5 Barnsley Road

Phase I Desk Study Report

August 2025

Document Control

Project:	5 Barnsley Road Phase I Desk Study Report
Client:	Mr Steve Lo
Job Number:	RBG476

Prepared and Issued by Ross Blake BSc MSc FGS, Engineer. Signed:

Issue	**Date**	**Status**
001	August 2025	Final

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Disclaimer

This report was produced by RB Geotechnical for Mr Steve Lo (The client) for the specific purposes of a Phase I Desk Study and Coal Mining Risk Assessment related to the proposed demolition of the existing house, and construction of a new one further along the garden, at 5 Barnsley Road in Flockton. This report may not be used by anyone else other than the client without their express permission. In any event, RB Geotechnical accepts no liability for any costs, liabilities or losses arising from the use of reliance upon the contents of this report by anyone other than the client.

1.0 Introduction

RB Geotechnical was commissioned by the client to carry out a Phase I Desk Study at 5 Barnsley Road in Flockton, relating to the proposed development of a new residential dwelling following demolition of the existing house.

1.1 Aims and Scope

The principal aims of this Phase I Desk Study is to interpret information pertaining to the site, obtained during a desk-based review of available data for the site.

The scope of this study is as follows:

- To provide general information on the site such as location and description;
- To discuss the geology, hydrogeology and hydrology at, and in the vicinity of, the site;
- To summarise the environmental setting of the site; e.g., landfills, permits and sensitive land uses;
- To summarise potential geotechnical risks associated with the site;
- To provide a preliminary summary of potential coal mining risks to the site;
- To discuss and summarise any historical development that have occurred at the site and in the surrounding area;
- To assess potential contamination issues pertaining to the site with consideration of the site's historic use;
- To develop an initial conceptual model linking sources of potential contamination with pathways and receptors; and
- To provide a preliminary risk assessment for the current and proposed end use of the site.

Please note that this Phase I Desk Study excludes an assessment of risks arising from asbestos, unexploded ordnance and/or invasive species.

1.2 Terms and Conditions

This report has been prepared for the client in support of a planning application for the proposed residential development at 5 Barnsley Road, Flockton.

1.3 Sources of information

Information on the site layout and current land use of the site is mainly based on information collected from online sources and photos from other sources.

An environmental database search was undertaken by GroundSure to provide supplementary Environmental information for the site and surrounding area. This was collated into an Insight Report by Ground Sure and as such the potential for further data to exist cannot be ruled out.

The existing database and other sources of which this study is based comprise:

- GroundSure EnviroInsight Report, 5 Barnsley Road, 14th August 2025 – Appendix A
- GroundSure 1:10,000 Historical Maps, 5 Barnsley Road, 14th August 2025 – Appendix B
- GroundSure 1:2,500 Historical Maps, 5 Barnsley Road, 14th August 2025 – Appendix B
- Environment Agency website (www.environment-agency.gov.uk);
- British Geological Survey (BGS) Geoindex website (www.bgs.ac.uk/geoindex)
- Coal Authority Interactive Viewer (www.mapapps2.bgs.ac.uk/coalauthority/home.html)

Although every effort has been made to ensure the accuracy of the information contained herein, no checks have been carried out to ensure the accuracy of information obtained from third parties and no liability can be accepted for any errors or misinterpretation of the third-party information where it has been incorporated into this report.

2.0 Site Details

2.1 Site Location and Description

The 0.48ha sized site is situated at 5 Barnsley Road in Flockton, West Yorkshire. It is currently occupied by a rectangular bungalow type building along the Southern site boundary, with a double detached garage just behind this. There is a tarmac hardstanding driveway and courtyard just off the road towards the garages. The rest of the site is open grass gardens.

The National Grid Reference for the centre of the site is 422494, 415078.

2.2 Proposed Development Plan

The site is to have the current house and buildings demolished, and a new large, detached house is to be constructed further into the garden. The proposed development plan is shown in Appendix C.

3.0 Site History

3.1 History of site and surrounding area

Information relating to the historical development of the site and the surrounding area has been obtained from Historical Ordnance Survey Maps (1:10,000 and 1:2,500). These are presented in Appendix B.

Table 4.1 Summary of on-site and surrounding area history

Map	On-Site Features	Surrounding Area
1855	The site is shown to have the rectangular building present today, along the Southern Western site boundary. The rest of the site is undeveloped.	The surrounding area is open fields, with coal pits mapped approximately 100m to the North East and 200m to the South West. A large Sandstone Quarry is mapped approximately 100m to the North West.
1855 – 1893	The site remains unchanged, however now showing the garages behind it.	An old shaft is mapped close to the Western site boundary. The Sandstone Quarry once mapped 100m to the North West is now labelled as Disused. A pumping shaft and other shaft is mapped adjacent to the Northern site boundary.
1893 – 1906	The site remains unchanged.	The Quarry to the North West seems to no longer be disused.
1906 –	The site remains unchanged.	A pond is mapped approximately 20m to the North West.

Map	On-Site Features	Surrounding Area
1913		
1913 – 1962	During this period, numerous other buildings are shown on the site.	The Quarry to the North is once again labelled as being disused. The air shafts adjacent to the North are no longer present. An electrical sub-station is shown adjacent to the South Western site boundary.
1962 – 1983	The site remains unchanged.	The surrounding area remains unchanged.
1983 – 1993	The site remains unchanged	The Quarry to the North West is longer labelled, likely to have been backfilled.
1993 – present day	The site remains unchanged	The surrounding area remains unchanged.

4.0 Geology, Hydrogeology and Hydrology

4.1 Geology

Information relating to the geology of the site has primarily been sourced from the EnviroInsight Report and the BGS Geoindex website.

4.1.1 Made Ground

According to the published geological maps and information on the BGS GeoIndex website, the site is not shown to be underlain by Made Ground, however Made Ground is mapped from 3m to the North.

4.1.2 Superficial Deposits

The site is not mapped as being underlain by superficial deposits.

4.1.3 Solid Geology

Geological maps indicate that the site is underlain by bedrock of the Birstall Rock Sandstone Formation.

4.1.4 BGS Boreholes

There are no nearby historical BGS boreholes of use.

4.1.5 Faults and Seams

No faults or seams are mapped within 250m of the site boundary.

4.1.6 Radon

The EnviroInsight Report indicates that the property is not within a Radon Affected Area, with less than 1% of properties affected. No Radon Protection Measures will be required.

4.2 Hydrogeology

4.2.1 Aquifers

The underlying Bedrock is classified as being a Secondary A Aquifer, which is a rock with permeable layers that are capable of supporting water supplies at a local rather than strategic scale.

4.2.2 Groundwater, Surface Water and Potable Water Abstraction Licences

The EnviroInsight Report indicates that there are no Surface Water, Groundwater or Potable Water abstractions within 500m of the site boundary.

4.2.3 Licensed Discharges

There are two recorded Licensed Discharges to controlled waters mapped within 500m of the site boundary, situated 289m to the North and 314m to the North West as Sewage and Trade Discharges.

4.2.4 Pollution Incidents to Controlled Waters

The EnviroInsight Report shows no significant pollution incidents to controlled water within 250m of the site boundary.

4.3 Hydrology

The nearest water network mapped within 250m of the site boundary is located 42m to the West as a small inland river.

4.3.1 Flood Risk

The EnviroInsight Report states that the site is not situated within either a Zone 2 Fluvial/Tidal Model or Zone 3 Fluvial Model floodplain. The site is classified as being at a **LOW** Risk of flooding from Rivers or Sea, with a **NEGLIGIBLE** Risk of Surface Water flooding, and **NEGLIGIBLE** Risk of Groundwater flooding.

4.3.2 Source Protection Zones

The site is not located within a Source Protection Zone.

5.0 Environmental Setting

5.1 Waste Treatment and Disposal

5.1.1 Landfill Sites

There are no historical or currently active landfill sites mapped within 250m of the site boundary.

5.1.2 Other Waste Sites

There are no other waste sites mapped within 250m of the site boundary.

5.2 Regulatory Permits, Incidents and Registers

5.2.1 Control of Major Hazard Sites /Notification of Installations Handling Substances

The EnviroInsight Report indicates there are no Control of Major Hazard sites (COMAH) or Notification of Installations Handling Substances (NIHHS) within 250m of the site boundary.

5.2.2 Hazardous Substance Storage/Usage

There are no records of Hazardous substance storage/usage within 500m of the site boundary.

5.3 Potentially Infilled Land

The old quarry once mapped 133m to the North West has been identified as the only infilled land feature situated within 250m of the site boundary.

5.4 Sensitive Land Uses

The site itself is within Green Belt Land and a Nitrate Vulnerable Zone, with another Nitrate Vulnerable Zone mapped 871m to the North. No other Sensitive Land Uses are mapped within 1000m of the site boundary.

5.5 Visual and Cultural Designations

There are no Visual or Cultural Designations within 250m of the site boundary.

5.6 Agricultural Designations

The site is in Grade 4 Land, which is defined as being poor quality agricultural land. Countryside Steward Schemes are mapped 9m to the South West and 241m to the East. No other Agricultural Designations are mapped within 250m of the site boundary.

5.7 Habitat Designations

No Habitat Designations are mapped within 250m of the site boundary.

6.0 Potentially Contaminative Sites

6.1 Potentially Contaminative Land Uses

Historical potentially contaminated land uses within 250m of the site boundary have been identified as the pumping shaft once adjacent to the North of the site, refuse heaps from 10m to the North, old coal shafts and the backfilled quarry. Current potentially contaminative land uses identified within 250m of the site boundary are the electrical sub-station 14m to the South West.

7.0 Geotechnical Assessment

7.1 Natural Hazards

The EnviroInsight Report states that the site has a **Negligible** risk of Shrink Swell Clays, Running Sands, Compressible Deposits and Ground Dissolution of Soluble Rocks and a **Very Low** risk of Collapsible Deposits and Landslides.

8.0 Mining

The site is within a Coal Mining Area. Upon inspecting the Coal Authority Online Interactive Viewer, it is evident that the site is in a Development High Risk Area and therefore a detailed desk based Coal Mining Risk Assessment has been carried out and is shown in Appendix D. In summary, it is evident that the site is at high risk of potential unrecorded mine workings, due to it being in an area of probable mine workings and the presence of an on-site mine entry.

The site is not withing a Non-Coal Mining Area.

9.0 Conceptual Site Model

9.1 Introduction

A preliminary **Conceptual Site Model** (CSM) has been developed for the site, to assess any constraints on the proposed development arising from contamination which may be present. The CSM describes the relationship between contamination which may be present from past and current activities, both on and off site, along with potential receptors of that contamination.

The site has been assessed in line with current UK guidelines and follows the procedures set out in the Environmental Agency 'Land Contamination Risk Management' (LCRM) web pages which are accessible via the government website.

LCRM provides the technical framework for structured decision making about land contamination and builds on previous work carried out under the Contaminated Land Research Programme of the former Department of the Environment. LCRM has adopted and refined the methodology and terminology that has been used in contaminated land risk assessment for a number of years.

LCRM defines the three essential elements to any risk:

- **A contaminant source** - a substance that is in, on or under land and has the potential to cause harm or to cause pollution of controlled waters;
- **A receptor** – in general terms, something that could be adversely affected by a contaminant, such as people, an ecological system, property or a water body; and

- **A pathway** - a route or means by which a receptor can be exposed to or affected by a contaminant.

Each of these elements can exist independently, but they create a risk only where they are linked together, so that a particular contaminant affects a particular receptor through a particular pathway. This kind of linked combination of source-pathway-receptor is described as a **Potential Pollutant Linkage (PPL)**.

It should be noted that at this preliminary stage, the assessment is based only on a desk-based study. A quantitative assessment of the potential risk is not possible at this stage of the assessment.

This report presents a Preliminary Conceptual Site Model and Preliminary Risk Assessments for the site, based on a **Residential** end use.

9.2 Potential Contamination Sources

9.2.1 On Site Sources

On-site sources of contamination have been identified as potential soil contamination associated with likely Made Ground on the site from historical construction and demolition. There is also the potential for ground gases to be present due to possible mine workings.

9.2.2 Off Site Sources

Possible off-site sources of contamination have been identified as potential ground gases associated with the nearby historically infilled Quarry.

9.3 Potential Receptors

9.3.1 Human Receptors

Based on the proposed use of the site, on-site receptors include:

- Current site users;
- New Residents;
- Construction workers involved in the proposed development. Note that potential contamination risks to construction workers will be mitigated by appropriate risk assessments and mitigation

measures required by Control of Substances Hazardous to Health (COSHH) and Construction, Design and Management (CDM) regulations.

9.3.2 Controlled Waters Receptors

The following on-site controlled waters receptors include:

- Groundwater within the underlying Aquifers.

9.3.3 Buildings Receptors

The proposed new buildings are a potential receptor.

9.4 Potential Pathways

9.4.1 On-Site Human Receptors

Potential pathways to future human receptors on site include:

- Dermal contact or ingestion with contaminated soils;
- Inhalation of contaminants in soil derived dust;
- Migration and inhalation of gases and vapours outdoors or indoors;
- Contamination of drinking water pipes by contaminated soils/water leading to the ingestion of contaminated drinking water.

9.4.2 Controlled Waters

Potential pathways to on-site controlled water receptors (groundwater) include:

- Leaching of contaminants and/or migration of contaminants from the unsaturated zone of soils to groundwater (Aquifers) in natural strata;
- Vertical migration of contaminants in shallow groundwater to deeper strata and aquifers;
- Lateral migration of impacted water through service conduits, drainage systems and possible perched groundwater pathways to surface water receptors.

9.4.3 Buildings

Potential pathways from off-site sources to the on-site property receptor include:

- Migration and accumulation of ground gas or vapours in buildings or structures.

9.5 Preliminary Risk Assessment

Based on the stated potential sources of contaminants identified and the receptors and pathways described, an assessment of the environmental risks has been made with reference to the significance and degree of risk. This assessment is based on consideration of whether the source contamination can reach a receptor and hence whether it is of a major or minor significance.

A preliminary Conceptual Site Model (CSM) of the Potential Pollutant Linkages (PPL) has been developed based on the information derived from this desk study for the site. This CSM has been used to identify potentially Relevant PPLs for the current and proposed end uses which have been assessed qualitatively using CIRIA 552 guidance, as described in Table 9.1 and Table 9.2.

Table 9.1 Classification of Consequence

Consequence	Criteria
Severe	Short term (acute) risk to Human Health likely to result in "significant harm" as defined by the Environmental Protection Act 1990, Part IIa. Short term risk of pollution of sensitive water resource. Catastrophic damage to buildings / property
Moderate	Chronic damage to Human Health likely, over a long term, to result in "significant harm" as defined by the Environmental Protection Act 1990, Part IIa. Pollution of sensitive water resources
Mild	Health effects to Human Health that are unlikely to result in "significant harm" as defined by the Environmental Protection Act 1990, Part IIa. Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services. Damage to sensitive buildings / structures / services or the environment
Negligible	Non-permanent health effects to Human Health that are unlikely to result in "significant harm" as defined by the Environmental Protection Act 1990, Part IIa. Those that are easily prevented by means such as personal protective clothing. Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve.

Table 9.2 Classification of Probability

Probability	Criteria
Almost Certain	Circumstances are such that an event either appears very likely in the short term and almost inevitable over the long term or there is evidence of currently harm occurring
Likely	Circumstances are such that an event, whilst not inevitable, is possible in the short term and is likely to occur over the long term
Unlikely	Circumstances are such that it is possible an event could occur, but it is by no means certain to occur even over a longer period, and it is less likely in the shorter term
Very Unlikely	Pollutant linkage may be present, but the circumstances under which harm would occur are improbable even in the medium to long term
Extremely Unlikely	Pollutant linkage may be present, but the circumstances under which harm would occur are highly improbable even in the long term

Once the consequence and probability have been classified, these can then be compared to produce a risk category (using Table 9.3), ranging from **Very High Risk** to **Very Low Risk,** with the definitions summarised in Table 9.4.

Table 9.3 Comparison of Consequence against Probability

Consequence / Probability	Severe	Moderate	Mild	Negligible
Almost Certain	Very High Risk	High Risk	Moderate Risk	Low Risk
Likely	High Risk	Moderate Risk	Moderate/ Low Risk	Low Risk
Unlikely	Moderate Risk	Moderate/ Low Risk	Low Risk	Very Low Risk
Very Unlikely	Low Risk	Low Risk	Very Low Risk	Very Low Risk
Extremely Unlikely	Very Low Risk	Very Low Risk	Very Low Risk	Very Low Risk

Table 9.4 Description of the Classified Risks and Likely Action Required

Risk	Criteria
Very High	There is a high probability that severe harm could arise to a designated receptor from an identified hazard at the site without appropriate remediation action
High	Harm is likely to arise to a designated receptor from an identified hazard at the site without appropriate remediation action.
Moderate	It is possible that without appropriate remediation action, harm could arise to a designated receptor. It is relatively unlikely that any such harm would be severe, and if any harm were to occur it is more likely that such harm would be relatively mild
Low	It is possible that harm could arise to a designated receptor from an identified hazard. It is likely that, at works, if any harm were to be realised, any such effects would be mild.
Very Low	There is very low possibility that harm could arise to the receptor, but it is likely that this harm, if realised, would be mild at worst

In accordance with CLR11, professional judgement has been employed to evaluate the risk on a qualitative basis using available information.

A summary of the pollution linkages identified during the desk study are provided in Table 9.5.

Table 9.5 Conceptual Site Model of Potential Pollutant Linkages

Source	Receptor	Pathway	Risk	Discussion
Contaminants in soil, soil derived dust, surface water run-off, groundwater, and as vapours/ground gas	New Residents	• Dermal contact or ingestion contaminants in soil-derived dust and entrained surface water run-off from areas where soil is exposed at the surface or where excavation takes place and in shallow groundwater in the natural strata if excavation takes place below the water table. • Inhalation of contaminants in soil derived dust from areas where soil is exposed at the surface of where excavation takes place. • Inhalation of soil and water derived vapours and ground gas outdoors • Inhalation of soil derived, and water derived vapours and ground gas indoors where it may have accumulated in buildings and enclosed spaces.	Moderate/Low	A potential risk of soil contamination exists in proposed soft landscaped garden areas, associated with historical construction and demolition of buildings on the site. This could result in contaminated Made Ground being present. Possible sources of ground gases have also been identified both on-site and off-site in the form of possible unrecorded mine workings below the site and the nearby backfilled quarry.
	Construction Workers	• Dermal contact or ingestion contaminants in soil-derived dust and entrained surface water run-off from areas where soil is exposed at the surface or where excavation takes place and in shallow groundwater in the natural strata if excavation takes place below the water table. • Inhalation of contaminants in soil derived dust from areas where soil is exposed at the surface of where excavation takes place.	Low	Construction workers will wear necessary PPE during the development works, thus reducing any risk of contact with potential contaminants.
Contaminants in Soil	Groundwater within the underlying soils and bedrock (Aquifer)	• Leaching of contaminants and/or migration of free phase contaminants from the unsaturated zone soils to groundwater in the natural strata • Vertical migration of contaminants in shallow groundwater to deeper strata and aquifer	Low	The aquifer is likely to be at a depth that will not be affected by potential soil contaminants
Contaminants in soil, surface water runoff, groundwater and as vapours/ground gas	Surface Water	• Lateral migration of contaminants and/or migration of free phase contaminants present in the Made Ground via groundwater to surface water discharge • Lateral migration of contaminants and/or migration of free phase contaminants present in the Made Ground and entrained in surface water runoff	Low	No surface water features on the site are deemed to present a risk to future human usage.
Contaminants in soil, groundwater and as vapours/ground gas	Building	• Accumulation of soil and water derived vapours/and or ground gas in enclosed spaces	Moderate/Low	Possible sources of ground gases from nearby infilled quarry and potential mine workings beneath or near to the site.
Contaminants in soil	Water Supply Routes	• Migration of heavy metal contaminants into newly placed water supply routes	Low	No other contamination risks identified.

10.0 Conclusions and Recommendations

The site is proposed to have the current buildings demolished, with a new large detached house built further into the current garden.

Historically the site has had buildings since 1855, with only the occasional addition and demolition of small buildings on the site over the years.

Potential on-site sources of contamination were identified as possible contaminants associated with building demolition and construction over the years, in addition to potential ground gases associated with possible mine workings.

Potential off-site sources of contamination have been identified as possible ground gases associated with infilled land nearby such as the old quarry.

In summary, on the basis of the above listed contaminant sources it is concluded that:

- Contaminants are possibly present in, on or under the land at the site from either on-site or off-site sources in the form of ground gases; and
- Future on site receptors to any form of contamination have been identified as the construction workers, residents, the new buildings, surface water and the groundwater.

A qualitative risk assessment of the identified potential pathways of contamination to the site have been summarised in Table 9.5. The following risks have been designated:

- Future Human Receptors –Moderate/Low Risk
- Construction Workers –Low Risk
- Groundwater –Low Risk
- Surface Water –Low Risk
- New Buildings – Moderate/Low Risk

- Utilities – Low Risk

Based on the review of all available historical data, it has been established that overall, a **MODERATE/LOW** risk of potential pollutant linkage to the site exists, due to the potential for on-site sources of soil contamination and potential sources of ground gases from both on-site and off-site sources.

The site was also found to be situated within a Development High Risk Area, associated with possible unrecorded mine workings, in addition to having a mine entry point located directly on site.

A Phase II Intrusive Investigation is therefore required on the site, to allow for sample collection of shallow soils for suitable contamination testing, in addition to a detailed ground gas assessment. This investigation should be tied into the investigation that is required to assess the condition of the existing mine entry on the site and to identify whether unrecorded mine workings exist beneath the site. The following works are therefore recommended:

- Reduced Level Dig with excavator around the mapped mine entry point on the site, in order to assess the condition of the mine entry and the surrounding area;
- Rotary Open Hole Boreholes to assess whether unrecorded mine workings exist beneath the stie;
- Installation of ground gas monitoring standpipe within the boreholes to allow for a detailed ground gas assessment; and
- Machine Excavated Trial pits to allow for shallow soil sample collection for appropriate soil contamination testing

11.0 References

- BS 5930: (2015) Code of Practice for Site Investigations. British Standards Institution.
- BS 10175: (2011) Code of Practice for the Investigation of Potentially Contaminated Sites. British Standard Institution.
- CIRIA 552: (2001) Contaminated Land Risk Assessment, A guide to good practice.

APPENDIX A – GROUNDSURE REPORT

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

5, BARNSLEY ROAD, FLOCKTON, WAKEFIELD, KIRKLEES, WF4 4DN

Order Details

Date: 14/08/2025

Your ref: RBG476

Our Ref: GS-3CO-FR8-P4Y-THS

Site Details

Location: 422494 415078

Area: 0.48 ha

Authority: Kirklees Council ↗

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

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
14 >	1.1 >	Historical industrial land uses >	0	15	11	32	-
17 >	1.2 >	Historical tanks >	0	0	0	2	-
17 >	1.3 >	Historical energy features >	0	1	0	0	-
18	1.4	Historical petrol stations	0	0	0	0	-
18	1.5	Historical garages	0	0	0	0	-
18	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
19 >	2.1 >	Historical industrial land uses >	0	19	14	43	-
22 >	2.2 >	Historical tanks >	0	0	0	3	-
23 >	2.3 >	Historical energy features >	0	2	0	0	-
23	2.4	Historical petrol stations	0	0	0	0	-
23	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
24	3.1	Active or recent landfill	0	0	0	0	-
24	3.2	Historical landfill (BGS records)	0	0	0	0	-
25	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
25	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
25	3.5	Historical waste sites	0	0	0	0	-
25	3.6	Licensed waste sites	0	0	0	0	-
25 >	3.7 >	Waste exemptions >	0	0	4	0	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
27 >	4.1 >	Recent industrial land uses >	0	1	2	-	-
28	4.2	National Geographic Database (NGD) - Current or recent tanks	0	0	0	-	-
28	4.3	Current or recent petrol stations	0	0	0	0	-
28	4.4	Electricity cables	0	0	0	0	-
28	4.5	Gas pipelines	0	0	0	0	-

28	4.6	Sites determined as Contaminated Land	0	0	0	0	-
29	4.7	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
29	4.8	Regulated explosive sites	0	0	0	0	-
29	4.9	Hazardous substance storage/usage	0	0	0	0	-
29	4.10	Historical licensed industrial activities (IPC)	0	0	0	0	-
29	4.11	Licensed industrial activities (Part A(1))	0	0	0	0	-
30	4.12	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
30	4.13	Radioactive Substance Authorisations	0	0	0	0	-
30 >	**4.14 >**	**Licensed Discharges to controlled waters >**	0	0	0	2	-
31	4.15	Pollutant release to surface waters (Red List)	0	0	0	0	-
31	4.16	Pollutant release to public sewer	0	0	0	0	-
31	4.17	List 1 Dangerous Substances	0	0	0	0	-
31	4.18	List 2 Dangerous Substances	0	0	0	0	-
31 >	**4.19 >**	**Pollution Incidents (EA/NRW) >**	0	1	0	0	-
32	4.20	Pollution inventory substances	0	0	0	0	-
32	4.21	Pollution inventory waste transfers	0	0	0	0	-
32	4.22	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
33	5.1	Superficial aquifer	None (within 500m)				
34 >	**5.2 >**	**Bedrock aquifer >**	Identified (within 500m)				
36 >	**5.3 >**	**Groundwater vulnerability >**	Identified (within 50m)				
37	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
37	5.5	Groundwater vulnerability- local information	None (within 0m)				
38	5.6	Groundwater abstractions	0	0	0	0	0
39 >	**5.7 >**	**Surface water abstractions >**	0	0	0	0	1
39	5.8	Potable abstractions	0	0	0	0	0
39	5.9	Source Protection Zones	0	0	0	0	-
39	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	**Hydrology >**	On site	0-50m	50-250m	250-500m	500-2000m

41 >	6.1 >	Water Network (OS MasterMap) >	0	1	4	-	-
42 >	6.2 >	Surface water features >	0	1	3	-	-
42 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
43 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
43 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
44	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
44	7.2	Historical Flood Events	0	0	0	-	-
44	7.3	Flood Defences	0	0	0	-	-
45	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
45	7.5	Flood Storage Areas	0	0	0	-	-
46	7.6	Flood Zone 2	None (within 50m)				
46	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
47 >	8.1 >	Surface water flooding >	1 in 100 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding >					
49 >	9.1 >	Groundwater flooding >	Negligible (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
50	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
51	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
51	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
51	10.4	Special Protection Areas (SPA)	0	0	0	0	0
51	10.5	National Nature Reserves (NNR)	0	0	0	0	0
52	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
52 >	10.7 >	Designated Ancient Woodland >	0	0	0	0	3
52	10.8	Biosphere Reserves	0	0	0	0	0
53	10.9	Forest Parks	0	0	0	0	0
53	10.10	Marine Conservation Zones	0	0	0	0	0
53 >	10.11 >	Green Belt >	1	0	0	0	0

53	10.12	Proposed Ramsar sites	0	0	0	0	0
54	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
54	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
54	10.15	Nitrate Sensitive Areas	0	0	0	0	0
54 >	10.16 >	Nitrate Vulnerable Zones >	1	0	0	0	2
56 >	10.17 >	SSSI Impact Risk Zones >	1	-	-	-	-
57	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
58	11.1	World Heritage Sites	0	0	0	-	-
58	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
58	11.3	National Parks	0	0	0	-	-
58	11.4	Listed Buildings	0	0	0	-	-
59	11.5	Conservation Areas	0	0	0	-	-
59	11.6	Scheduled Ancient Monuments	0	0	0	-	-
59	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
60 >	12.1 >	Agricultural Land Classification >	Not Surveyed (within 250m)				
61	12.2	Open Access Land	0	0	0	-	-
61	12.3	Tree Felling Licences	0	0	0	-	-
61	12.4	Environmental Stewardship Schemes	0	0	0	-	-
61 >	12.5 >	Countryside Stewardship Schemes >	0	1	1	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
63	13.1	Priority Habitat Inventory	0	0	0	-	-
63	13.2	Habitat Networks	0	0	0	-	-
63	13.3	Open Mosaic Habitat	0	0	0	-	-
63	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
64 >	14.1 >	10k Availability >	Identified (within 500m)				
65 >	14.2 >	Artificial and made ground (10k) >	0	1	1	5	-

