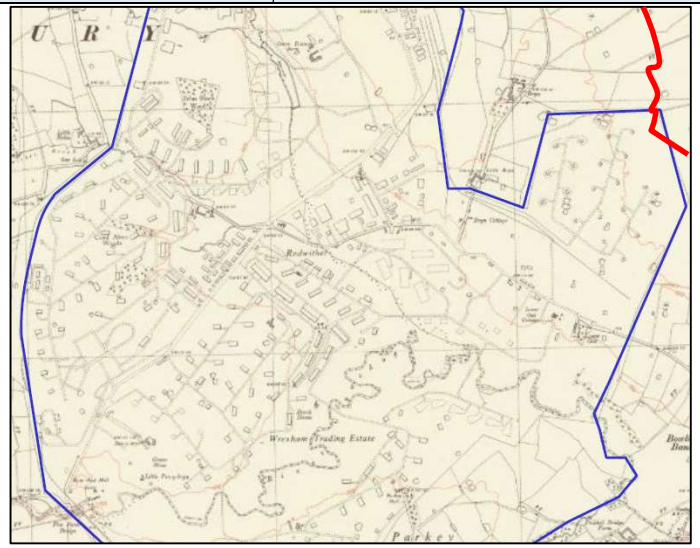
Table 3.1 below presents a summary of the main aspects of the site relevant to the current and proposed future end uses. It is not the intention of this report to describe in detail all of the changes that have occurred on or adjacent to the site, where these are not relevant to the land use.

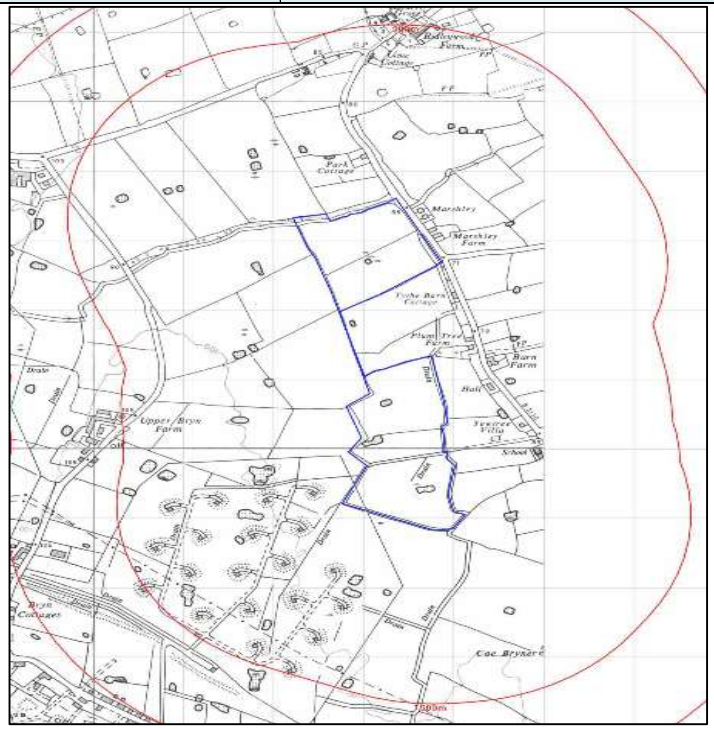
Table 3.1 Site History.

Time Period	On-site features	Off-site features
Pre-1900	 1872 Scale 1:10,560	
	• The site is unoccupied as agricultural fields. • Footpaths traverse across the site boundary • 3 No. ponds present on site	• Surrounding land uses consist of agriculture and localised residential properties in the west e.g. Yewtree cottage 160m west of site boundary. • School located 175m east of south site • Numerous ponds noted within a 250m radius of site boundary, including 40m south of the northern area of site, 115m west of northern area and 170m west of southern site boundary

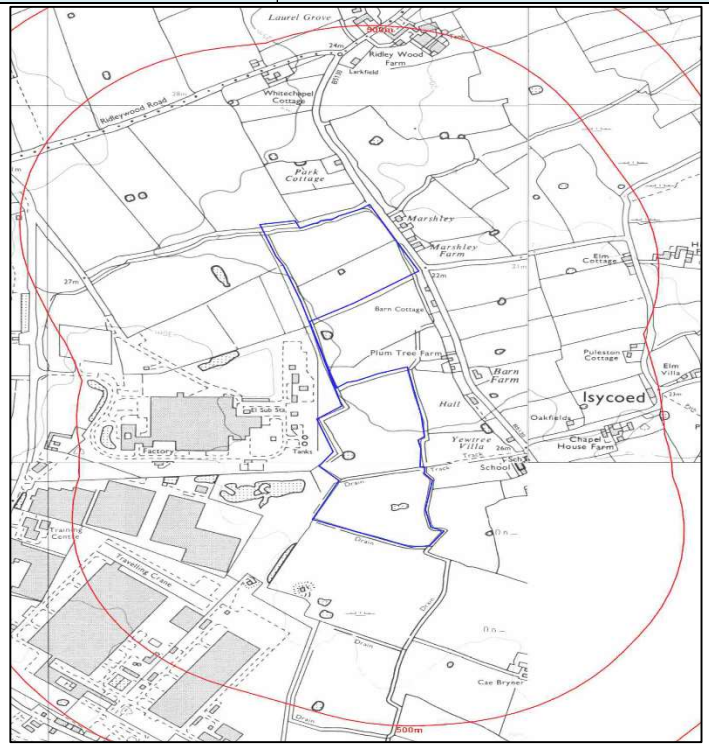
<table>
<tr><th>Time Period</th><th>On-site features</th><th>Off-site features</th></tr>
<tr><td rowspan="2">1900 to 1939 (Pre-war period)</td><td colspan="2">

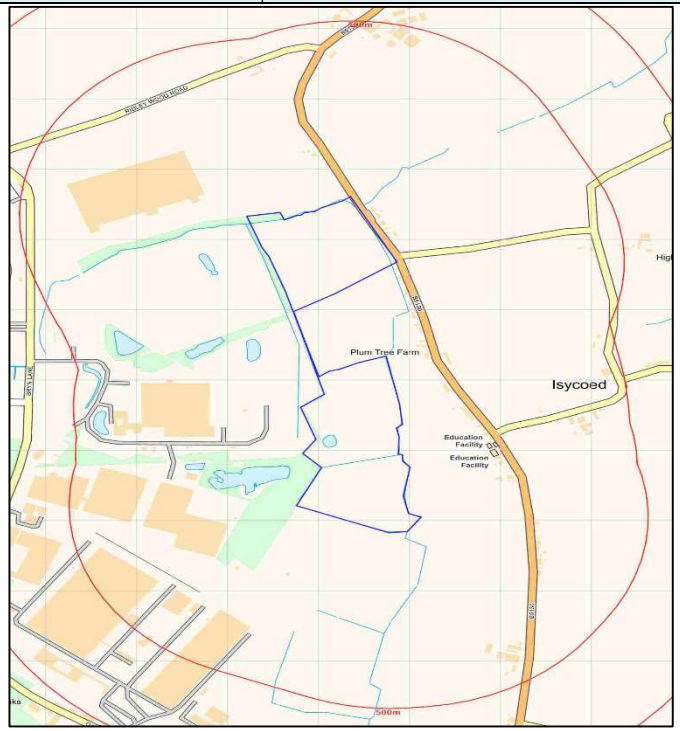
1914 Scale 1:10,560</td></tr>
<tr><td>• No significant changes</td><td>• No significant changes</td></tr>
</table>

Time Period	On-site features	Off-site features
1939-1945 (Second World War Period)	 1949 OS Mapping records from UXO Report DA18240-00 Extent of ROF Wrexham in blue, south-western site boundary in red	
	• The site remains unchanged though the far south-western corner is located within the boundary of ROF Wrexham. • There is no evidence for any onsite uses associated with ROF Wrexham throughout this period.	• ROF Wrexham has been established from circa 50m west of the site boundary with small structures (likely to be earth covered storage bunkers) in the adjacent field and the wider facility with factory buildings further west.

<table>
<tr><th>Time Period</th><th>On-site features</th><th>Off-site features</th></tr>
<tr><td rowspan="2">1945-1980 (Post war period)</td><td colspan="2">

1964 Scale 1:10,560</td></tr>
<tr><td>An additional pond shown in the northern part of the southern area.
Land drains now present on site in the southern area and along the southern and eastern site boundaries.</td><td>Pill boxes/bunkers associated with the former ROF Wrexham are still present in fields to the west of the site.</td></tr>
</table>

Time Period	On-site features	Off-site features
1980 – 2000 (Late 20th century period)	 1992 Scale 1:10,000	
	• No significant changes.	• Expansion of pond located in the west of south site area circa 50m. • Major industrial development shown from 1976 to the west and southwest as part of Wrexham Industrial Estate. • 2 No. tanks present 35m west of site boundary. • 1 No electrical substation 145m west. • Residential development from 1976 in the north and east.

Time Period	On-site features	Off-site features
2000 to 2020 (Modern day period)	 2025 Scale 1:10,000	
	• Disappearance of 2 No. ponds from mapping, although still present in satellite imagery in the south and north.	• Tanks located 35m west have been removed from maps. • Emergence of new industrial warehouse operated by Net World Sports located 110m northwest of northern site boundary.

3.2. Preliminary Unexploded Ordnance Risk Assessment

Publicly available online Zetica UXO Risk mapping indicates the site is within a low risk area. A potential Luftwaffe target was located circa 50m west of the site associated with a munitions factory. The southwest of the site is recorded to be within land that was formerly used by the Ministry of Defence (MoD) for the manufacture of explosives as part of the Royal Ordnance Factory (ROF) Wrexham which covered an area of over 1400 acres. Operational; in 1941, it consisted of a number if production buildings, widely spaced to minimise and damage should an accidental explosion occur. Operation of the ROF ceased on 11 August 1945. Shortly after the war the site was sold for development as an Industrial Estate.

A previous Detailed Unexploded Risk Assessment completed for the land to the north of Bryn Lane, circa 500m northwest of the current site boundary, by 1st Line Defence Ltd (Ref: DA18240-00, dated July 2023) under Tier project TE1749 and TE1750, recorded a low risk for that site area. The report acknowledged that whilst the ROF could have contributed to localised contamination through burial/disposal/burning, there was no specific evidence. Equally there is no evidence on mapping that the site itself was used as part of the facility and may just fall within the wider boundary.

Table 3.2 Preliminary UXO Risk Assessment.

	Yes/no	Comments
Is the site indicated to have been directly bombed?	No	There are no records of a direct bomb drop on site.
Is the site within an area recorded to have been bombed?	No	N/A
Could the site have been a high-risk target?	Yes	Possibly part of the wider Royal Ordnance Factory (ROF) Wrexham which covered an area of over 1,400 acres, within the southwest of the site only.
Any development cycles since 1945?	No	No development records.
Mitigating Factors	No	N/A
Preliminary assessment of UXO Risk	Low	N/A
Further works?	No	No further works required.

4. ENVIRONMENTAL SETTING

4.1. Geology

Table 4.1 Geological Summary.

Maps and publications referenced	Groundsure, BGS Map viewer and BGS Geoindex (onshore)
Made ground / artificial ground	Made Ground and Landscaped Ground associated with the former ROF Wrexham are indicated immediately to the west of the site in the Groundsure Report. Given the history of industrial development of the area to the west and the presence of potentially infilled ponds, localised Made Ground is anticipated.
Drift geology	Till, Devensian - Diamiction.
Solid geology	Kinnerton Sandstone Formation – Sandstone is anticipated beneath the majority of the site, however the Salop Formation – Mudstone, Sandstone and Conglomerate is anticipated to occur in the far north-western corner of the site.
Dip of solid strata	Not determined
Faults	None recorded on or in the immediate vicinity of the site.
Coal seams	None shown to outcrop or subcrop on or in the immediate vicinity of the site.

4.2. Mining and Quarrying

Table 4.2 Coal Mining Activities.

	Yes/No	**Comments**
Is the site in an area of potential shallow coal workings?	No	Source: Mining Remediation Authority
Is the site in a high risk development area?	No	Source: Mining Remediation Authority
Are there any known shafts, adits, tips, lagoons, or opencast workings likely to affect the site?	No	Source: Mining Remediation Authority
Is exploratory work required to investigate the potential risk from shallow mining or quarrying?	No	

Table 4.3 Other Extractive Industries.

	Yes/No	**Comments**
Superficial drift deposits		
Evidence of extraction on or within 250m of the site?	NR	Source: Groundsure Report
Action required?	No	
Solid Strata		
Any evidence of mineral extraction on or within 250m of the site?	NR	Source: Groundsure Report
Action required?	No	

Other, undocumented mineral workings on or close to the site cannot be completely dismissed.

4.3. Hydrogeology

Table 4.4 Groundwater Occurrence and Abstraction.

	Presence/location	Comments
Environment Agency aquifer designation – Superficial Deposits	Till, Devensian - Diamicton.	Secondary Undifferentiated Aquifer
Environment Agency aquifer designation – Bedrock	Kinnerton Sandstone Formation – Sandstone (majority of the site)	Principal Aquifer
	Salop Formation - Mudstone, sandstone and conglomerate (extreme north-western corner of the north area)	Secondary A Aquifer
Groundwater vulnerability	Superficial	Vulnerability: Low Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low
	Bedrock	Vulnerability: Low Aquifer type: Principal/Secondary Flow mechanism: Well connected fractures
Anticipated groundwater depth(s)	Unknown	No groundwater was encountered in any exploratory hole location during fieldwork of TE1456
Direction of flow	Unknown	Anticipated to follow the local topography.
Current licensed abstractions – potable	NR	Source: Groundsure Report
Current licensed abstractions – non-potable	NR	Source: Groundsure Report
Private wells	Yes	1 No. pump observed on historical maps from 1897 located 145m east of site boundary
Source Protection Zones	NR	Source: Groundsure Report
Springs	NR	Source: Groundsure Report

NR - none recorded.

For definition of Source Protection Zones, see Appendix E.

4.4. Hydrology

Table 4.5 Surface Water Features.

	Presence/location	Comments
Nearest surface water feature	North and east of site	Stream running east-west along northern boundary and then flowing south along eastern boundary. On-site pond.
	South of site	Stream bisecting the site and along southern site boundary. 2 No. on-site ponds.
Other surface water features	On site and within 250m	Inland river streams and ponds
Canals, ponds, lakes, etc.	50m west	Attenuation pond, and multiple other ponds in fields west of the site
Water Framework Directive (WFD) Surface Water Bodies	NR	Source: Groundsure Report
Licensed surface water abstractions	NR	Source: Groundsure Report
Surface run-off and site drainage	On site	The site comprises soft landscaping and therefore water drains directly to the ground.

NR - none recorded. Environment Agency GQA assessments: A = very good to E = poor

4.5. Flood Risk Summary

Table 4.6 below represents a summary of the flood risk data contained within the Groundsure report obtained for the site.

Table 4.6 Flood Risk Summary

	Presence/location	Comments
Risk of Flooding from Rivers and Sea (RoFRaS)	NR	Source: Groundsure Report
Historical Flood Events	NR	Source: Groundsure Report
Flood Defences	NR	Source: Groundsure Report
Areas Benefiting from Flood Defences	NR	Source: Groundsure Report
Flood Storage Areas	NR	Source: Groundsure Report
Records of Flood Zone 2	NR	Source: Groundsure Report
Records of Flood Zone 3	NR	Source: Groundsure Report
Surface water flooding	On site	1 in 30 year, 0.3m - 1.0m
	Highest risk in 50m	1 in 30 year, Greater than 1.0m
Groundwater flooding	On Site	Moderate
	Highest risk in 50m	Moderate

NR - none recorded

4.6. Environmental Designations

Table 4.7 Summary of Environmental Designations.

	Presence/location	Comments
Sites of Special Scientific Interest (SSSI)	NR	Source: Groundsure Report
Conserved wetland sites (Ramsar sites)	NR	Source: Groundsure Report
Special Areas of Conservation (SAC)	NR	Source: Groundsure Report
Special Protection Areas (SPA)	NR	Source: Groundsure Report
National Nature Reserves (NNR)	NR	Source: Groundsure Report
Local Nature Reserves (LNR)	NR	Source: Groundsure Report
Designated Ancient Woodland	NR	Source: Groundsure Report
Biosphere Reserves	NR	Source: Groundsure Report
Forest Parks	NR	Source: Groundsure Report
Marine Conservation Zones	NR	Source: Groundsure Report
Green Belt	NR	Source: Groundsure Report
Proposed Ramsar sites	NR	Source: Groundsure Report
Possible Special Areas of Conservation (pSAC)	NR	Source: Groundsure Report
Potential Special Protection Areas (pSPA)	NR	Source: Groundsure Report
Nitrate Sensitive Areas	NR	Source: Groundsure Report
Nitrate Vulnerable Zones	NR	Source: Groundsure Report
SSSI Units	NR	Source: Groundsure Report

NR - none recorded

4.7. Landfill and Waste Management Activity

Table 4.8 Waste Management Activities.

	Presence/location	Comments
Active or recent landfill	NR	Source: Groundsure Report
Historical landfill (BGS records)	NR	Source: Groundsure Report
Historical landfill (LA/mapping records)	NR	Source: Groundsure Report
Historical landfill (EA/NRW records)	223m SW	Site Address: B.I.C.C Cables Limited, Bowling Bank, Wrexham, Clwyd Waste Type: Inert, Liquid sludge
Historical waste sites	NR	Source: Groundsure Report
Licensed waste sites	NR	Source: Groundsure Report
Waste exemptions	NR	Source: Groundsure Report

	Presence/location	Comments
Evidence of other landfilling or potential infilling on or within 250m of site	NR	Source: Groundsure Report.
Walkover evidence of fly-tipping on site?	NR	No evidence of fly tipping on site walkover.
Is a landfill/ground gas risk assessment required?	Yes	Consideration of potential low ground gas risk should be undertaken based on the site history on proposed development (see Section 6).

NR - none recorded

4.8. Local Industrial Land Uses

Other potentially contaminative activities are shown in Table 4.9 below with those features considered pertinent to the conceptual site model highlighted in **bold**. The entries relate to activities within *circa* 250m of the site, with the exception of COMAH facilities where the assessment is extended to a distance of *circa* 500m from the site.

Table 4.9 Other Potentially Contaminative Processes in the Locality

	Location	Comments
Recent industrial land uses	127m N	Tanks (Generic)
	152m W	Tanks (Generic)
	154 SW	Electrical Features
	225m S	Business Parks and Industrial Estates
	249m SW	Electrical Features
Current or recent petrol stations	NR	Source: Groundsure Report
Electricity cables	NR	Source: Groundsure Report
Gas pipelines	NR	Source: Groundsure Report
Sites determined as Contaminated Land	NR	Source: Groundsure Report
Control of Major Accident Hazards (COMAH)	NR	Source: Groundsure Report
Regulated explosive sites	NR	Source: Groundsure Report
Hazardous substance storage/usage	NR	Source: Groundsure Report
Historical licensed industrial activities (IPC)	NR	Source: Groundsure Report
Licensed industrial activities (Part A(1))	NR	Source: Groundsure Report
Licensed pollutant release (Part A(2)/B)	NR	Source: Groundsure Report
Radioactive Substance Authorisations	NR	Source: Groundsure Report
Licensed Discharges to controlled waters	35m E	4 No. of Effluent Type: Unspecified
	133m NE	1 No. of Effluent Type: Sewage Discharges - Final/Treated Receiving Water: Unnamed Watercourse

	Location	Comments
	179m N	1 No. of Effluent Type: Sewage Discharges - Final/Treated Receiving Water: Tributary of River Dee
Pollutant release to surface waters (Red List)	NR	Source: Groundsure Report
Pollutant release to public sewer	NR	Source: Groundsure Report
List 1 Dangerous Substances	NR	Source: Groundsure Report
List 2 Dangerous Substances	NR	Source: Groundsure Report
Pollution Incidents (EA/NRW)	42m NE	2 No. of Noise pollutant Water Impact: Other Land Impact: Other Air Impact: Category 3 (Minor)
	130m NE	2 No. of Noise pollutant Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
Pollution inventory substances	NR	Source: Groundsure Report
Pollution inventory waste transfers	NR	Source: Groundsure Report
Pollution inventory radioactive waste	NR	Source: Groundsure Report

NR - none recorded

COMAH – Control of Major Accident Hazards (regulations); NIHHS – Notification of Installations Handling Hazardous Substances (regulations)

4.9. Radon Risk

Table 4.10 Radon Risk Status.

	Comments
Estimated properties affected	Less than 1% of properties above the Action Level
Does a basement (or converted cellar/basement) form part of the proposed development?	As stated within BR 211, basements represent areas that are more at risk because the walls are in contact with the ground as well as the floor. This, coupled with reduced natural ventilation below ground level, increases the risk of elevated radon levels. All basements are therefore considered under BR 211 to be at increased risk of elevated levels of radon regardless of geographic location. Currently, no basements or converted cellars / basements are proposed for the development and therefore no additional consideration of potential increased risk needs to be made; however, this should be revisited in the event that the proposals change to include for a basement.
Radon Protection Measures required?	No

4.10. Waste Classification and Materials Re-Use

If the site is to be redeveloped and materials are disposed off-site, the material exported from the site to landfill should be hauled by a register waste character in accordance with Duty of Care Regulations 1991 and the Hazardous Waste Regulations 2005.

Based on the history of the site and the anticipated potential contaminants of concern, it is considered unlikely that hazardous waste soil materials area present beneath the site; however, this will be subject to confirmatory investigation, sampling, laboratory analysis and waste classification in accordance with the Guidance on the Classification and Assessment of Waste (WM3).

It will be necessary to register the site in advance of the intended reclamation works with the Environment Agency before disposal to landfill can take place. There will be requirement for the waste producer to provide appropriate Waste Acceptance Criteria (WAC) testing of the Soils for disposal to ensure that the soils are appropriately classified and that the landfill is licensed to receive such soils. A consignment note shall be completed, signed and retained by all parties involved. The consignment note shall state the volume of waste, a physical description of the material and statement of its chemical composition. The waste consignment notes shall be kept by the contractor for a period of at least two years.

Subject to volumetric fill requirements and a future assessment of suitability of re-use (both chemically and geotechnically), some materials may be considered for potential re-use in line with an appropriate end-of-waste protocol such as WRAP Quality Protocol for Aggregates from Inert Waste, U1 Exemption or a Materials Management Plan in accordance with the CL:AIRE Definition of Waste Code of Practice (DoWCoP). Please note that any previously landfilled or mining waste materials may not be appropriately subject to consideration under DoWCoP and may not be re-used under DoWCoP unless sufficient lines of evidence and agreement with the local Environment Agency Waste Team can be sought beforehand.

Re-Use of Excavated and Stockpiled Clean Naturally Occurring Soils on Other Sites

In addition, Tier Environmental are aware that CL:AIRE is classing stockpiled clean, naturally occurring soils as waste, unless their final destination is identified in a Materials Management Plan, before they are excavated. However, Tier Environmental consider that any clean naturally occurring soils arising from enabling works, earthworks or construction activities would be regarded as an asset and the default assumption for this site (prior to excavation and stockpiling) is not the intention to discard these materials where they may be reasonably re-used on this, or another, development site. Stockpiling is a recognised, recommended means of safely storing soils. Whilst there may be advantages to leaving soils in-situ, stripping topsoil and subsoil prior to earthworks is a routine construction activity. Tier Environmental consider that it is not unreasonable to state that in the event that the developer owns another site where the construction phase is ongoing, soils can be transferred between their sites as an owned product and never become waste.

The above paragraph above is therefore considered a clear intention to reuse any clean, naturally occurring soils derived from excavations at this site (which may also include temporary stockpiling these materials). It is considered; however, that in addition to this the following must be adhered to:

- Reuse does need to occur within a ‘reasonable’ timeframe (12 No. months); and,
- If soils are transferred to a third party (another developer), there needs to be some contractual agreement in place, as in this situation it is important to have something in place confirming that surplus soils are required by the third party.

Re-Use of Excavated and Stockpiled Clean Naturally Occurring Soils Within The Site They Are Excavated From

Further to the above, where soils are naturally occurring, uncontaminated and re-used on the site they are excavated from, they fall outside of the Waste Framework Directive (WFD) i.e. they will not be classified as a waste Currently the CL:AIRE Definition of Waste Code of Practice states the following which appears to support this position: *“If the material is waste an Environmental Permit will be required to lawfully deposit or re-use it unless the material is “uncontaminated soil and other naturally occurring material excavated in the course of construction activities where it is certain that the material will be used for the purposes of construction in its natural state on the site from which it was excavated”, which is excluded from waste regulation by the Waste Framework Directive (2008).”*

4.11. Regulator Provided Information

Relevant searches for the site have been requested and will be conducted by the Natural Resources Wales, local authority, fire service and petroleum licencing officer.

Responses will be included in an updated version of this report.

5. PREVIOUS INVESTIGATION FINDINGS

Tier Environmental have previously conducted a Ground Investigation for a Site circa 50m northwest of the site boundary (Ref:TE1456GIR1.3, dated July 2021). In addition, a third-party desk study report by SP Associates for an area of land immediately west of the site was available on planning records (Ref: S1761, dated September 2021).

Table 5.1 Tier Environmental 2021 Report Review

Site location and surrounding land uses	The site is located at the Net World Headquarters Building, Bryn Lane, Wrexham Industrial Estate, Holt, Wrexham, LL13 9UT. The site is surrounded by agriculture fields to the north (beyond Ridley Wood Road), east and south of the Site. Wrexham Industrial estate is located to the west of Site beyond Bryn Lane. Trees are located immediately to the southern and eastern boundaries of the Site.
Potential contaminative features identified	No significant potentially contaminative features were identified on the Site.
Mining and quarrying	The Site is not located within a mining area or an area subject to historic quarrying.
Previous investigations referenced in the report	A Geo-Environmental Desk Study was conducted for the Site by Shepherd Gilmour Environmental Ltd in October 2011. Conclusions of this desk study identified potential contamination sources associated with Made Ground within infilled ponds, potential ground gas associated with unknown Made Ground deposits and impacts on of Site from trade effluent discharges into the tertiary river adjacent to the southern Site boundary.
Fieldwork	Tier Environmental conducted 3 No. days fieldwork on 6th, 9th and 10th April 2021 which comprised: • 1 No. day window sample drilling (WS1 to WS4 and WS6) to depths between 3.50m bgl and 5.45m bgl to determine the nature and extent of soil and groundwater and obtain samples for geo-environmental and geotechnical analysis. • 3 No. cable percussive boreholes (CP1 to CP3) to depths between 10.00m bgl and 10.45m bgl to determine the nature and extent of soil and groundwater and obtain samples for geo-environmental and geotechnical analysis. • Excavation of 6 No. hand dug pits (HDP1 to HDP6) to obtain shallow soil samples for geo-environmental analysis.
Laboratory testing	Samples of soil were submitted for analysis of a range of metal, other inorganic and organic components including asbestos. Geotechnical testing was scheduled on selected samples. All testing was undertaken at accredited laboratories.
Ground conditions	Topsoil was encountered at ground level in all exploratory hole locations to depths between 0.23m bgl to 0.38m bgl. Underlying the Topsoil was firm to stiff, locally very stiff clay (Till). Till was encountered in all exploratory hole locations to a maximum depth of 10.45m bgl, however the base of this unit was not encountered.
Ground stability	The ground across the Site was stable.
Foundations and floor slab recommendations	The preferred, most economic foundation solution is likely to be shallow spread foundations (pads or strip) within the Till and it is proposed that floor slabs are ground bearing.
Sulphate class	It is considered that a Design Sulphate Class of DS-1 and ACEC Class AC-1 is appropriate for buried concrete at the Site within the topsoil and a Design Sulphate Class of DS-2 and ACEC Class AC-2 is appropriate for buried concrete at the Site within the Till.
Contamination – Human Health	No measured soil concentrations of potential contaminants of concern have been reported in excess of Generic Assessment Criteria (GACs) protective of human health appropriate to commercial site end use
Gas protection	A Gas Screening Value of 0.0045 l/hr has been calculated, derived using the maximum recorded carbon dioxide concentration of 1.5 %v/v and the maximum peak flow rate of 0.3 l/hr. Assessment of this gas screening value alone places the Site in a Characteristic Situation 1 – Very Low risk scenario in accordance with CIRIA C665 for which ground gas protection measures are not required. The results of carbon monoxide and hydrogen sulphide monitoring has determined that neither gas has been detected.
Radon Requirements	Data from UKRadon.org indicates that the majority of the Site lies within an area where less than 1% of the properties lie above the action level, therefore no radon protection measures are required

Table 5.2 SP Associates 2021 Report Review

Site location and surrounding land uses	The site agricultural since earliest records. By the early 1970s a small part of the southeast of the site was occupied by an area of concrete hardstanding, small structures and possible tanks associated with a larger factory immediately south of the site A concrete HGV parking/turning circle was present in the south west of the site. No structures are present on site by 2006.
Ground conditions	BGS records show the site is underlain by superficial Devensian Till over mudstone/sandstone of the Salop Formation.
Controlled Waters	There are no licensed groundwater abstractions within 250m of the site, and the site is not located within a source protection zone. SP identified that land to the west of the site was occupied by the former ROF Wrexham facility, which manufactured cordite for the war effort. Ultimately a low risk was considered for the migration of potential contaminants into controlled waters based on the likelihood widespread contaminants are not present and the low permeability drift deposits (Till) would significantly reduce infiltration into lower aquifers.
Contamination – Human Health	A low risk was determined for end users with regards to human health risk and widespread contamination was not anticipated across site. it was acknowledged that localised spills may have occurred associated with the HGV/possible tank area in the southeast and southwest though these are considered to be localised and in small volume.
Ground Gas Risk Assessment	SP considered there is unlikely to be significant amounts of Made Ground on site, and the potential for near surface deposits to generate landfill gas is considered to be low. There are records of nearby infilled ground within 250m of the site though the risk from these features was deemed low. Ground gas monitoring was recommended within a future site investigation.
Radon Requirements	Radon measures are not required for the site.

6. GROUND GAS CONCEPTUAL SITE MODEL CONSIDERATION

6.1. Potential Ground Gas Sources and Gas Generation Potential

BS 8576:2013 outlines the importance of determining the ***gas generation potential*** on a given site by examining the potential source's characteristics, such as the type of waste or organic content, that could produce hazardous gases like methane or carbon dioxide. However, ***risk assessment is a separate step***, which considers pathways and receptors, using factors like Gas Screening Values (GSV) to estimate potential exposure and impact on receptors.

As such, it is important to delineate "generation potential" (linked to source characteristics) from "risk" (dependent on exposure likelihood and receptor sensitivity).

Taking into account the proposed land use as a dedicated ecological area with vegetation and ponds, and no proposed occupied buildings or enclosed spaces, Tier Environmental do not consider a ground gas conceptual site model relevant to the context of the development.

7. PRELIMINARY CONCEPTUAL SITE MODEL

Based on the information provided in the previous sections of this report a combined preliminary conceptual site model and conceptual exposure model has been developed for the proposed future land use. This summarises the understanding of surface and sub-surface features, the potential contaminant sources, transport pathways and receptors. In assessing the likely contaminants of concern present at the site, reference has also been made to Defra and Environment Agency supporting documentation. A preliminary qualitative risk assessment has also been made of the likelihood of the linkage operating and its potential significance in accordance with CIRIA C552.

The potential pollutant linkages identified and the qualitative risk assessment for these are presented in Table 7.1 below. The terms used in the preliminary qualitative risk assessment are defined in Appendix D.

7.1. Uncertainties

The following uncertainties exist in the preliminary conceptual model:

- The presence of any features unrecorded by the historic maps.
- Any unrecorded geological features.
- Any unrecorded pollution events during the site's history.

Table 7.1 Preliminary Assessment of Potential Pollutant Linkages (Continued on Next Page).

Justification / Comments
• The site is located off the B5130, Isycoed, Wrexham, Wales, LL13 9RL. It is currently used as agricultural land. The surrounding area is a mix of industrial land to the west, residential properties to the east, and St. Paul's VA Primary School is located 175 meters east of the site. The surrounding land use includes a combination of agricultural, industrial, and residential developments. • The site has been in agricultural use since at least 1872, with ponds and footpaths shown on historical maps. During the Second World War, the southwest of the site was within the boundaries of the Royal Ordnance Factory (ROF) Wrexham though no on-site activities associated with the facility are anticipated. After the war, industrial development occurred nearby, with drains and excavation work conducted at the site. Tanks and electrical substations are located near the site, which could contribute to contamination risk. • The surrounding area saw significant industrial development since the 1940s developing into Wrexham Industrial Estate by the 1990s. Substations and tanks are recorded within 100m west of the site y the early 1970s. • The site is underlain by superficial deposits classified as a Secondary Undifferentiated Aquifer (Till, Devensian - Diamicton). The bedrock is classified as a Principal Aquifer (Kinnerton Sandstone Formation). The far northwest of the site has the Salop Formation, a Secondary A Aquifer. Localised Made Ground may be present in the southwest of the site and within potentially infilled ponds. • The site is not located within a Source Protection Zone, and there are no potable or non-potable water abstractions within 1 km. Groundwater flow is expected to follow local topography. The nearest surface water features are multiple streams and ponds within the site boundary and site drainage is anticipated to infiltrate directly into the ground. Given the absence of onsite land uses and , the controlled waters environment is considered to be low. • There are no landfills within 250 meters of the site. No radon protection measures are required for the proposed development • The site falls within a Phosphorus Sensitive SAC Freshwater catchment area associated with the River Dee. As such, due consideration during drainage strategy / design (if required) should be given with respect to this designation and any mitigation / avoidance measures. • The site is not located within an ecologically sensitive area.

Source	Potential Contaminants of Concern	Pathway	Receptor	Consequence	Probability	Qualitative Risk Assessment
Localised Made Ground associated with historic agricultural land use and potentially infilled ponds	Metals PAHs pH Hexavalent chromium Acids Alkalis	Direct contact, dust inhalation and ingestion	Future site users (public open space)	Medium	Unlikely	Low Risk
			Adjacent site users (residential)	Mild	Unlikely	Very Low Risk
			Construction, site investigation, demolition and future maintenance workers	Medium	Low Likelihood	Moderate / Low Risk
		Migration of mobile contaminants from Made Ground soils to adjacent sites along services and conduits	Adjacent site users (residential)	Mild	Unlikely	Low Risk
		Migration via water pipes	Future site users (public open space)	Medium	Unlikely	Low Risk
		Lateral and/or vertical migration of mobile contaminants.	Aquifer 1 - Secondary (Undifferentiated) Aquifer associated with Till	Mild	Low Likelihood	Low Risk
			Aquifer 2 - Principal Aquifer associated with Kinnerton Sandstone	Medium	Unlikely	Low Risk
			Aquifer 3 – Secondary A Aquifer associated with Salop Formation - Mudstone, sandstone and conglomerate (Extreme northwestern corner)	Medium	Unlikely	Low Risk
			Inland river stream and pond located on site	Mild	Low Likelihood	Low Risk
	Naphthalene (a semi-volatile PAH) Phenols Cyanides	Vapour inhalation, direct contact, dust inhalation and ingestion	Future site users (public open space)	Medium	Unlikely	Low Risk
			Adjacent site users (residential)	Mild	Unlikely	Very Low Risk
			Construction, site investigation, demolition and future maintenance workers	Medium	Low Likelihood	Moderate / Low Risk
		Migration of mobile contaminants from Made Ground soils to adjacent sites along services and conduits	Adjacent site users (residential)	Mild	Unlikely	Very Low Risk
		Migration via water pipes	Future site users (public open space)	Medium	Unlikely	Low Risk
		Lateral and/or vertical migration of mobile contaminants.	Aquifer 1 - Secondary (Undifferentiated) Aquifer associated with Till	Mild	Low Likelihood	Low Risk
			Aquifer 2 - Principal Aquifer associated with by Kinnerton Sandstone	Medium	Unlikely	Low Risk
			Aquifer 3 – Secondary A Aquifer associated with Salop Formation - Mudstone, sandstone and conglomerate (Extreme northwestern corner)	Medium	Unlikely	Low Risk
			Inland river stream and pond located on site	Mild	Low Likelihood	Low Risk
	Asbestos	(Dust migration and) dust inhalation	Future site users (public open space)	Medium	Unlikely	Low Risk
			Adjacent site users (residential)	Mild	Unlikely	Very Low Risk
			Construction, site investigation, demolition and future maintenance workers	Medium	Low Likelihood	Moderate / Low Risk

8. PROPOSED FURTHER WORKS

8.1. Further works

The Phase 1 Preliminary Risk Assessment has determined a very low to moderate/low risk to human health and a low risk to controlled waters at the site with respect to potential contamination.

It is recommended that a ground investigation is undertaken in order to further assess the potential risks associated with the pollutant linkages identified in the Preliminary Conceptual Site Model (presented in Section 7).

The objectives of the Phase II Ground Investigation will be:

- To determine shallow soil and groundwater (if encountered) conditions, including whether significant contamination has resulted from past or current land uses;
- To determine the risks posed by any ground contamination and provide recommendations on remedial measures to manage such risks;
- To determine the existence, and if applicable, the extent of contamination within local groundwater beneath the site; and,
- To provide advice relating to geotechnical issues associated with the site.

8.2. Proposed Scope of Works

The following scope of works are proposed:

- Trial pitting to determine the nature and extent of Made Ground and natural deposits across the site, across the site, focusing on areas closest to historic industrial uses, and facilitate soil sampling for environmental and geotechnical testing.
- Soakaway/infiltration testing to determine whether the proposed ponds will need to be lined.
- Geoenvironmental chemical testing on selected soil samples for metals, pH, speciated PAH, speciated TPH, phenol, sulphate, TOC and asbestos screens in order to assess potential risks to human health based on historical land uses on and within close proximity to the site and to assist with basic waste characterisation.

9. REGULATORY APPROVALS

The conclusions and recommendations presented above are considered reasonable based on the findings of the site investigation. However, these cannot be guaranteed to gain regulatory approval and, therefore, the report should be passed to the appropriate regulatory authorities and/or other organisations for their comment and approval prior to undertaking any works on site.

It is recommended that conditions placed on any planning permission are discharged prior to commencement of site works.

10.REFERENCES

BRE BR211 (2015). Radon: Guidance on Protective Measures for New Dwellings. IHS BRE Press, Bracknell.

BRE SD1 (2005). Concrete in Aggressive Ground. Special Digest 1 (revised edition). IHS BRE Press, Bracknell.

BRE 414 (2001) Protective measures for housing on gas-contaminated land. BRE.

BS 10175:2011+A2:2017 Investigation of Potentially Contaminated Sites - Code of Practice. British Standards Institution, London.

BS EN 1997-1:2004 Eurocode 7. Geotechnical Design. General Rules. British Standards Institution, London.

BS EN 1997-2:2007 Eurocode 7. Geotechnical Design. Ground Investigation and Testing. British Standards Institution, London.

BS5930:2015+A12020 Code of practice for ground investigations BSI

BS EN ISO 17892-1-12:2018 Geotechnical investigation and testing BSI

BS EN ISO 14688-1:2018 Geotechnical Investigation and Testing. Identification and Classification of Soil. Identification and Description. British Standards Institution, London.

BS EN ISO 14688-2:2018 Geotechnical Investigation and Testing. Identification and Classification of Soil. Principles for a Classification. British Standards Institution, London.

BS EN ISO 14689-1:2018 Geotechnical Investigation and Testing. Identification and Classification of Rock. Identification and Description. British Standards Institution, London.

BS8485 2015 Code of Practice for the design of protective measures for methane and carbon dioxide ground gases in new buildings. British Standards

BS85762013 Guidance on investigations for ground gas – permanent gases and volatile organic compounds (VOCs). BSI,

CIRIA Rep R 97 (2001) Trenching Practice. Report 097, 2nd edition, CIRIA, London.

CIRIA Rep R 149 (1995a) Protecting Development from Methane. Report 149, CIRIA, London.

CIRIA Rep R 150 (1995b) Methane Investigation Strategies. Report 150, CIRIA, London.

CIRIA Rep R 151 (1995c) Interpreting Measurement of Gas in the Ground Report 151, CIRIA, London.

CIRIA Rep R 152 (1995d) Risk Assessment for Methane and Other Gases from the Ground. Report 152, CIRIA, London.

CIRIA Rep R 132 (1996) A Guide for Safe Working on Contaminated Sites. Report 132, CIRIA, London.

CIRIA C552 (2001) Contaminated land risk assessment. A guide to good practice (report no. C552).

CIRIA C665 (2007) Assessing the risks posed by hazardous gases to buildings CIRIA, London

CIRIA C748 (2014) Guidance on the use of plastic membranes as VOC barriers, CIRIA, London

CIRIA C735 (2014) Good practice on the testing and verification of protection systems for buildings against hazardous ground gases. CIRIA.

CIRIA C681 (2009) Unexploded ordnance (UXO) A guide for the construction industry (C681)

CIRIA C785 (2019) Unexploded ordnance (UXO) risk management guide for land-based projects (C785)

CIRIA C758D (2019) Abandoned mine workings manual (C758D)

Contaminated Land: Applications in Real Environments (CL:AIRE) (2011) Definition of Waste Code of Practice (version 2).

Department of Environment Food and Rural Affairs (DEFRA) (2012) Environmental Protection Act 1990:Part 2A Contaminated Land Statutory Guidance (report no. PB13735).

Environment Agency (2000) Technical Aspects of Site Investigation. Report P5-065/TR, Environment Agency, Bristol.

Environment Agency (2002) Guidance on Monitoring Landfill Leachate, Groundwater and Surface Water. Report LFTGN02, Environment Agency, Bristol.

Environment Agency (2007) Evaluation of Models for Predicting Plant Uptake of Chemicals from Soil. Report SC050021/SR, Environment Agency, Bristol.

Environment Agency (2006) Remedial Targets Methodology - Hydrogeological Risk Assessment for Land Contamination (report no.ea/br/e/std/vr10thanni).

Environment Agency (2008) Science Report SC050021/SR7 Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values.

Environment agency, 2007. Inter-laboratory comparison of in vitro bioaccessibility measurements for arsenic lead and nickel in soil, Science Report SC040060/SR2.

Environment Agency, 2009 Human health toxicological assessment of contaminants in soil (Science Report Final SC050021/SR2)

Environment Agency (2015) Guidance on the Classification and Assessment of Waste Technical Guidance WM3 (1st edition).European Union (1998) Drinking Water Directive (Council Directive 98/83/EC).

Gibbons, R. (1994) Statistical Methods for Groundwater Monitoring. Wiley, New York.

Groundsure Report 2021 GSIP-2021-10752-4061

Highways Agency (2006) Design of Pavement Foundations. Document HD 25/IAN 73/06.

HSE (1991) Protection of Workers and the General Public During the Development of Contaminated Land. HMSO, London.

HSE (2005) Occupational Exposure Limits. HSE report EH40/2005, HMSO, London.

ICRCL (1986) Notes on the Fire Hazards of Contaminated Land. Guidance Note 61/84, 2nd Edition, Interdepartmental Committee on the Redevelopment of Contaminated Land, London.

Jeffries, J.(2009). A review of body weight and height data used within the Contaminated Land Exposure Assessment model (CLEA). Project SC050021/ Technical Review 1. Bristol: Environment Agency

Land Contamination Risk Management (LCRM) Environment Agency October 2020 https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm .

LQM/CIEH Ltd (2015) S4ULs for Human Health Risk Assessment. Land Quality Press, Nottingham.

NHBC (2007) Guidance on Evaluation of Development Proposals on Sites where Methane and Carbon Dioxide are Present (report no .04).

NRA (1994) Protocol for a Leaching Test to Assess the Leaching Potential for Soils from Contaminated Sites. R&D Note 181.

SoBRA (2017) Development of Generic Assessment Criteria for Assessing Vapour Risks to Human Health from Volatile Contaminants in Groundwater – Version 1.0.

The Water Framework Directive, (Standards and Classification) Directions (England and Wales).

UK Water Industry Research (2010) Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites (report no. 10/WM/03/21)

WHO (2000) Air Quality Guidelines for Europe. 2nd edition, WHO Regional Office for Europe, Copenhagen.

World Health Organisation (2017) Guidelines for Drinking Water Quality (4th edition).

Britain From Above - https://britainfromabove.org.uk/en/image/WPW060399

http://www.warstateandsociety.com/Bombing-Britain

https://www.epa.gov/pfas/basic-information-pfas

UK Maps of Radon, http://www.ukradon.org/information/ukmaps

Health and Safety Executive (2015) Construction (Design and Management) Regulations.