67 >	14.3 >	Superficial geology (10k) >	0	0	0	1	-
68	14.4	Landslip (10k)	0	0	0	0	-
69 >	14.5 >	Bedrock geology (10k) >	1	1	1	4	-
70 >	14.6 >	Bedrock faults and other linear features (10k) >	0	0	0	2	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
71 >	15.1 >	50k Availability >	Identified (within 500m)				
72 >	15.2 >	Artificial and made ground (50k) >	0	0	0	3	-
73	15.3	Artificial ground permeability (50k)	0	0	-	-	-
74	15.4	Superficial geology (50k)	0	0	0	0	-
74	15.5	Superficial permeability (50k)	None (within 50m)				
74	15.6	Landslip (50k)	0	0	0	0	-
74	15.7	Landslip permeability (50k)	None (within 50m)				
75 >	15.8 >	Bedrock geology (50k) >	1	0	1	4	-
76 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
76 >	15.10 >	Bedrock faults and other linear features (50k) >	0	0	0	2	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
77	16.1	BGS Boreholes	0	0	0	-	-
Page	Section	Natural ground subsidence >					
78 >	17.1 >	Shrink swell clays >	Negligible (within 50m)				
79 >	17.2 >	Running sands >	Negligible (within 50m)				
81 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
82 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
83 >	17.5 >	Landslides >	Very low (within 50m)				
85 >	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
87 >	18.1 >	BritPits >	0	0	5	12	-
93 >	18.2 >	Surface ground workings >	0	8	13	-	-
94 >	18.3 >	Underground workings >	0	8	1	8	40
97	18.4	Underground mining extents	0	0	0	0	-

97	18.5	Historical Mineral Planning Areas	0	0	0	0	-
97	18.6	Non-coal mining	0	0	0	0	0
97	18.7	JPB mining areas	None (within 0m)				
97	18.8	The Coal Authority non-coal mining	0	0	0	0	-
98	18.9	Researched mining	0	0	0	0	-
98	18.10	Mining record office plans	0	0	0	0	-
98	18.11	BGS mine plans	0	0	0	0	-
98 >	**18.12 >**	**Coal mining >**	Identified (within 0m)				
99	18.13	Brine areas	None (within 0m)				
99	18.14	Gypsum areas	None (within 0m)				
99	18.15	Tin mining	None (within 0m)				
99	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
100	19.1	Natural cavities	0	0	0	0	-
100	19.2	Mining cavities	0	0	0	0	0
100	19.3	Reported recent incidents	0	0	0	0	-
100	19.4	Historical incidents	0	0	0	0	-
Page	Section	**Radon >**					
102 >	**20.1 >**	**Radon >**	Less than 1% (within 0m)				
Page	Section	**Soil chemistry >**	On site	0-50m	50-250m	250-500m	500-2000m
104 >	**21.1 >**	**BGS Estimated Background Soil Chemistry >**	2	2	-	-	-
104	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
105	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
106	22.1	Underground railways (London)	0	0	0	-	-
106	22.2	Underground railways (Non-London)	0	0	0	-	-
106	22.3	Railway tunnels	0	0	0	-	-
106	22.4	Historical railway and tunnel features	0	0	0	-	-
106	22.5	Royal Mail tunnels	0	0	0	-	-

107	22.6	Historical railways	0	0	0	-	-
107	22.7	Railways	0	0	0	-	-
107	22.8	Crossrail 2	0	0	0	0	-
107	22.9	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 30/05/2021

Site Area: 0.48ha

Recent site history - 2018 aerial photograph

Capture Date: 01/07/2018

Site Area: 0.48ha

Recent site history - 2012 aerial photograph

Capture Date: 26/03/2012

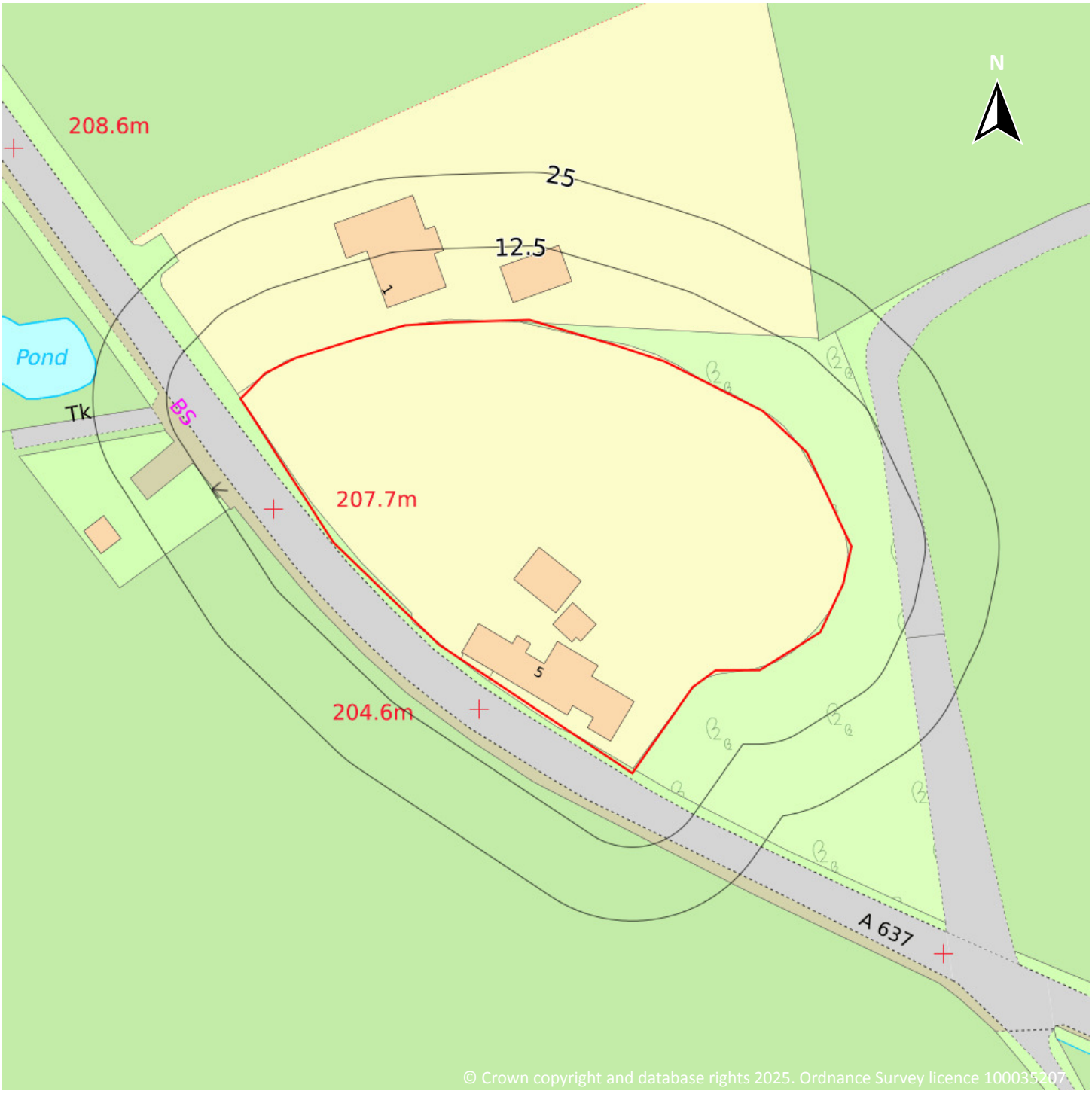
Site Area: 0.48ha

Recent site history - 1999 aerial photograph

Capture Date: 10/07/1999

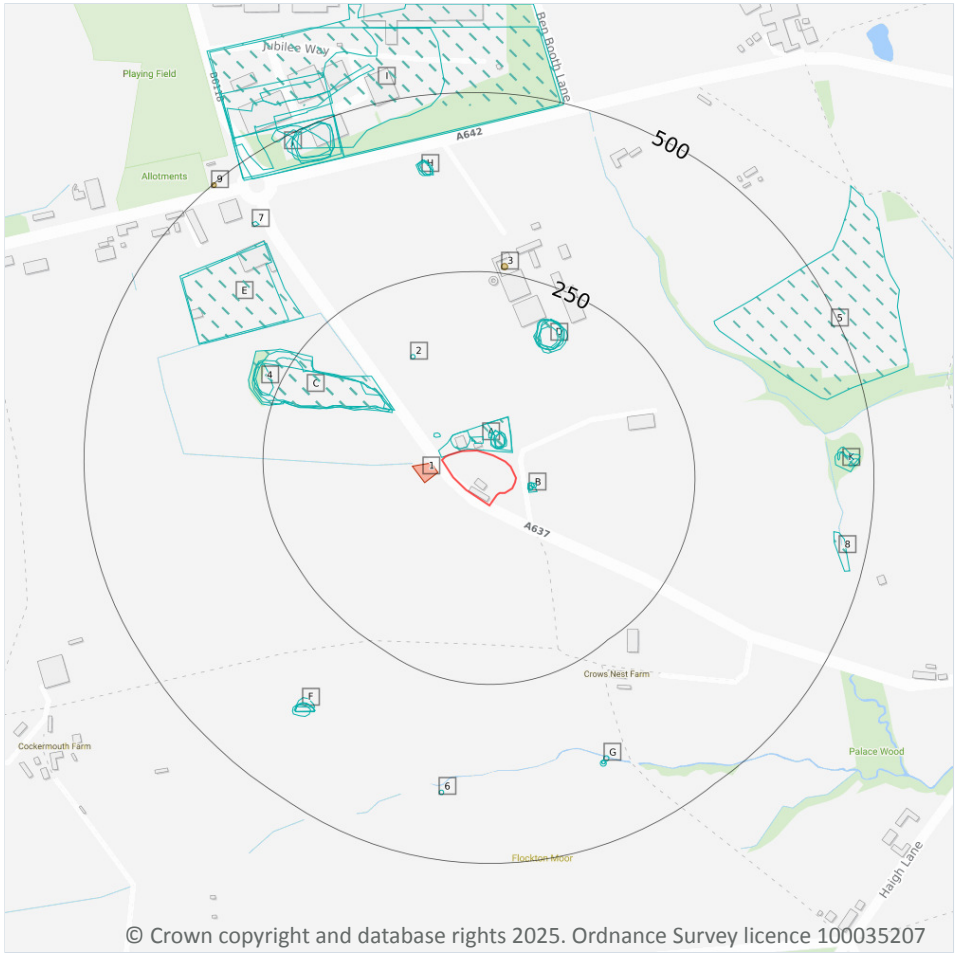
Site Area: 0.48ha

OS MasterMap site plan



Site Area: 0.48ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

1.1 Historical industrial land uses

Records within 500m	58

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

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

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Pumping Shaft**	**1951**	**1488636**

ID	Location	Land use	Dates present	Group ID
A	4m N	Refuse Heap	1904	1434286
A	10m N	Pumping Shaft	1938	1520182
A	10m N	Refuse Heap	1966	1563431
A	11m NE	Refuse Heap	1948	1578843
A	11m N	Refuse Heap	1938	1575143
A	12m N	Refuse Heap	1951	1516818
A	14m NE	Refuse Heap	1904	1523483
B	18m E	Unspecified Disused Shaft	1966 - 1982	1544737
B	18m E	Unspecified Old Shaft	1948	1526692
B	19m E	Unspecified Old Shaft	1938	1503666
B	19m E	Unspecified Old Shaft	1904	1550948
A	22m N	Pumping Shaft	1904	1489316
B	23m E	Unspecified Old Shaft	1951	1510514
A	28m NW	Pumping Shaft	1948	1534008
C	96m NW	Unspecified Quarry	1904	1563019
C	96m NW	Unspecified Disused Quarry	1951 - 1966	1572264
C	99m NW	Unspecified Quarry	1938 - 1948	1485681
C	101m NW	Unspecified Disused Quarry	1892	1495289
2	143m N	Unspecified Old Shaft	1904	1446418
D	161m NE	Sand Pit	1951	1449189
D	165m NE	Refuse Heap	1948	1556455
D	165m NE	Refuse Heap	1904	1543269
D	165m NE	Refuse Heap	1938	1567595
D	168m NE	Refuse Heap	1892	1500969
D	169m NE	Unspecified Heap	1966 - 1982	1486352
4	256m NW	Unspecified Disused Quarry	1982	1532584
E	277m NW	Unspecified Depot	1982 - 1993	1578314
E	290m NW	Unspecified Depot	1966	1506566

ID	Location	Land use	Dates present	Group ID
5	348m NE	Refuse Heap	1982	1490991
F	365m SW	Unspecified Pit	1955	1581365
F	372m SW	Unspecified Pit	1938	1498799
F	372m SW	Unspecified Pit	1904	1575001
F	372m SW	Unspecified Pit	1948	1552044
F	375m SW	Unspecified Old Quarry	1892	1437719
G	385m SE	Unspecified Old Shaft	1955	1446422
H	388m N	Unspecified Pit	1948	1484496
H	388m N	Unspecified Pit	1951	1483258
H	389m N	Unspecified Pit	1938	1519713
H	389m N	Unspecified Pit	1904	1527414
G	389m SE	Unspecified Old Shaft	1948	1545010
G	390m SE	Unspecified Old Shaft	1938	1499173
G	390m SE	Unspecified Old Shaft	1904	1545855
6	403m S	Unspecified Old Shaft	1904	1446421
7	416m NW	Smithy	1904	1454733
I	437m N	Unspecified Mine	1966	1442786
I	439m N	Collieries	1948	1542238
J	441m N	Collieries	1892 - 1904	1481805
K	446m E	Unspecified Quarry	1948	1464033
J	447m N	Collieries	1938	1581963
J	448m N	Refuse Heap	1892 - 1904	1504663
J	449m NW	Refuse Heap	1948	1488839
K	450m E	Unspecified Ground Workings	1951	1439130
I	450m N	Refuse Heap	1966	1577516
8	450m E	Unspecified Ground Workings	1967 - 1993	1484217
J	452m N	Refuse Heap	1951	1563988
J	456m NW	Refuse Heap	1938	1556086

ID	Location	Land use	Dates present	Group ID
J	469m NW	Railway Sidings	1951 - 1966	1497825

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	2

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
3	255m N	Unspecified Tank	1990	256003
9	495m NW	Unspecified Tank	1893	242573

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	1

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
1	14m SW	Electricity Substation	1990	153606

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m	0

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

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

2 Past land use - un-grouped

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	76

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

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

ID	Location	Land Use	Date	Group ID
A	**On site**	**Pumping Shaft**	**1951**	**1488636**
A	4m N	Refuse Heap	1904	1434286
A	10m N	Pumping Shaft	1938	1520182

ID	Location	Land Use	Date	Group ID
A	10m N	Refuse Heap	1966	1563431
A	11m NE	Refuse Heap	1948	1578843
A	11m NE	Refuse Heap	1948	1578843
A	11m N	Refuse Heap	1938	1575143
A	12m N	Refuse Heap	1951	1516818
A	14m NE	Refuse Heap	1904	1523483
C	18m E	Unspecified Disused Shaft	1982	1544737
C	18m E	Unspecified Disused Shaft	1966	1544737
C	18m E	Unspecified Old Shaft	1948	1526692
C	18m E	Unspecified Old Shaft	1948	1526692
C	19m E	Unspecified Old Shaft	1938	1503666
C	19m E	Unspecified Old Shaft	1904	1550948
A	22m N	Pumping Shaft	1904	1489316
C	23m E	Unspecified Old Shaft	1951	1510514
A	28m NW	Pumping Shaft	1948	1534008
A	28m NW	Pumping Shaft	1948	1534008
D	96m NW	Unspecified Quarry	1904	1563019
D	96m NW	Unspecified Disused Quarry	1951	1572264
D	99m NW	Unspecified Quarry	1938	1485681
D	101m NW	Unspecified Disused Quarry	1892	1495289
D	120m NW	Unspecified Quarry	1948	1485681
1	143m N	Unspecified Old Shaft	1904	1446418
E	161m NE	Sand Pit	1951	1449189
E	165m NE	Refuse Heap	1948	1556455
E	165m NE	Refuse Heap	1948	1556455
E	165m NE	Refuse Heap	1938	1567595
E	165m NE	Refuse Heap	1904	1543269
E	168m NE	Refuse Heap	1892	1500969

ID	Location	Land Use	Date	Group ID
E	169m NE	Unspecified Heap	1982	1486352
E	169m NE	Unspecified Heap	1966	1486352
G	256m NW	Unspecified Disused Quarry	1982	1532584
G	266m W	Unspecified Disused Quarry	1966	1572264
H	277m NW	Unspecified Depot	1993	1578314
H	277m NW	Unspecified Depot	1982	1578314
H	290m NW	Unspecified Depot	1966	1506566
2	348m NE	Refuse Heap	1982	1490991
I	365m SW	Unspecified Pit	1955	1581365
I	372m SW	Unspecified Pit	1938	1498799
I	372m SW	Unspecified Pit	1904	1575001
I	372m SW	Unspecified Pit	1948	1552044
I	372m SW	Unspecified Pit	1948	1552044
I	375m SW	Unspecified Old Quarry	1892	1437719
J	385m SE	Unspecified Old Shaft	1955	1446422
K	388m N	Unspecified Pit	1948	1484496
K	388m N	Unspecified Pit	1948	1484496
K	388m N	Unspecified Pit	1951	1483258
K	389m N	Unspecified Pit	1938	1519713
K	389m N	Unspecified Pit	1904	1527414
J	389m SE	Unspecified Old Shaft	1948	1545010
J	389m SE	Unspecified Old Shaft	1948	1545010
J	390m SE	Unspecified Old Shaft	1938	1499173
J	390m SE	Unspecified Old Shaft	1904	1545855
3	403m S	Unspecified Old Shaft	1904	1446421
4	416m NW	Smithy	1904	1454733
L	437m N	Unspecified Mine	1966	1442786
L	439m N	Collieries	1948	1542238

ID	Location	Land Use	Date	Group ID
L	439m N	Collieries	1948	1542238
M	441m N	Collieries	1904	1481805
M	441m N	Collieries	1892	1481805
N	446m E	Unspecified Quarry	1948	1464033
M	447m N	Collieries	1938	1581963
M	448m N	Refuse Heap	1904	1504663
M	449m NW	Refuse Heap	1948	1488839
M	449m NW	Refuse Heap	1948	1488839
N	450m E	Unspecified Ground Workings	1951	1439130
L	450m N	Refuse Heap	1966	1577516
O	450m E	Unspecified Ground Workings	1993	1484217
O	450m E	Unspecified Ground Workings	1979	1484217
O	450m E	Unspecified Ground Workings	1967	1484217
M	452m N	Refuse Heap	1951	1563988
M	455m NW	Refuse Heap	1892	1504663
M	456m NW	Refuse Heap	1938	1556086
M	469m NW	Railway Sidings	1951	1497825

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**3**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. 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
F	255m N	Unspecified Tank	1990	256003
F	255m N	Unspecified Tank	1990	256003
5	495m NW	Unspecified Tank	1893	242573

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	2

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
B	14m SW	Electricity Substation	1990	153606
B	14m SW	Electricity Substation	1990	153606

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.

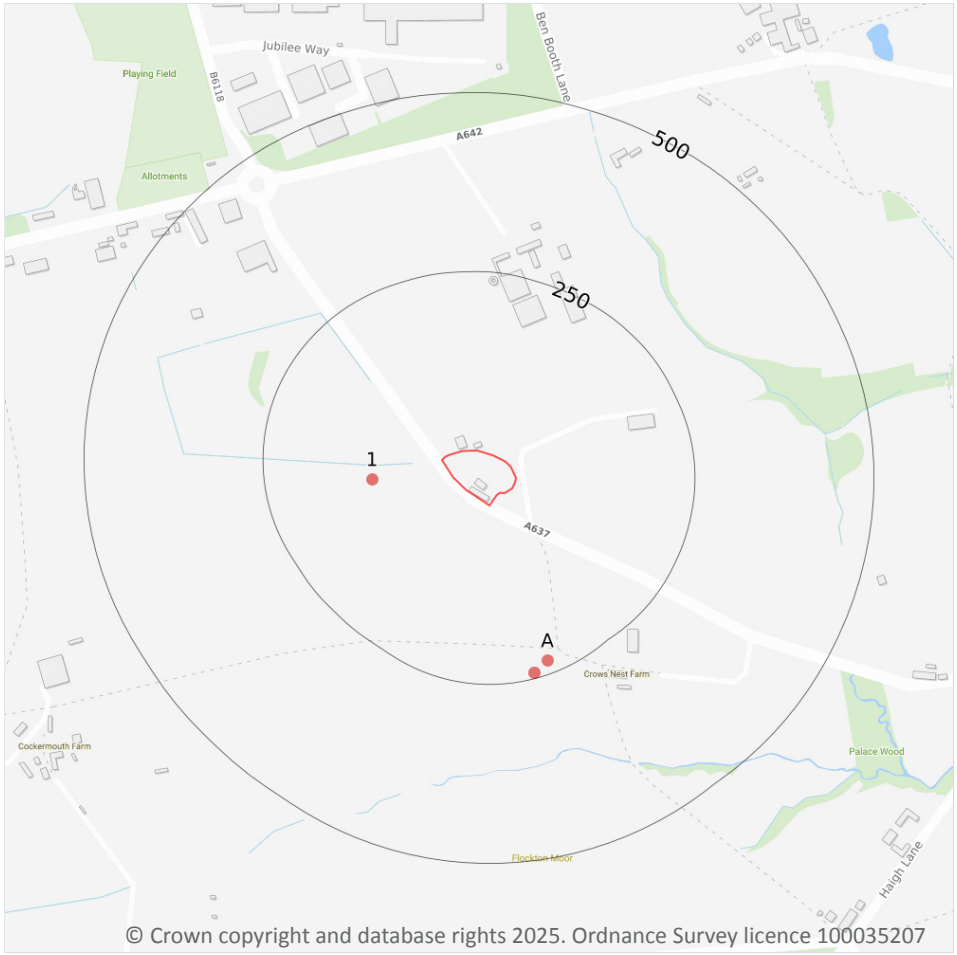
2.5 Historical garages

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)

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

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

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

3.5 Historical waste sites

Records within 500m	0

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

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

3.6 Licensed waste sites

Records within 500m	0

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

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

3.7 Waste exemptions

Records within 500m	4

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

Features are displayed on the Waste and landfill map on **page 24 >**

ID	Location	Site	Reference	Category	Sub-Category	Description
1	102m W	Flockton Hall Farm 49 Barnsley Road Wakefield Wf4 4dw	EPR/LF0631ZF /A001	Storing waste exemption	Non-agricultural waste only	Storage of sludge

ID	Location	Site	Reference	Category	Sub-Category	Description
A	232m S	Flockton Hall Farm 49 Barnsley Road Wakefield Wf4 4dw	EPR/NF0804UE/A001	Storing waste exemption	Non-agricultural waste only	Storage of sludge
A	243m S	Flockton Hall Farm 49 Barnsley Road Wakefield Wf4 4dw	EPR/LF0231ZL/A001	Storing waste exemption	Non-agricultural waste only	Storage of sludge
A	243m S	Flockton Hall Farm 49 Barnsley Road Wakefield Wf4 4dw	EPR/UH0970RP/A001	Storing waste exemption	Non-agricultural waste only	Storage of sludge

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	3

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 27 >**

ID	Location	Company	Address	Activity	Category
1	14m SW	Electricity Sub Station	West Yorkshire, WF4	Electrical Features	Infrastructure and Facilities
3	200m N	Wind Turbine	West Yorkshire, WF4	Energy Production	Industrial Features
4	212m E	Wind Turbine	West Yorkshire, WF4	Energy Production	Industrial Features

This data is sourced from Ordnance Survey.

4.2 National Geographic Database (NGD) - Current or recent tanks

Records within 250m	0

Current or recent tanks identified from the Ordnance Survey NGD.

This data is sourced from Ordnance Survey.

4.3 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.4 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.5 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.6 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.

4.7 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.

4.8 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.

4.9 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.

4.10 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.

4.11 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.

4.12 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.

4.13 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.

4.14 Licensed Discharges to controlled waters

Records within 500m	2

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

Features are displayed on the Current industrial land use map on **page 27 >**

ID	Location	Address	Details	
5	289m N	NEW HALL FARM, GRANGE MOOR PRIVAT, E STW	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: C3924 Permit Version: 1 Receiving Water: -	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 03/06/1985 Effective Date: 03/06/1985 Revocation Date: 01/10/1996
6	314m NW	PREMISES ON FLOCKTON LANE, GRANGE MOOR, KIRKLEES, WEST YORKSHIRE	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: 3513 Permit Version: 1 Receiving Water: TRIB OF FLOCKTON BECK	Status: TRANSFERRED FROM R(PP)A 1951-1961 Issue date: 14/01/1981 Effective Date: 14/01/1981 Revocation Date: -

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

4.15 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.

4.16 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.

4.17 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.

4.18 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.

4.19 Pollution Incidents (EA/NRW)

Records within 500m	1

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

Features are displayed on the Current industrial land use map on **page 27 >**

ID	Location	Details	
2	24m NW	Incident Date: 21/04/2002 Incident Identification: 73447 Pollutant: Contaminated Water Pollutant Description: Firefighting Run-Off	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)

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

4.20 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.

4.21 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.

4.22 Pollution inventory radioactive waste

Records within 500m	**0**

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

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

5 Hydrogeology - Superficial aquifer

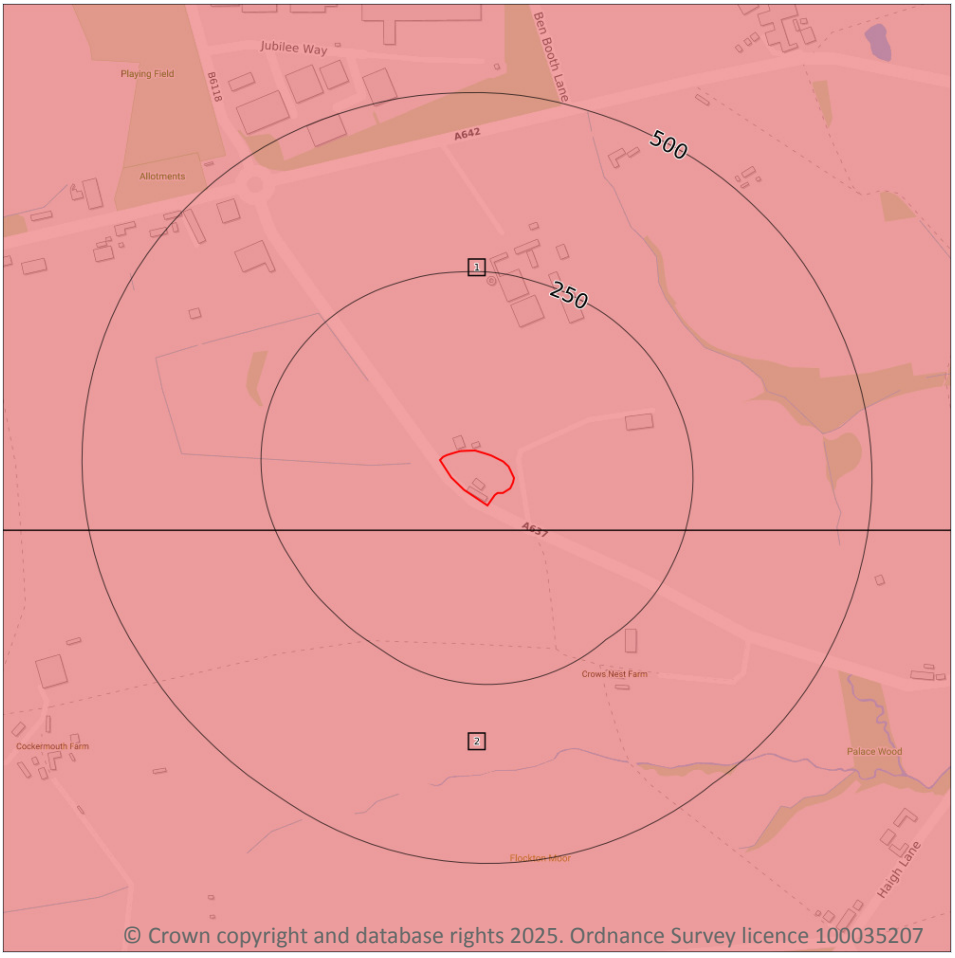
5.1 Superficial aquifer

Records within 500m	0

Aquifer status of groundwater held within superficial geology.

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

Bedrock aquifer



Site Outline

Search buffers in metres (m)

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

5.2 Bedrock aquifer

Records within 500m	2

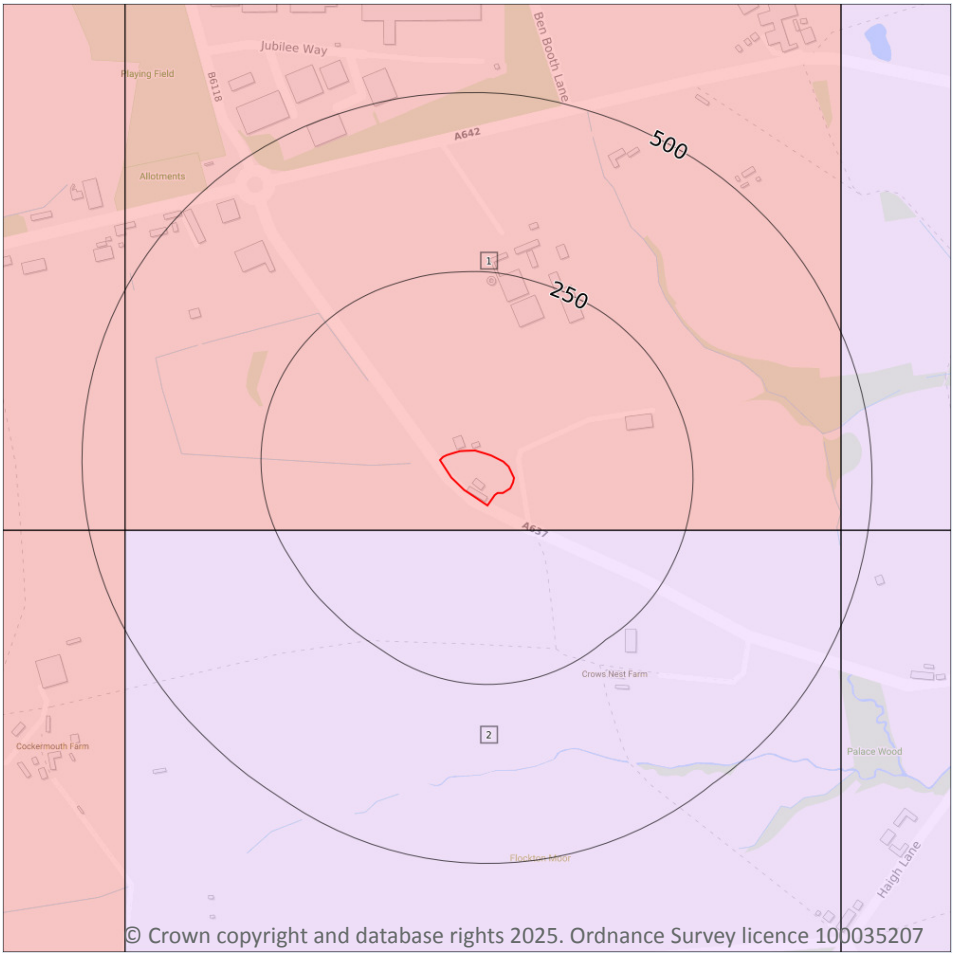
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 34 >**

ID	Location	Designation	Description
1	**On site**	**Secondary A**	**Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers**
2	35m S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

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

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

Other information
- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	2

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

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

Features are displayed on the Groundwater vulnerability map on **page 36 >**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	**On site**	**Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year**	**Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data**	**Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures**
2	35m S	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: Medium 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	0

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

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

5.7 Surface water abstractions

Records within 2000m	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 38 >**

ID	Location	Details	
-	1664m SE	Status: Historical Licence No: 2/27/08/024 Details: General Farming & Domestic Direct Source: SURFACE WATER Point: MOUSE HOUSE DYKE Data Type: Point Name: H LODGE & SONS Easting: 423500 Northing: 413700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 14/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 14/12/1965 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	5

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 41 >**

ID	Location	Type of water feature	Ground level	Permanence	Name
B	42m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
C	80m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	89m SE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
D	94m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	149m NW	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	4

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 41 >**

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 41 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	**On site**	**River**	**Bentley Brook from Source to River Dearne**	**GB104027063310**	**Dearne**	**Don and Rother**

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

6.4 WFD Surface water bodies

Records identified	1

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

Features are displayed on the Hydrology map on **page 41 >**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
3	368m S	River	Bentley Brook from Source to River Dearne	GB104027063310 ↗	Moderate	Fail	Moderate	2019

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

6.5 WFD Groundwater bodies

Records on site	1

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

Features are displayed on the Hydrology map on **page 41 >**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	**On site**	**Don & Rother Millstone grit & Coal Measures**	**GB40402G992300 ↗**	**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	**Negligible**
Highest risk within 50m	**1 in 100 year, 0.1m - 0.3m**

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

Features are displayed on the Surface water flooding map on **page 47 >**

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

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

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

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding

Site Outline

Search buffers in metres (m)

High

Moderate - High

Moderate

Low

Negligible

9.1 Groundwater flooding

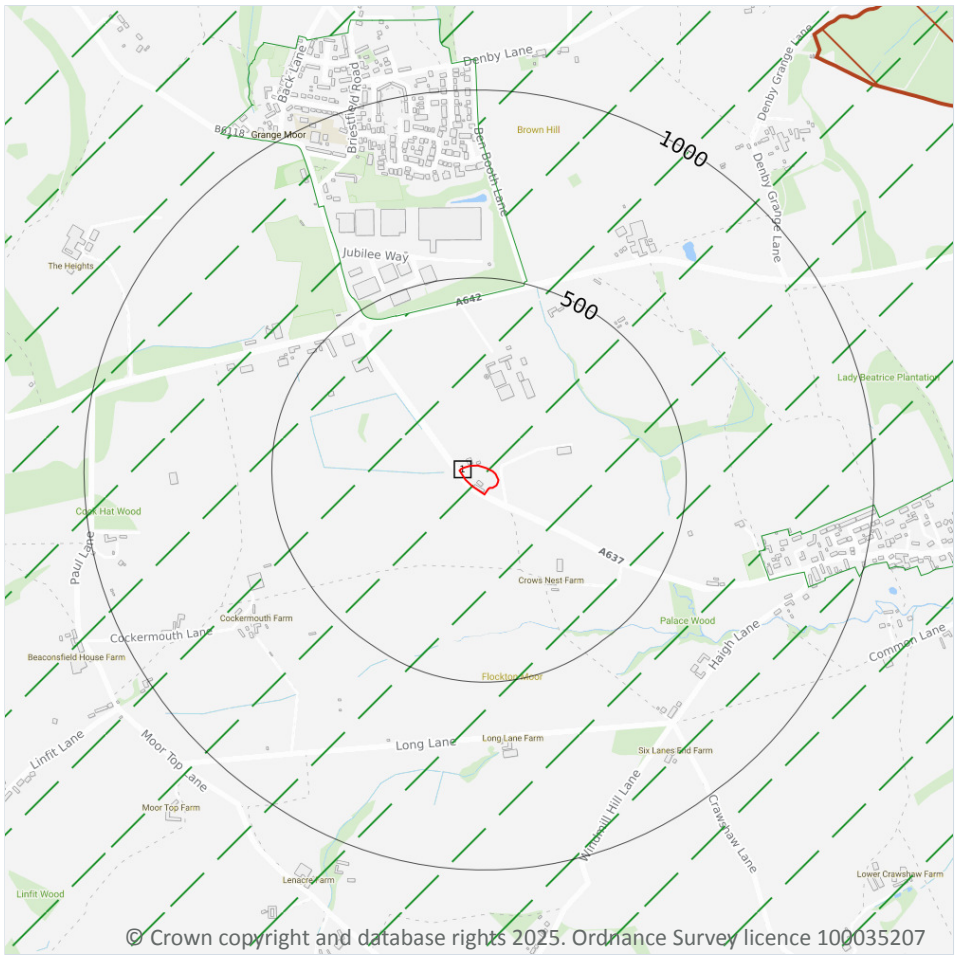
Highest risk on site	**Negligible**
Highest risk within 50m	**Negligible**

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

Features are displayed on the Groundwater flooding map on **page 49 >**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



Site Outline

Search buffers in metres (m)

Designated Ancient Woodland

Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m	0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	0

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

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

10.7 Designated Ancient Woodland

Records within 2000m	3

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 50 >**

ID	Location	Name	Woodland Type
2	1400m NE	Grange, Hepper And Denby Woods	Ancient Replanted Woodland
-	1554m SE	Epley Wood	Ancient Replanted Woodland
-	1733m E	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	1

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

Features are displayed on the Environmental designations map on **page 50 >**

ID	Location	Name	Local Authority name
1	**On site**	**South and West Yorkshire Green Belt**	**Kirklees**

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

10.12 Proposed Ramsar sites

Records within 2000m	0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m	3

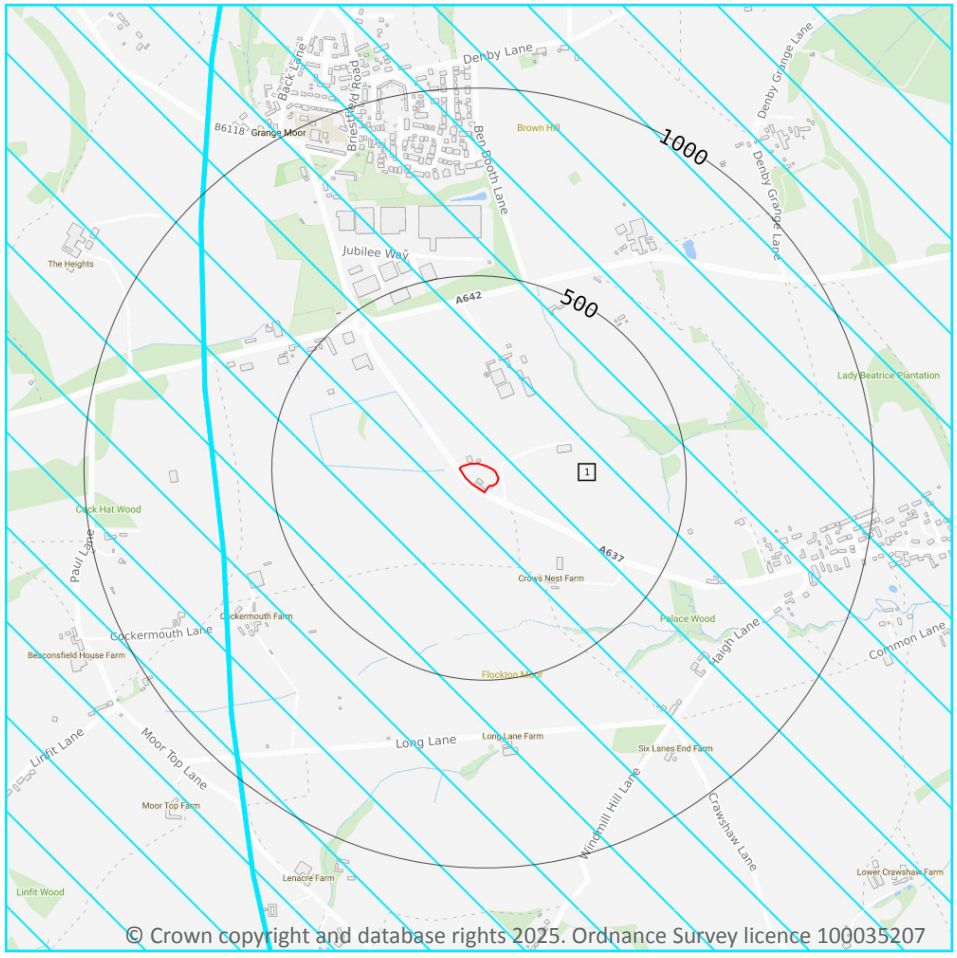
Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
On site	**River Dearne NVZ**	**Surface Water**	**278**	**Existing**

Location	Name	Type	NVZ ID	Status
871m N	River Dearne NVZ	Surface Water	278	Existing
1549m E	River Dearne NVZ	Surface Water	278	Existing

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

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

10.17 SSSI Impact Risk Zones

Records on site	1

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

Features are displayed on the SSSI Impact Zones and Units map on **page 56 >**

ID	Location	Type of developments requiring consultation
1	**On site**	**https://irz.geodata.org.uk/IRZ/step2.html?irzcode=0300000430000&notes=&location=422767,415332%20(IRZ%20polygon%20centre)**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	0

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

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

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	0

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

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

11.5 Conservation Areas

Records within 250m	0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m	0

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

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

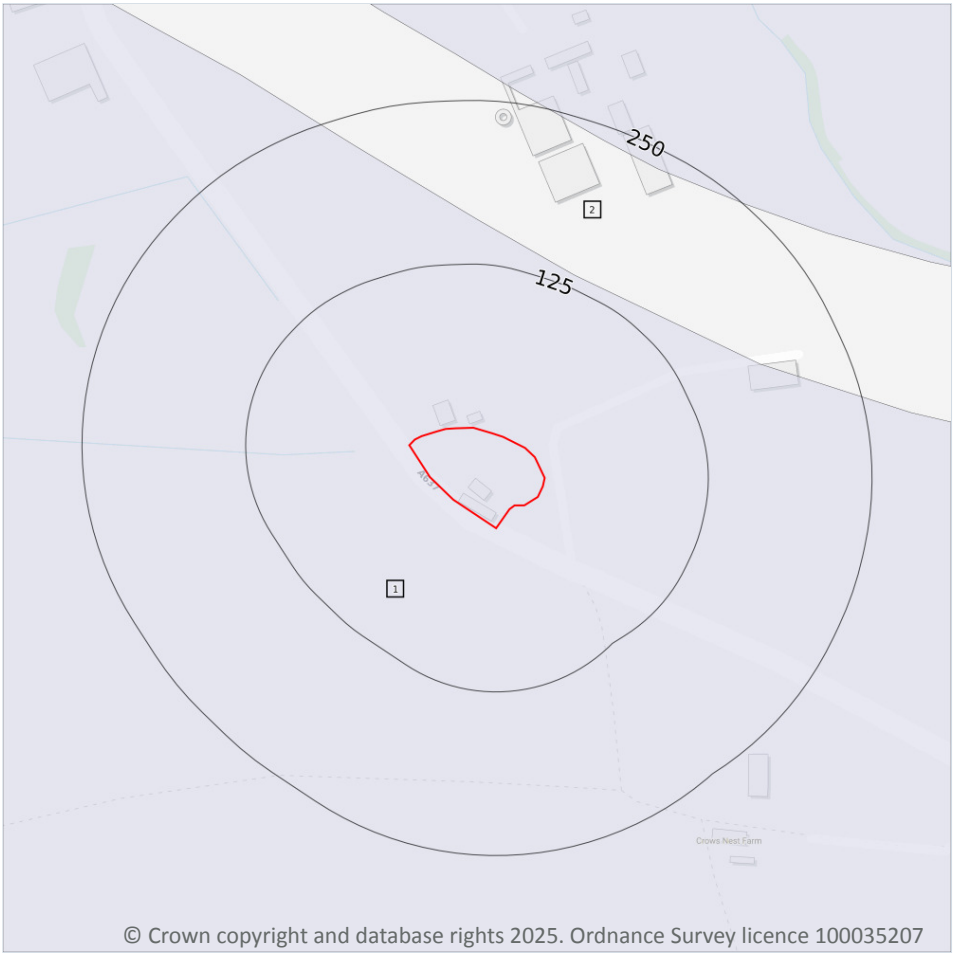
11.7 Registered Parks and Gardens

Records within 250m	0

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

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

12 Agricultural designations



Site Outline

Search buffers in metres (m)

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

12.1 Agricultural Land Classification

Records within 250m	2

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 60 >**

ID	Location	Classification	Description
1	On site	Grade 4	**Poor quality agricultural land. Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.**

ID	Location	Classification	Description
2	135m NE	Not Surveyed	Non-agricultural/no quality assigned

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	0

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

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

12.3 Tree Felling Licences

Records within 250m	0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	2

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

Location	Reference	Scheme	Start Date	End Date
9m SW	1637244	Countryside Stewardship (Middle Tier)	01/01/2024	31/12/2028
241m E	1637244	Countryside Stewardship (Middle Tier)	01/01/2024	31/12/2028

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m	0

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

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

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

This data is sourced from Natural England.

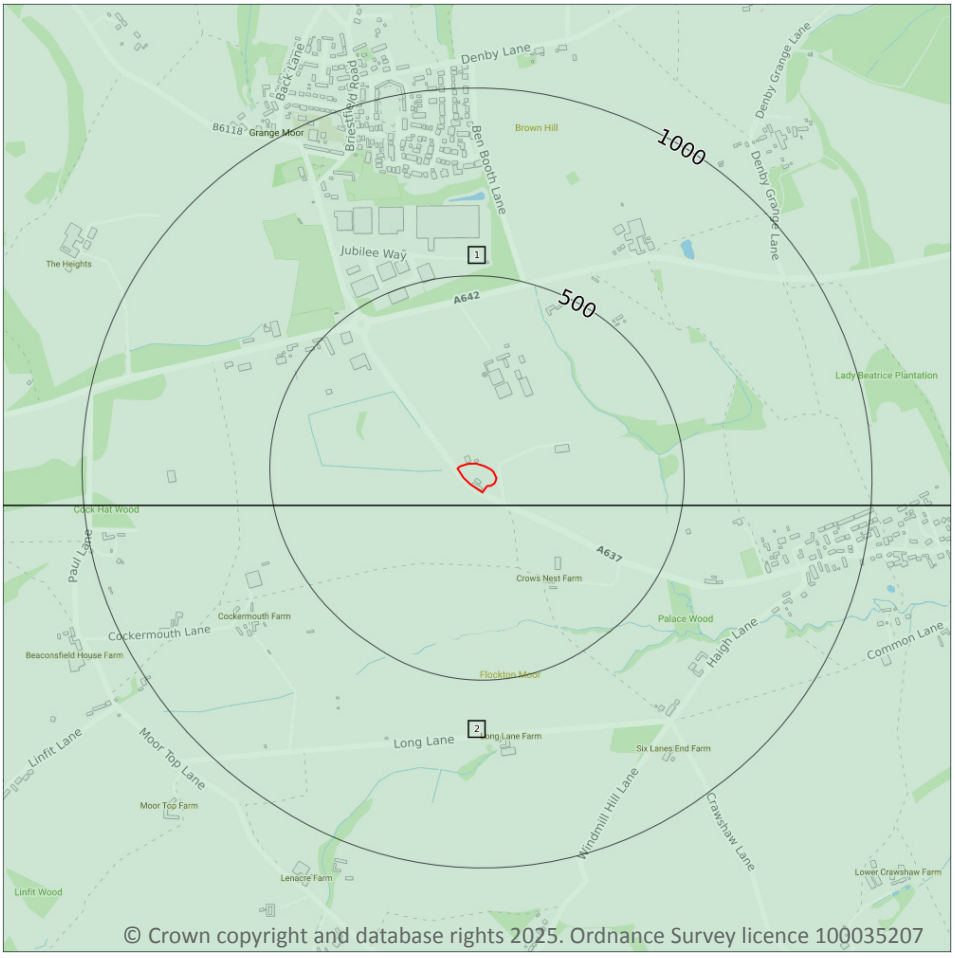
13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



Site Outline

Search buffers in metres (m)

Full coverage

Partial coverage

No coverage

14.1 10k Availability

Records within 500m	2

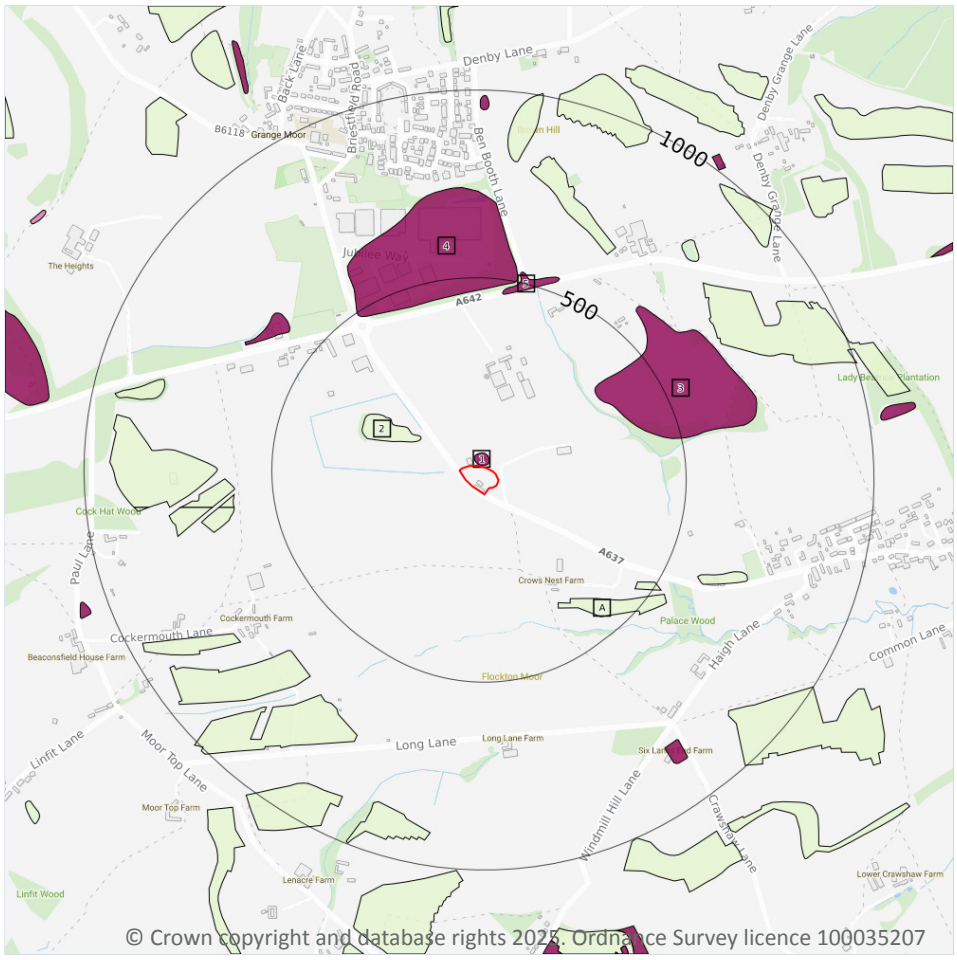
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 64 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**SE21NW**
2	35m S	Full	Full	Full	Full	SE21SW

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	7

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.

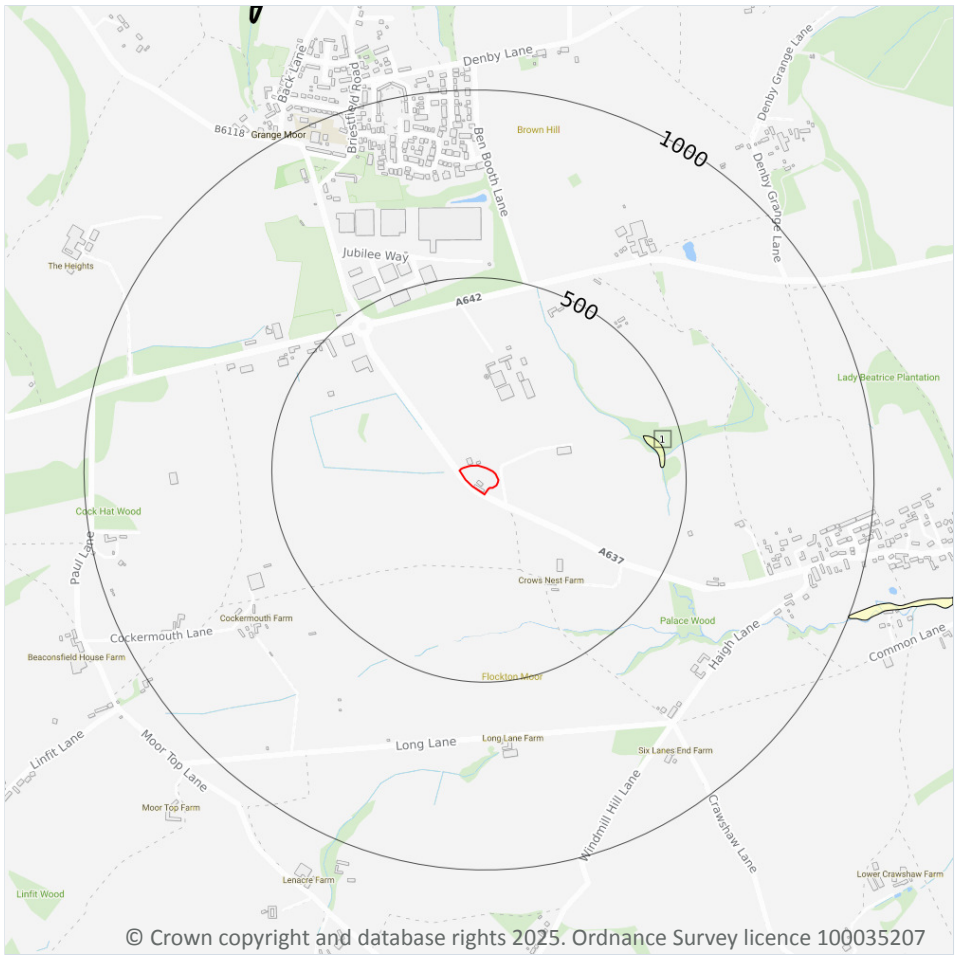
Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 65 >**

ID	Location	LEX Code	Description	Rock description
1	3m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	133m NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
3	341m NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
A	349m SE	WMGR-ARTDP	Infilled Ground	Artificial Deposit

ID	Location	LEX Code	Description	Rock description
4	450m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
A	455m SE	WMGR-ARTDP	Infilled Ground	Artificial Deposit
5	461m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

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

14.3 Superficial geology (10k)

Records within 500m	1

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

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

ID	Location	LEX Code	Description	Rock description
1	403m E	ALV-XCSV	Alluvium - Clay, Sand And Gravel	Clay, Sand And Gravel

This data is sourced from the British Geological Survey.