Coal Authority Interactive Map Viewer, http://mapapps2.bgs.ac.uk/coalauthority/home.html

BGS Geology of Britain Viewer http://mapapps.bgs.ac.uk/geologyofbritain/home.html

11.GLOSSARY OF TERMS

ACEC	Aggressive Chemical Environment for Concrete (classification)
aOD	Above Ordnance Datum
bgl	Below ground level
BGS	British Geological Survey
BRE	Building Research Establishment
CBR	California Bearing Ratio (test)
COMAH	Control of Major Accident Hazards (regulations)
Designated location	Site (and the ecosystem on that site) protected under national of international legislation. A potential ecological receptor to be considered as part of the assessment of land contamination. Example designated locations include SSSIs (q.v.), SACs (q.v.), national nature reserves, Ramsar sites and bird special protection areas.
DQA	Data Quality Assessment
DQO	Data Quality Objective
DQRA	Detailed Quantitative Risk Assessment
DWS	Drinking Water Standard
EQS	Environmental Quality Standard
GAC	Generic Assessment Criterion
GQA	General Quality Assessment (Environment Agency)
GSV	Gas Screening Value
HCV	Health Criteria Value
IPPC	Integrated Pollution Prevention and Control (regulations)
K_{ow}	Octanol-water partition coefficient
LEL	Lower Explosive Limit
LL	Liquid Limit
LoD	Limit of Detection (analytical)
LoQ	Limit of Quantification (analytical)
Mean Value Test	Statistical test (described in the CIEH Guidance) to estimate the mean value of a normally distributed population of data at a given level of confidence. Normally for contaminated land assessment, the 95th percentile (referred to as the 95%UCL or US95) is applied as a reasonable but conservative estimate of the mean concentration for comparison with the relevant assessment criteria.
Maximum Value Test	Statistical test (described in the CIEH Guidance) to identify whether an elevated concentration within a normally distributed data set forms part of the underlying population from which it has been sampled or whether it is an outlier (such as a localised area of contamination) that merits further consideration.
MC	Moisture Content
NGR	National Grid Reference
NIHHS	Notification of Installations Handling Hazardous Substances (regulations)
OS	Ordnance Survey
PI	Plasticity Index
PID	Photoionisation Detector
PL	Plastic Limit
ppm	Parts per million
ppmv	Parts per million by volume
QA	Quality Assurance
QC	Quality Control
SAC	Special Area of Conservation
SOM	Soil Organic Matter

SPT	Standard Penetration Test
SPZ	Source Protection Zone (see Appendix E)
SSAC	Site-Specific Assessment Criterion
SSSI	Site of Special Scientific Interest
SVOC	Semi-Volatile Organic Compound
TEF	Toxicity Equivalent Factor
TPH	Total Petroleum Hydrocarbons
TWA	Time Weighted Average
US95	95th percentile estimate of the true mean value of a data population (also known as 95%UCL).
VOC	Volatile Organic Compound

APPENDIX A - DRAWINGS

As existing
(with potential future role
in strategic ecological corridor)

To deliver at least
40% of land for
ecological mitigation
(ON SITE/OFF SITE)

To be delivered in line
with approved drawings

Utopia City



Scheme		Site area - off site mitigation	% of development site area (including on-site mitigation)
Utopia City		8.77ha	40%
Land South		0.5ha	45%
HQ Extension		8.14ha	>100% (final number subject to design work for on-site mitigation

Land South



Scheme		Site area - off site mitigation	% of development site area (including on-site mitigation)
Utopia City		8.77ha	40%
Land South		0.5ha	45%
HQ Extension		8.14ha	>100% (final number subject to design work for on-site mitigation

HQ Extension



Scheme		Site area - off site mitigation	% of development site area (including on-site mitigation)
Utopia City		8.77ha	40%
Land South		0.5ha	45%
HQ Extension		8.14ha	>100% (final number subject to design work for on-site mitigation

NET WORLD SPORTS

Strategic Ecological Plan
Date - December 2024
Ref - 1059-1-NLA.109.1 v7

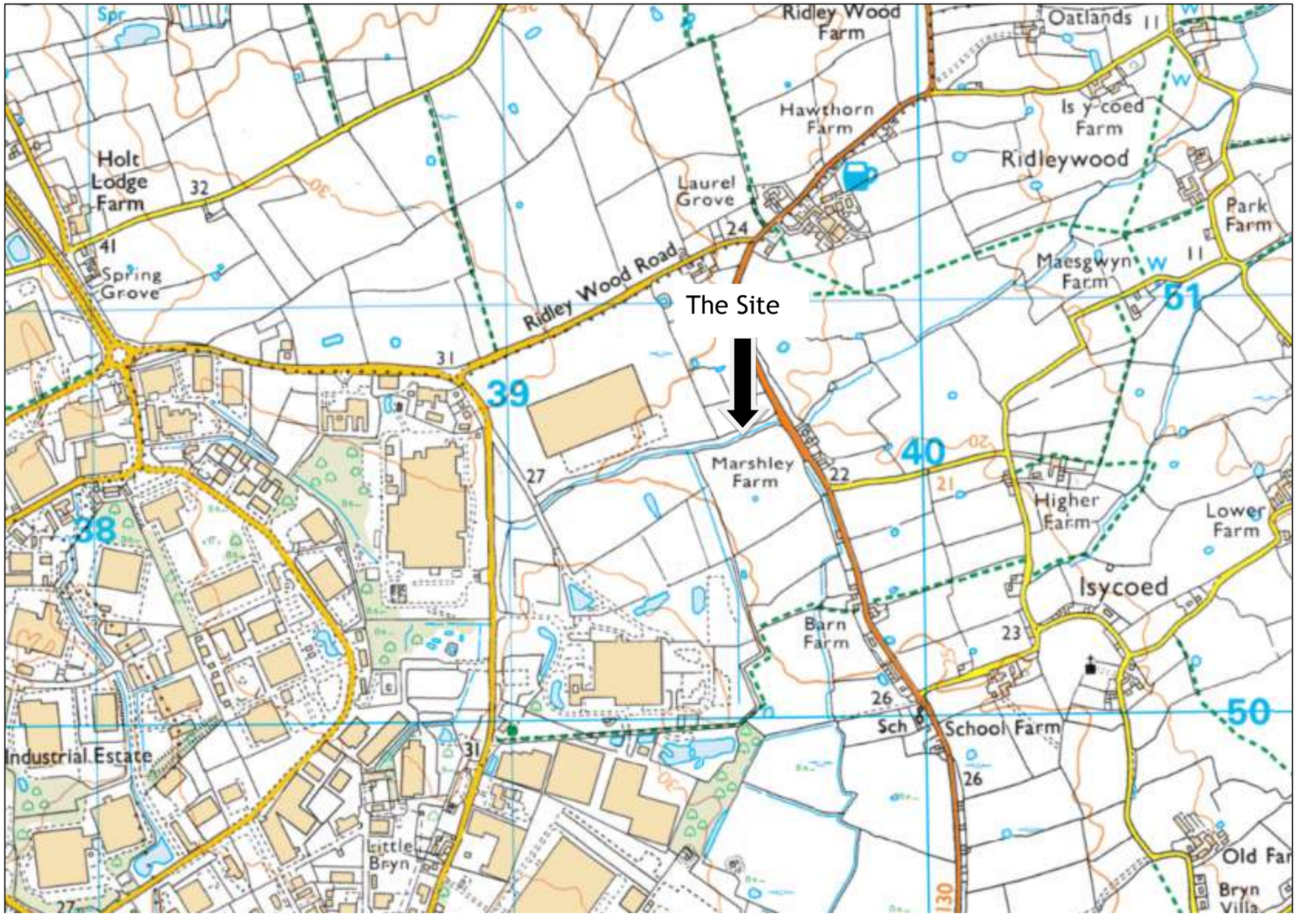
0 0.05 0.1 0.2 0.3 0.4 0.5 Kilometers

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- Redline Boundary
- Woodland
- Tree Planting
- Scrub Planting
- Open Grassland
- Rough Grassland Meadow
- Existing Pond
- Proposed Pond
- Marginal Vegetation
- Hedgerow
- Wrexham Industrial Estate Strategic Ecological Network
- Bund

Contract Number	TE1906
Contract	Ecological site East of Net World Sports Head Office
Client	Net World Sports

Site Location Plan



Scale	NTS		
Drawn by	JL	Approved	SL
Drawing Number	TE1906-TE-00-XX-DR-GE-001-V01		

APPENDIX B-GROUNDSURE REPORT

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

Ecological Site East of NWS of HO

Order Details

Date: 17/01/2025

Your ref: TE1906 / 3500

Our Ref: GS-PCS-DY4-UUH-RI3

Site Details

Location: 339655 350228

Area: 14.9 ha

Authority: Wrecsam - Wrexham County Borough Council ↗



Summary of findings p. 2 >

OS MasterMap site plan N/A: >10ha

Aerial image p. 9 >

Insight User Guide ↗

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

Certified B Corporation

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 >	3	1	5	5	-
15 >	1.2 >	Historical tanks >	0	5	15	9	-
17 >	1.3 >	Historical energy features >	0	0	9	3	-
17	1.4	Historical petrol stations	0	0	0	0	-
18	1.5	Historical garages	0	0	0	0	-
18 >	1.6 >	Historical military land >	1	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
19 >	2.1 >	Historical industrial land uses >	4	1	5	7	-
20 >	2.2 >	Historical tanks >	0	8	25	17	-
22 >	2.3 >	Historical energy features >	0	0	18	7	-
23	2.4	Historical petrol stations	0	0	0	0	-
24	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
25	3.1	Active or recent landfill	0	0	0	0	-
25	3.2	Historical landfill (BGS records)	0	0	0	0	-
26	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
26 >	3.4 >	Historical landfill (EA/NRW records) >	0	0	1	0	-
26	3.5	Historical waste sites	0	0	0	0	-
26	3.6	Licensed waste sites	0	0	0	0	-
27 >	3.7 >	Waste exemptions >	0	0	0	10	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
28 >	4.1 >	Recent industrial land uses >	0	0	5	-	-
29	4.2	Current or recent petrol stations	0	0	0	0	-
29	4.3	Electricity cables	0	0	0	0	-
29	4.4	Gas pipelines	0	0	0	0	-
29	4.5	Sites determined as Contaminated Land	0	0	0	0	-

30	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
30	4.7	Regulated explosive sites	0	0	0	0	-
30	4.8	Hazardous substance storage/usage	0	0	0	0	-
30	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
30	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
31	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
31	4.12	Radioactive Substance Authorisations	0	0	0	0	-
31 >	**4.13 >**	**Licensed Discharges to controlled waters >**	0	4	2	8	-
33	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
33	4.15	Pollutant release to public sewer	0	0	0	0	-
34	4.16	List 1 Dangerous Substances	0	0	0	0	-
34	4.17	List 2 Dangerous Substances	0	0	0	0	-
34 >	**4.18 >**	**Pollution Incidents (EA/NRW) >**	0	2	2	1	-
35	4.19	Pollution inventory substances	0	0	0	0	-
35	4.20	Pollution inventory waste transfers	0	0	0	0	-
35	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	**Hydrogeology >**	On site	0-50m	50-250m	250-500m	500-2000m
36 >	**5.1 >**	**Superficial aquifer >**	Identified (within 500m)				
38 >	**5.2 >**	**Bedrock aquifer >**	Identified (within 500m)				
40 >	**5.3 >**	**Groundwater vulnerability >**	Identified (within 50m)				
41	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
41	5.5	Groundwater vulnerability- local information	None (within 0m)				
42 >	**5.6 >**	**Groundwater abstractions >**	0	0	0	0	21
47 >	**5.7 >**	**Surface water abstractions >**	0	0	0	0	1
47	5.8	Potable abstractions	0	0	0	0	0
48	5.9	Source Protection Zones	0	0	0	0	-
48	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	**Hydrology >**	On site	0-50m	50-250m	250-500m	500-2000m
49 >	**6.1 >**	**Water Network (OS MasterMap) >**	11	10	4	-	-

52 >	6.2 >	Surface water features >	1	7	6	-	-
52 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
52 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
53 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-

Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
54	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
54	7.2	Historical Flood Events	0	0	0	-	-
54	7.3	Flood Defences	0	0	0	-	-
55	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
55	7.5	Flood Storage Areas	0	0	0	-	-
56	7.6	Flood Zone 2	None (within 50m)				
56	7.7	Flood Zone 3	None (within 50m)				

Page	Section	Surface water flooding >	
57 >	8.1 >	Surface water flooding >	1 in 30 year, Greater than 1.0m (within 50m)

Page	Section	Groundwater flooding >	
59 >	9.1 >	Groundwater flooding >	Moderate (within 50m)

Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
60 >	10.1 >	Sites of Special Scientific Interest (SSSI) >	0	0	0	0	3
61	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
61 >	10.3 >	Special Areas of Conservation (SAC) >	0	0	0	0	1
62	10.4	Special Protection Areas (SPA)	0	0	0	0	0
62	10.5	National Nature Reserves (NNR)	0	0	0	0	0
62	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
62 >	10.7 >	Designated Ancient Woodland >	0	0	0	0	5
63	10.8	Biosphere Reserves	0	0	0	0	0
63	10.9	Forest Parks	0	0	0	0	0
63	10.10	Marine Conservation Zones	0	0	0	0	0
63	10.11	Green Belt	0	0	0	0	0
64	10.12	Proposed Ramsar sites	0	0	0	0	0

64	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
64	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
64	10.15	Nitrate Sensitive Areas	0	0	0	0	0
65	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
66 >	**10.17 >**	**SSSI Impact Risk Zones >**	2	-	-	-	-
67 >	**10.18 >**	**SSSI Units >**	0	0	0	0	1
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
69	11.1	World Heritage Sites	0	0	0	-	-
69	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
69	11.3	National Parks	0	0	0	-	-
69	11.4	Listed Buildings	0	0	0	-	-
70	11.5	Conservation Areas	0	0	0	-	-
70	11.6	Scheduled Ancient Monuments	0	0	0	-	-
70	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	**Agricultural designations >**	On site	0-50m	50-250m	250-500m	500-2000m
71 >	**12.1 >**	**Agricultural Land Classification >**	Grade 3b (within 250m)				
72	12.2	Open Access Land	0	0	0	-	-
72	12.3	Tree Felling Licences	0	0	0	-	-
72	12.4	Environmental Stewardship Schemes	0	0	0	-	-
72	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
73	13.1	Priority Habitat Inventory	0	0	0	-	-
73	13.2	Habitat Networks	0	0	0	-	-
73	13.3	Open Mosaic Habitat	0	0	0	-	-
73	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
74 >	**14.1 >**	**10k Availability >**	Identified (within 500m)				
75 >	**14.2 >**	**Artificial and made ground (10k) >**	2	1	1	4	-
77 >	**14.3 >**	**Superficial geology (10k) >**	2	0	0	0	-

78	14.4	Landslip (10k)	0	0	0	0	-
79 >	14.5 >	Bedrock geology (10k) >	2	1	0	0	-
80	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
81 >	15.1 >	50k Availability >	Identified (within 500m)				
82	15.2	Artificial and made ground (50k)	0	0	0	0	-
82	15.3	Artificial ground permeability (50k)	0	0	-	-	-
83 >	15.4 >	Superficial geology (50k) >	1	0	0	0	-
84 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
84	15.6	Landslip (50k)	0	0	0	0	-
84	15.7	Landslip permeability (50k)	None (within 50m)				
85 >	15.8 >	Bedrock geology (50k) >	2	0	0	0	-
86 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
86	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
87 >	16.1 >	BGS Boreholes >	1	1	11	-	-
Page	Section	**Natural ground subsidence** >					
89 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
90 >	17.2 >	Running sands >	Very low (within 50m)				
91 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
92 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
93 >	17.5 >	Landslides >	Very low (within 50m)				
94 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	**Mining and ground workings** >	On site	0-50m	50-250m	250-500m	500-2000m
96	18.1	BritPits	0	0	0	0	-
97 >	18.2 >	Surface ground workings >	15	4	44	-	-
99	18.3	Underground workings	0	0	0	0	0
99	18.4	Underground mining extents	0	0	0	0	-
100	18.5	Historical Mineral Planning Areas	0	0	0	0	-

100	18.6	Non-coal mining	0	0	0	0	0
100	18.7	JPB mining areas	None (within 0m)				
100	18.8	The Coal Authority non-coal mining	0	0	0	0	-
101	18.9	Researched mining	0	0	0	0	-
101	18.10	Mining record office plans	0	0	0	0	-
101	18.11	BGS mine plans	0	0	0	0	-
101	18.12	Coal mining	None (within 0m)				
101	18.13	Brine areas	None (within 0m)				
102	18.14	Gypsum areas	None (within 0m)				
102	18.15	Tin mining	None (within 0m)				
102	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
103	19.1	Natural cavities	0	0	0	0	-
103	19.2	Mining cavities	0	0	0	0	0
103	19.3	Reported recent incidents	0	0	0	0	-
103	19.4	Historical incidents	0	0	0	0	-
Page	Section	**Radon** >					
105 >	**20.1** >	**Radon** >	Less than 1% (within 0m)				
Page	Section	**Soil chemistry** >	On site	0-50m	50-250m	250-500m	500-2000m
107 >	**21.1** >	**BGS Estimated Background Soil Chemistry** >	5	1	-	-	-
107	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
108	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
109	22.1	Underground railways (London)	0	0	0	-	-
109	22.2	Underground railways (Non-London)	0	0	0	-	-
109	22.3	Railway tunnels	0	0	0	-	-
109	22.4	Historical railway and tunnel features	0	0	0	-	-
109	22.5	Royal Mail tunnels	0	0	0	-	-
110	22.6	Historical railways	0	0	0	-	-

110	22.7	Railways	0	0	0	-	-
110	22.8	Crossrail 2	0	0	0	0	-
110	22.9	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 25/04/2023

Site Area: 14.9ha

Recent site history - 2020 aerial photograph



Capture Date: 10/04/2020

Site Area: 14.9ha

Recent site history - 2013 aerial photograph



Capture Date: 09/06/2013

Site Area: 14.9ha

Recent site history - 2009 aerial photograph



Capture Date: 01/06/2009

Site Area: 14.9ha

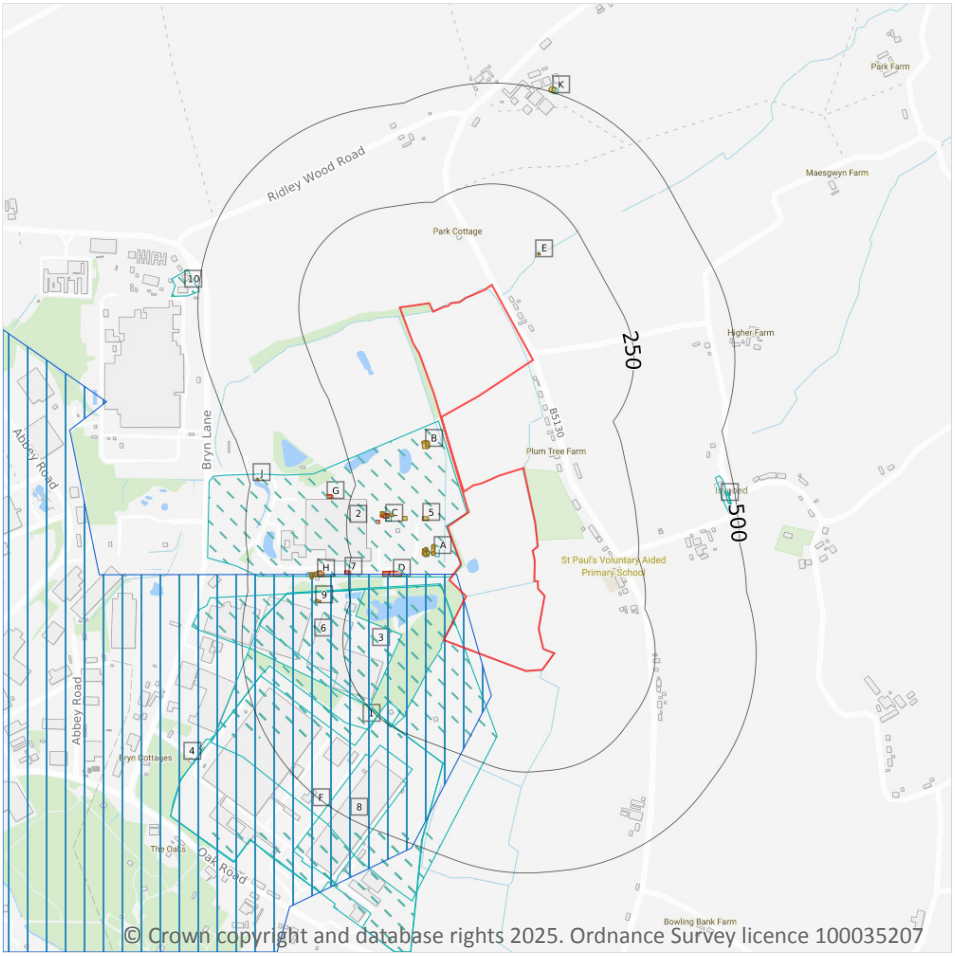
Recent site history - 2000 aerial photograph



Capture Date: 04/09/2000

Site Area: 14.9ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

Historical military land

1.1 Historical industrial land uses

Records within 500m	14

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
1	**On site**	**Unspecified Commercial/Industrial**	**1964**	**900456**

ID	Location	Land use	Dates present	Group ID
2	**On site**	**Unspecified Factory**	**1982 - 1992**	**908896**
3	**On site**	**Unspecified Commercial/Industrial**	**1979**	**1004175**
A	36m SW	Unspecified Tanks	1992	819014
A	69m SW	Unspecified Tank	1982	848924
6	105m SW	Unspecified Commercial/Industrial	1992	860276
C	140m W	Electric Substation	1992	820040
F	203m SW	Unspecified Commercial/Industrial	1992	877354
F	245m SW	Industrial Estate	1979	836665
8	305m S	Unspecified Factory	1979	857050
I	460m E	Smithy	1900	943127
I	477m E	Smithy	1872 - 1897	952622
K	498m N	Unspecified Tank	1992	851215
10	498m NW	Telecomm Exchange	1982 - 1992	898435

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**29**

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

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

ID	Location	Land use	Dates present	Group ID
A	44m SW	Tanks	1992	152915
B	45m NW	Tanks	1990 - 1992	141748
A	45m SW	Tanks	1990	130107
B	47m NW	Tanks	1990	136925
5	49m SW	Tanks	1974 - 1992	141931

ID	Location	Land use	Dates present	Group ID
A	50m SW	Tanks	1992	155068
A	64m SW	Tanks	1990	127631
A	64m SW	Tanks	1974	134497
A	64m SW	Tanks	1992	150047
A	66m SW	Tanks	1992	127513
A	66m SW	Tanks	1974	132791
A	70m SW	Tanks	1974	134614
A	70m SW	Tanks	1992	140264
C	102m SW	Tanks	1974 - 1992	152295
C	136m W	Tanks	1974 - 1992	130890
E	137m N	Unspecified Tank	1961 - 1974	141606
E	137m N	Unspecified Tank	1992	141713
E	140m N	Unspecified Tank	1990	121299
C	160m W	Unspecified Tank	1992	144922
C	160m W	Unspecified Tank	1974	148054
H	312m SW	Gas Control Station	1974 - 1992	145463
9	319m SW	Unspecified Tank	1990 - 1991	141021
H	337m SW	Unspecified Tank	1974	142740
H	337m SW	Unspecified Tank	1992	146711
H	337m SW	Unspecified Tank	1986 - 1991	152291
H	338m SW	Unspecified Tank	1990	156203
J	477m W	Unspecified Tank	1974	138819
J	477m W	Unspecified Tank	1992	138956
K	498m N	Unspecified Tank	1990 - 1992	142266

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	12

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

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

ID	Location	Land use	Dates present	Group ID
D	119m SW	Electricity Substation	1990	88968
C	147m W	Electricity Substation	1974	81026
C	147m W	Electricity Substation	1992	85080
D	149m SW	Electricity Substation	1992	83667
D	149m SW	Electricity Substation	1974	84086
C	149m W	Electricity Substation	1990	80305
C	162m W	Electricity Substation	1990	74999
C	168m W	Electricity Substation	1974 - 1992	88992
7	246m SW	Electricity Substation	1974 - 1992	90393
G	295m W	Electricity Substation	1990	74123
G	296m W	Electricity Substation	1992	92433
H	312m SW	Gas Control Station	1974 - 1992	79750

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m	1

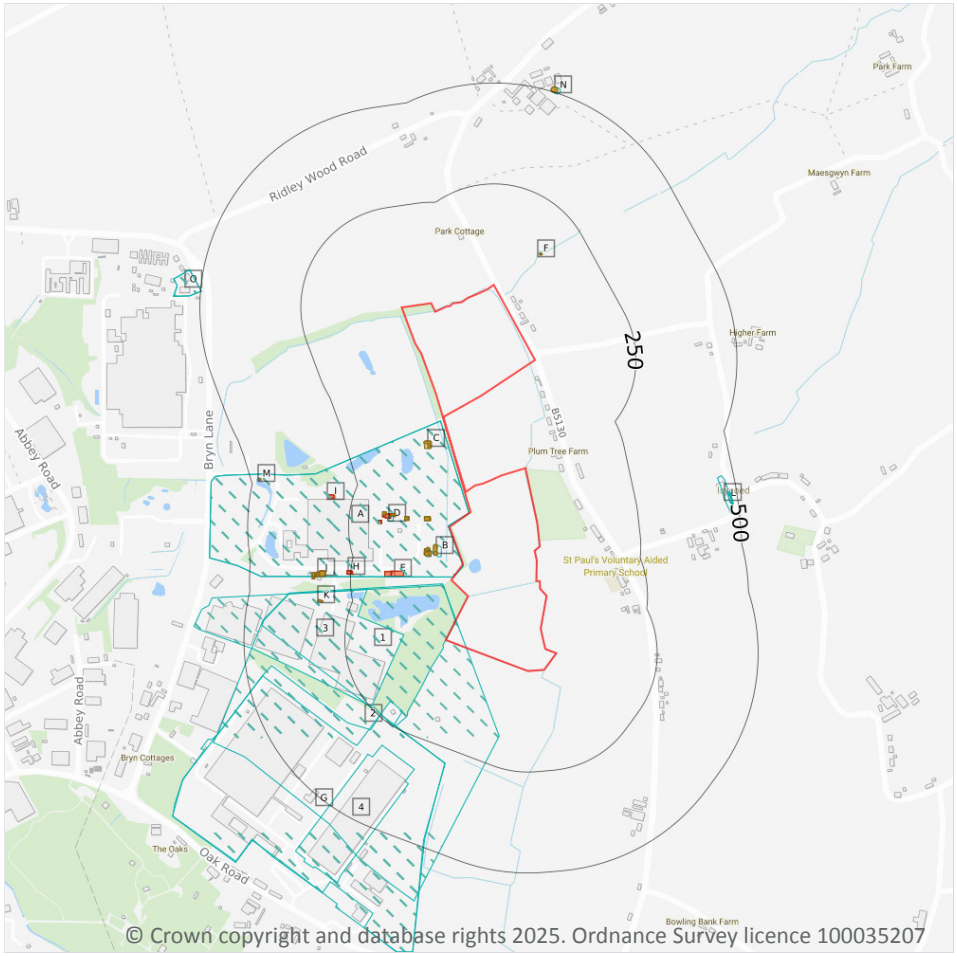
Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

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

ID	Location	Site Name	Date of Operation	Activities
4	**On site**	**ROF Wrexham**	**c.1938 - 1988**	**c. WW2: Produced cordite,; post WW2: Cordite production ceased in 1945 an the area was used as an industrial estate by the Welsh Development Agency to boost the local economy; Explosives Factory**

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

2 Past land use - un-grouped



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

2.1 Historical industrial land uses

Records within 500m	17

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

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

ID	Location	Land Use	Date	Group ID
1	**On site**	**Unspecified Commercial/Industrial**	**1979**	**1004175**
2	**On site**	**Unspecified Commercial/Industrial**	**1964**	**900456**
A	**On site**	**Unspecified Factory**	**1992**	**908896**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Unspecified Factory**	**1982**	**908896**
B	36m SW	Unspecified Tanks	1992	819014
B	69m SW	Unspecified Tank	1982	848924
3	105m SW	Unspecified Commercial/Industrial	1992	860276
D	140m W	Electric Substation	1992	820040
G	203m SW	Unspecified Commercial/Industrial	1992	877354
G	245m SW	Industrial Estate	1979	836665
4	305m S	Unspecified Factory	1979	857050
L	460m E	Smithy	1900	943127
L	477m E	Smithy	1897	952622
L	480m E	Smithy	1872	952622
N	498m N	Unspecified Tank	1992	851215
O	498m NW	Telecomm Exchange	1992	898435
O	498m NW	Telecomm Exchange	1982	898435

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**50**

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

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

ID	Location	Land Use	Date	Group ID
B	44m SW	Tanks	1992	152915
C	45m NW	Tanks	1992	141748
B	45m SW	Tanks	1990	130107
B	45m SW	Tanks	1990	130107
C	47m NW	Tanks	1990	136925
C	48m NW	Tanks	1990	141748

ID	Location	Land Use	Date	Group ID
D	49m SW	Tanks	1992	141931
D	49m SW	Tanks	1974	141931
B	50m SW	Tanks	1992	155068
D	52m SW	Tanks	1990	141931
D	52m SW	Tanks	1990	141931
B	64m SW	Tanks	1990	127631
B	64m SW	Tanks	1990	127631
B	64m SW	Tanks	1992	150047
B	64m SW	Tanks	1974	134497
B	66m SW	Tanks	1992	127513
B	66m SW	Tanks	1974	132791
B	70m SW	Tanks	1992	140264
B	70m SW	Tanks	1974	134614
D	102m SW	Tanks	1992	152295
D	102m SW	Tanks	1974	152295
D	104m SW	Tanks	1990	152295
D	104m SW	Tanks	1990	152295
D	136m W	Tanks	1992	130890
D	136m W	Tanks	1974	130890
F	137m N	Unspecified Tank	1961	141606
F	137m N	Unspecified Tank	1992	141713
F	137m N	Unspecified Tank	1974	141606
D	138m W	Tanks	1990	130890
D	138m W	Tanks	1990	130890
F	140m N	Unspecified Tank	1990	121299
D	160m W	Unspecified Tank	1992	144922
D	160m W	Unspecified Tank	1974	148054
J	312m SW	Gas Control Station	1992	145463

ID	Location	Land Use	Date	Group ID
J	312m SW	Gas Control Station	1974	145463
J	314m SW	Gas Control Station	1990	145463
J	314m SW	Gas Control Station	1990	145463
K	319m SW	Unspecified Tank	1991	141021
K	321m SW	Unspecified Tank	1990	141021
J	337m SW	Unspecified Tank	1992	146711
J	337m SW	Unspecified Tank	1974	142740
J	337m SW	Unspecified Tank	1991	152291
J	338m SW	Unspecified Tank	1990	156203
J	338m SW	Unspecified Tank	1990	156203
J	339m SW	Unspecified Tank	1986	152291
J	339m SW	Unspecified Tank	1990	152291
M	477m W	Unspecified Tank	1992	138956
M	477m W	Unspecified Tank	1974	138819
N	498m N	Unspecified Tank	1990	142266
N	499m N	Unspecified Tank	1992	142266

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**25**

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

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

ID	Location	Land Use	Date	Group ID
E	119m SW	Electricity Substation	1990	88968
E	119m SW	Electricity Substation	1990	88968
D	147m W	Electricity Substation	1992	85080
D	147m W	Electricity Substation	1974	81026

ID	Location	Land Use	Date	Group ID
E	149m SW	Electricity Substation	1992	83667
E	149m SW	Electricity Substation	1974	84086
D	149m W	Electricity Substation	1990	80305
D	149m W	Electricity Substation	1990	80305
D	162m W	Electricity Substation	1990	74999
D	162m W	Electricity Substation	1990	74999
D	168m W	Electricity Substation	1992	88992
D	168m W	Electricity Substation	1974	88992
D	169m W	Electricity Substation	1990	88992
D	169m W	Electricity Substation	1990	88992
H	246m SW	Electricity Substation	1992	90393
H	246m SW	Electricity Substation	1974	90393
H	247m SW	Electricity Substation	1990	90393
H	247m SW	Electricity Substation	1990	90393
I	295m W	Electricity Substation	1990	74123
I	295m W	Electricity Substation	1990	74123
I	296m W	Electricity Substation	1992	92433
J	312m SW	Gas Control Station	1992	79750
J	312m SW	Gas Control Station	1974	79750
J	314m SW	Gas Control Station	1990	79750
J	314m SW	Gas Control Station	1990	79750

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	**0**

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

This data is sourced from Ordnance Survey / Groundsure.

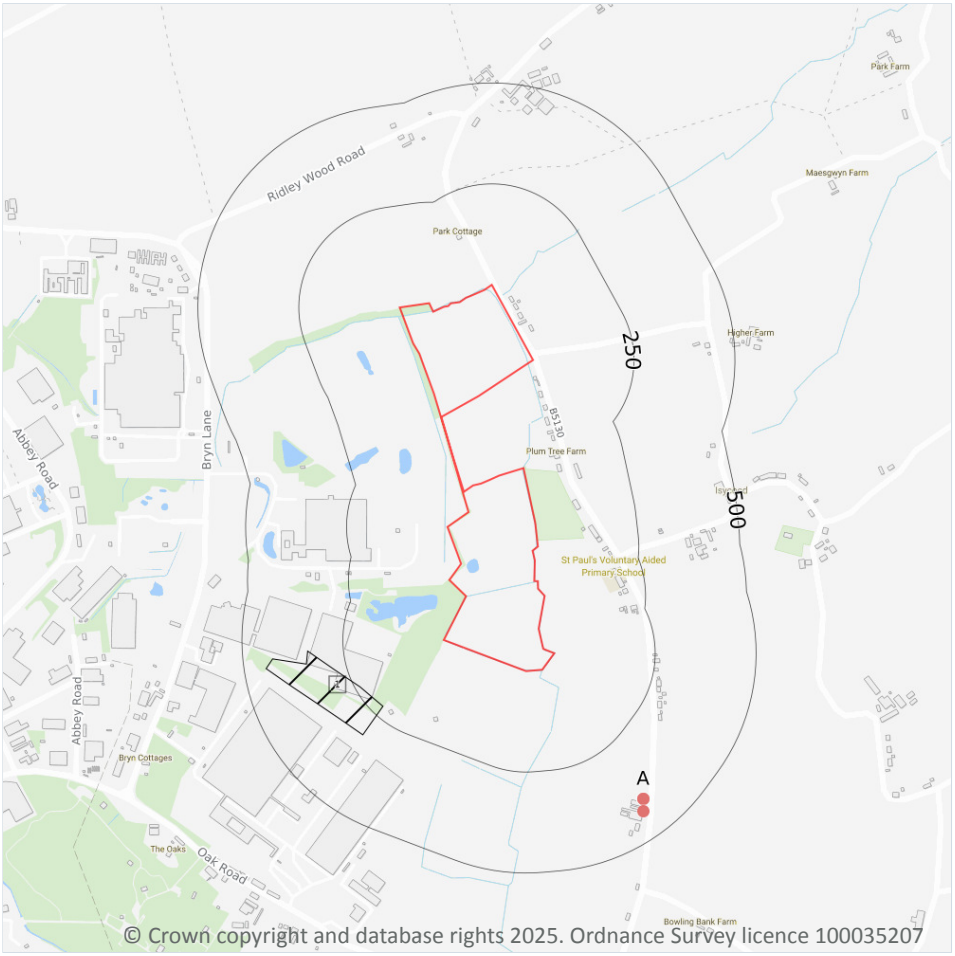
2.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



Site Outline

Search buffers in metres (m)

Historical landfill (EA/NRW)

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	1

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.

Features are displayed on the Waste and landfill map on **page 25 >**

ID	Location	Details		
1	223m SW	Site Address: B.I.C.C Cables Limited, Bowling Bank, Wrexham, Clwyd Licence Holder Address: -	Waste Licence: - Site Reference: - Waste Type: Inert, Liquid sludge Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: - Licence Holder: BICC Limted First Recorded 01/01/1968 Last Recorded: 31/12/1977

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	10

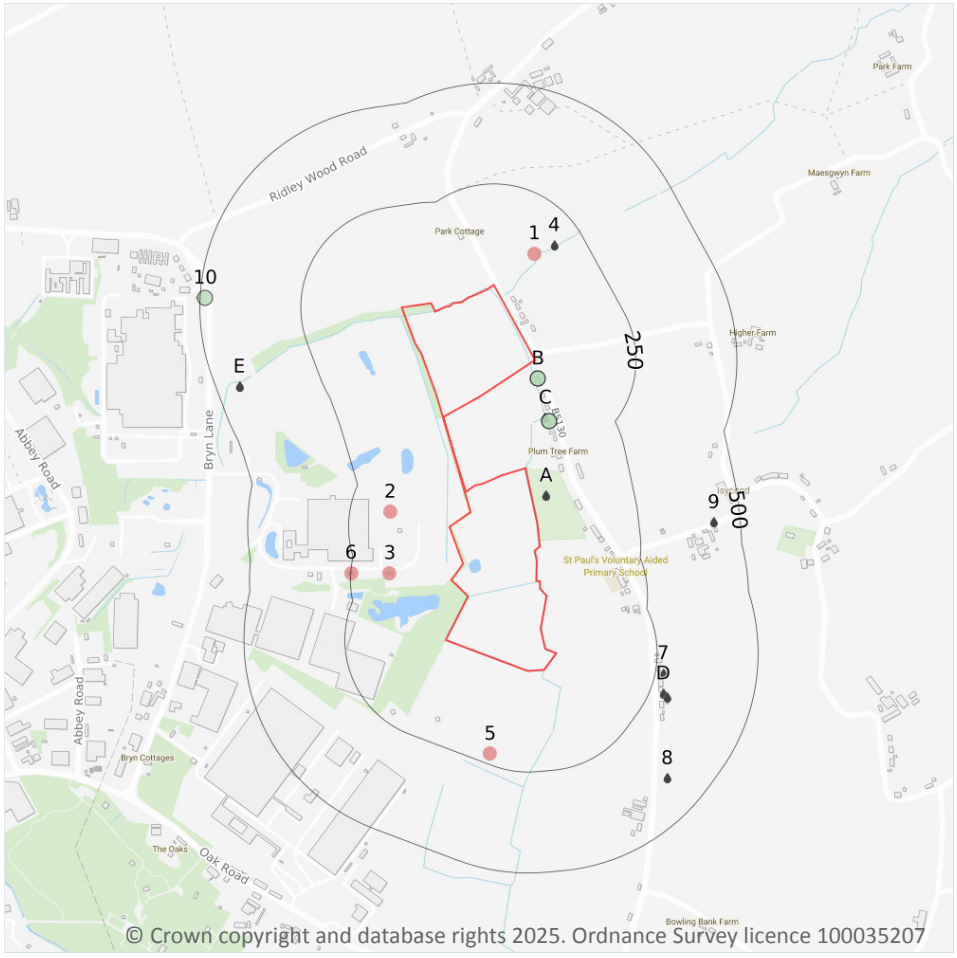
Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 25 >**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	406m SE	Diamond Farm, Bowling Bank, Wrexham, Ll13 9rl	WEX154673	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
A	406m SE	Diamond Farm, Bowling Bank, Wrexham, Ll13 9rl	WEX154673	Treating waste exemption	On a farm	Aerobic composting and associated prior treatment
A	406m SE	Diamond Farm, Bowling Bank, Wrexham, Ll13 9rl	WEX154673	Using waste exemption	On a farm	Use of waste for a specified purpose
A	406m SE	T G Ellis, Diamond Farm, Bowling Bank, Wrecsam, Ll139rl	NRW-WME013286	Disposing of waste exemption	On a farm	Burning waste in the open
A	406m SE	T G Ellis, Diamond Farm, Bowling Bank, Wrecsam, Ll139rl	NRW-WME013286	Disposing of waste exemption	On a farm	Deposit of agricultural waste consisting of plant tissue under a Plant Health notice
A	406m SE	T G Ellis, Diamond Farm, Bowling Bank, Wrecsam, Ll139rl	NRW-WME013286	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
A	406m SE	T G Ellis, Diamond Farm, Bowling Bank, Wrecsam, Ll139rl	NRW-WME013286	Treating waste exemption	On a farm	Mechanical treatment of end-of-life tyres
A	406m SE	T G Ellis, Diamond Farm, Bowling Bank, Wrecsam, Ll139rl	NRW-WME013286	Storing waste exemption	On a farm	Storage of waste in a secure place
A	406m SE	T G Ellis, Diamond Farm, Bowling Bank, Wrecsam, Ll139rl	NRW-WME013286	Treating waste exemption	On a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
A	432m SE	Diamond Farm, Bowling Bank, Wrexham, Ll13 9rl	NRW-WME061677	Using waste exemption	On a farm	Use of waste in construction

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

4 Current industrial land use



Site Outline

Search buffers in metres (m)

Recent industrial land uses

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 28 >**

ID	Location	Company	Address	Activity	Category
1	127m N	Tank	Clwyd, LL13	Tanks (Generic)	Industrial Features
2	152m W	Tank	Clwyd, LL13	Tanks (Generic)	Industrial Features
3	154m SW	Electricity Sub Station	Clwyd, LL13	Electrical Features	Infrastructure and Facilities

ID	Location	Company	Address	Activity	Category
5	225m S	Wrexham Industrial Estate	Clwyd, LL13	Business Parks and Industrial Estates	Industrial Features
6	249m SW	Electricity Sub Station	Clwyd, LL13	Electrical Features	Infrastructure and Facilities

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	14

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 28 >**

ID	Location	Address	Details	
A	35m E	PLOT1LILACCOTTAGE(2THEWILLO, PLOT1LILACCOTTAGE(2THEWI,THE WILLOWS(3&OAKVIEW(4B,BOWLI NGBANKWREXHAM,WREXHAM	Effluent Type: UNSPECIFIED Permit Number: CG0346301 Permit Version: 1 Receiving Water: UNNAMED WATERCOURSE	Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 31/12/1993 Effective Date: 31/12/1993 Revocation Date: -
A	35m E	PLOT1LILACCOTTAGE(2THEWILLO, PLOT1LILACCOTTAGE(2THEWI,THE WILLOWS(3&OAKVIEW(4B,BOWLI NGBANKWREXHAM,WREXHAM	Effluent Type: UNSPECIFIED Permit Number: CG0346301 Permit Version: 1 Receiving Water: UNNAMED WATERCOURSE	Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 31/12/1993 Effective Date: 31/12/1993 Revocation Date: -
A	35m E	PLOT1LILACCOTTAGE(2THEWILLO, PLOT1LILACCOTTAGE(2THEWI,THE WILLOWS(3&OAKVIEW(4B,BOWLI NGBANKWREXHAM,WREXHAM	Effluent Type: UNSPECIFIED Permit Number: CG0346301 Permit Version: 1 Receiving Water: UNNAMED WATERCOURSE	Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 31/12/1993 Effective Date: 31/12/1993 Revocation Date: -

ID	Location	Address	Details	
A	35m E	PLOT1LILACCOTTAGE(2THEWILLO, PLOT1LILACCOTTAGE(2THEWI,THE WILLOWS(3&OAKVIEW(4B,BOWLI NGBANKWREXHAM,WREXHAM	Effluent Type: UNSPECIFIED Permit Number: CG0346301 Permit Version: 1 Receiving Water: UNNAMED WATERCOURSE	Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 31/12/1993 Effective Date: 31/12/1993 Revocation Date: -
C	133m NE	PLUMTREEHOUSE,ISYCOED,WREXH AM,NORTHWALES,UK,LL139RN	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CG0456401 Permit Version: 1 Receiving Water: UNNAMED WATERCOURSE	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY Issue date: 12/06/2007 Effective Date: 12/06/2007 Revocation Date: -
4	179m N	ISYCOEDMARSHLEASTW,ISYCOED MARSHLEASTW,ISYCOEDMARSHLE A,WREXHAM,WALES	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CM0044801 Permit Version: 0 Receiving Water: TRIB OF RIVER DEE	Status: Effective Issue date: 21/01/2002 Effective Date: 22/01/2002 Revocation Date: -
7	269m SE	DERBYVILLAISYCOEDWREXHAM,ISY COEDWREXHAM,WREXHAM	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CG0371901 Permit Version: 1 Receiving Water: A DITCH	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY Issue date: 12/05/1997 Effective Date: 12/05/1997 Revocation Date: -
D	283m SE	SHARLYN&CHALSVERBOWLINGBA NKWR,SHARLYN&CHALSVERBOWLI NGBANK,BOWLINGBANKWREXHA M,WREXHAM	Effluent Type: UNSPECIFIED Permit Number: CM0183801 Permit Version: 1 Receiving Water: LAND	Status: REVOKED - UNSPECIFIED Issue date: 07/08/1989 Effective Date: 07/08/1989 Revocation Date: 14/05/1992
D	296m SE	SILVERBURNLODGEISYCOEDWREX HAM,SILVERBURNLODGE,ISYCOED, WREXHAM,WALES,LL139RL	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CG037500101 Permit Version: 1 Receiving Water: UNNAMED TRIB OF ISYCOED BROOK	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY Issue date: 03/02/1998 Effective Date: 03/02/1998 Revocation Date: -
8	406m SE	CAEBRYNERFARMBOWLINGBANK WREXH,CAEBRYNERFARMBOWLIN GBANKWR,BOWLINGBANKWREXH AM,WREXHAM	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CG0322501 Permit Version: 1 Receiving Water: INTO LAND	Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 27/11/1991 Effective Date: 27/11/1991 Revocation Date: -

ID	Location	Address	Details	
9	434m E	LIGHTOAKHOUSE,BOWLINGBANK, WREXHAM,NORTHWALES,LL139RY	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CG0409701 Permit Version: 1 Receiving Water: TRIBUTARY OF THE RIVER DEE	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY Issue date: 23/07/2003 Effective Date: 23/07/2003 Revocation Date: -
E	446m W	BRYNROADWREXHAMINDEST,WREXHAMINDEST,WREXHAMIN	Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: CM0083601 Permit Version: 1 Receiving Water: UNNAMED TRIB OF RIVER DEE	Status: REVOKED - UNSPECIFIED Issue date: 08/02/1978 Effective Date: 08/02/1978 Revocation Date: 29/09/1985
E	446m W	BRYNROADWREXHAMINDEST,WREXHAMINDEST,WREXHAMIN	Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: CM0083601 Permit Version: 3 Receiving Water: UNNAMED TRIB OF RIVER DEE	Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV Issue date: 06/07/1994 Effective Date: 06/07/1994 Revocation Date: 09/11/2005
E	446m W	BRYNROADWREXHAMINDEST,WREXHAMINDEST,WREXHAMIN	Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: CM0083601 Permit Version: 2 Receiving Water: UNNAMED TRIB OF RIVER DEE	Status: REVOKED - UNSPECIFIED Issue date: 30/09/1985 Effective Date: 30/09/1985 Revocation Date: 05/07/1994

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	5

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 28 >**

ID	Location	Details	
B	42m NE	Incident Date: 10/06/2016 Incident Identification: 1603218 Pollutant: Other Pollutant Pollutant Description: Noise	Water Impact: Other Land Impact: Other Air Impact: Category 3 (Minor)
B	42m NE	Incident Date: 10/06/2016 Incident Identification: 1603218 Pollutant: - Pollutant Description: -	Water Impact: Other Land Impact: Other Air Impact: Category 3 (Minor)
C	130m NE	Incident Date: 10/10/2014 Incident Identification: 1285680 Pollutant: Other Pollutant Pollutant Description: Noise	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
C	130m NE	Incident Date: 05/09/2014 Incident Identification: 1274415 Pollutant: Other Pollutant Pollutant Description: Noise	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

ID	Location	Details	
10	487m NW	Incident Date: 30/04/2015 Incident Identification: 1333634 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m	0

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

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

4.20 Pollution inventory waste transfers

Records within 500m	0

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

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

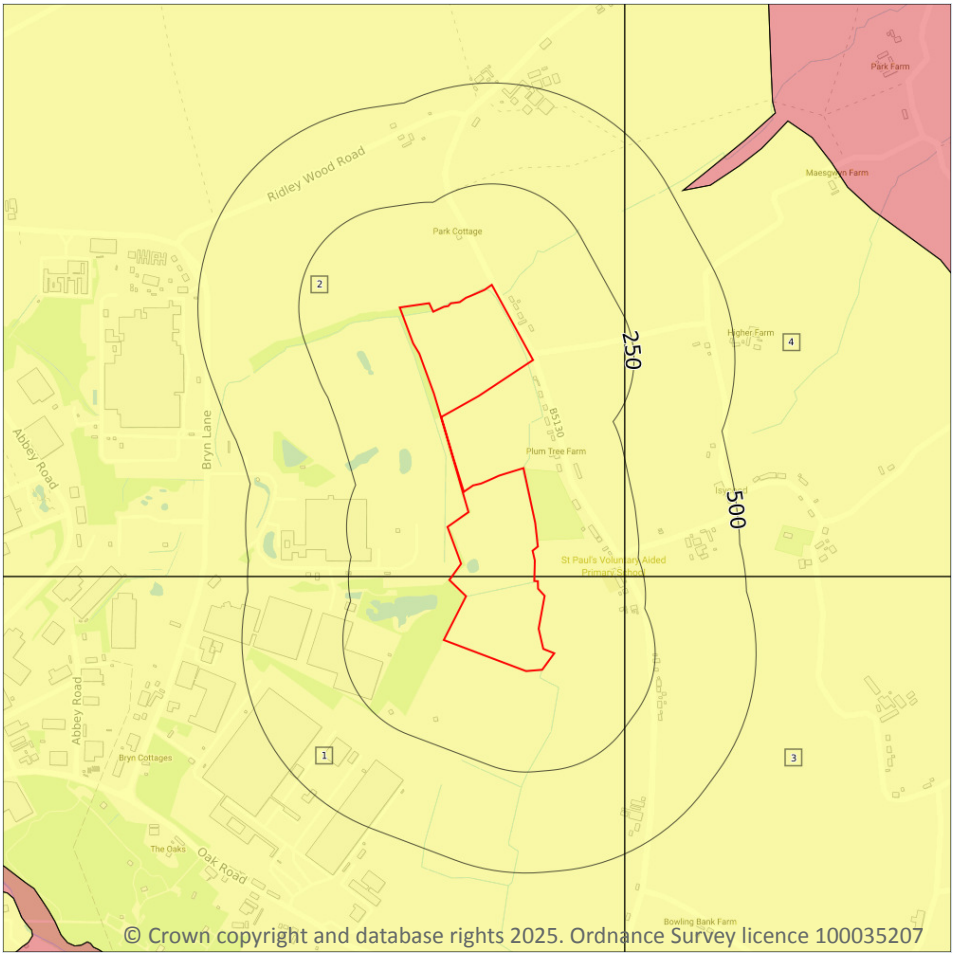
4.21 Pollution inventory radioactive waste

Records within 500m	0

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

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

5 Hydrogeology - Superficial aquifer



Site Outline

Search buffers in metres (m)

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

5.1 Superficial aquifer

Records within 500m	4

Aquifer status of groundwater held within superficial geology.

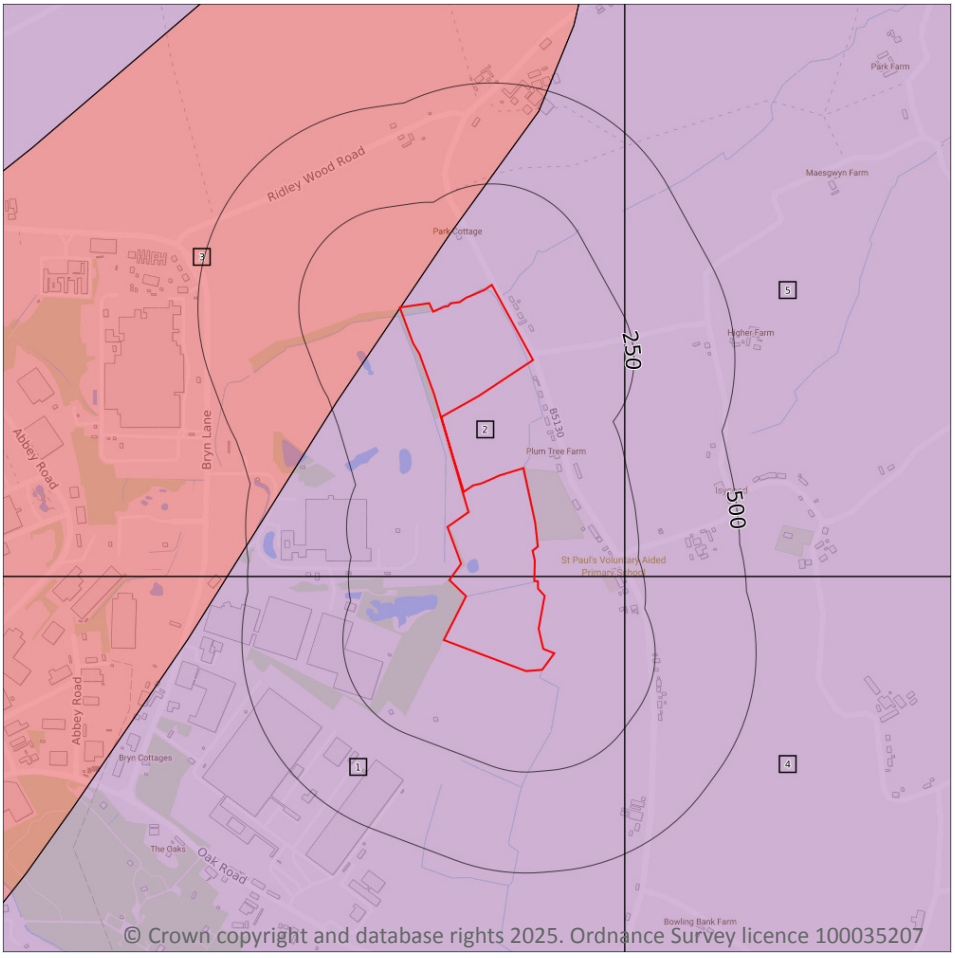
Features are displayed on the Hydrogeology map on **page 36 >**

ID	Location	Designation	Description
1	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
2	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

ID	Location	Designation	Description
3	175m SE	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
4	204m SE	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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

Bedrock aquifer



Site Outline

Search buffers in metres (m)

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

5.2 Bedrock aquifer

Records within 500m	5

Aquifer status of groundwater held within bedrock geology.