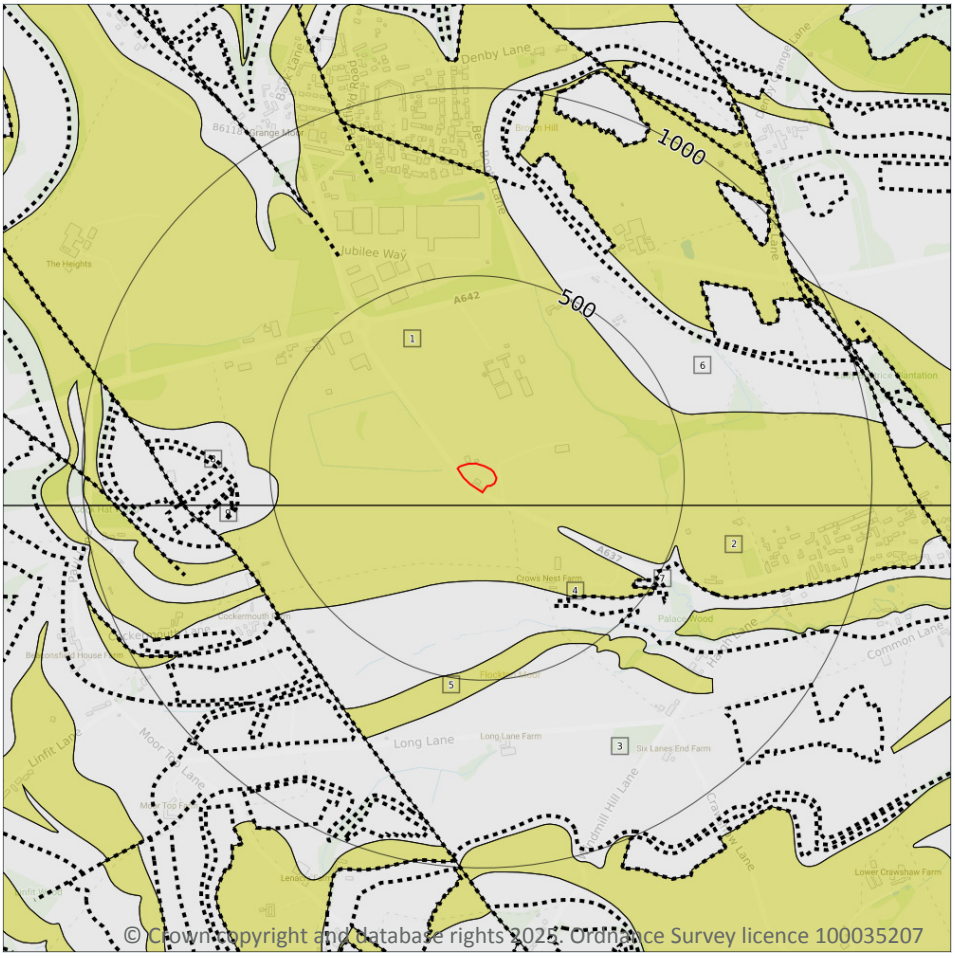
14.4 Landslip (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

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

14.5 Bedrock geology (10k)

Records within 500m **7**

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 69 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**BRSR-SDST**	**Birstall Rock - Sandstone**	**Langsettian Sub-age**
2	35m S	BRSR-SDST	Birstall Rock - Sandstone	Langsettian Sub-age
3	207m SE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age

ID	Location	LEX Code	Description	Rock age
5	403m S	BRSR-SDST	Birstall Rock - Sandstone	Langsettian Sub-age
6	451m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
8	480m W	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
9	495m W	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m	**2**

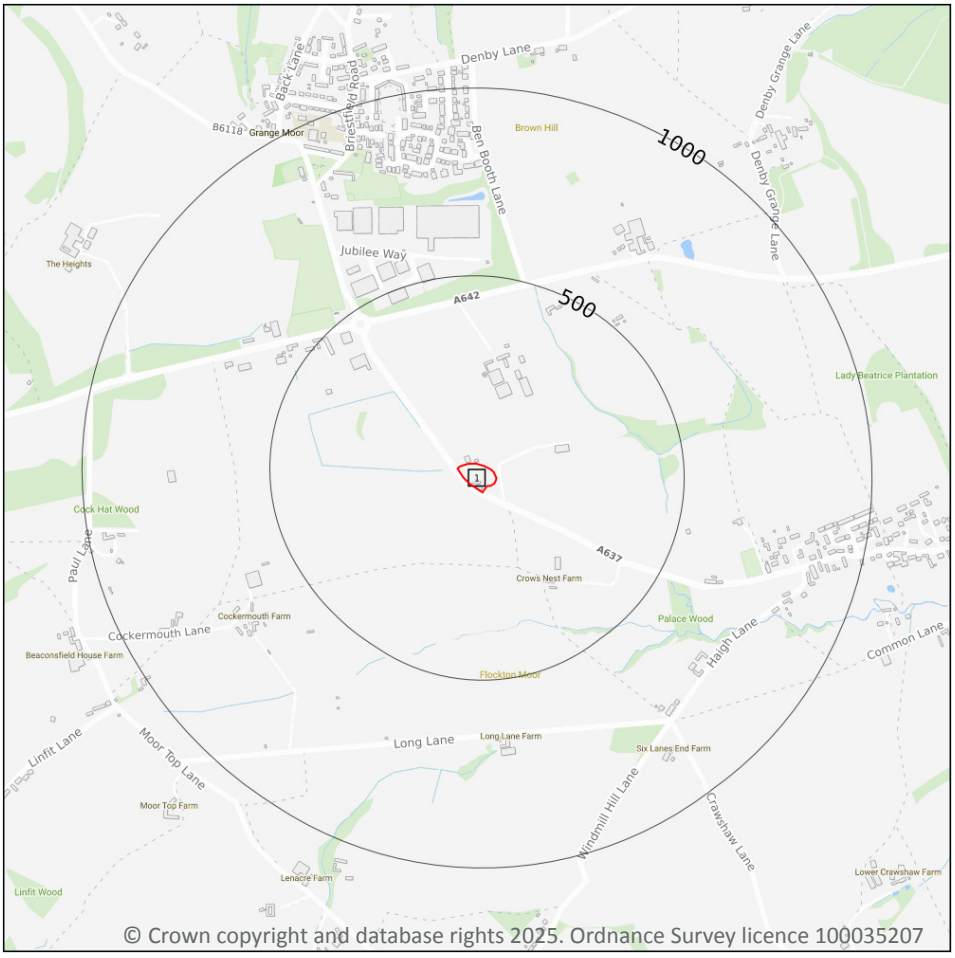
Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

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

ID	Location	Category	Description
4	349m SE	ROCK	Coal seam, observed
7	455m SE	ROCK	Coal seam, observed

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

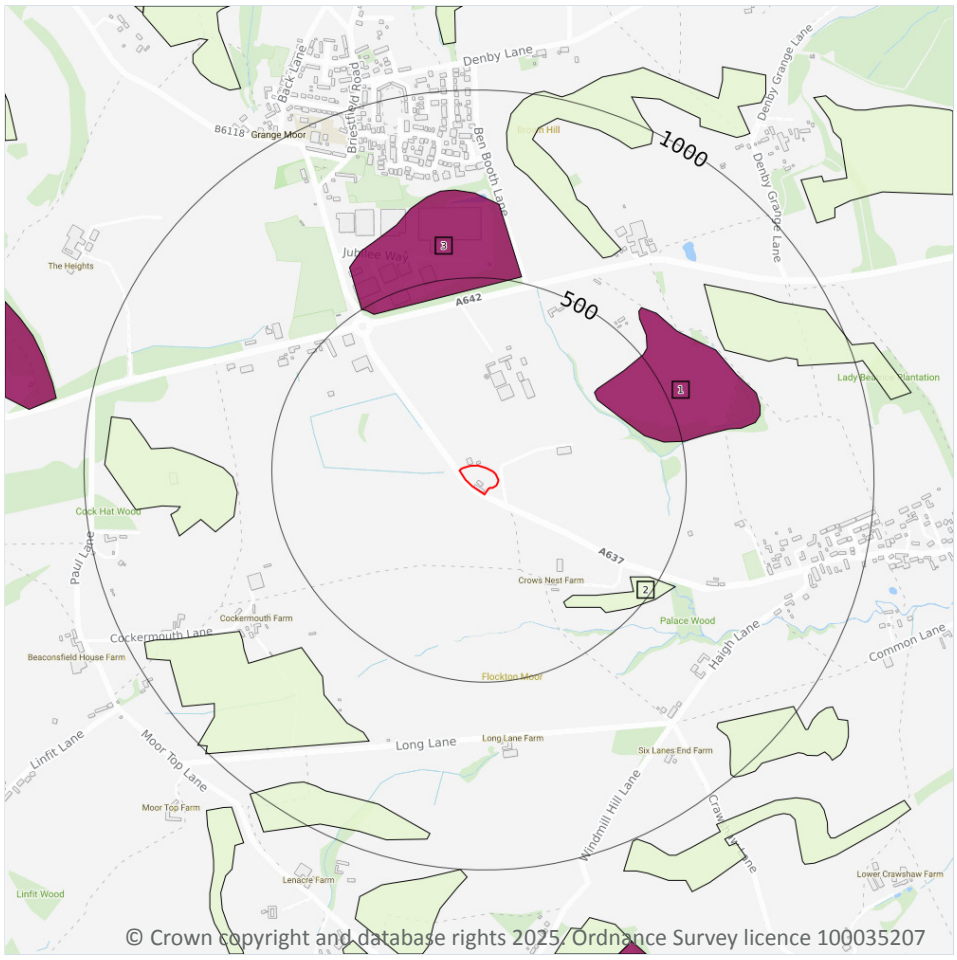
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 71 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**EW077_huddersfield_v4**

This data is sourced from the British Geological Survey.

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



Site Outline

Search buffers in metres (m)

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

15.2 Artificial and made ground (50k)

Records within 500m	3

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.

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 72 >**

ID	Location	LEX Code	Description	Rock description
1	335m NE	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	356m SE	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT
3	454m N	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial

15.4 Superficial geology (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

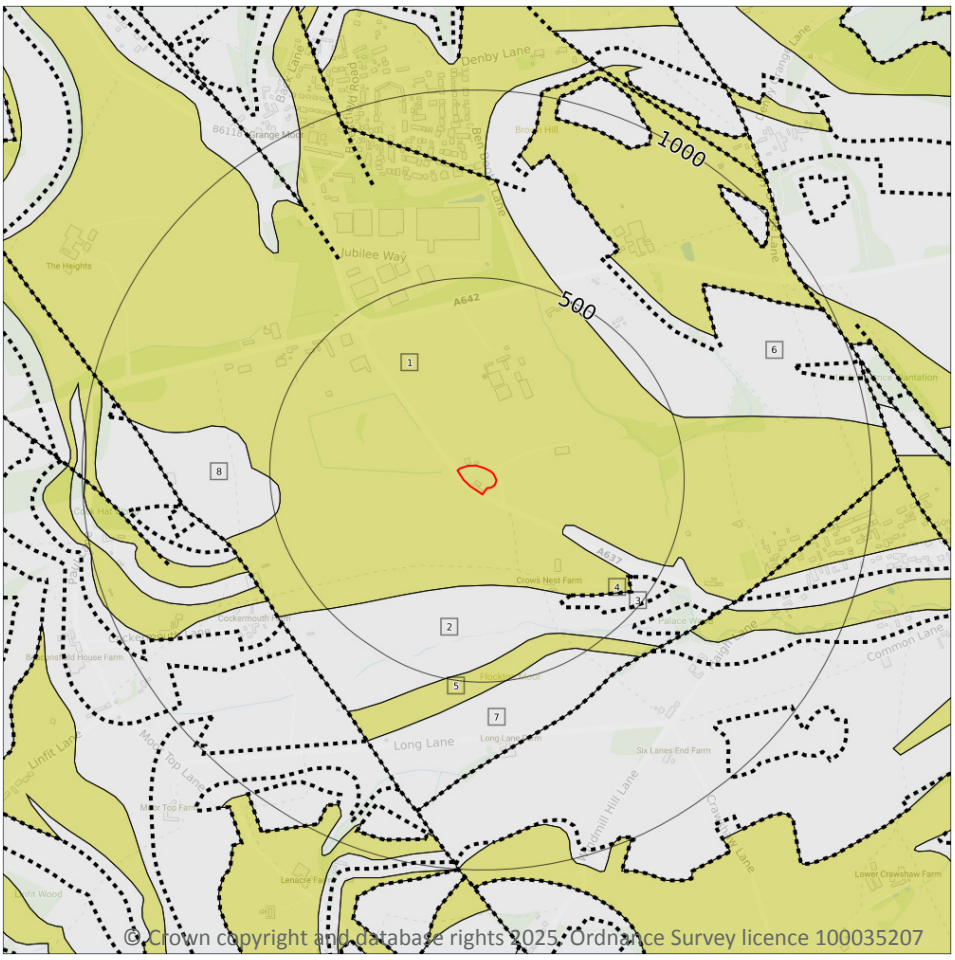
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m **6**

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 75 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**BRSR-SDST**	**BIRSTALL ROCK - SANDSTONE**	**WESTPHALIAN**
2	217m SE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
5	407m S	BRSR-SDST	BIRSTALL ROCK - SANDSTONE	WESTPHALIAN

ID	Location	LEX Code	Description	Rock age
6	453m NE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
7	462m S	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
8	477m W	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock 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 bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Fracture**	**High**	**Moderate**
35m S	Fracture	High	Moderate

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m **2**

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.

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

ID	Location	Category	Description
3	356m SE	ROCK	Coal seam, inferred
4	356m SE	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.

16 Boreholes

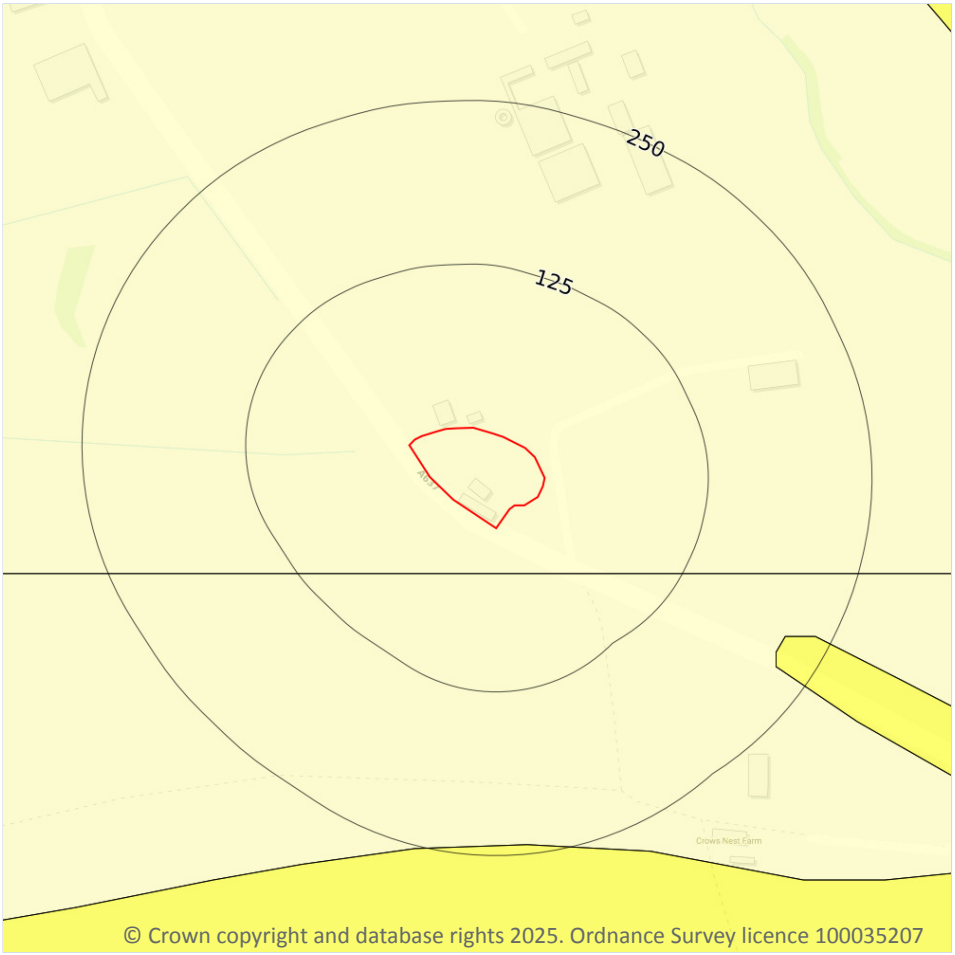
16.1 BGS Boreholes

Records within 250m	0

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

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

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

17.1 Shrink swell clays

Records within 50m	2

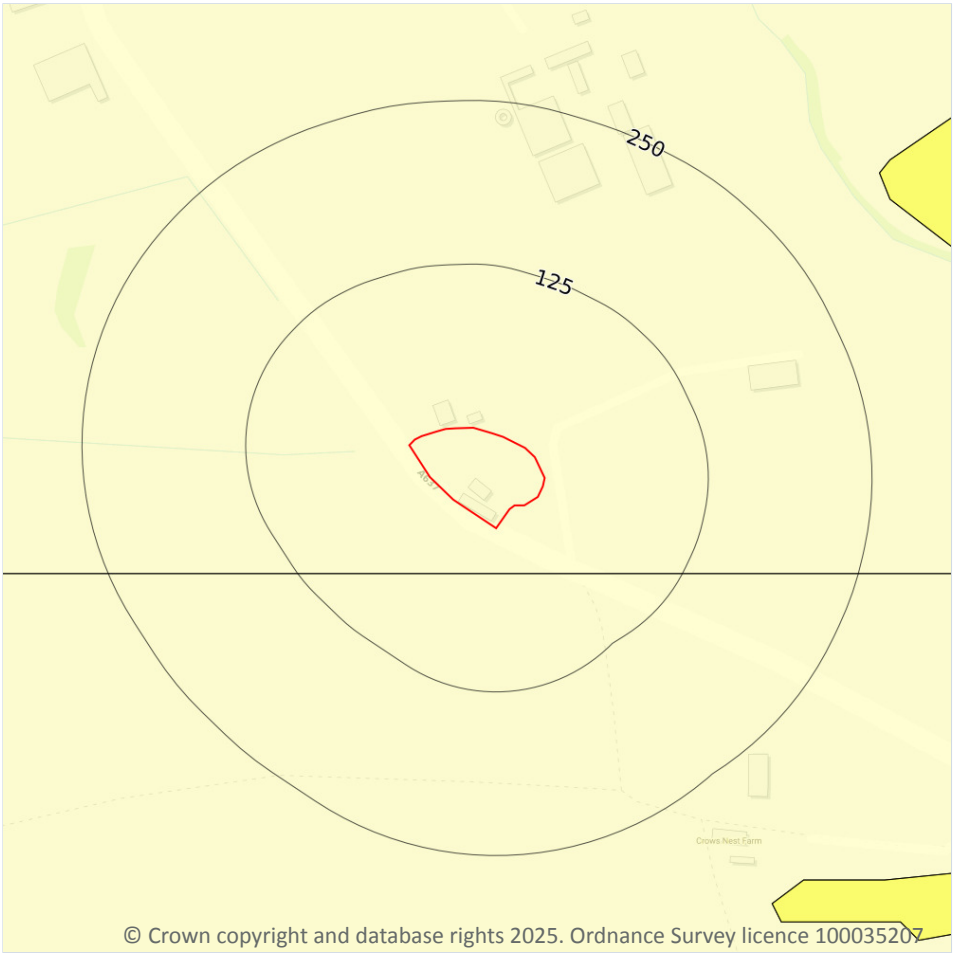
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 78 >**

Location	Hazard rating	Details
On site	**Negligible**	**Ground conditions predominantly non-plastic.**
35m S	Negligible	Ground conditions predominantly non-plastic.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

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

17.2 Running sands

Records within 50m	2

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.

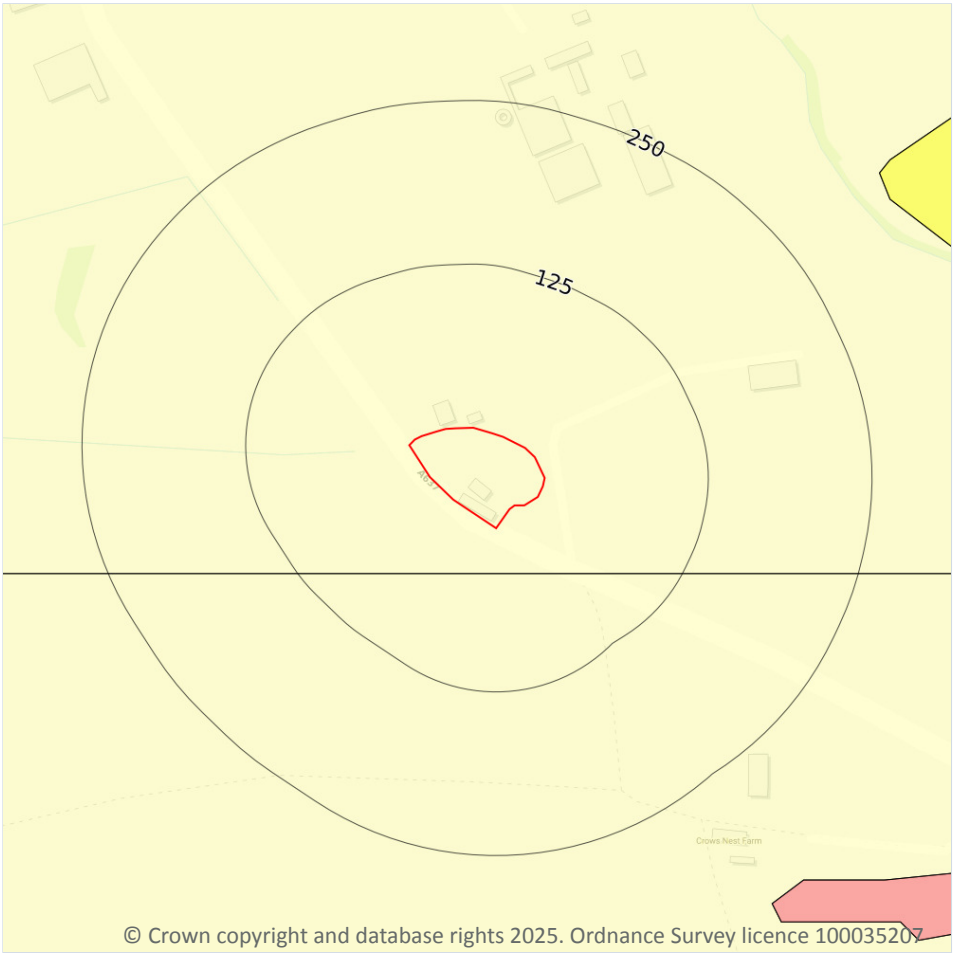
Features are displayed on the Natural ground subsidence - Running sands map on **page 79 >**

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

Location	Hazard rating	Details
35m S	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

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

17.3 Compressible deposits

Records within 50m	2

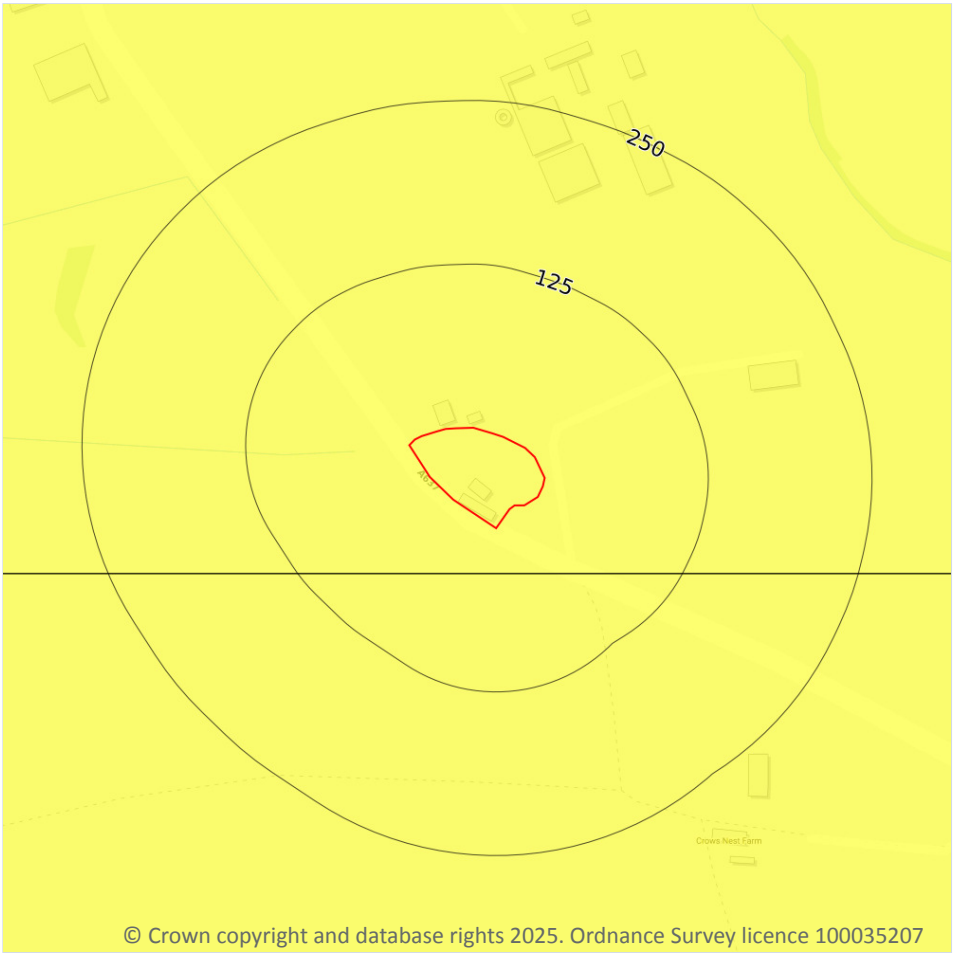
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 81 >**

Location	Hazard rating	Details
On site	**Negligible**	**Compressible strata are not thought to occur.**
35m S	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	2

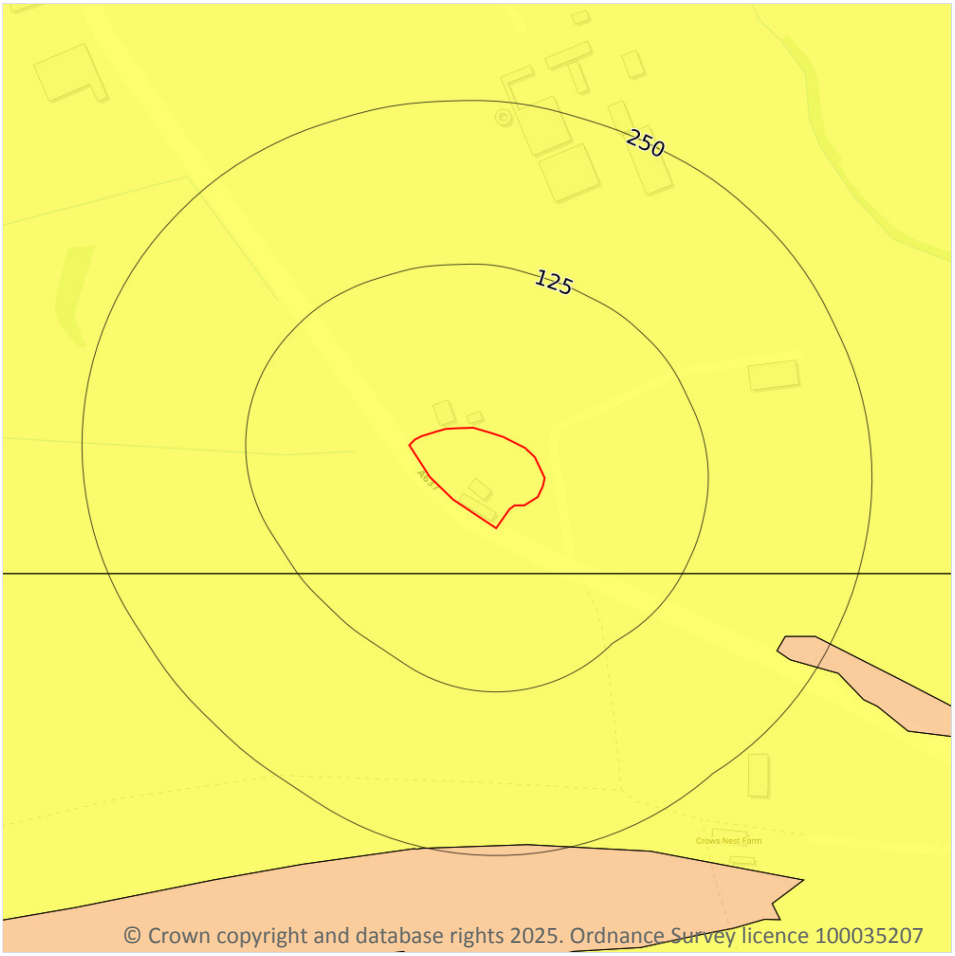
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

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

Location	Hazard rating	Details
On site	**Very low**	**Deposits with potential to collapse when loaded and saturated are unlikely to be present.**
35m S	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	2

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.

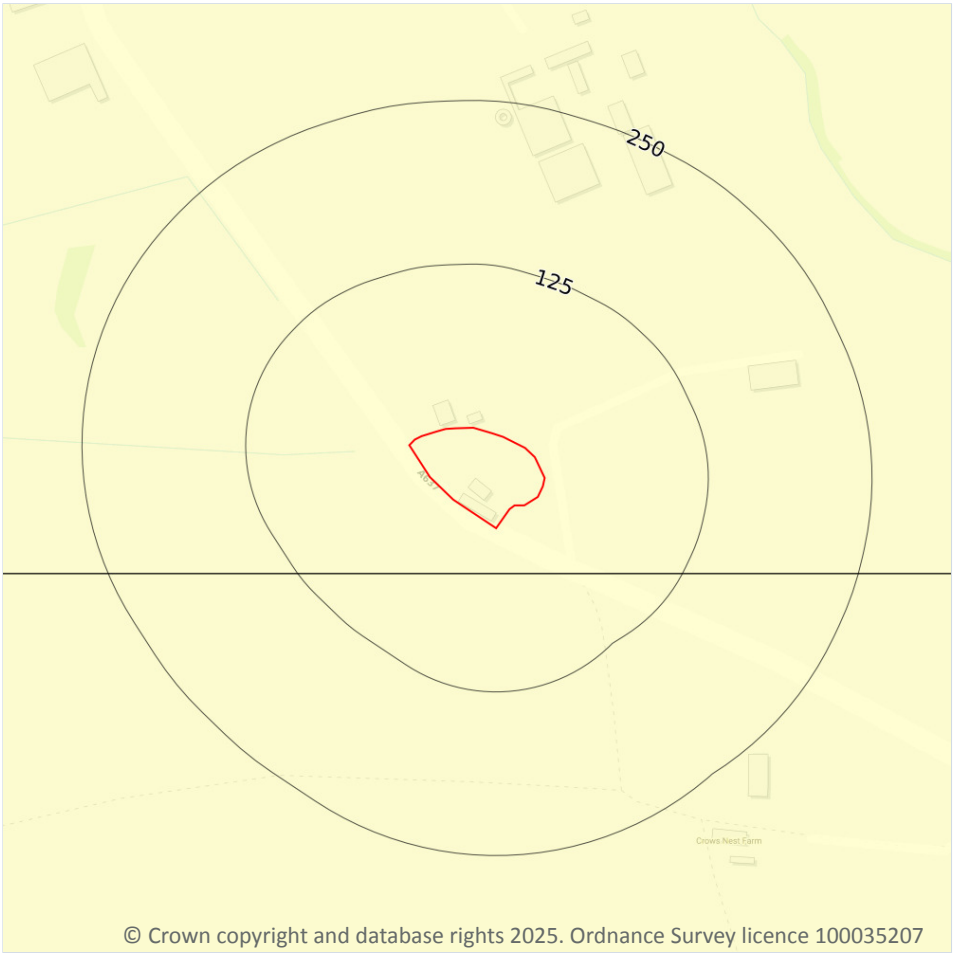
Features are displayed on the Natural ground subsidence - Landslides map on **page 83 >**

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.**

Location	Hazard rating	Details
35m S	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	2

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

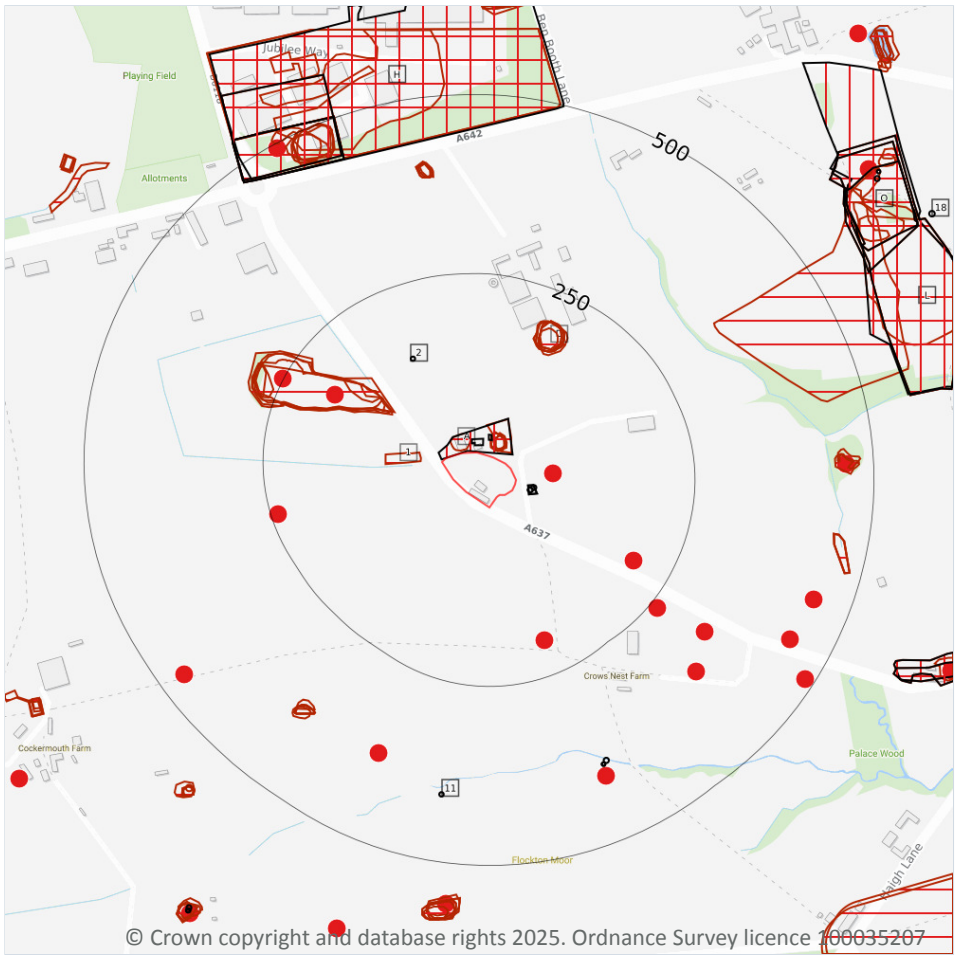
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 85 >**

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

Location	Hazard rating	Details
35m S	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	17

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

Features are displayed on the Mining and ground workings map on **page 87 >**

ID	Location	Details	Description
B	52m E	Name: Cropper Gate Pits Address: Flockton, HUDDERSFIELD, West Yorkshire Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed `Quarry' or `Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
C	177m NW	Name: Cropper Gate Quarry Address: Grange Moor, Fenay Bridge, HUDDERSFIELD, West Yorkshire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Delf, Delph, Gravel Pit, Sand Pit, Sand and Gravel Pit, Clay Pit, Pit, Opencast Coal Site or Surface Mine. It may be mapped as Worked Ground or Worked and Made Ground on BGS mapping. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
3	196m SE	Name: Cropper Gate Pits Address: Flockton, HUDDERSFIELD, West Yorkshire Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed `Quarry' or `Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.