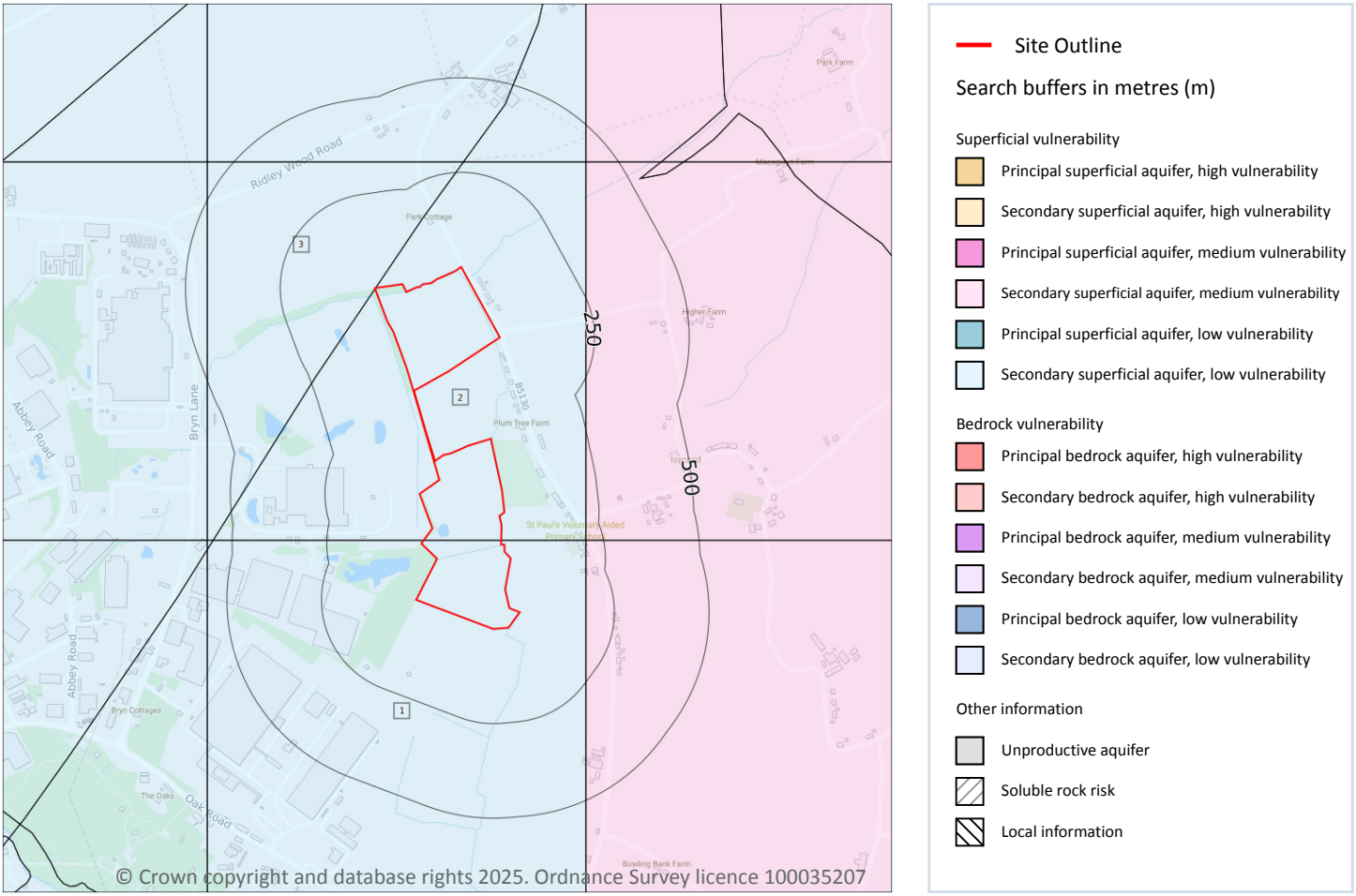
Features are displayed on the Bedrock aquifer map on **page 38 >**

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

ID	Location	Designation	Description
3	**On site**	**Secondary 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**
4	175m SE	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
5	204m SE	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

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

Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m	3

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 40 >**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Principal Flow mechanism: Intergranular
2	On site	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures
3	On site	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0

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

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

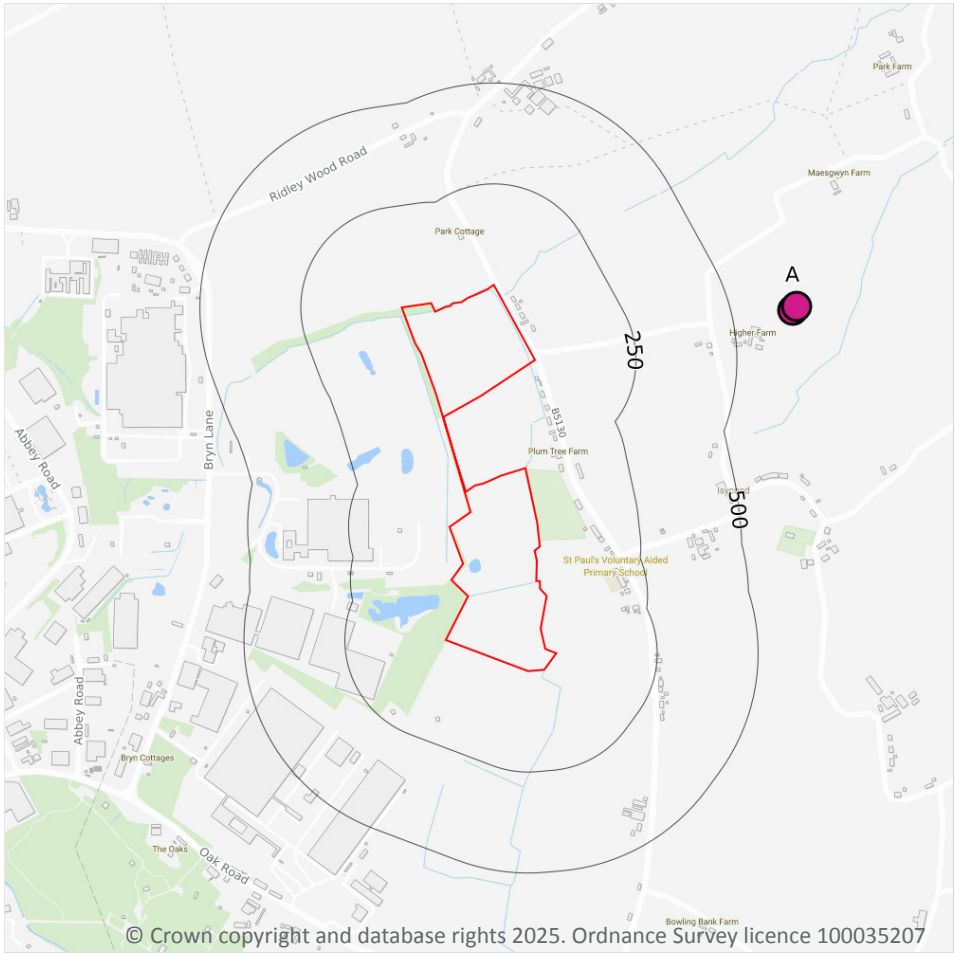
5.5 Groundwater vulnerability- local information

Records on site	0

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

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

Abstractions and Source Protection Zones



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	21

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 42 >**

ID	Location	Details	
A	649m NE	Status: Historical Licence No: 24/67/7/0171 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: BOREHOLE Data Type: Point Name: Davies Easting: 340410 Northing: 350660	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/01/1969 Expiry Date: - Issue No: 100 Version Start Date: 31/01/1994 Version End Date: -
A	661m NE	Status: Historical Licence No: 24/67/7/0107 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: WELL Data Type: Point Name: Evans Easting: 340420 Northing: 350670	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 25/10/1966 Expiry Date: - Issue No: 100 Version Start Date: 25/10/1966 Version End Date: -
-	1098m E	Status: Historical Licence No: 24/67/7/0095 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: BOREHOLE Data Type: Point Name: Rigby Easting: 340870 Northing: 350580	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 25/10/1966 Expiry Date: - Issue No: 100 Version Start Date: 25/10/1966 Version End Date: -
-	1257m SE	Status: Historical Licence No: 24/67/7/0105 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: WELL Data Type: Point Name: Brereton Easting: 340790 Northing: 349000	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 25/10/1966 Expiry Date: - Issue No: 100 Version Start Date: 25/10/1966 Version End Date: -
-	1359m SW	Status: Historical Licence No: 24/67/7/0213 Details: Process water Direct Source: EAW Groundwater Point: 144 M DEEP, 200MM DIA BH AW2 Data Type: Point Name: Calypso Soft Drinks Ltd Easting: 338360 Northing: 349190	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/09/1998 Expiry Date: 10/09/2001 Issue No: 100 Version Start Date: 10/09/1998 Version End Date: -

ID	Location	Details	
-	1359m SW	Status: Historical Licence No: 24/67/7/0222 Details: Process Water Direct Source: EAW Groundwater Point: 144 M DEEP, 200MM DIA BH AW2 Data Type: Point Name: Calypso Soft Drinks Ltd Easting: 338360 Northing: 349190	Annual Volume (m^3): 131400 Max Daily Volume (m^3): 600 Original Application No: - Original Start Date: 10/09/2001 Expiry Date: 31/03/2012 Issue No: 1 Version Start Date: 10/09/2001 Version End Date: -
-	1365m E	Status: Historical Licence No: 24/67/7/0212 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: BOREHOLE - PERMO-TRIASSIC SANDSTONE Data Type: Point Name: Pinnington Easting: 341190 Northing: 349770	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 12/03/1998 Expiry Date: 12/03/2003 Issue No: 100 Version Start Date: 12/03/1998 Version End Date: -
-	1365m E	Status: Historical Licence No: 24/67/7/0225 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: BOREHOLE - PERMO-TRIASSIC SANDSTONE Data Type: Point Name: Pinnington Easting: 341190 Northing: 349770	Annual Volume (m^3): 11115 Max Daily Volume (m^3): 80 Original Application No: - Original Start Date: 27/03/2003 Expiry Date: 31/03/2008 Issue No: 2 Version Start Date: 01/04/2006 Version End Date: -
-	1365m E	Status: Historical Licence No: 24/67/7/0234 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: BOREHOLE - PERMO-TRIASSIC SANDSTONE Data Type: Point Name: Worsnop Easting: 341190 Northing: 349770	Annual Volume (m^3): 11115 Max Daily Volume (m^3): 80 Original Application No: - Original Start Date: 01/04/2008 Expiry Date: 31/03/2015 Issue No: 2 Version Start Date: 19/08/2009 Version End Date: -
-	1371m E	Status: Historical Licence No: WA/067/0007/012 Details: General Farming & Domestic - Medium Direct Source: - Point: - Data Type: Point Name: - Easting: 341196 Northing: 349771	Annual Volume (m^3): 11115 Max Daily Volume (m^3): 108 Original Application No: - Original Start Date: 01/04/2015 Expiry Date: 31/03/2027 Issue No: - Version Start Date: - Version End Date: -

ID	Location	Details	
-	1371m E	Status: Historical Licence No: WA/067/0007/012 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: UNDERGROUND STRATA AT HIGHER HALL, BOWLING BANK, WREXHAM Data Type: Point Name: Higher Hall Poultry Limited Easting: 341196 Northing: 349771	Annual Volume (m^3): 11115 Max Daily Volume (m^3): 80 Original Application No: - Original Start Date: 01/04/2015 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 01/04/2015 Version End Date: -
-	1371m E	Status: Active Licence No: WA/067/0007/012 Details: General Farming & Domestic - Medium Direct Source: - Point: - Data Type: Point Name: - Easting: 341196 Northing: 349771	Annual Volume (m^3): 11115 Max Daily Volume (m^3): 80 Original Application No: - Original Start Date: 01/04/2015 Expiry Date: 31/03/2027 Issue No: - Version Start Date: - Version End Date: -
-	1372m SW	Status: Historical Licence No: WA/067/0007/006 Details: Process Water Direct Source: EAW Groundwater Point: SPECTRUM BUSINESS PARK BOREHOLE AW2 Data Type: Point Name: Calypso Soft Drinks Ltd Easting: 338350 Northing: 349180	Annual Volume (m^3): 131400 Max Daily Volume (m^3): 600 Original Application No: - Original Start Date: 01/04/2012 Expiry Date: 31/03/2022 Issue No: 1 Version Start Date: 01/04/2012 Version End Date: -
-	1512m SW	Status: Historical Licence No: 24/67/7/0213 Details: Process water Direct Source: EAW Groundwater Point: 144M DEEP, 150MM DIA., OB1 Data Type: Point Name: Calypso Soft Drinks Ltd Easting: 338240 Northing: 349090	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/09/1998 Expiry Date: 10/09/2001 Issue No: 100 Version Start Date: 10/09/1998 Version End Date: -
-	1512m SW	Status: Historical Licence No: 24/67/7/0222 Details: Process Water Direct Source: EAW Groundwater Point: 144M DEEP, 150MM DIA., OB1 Data Type: Point Name: Calypso Soft Drinks Ltd Easting: 338240 Northing: 349090	Annual Volume (m^3): 131400 Max Daily Volume (m^3): 600 Original Application No: - Original Start Date: 10/09/2001 Expiry Date: 31/03/2012 Issue No: 1 Version Start Date: 10/09/2001 Version End Date: -

ID	Location	Details	
-	1512m SW	Status: Historical Licence No: WA/067/0007/006 Details: Process Water Direct Source: EAW Groundwater Point: 144M DEEP, 150MM DIA., OB1 Data Type: Point Name: Calypso Soft Drinks Ltd Easting: 338240 Northing: 349090	Annual Volume (m^3): 131400 Max Daily Volume (m^3): 600 Original Application No: - Original Start Date: 01/04/2012 Expiry Date: 31/03/2022 Issue No: 1 Version Start Date: 01/04/2012 Version End Date: -
-	1568m NW	Status: Historical Licence No: 24/67/9/0130 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: WELL Data Type: Point Name: Taylor Easting: 337980 Northing: 351230	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 14/06/1968 Expiry Date: - Issue No: 100 Version Start Date: 14/06/1968 Version End Date: -
-	1634m SW	Status: Historical Licence No: 24/67/7/0213 Details: Process water Direct Source: EAW Groundwater Point: 144M DEEP, 150MM DIA. BOREHOLE AW1 Data Type: Point Name: Calypso Soft Drinks Ltd Easting: 338190 Northing: 348940	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/09/1998 Expiry Date: 10/09/2001 Issue No: 100 Version Start Date: 10/09/1998 Version End Date: -
-	1634m SW	Status: Historical Licence No: 24/67/7/0222 Details: Process Water Direct Source: EAW Groundwater Point: 144M DEEP, 150MM DIA. BOREHOLE AW1 Data Type: Point Name: Calypso Soft Drinks Ltd Easting: 338190 Northing: 348940	Annual Volume (m^3): 131400 Max Daily Volume (m^3): 600 Original Application No: - Original Start Date: 10/09/2001 Expiry Date: 31/03/2012 Issue No: 1 Version Start Date: 10/09/2001 Version End Date: -
-	1634m SW	Status: Historical Licence No: WA/067/0007/006 Details: Process Water - Medium Direct Source: Underground strata Point: - Data Type: Point Name: - Easting: 338190 Northing: 348940	Annual Volume (m^3): 131400 Max Daily Volume (m^3): 600 Original Application No: - Original Start Date: 02/10/2016 Expiry Date: 30/03/2027 Issue No: - Version Start Date: - Version End Date: -

ID	Location	Details	
-	1634m SW	Status: Historical Licence No: WA/067/0007/006 Details: Process Water Direct Source: EAW Groundwater Point: 144M DEEP, 150MM DIA. BOREHOLE AW1 Data Type: Point Name: Calypso Soft Drinks Ltd Easting: 338190 Northing: 348940	Annual Volume (m^3): 131400 Max Daily Volume (m^3): 600 Original Application No: - Original Start Date: 01/04/2012 Expiry Date: 31/03/2022 Issue No: 1 Version Start Date: 01/04/2012 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	**1**

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 42 >**

ID	Location	Details	
-	1641m W	Status: Historical Licence No: 24/67/7/0178 Details: Non-Evaporative Cooling Direct Source: EAW Surface Water Point: TRIBUTARY OF REDWITHER BROOK Data Type: Point Name: Caparo Wire Ltd Easting: 337810 Northing: 350500	Annual Volume (m^3): 9955.74 Max Daily Volume (m^3): 27.276 Original Application No: - Original Start Date: 12/05/1972 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2007 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	**0**

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

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

5.9 Source Protection Zones

Records within 500m	0

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

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

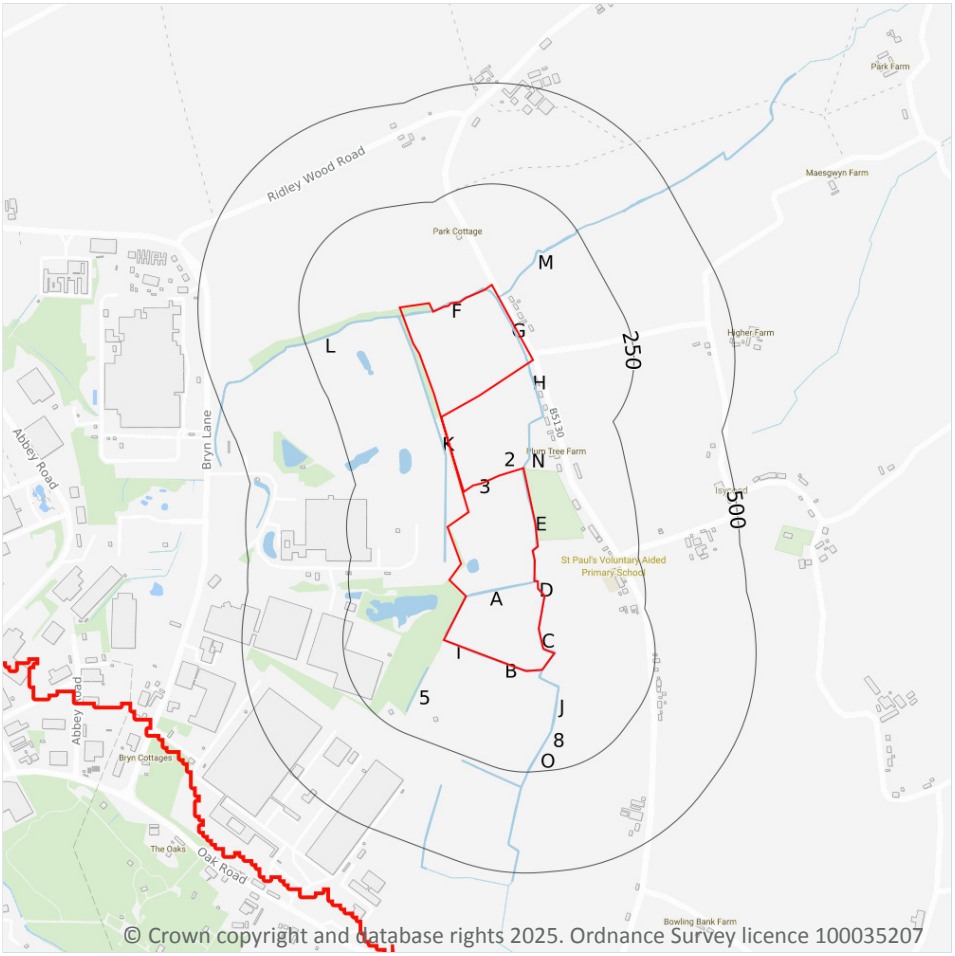
5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

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

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

6 Hydrology



Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	25

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 49 >**

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

ID	Location	Type of water feature	Ground level	Permanence	Name
B	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	-
C	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	-
D	**On site**	**Inland river not influenced by normal tidal action.**	**Underground**	**Watercourse contains water year round (in normal circumstances)**	-
D	**On site**	**Inland river not influenced by normal tidal action.**	**Underground**	**Watercourse contains water year round (in normal circumstances)**	-
E	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	-
F	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	-
G	**On site**	**Inland river not influenced by normal tidal action.**	**Underground**	**Watercourse contains water year round (in normal circumstances)**	-
G	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	-
G	**On site**	**Inland river not influenced by normal tidal action.**	**Underground**	**Watercourse contains water year round (in normal circumstances)**	-
H	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	-
I	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	-
I	1m S	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
I	1m S	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
I	1m S	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
J	3m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
K	5m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
L	11m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
M	11m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
N	39m NE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
N	42m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
5	77m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
N	110m NE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
8	153m S	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
O	157m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	14

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 49 >**

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 49 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
2	**On site**	**River WB catchment**	**Dee - Chester Weir to Ceiriog**	**GB111067057080**	**Dee Lower Chester Weir to Ceiriog**	**Dee**

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.

Features are displayed on the Hydrology map on **page 49 >**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	2013m SE	River	Dee - Chester Weir to Ceiriog	GB111067057080	Moderate	Fail	Moderate	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.

Features are displayed on the Hydrology map on **page 49 >**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
3	**On site**	**Dee Permo-Triassic Sandstone**	**GB41101G202400**	**Poor**	**Poor**	**Good**	**2019**

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

7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m	0

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

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

7.2 Historical Flood Events

Records within 250m	0

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

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

7.3 Flood Defences

Records within 250m	0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

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

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

7.5 Flood Storage Areas

Records within 250m	0

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

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

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0

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

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

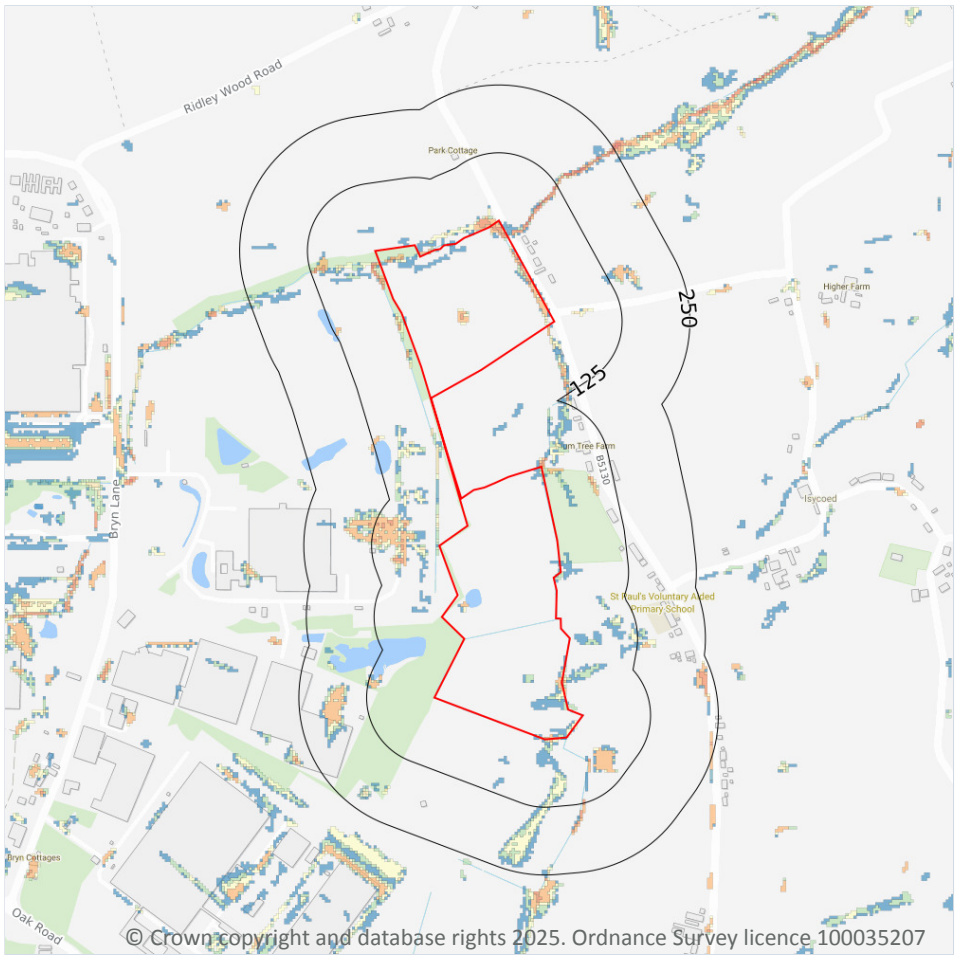
7.7 Flood Zone 3

Records within 50m	0

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

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

8 Surface water flooding



Site Outline

Search buffers in metres (m)

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

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

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

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

8.1 Surface water flooding

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

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

Features are displayed on the Surface water flooding map on **page 57 >**

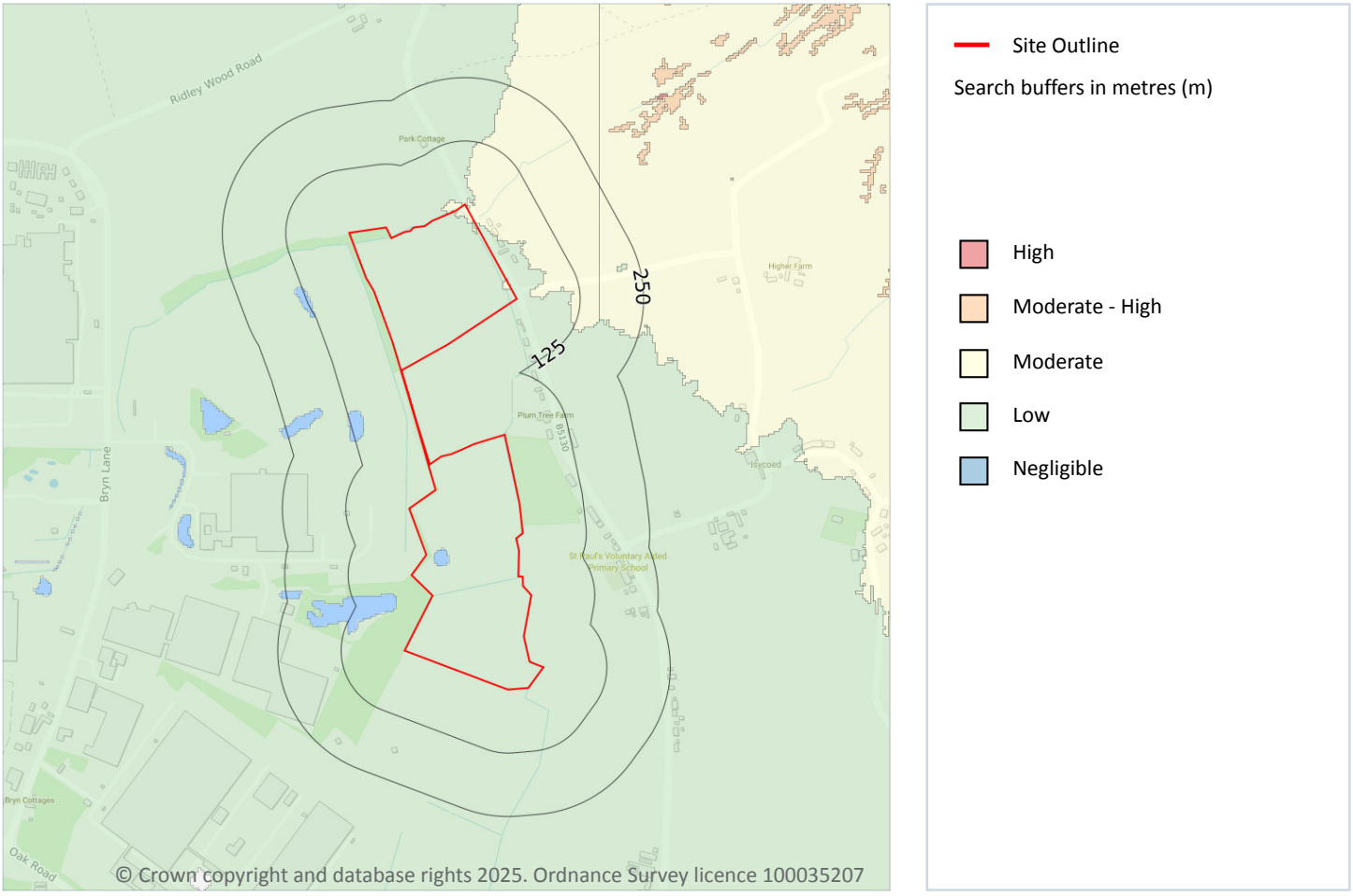
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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	Greater than 1.0m
1 in 250 year	Greater than 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.3m and 1.0m

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



9.1 Groundwater flooding

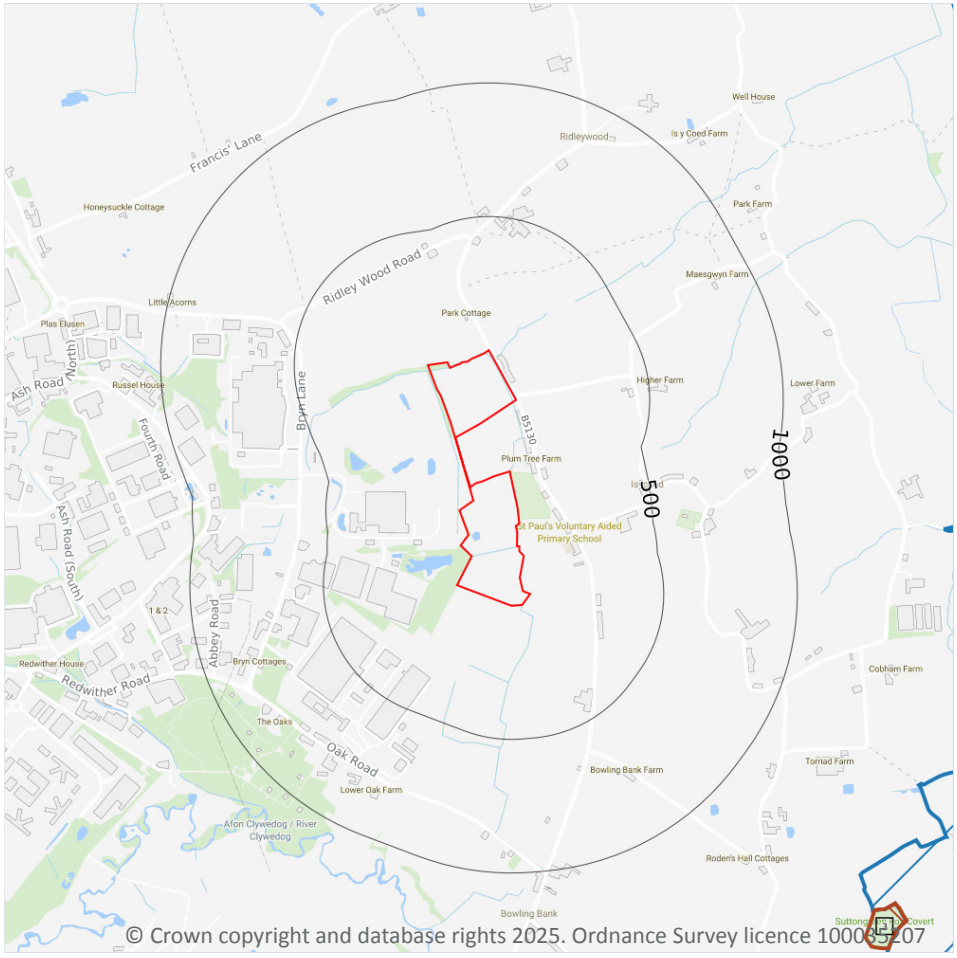
Highest risk on site	**Moderate**
Highest risk within 50m	**Moderate**

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 59 >**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



Site Outline

Search buffers in metres (m)

Sites of Special Scientific Interest (SSSI)

Special Areas of Conservation (SAC)

Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	3

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

Features are displayed on the Environmental designations map on **page 60 >**

ID	Location	Name	Data source
A	1572m E	Afon Dyfrdwy (River Dee)	Natural Resources Wales

ID	Location	Name	Data source
-	1820m E	Afon Dyfrdwy (River Dee)	Natural Resources Wales
-	1965m E	River Dee (England)	Natural England

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	**0**

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	**1**

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.

Features are displayed on the Environmental designations map on **page 60 >**

ID	Location	Name	Features of interest	Habitat description	Data source
-	1991m SE	River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid (Wales)	Rivers with floating vegetation often dominated by water-crowfoot; Mixed woodland on base-rich soils associated with rocky slopes; Western acidic oak woodland; Alder woodland on floodplains; Sea lamprey; Brook lamprey; River lamprey; Twaite shad; Atlantic salmon; Bullhead; Freshwater pearl mussel; Otter; Floating water-plantain.	Broad-leaved deciduous woodland; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Improved grassland; Inland water bodies (Standing water, Running water); Salt marshes, Salt pastures, Salt steppes	Natural Resources Wales

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	5

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

Features are displayed on the Environmental designations map on **page 60 >**

ID	Location	Name	Woodland Type
-	1569m S	Unknown	Ancient Semi Natural Woodland
-	1680m S	Unknown	Ancient Semi Natural Woodland
-	1740m W	Unknown	Restored Ancient Woodland Site
-	1742m W	Unknown	Restored Ancient Woodland Site

ID	Location	Name	Woodland Type
3	1745m SE	Unknown	Ancient Semi Natural Woodland

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

10.8 Biosphere Reserves

Records within 2000m	0

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

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

10.9 Forest Parks

Records within 2000m	0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

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

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

10.11 Green Belt

Records within 2000m	0

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

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

10.12 Proposed Ramsar sites

Records within 2000m	0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

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

This data is sourced from Natural England.

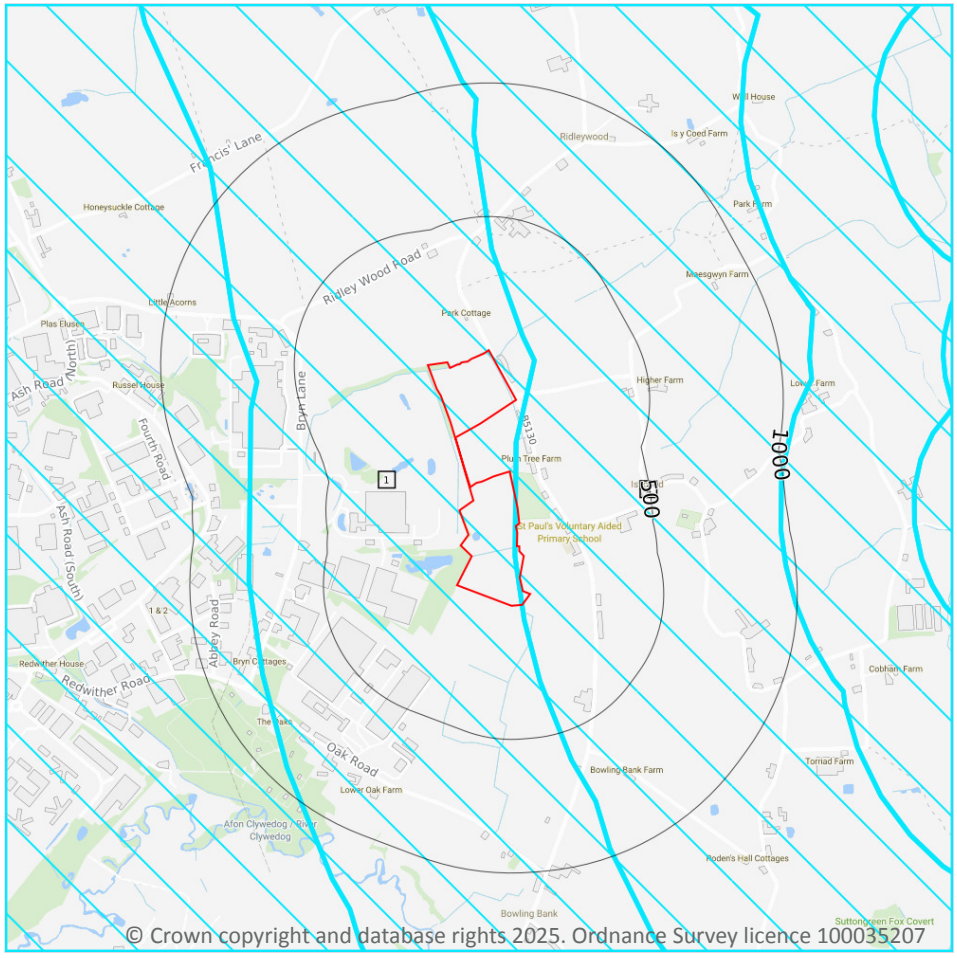
10.16 Nitrate Vulnerable Zones

Records within 2000m	0

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

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

SSSI Impact Zones and Units



10.17 SSSI Impact Risk Zones

Records on site	2

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

Features are displayed on the SSSI Impact Zones and Units map on **page 66 >**

ID	Location	Type of developments requiring consultation
1	On site	**Infrastructure - Airports, helipads and other aviation proposals. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Air pollution - Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m², manure stores > 3500t). Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.**
2	On site	**Infrastructure - Pipelines and underground cables, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Air pollution - Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m², manure stores > 250t). Combustion - General combustion processes >20MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill. Composting - Any composting proposal with more than 75000 tonnes maximum annual operational throughput. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Water supply - Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m² or more.**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	**1**

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

Features are displayed on the SSSI Impact Zones and Units map on **page 66 >**

ID:	-
Location:	1965m E
SSSI name:	River Dee (England)
Unit name:	Farndon - Shocklach Floodplain
Broad habitat:	Rivers And Streams
Condition:	Favourable
Reportable features:	

Feature name	Feature condition	Date of assessment
IA - Fluvial Geomorphology	Favourable	01/11/2021
IS - Fluvial Geomorphology	Favourable	09/02/2021

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

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	0

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

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

11.5 Conservation Areas

Records within 250m	0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m	0

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

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

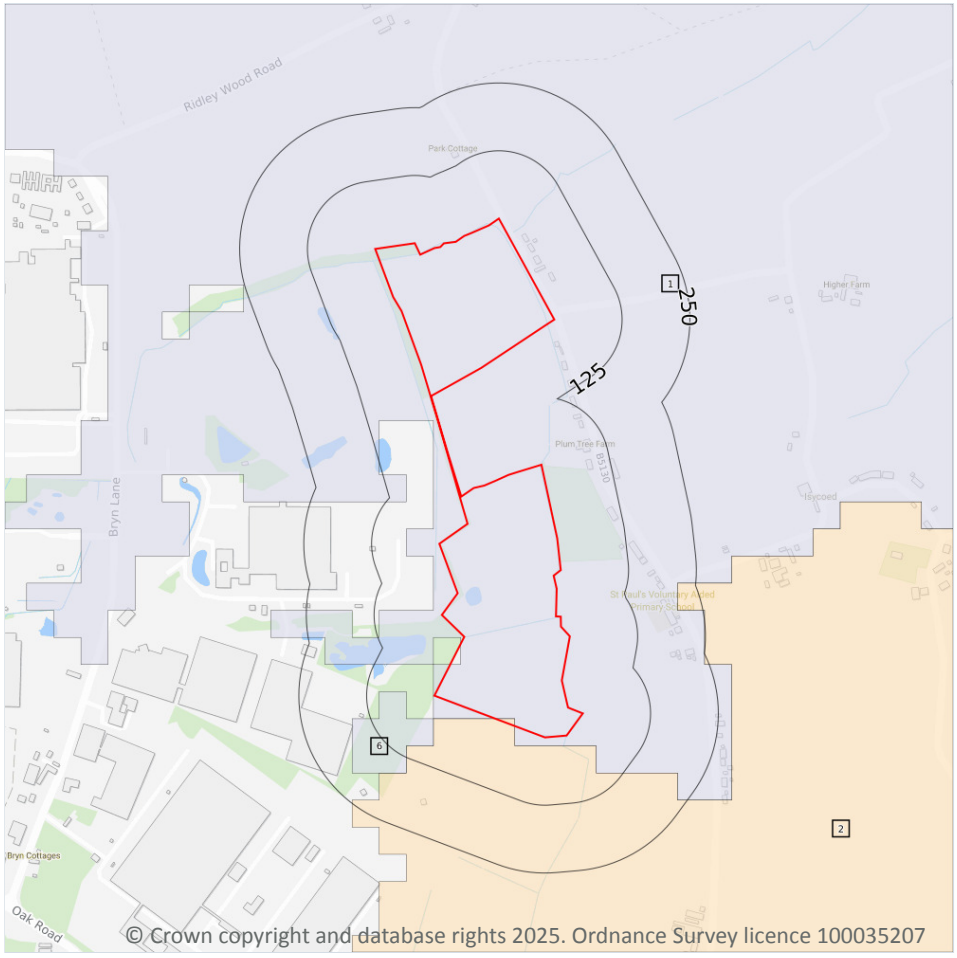
11.7 Registered Parks and Gardens

Records within 250m	0

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

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

12 Agricultural designations



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Timber felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	3

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 71 >**

ID	Location	Classification	Description
1	**On site**	**Grade 3b**	**Moderate quality agricultural land**
2	**On site**	**Grade 3a**	**Good to moderate quality agricultural land**
6	41m S	Grade 3b	Moderate quality agricultural land

This data is sourced from Natural Resources Wales.

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

13.1 Priority Habitat Inventory

Records within 250m	0

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

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

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

This data is sourced from Natural England.

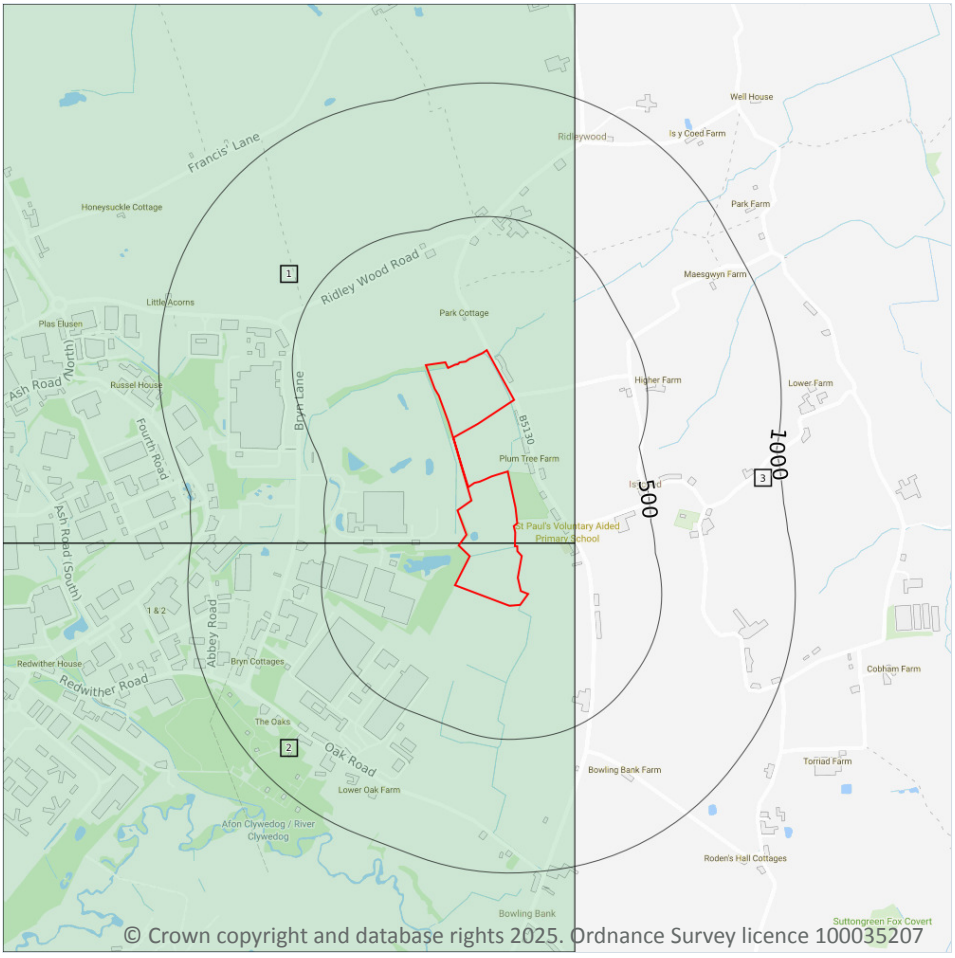
13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



14.1 10k Availability

Records within 500m	3

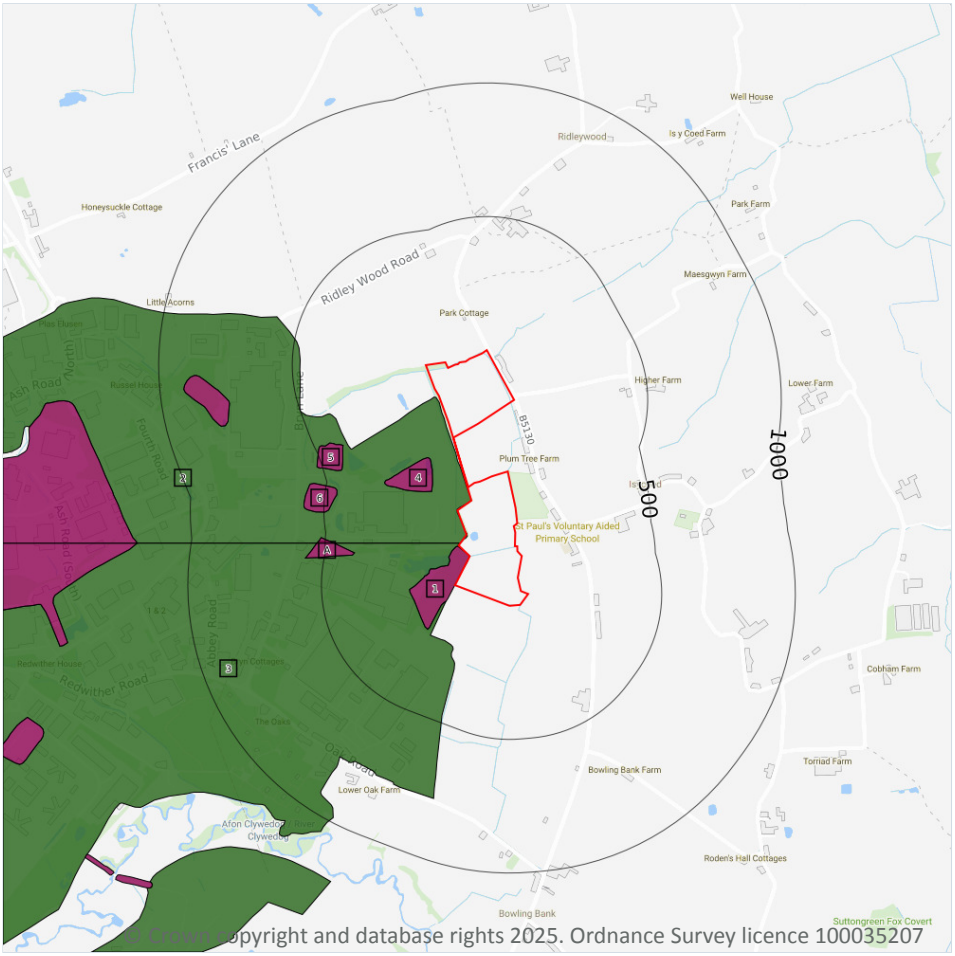
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 74 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**SJ35SE**
2	**On site**	**Full**	**Full**	**Full**	**No coverage**	**SJ34NE**
3	175m SE	No coverage	No coverage	No coverage	No coverage	NoCov

This data is sourced from the British Geological Survey.

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



Site Outline

Search buffers in metres (m)

- Reclaimed ground
- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

14.2 Artificial and made ground (10k)

Records within 500m	8

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.

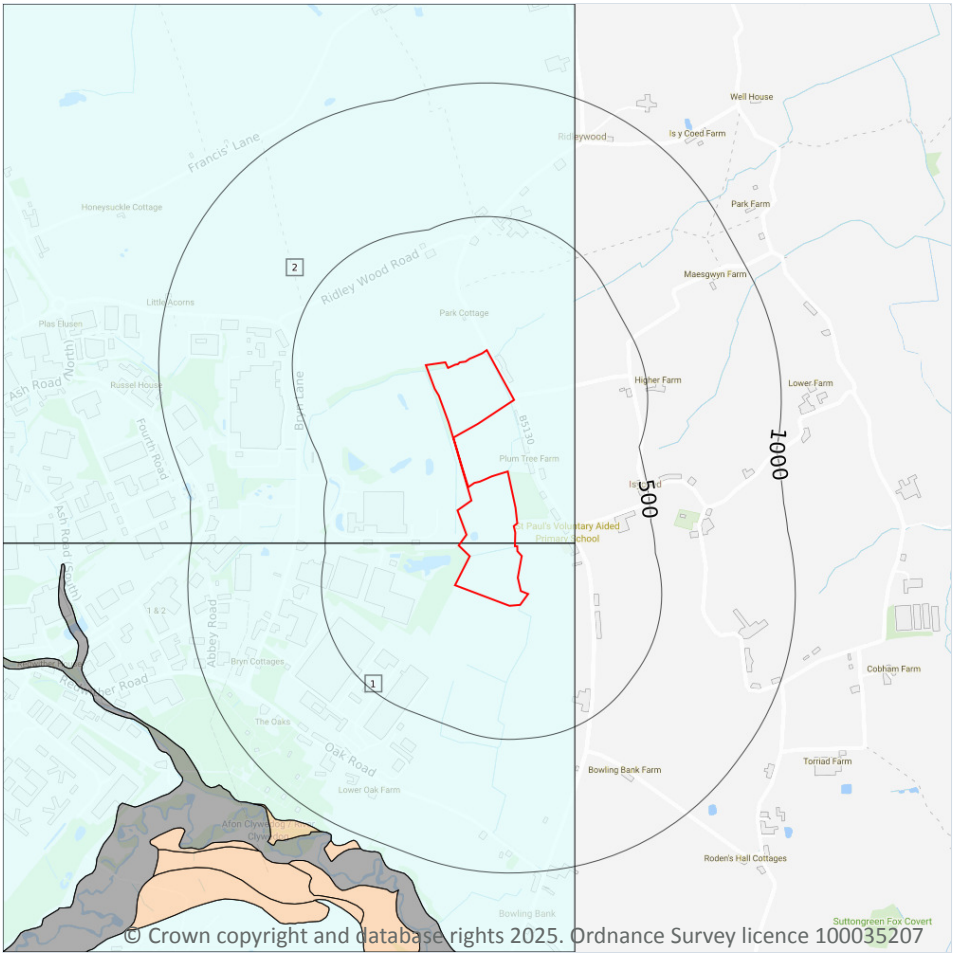
Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 75 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**MGR-ARTDP**	**Made Ground (Undivided)**	**Artificial Deposit**
2	**On site**	**LSGR-UKNOWN**	**Landscaped Ground (Undivided)**	**Unknown/unclassified Entry**
3	2m S	LSGR-UKNOWN	Landscaped Ground (Undivided)	Unknown/unclassified Entry
4	105m NW	MGR-UKNOWN	Made Ground (Undivided)	Unknown/unclassified Entry

ID	Location	LEX Code	Description	Rock description
A	391m SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
5	400m W	MGR-UKNOWN	Made Ground (Undivided)	Unknown/unclassified Entry
6	455m W	MGR-UKNOWN	Made Ground (Undivided)	Unknown/unclassified Entry
A	466m W	MGR-UKNOWN	Made Ground (Undivided)	Unknown/unclassified Entry

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	2

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 77 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TILL-DMTN**	**Till - Diamicton**	**Diamicton**
2	**On site**	**TILL-DMTN**	**Till - Diamicton**	**Diamicton**

This data is sourced from the British Geological Survey.

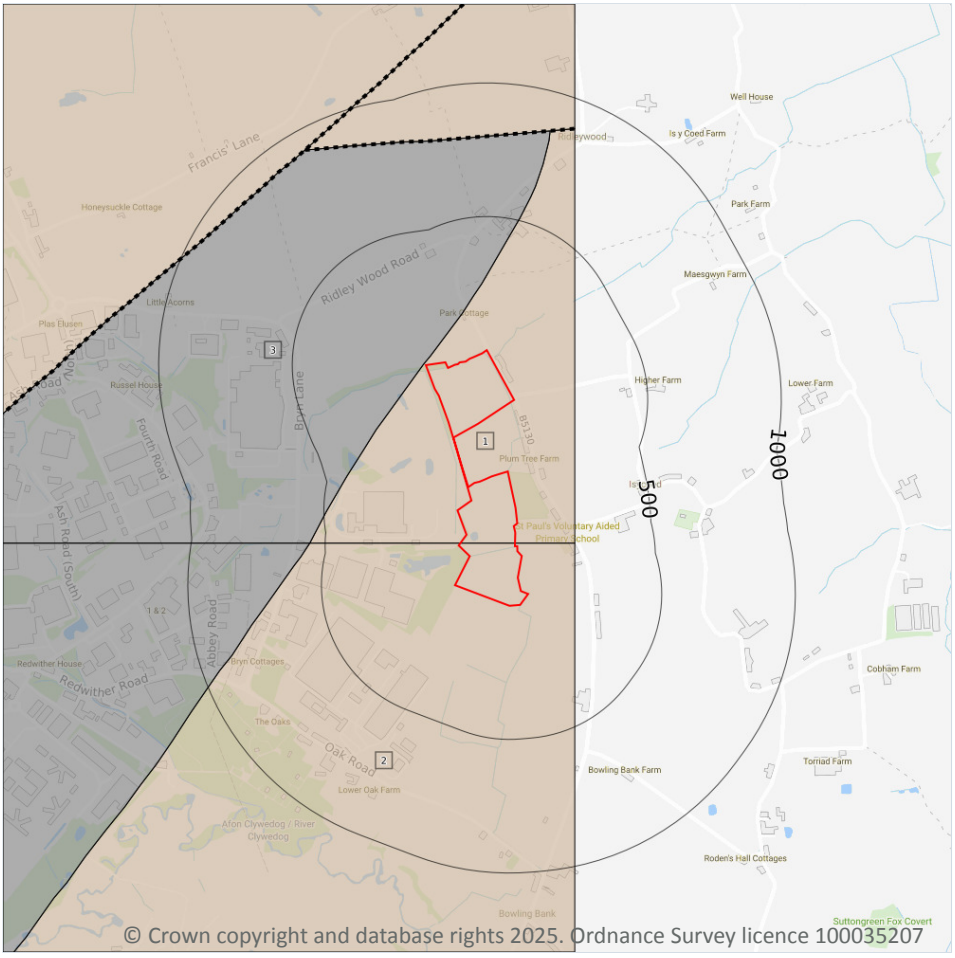
14.4 Landslip (10k)

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 79 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**KNSF-SDST**	**Kinnerton Sandstone Formation - Sandstone**	**Early Triassic Epoch**
2	**On site**	**KNSF-SDST**	**Kinnerton Sandstone Formation - Sandstone**	**Early Triassic Epoch**
3	9m NW	SAL-MDST	Salop Formation - Mudstone	Cisuralian Epoch - Westphalian D Sub-age

This data is sourced from the British Geological Survey.

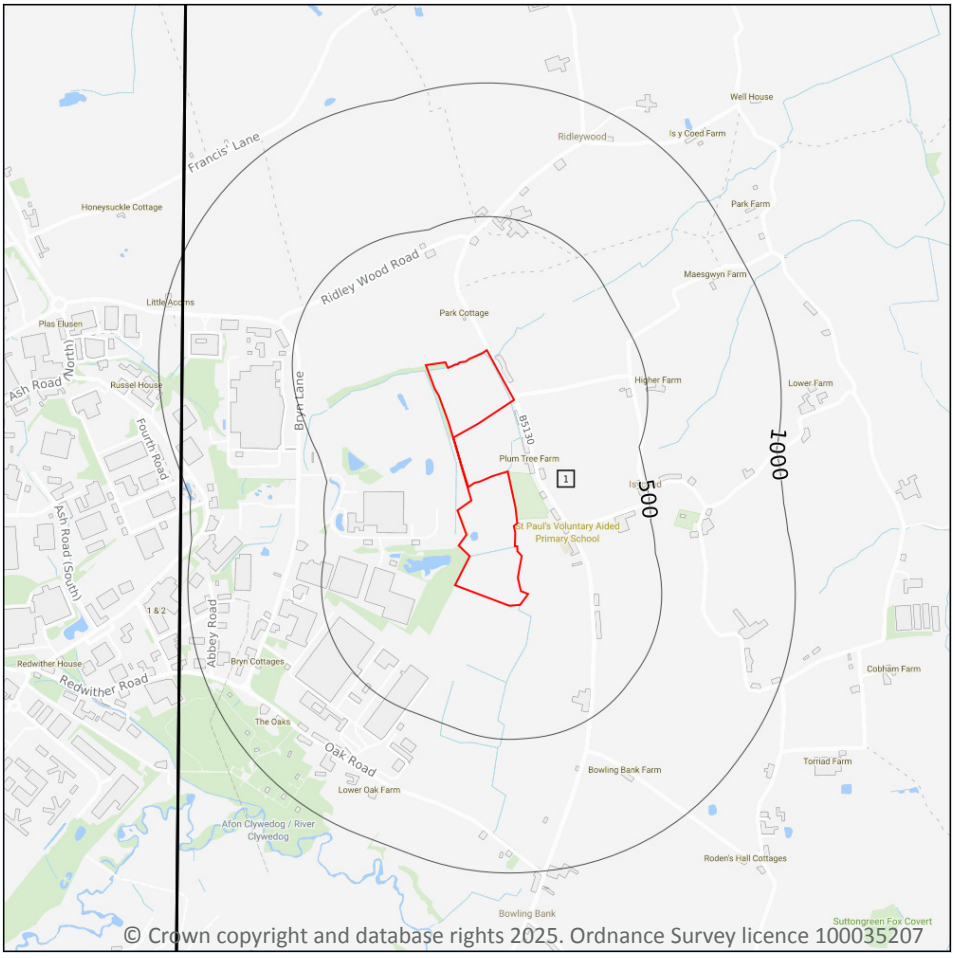
14.6 Bedrock faults and other linear features (10k)

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



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. Where 50k data is not available, this area has been filled in with 625k scale data.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 81 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**No coverage**	**Full**	**Full**	**Full**	**EW122_nantwich_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.

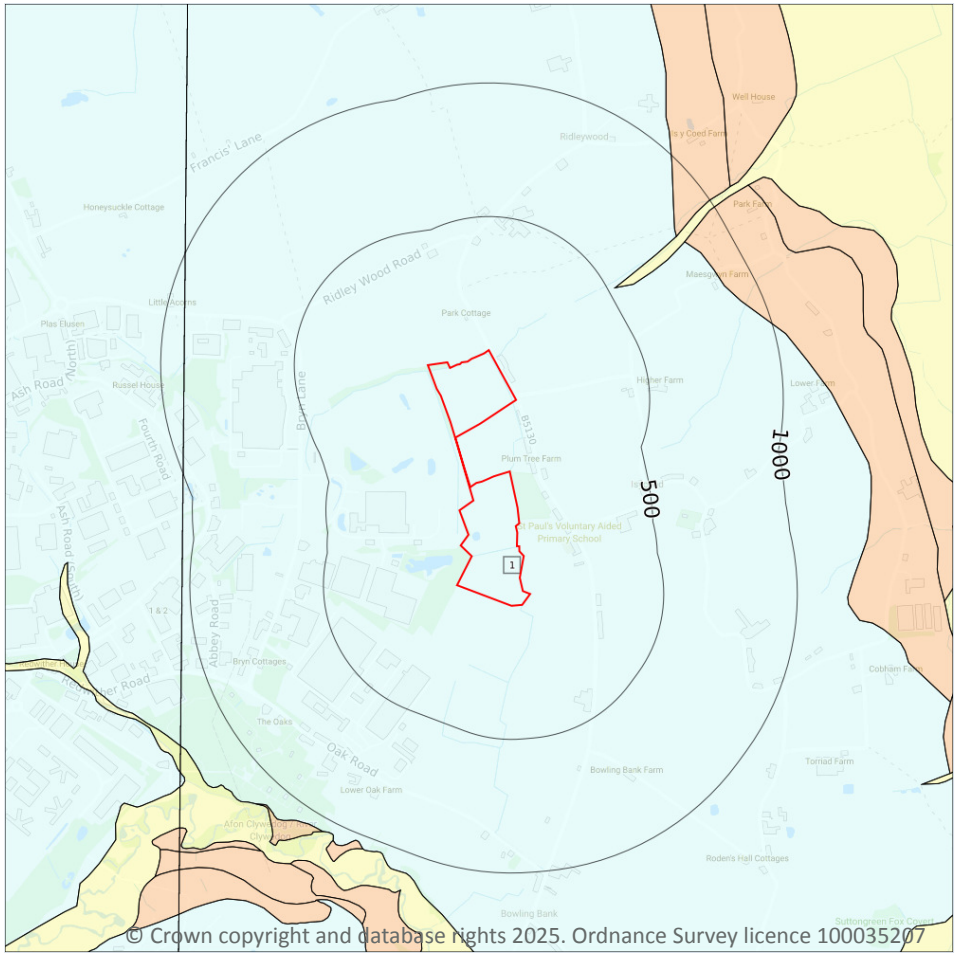
15.3 Artificial ground permeability (50k)

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



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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 83 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TILLD-DMTN**	**TILL, DEVENSIAN**	**DIAMICTON**

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	2

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

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

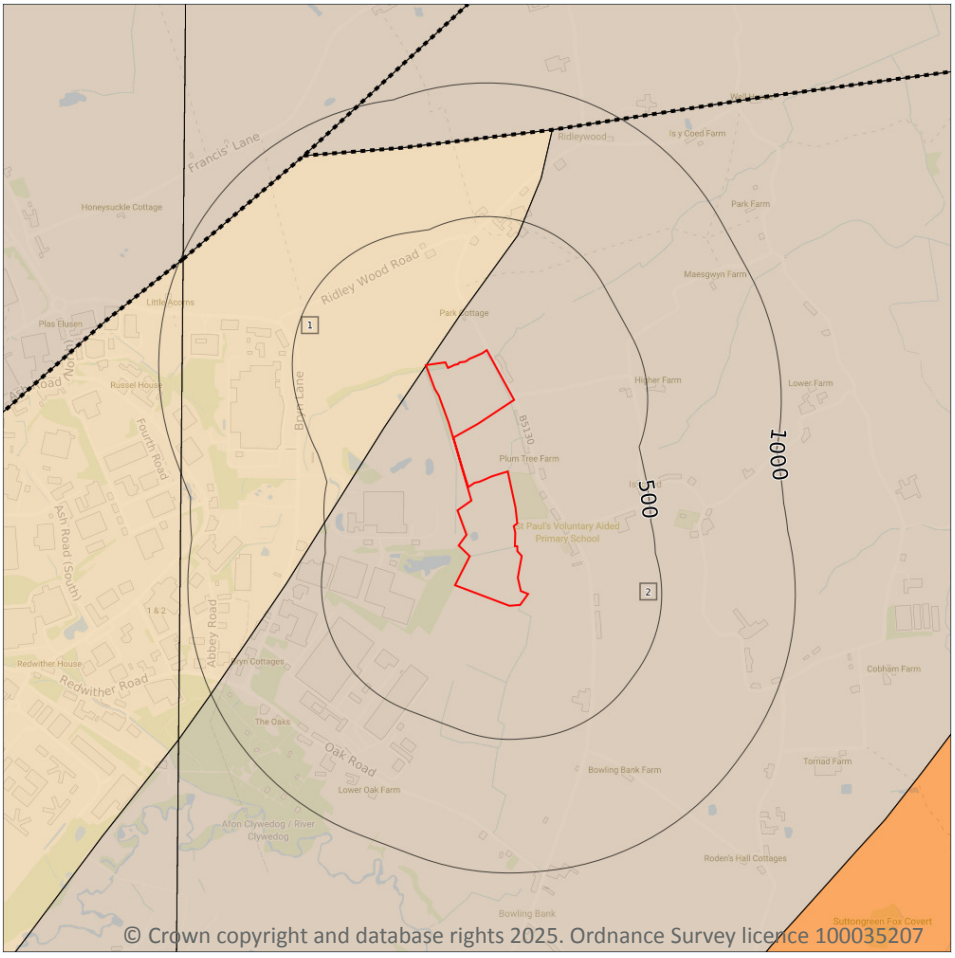
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m	2

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 85 >**

ID	Location	LEX Code	Description	Rock age
1	On site	SAL-MDSC	SALOP FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE	WESTPHALIAN
2	On site	KNSF-SDST	KINNERTON SANDSTONE FORMATION - SANDSTONE	-

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	3

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Fracture**	**Moderate**	**Low**
On site	**Intergranular**	**High**	**High**
On site	**Intergranular**	**High**	**High**

This data is sourced from the British Geological Survey.

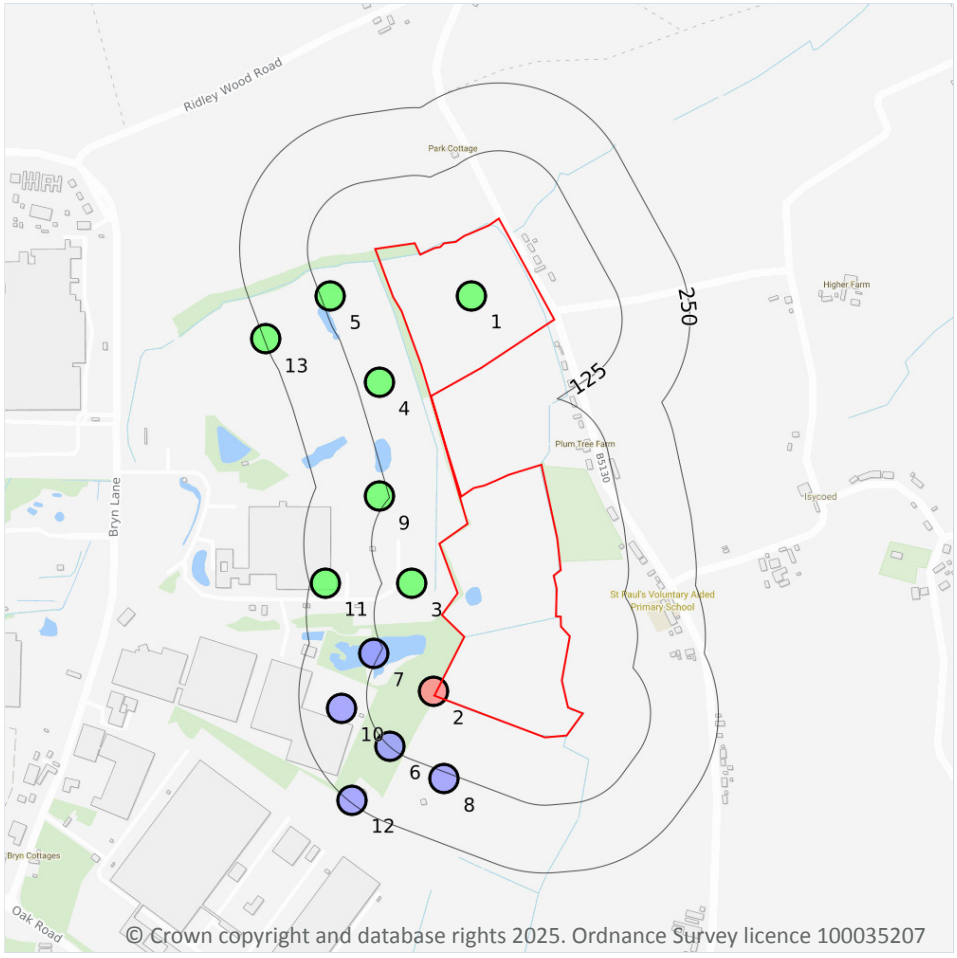
15.10 Bedrock faults and other linear features (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

16 Boreholes



Site Outline

Search buffers in metres (m)

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

16.1 BGS Boreholes

Records within 250m	13

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.

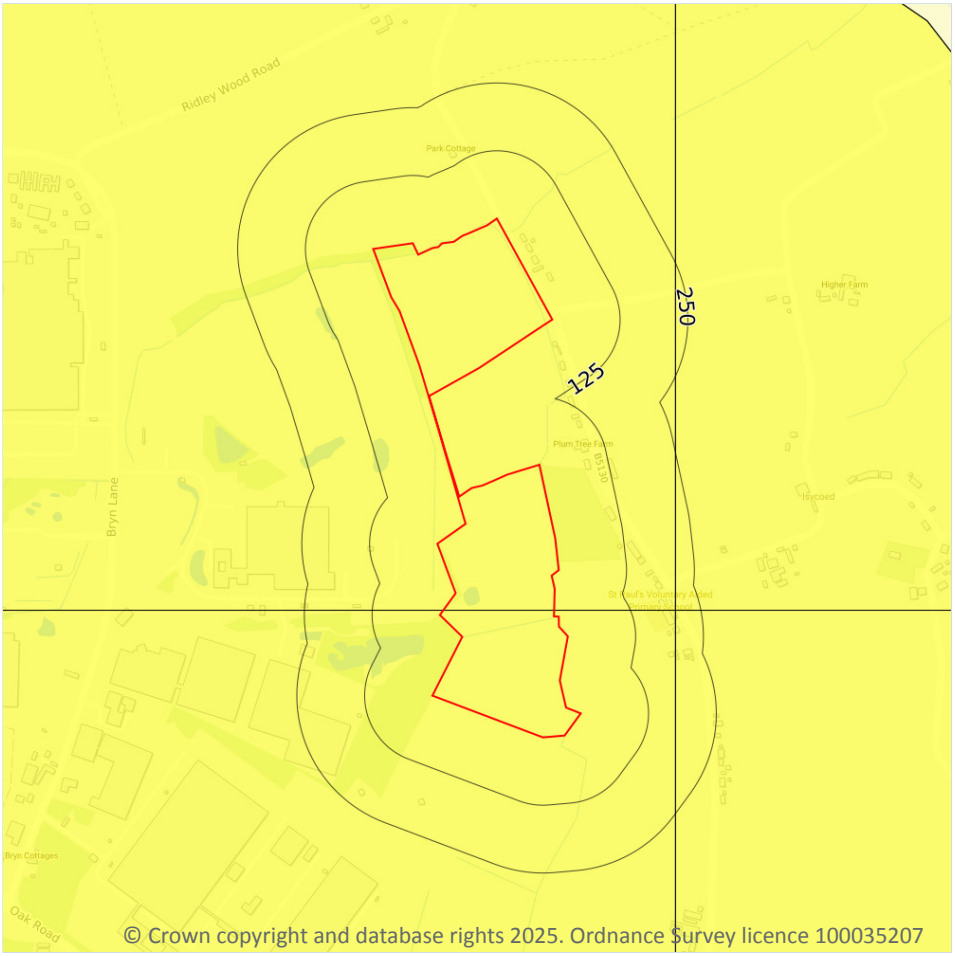
Features are displayed on the Boreholes map on **page 87 >**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	**On site**	**339620 350580**	**ISYCOED,BARN FARM**	**18.0**	**N**	**154654** ↗
2	5m S	339550 349850	WREXHAN IND EST. BICC SITE. 31	30.48	N	153170 ↗
3	73m SW	339510 350050	FIBREGLASS LTD 4	15.0	N	154659 ↗

ID	Location	Grid reference	Name	Length	Confidential	Web link
4	84m NW	339450 350420	FIBREGLASS LTD 8	15.0	N	154663 ↗
5	108m NW	339360 350580	FIBREGLASS LTD 9	15.0	N	154664 ↗
6	124m S	339470 349750	WREXHAN IND EST. BICC SITE. 28	9.14	N	153167 ↗
7	135m SW	339440 349920	WREXHAN IND EST. BICC SITE. 30	9.14	N	153169 ↗
8	136m S	339570 349690	WREXHAN IND EST. BICC SITE. 29	9.14	N	153168 ↗
9	141m W	339450 350210	FIBREGLASS LTD 5	15.0	N	154660 ↗
10	173m SW	339380 349820	WREXHAN IND EST. BICC SITE. 27	9.14	N	153166 ↗
11	223m SW	339350 350050	FIBREGLASS LTD 3	15.0	N	154658 ↗
12	245m SW	339400 349650	WREXHAN IND EST. BICC SITE. 23	9.14	N	153162 ↗
13	248m NW	339240 350500	FIBREGLASS LTD 10	15.0	N	154665 ↗

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

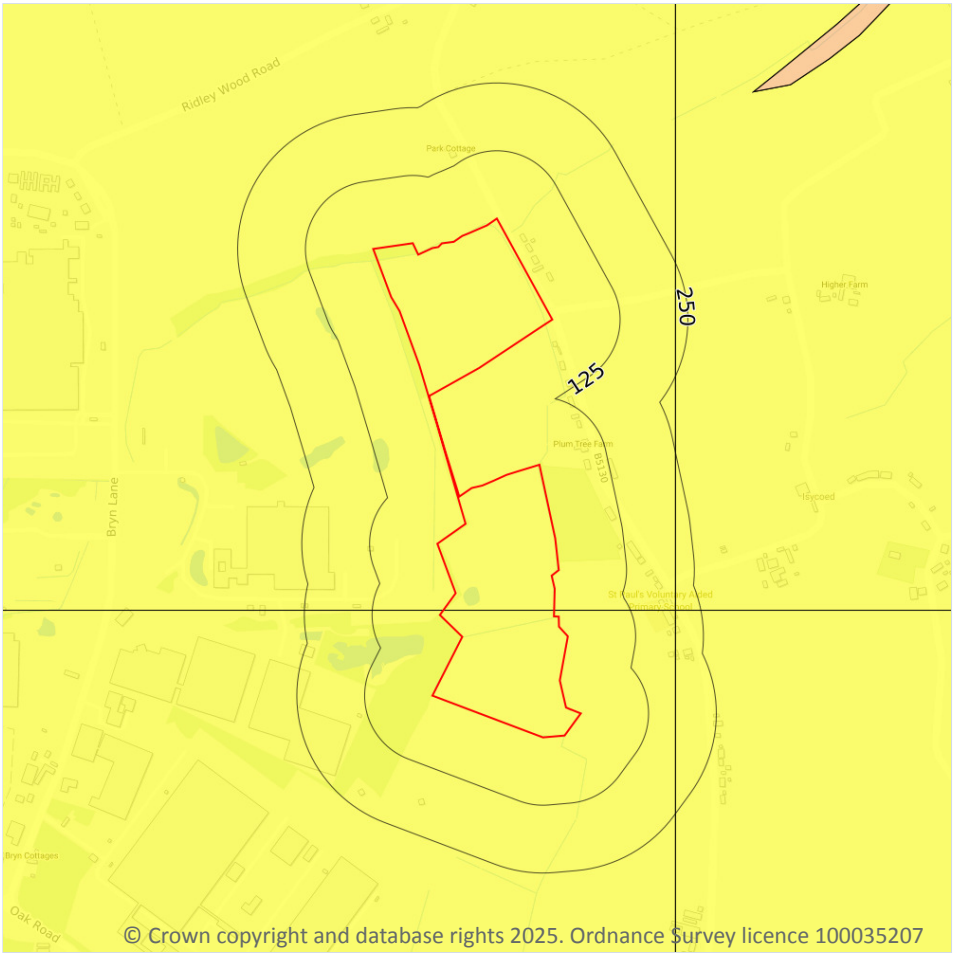
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 89 >**

Location	Hazard rating	Details
On site	**Very low**	**Ground conditions predominantly low plasticity.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

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

17.2 Running sands

Records within 50m	1

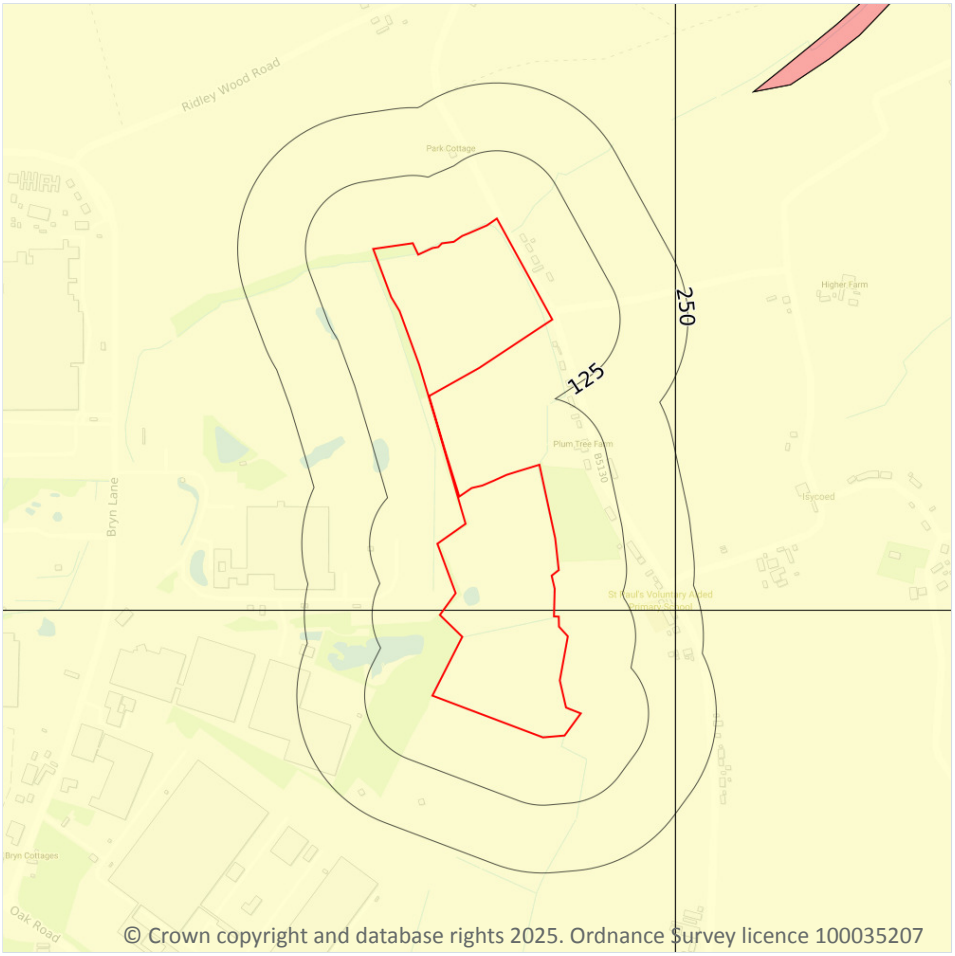
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 90 >**

Location	Hazard rating	Details
On site	**Very low**	**Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

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

17.3 Compressible deposits

Records within 50m	1

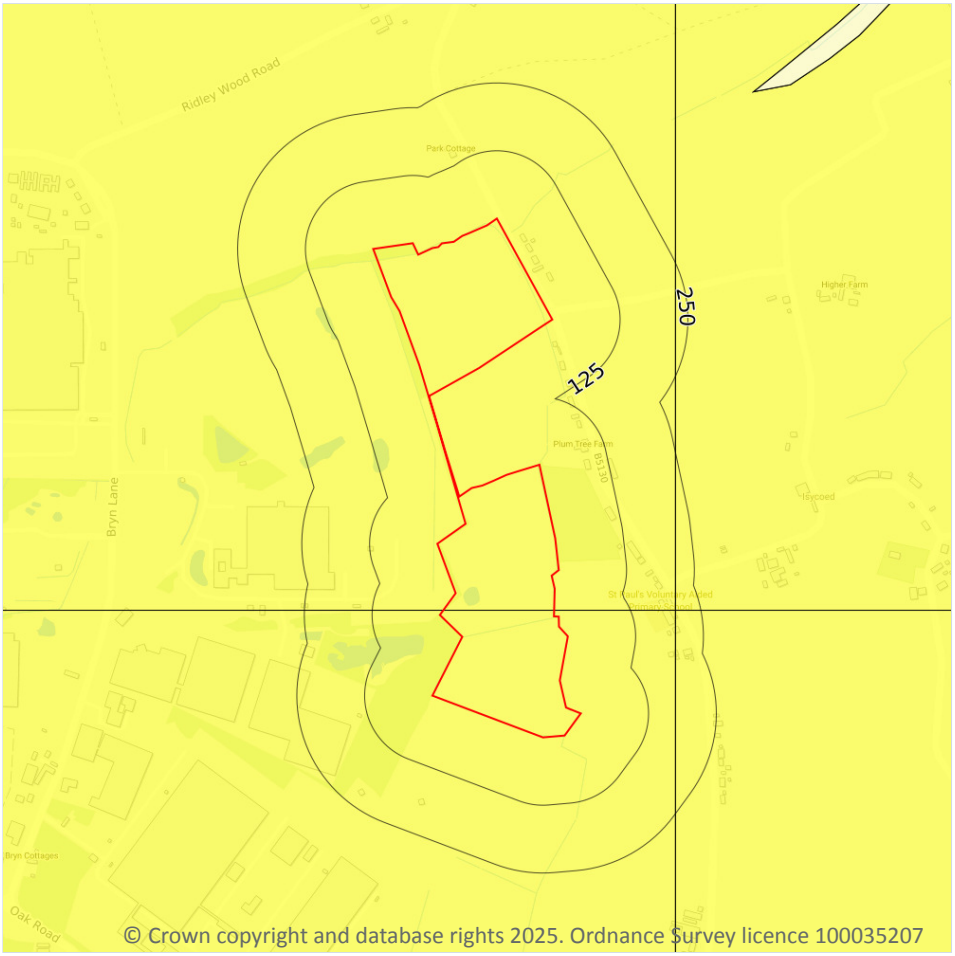
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 91 >**

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

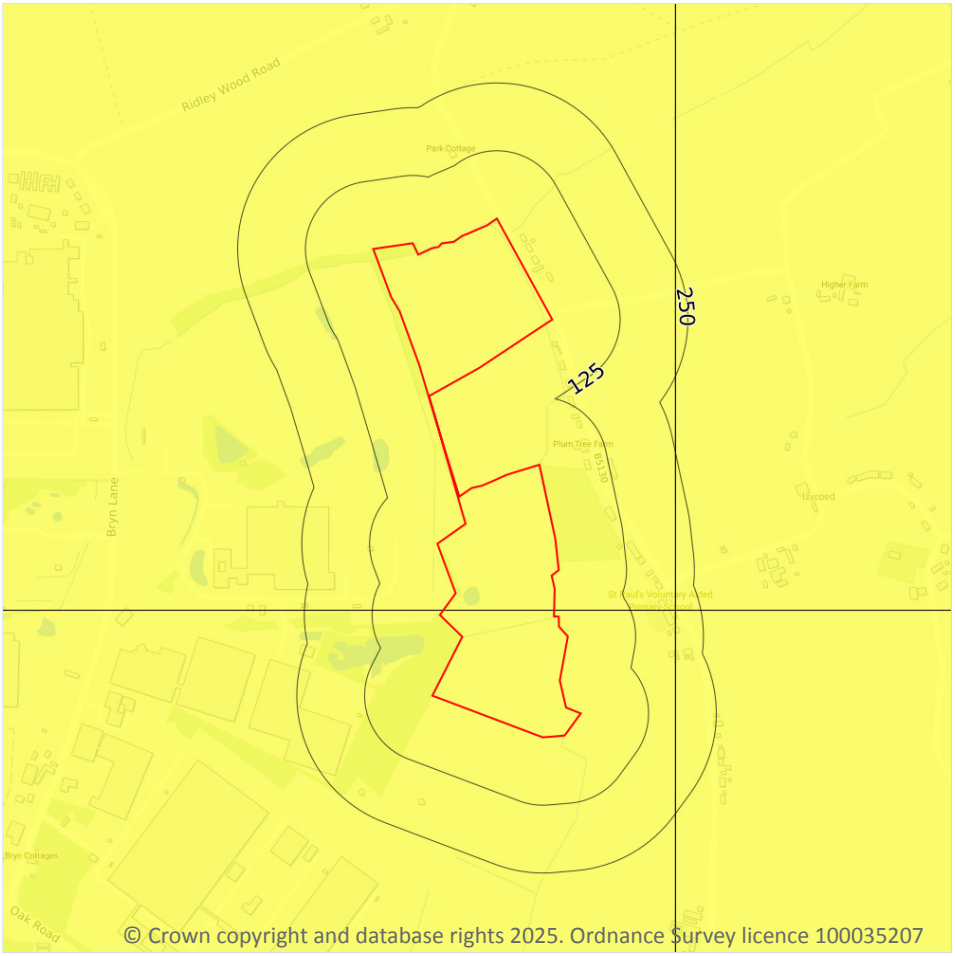
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 92 >**

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

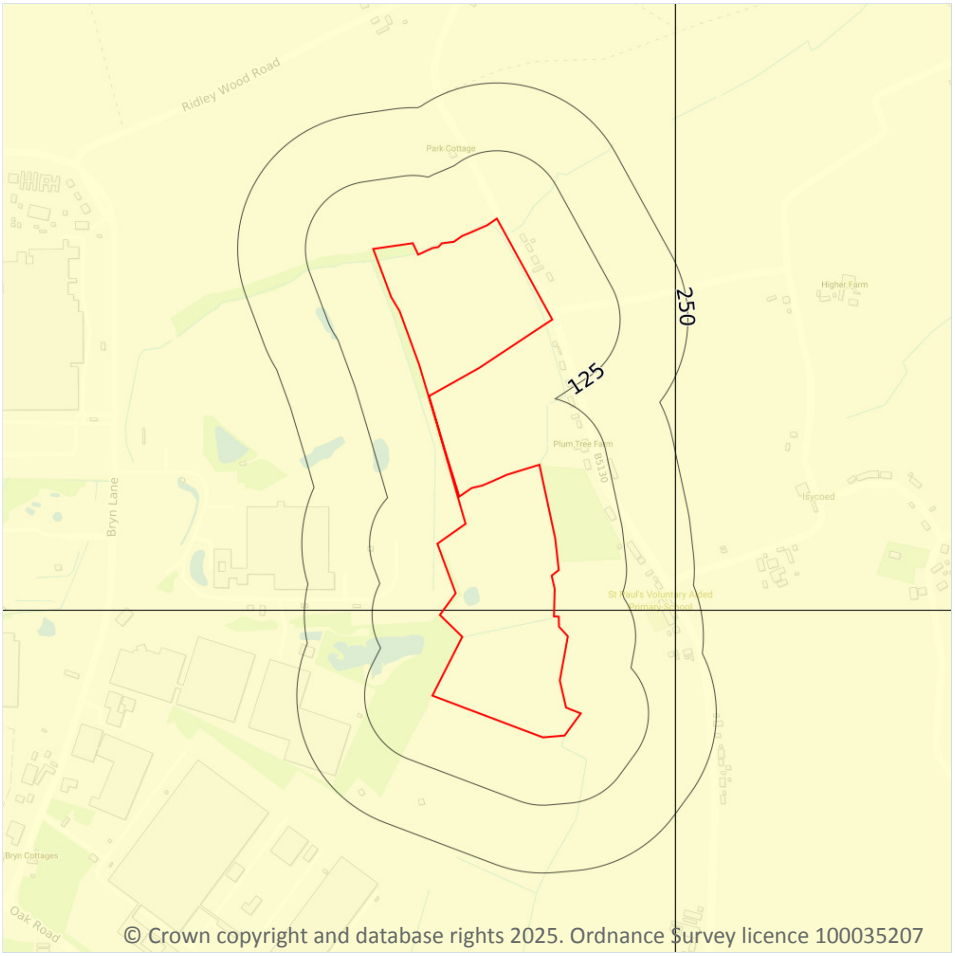
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 93 >**

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

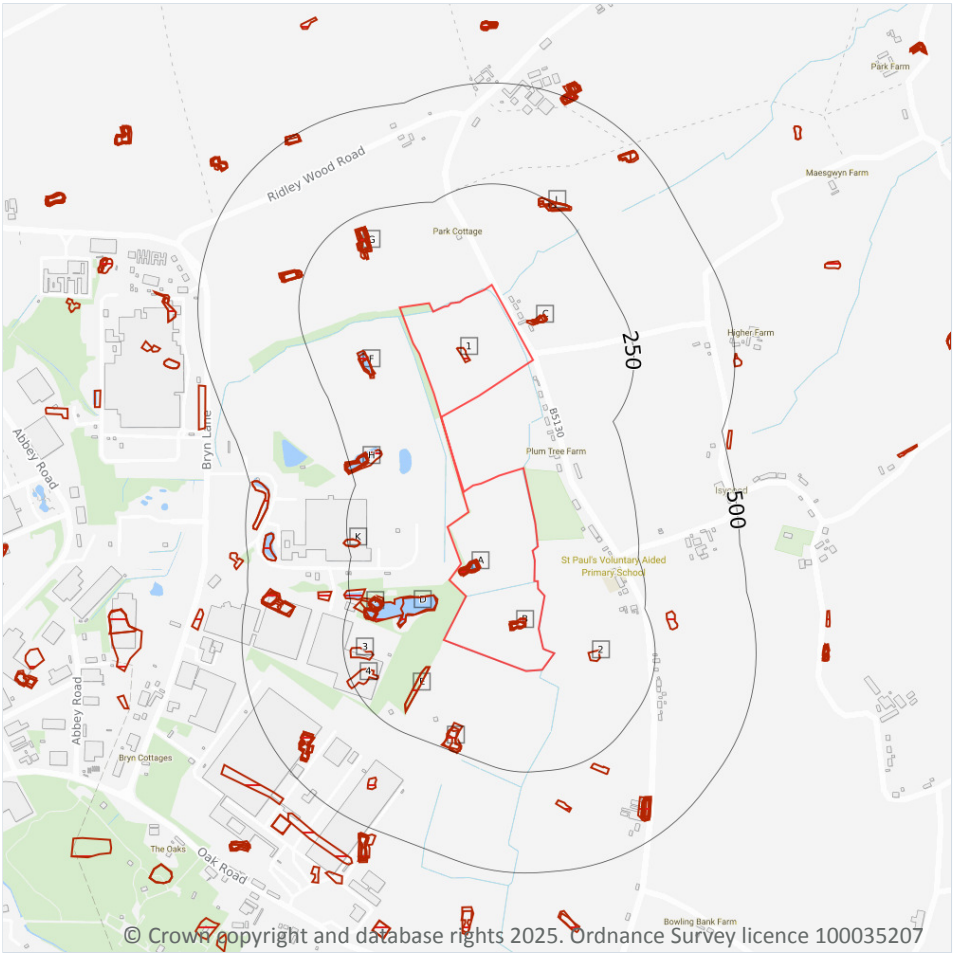
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 94 >**

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

This data is sourced from the British Geological Survey.

18 Mining and ground workings



Site Outline

Search buffers in metres (m)

BritPits

Surface ground workings

Underground workings

Underground mining extents

Historical mineral planning areas

TCA non-coal mining

Non Coal Mining

Sporadic underground mining of restricted extent possible

Localised small scale underground mining possible

Small scale mining possible

Underground mining known or likely within or in close proximity

Underground mining known within or in very close proximity

18.1 BritPits

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m	63

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

Features are displayed on the Mining and ground workings map on **page 96 >**

ID	Location	Land Use	Year of mapping	Mapping scale
1	**On site**	**Pond**	**1872**	**1:10560**
A	**On site**	**Pond**	**1982**	**1:10000**
A	**On site**	**Pond**	**1960**	**1:10560**
A	**On site**	**Pond**	**1968**	**1:10560**
A	**On site**	**Pond**	**1913**	**1:10560**
A	**On site**	**Pond**	**1897**	**1:10560**
A	**On site**	**Pond**	**1938**	**1:10560**
A	**On site**	**Pond**	**1949**	**1:10560**
A	**On site**	**Pond**	**1898**	**1:10560**
A	**On site**	**Pond**	**1872**	**1:10560**
A	**On site**	**Pond**	**1909**	**1:10560**
B	**On site**	**Ponds**	**1913**	**1:10560**
B	**On site**	**Ponds**	**1938**	**1:10560**
B	**On site**	**Pond**	**1992**	**1:10000**
B	**On site**	**Pond**	**1964**	**1:10560**
C	32m N	Pond	1900	1:10560
C	42m N	Pond	1914	1:10560
C	45m N	Pond	1913	1:10560
C	45m N	Pond	1897	1:10560
D	54m S	Pond	1979	1:10000
D	55m SW	Pond	1992	1:10000
E	76m S	Pond	1979	1:10000
E	76m S	Pond	1992	1:10000

ID	Location	Land Use	Year of mapping	Mapping scale
2	85m SE	Pond	1964	1:10560
F	117m NW	Pond	1992	1:10000
F	119m NW	Pond	1982	1:10000
F	119m NW	Pond	1960	1:10560
F	119m NW	Pond	1968	1:10560
F	119m NW	Ponds	1872	1:10560
G	143m NW	Ponds	1872	1:10560
G	149m NW	Ponds	1900	1:10560
G	157m NW	Ponds	1982	1:10000
G	157m NW	Ponds	1960	1:10560
G	157m NW	Ponds	1968	1:10560
G	164m NW	Ponds	1914	1:10560
G	165m NW	Pond	1949	1:10560
H	167m W	Pond	1992	1:10000
I	170m SW	Pond	1964	1:10560
I	174m SW	Pond	1949	1:10560
I	174m SW	Pond	1898	1:10560
I	174m SW	Pond	1872	1:10560
I	174m SW	Pond	1909	1:10560
I	174m SW	Pond	1938	1:10560
3	178m SW	Pond	1964	1:10560
J	183m S	Ponds	1964	1:10560
4	186m SW	Ponds	1979	1:10000
J	193m S	Ponds	1872	1:10560
J	196m S	Ponds	1992	1:10000
H	203m W	Ponds	1949	1:10560
H	203m W	Ponds	1898	1:10560
H	204m W	Ponds	1982	1:10000

ID	Location	Land Use	Year of mapping	Mapping scale
H	204m W	Ponds	1960	1:10560
H	204m W	Ponds	1968	1:10560
H	204m W	Ponds	1872	1:10560
H	204m W	Ponds	1938	1:10560
5	210m SW	Pond	1992	1:10000
K	221m SW	Pond	1960	1:10560
K	221m SW	Pond	1968	1:10560
L	227m N	Ponds	1872	1:10560
L	230m N	Ponds	1982	1:10000
L	230m N	Ponds	1960	1:10560
L	230m N	Ponds	1968	1:10560
L	236m N	Ponds	1992	1:10000

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m	**0**

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

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m	**0**

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

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	0

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

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site	0

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

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m	0

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

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m	0

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

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m	0

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

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m	0

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

This data is sourced from Groundsure.

18.12 Coal mining

Records on site	0

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

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site	0

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

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

18.14 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site	0

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

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

19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m	0

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

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m	0

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

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m	0

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

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

This data is sourced from Groundsure.

20 Radon



Site Outline

Search buffers in metres (m)

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

20.1 Radon

Records on site	1

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

Features are displayed on the Radon map on **page 105 >**

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

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

21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m **6**

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
10m NW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m **0**

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

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

22 Railway infrastructure and projects

22.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m	0

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

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

22.9 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.

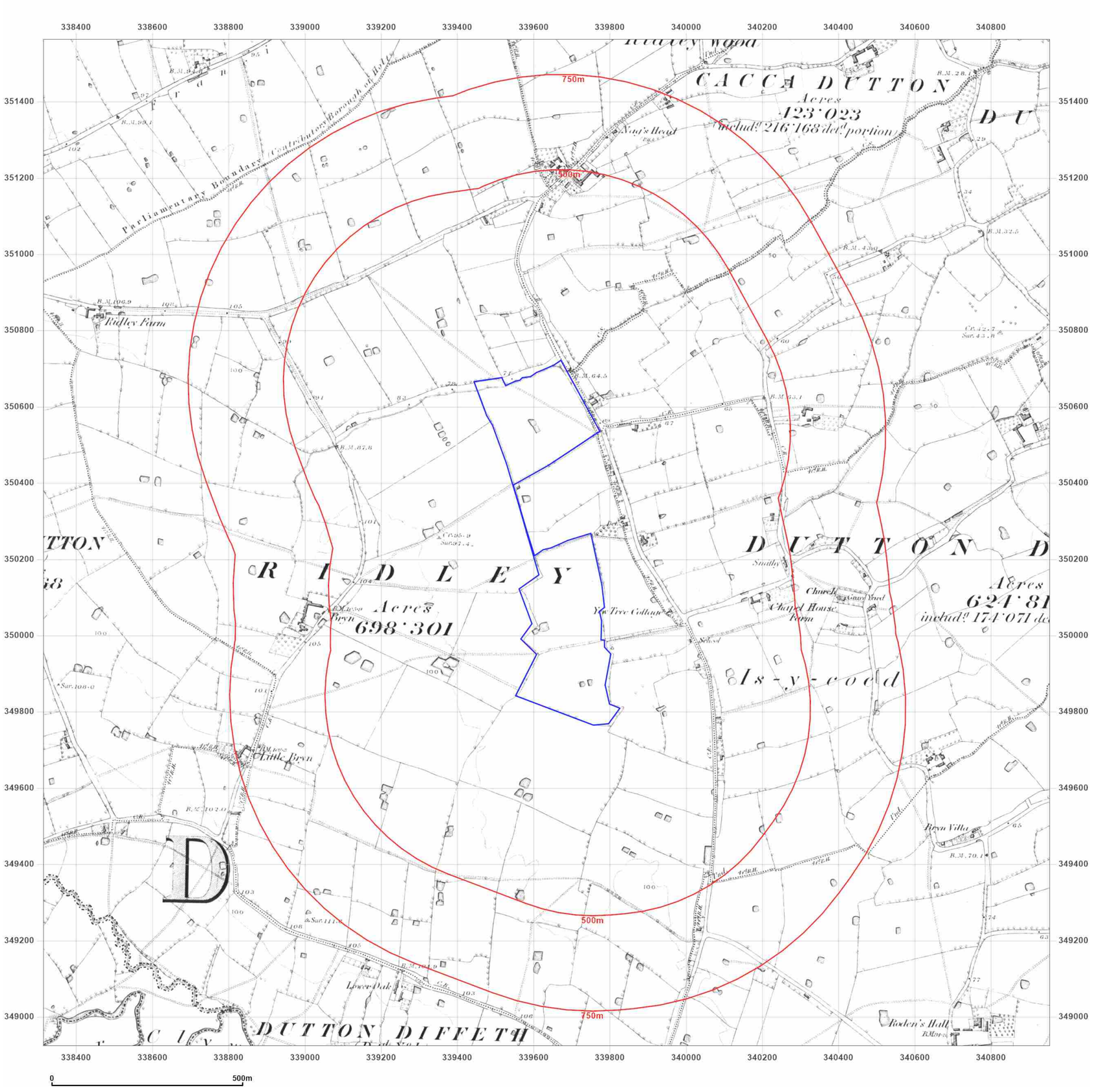
This data is sourced from HS2 ltd.