ID	Location	Details	Description
4	201m S	Name: Westfield House Pits Address: Flockton, HUDDERSFIELD, West Yorkshire Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed `Quarry' or `Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
5	240m W	Name: Cropper Gate Pits Address: Flockton, HUDDERSFIELD, West Yorkshire Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed `Quarry' or `Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
C	251m NW	Name: Cropper Gate Quarry Address: Grange Moor, Fenay Bridge, HUDDERSFIELD, West Yorkshire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Delf, Delph, Gravel Pit, Sand Pit, Sand and Gravel Pit, Clay Pit, Pit, Opencast Coal Site or Surface Mine. It may be mapped as Worked Ground or Worked and Made Ground on BGS mapping. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.

ID	Location	Details	Description
6	261m SE	Name: Westfield House Pits Address: Flockton, HUDDERSFIELD, West Yorkshire Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed `Quarry' or `Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
7	334m SE	Name: Chapel House Pits Address: Flockton, HUDDERSFIELD, West Yorkshire Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed `Quarry' or `Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
9	360m SE	Name: Westfield House Pits Address: Flockton, HUDDERSFIELD, West Yorkshire Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed `Quarry' or `Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.

ID	Location	Details	Description
10	376m SW	Name: Westfield House Pits Address: Flockton, HUDDERSFIELD, West Yorkshire Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed `Quarry' or `Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
F	409m SE	Name: Flocton Moor Pits Address: Flockton, HUDDERSFIELD, West Yorkshire Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed `Quarry' or `Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
12	441m SE	Name: Chapel House Pits Address: Flockton, HUDDERSFIELD, West Yorkshire Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed `Quarry' or `Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.

ID	Location	Details	Description
13	447m E	Name: Westfield House Pits Address: Flockton, HUDDERSFIELD, West Yorkshire Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed `Quarry' or `Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
J	462m E	Name: Zion Quarry Address: Flockton, HUDDERSFIELD, West Yorkshire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Delf, Delph, Gravel Pit, Sand Pit, Sand and Gravel Pit, Clay Pit, Pit, Opencast Coal Site or Surface Mine. It may be mapped as Worked Ground or Worked and Made Ground on BGS mapping. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
14	464m SW	Name: Cockermouth Address: Lepton Edge, Lepton, HUDDERSFIELD, West Yorkshire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Delf, Delph, Gravel Pit, Sand Pit, Sand and Gravel Pit, Clay Pit, Pit, Opencast Coal Site or Surface Mine. It may be mapped as Worked Ground or Worked and Made Ground on BGS mapping. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.

ID	Location	Details	Description
15	486m SE	Name: Palace Wood Pit Address: Flockton, HUDDERSFIELD, West Yorkshire Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed `Quarry' or `Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
I	494m NW	Name: Shuttle Eye Colliery Address: Grange Moor, Fenay Bridge, HUDDERSFIELD, West Yorkshire Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit, drift or incline. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun' Ee' - Scots). May also be locally termed `Quarry' or `Underground Quarry' when referring to sites extracting building stone (e.g. in Dorset and Wiltshire). The location given is that of the mine entrance and may be approximate for older sites shown on contemporaneous mapping by the Geological Survey used as the source document. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m **21**

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 87 >**

ID	Location	Land Use	Year of mapping	Mapping scale
A	4m N	Refuse Heap	1904	1:10560
A	10m N	Refuse Heap	1966	1:10560
A	11m NE	Refuse Heap	1948	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
A	11m NE	Refuse Heap	1948	1:10560
A	11m N	Refuse Heap	1938	1:10560
A	12m N	Refuse Heap	1951	1:10560
A	14m NE	Refuse Heap	1904	1:10560
1	30m W	Pond	1892	1:10560
C	96m NW	Unspecified Quarry	1904	1:10560
C	96m NW	Unspecified Disused Quarry	1951	1:10560
C	99m NW	Unspecified Quarry	1938	1:10560
C	101m NW	Unspecified Disused Quarry	1892	1:10560
C	120m NW	Unspecified Quarry	1948	1:10560
D	161m NE	Sand Pit	1951	1:10560
D	165m NE	Refuse Heap	1948	1:10560
D	165m NE	Refuse Heap	1948	1:10560
D	165m NE	Refuse Heap	1938	1:10560
D	165m NE	Refuse Heap	1904	1:10560
D	168m NE	Refuse Heap	1892	1:10560
D	169m NE	Unspecified Heap	1982	1:10000
D	169m NE	Unspecified Heap	1966	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m	**57**

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

Features are displayed on the Mining and ground workings map on **page 87 >**

ID	Location	Land Use	Year of mapping	Mapping scale
A	**On site**	**Pumping Shaft**	**1951**	**1:10560**
A	10m N	Pumping Shaft	1938	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
B	18m E	Unspecified Disused Shaft	1982	1:10000
B	18m E	Unspecified Disused Shaft	1966	1:10560
B	19m E	Unspecified Old Shaft	1938	1:10560
B	19m E	Unspecified Old Shaft	1904	1:10560
A	22m N	Pumping Shaft	1904	1:10560
B	23m E	Unspecified Old Shaft	1951	1:10560
2	143m N	Unspecified Old Shaft	1904	1:10560
F	385m SE	Unspecified Old Shaft	1955	1:10560
F	390m SE	Unspecified Old Shaft	1938	1:10560
F	390m SE	Unspecified Old Shaft	1904	1:10560
11	403m S	Unspecified Old Shaft	1904	1:10560
H	437m N	Unspecified Mine	1966	1:10560
I	441m N	Collieries	1904	1:10560
I	441m N	Collieries	1892	1:10560
I	447m N	Collieries	1938	1:10560
L	535m E	Unspecified Mine	1966	1:10560
L	557m E	Colliery	1951	1:10560
O	571m NE	Colliery	1948	1:10560
O	582m NE	Colliery	1891	1:10560
P	586m SE	Disused Delf	1955	1:10560
P	591m SE	Disused Delf	1948	1:10560
O	649m NE	Unspecified Shaft	1948	1:10560
O	658m NE	Unspecified Shaft	1951	1:10560
-	681m S	Unspecified Old Shaft	1955	1:10560
18	684m NE	Unspecified Shaft	1948	1:10560
-	686m S	Unspecified Old Shaft	1938	1:10560
U	694m SW	Unspecified Old Shaft	1955	1:10560
U	699m SW	Unspecified Old Shaft	1938	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
U	699m SW	Unspecified Old Shaft	1904	1:10560
-	760m W	Old Coal Pit	1904	1:10560
-	779m E	Unspecified Shaft	1948	1:10560
-	783m E	Unspecified Shaft	1951	1:10560
-	783m SW	Unspecified Old Shaft	1955	1:10560
-	788m SW	Coal Pit	1904	1:10560
-	789m SW	Unspecified Old Shaft	1938	1:10560
-	794m SW	Unspecified Old Shaft	1955	1:10560
-	794m NW	Colliery	1948	1:10560
-	805m SE	Colliery	1891	1:10560
-	818m SW	Unspecified Old Shaft	1955	1:10560
-	823m SW	Unspecified Old Shaft	1938	1:10560
-	824m SW	Old Coal Pit	1904	1:10560
-	833m SW	Old Colliery	1938	1:10560
-	840m W	Old Coal Pit	1904	1:10560
-	841m W	Old Colliery	1955	1:10560
-	864m SE	Unspecified Old Shaft	1955	1:10560
-	868m SE	Unspecified Shaft	1948	1:10560
-	880m SW	Coal Pit	1904	1:10560
-	899m W	Unspecified Shaft	1955	1:10560
-	900m W	Unspecified Shaft	1938	1:10560
-	972m W	Unspecified Disused Shaft	1993	1:10000
-	972m W	Unspecified Disused Shaft	1979	1:10000
-	972m W	Unspecified Disused Shaft	1967	1:10560
-	976m W	Unspecified Old Shaft	1955	1:10560
-	979m W	Unspecified Old Shaft	1938	1:10560
-	979m W	Unspecified Old Shaft	1904	1:10560

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	1

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

Location	Details
On site	**The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site. This can be ordered directly through Groundsure or your preferred search provider.**

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 102 >**

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	4

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
35m S	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
35m S	25 - 35 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.

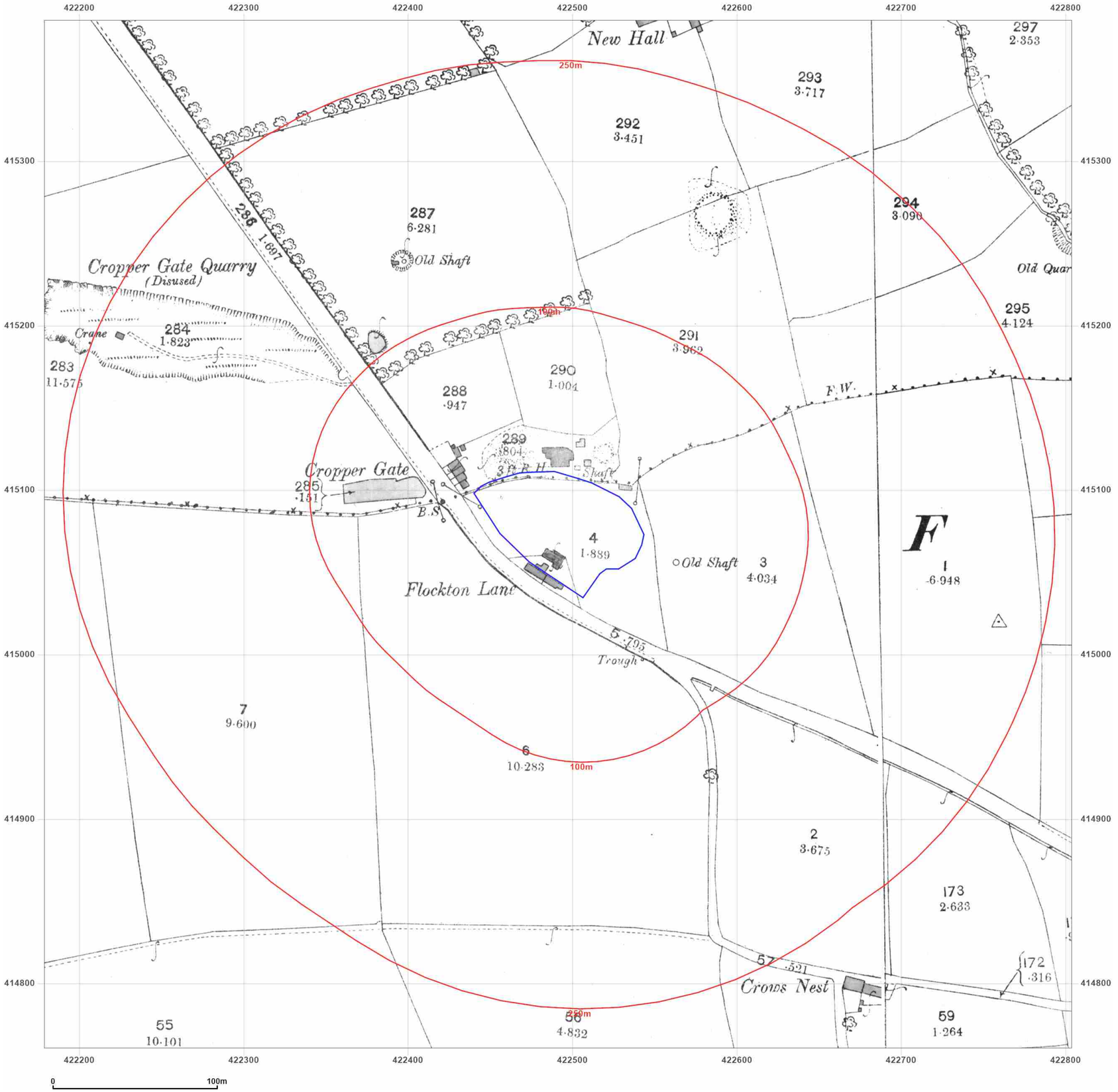
Data providers

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

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: www.groundsure.com/terms-and-conditions-april-2023/ ↗.

APPENDIX B – HISTORICAL OS MAPS



Groundsure INSIGHTS

Site Details:

5, BARNSLEY ROAD,
FLOCKTON, WAKEFIELD,
KIRKLEES, WF4 4DN

Client Ref: RBG476
Report Ref: GS-789-238-JLL-VOM
Grid Ref: 422491, 415073

Map Name: County Series

Map date: **1893**

Scale: 1:2,500

Printed at: 1:2,500

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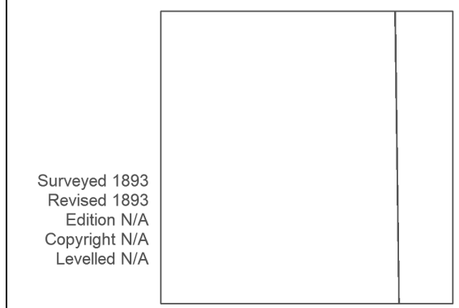

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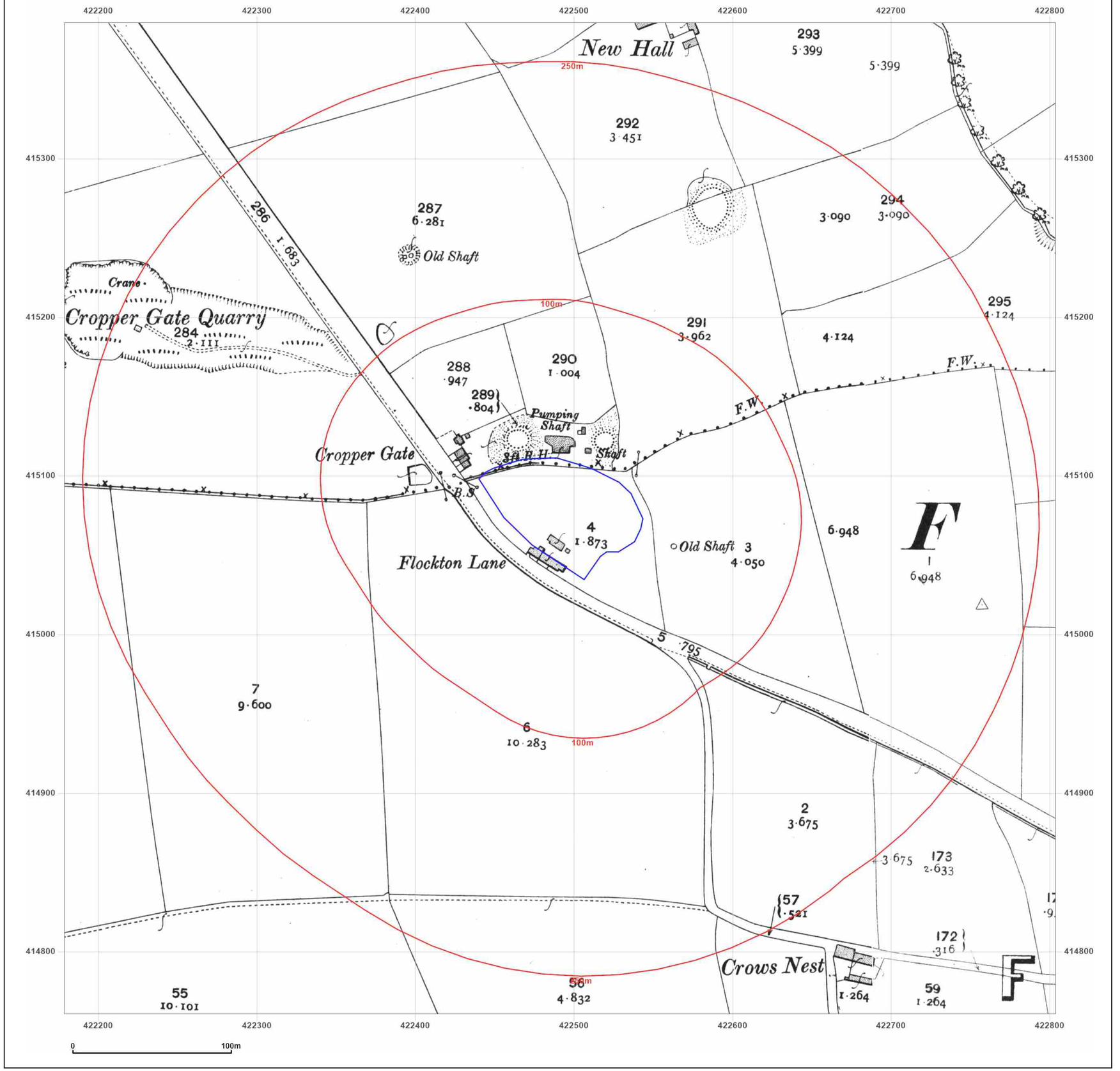

Groundsure INSIGHTS

Site Details:

5, BARNSLEY ROAD,
FLOCKTON, WAKEFIELD,
KIRKLEES, WF4 4DN

Client Ref: RBG476
Report Ref: GS-789-238-JLL-VOM
Grid Ref: 422491, 415073

Map Name: County Series

Map date: **1906**

Scale: 1:2,500

Printed at: 1:2,500

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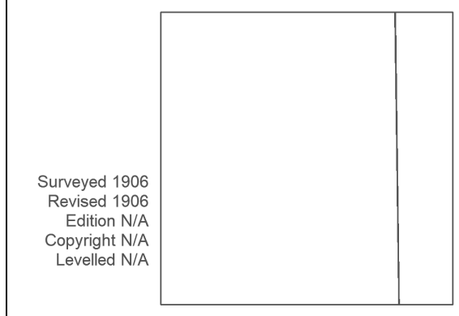

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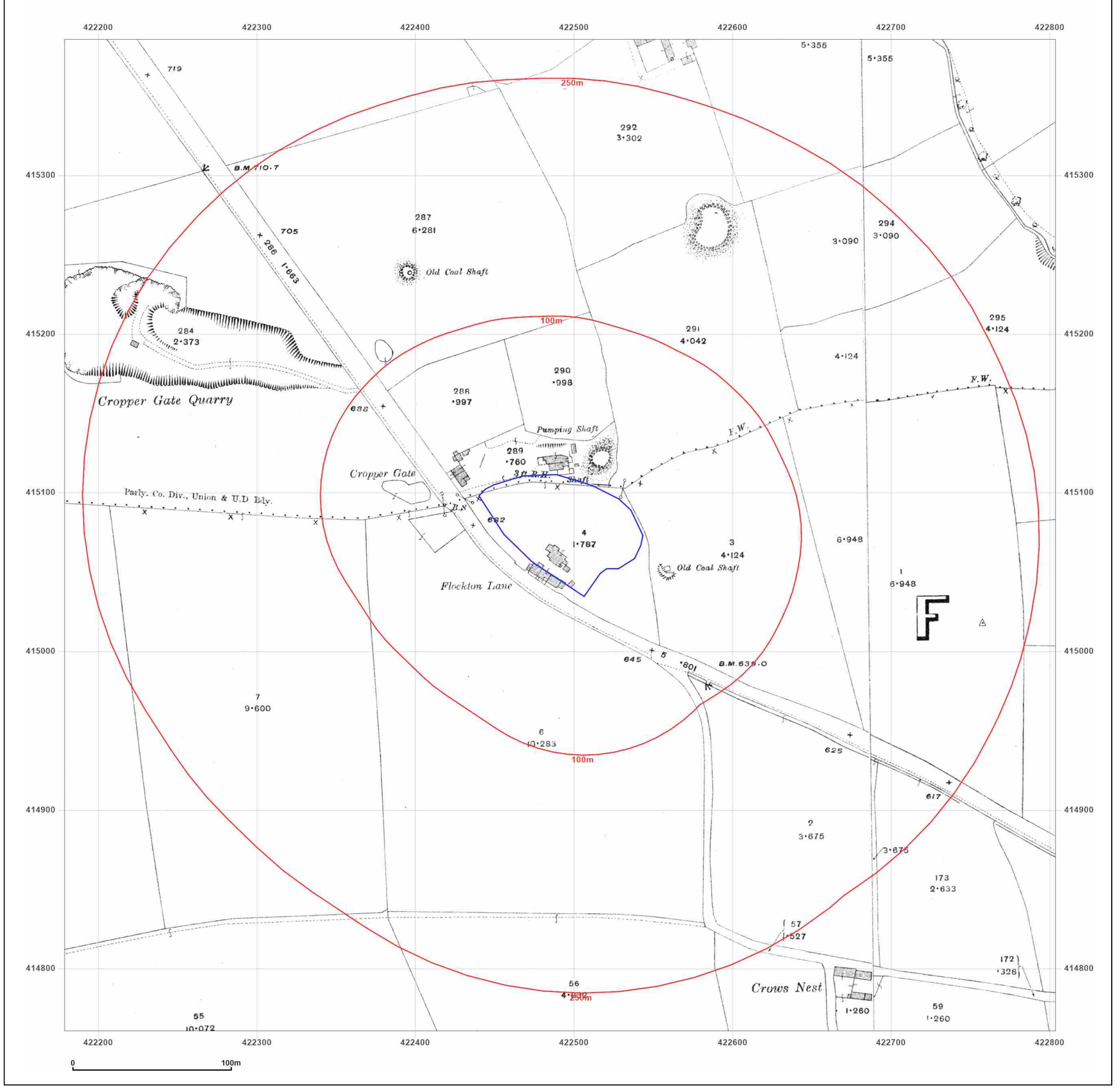

Groundsure INSIGHTS

Site Details:

5, BARNSLEY ROAD,
FLOCKTON, WAKEFIELD,
KIRKLEES, WF4 4DN

Client Ref: RBG476
Report Ref: GS-789-238-JLL-VOM
Grid Ref: 422491, 415073

Map Name: County Series

Map date: **1913**

Scale: 1:2,500

Printed at: 1:2,500

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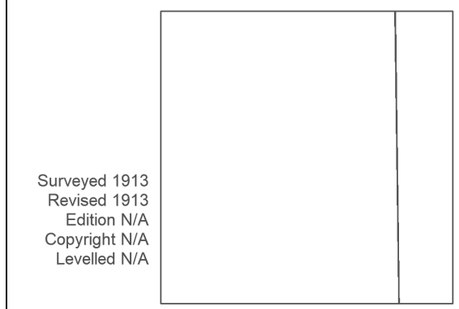

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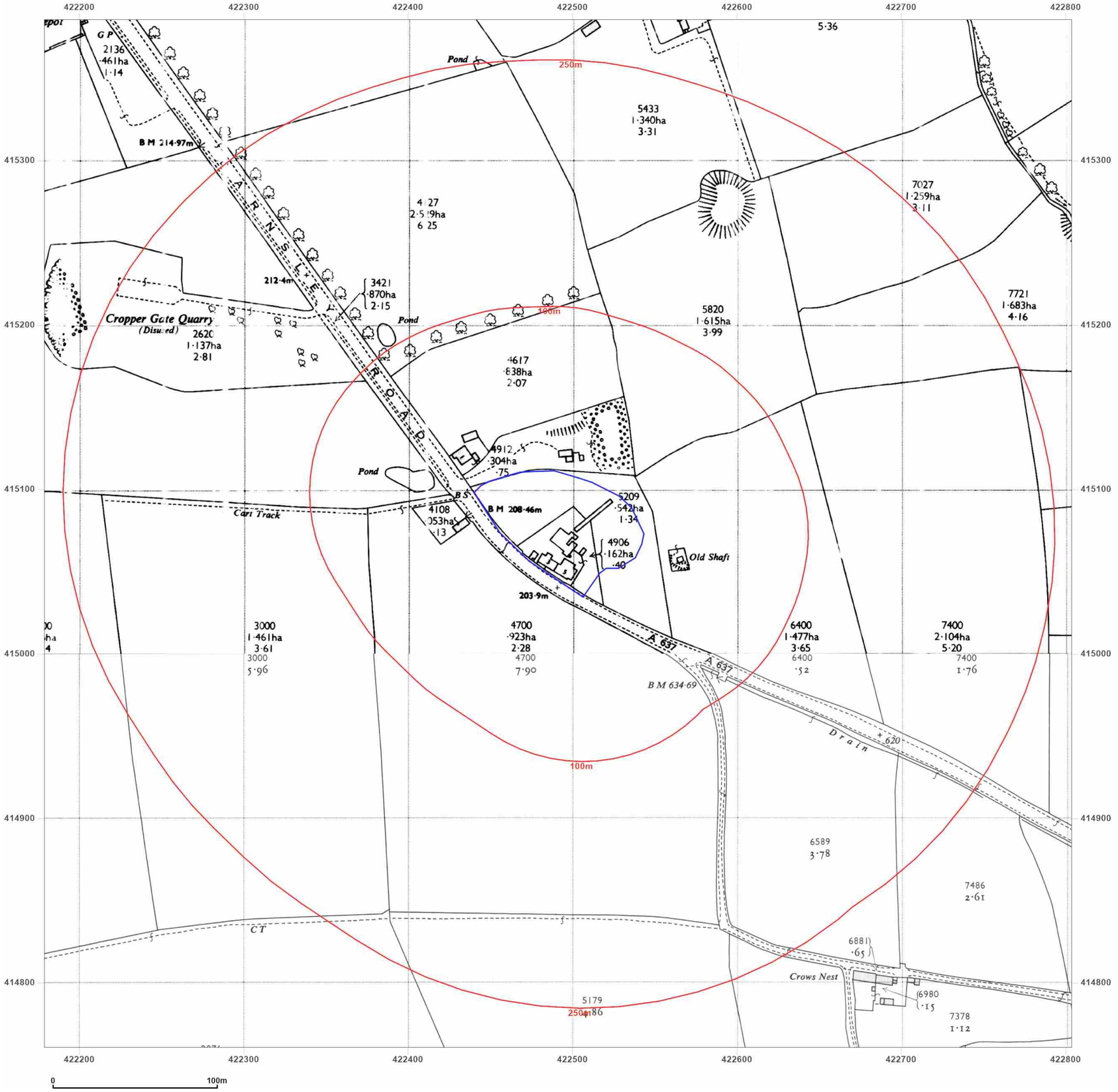