Data providers

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Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J
Grid Ref: 339633, 350243

Map Name: County Series

Map date: **1872**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1872
Revised 1872
Edition N/A
Copyright N/A
Levelled N/A

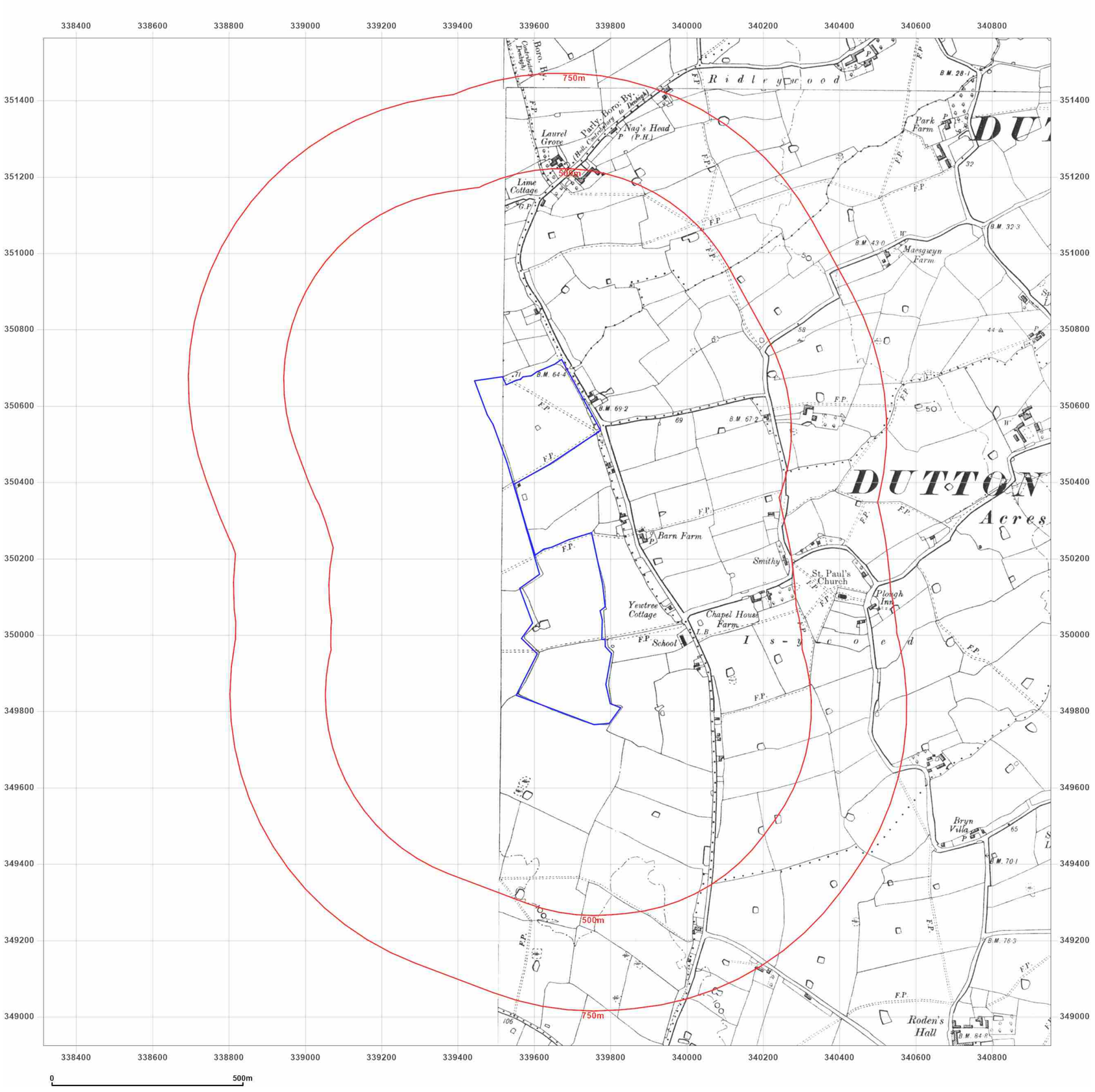
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Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J
Grid Ref: 339633, 350243

Map Name: County Series

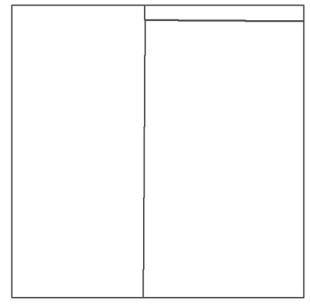
Map date: **1897**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1874
Revised 1897
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1874
Revised 1897
Edition N/A
Copyright N/A
Levelled N/A

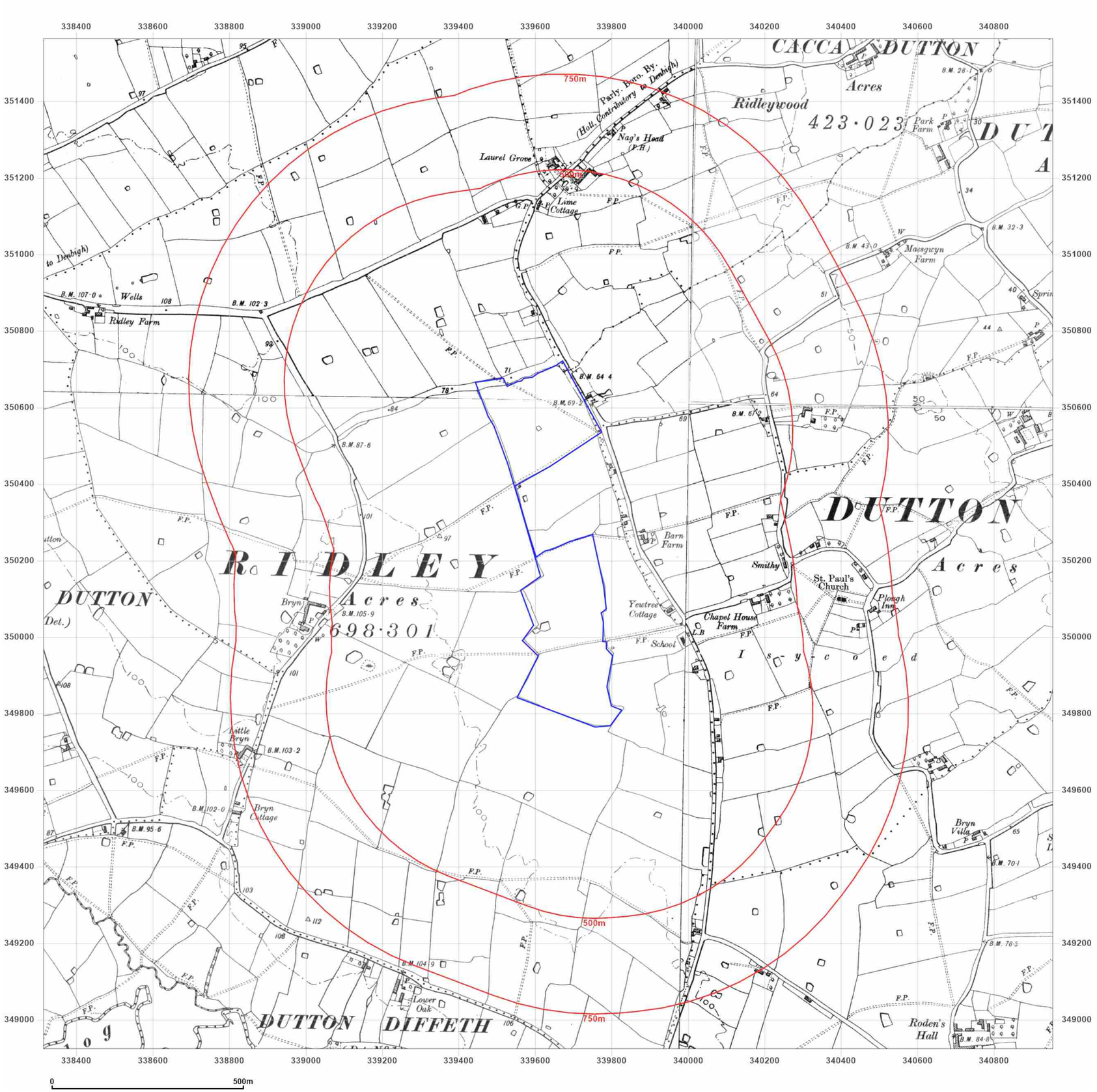
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Groundsure INSIGHTS

Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J
Grid Ref: 339633, 350243

Map Name: County Series

Map date: **1898-1900**

Scale: 1:10,560

Printed at: 1:10,560

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

Surveyed 1871
Revised 1898
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1872
Revised 1898
Edition N/A
Copyright N/A
Levelled N/A

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

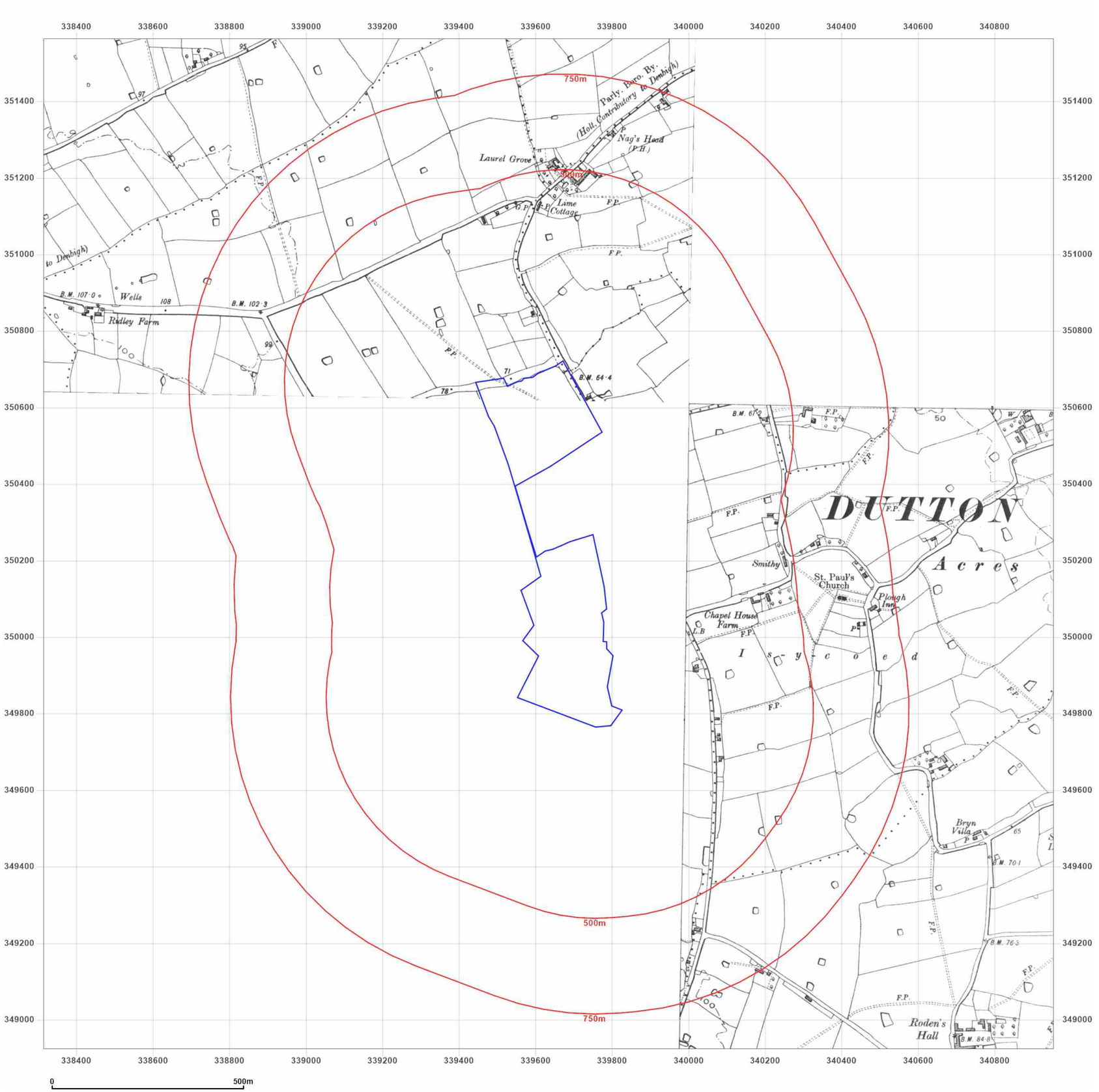
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Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J
Grid Ref: 339633, 350243

Map Name: County Series

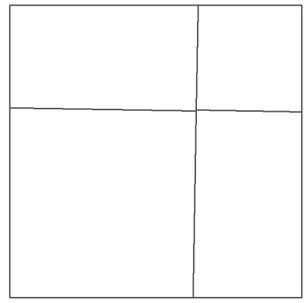
Map date: **1900**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1872
Revised 1900
Edition N/A
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Surveyed 1872
Revised 1900
Edition N/A
Copyright N/A
Levelled N/A

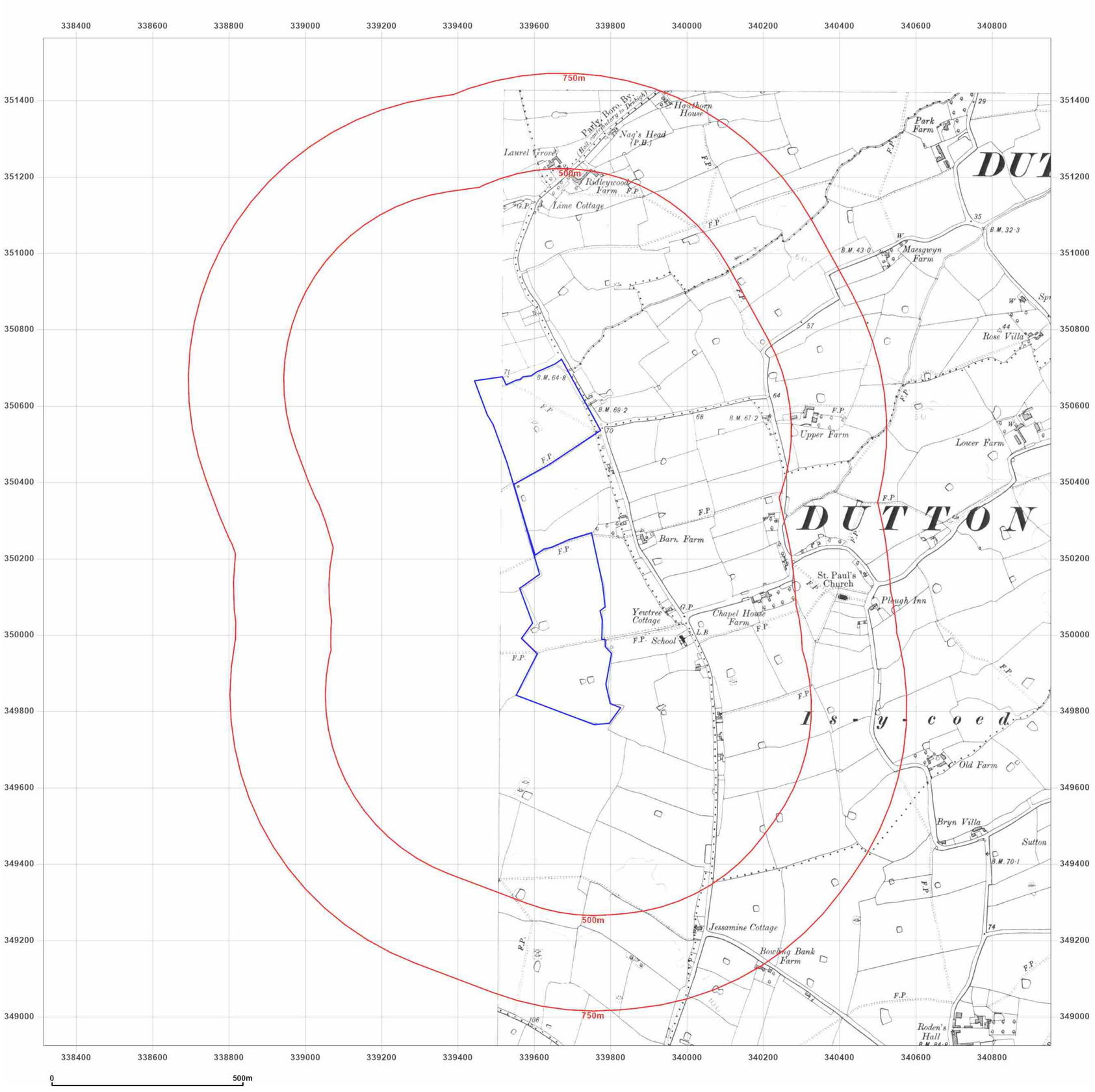
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Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J
Grid Ref: 339633, 350243

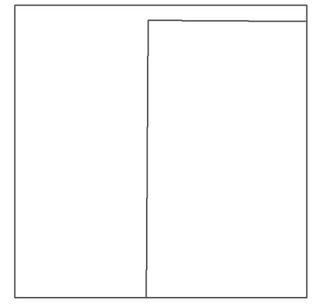
Map Name: County Series

Map date: **1913**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1874
Revised 1913
Edition N/A
Copyright N/A
Levelled N/A

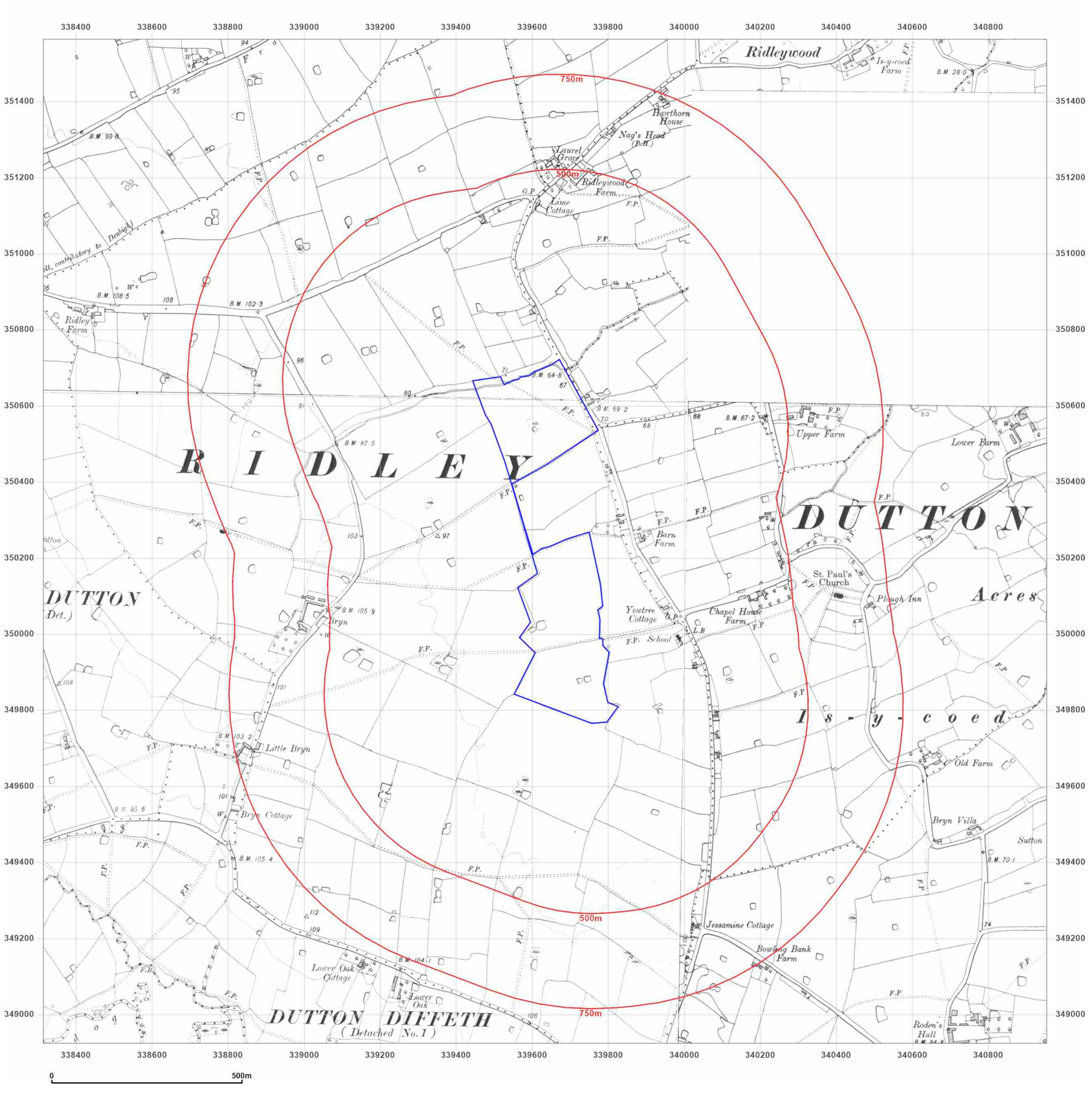
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Ecological Site East of NWS of HO

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Report Ref: GS-6HF-I7K-E2L-49J
Grid Ref: 339633, 350243

Map Name: County Series

Map date: **1909-1914**

Scale: 1:10,560

Printed at: 1:10,560

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Revised 1914
Edition 1914
Copyright N/A
Levelled N/A

Surveyed 1874
Revised 1913
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1872
Revised 1909
Edition N/A
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Surveyed 1872
Revised 1914
Edition N/A
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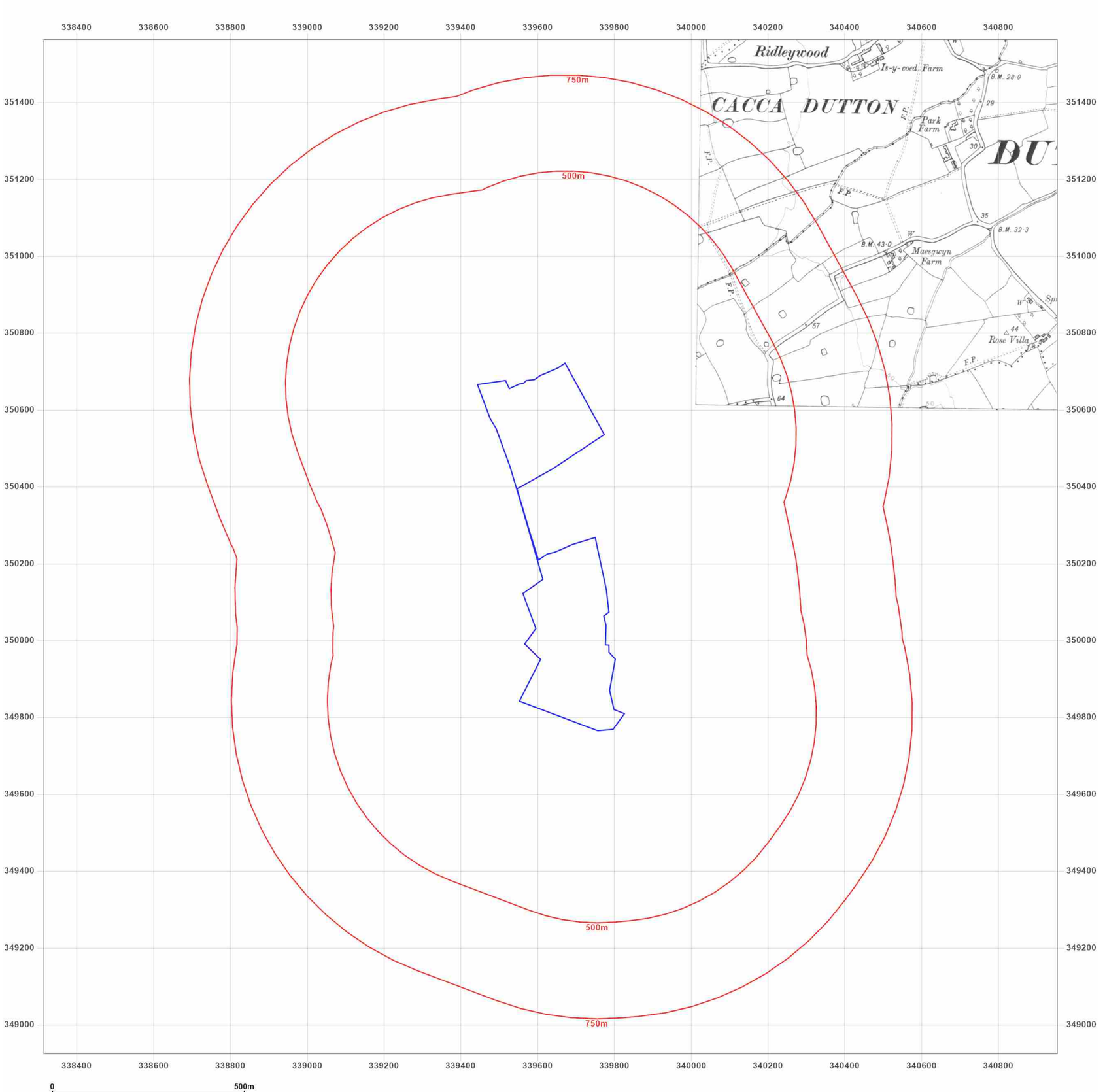
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Report Ref: GS-6HF-I7K-E2L-49J
Grid Ref: 339633, 350243

Map Name: County Series

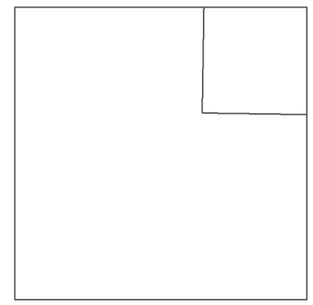
Map date: **1914**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1871
Revised 1914
Edition N/A
Copyright N/A
Levelled N/A



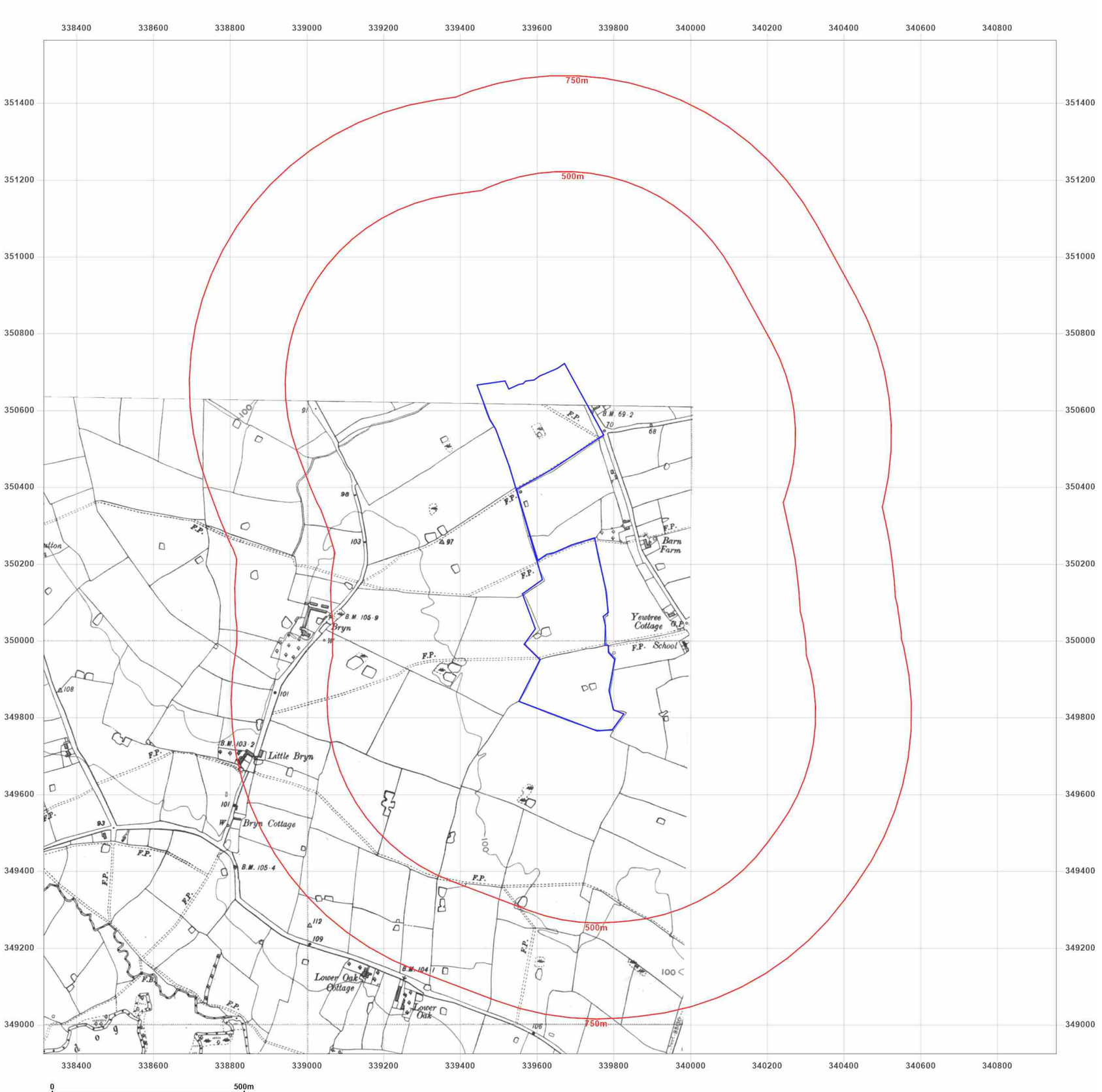
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Report Ref: GS-6HF-I7K-E2L-49J
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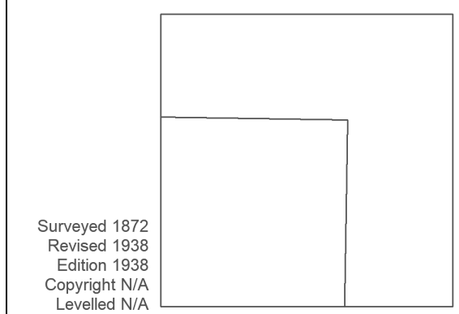
Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1872
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

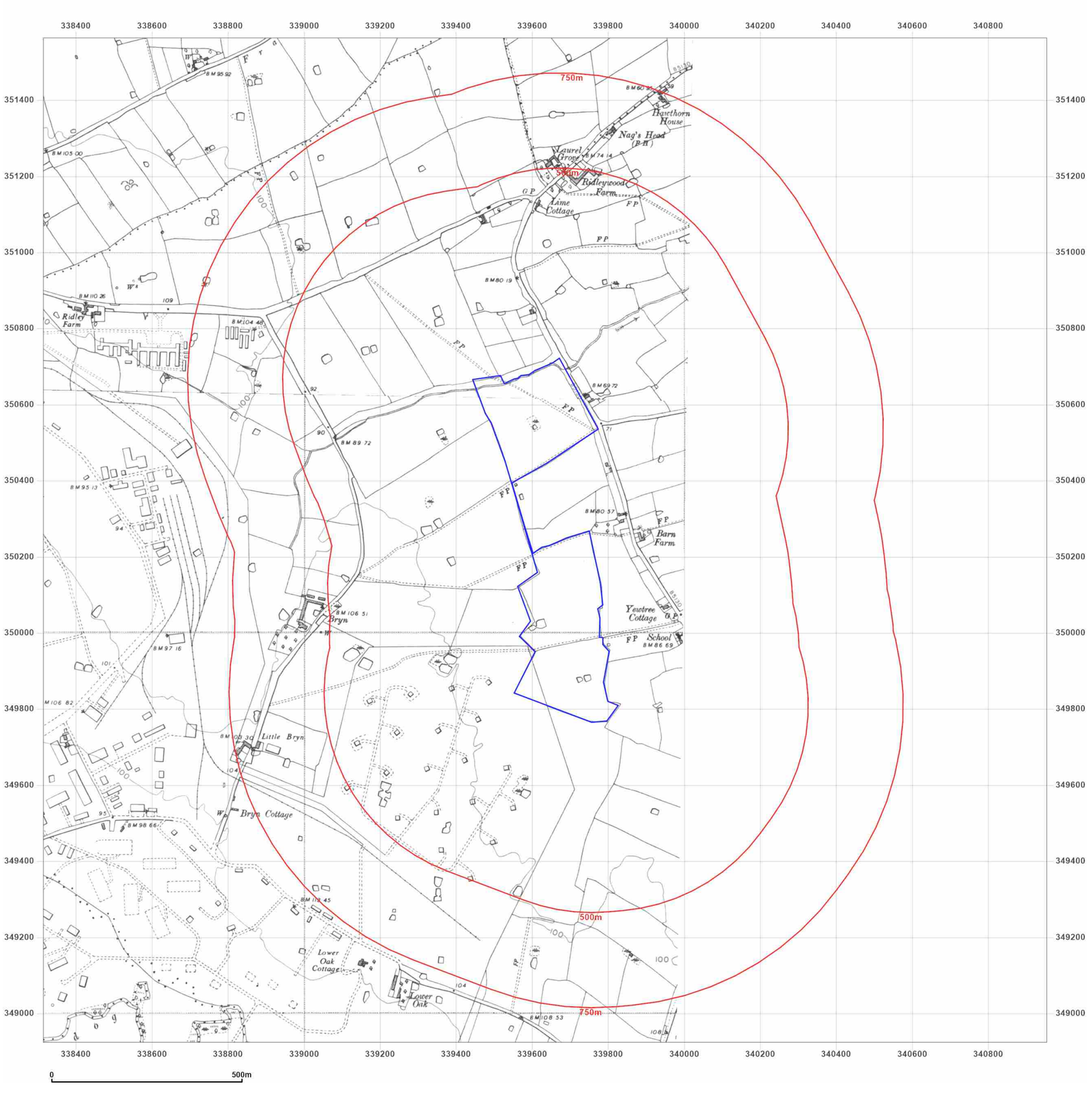
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Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J
Grid Ref: 339633, 350243

Map Name: County Series

Map date: **1949**

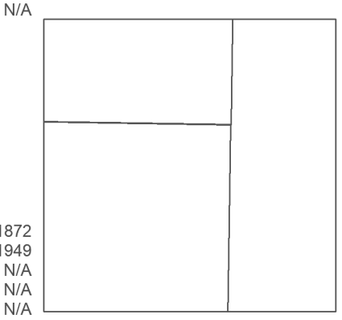
Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1871
Revised 1949
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1872
Revised 1949
Edition N/A
Copyright N/A
Levelled N/A



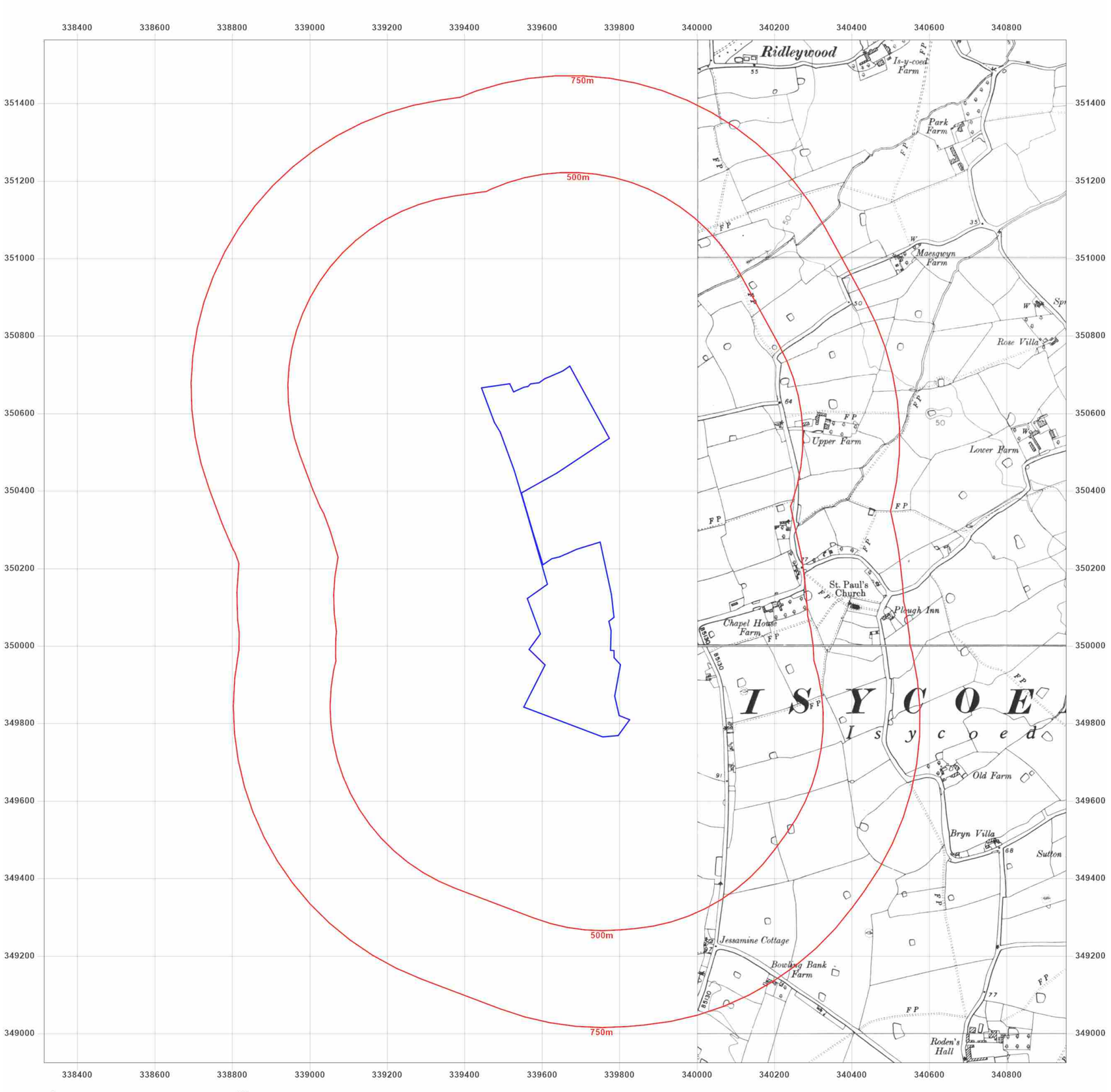
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Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J
Grid Ref: 339633, 350243

Map Name: Provisional

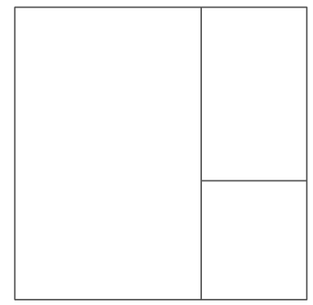
Map date: **1949**

Scale: 1:10,560

Printed at: 1:10,560

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Revised 1949
Edition N/A
Copyright N/A
Levelled N/A



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

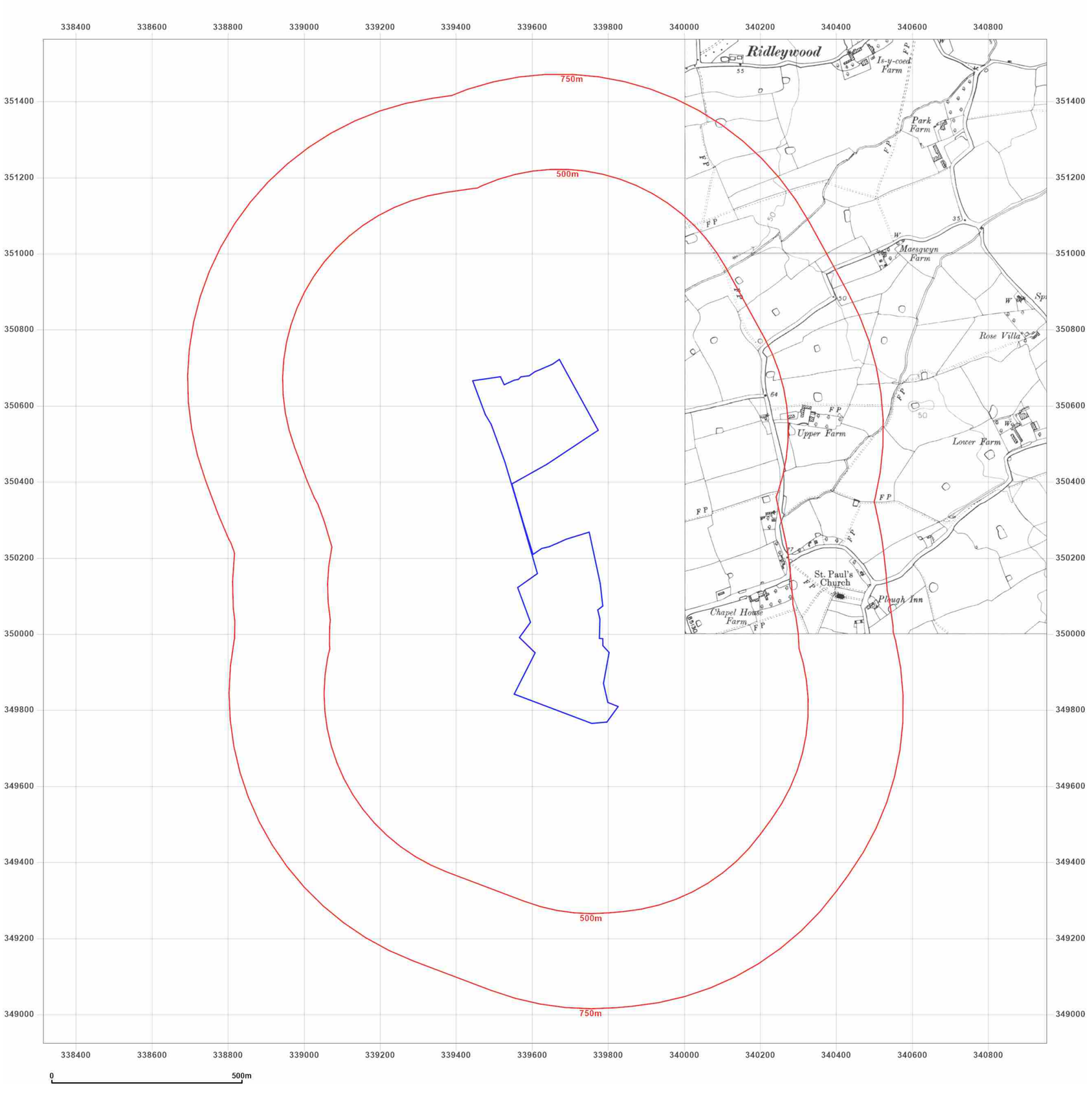
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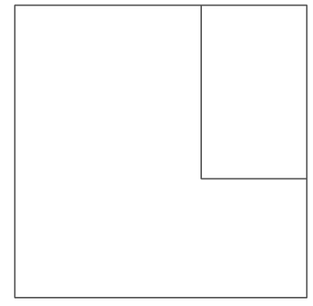
Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J
Grid Ref: 339633, 350243

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

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



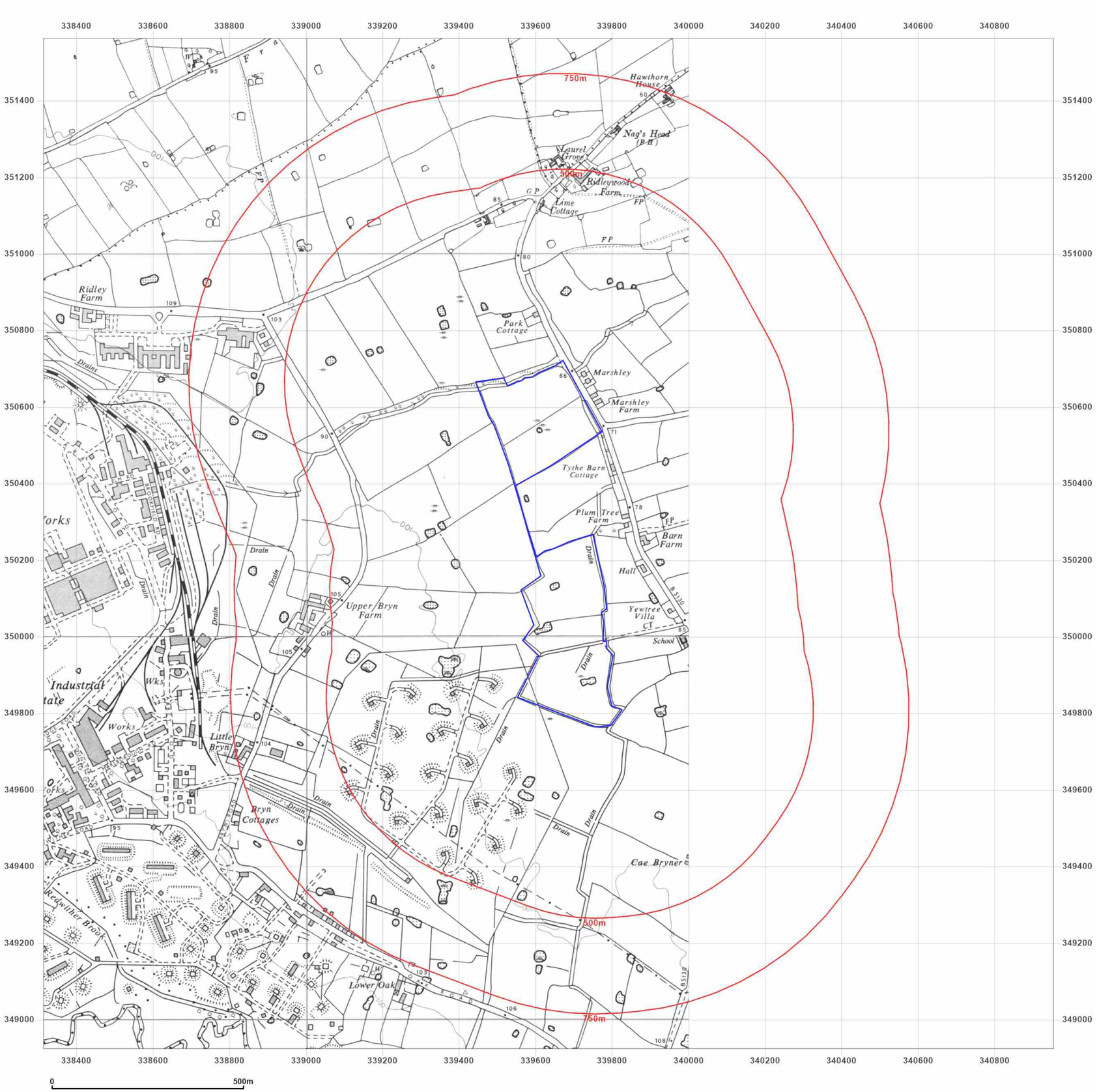
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Site Details:

Ecological Site East of NWS of HO

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Report Ref: GS-6HF-I7K-E2L-49J
Grid Ref: 339633, 350243

Map Name: Provisional
Map date: **1960-1964**
Scale: 1:10,560
Printed at: 1:10,560

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Surveyed 1874
Revised 1960
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1964
Revised 1964
Edition N/A
Copyright N/A
Levelled N/A

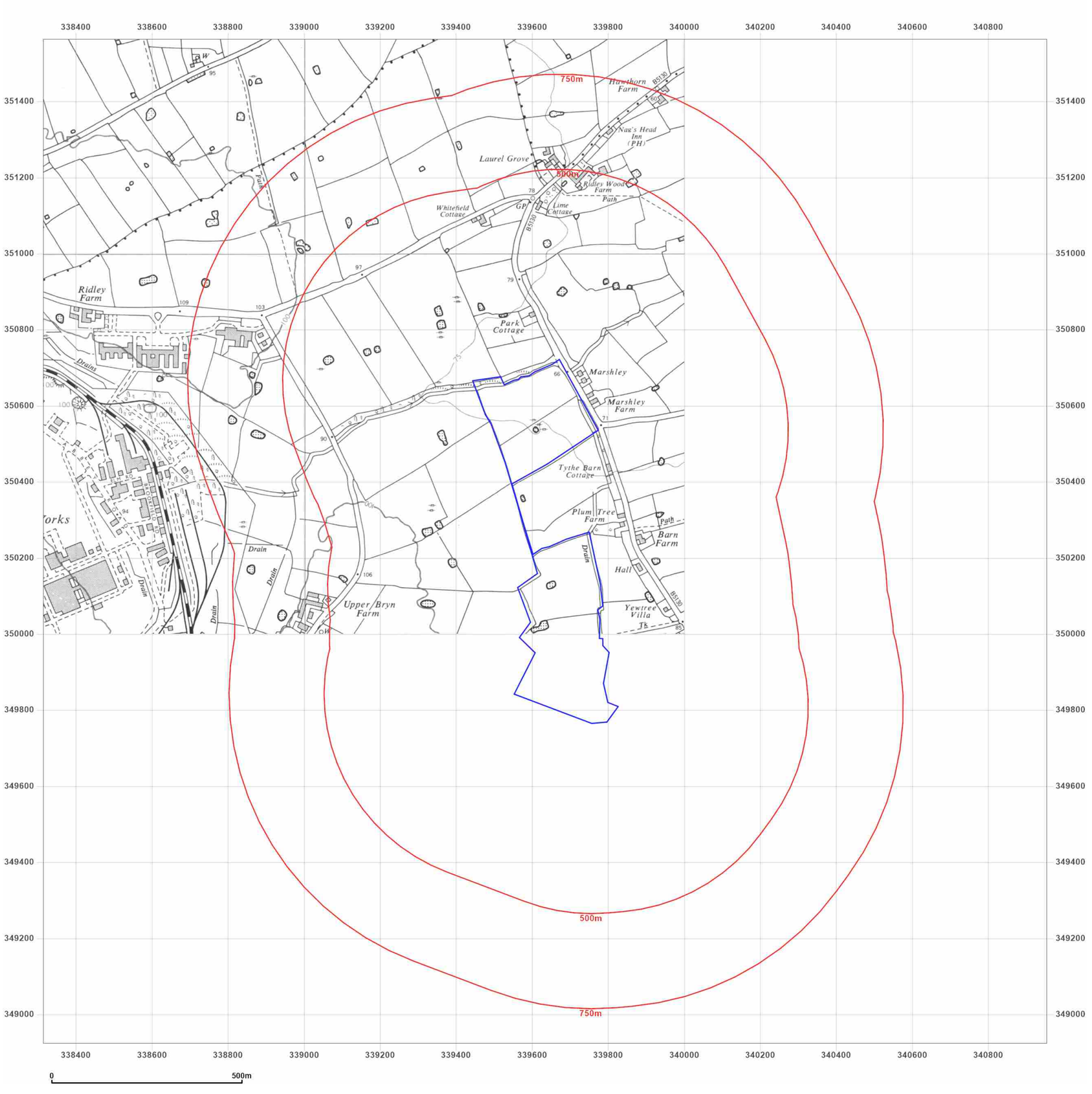
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Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J
Grid Ref: 339633, 350243

Map Name: Provisional

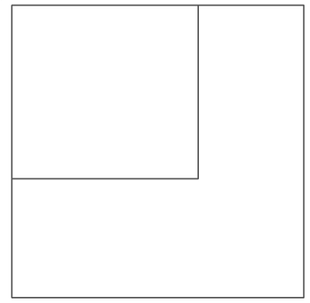
Map date: **1968**

Scale: 1:10,560

Printed at: 1:10,560

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



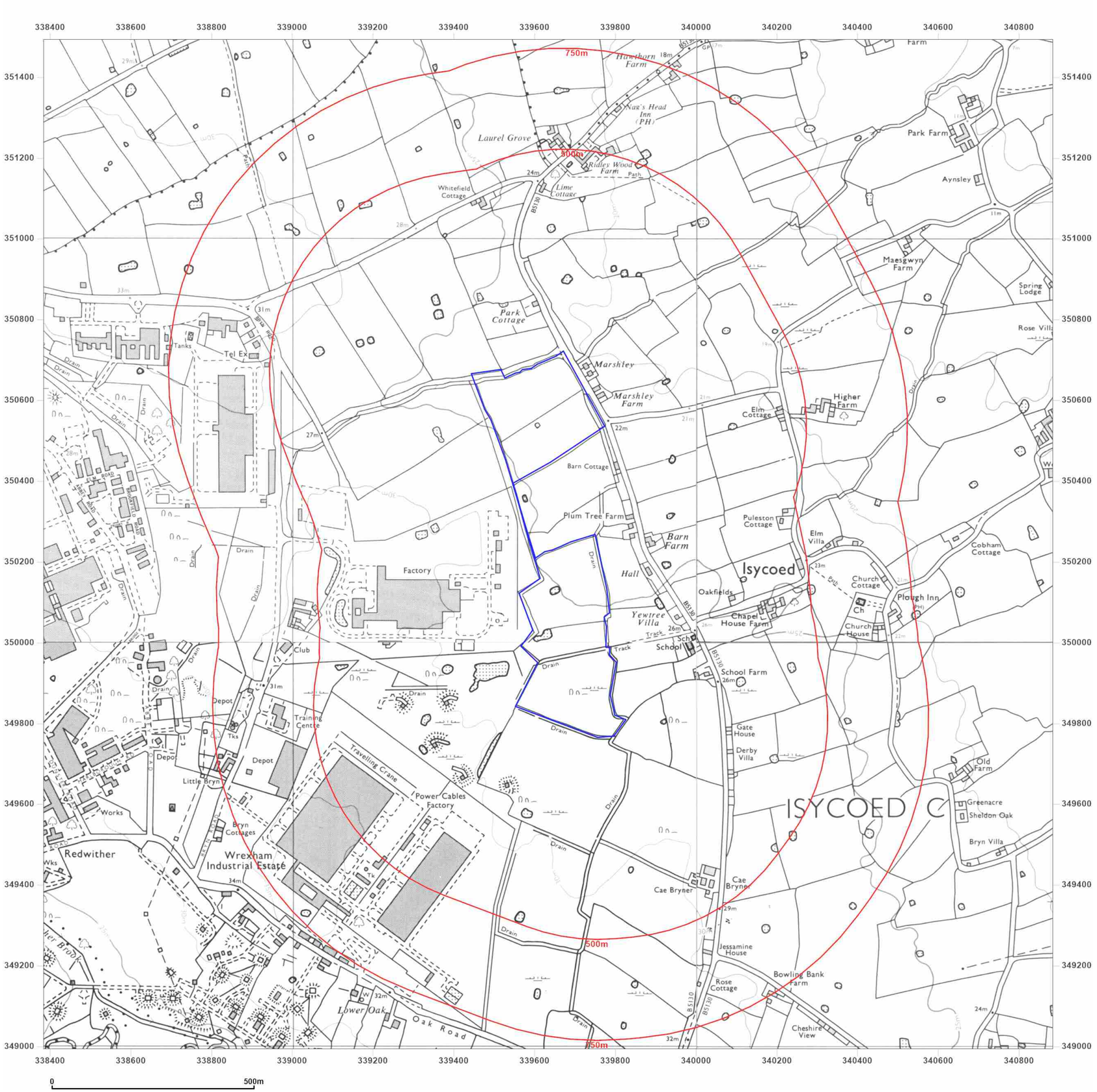
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Site Details:

Ecological Site East of NWS of HO

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Report Ref: GS-6HF-I7K-E2L-49J
Grid Ref: 339633, 350243

Map Name: National Grid

Map date: **1976-1982**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1970
Revised 1982
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1970
Revised 1976
Edition N/A
Copyright 1976
Levelled 1973

Surveyed 1975
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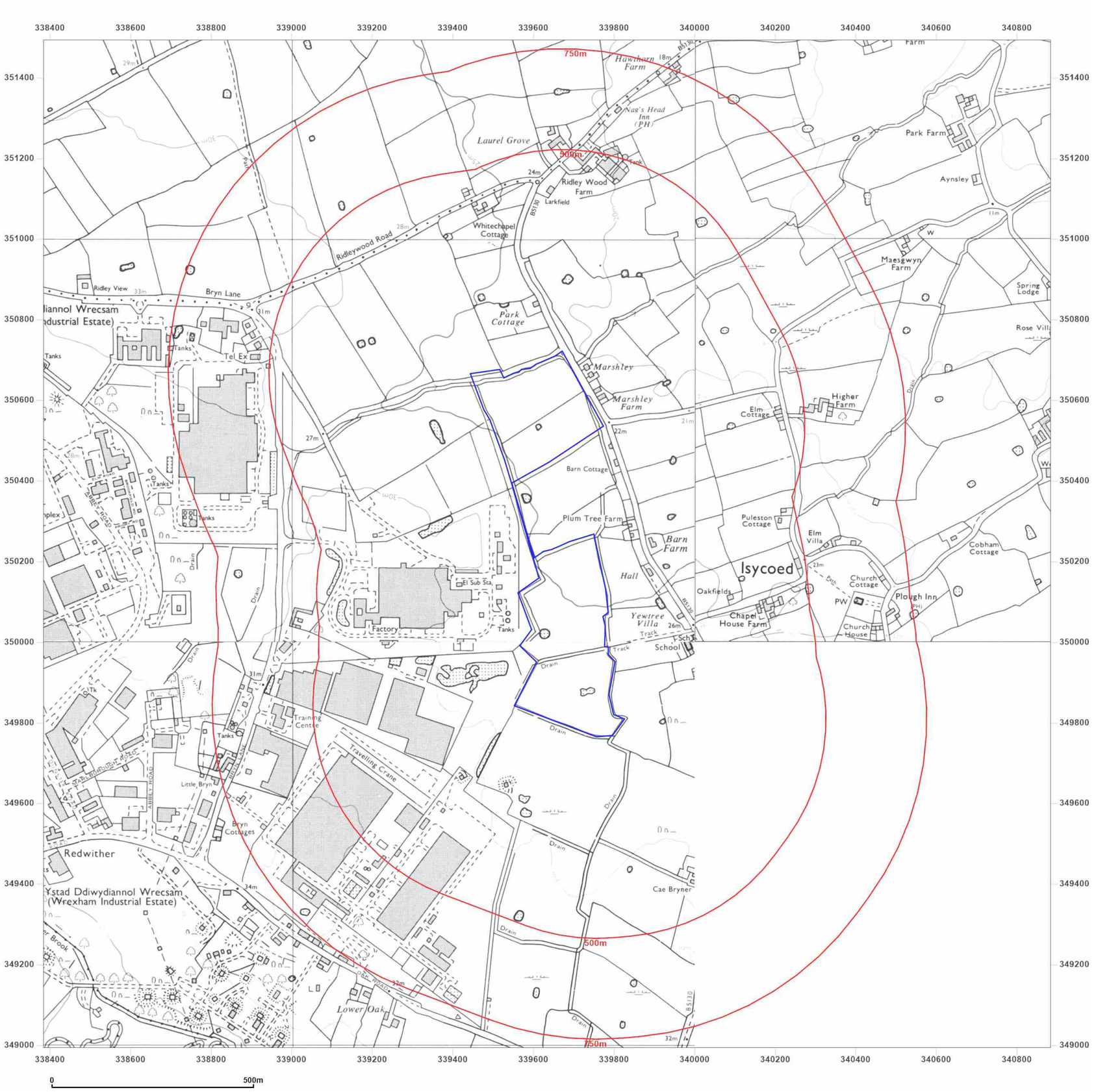
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Groundsure INSIGHTS

Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J
Grid Ref: 339633, 350243

Map Name: National Grid

Map date: **1992**

Scale: 1:10,000

Printed at: 1:10,000

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Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1970
Revised 1992
Edition N/A
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Levelled N/A

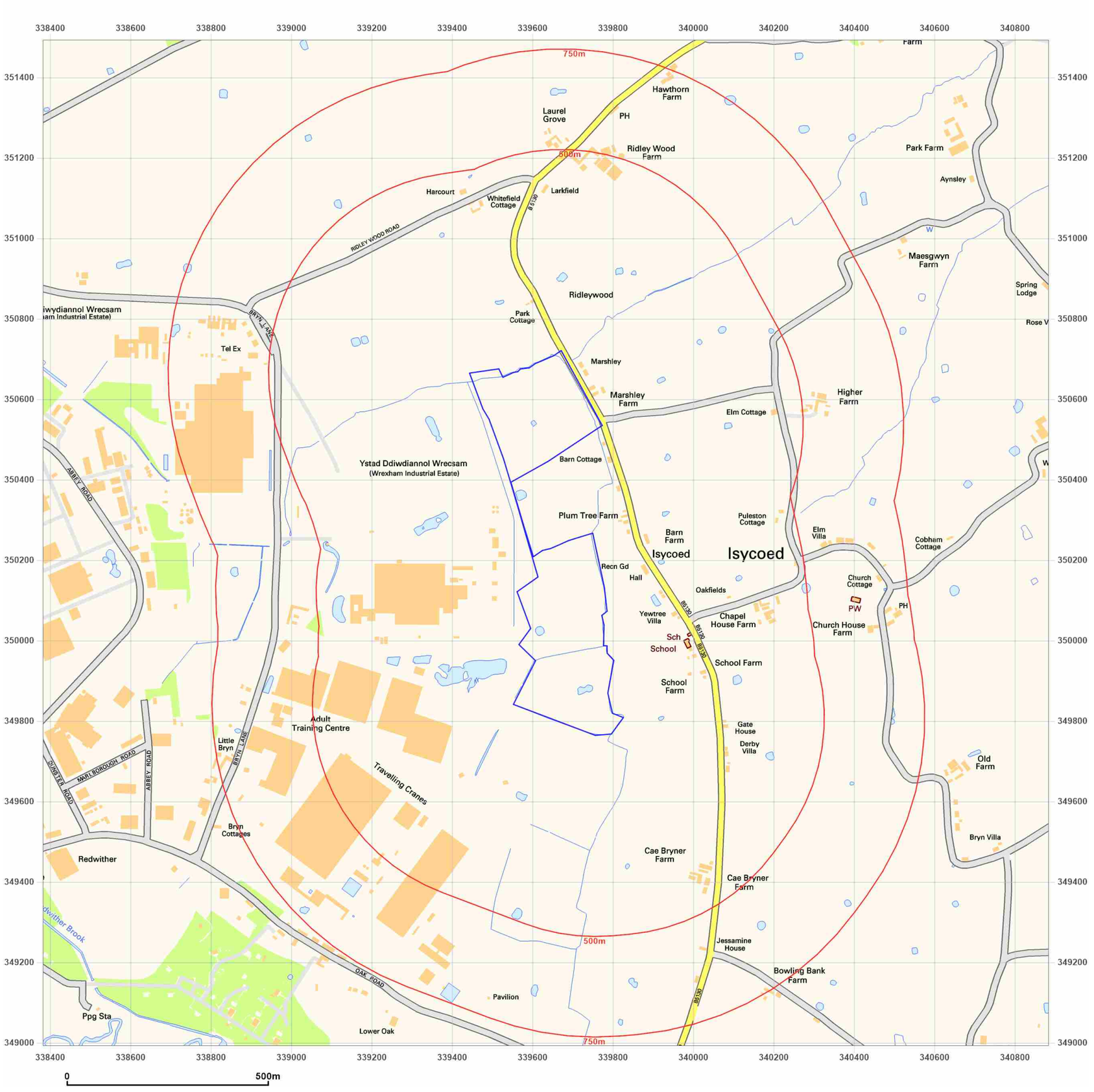
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Groundsure INSIGHTS

Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J
Grid Ref: 339633, 350243

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

N
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2001

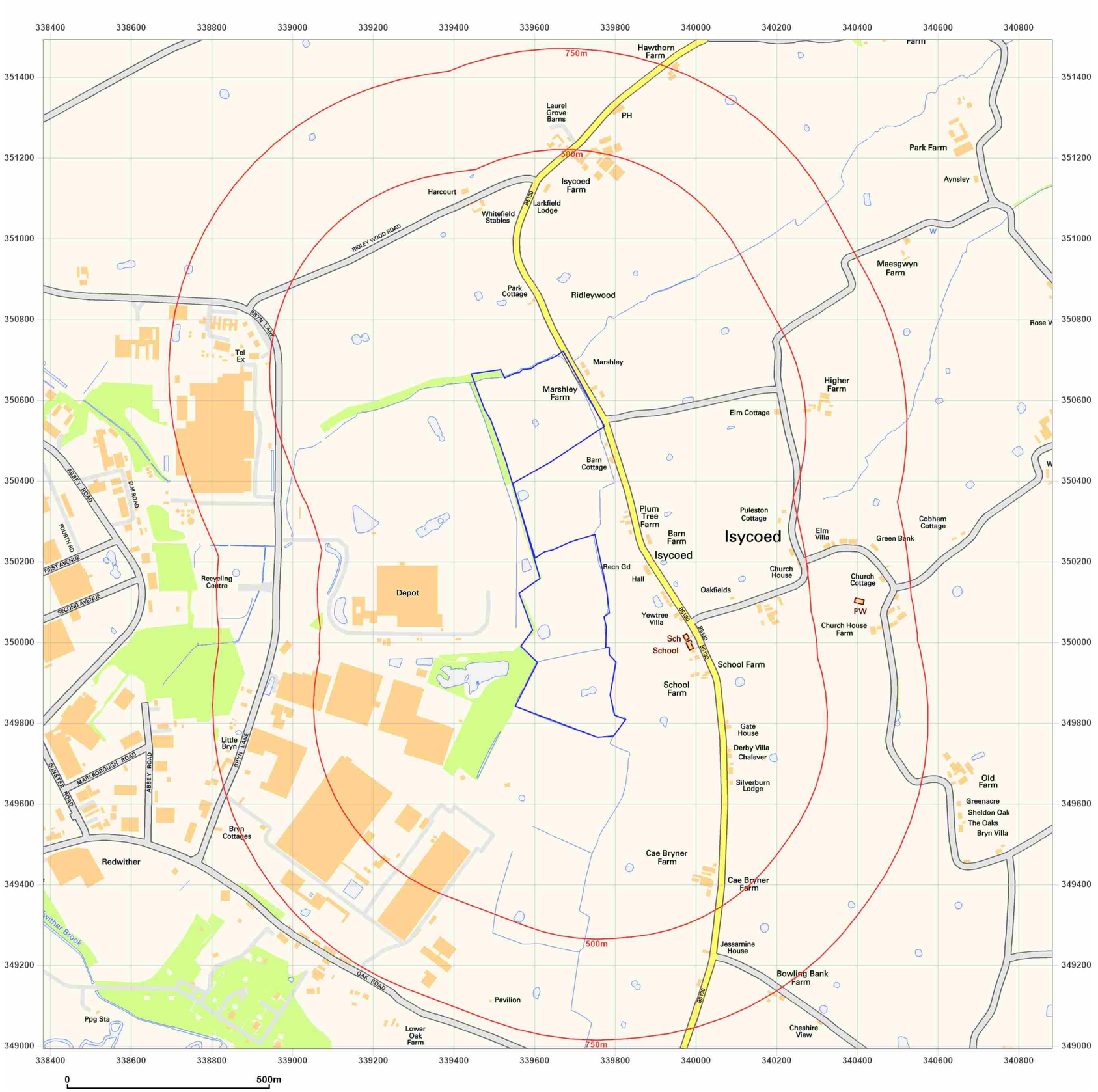
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Groundsure INSIGHTS

Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J
Grid Ref: 339633, 350243

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

N
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2010

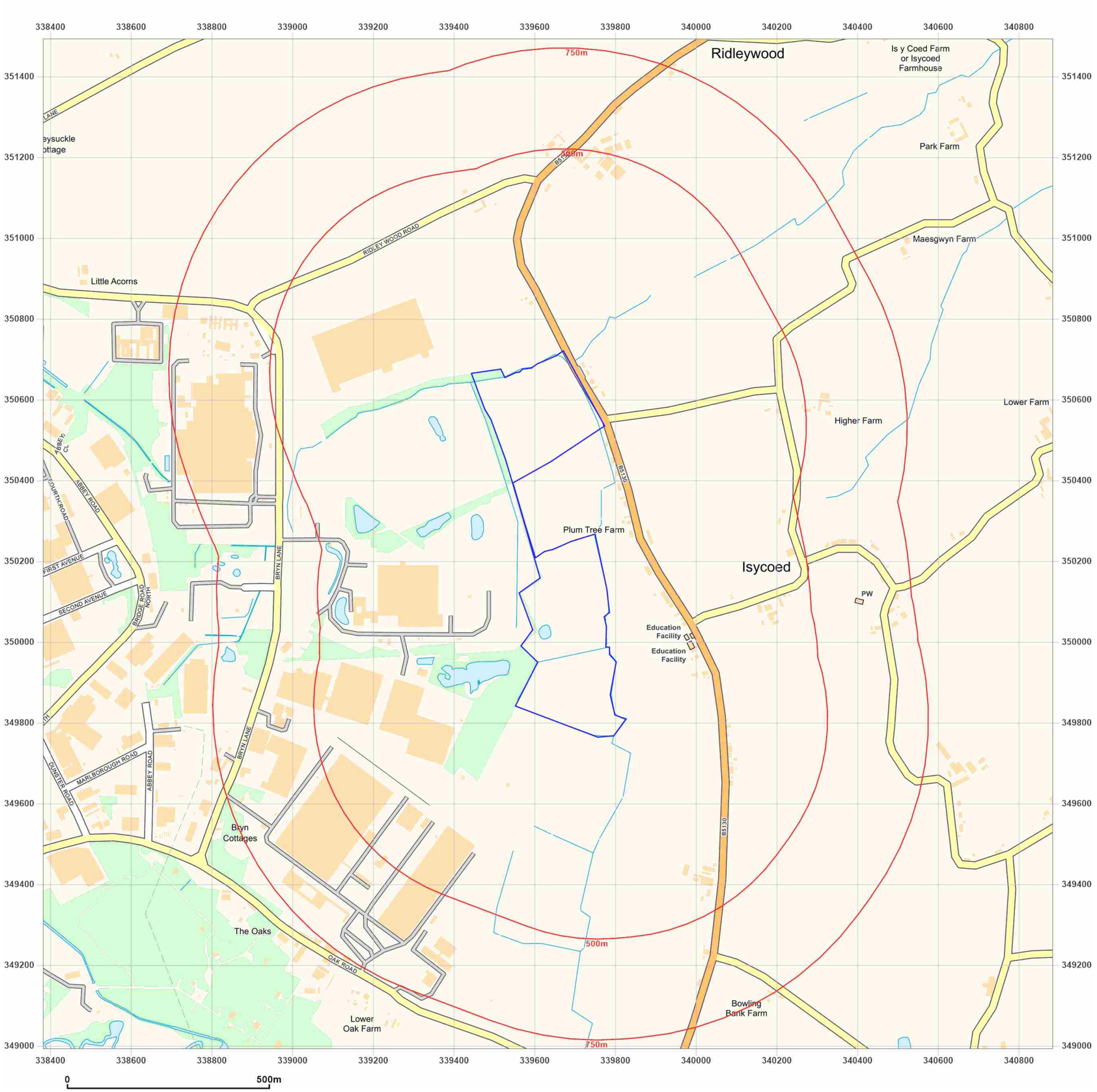
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Groundsure INSIGHTS

Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J
Grid Ref: 339633, 350243

Map Name: National Grid

Map date: **2025**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
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2025

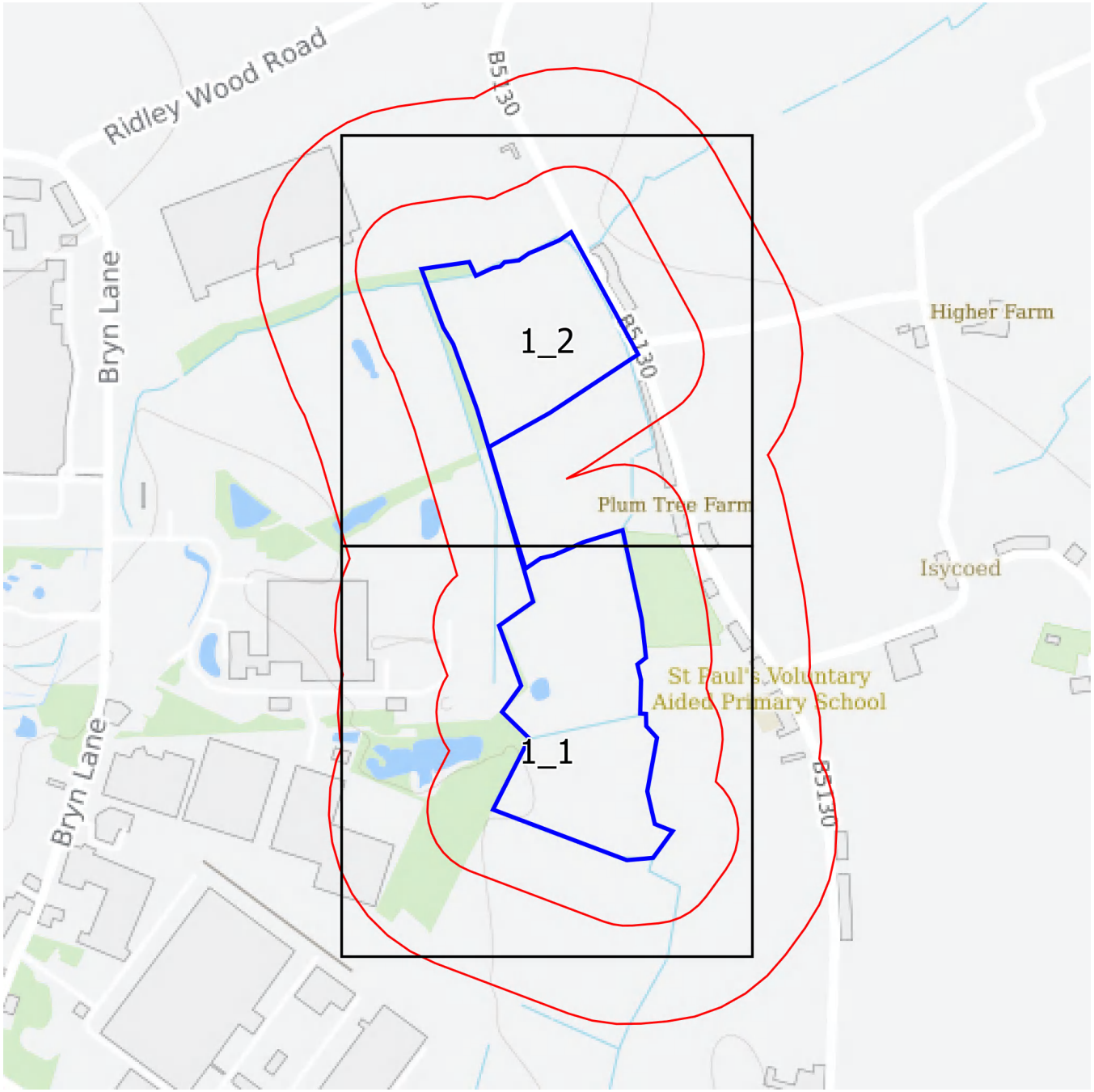
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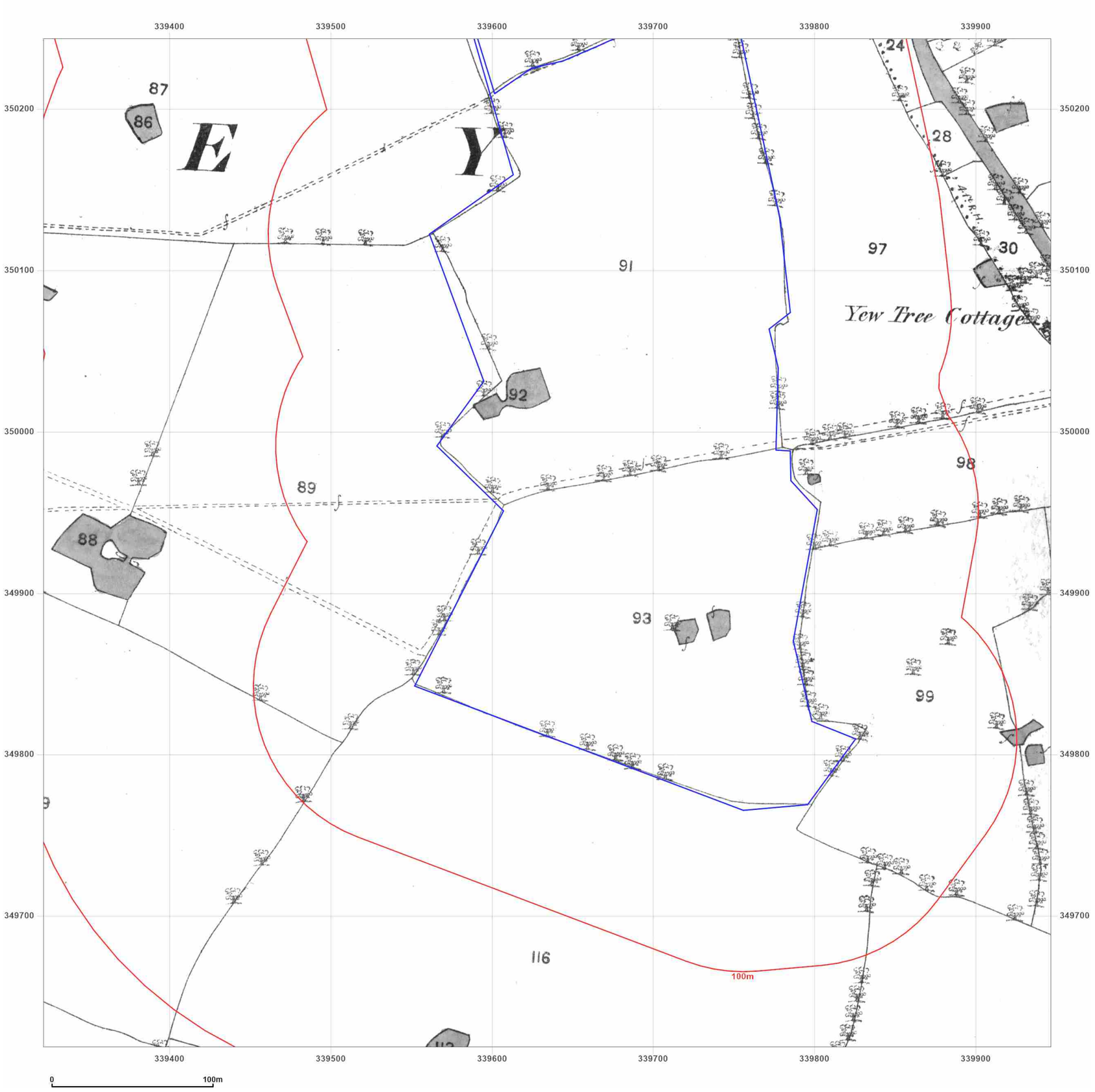
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Groundsure INSIGHTS

1:2,500 Scale Grid Index

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Groundsure INSIGHTS

Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J_LS_1_1
Grid Ref: 339634, 349931

Map Name: County Series

Map date: **1873**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1873
Revised 1873
Edition N/A
Copyright N/A
Levelled N/A

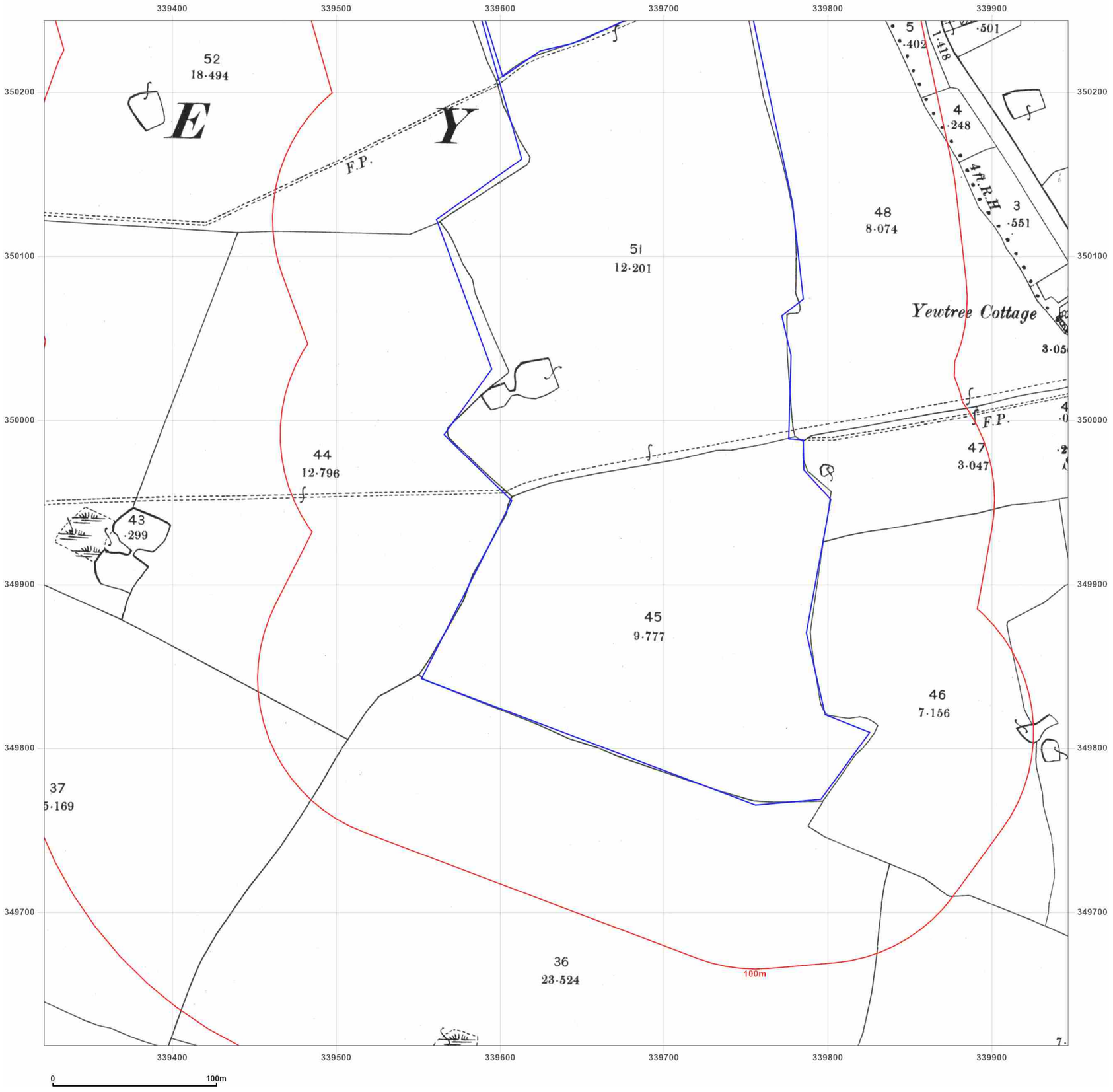
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Groundsure INSIGHTS

Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J_LS_1_1
Grid Ref: 339634, 349931

Map Name: County Series
Map date: **1899**
Scale: 1:2,500
Printed at: 1:2,500

N
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Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A

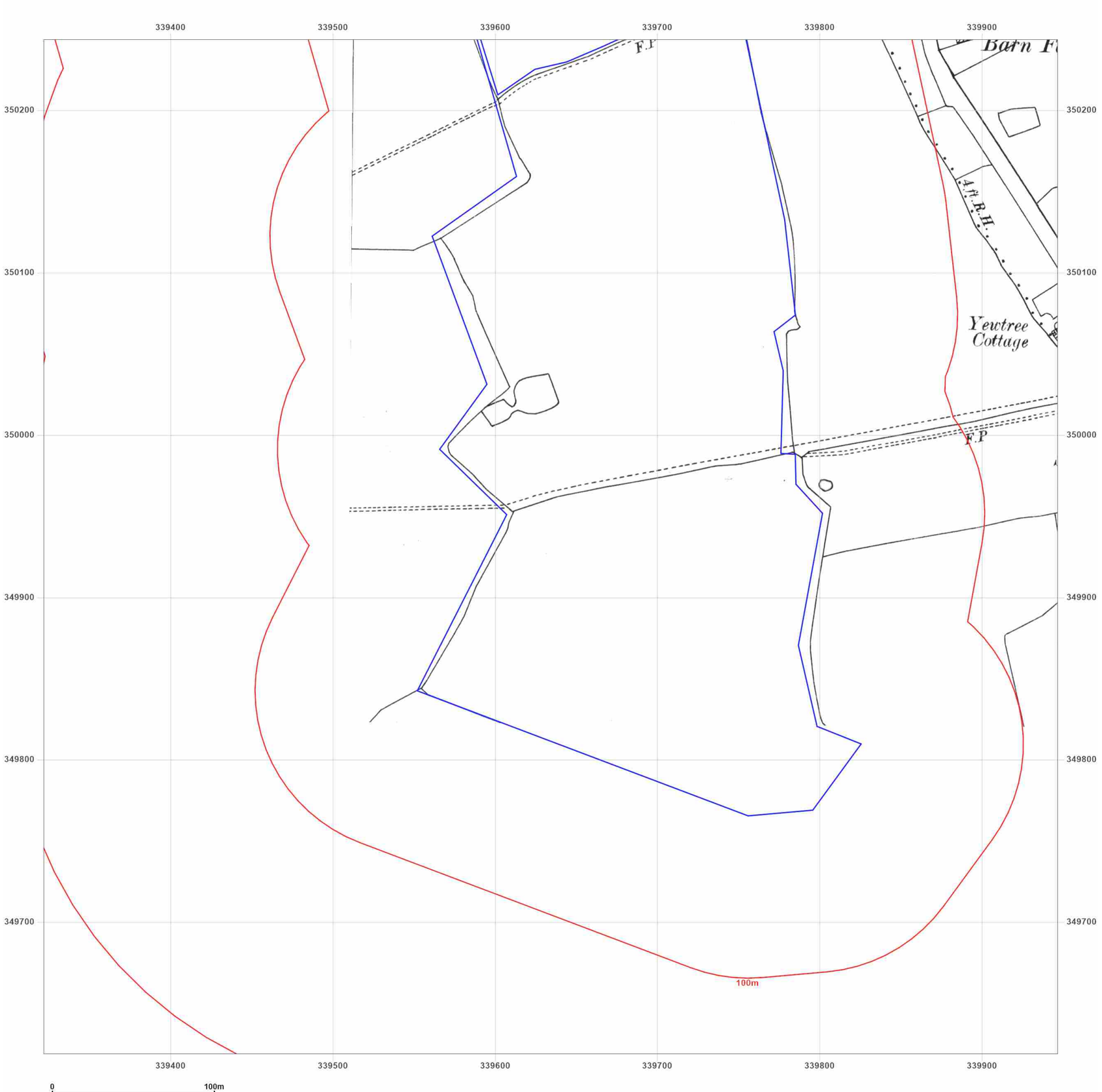
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Groundsure INSIGHTS

Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J_LS_1_1
Grid Ref: 339634, 349931

Map Name: County Series

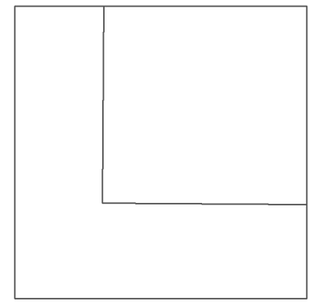
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Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A



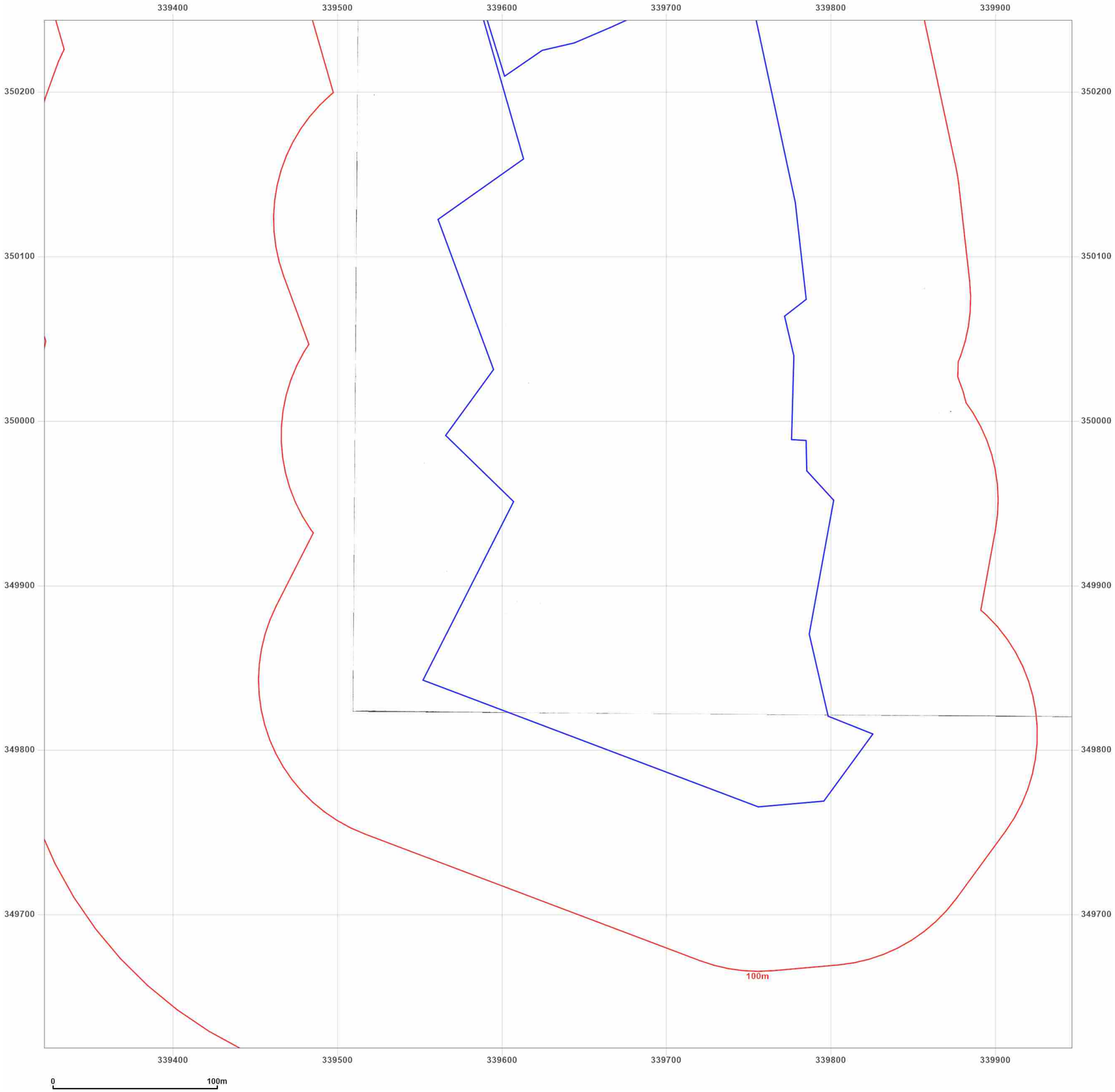
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Groundsure INSIGHTS

Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J_LS_1_1
Grid Ref: 339634, 349931

Map Name: County Series

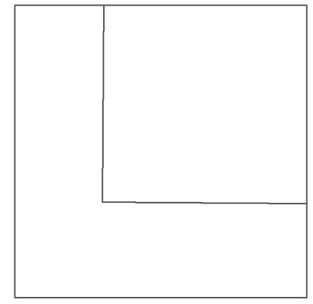
Map date: **1911**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1911
Revised 1911
Edition N/A
Copyright N/A
Levelled N/A



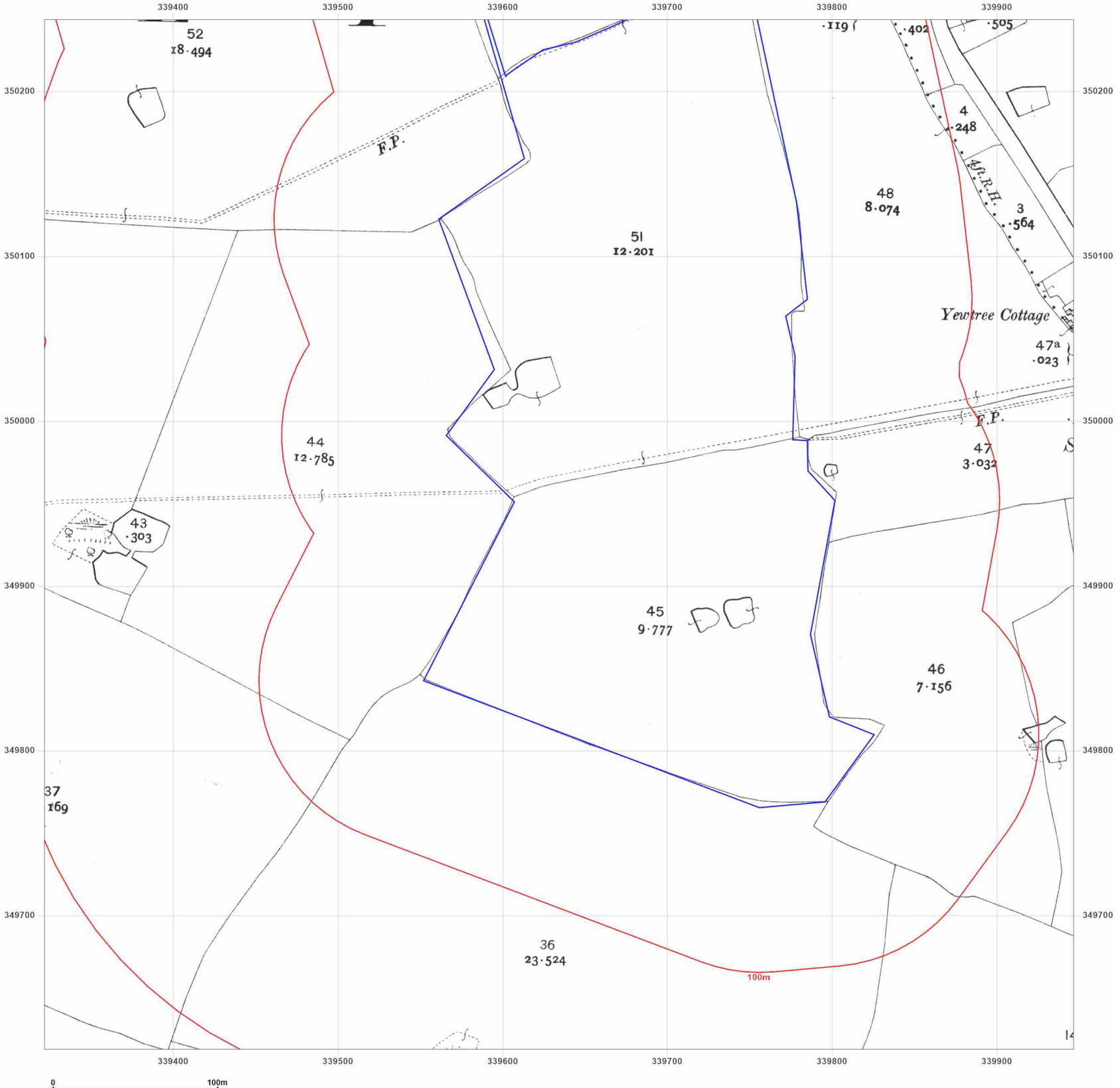
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Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J_LS_1_1
Grid Ref: 339634, 349931

Map Name: County Series
Map date: **1912**
Scale: 1:2,500
Printed at: 1:2,500

N
W E
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Surveyed 1912
Revised 1912
Edition N/A
Copyright N/A
Levelled N/A