Groundsure INSIGHTS

Site Details:

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FLOCKTON, WAKEFIELD,
KIRKLEES, WF4 4DN

Client Ref: RBG476
Report Ref: GS-789-238-JLL-VOM
Grid Ref: 422491, 415073

Map Name: National Grid

Map date: **1961-1962**

Scale: 1:2,500

Printed at: 1:2,500

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

Surveyed 1960
Revised 1960
Edition N/A
Copyright 1961
Levelled 1959

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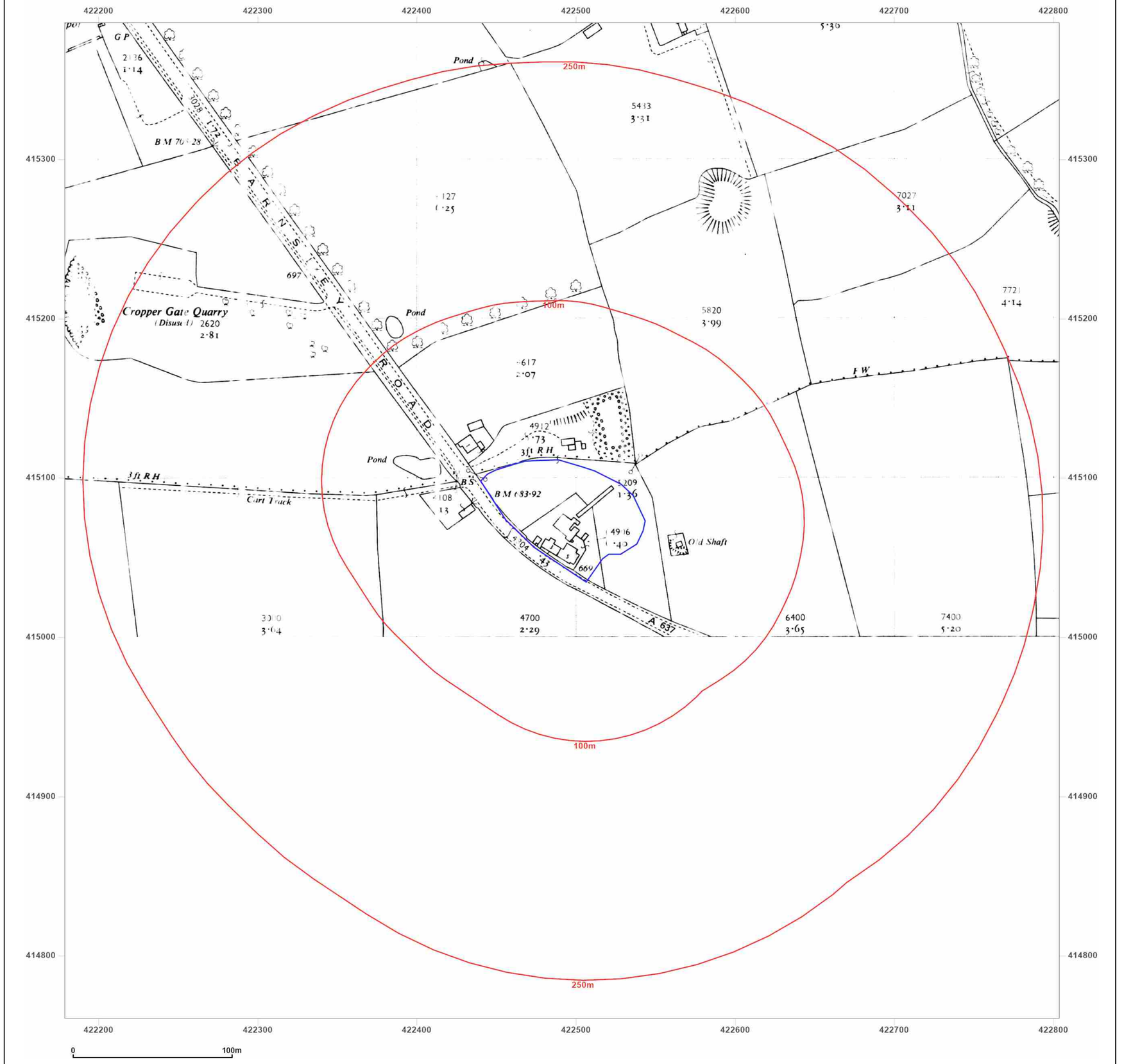

Groundsure INSIGHTS

Site Details:

5, BARNSLEY ROAD,
FLOCKTON, WAKEFIELD,
KIRKLEES, WF4 4DN

Client Ref: RBG476
Report Ref: GS-789-238-JLL-VOM
Grid Ref: 422491, 415073

Map Name: National Grid
Map date: **1962**
Scale: 1:2,500
Printed at: 1:2,500

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

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Client Ref: RBG476
Report Ref: GS-789-238-JLL-VOM
Grid Ref: 422491, 415073

Map Name: National Grid

Map date: **1962**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1960
Revised 1960
Edition N/A
Copyright 1962
Levelled 1958

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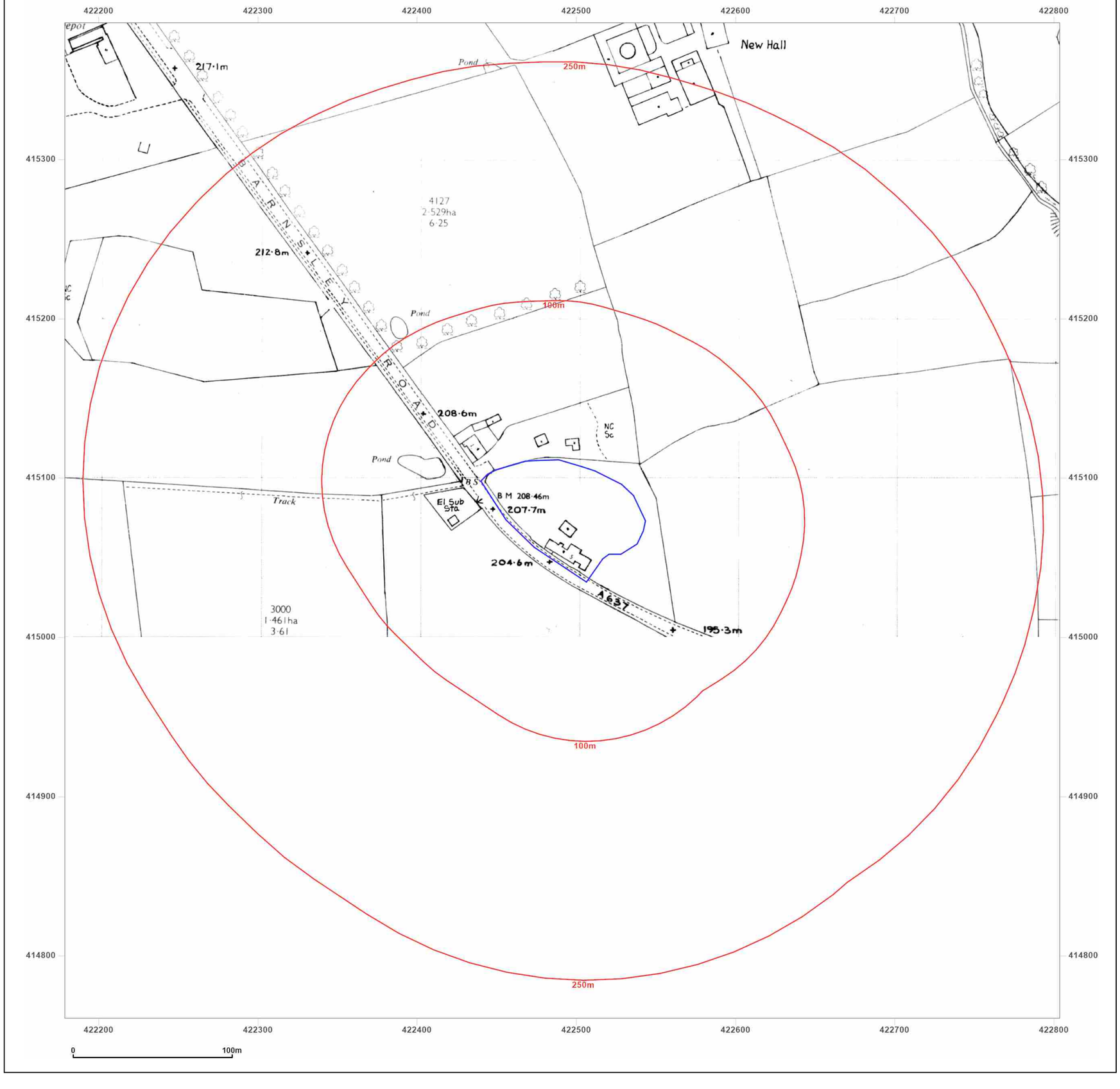

Groundsure INSIGHTS

Site Details:

5, BARNSLEY ROAD,
FLOCKTON, WAKEFIELD,
KIRKLEES, WF4 4DN

Client Ref: RBG476
Report Ref: GS-789-238-JLL-VOM
Grid Ref: 422491, 415073

Map Name: National Grid

Map date: **1990**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1963
Revised 1990
Edition N/A
Copyright 1990
Levelled 1963

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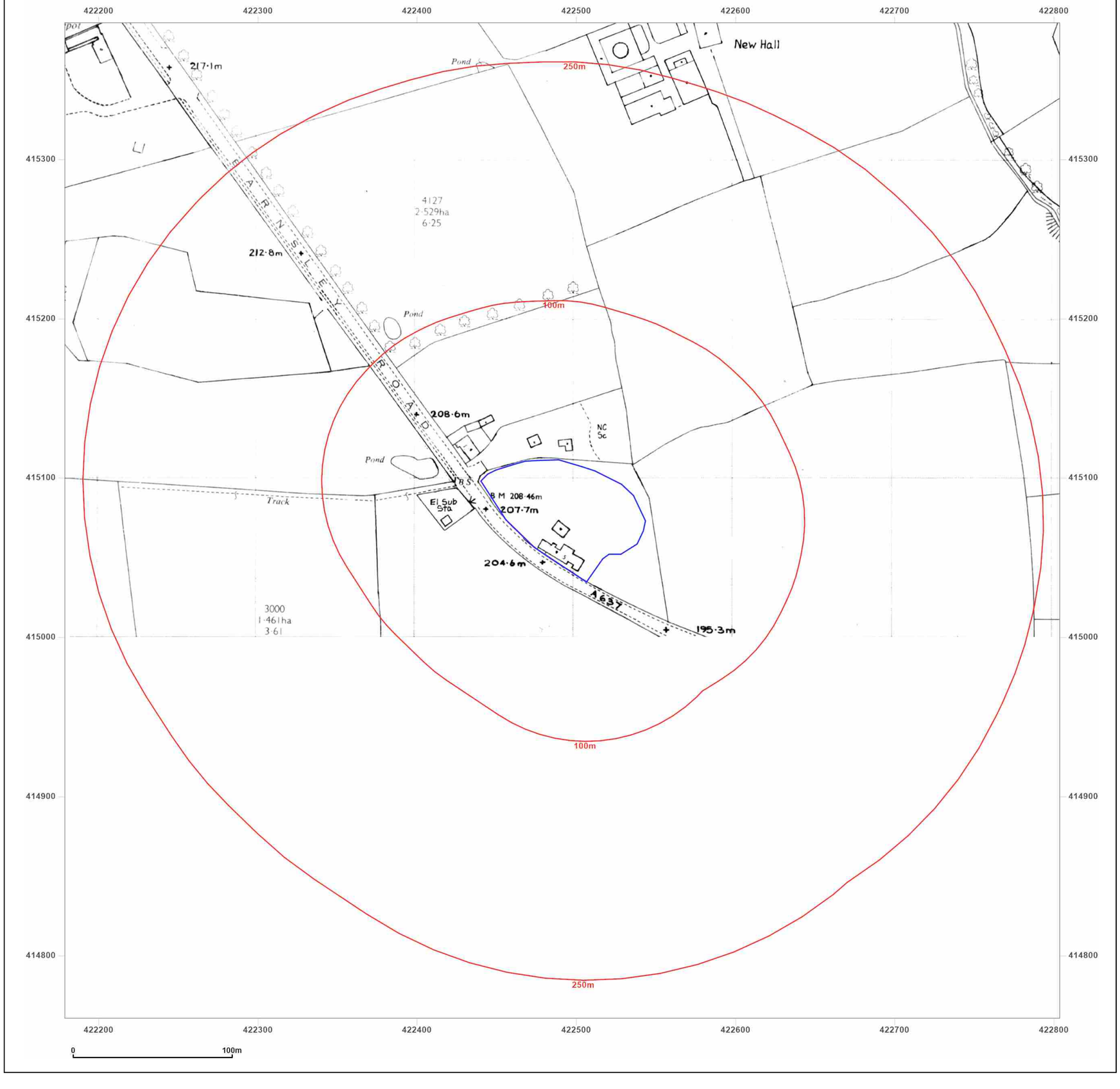

Groundsure INSIGHTS

Site Details:

5, BARNSLEY ROAD,
FLOCKTON, WAKEFIELD,
KIRKLEES, WF4 4DN

Client Ref: RBG476
Report Ref: GS-789-238-JLL-VOM
Grid Ref: 422491, 415073

Map Name: National Grid

Map date: **1990**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1963
Revised 1990
Edition N/A
Copyright 1990
Levelled 1963

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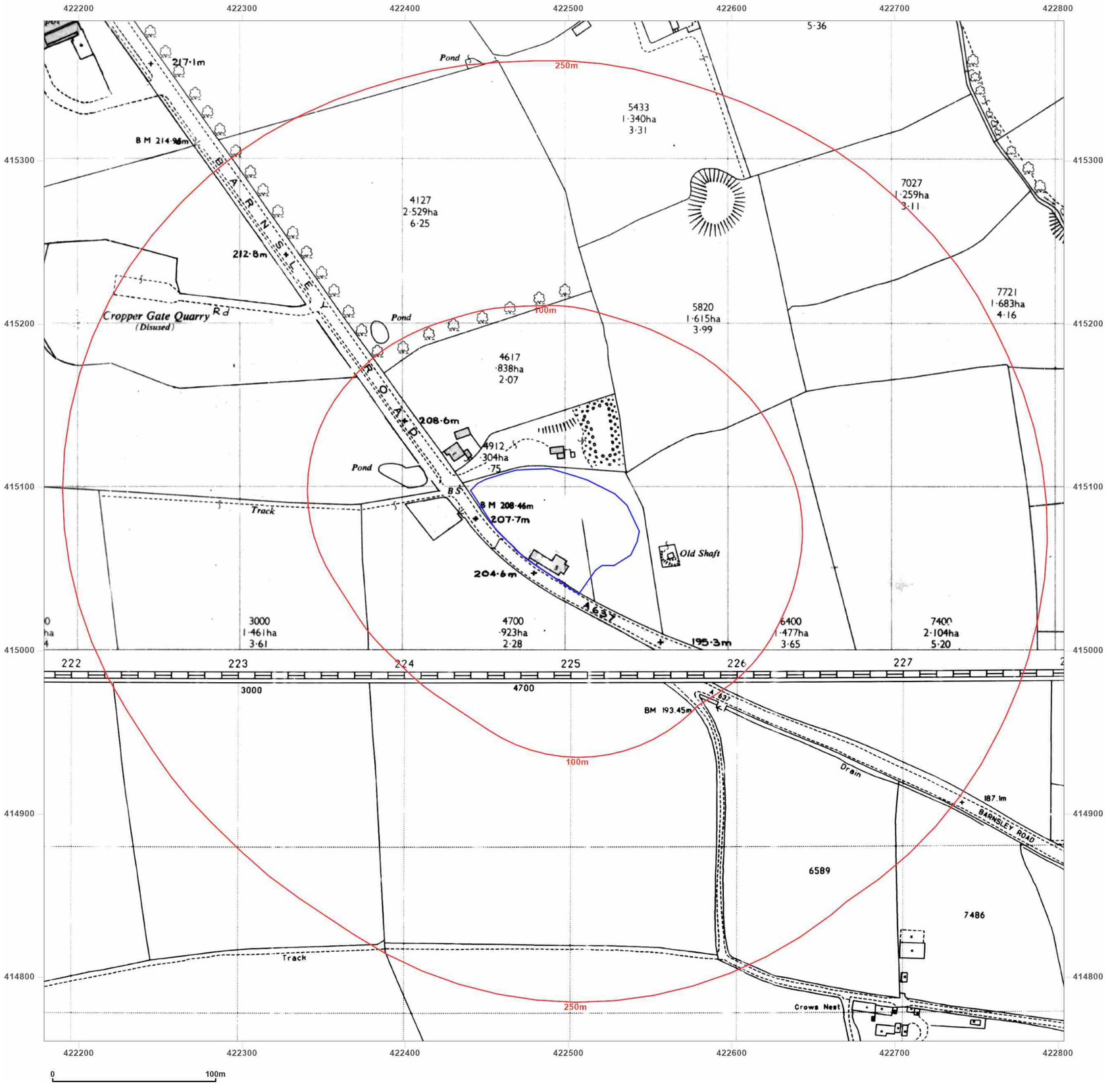

Groundsure INSIGHTS

Site Details:

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FLOCKTON, WAKEFIELD,
KIRKLEES, WF4 4DN

Client Ref: RBG476
Report Ref: GS-789-238-JLL-VOM
Grid Ref: 422491, 415073

Map Name: National Grid

Map date: **1987-1992**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1963
Revised 1987
Edition N/A
Copyright 1987
Levelled 1963

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

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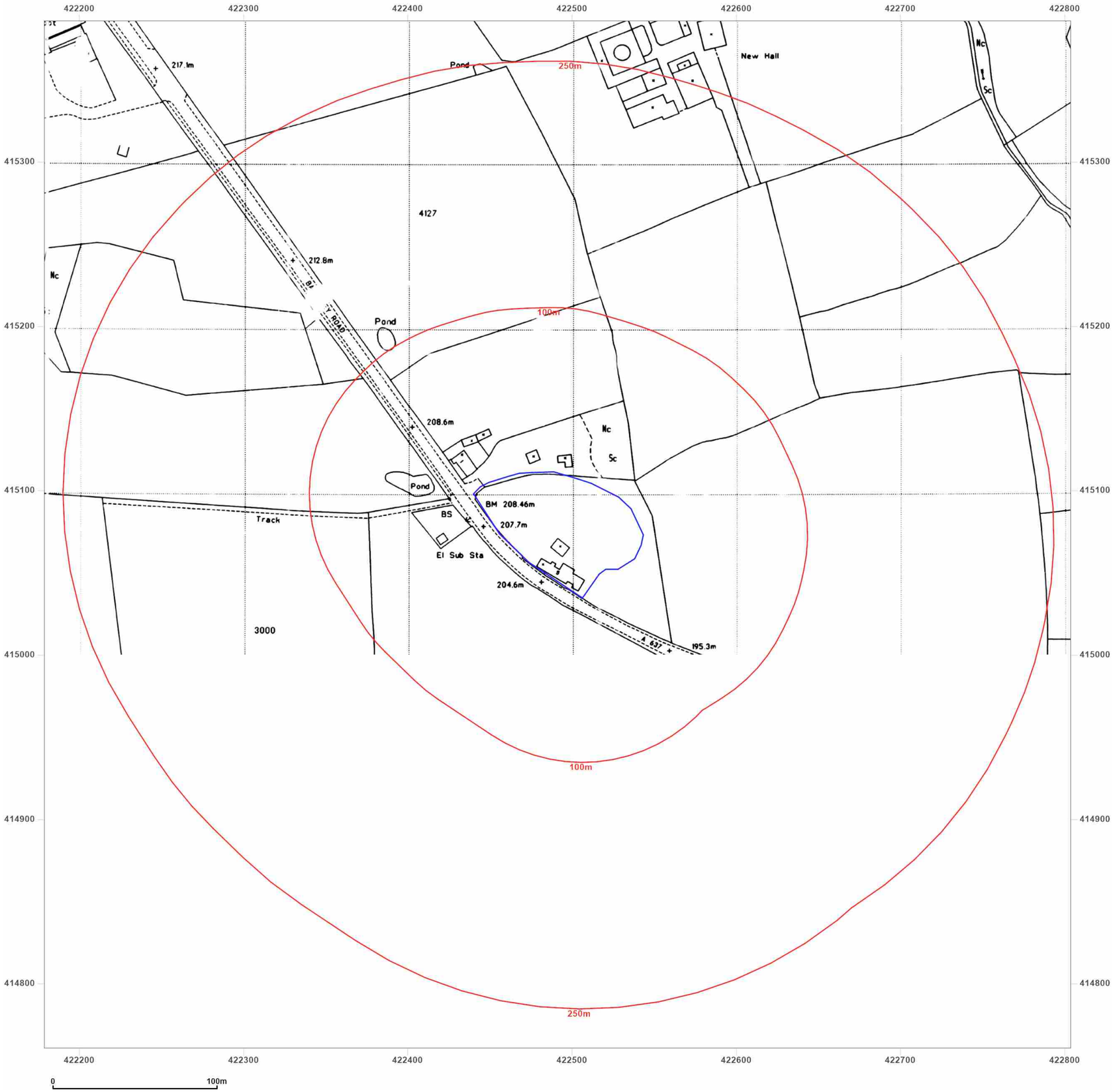

Groundsure INSIGHTS

Site Details:

5, BARNSLEY ROAD,
FLOCKTON, WAKEFIELD,
KIRKLEES, WF4 4DN

Client Ref: RBG476
Report Ref: GS-789-238-JLL-VOM
Grid Ref: 422491, 415073

Map Name: National Grid

Map date: **1993**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

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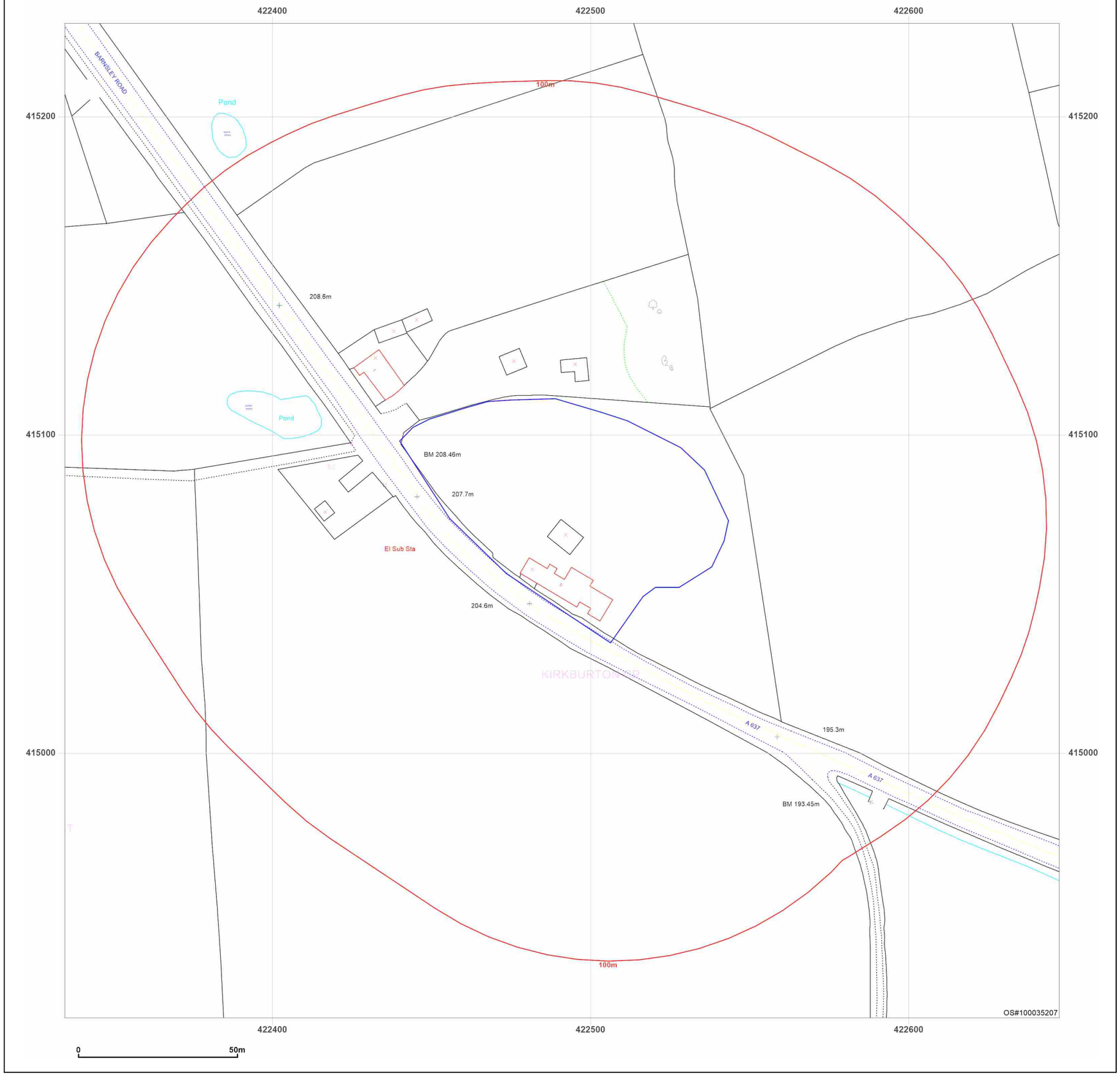

Groundsure INSIGHTS

Site Details:

5, BARNSLEY ROAD,
FLOCKTON, WAKEFIELD,
KIRKLEES, WF4 4DN

Client Ref: RBG476
Report Ref: GS-789-238-JLL-VOM
Grid Ref: 422491, 415073

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

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Production date: 14 August 2025

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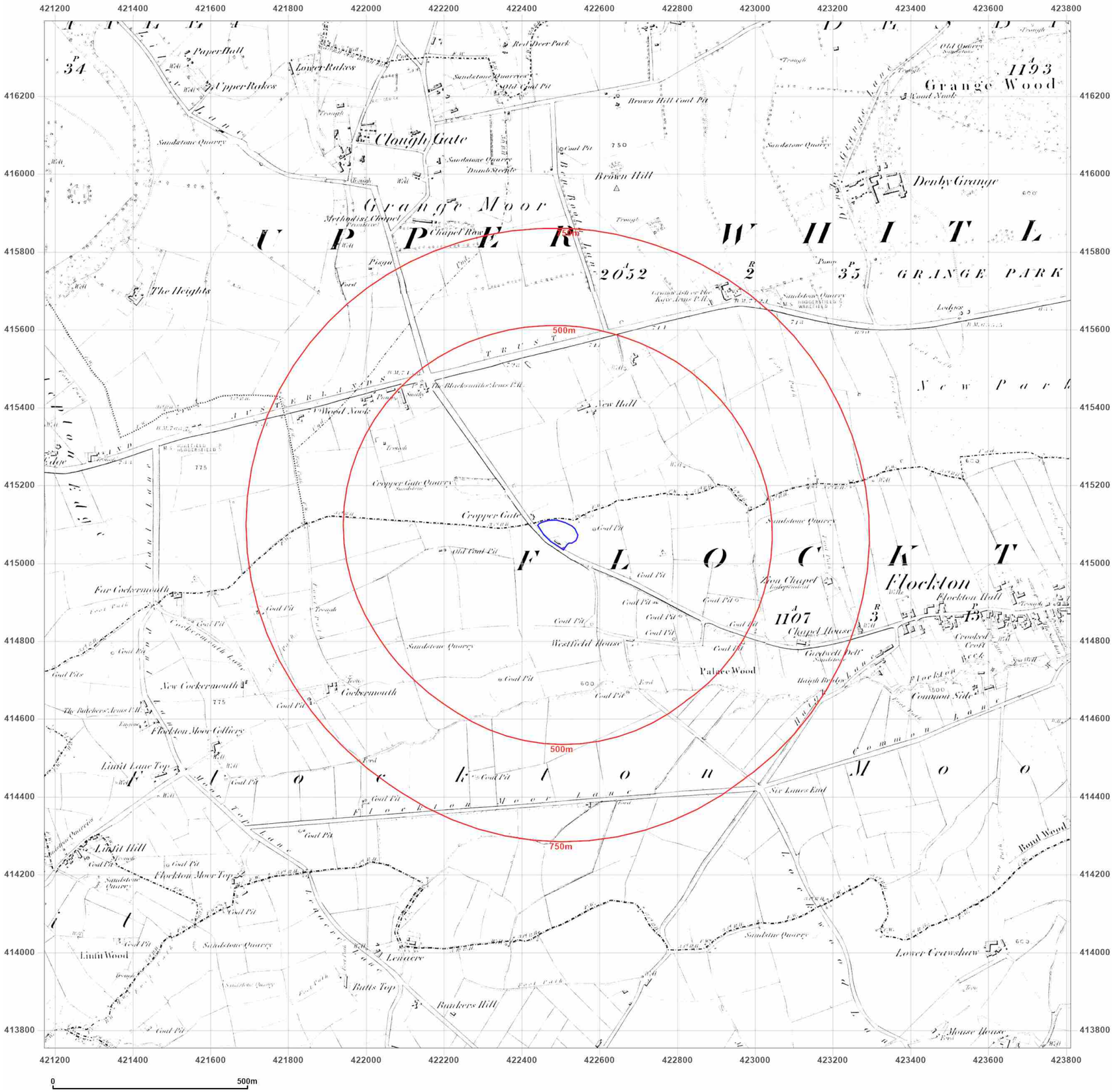