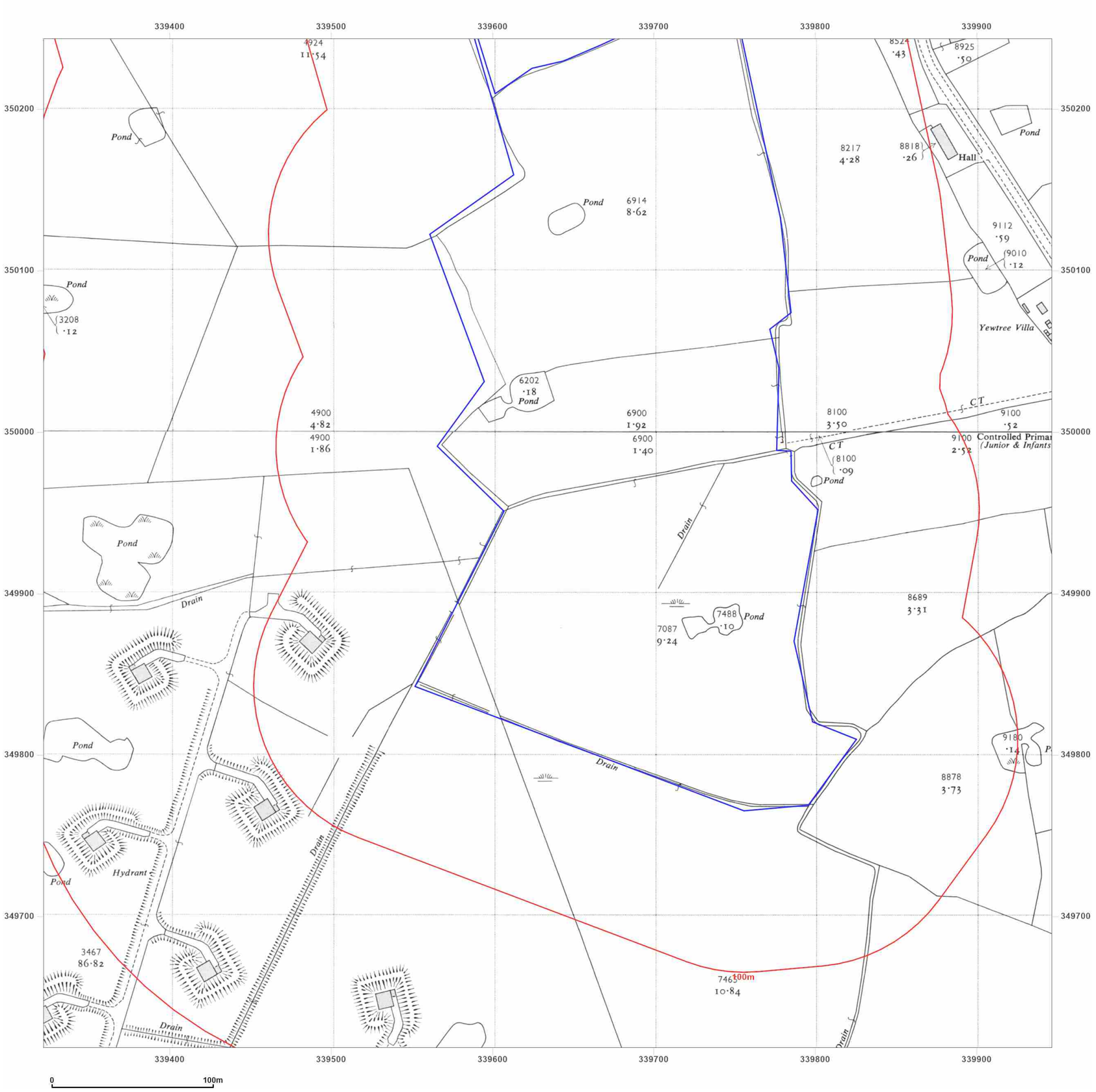
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Groundsure INSIGHTS

Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J_LS_1_1
Grid Ref: 339634, 349931

Map Name: National Grid

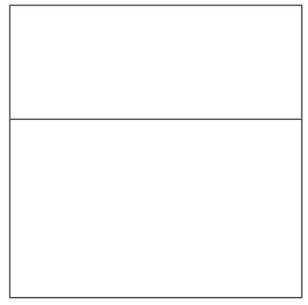
Map date: **1961**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1960
Revised 1960
Edition N/A
Copyright 1961
Levelled 1950



Surveyed 1959
Revised 1959
Edition N/A
Copyright 1961
Levelled 1950

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Groundsure INSIGHTS

Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J_LS_1_1
Grid Ref: 339634, 349931

Map Name: National Grid

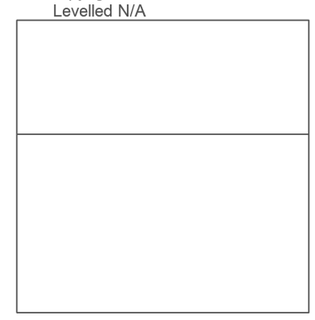
Map date: **1961**

Scale: 1:2,500

Printed at: 1:2,500

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



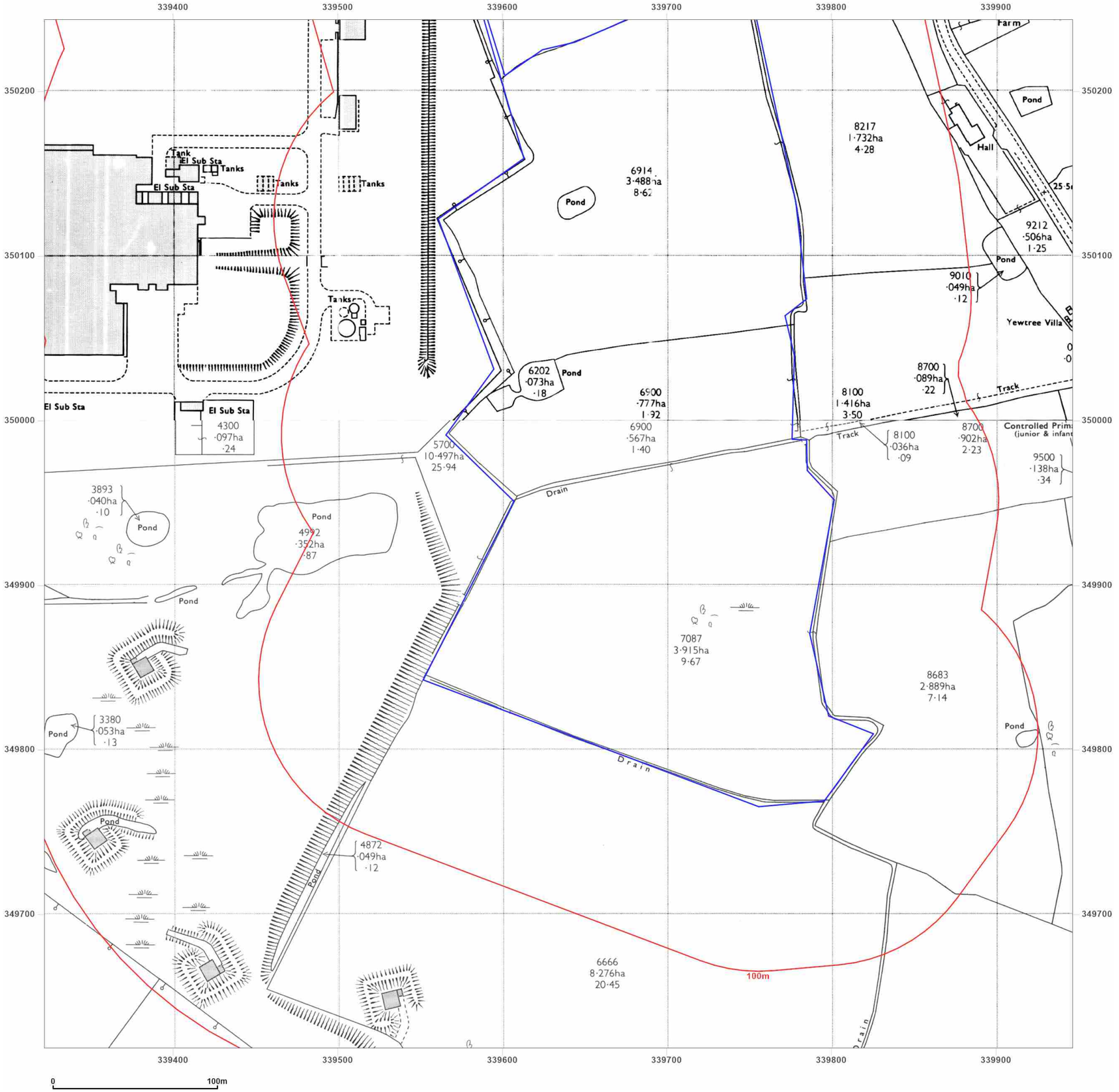
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Groundsure INSIGHTS

Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J_LS_1_1
Grid Ref: 339634, 349931

Map Name: National Grid

Map date: **1972-1974**

Scale: 1:2,500

Printed at: 1:2,500

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

Surveyed 1971
Revised 1971
Edition N/A
Copyright 1972
Levelled 1959

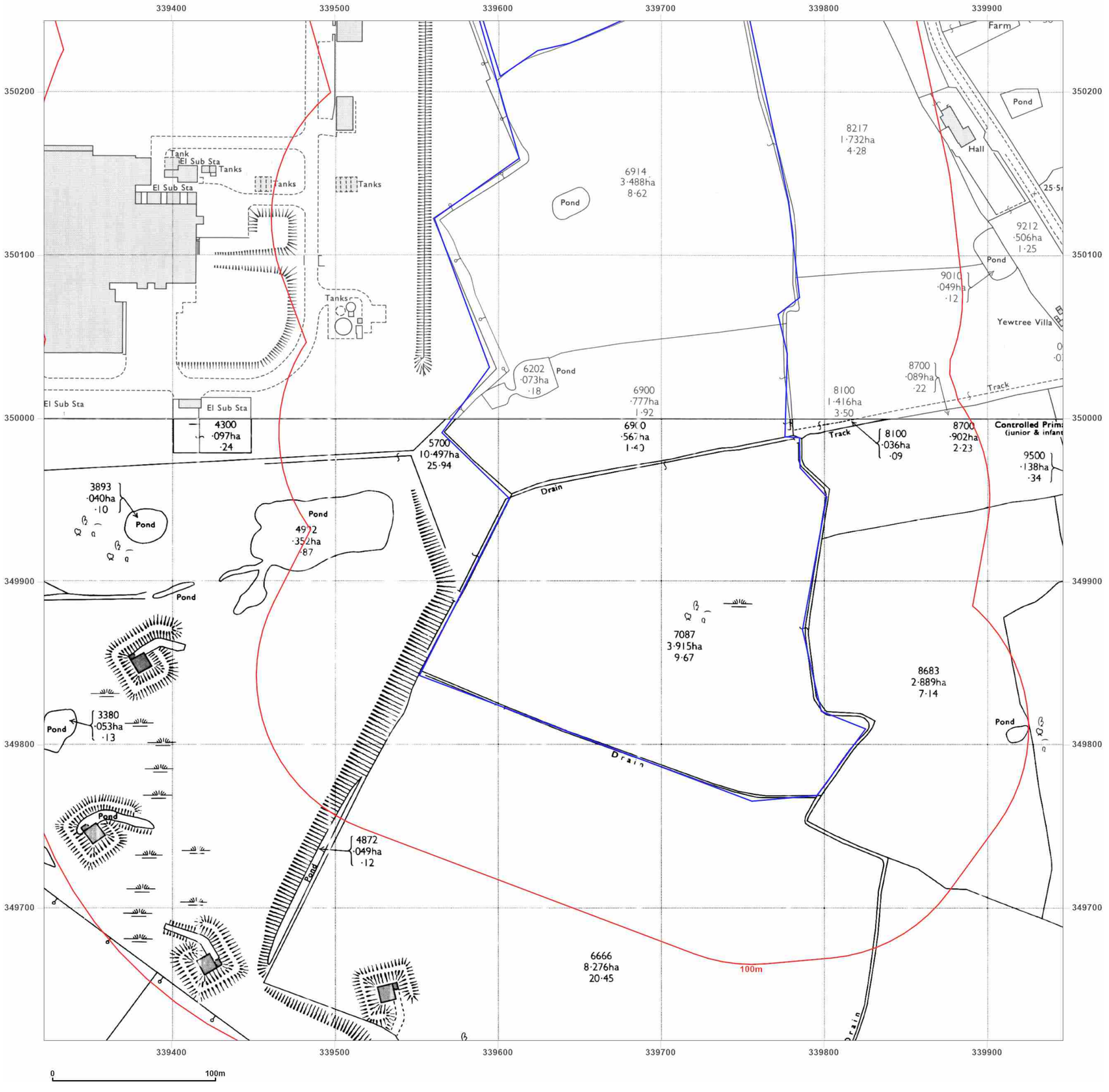
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Groundsure INSIGHTS

Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J_LS_1_1
Grid Ref: 339634, 349931

Map Name: National Grid

Map date: **1972-1974**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1974
Revised 1974
Edition N/A
Copyright 1974
Levelled 1959

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

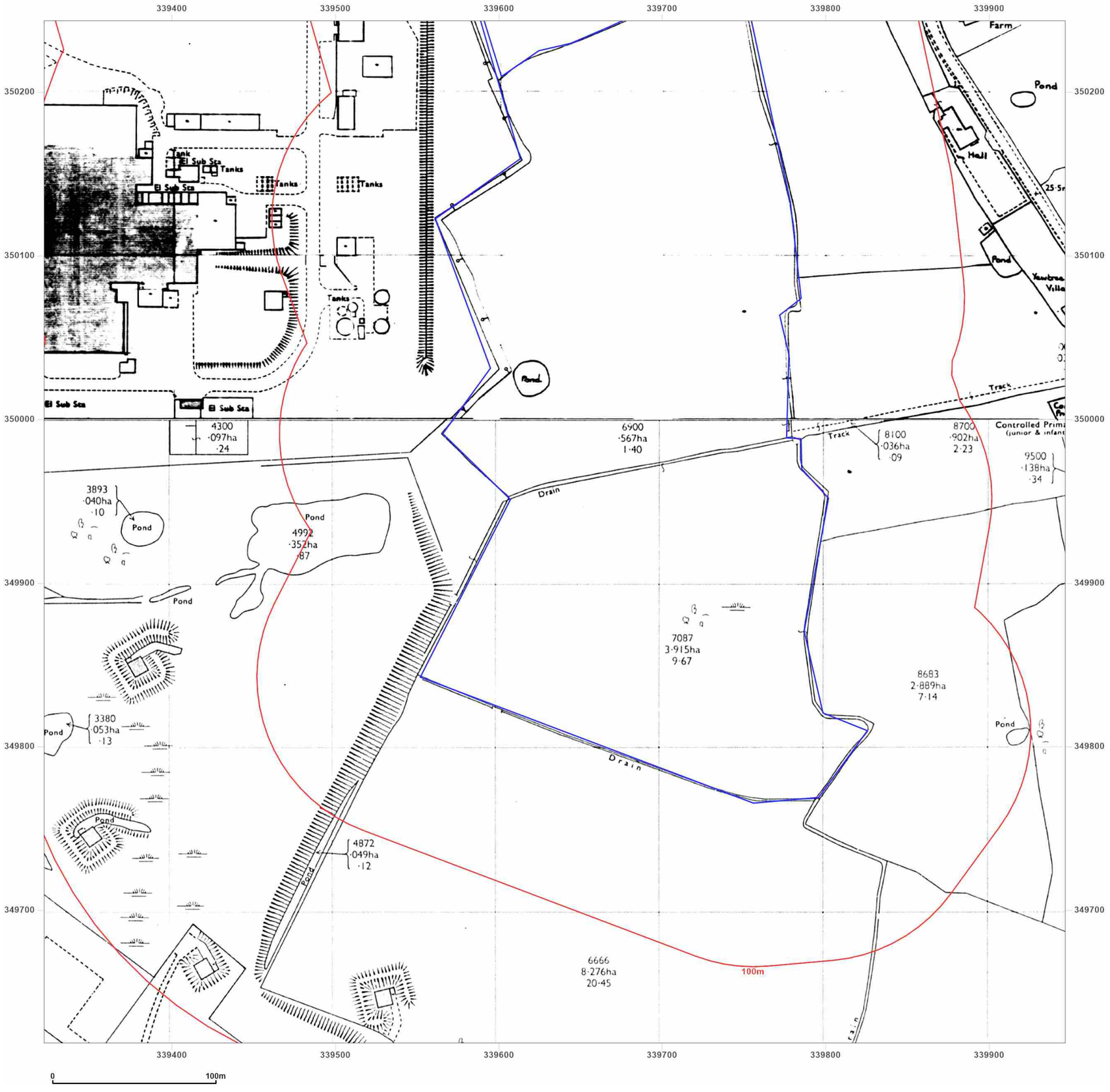
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Groundsure INSIGHTS

Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J_LS_1_1
Grid Ref: 339634, 349931

Map Name: National Grid

Map date: **1986-1990**

Scale: 1:2,500

Printed at: 1:2,500

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

Surveyed 1959
Revised 1986
Edition N/A
Copyright 1986
Levelled 1959

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Groundsure INSIGHTS

Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J_LS_1_1
Grid Ref: 339634, 349931

Map Name: National Grid

Map date: **1990**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1959
Revised 1990
Edition N/A
Copyright 1990
Levelled 1959

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1990
Levelled 1959

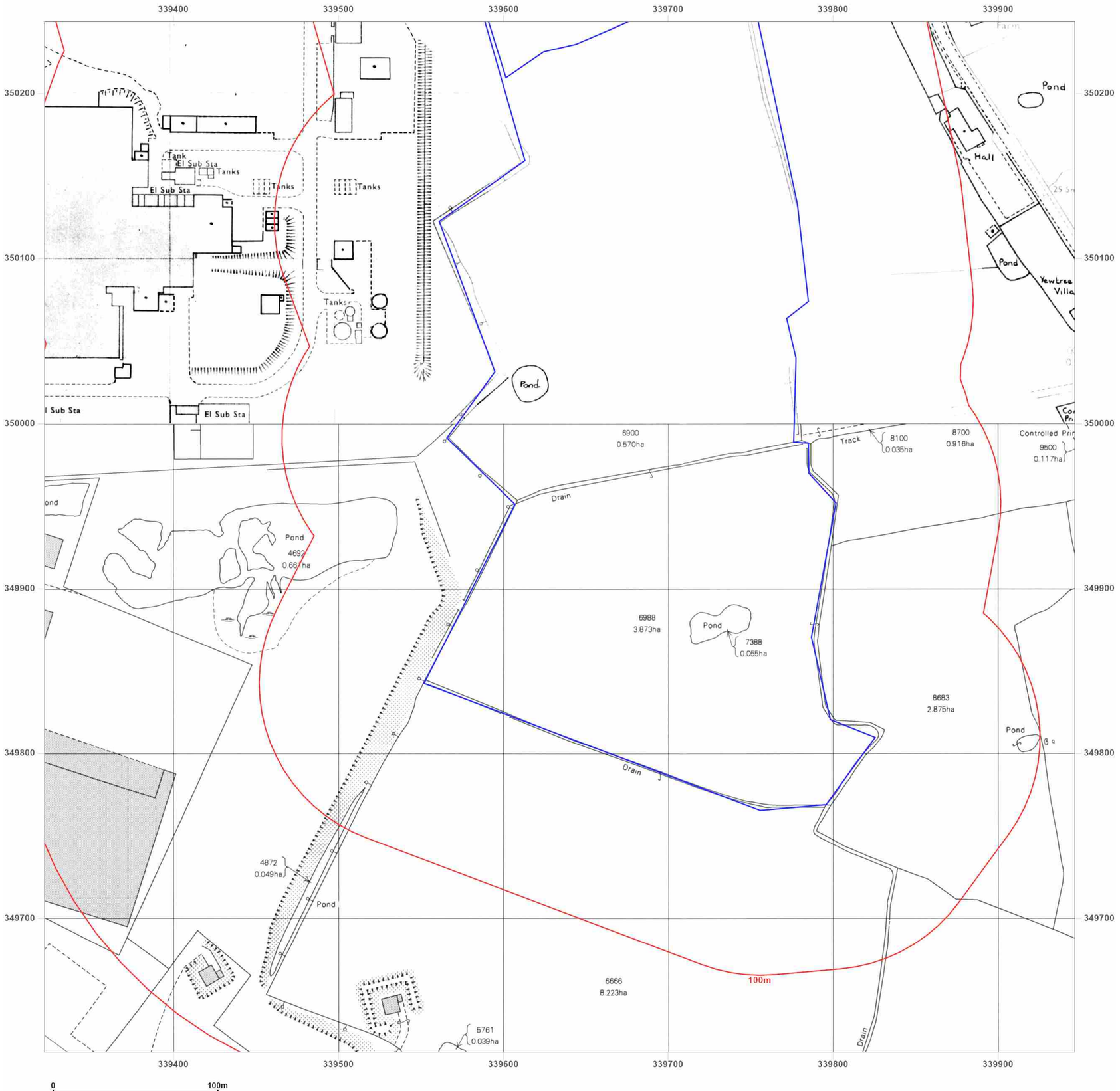
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Groundsure INSIGHTS

Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J_LS_1_1
Grid Ref: 339634, 349931

Map Name: National Grid

Map date: **1990-1991**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1990
Levelled 1959

Surveyed 1991
Revised 1991
Edition N/A
Copyright 1991
Levelled N/A

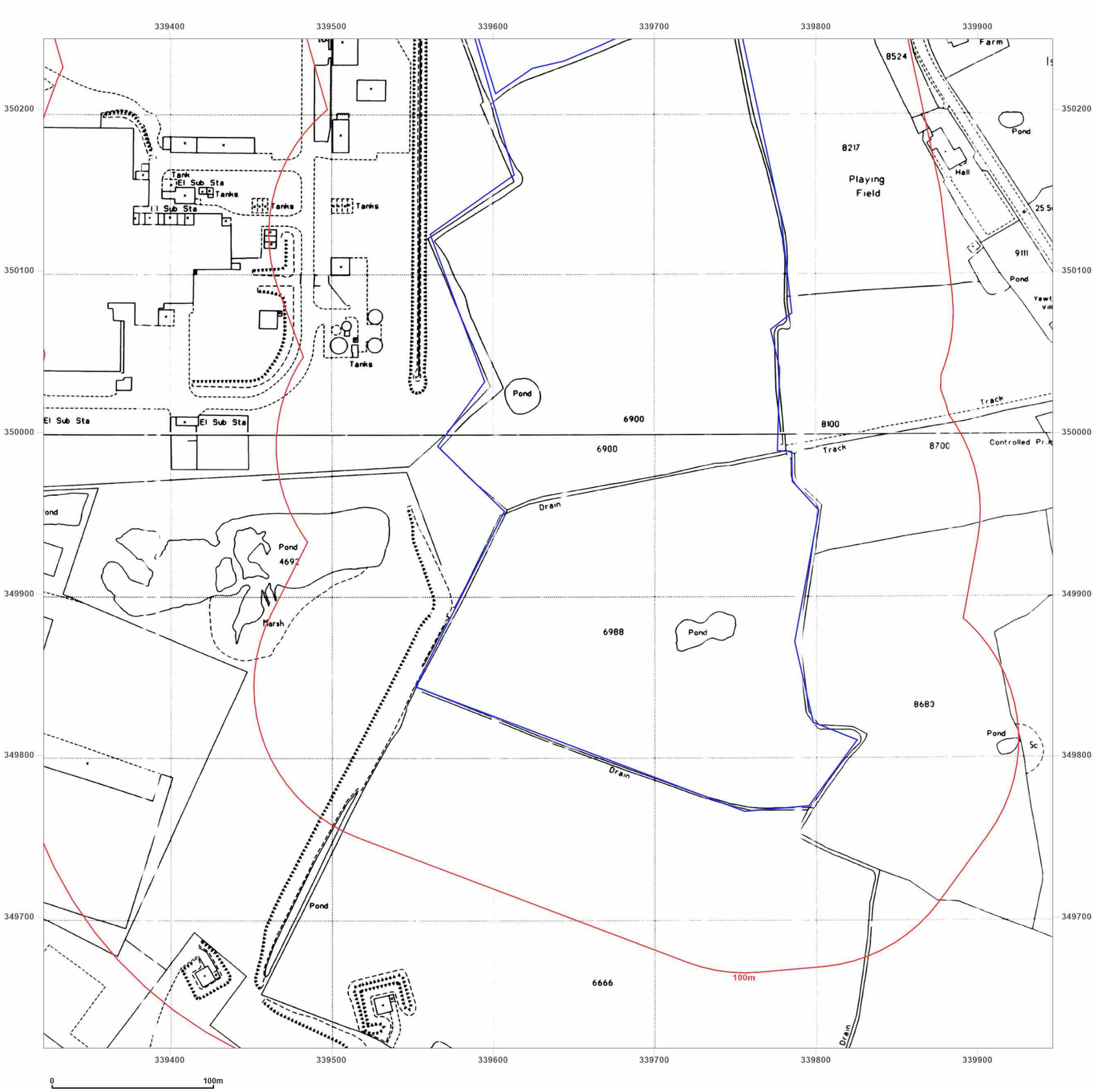
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Groundsure INSIGHTS

Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J_LS_1_1
Grid Ref: 339634, 349931

Map Name: National Grid

Map date: **1992**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1992
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1992
Levelled N/A

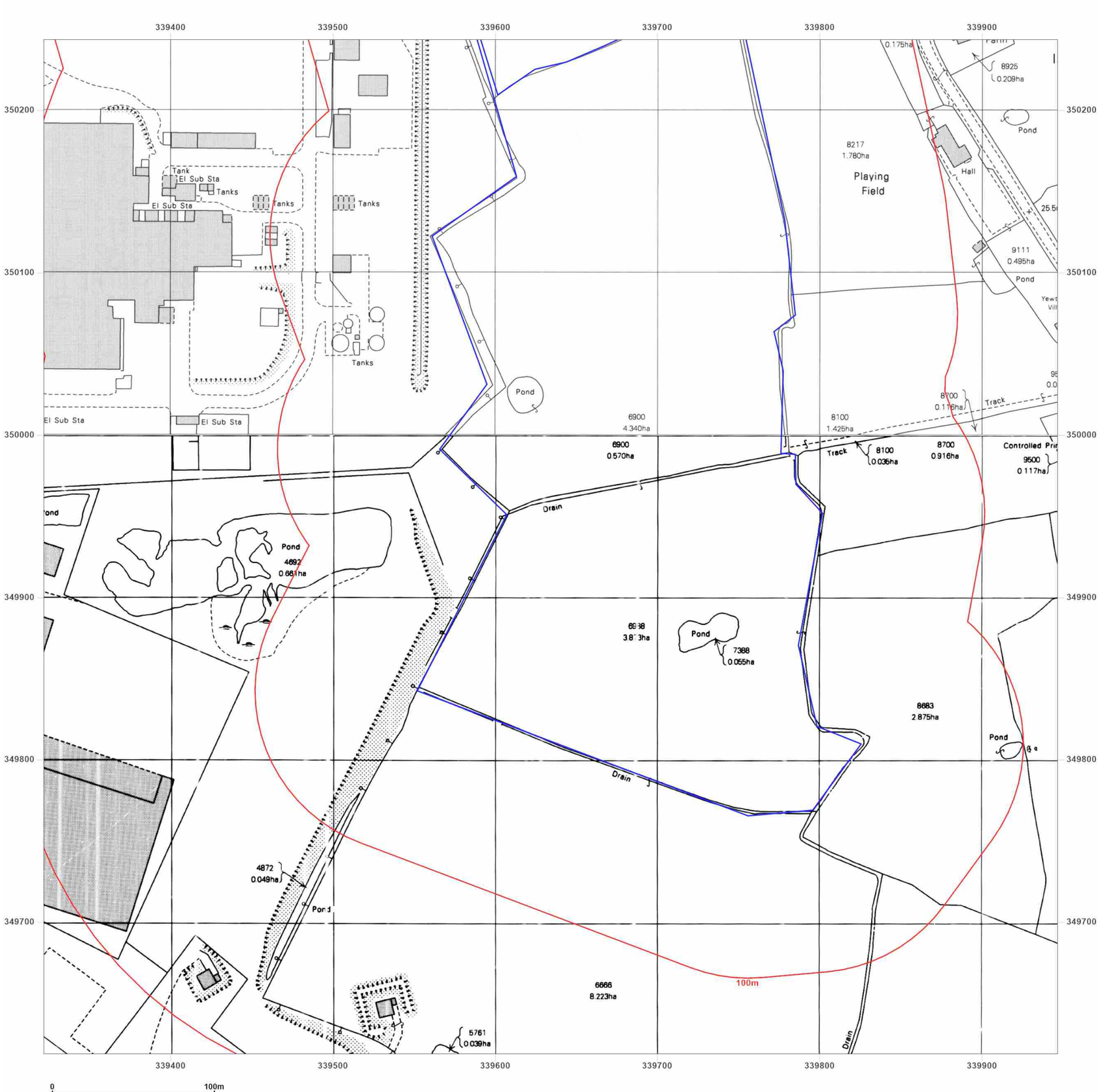
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Groundsure INSIGHTS

Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J_LS_1_1
Grid Ref: 339634, 349931

Map Name: National Grid

Map date: **1992**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1991
Revised 1991
Edition N/A
Copyright 1992
Levelled N/A

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

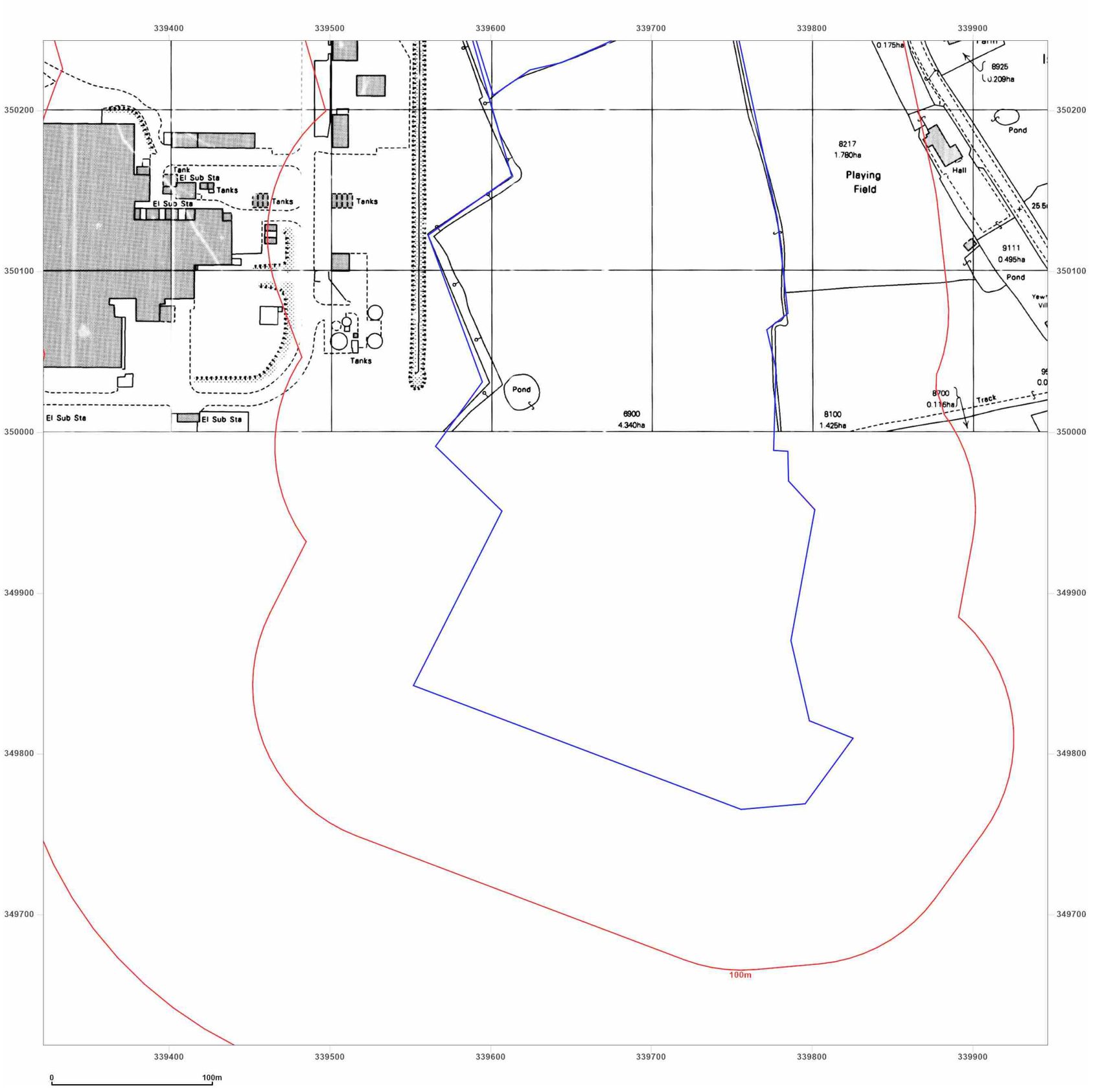
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Groundsure INSIGHTS

Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J_LS_1_1
Grid Ref: 339634, 349931

Map Name: National Grid

Map date: **1992**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

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

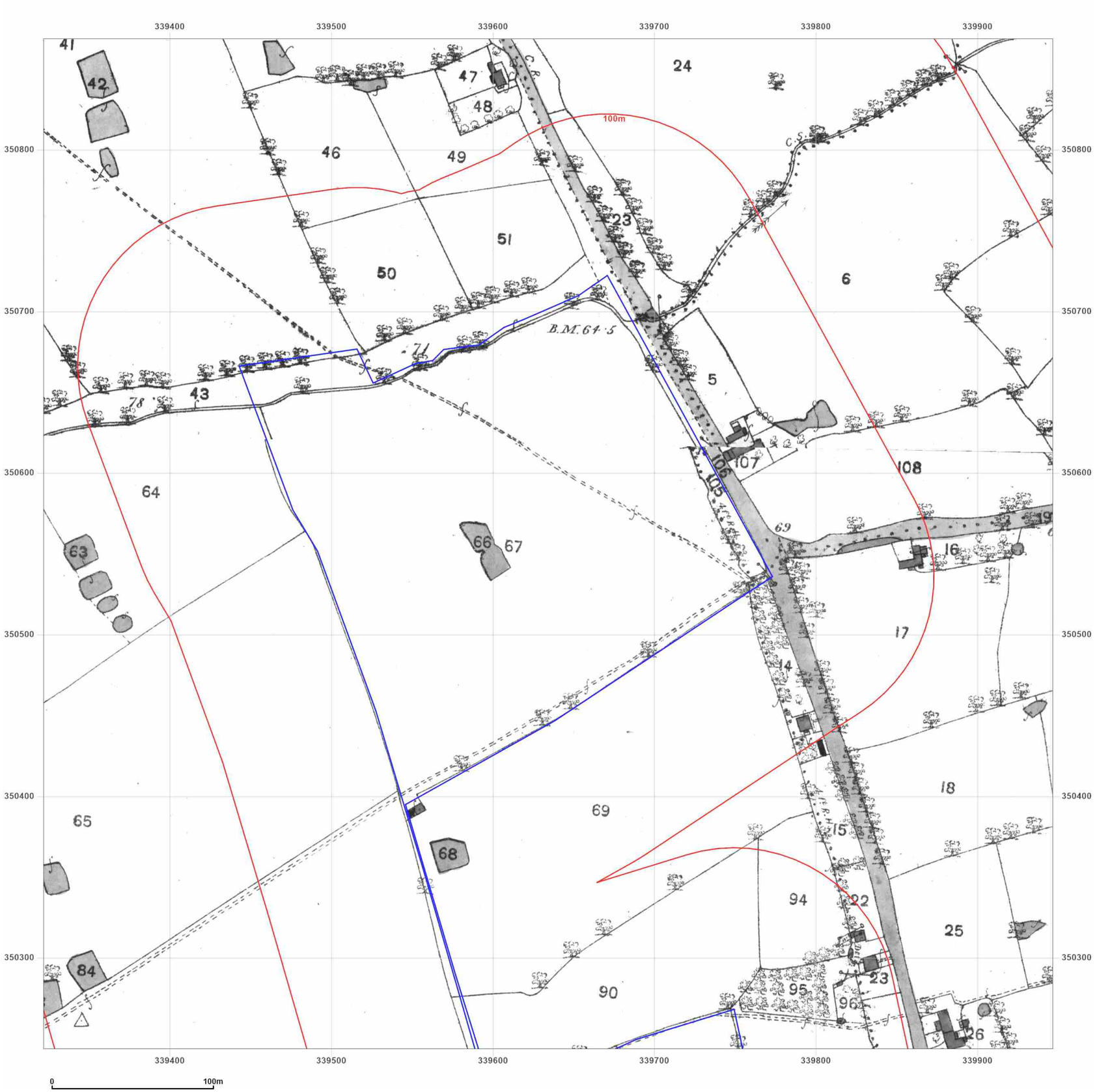
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Groundsure INSIGHTS

Site Details:

Ecological Site East of NWS of HO

Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J_LS_1_2
Grid Ref: 339634, 350556

Map Name: County Series

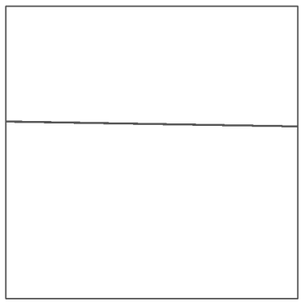
Map date: **1873**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1873
Revised 1873
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1873
Revised 1873
Edition N/A
Copyright N/A
Levelled N/A

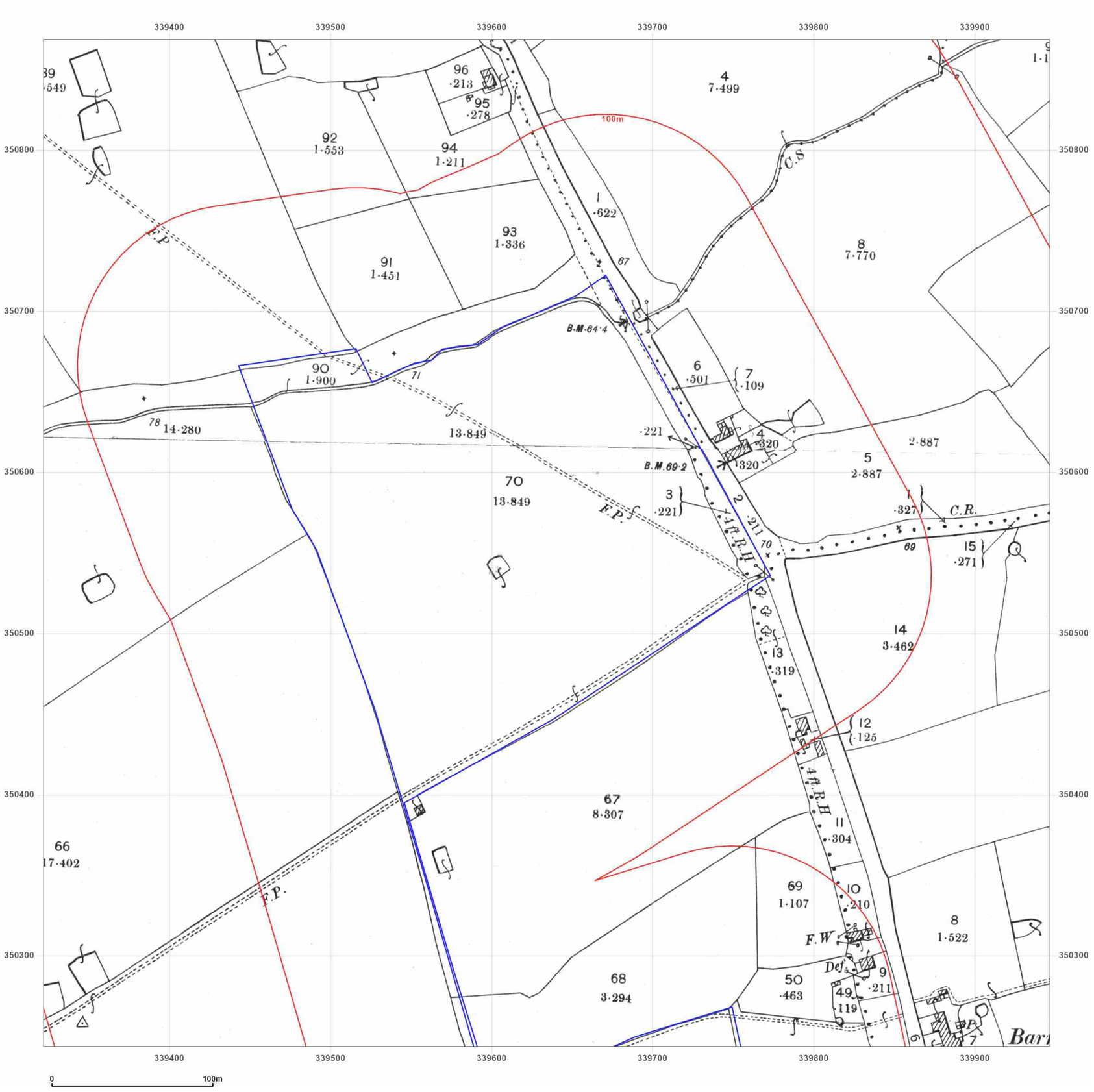
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Site Details:

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Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J_LS_1_2
Grid Ref: 339634, 350556

Map Name: County Series

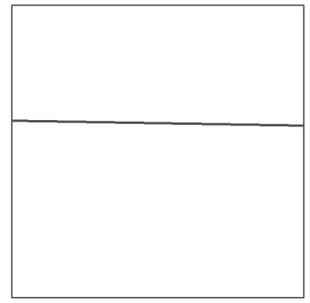
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Map Name: County Series

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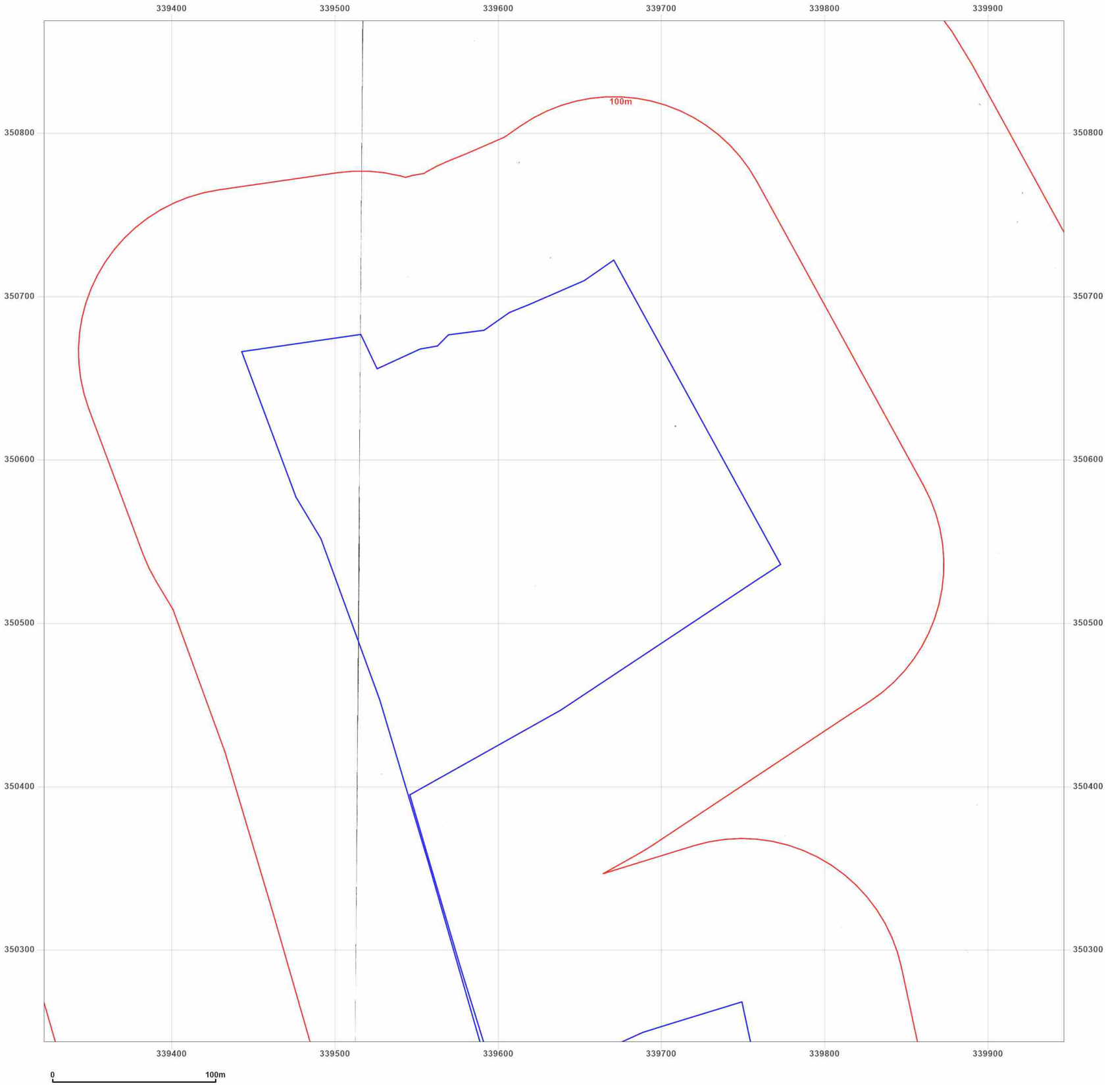
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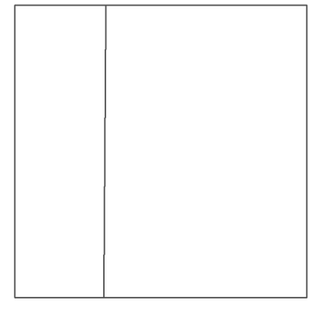
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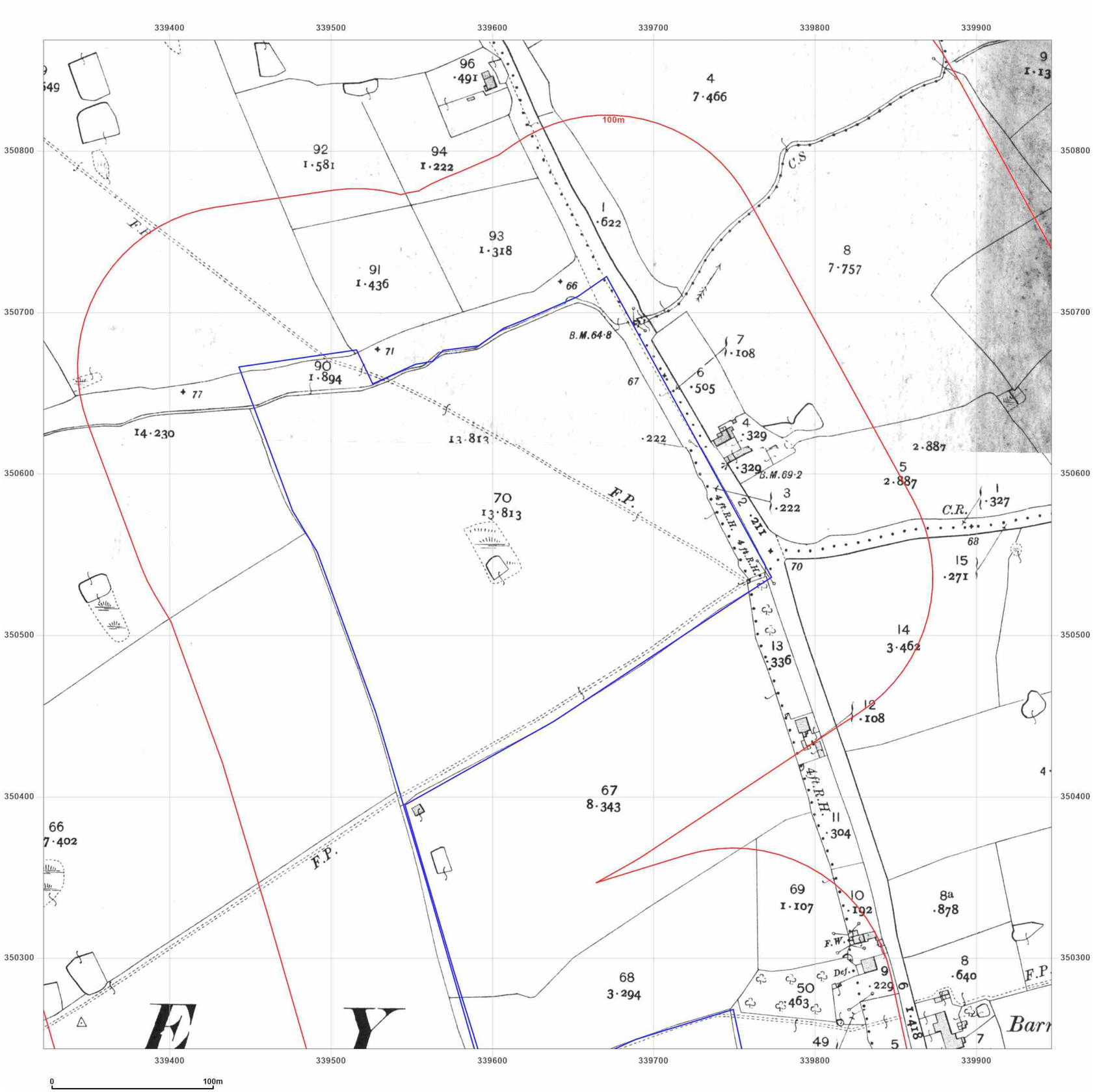
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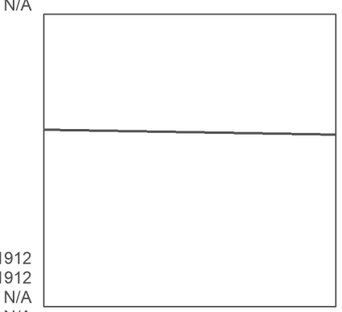
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Edition N/A
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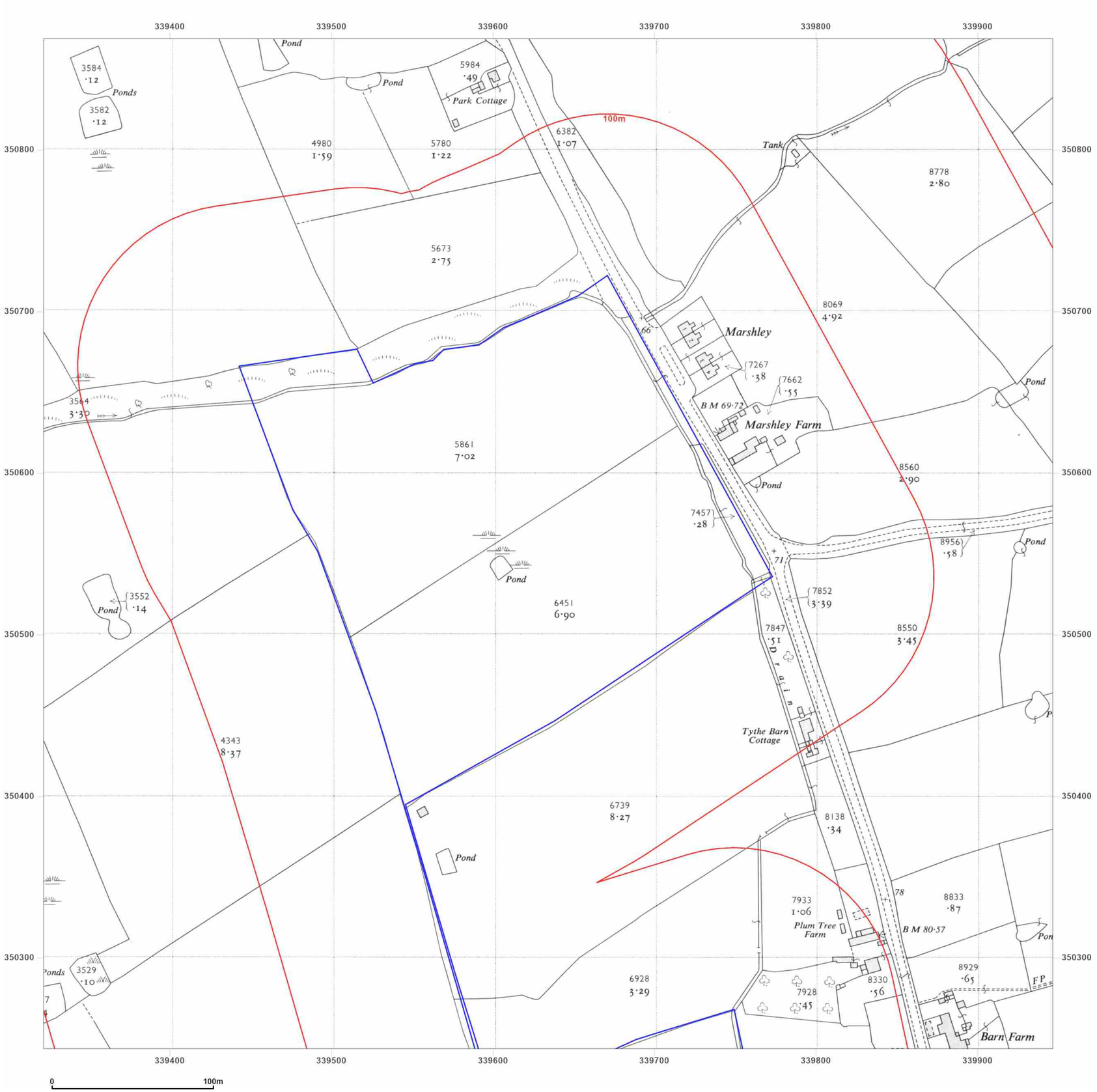
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Client Ref: TE1906 / 3500
Report Ref: GS-6HF-I7K-E2L-49J_LS_1_2
Grid Ref: 339634, 350556