Groundsure INSIGHTS

Site Details:

5, BARNSLEY ROAD,
FLOCKTON, WAKEFIELD,
KIRKLEES, WF4 4DN

Client Ref: RBG476
Report Ref: GS-789-238-JLL-VOM
Grid Ref: 422491, 415073

Map Name: County Series

Map date: **1854-1855**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1851
Revised N/A
Edition 1855
Copyright N/A
Levelled N/A

Surveyed 1850
Revised N/A
Edition 1854
Copyright N/A
Levelled N/A

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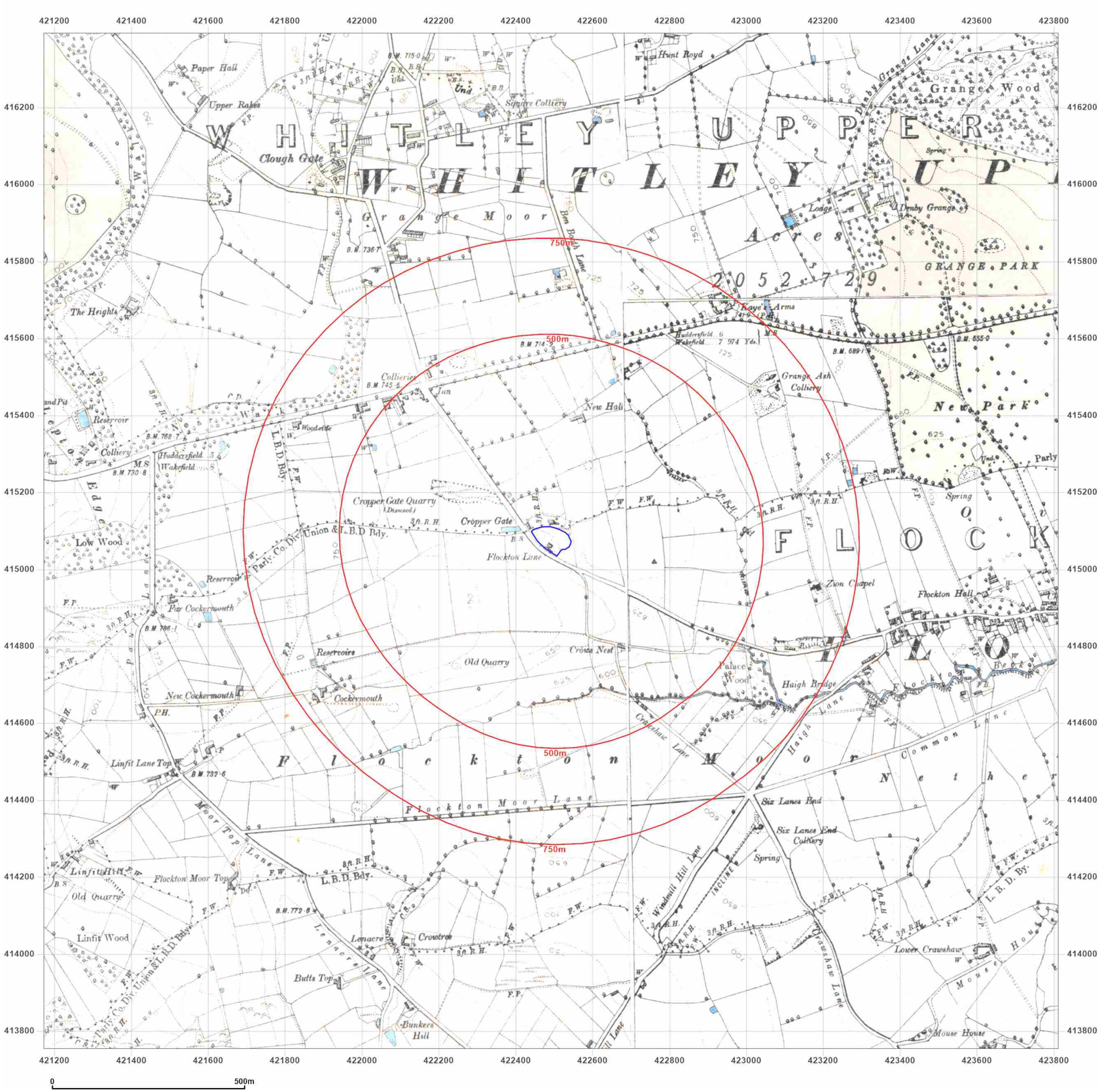

Groundsure INSIGHTS

Site Details:

5, BARNSLEY ROAD,
FLOCKTON, WAKEFIELD,
KIRKLEES, WF4 4DN

Client Ref: RBG476
Report Ref: GS-789-238-JLL-VOM
Grid Ref: 422491, 415073

Map Name: County Series

Map date: **1888-1892**

Scale: 1:10,560

Printed at: 1:10,560

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

Surveyed 1892
Revised 1892
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1892
Revised 1892
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1891
Revised 1891
Edition N/A
Copyright N/A
Levelled N/A

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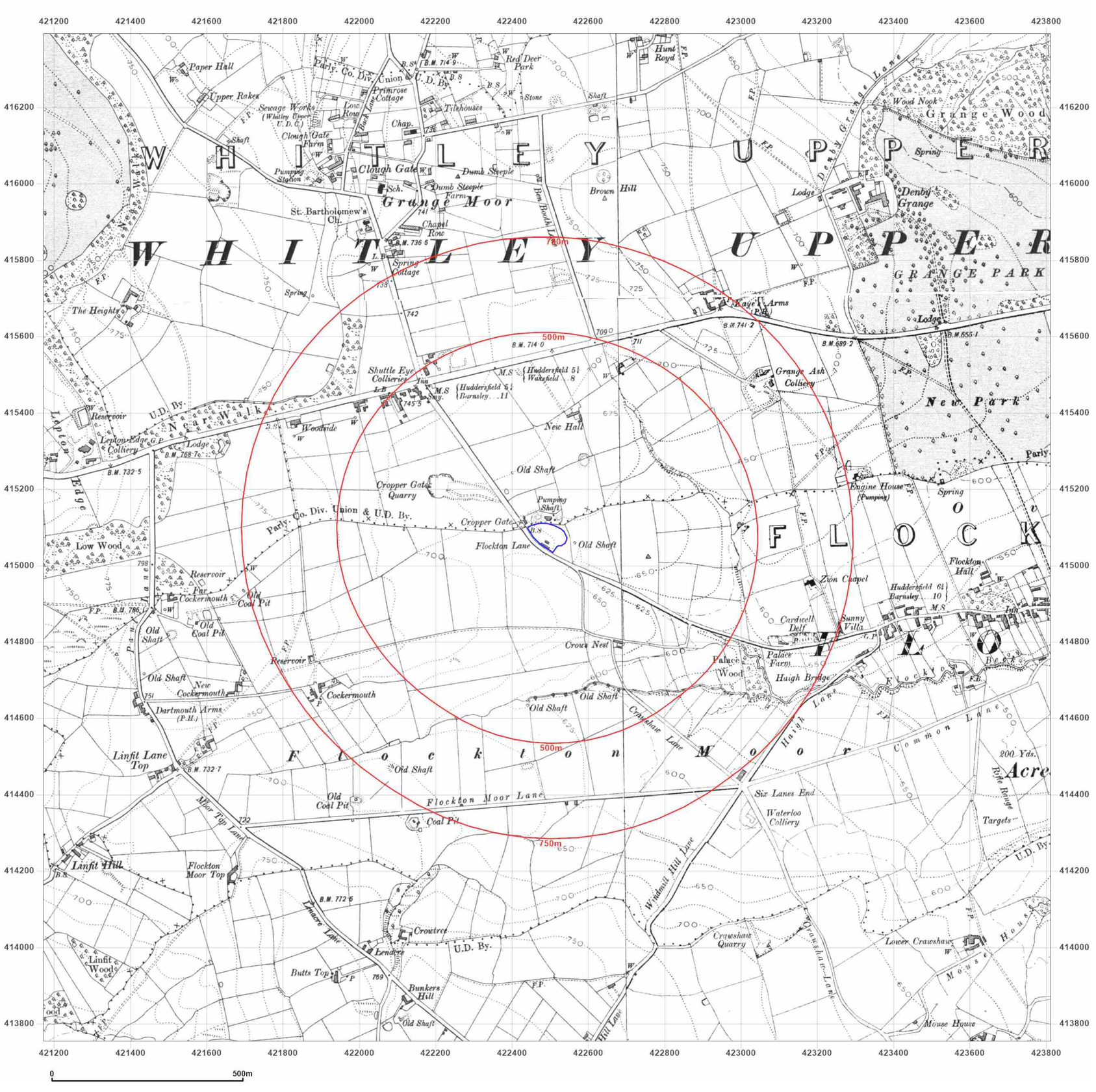

Groundsure INSIGHTS

Site Details:

5, BARNSLEY ROAD,
FLOCKTON, WAKEFIELD,
KIRKLEES, WF4 4DN

Client Ref: RBG476
Report Ref: GS-789-238-JLL-VOM
Grid Ref: 422491, 415073

Map Name: County Series

Map date: **1904-1905**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1888 Revised 1904 Edition N/A Copyright N/A Levelled N/A	Surveyed 1892 Revised 1905 Edition N/A Copyright N/A Levelled N/A
Surveyed 1892 Revised 1904 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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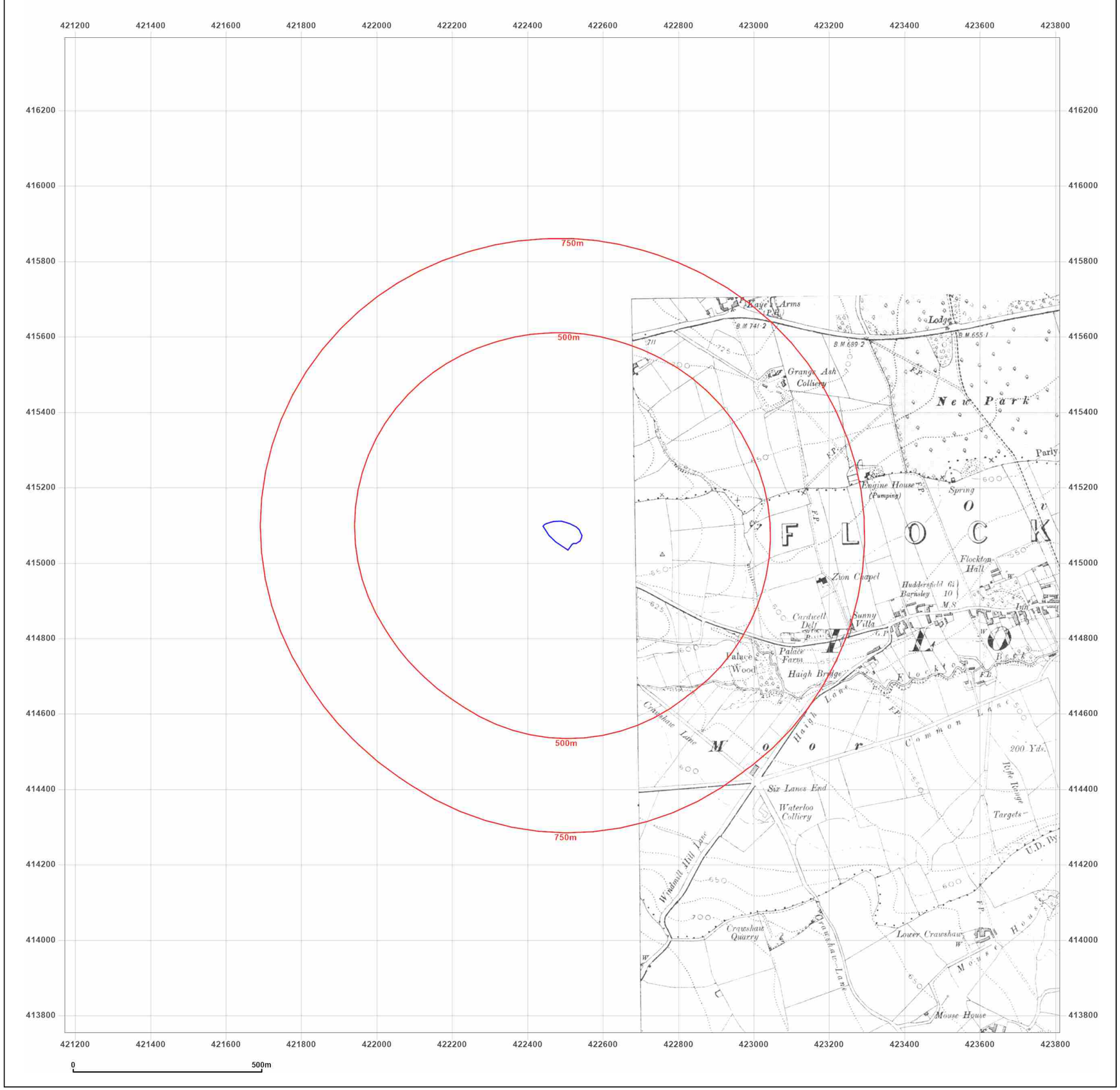

Groundsure INSIGHTS

Site Details:

5, BARNSLEY ROAD,
FLOCKTON, WAKEFIELD,
KIRKLEES, WF4 4DN

Client Ref: RBG476
Report Ref: GS-789-238-JLL-VOM
Grid Ref: 422491, 415073

Map Name: County Series

Map date: **1907**

Scale: 1:10,560

Printed at: 1:10,560

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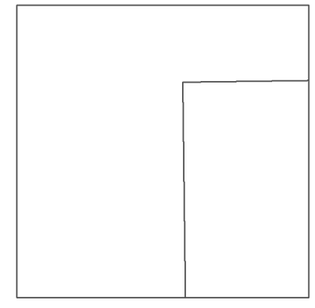

Surveyed N/A
Revised 1907
Edition N/A
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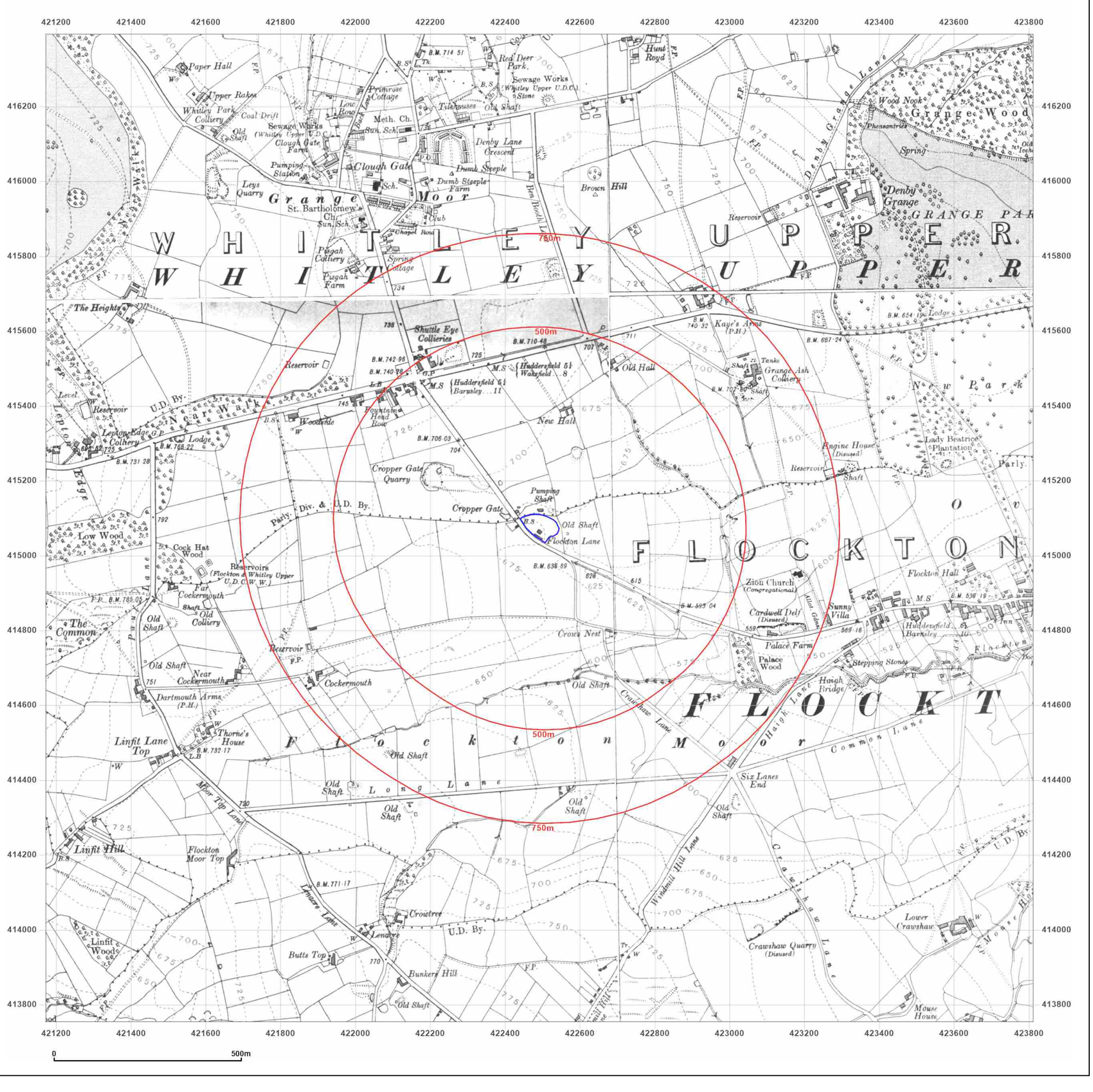

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Grid Ref: 422491, 415073

Map Name: County Series

Map date: **1930-1931**

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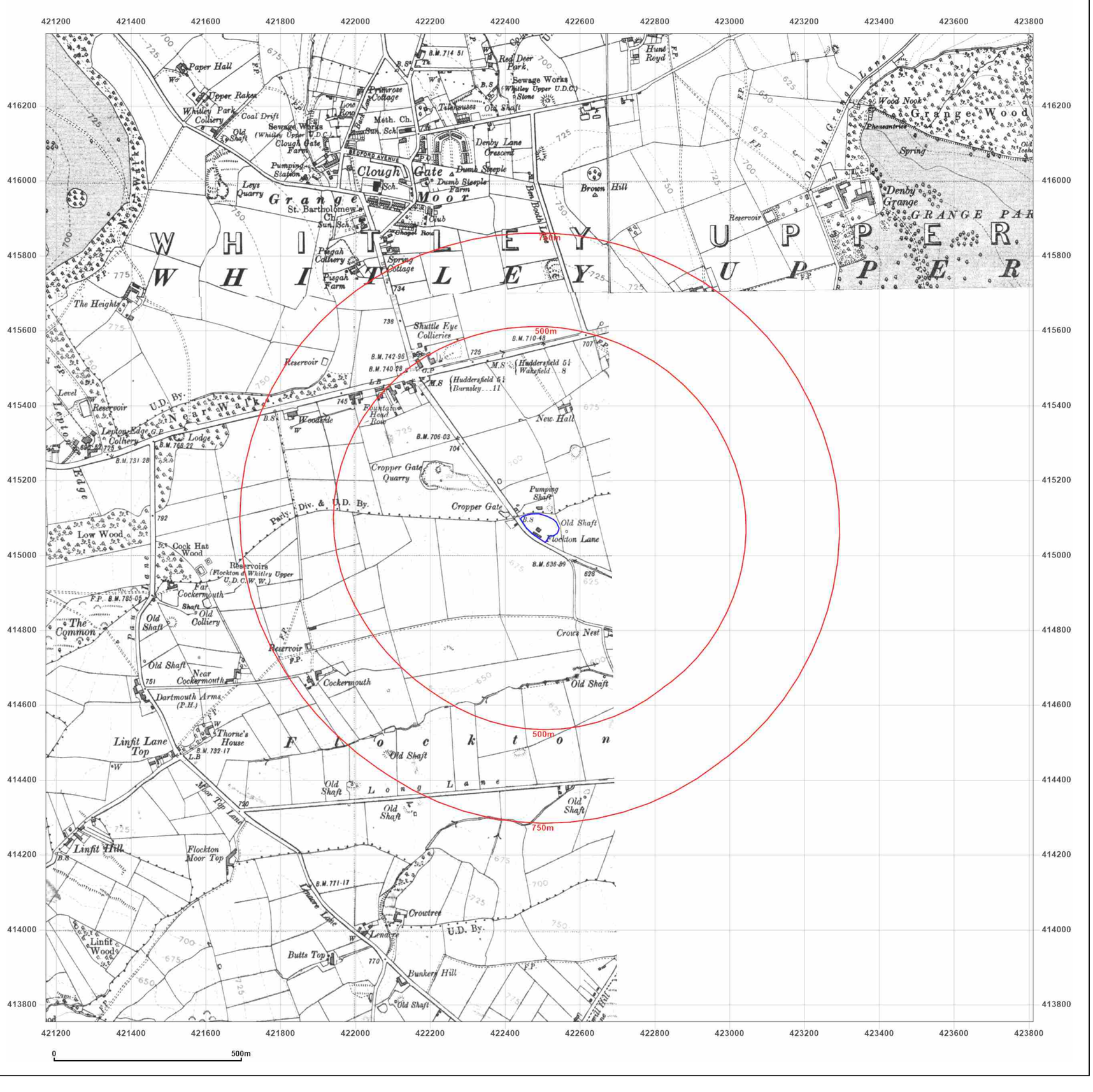

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KIRKLEES, WF4 4DN

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Report Ref: GS-789-238-JLL-VOM
Grid Ref: 422491, 415073

Map Name: County Series

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Scale: 1:10,560

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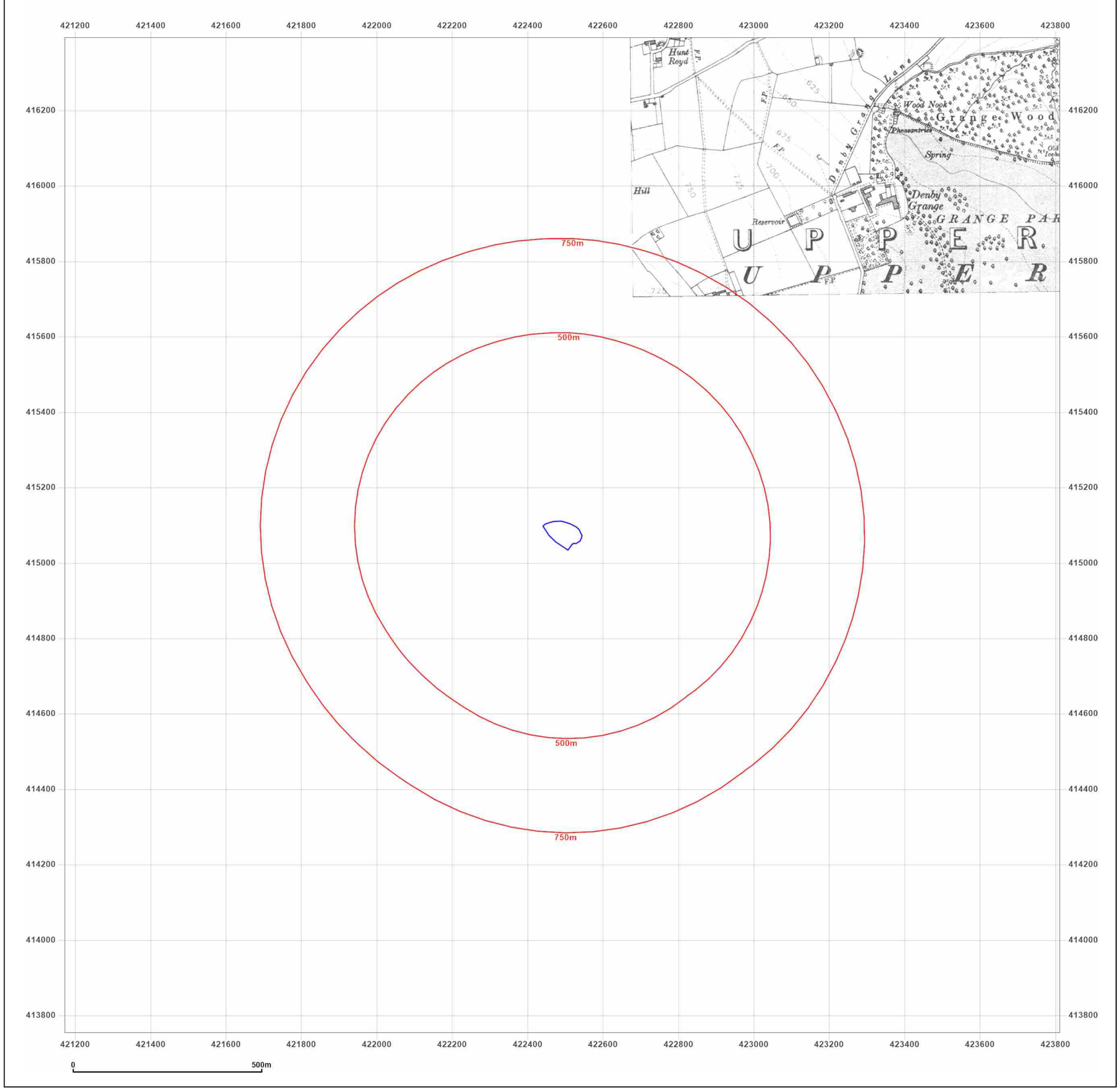

Groundsure INSIGHTS

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FLOCKTON, WAKEFIELD,
KIRKLEES, WF4 4DN

Client Ref: RBG476
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Grid Ref: 422491, 415073

Map Name: County Series

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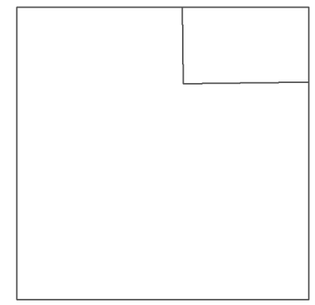

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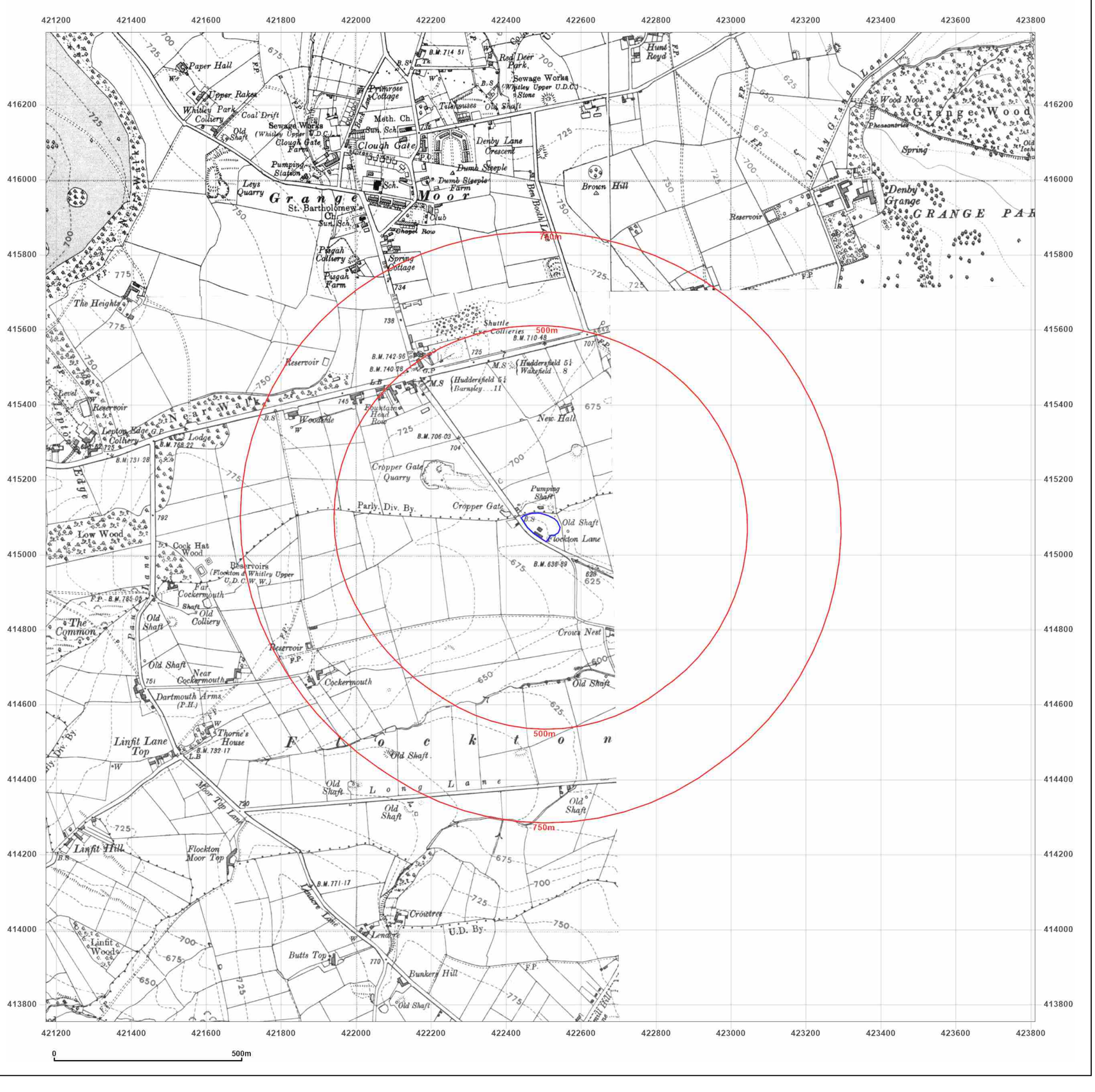