Map Name: National Grid

Map date: **1961**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1960
Revised 1960
Edition N/A
Copyright 1961
Levelled 1950

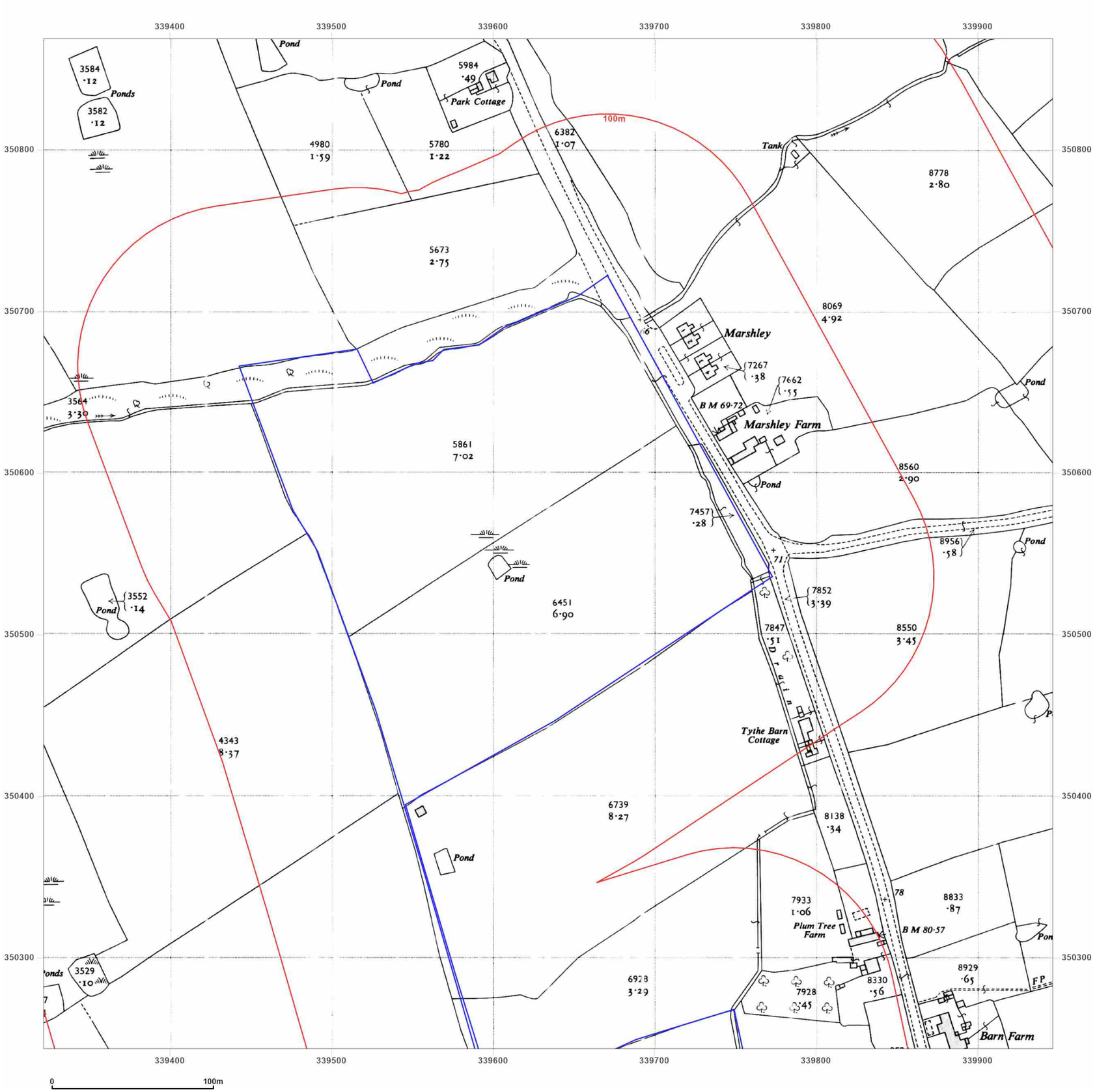
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Grid Ref: 339634, 350556

Map Name: National Grid

Map date: **1961**

Scale: 1:2,500

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Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
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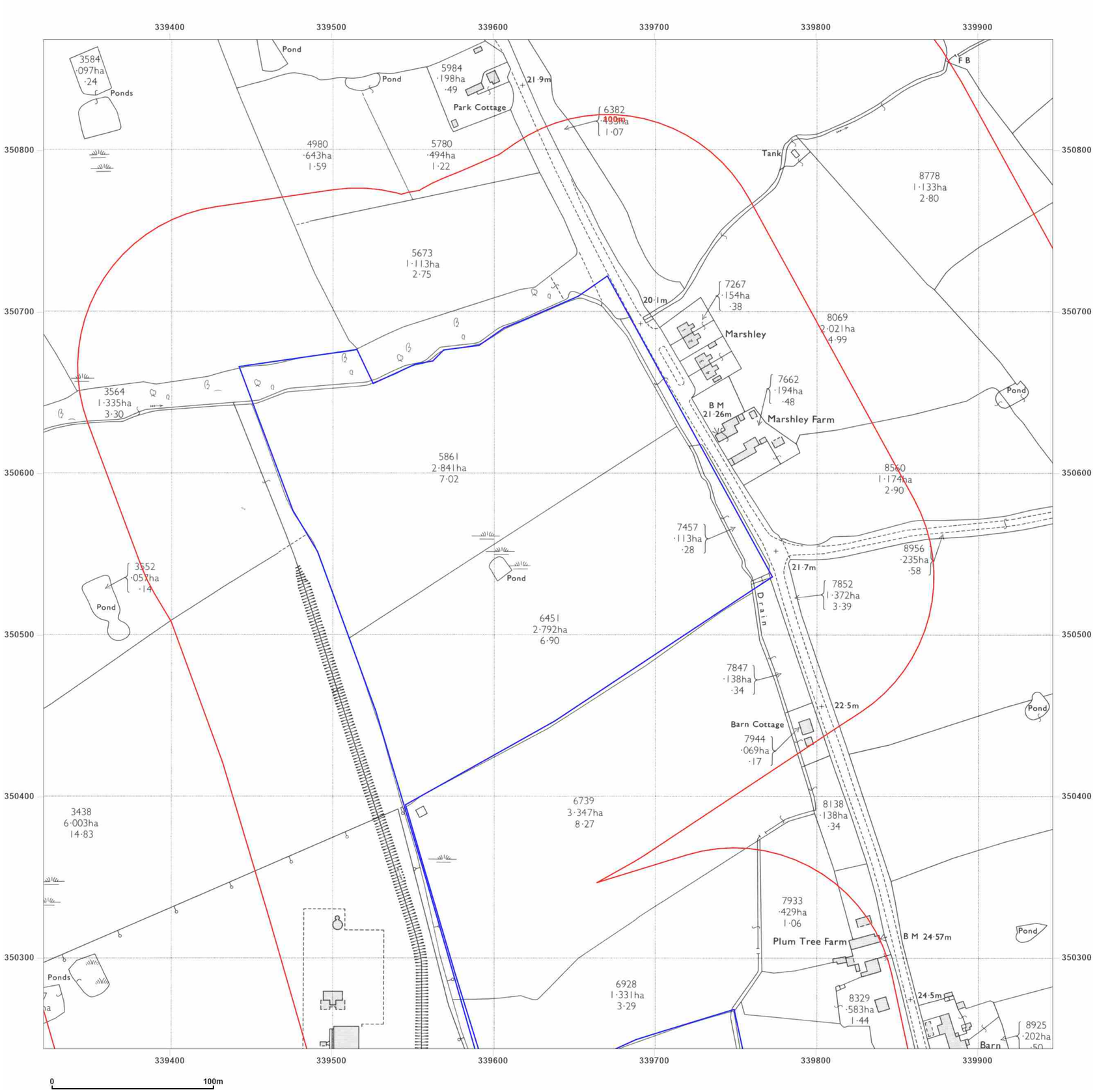
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Report Ref: GS-6HF-I7K-E2L-49J_LS_1_2
Grid Ref: 339634, 350556

Map Name: National Grid

Map date: **1974**

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Surveyed 1974
Revised 1974
Edition N/A
Copyright 1974
Levelled 1959

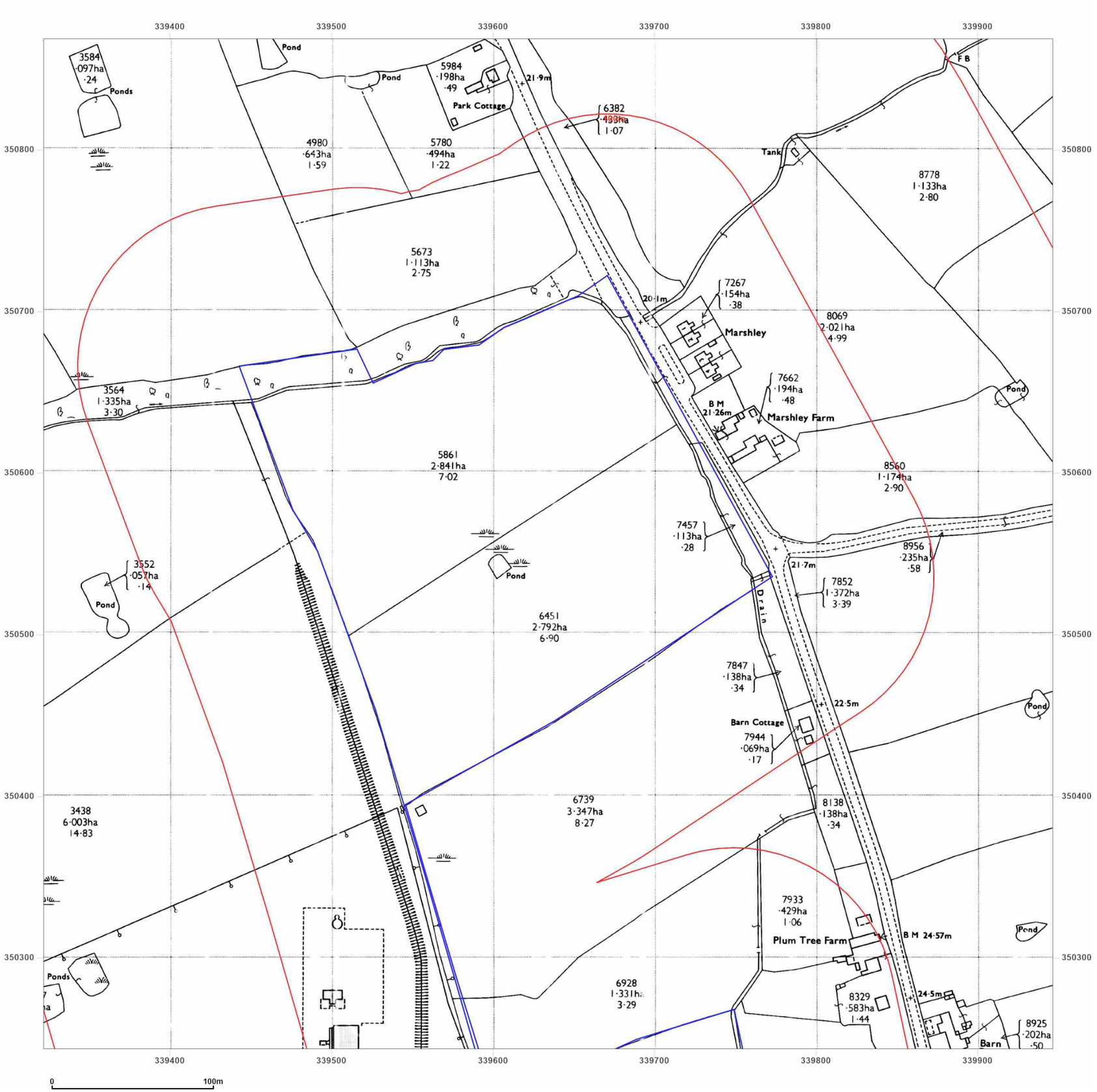
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Grid Ref: 339634, 350556

Map Name: National Grid

Map date: **1974**

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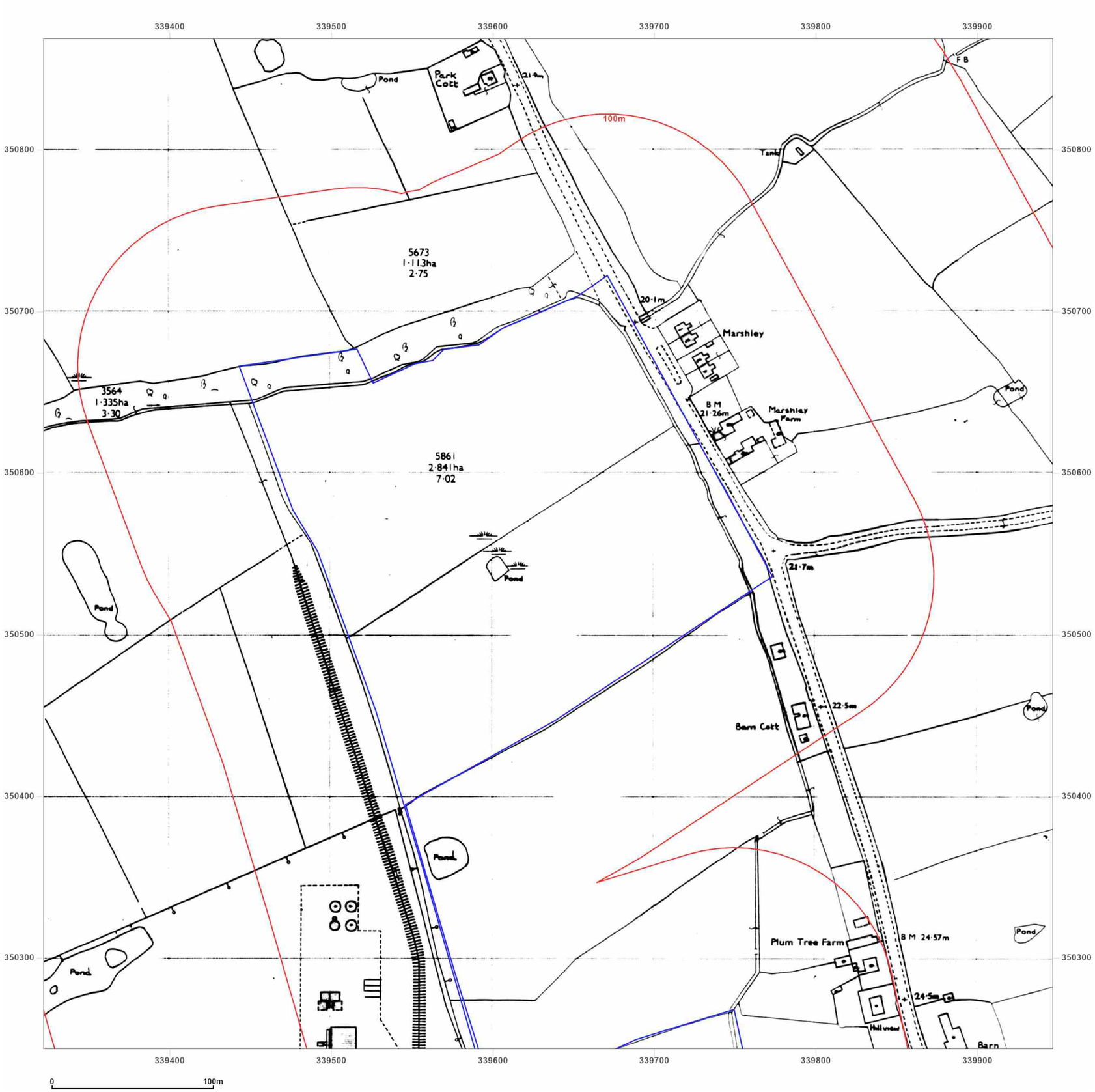
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Report Ref: GS-6HF-I7K-E2L-49J_LS_1_2
Grid Ref: 339634, 350556

Map Name: National Grid

Map date: **1990**

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Surveyed 1959
Revised 1990
Edition N/A
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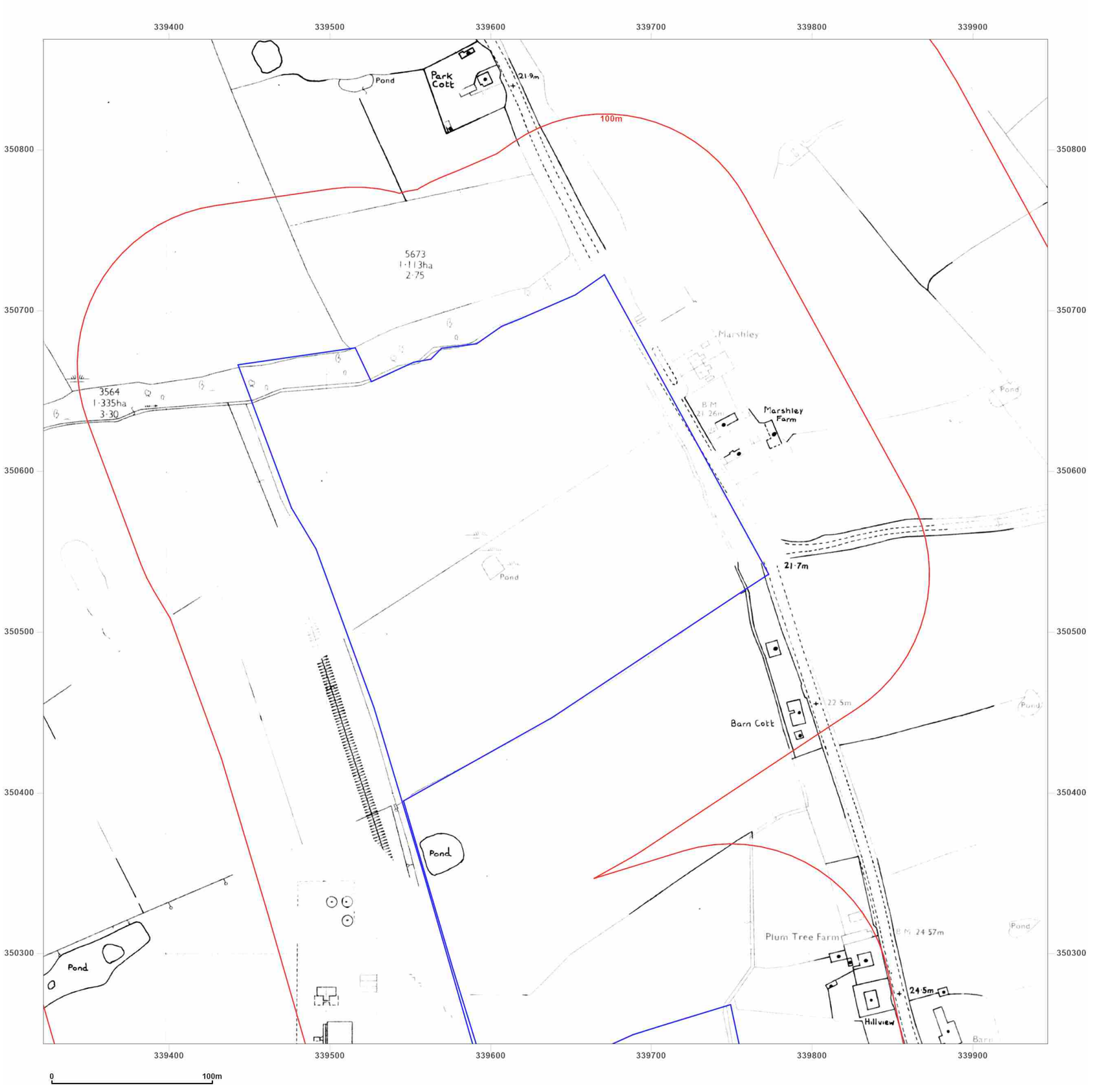
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Map date: **1990**

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Levelled 1959

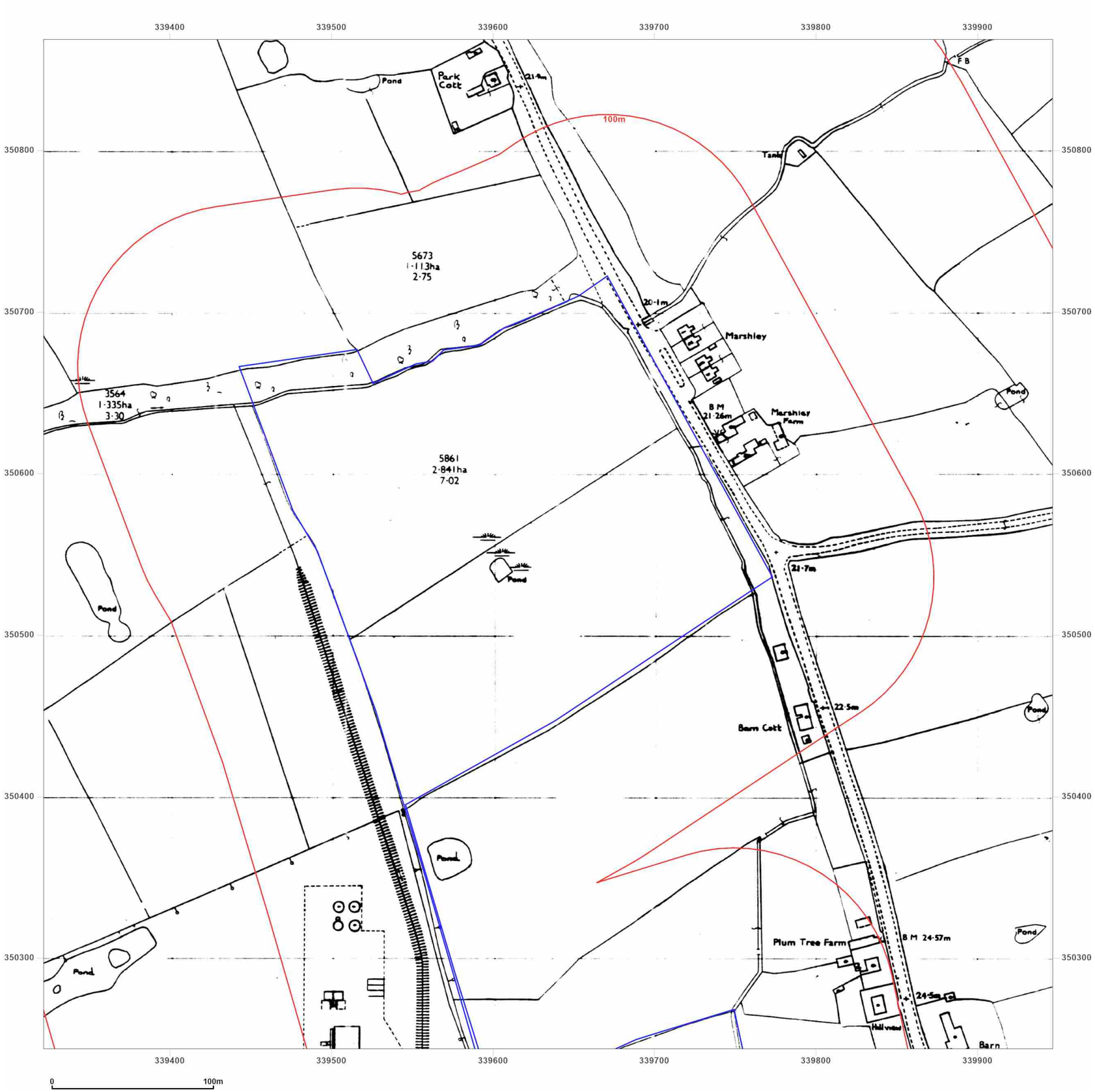
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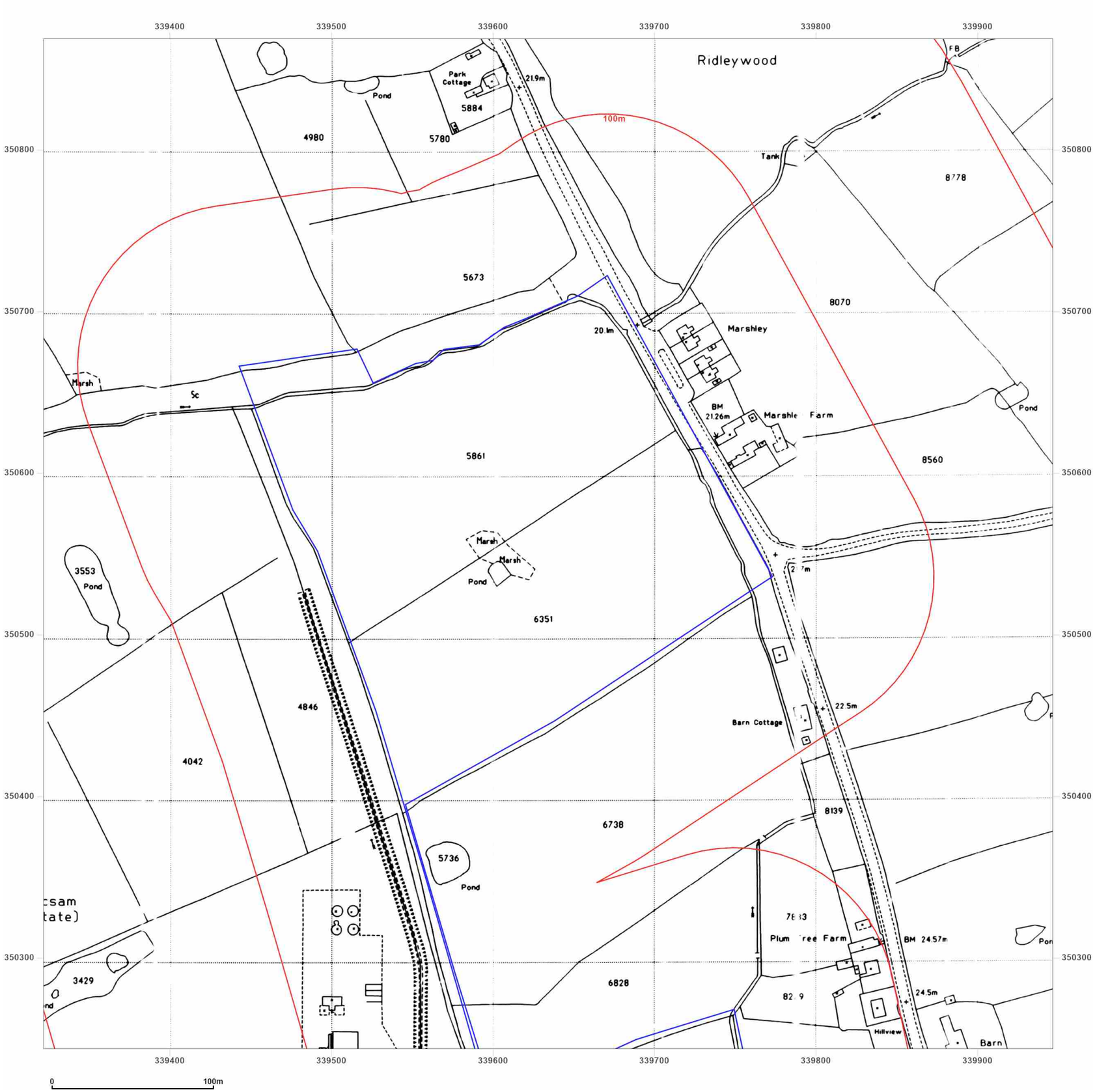
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Map Name: National Grid

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Surveyed N/A
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Edition N/A
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Map Name: National Grid

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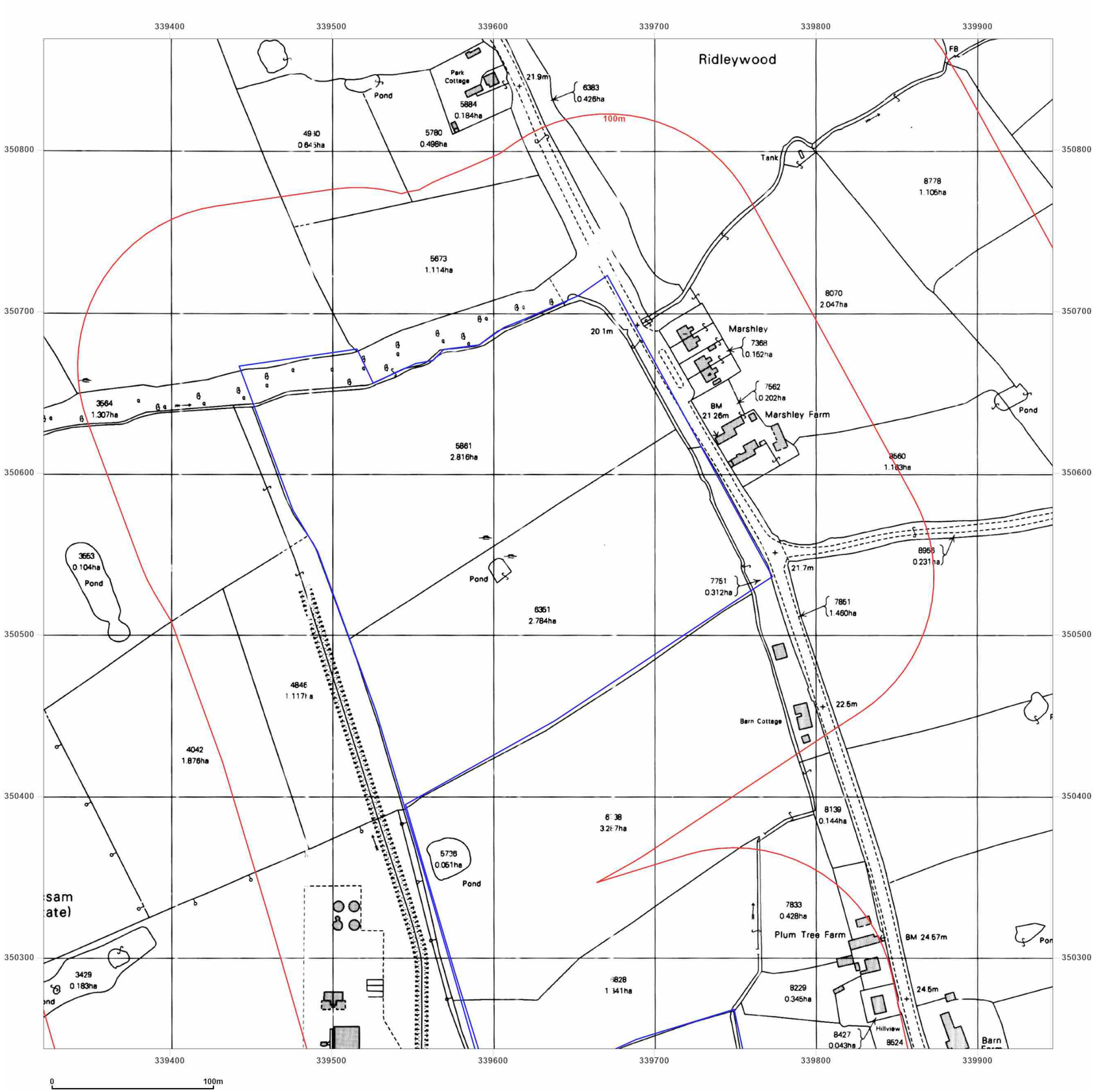
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APPENDIX C- PREVIOUS REPORTS (AVAILABLE AS A SEPARATE DOCUMENT)

APPENDIX D- DEFINITIONS OF TERMS USED IN QUALITATIVE AND QUANTITATIVE RISK ASSESSMENTS

CIRIA C552 Terminology

For the qualitative and quantitative assessment of risks posed by potential pollutant linkages have been undertaken using the risk matrix adapted from CIRIA C552 and outlined in the table below.

	Category	Definition
Potential severity	Severe	Acute (short term) risk to human health, Major pollution of sensitive controlled waters, ecosystems or habitat. Catastrophic damage to buildings or property or crops.
	Medium	Chronic (Medium / long term) risk to human health Pollution of sensitive controlled waters, ecosystems or species, Significant damage to crops, buildings or structures
	Mild	Easily preventable permanent health effects on humans. Pollution of non-sensitive controlled waters. Minor damage to buildings or structures.
	Minor	Easily preventable non-permanent health effects on humans, or no effects. Minor, low level and localised contamination of on-site soil. Easily repairable damage to buildings or structures.
Probability of risk	High Likelihood	Pollutant linkage may be present, and the risk is almost certain to occur , or there is evidence of harm already occurring.
	Likely	Pollutant linkage may be present, and it is probable that the risk will occur over the long term.
	Low Likelihood	Pollutant linkages may be present and there is a possibility of the risk occurring, although there is no certainty that it will do so.
	Unlikely	Pollutant linkage may be present but the circumstances under which harm would occur are improbable.

		Potential Severity			
		Severe	**Medium**	**Mild**	**Minor**
Probability of risk	**High Likelihood**	Very high risk	High risk	Moderate risk	Moderate / low risk
	Likely	High risk	Moderate risk	Moderate / low risk	Low risk
	Low Likelihood	Moderate risk	Moderate / low risk	Low risk	Very low risk
	Unlikely	Moderate / low risk	Low risk	very low risk	Very low risk

APPENDIX E- CONTROLLED WATERS RISK ASSESSMENT

CURRENT GUIDANCE FOR CONTROLLED WATERS RISK ASSESSMENT

Regulatory Context

Government policy is based upon a "suitable for use approach," which is relevant to both the current use of land and also to any proposed future use. When considering the current use of land, Part IIA of the Environment Protection Act 1990 (EPA 1990) provides the regulatory regime, which was introduced by Section 57 of the Environment Act 1995, which came into force in England on 1 April 2000. The main objective of introducing the Part IIA regime is to provide an improved system for the identification and remediation of land where contamination is causing unacceptable risks to human health, controlled waters or the wider environment given the current use and circumstances of the land. Part IIA provides a statutory definition of contaminated land under Section 78A(2) 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."*

Part IIA provides a statutory definition of the pollution of controlled waters under Section 78A(9) as:

> *"the entry into controlled waters of any poisonous, noxious or polluting matter or any solid waste matter"*

Controlled Waters are defined Section 104 of the Water Resources Act 1991. In summary, the comprise relevant territorial waters which extend seaward for three miles from the low-tide limit from which the territorial sea adjacent to England and Wales is measured.

The Environment Agency has powers under Part 7 of The Water Resources Act (1991) to take action to prevent or remedy the pollution of controlled waters, including circumstances where the pollution arises from contamination in the land. This is reinforced in The Contaminated Land (England) (Amendment) Regulations 2012 and Contaminated Land Statutory Guidance (DEFRA, 2012) which came into force in early April 2012.

Part IIA introduces the concept of a contaminant linkage; where for potential harm to exist there must be a connection between the source of the hazard and the receptor via a pathway. Risk assessment in contaminated land is therefore directed towards identifying the contaminants, pathways and receptors that can provide contaminant linkages. This is known as the contaminant-pathway-receptor link (CPR or contaminant linkage).

Part IIA places contaminated land responsibility as a part of the planning and redevelopment process, rather than Local Authority or Environment Agency directly, except in cases of very high pollution risk or where harm is occurring. In the planning process, guidance is provided by National Planning Policy Framework (NPPF) of March 2012. The NPPF requires that a site which has been developed shall not be capable of being determined "contaminated land" under Part IIA. Therefore, appropriate risk-based investigation is required to identify the contaminant linkages that can then be assessed, and then mitigated using methods that can be agreed with the planners.

Source Protection Zones

Source Protection Zones (SPZs) are defined by the Environment Agency (for England and Wales), SEPA (Scotland) and the Environment and Heritage Service (Northern Ireland) for groundwater sources such as wells, boreholes and springs that are used for public drinking water supply. The zones show the risk of contamination from activities that might cause groundwater pollution in the area. The size and shape of a zone depends upon subsurface conditions, how the groundwater is removed, and other environmental factors.

SPZs are classified into four categories:

- **Zone 1 (Inner protection zone).** Any pollution that can travel to the abstraction point within 50 days from any point within the zone is classified as being inside Zone 1. This applies at and below the groundwater table. This zone also has a minimum 50 m protection radius around the abstraction point. These criteria are designed to protect against the transmission of toxic chemicals and water-borne disease.
- **Zone 2 (Outer protection zone).** The outer zone covers pollution that takes up to 400 days to travel to the abstraction point, or 25% of the total catchment area, whichever area is the largest. This travel time is the minimum period over which the Environment Agency considers that pollutants need to be diluted, reduced in strength or delayed by the time they reach the abstraction point.
- **Zone 3 (Total catchment).** This is the total area needed to support removal of water from the abstraction point, and to support any discharge from this.
- **Zone of special interest.** This may occasionally be defined as a special case. This is usually where local conditions mean that industrial sites and other potential sources of contamination could affect the groundwater source, even though they are outside the normal catchment area.

Groundwater Vulnerability Assessments

From 1 April 2010 The Environment Agency Groundwater Protection Policy began to use aquifer designations which are consistent with the Water Framework Directive. These designations reflect the importance of aquifers in terms of groundwater as a resource (drinking water supply) but also their role in supporting surface water flows and wetland ecosystems.

The aquifer designation data is based on geological mapping provided by the British Geological Survey. It is updated regularly to reflect their ongoing programme of improvements to these maps. The maps are split into two different type of aquifer designation:

- Superficial (Drift) - permeable unconsolidated (loose) deposits. For example, sands and gravels.
- Bedrock -solid permeable formations e.g. sandstone, chalk and limestone.

The maps display the following aquifer designations:

Table 1. Aquifer Classification ("Geological Classification").

Classification	Definition
Principal Aquifers (Highly Permeable)	These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer.
Secondary A Aquifers	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.
Secondary B Aquifers	Predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.
Secondary Undifferentiated Aquifers	This has been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.
Unproductive Strata	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

Environment Agency Guidance

The Environment Agency's stance on groundwater resources is:

> *"to protect and manage groundwater resources for present and future generations in ways that are appropriate for the risks we identify"* (Groundwater Protection: Policy and Practice GP3, 2012).

At present, the legislation and guidance pertaining to the protection of controlled waters in the UK is complex; however, the core objectives seek to enforce the position given above.

In 1992, the National Rivers Authority published their Policy and Practice for the Protection of Groundwater (PPPG), this document introduced areas of focus for developments such as Source Protection Zones (SPZs) and Groundwater Vulnerability Maps. The Policy was revised in 1998, since which there have been substantial changes in legislation, driven by key European Directives relating to groundwater include the Groundwater Directive (80/68/EEC) and the Water Framework Directive (2000/60/EC). Aspects of these directives are controlled by primary UK legislation such as the Water Resources Act 1991 as amended by the Water Act 2003. Gaps in the 1998 PPPG that emerged as the result of further legislative changes were addressed in the Environment Agency Policy document Groundwater Protection: Policy and Practice (GP3), Version 1 of November 2012. The three main parts of GP3 were:

- Groundwater principals;
- Position statements and legislation; and
- Technical information.

The Environment Agency has a tiered risk based approach to drinking water protection as summarised below:



Increasing levels of protection

Water Protection Zones

Safeguard Zones

Source Protection Zones

Principal Aquifers

Secondary Aquifers

APPENDIX F- COMPLYING WITH CONTROL OF ASBESTOS REGULATIONS 2012

Complying with Control of Asbestos Regulations (CAR): Risk Assessments, Licensing and Training

This appendix outlines CAR risk assessments and where they should be applied in relation to assessing and remediating brownfield sites. The information below details the different classifications of work with asbestos under CAR, summarises the legal requirements for asbestos awareness training for all involved in the investigation and management of asbestos containing soil (ACS), and details the potential requirements for suitable proficiency training relating specifically to ACS.

CAR RISK ASSESSMENTS

A CAR Risk Assessment is required for any work which may expose employees to asbestos. It is recommended that a precautionary approach is adopted if there is any doubt about risks associated with asbestos.

There are three main activities for potential asbestos exposure during work on brownfield sites:

- Site reconnaissance visits;
- Site investigation works; and
- Site remediation.

CAR risk assessments are needed at each stage but may be incorporated during the site investigation stage into the overarching health and safety risk assessments.

The CAR risk assessment must:

- Identify the type of asbestos to which employees are liable to be exposed, where possible, or assume it is present in different forms;
- Determine the type and extent of exposures to asbestos that may occur during the work
- Identify the steps to be taken to prevent exposure or reduce it to the lowest level reasonably practicable; and,
- Consider the effects of control measures that have been or will be taken.

The CAR risk assessment should include any information used to inform the risk assessment such as asbestos reports or desk study information. In the event that this information is not available, the assessor should be assumed that all forms of asbestos may be present on site.

For all investigation and remediation of ACSs, a detailed written work plan should he produced and followed as detailed on the HSE website and in the CAR.

The CAR risk assessments for specific investigations or remediation projects, will determine whether or not work is 'licensable work' (LW)**,** notifiable non-licensable work' (NNLW) or 'non-licensed work' (NLW). In addition, training requirements are also defined by the CAR risk assessment.

Some examples of control measures that apply during site reconnaissance, site investigation works, and site remediation are given below and should be applied depending on the asbestos risks identified for the site at each stage of investigation:

- Avoiding stirring up dust;
- Cleaning footwear after site works;
- Removing and bagging any overalls for disposal/laundering;
- Respirators and hygiene facilities for high risk sites;
- Segregated welfare units;
- Wetting ground
- Minimising soil disturbances;
- Implementation or retention of capping/break layers;
- Implementation of awareness training;
- Air monitoring;
- Managing stockpiles;
- Area segregation;
- Wheel washing
- Road washing/cleaning

It is important to note that during site reconnaissance visits, site investigation works and site remediation that asbestos should not be considered in isolation and control measures are likely to form part of a wider health and safety precautions.

Respiratory protective equipment (RPE)

RPE is the last line of defence and its requirement would be defined by the CAR risk assessment. HSE (2013b) advises that RPE should have an assigned protection factor of 20 or more for all work with asbestos. In certain instances, full face-piece, positive pressure respirators with a protection factor of 40 are necessary (to EN 12942:1998, TM3).

Suitable types of RPE for most ***short*** duration non-licensed asbestos work:

- Disposable respirator to standards EN149 (type FFP3) or EN1827 (type FMP3)
- Half mask respirator (to standard EN140) with P3 filter
- Semi-disposable respirator (to EN405) with P3 filter

These filters are not suitable for people with beards/stubble or for long or continuous use.

LICENSING

CAR defined certain types of activities involving asbestos as 'licensable work' (LW) or as 'notifiable non-licensable work' (NNLW). All other work would be 'non-licensable work' (NLW).

LW is defined as:

- work where exposure is not 'sporadic and low intensity'
- work where the risk assessment cannot demonstrate that the control limits (four hour and 10 minute limits) will not be exceeded
- work on asbestos coating
- work on AIB or insulation where risk assessment is either of first two points above or not of short duration (where short duration is defined for any work liable to disturb asbestos as taking less than two hours per week (including ancillary work) and no one person carries out that work for more than one hour').

NNLW includes work with:

- AIB or asbestos insulation of short duration that is not licensable
- fire-damaged asbestos cement or asbestos cement damaged so as to create significant dust and debris
- asbestos ropes, yarns, woven cloths in poor condition or handling cutting or breaking up the materials
- asbestos papers, felts and cardboard in poor condition, unencapsulated or not bound into another material.

Work with weathered asbestos cement, air monitoring and collecting samples of ACM in buildings would not normally be notifiable.

It is impossible to specify definitively what activities will and will not be licensable. This decision should be made as part of the CAR risk assessment. CAR is not primarily aimed at work with ACSs and there is little published information on airborne asbestos concentrations during work with ACSs. Nevertheless, CAR will require some remediation projects, and occasionally site investigations, to be LW. Investigations on other sites may involve NNLW. The decision as to whether work is LW or NNLW should be made during the CAR risk assessment by those in charge of the brownfield site investigations and remediation projects.

TRAINING REQUIREMENTS

Asbestos health and safety courses are offered by a number of providers in the UK. Training courses that include the problem of identifying ACMs in soil should be undertaken at regular intervals by those involved in the investigation, assessment and management of sites where ACs are known or suspected. It is the role of the employer to identify the level of training required for an employee based on their role, experience and duties. Reference to Regulation 10 of CAR should be referred to for more information on training requirements.

Recognising asbestos within soils is challenging due to the heterogeneity of such soils and the discolouration of asbestos by smeared soil. Specific training for ground workers should include understanding fibre release potential, potential control measures in the field, how to take representative ACSs safely, sample labelling and what analytical tests are available and when the y should be implemented.

Health and safety training required under CAR includes asbestos awareness, non-licensable work (including notifiable non-licensable work) and licensable work with asbestos.

In addition to health and safety training, some staff involved in the technical identification on site of ACMs, sampling and analysis may require technical proficiency training (competency training).

Training vs. Competence

HSE (2005) identifies that ‘training alone does not make people competent. Training must be consolidated by practical experience so that the person becomes confident, skilful and knowledgeable in practice on the job’. It is critical that ACS surveyors demonstrate competency with details of relevant field experience alongside training and examples of previous works/references.