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Grid Ref: 422491, 415073

Map Name: County Series

Map date: **1948**

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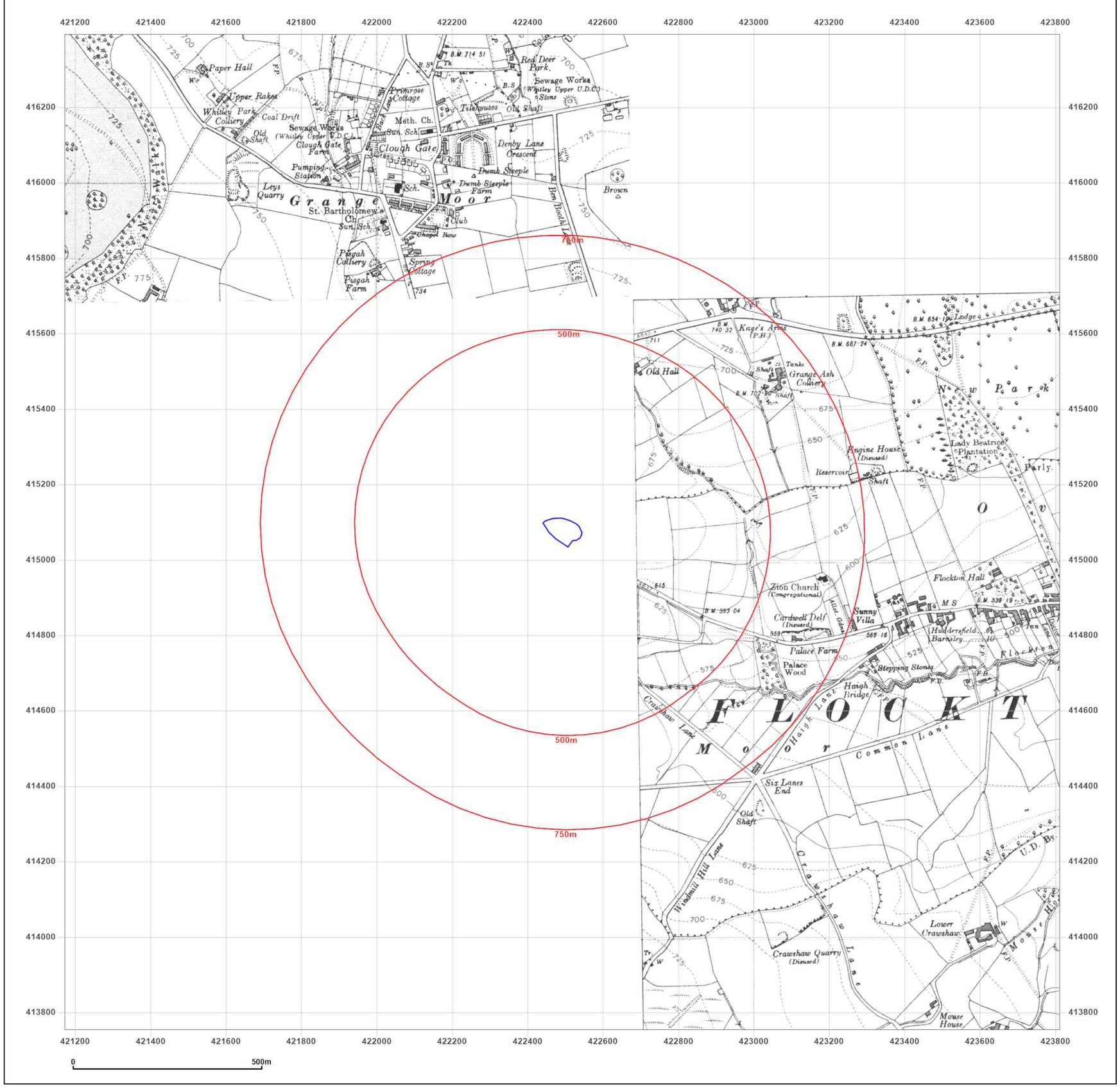

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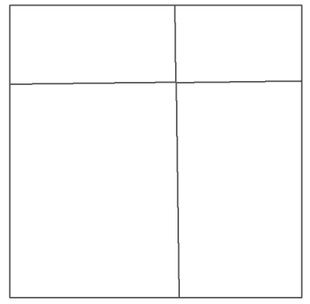

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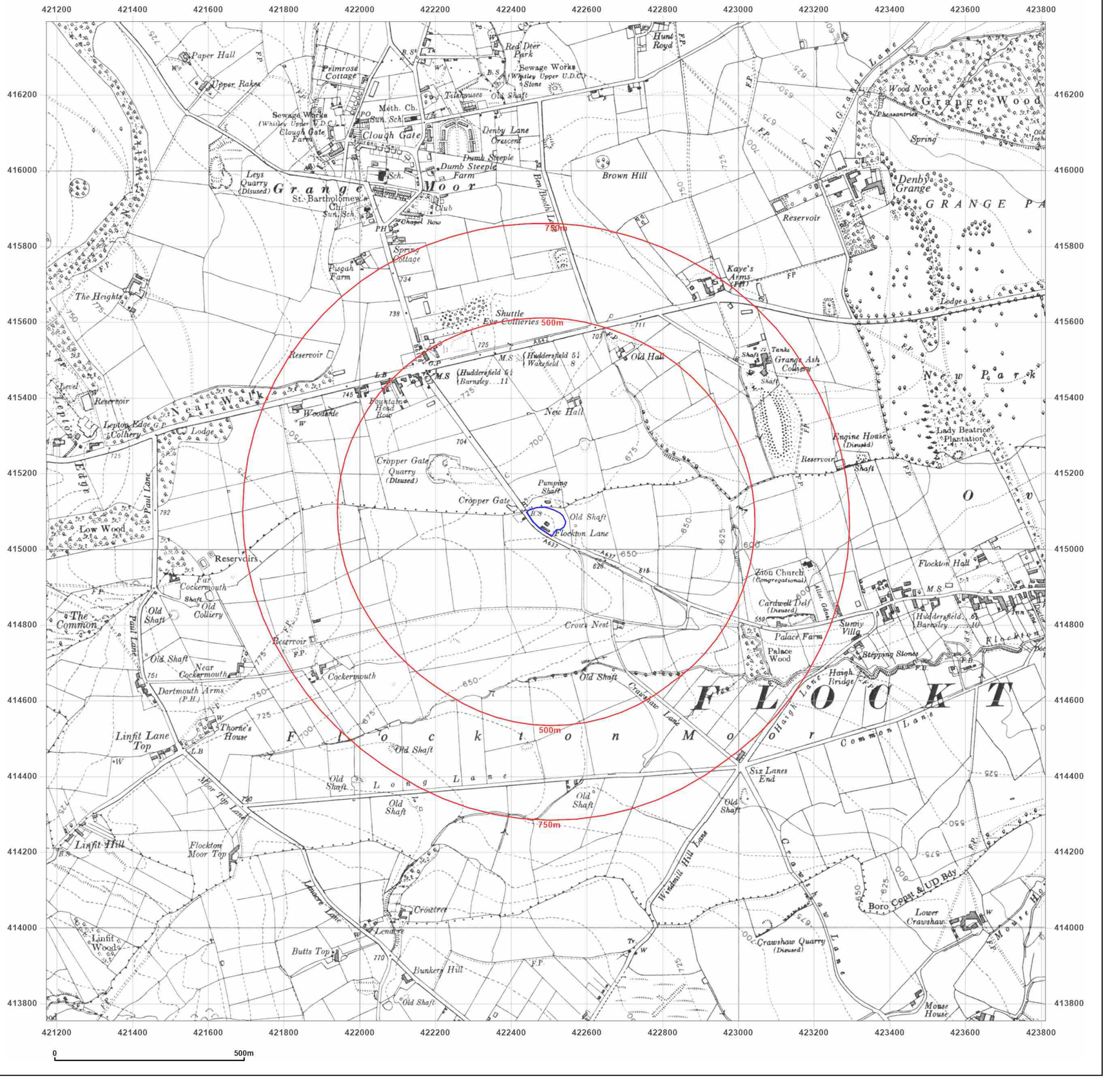

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FLOCKTON, WAKEFIELD,
KIRKLEES, WF4 4DN

Client Ref: RBG476
Report Ref: GS-789-238-JLL-VOM
Grid Ref: 422491, 415073

Map Name: Provisional

Map date: **1951-1955**

Scale: 1:10,560

Printed at: 1:10,560

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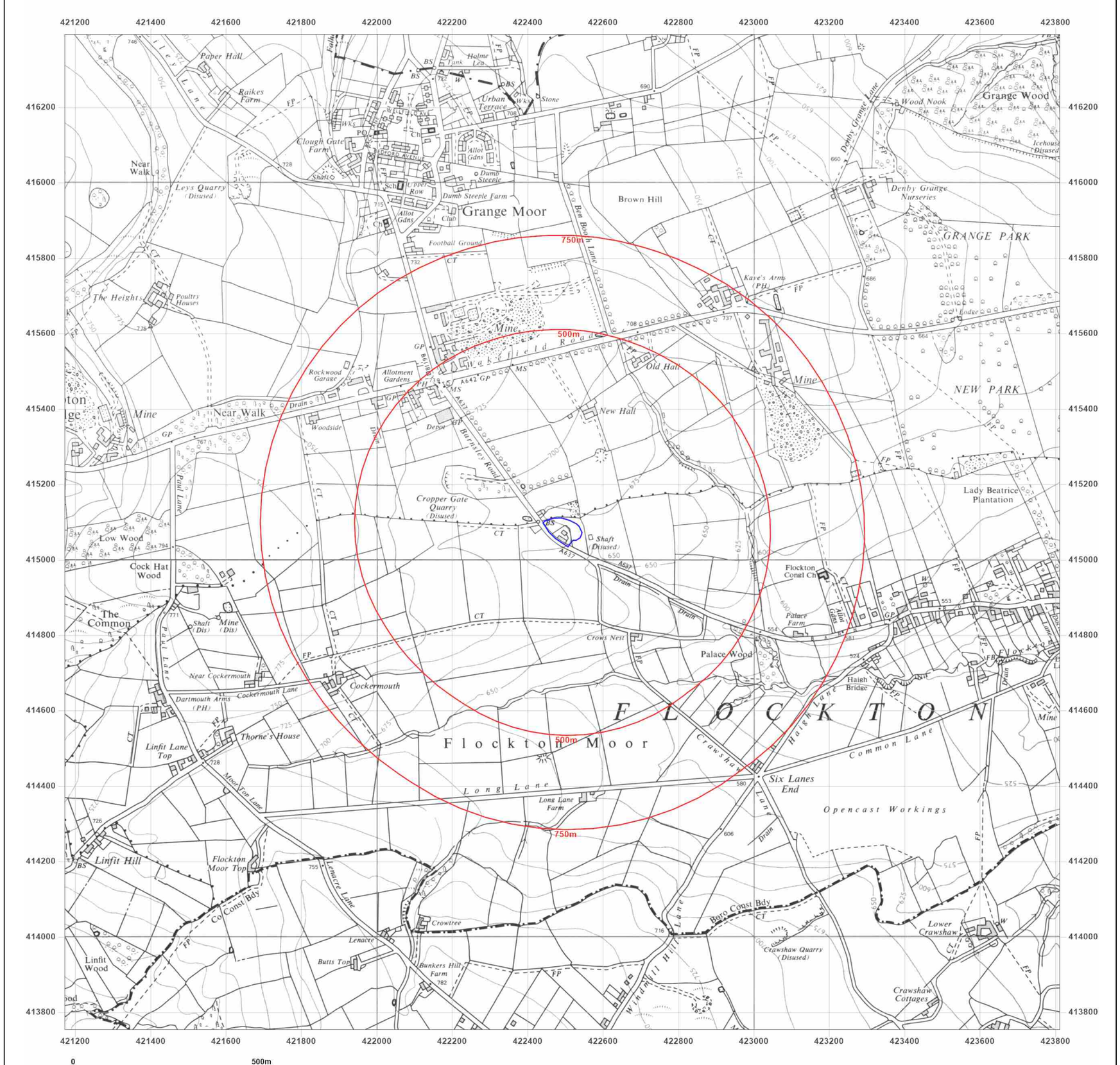

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FLOCKTON, WAKEFIELD,
KIRKLEES, WF4 4DN

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Grid Ref: 422491, 415073

Map Name: Provisional

Map date: **1966-1967**

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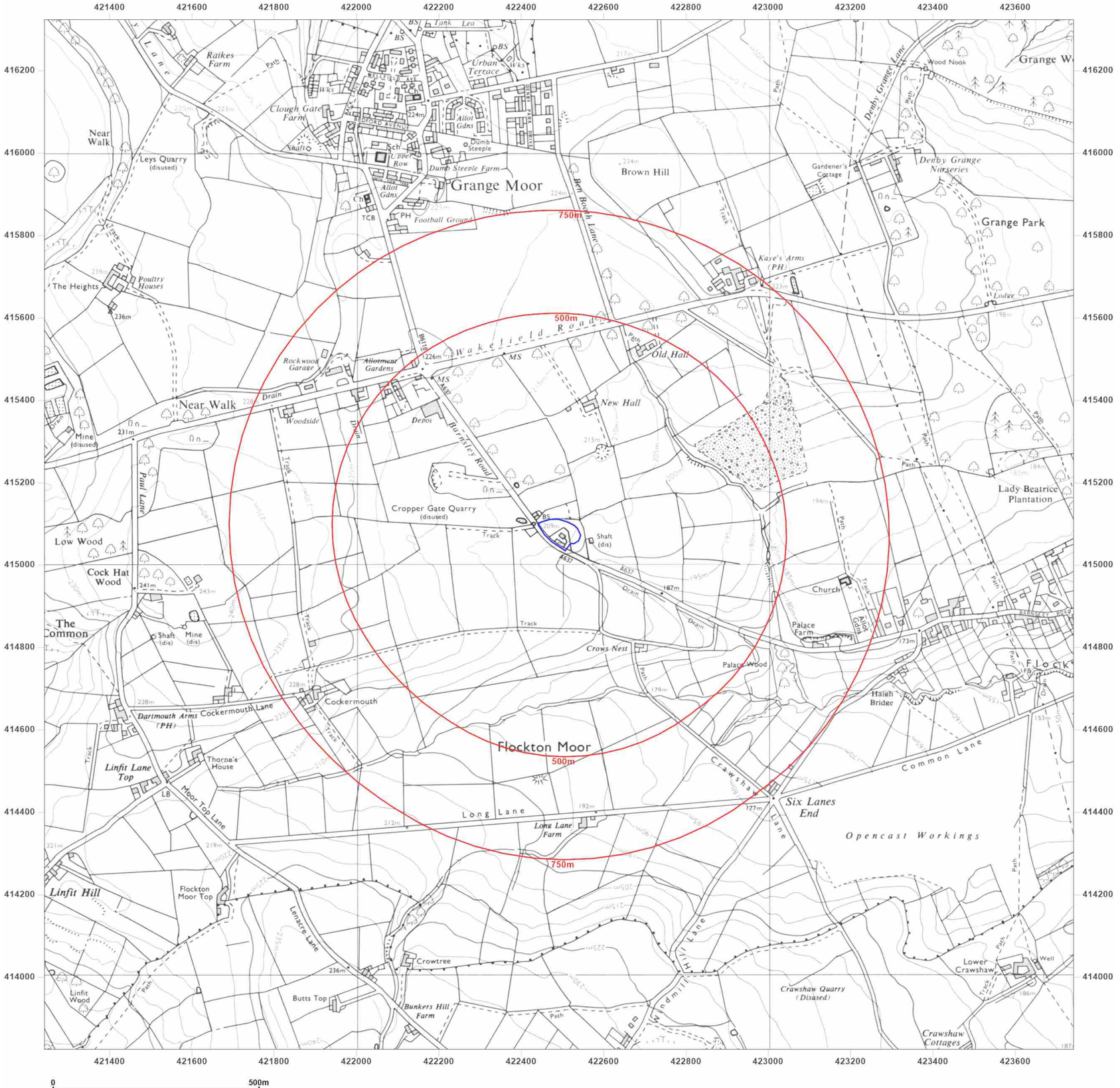

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Map Name: National Grid

Map date: **1979-1982**

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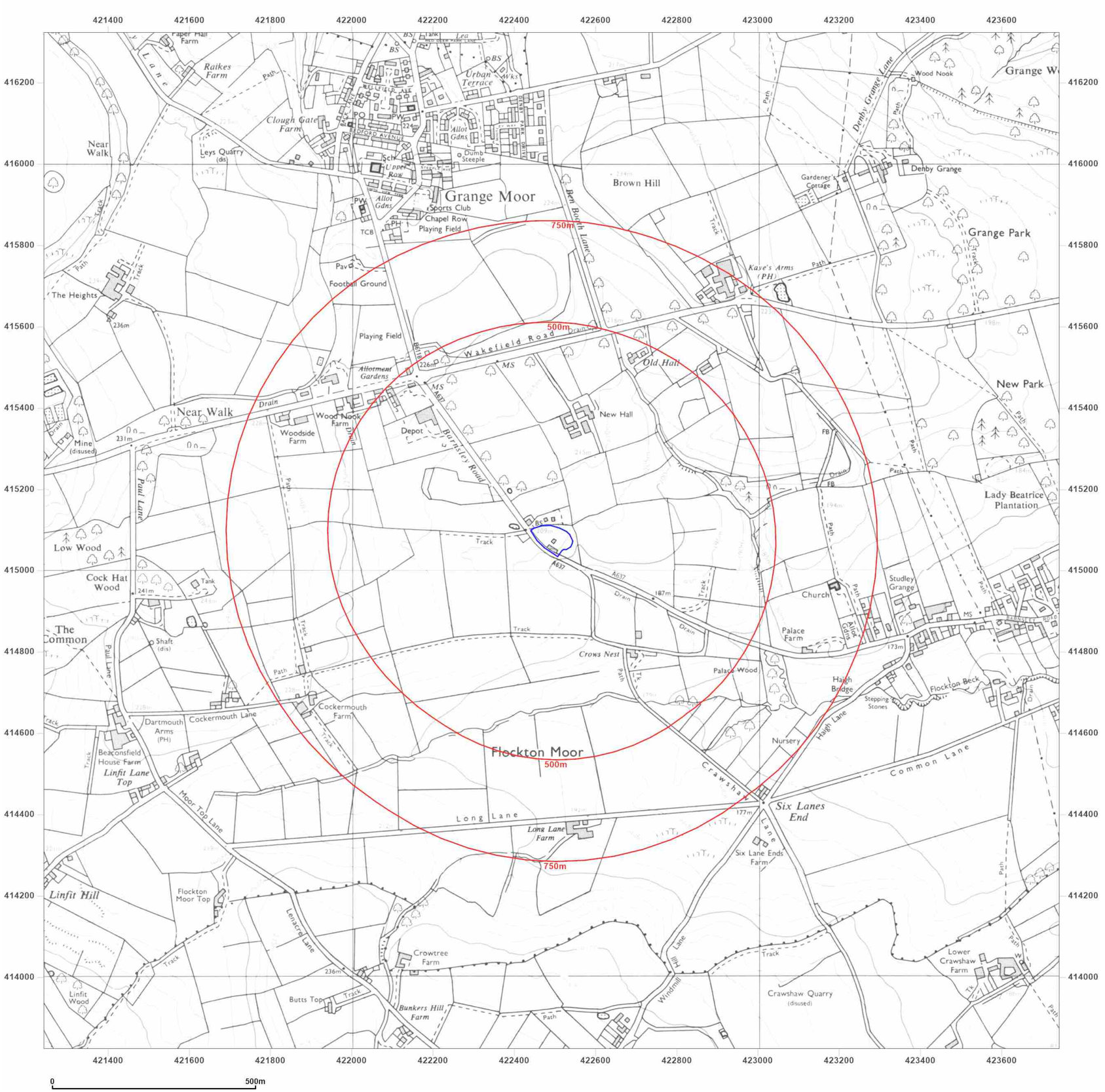

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KIRKLEES, WF4 4DN

Client Ref: RBG476
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Map Name: National Grid

Map date: **1993**

Scale: 1:10,000

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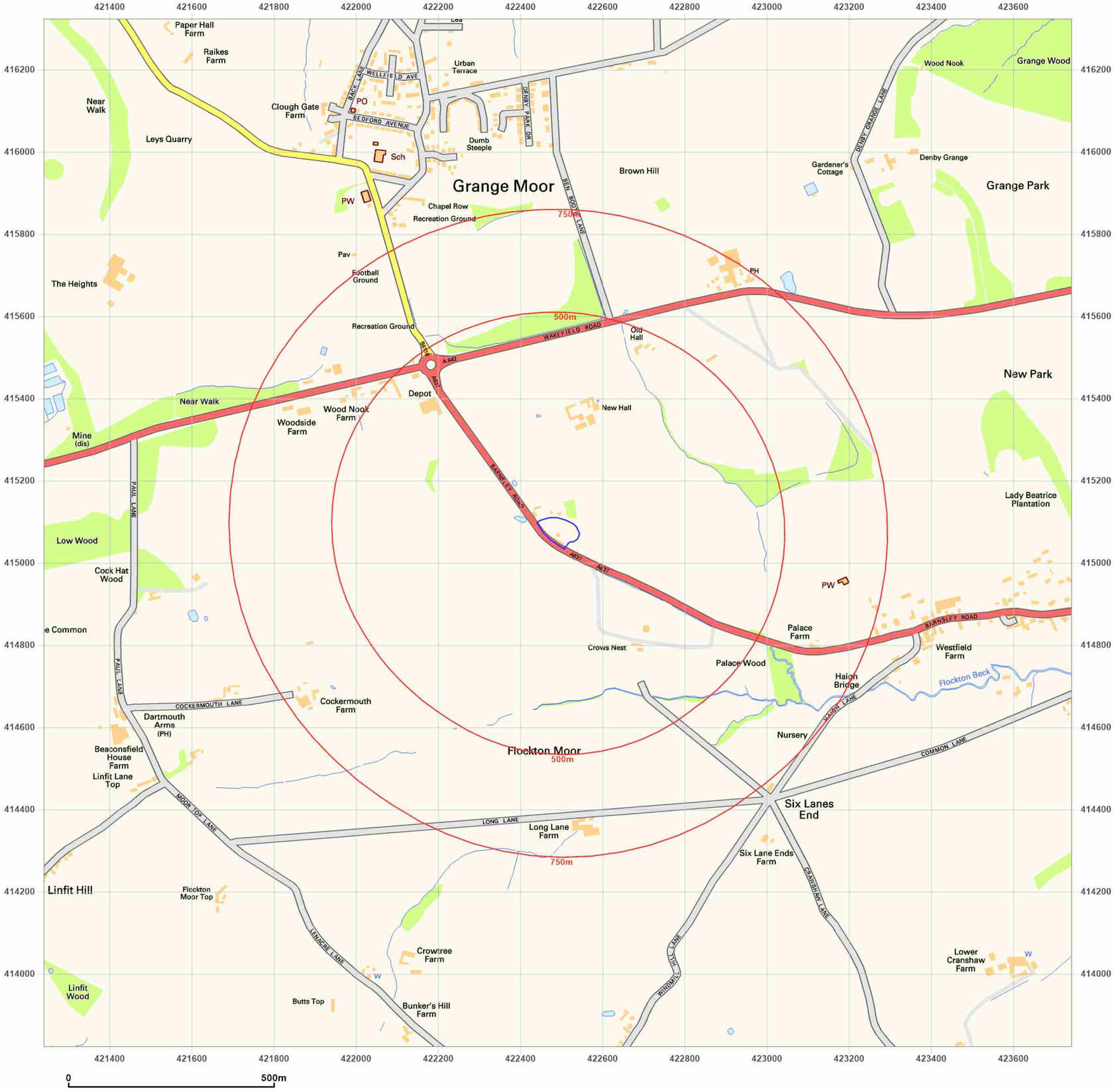

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Scale: 1:10,000
Printed at: 1:10,000

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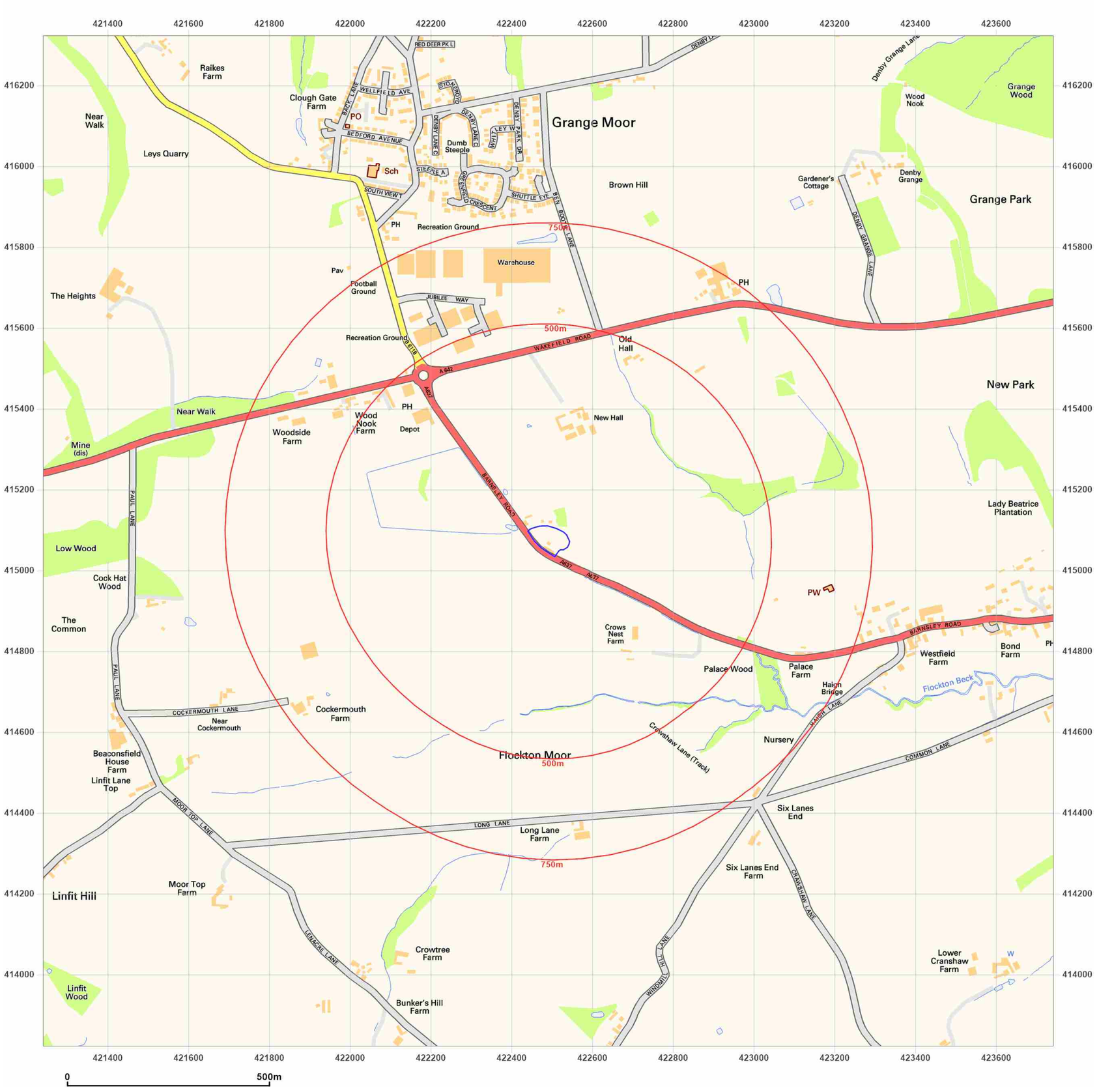

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Client Ref: RBG476
Report Ref: GS-789-238-JLL-VOM
Grid Ref: 422491, 415073

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

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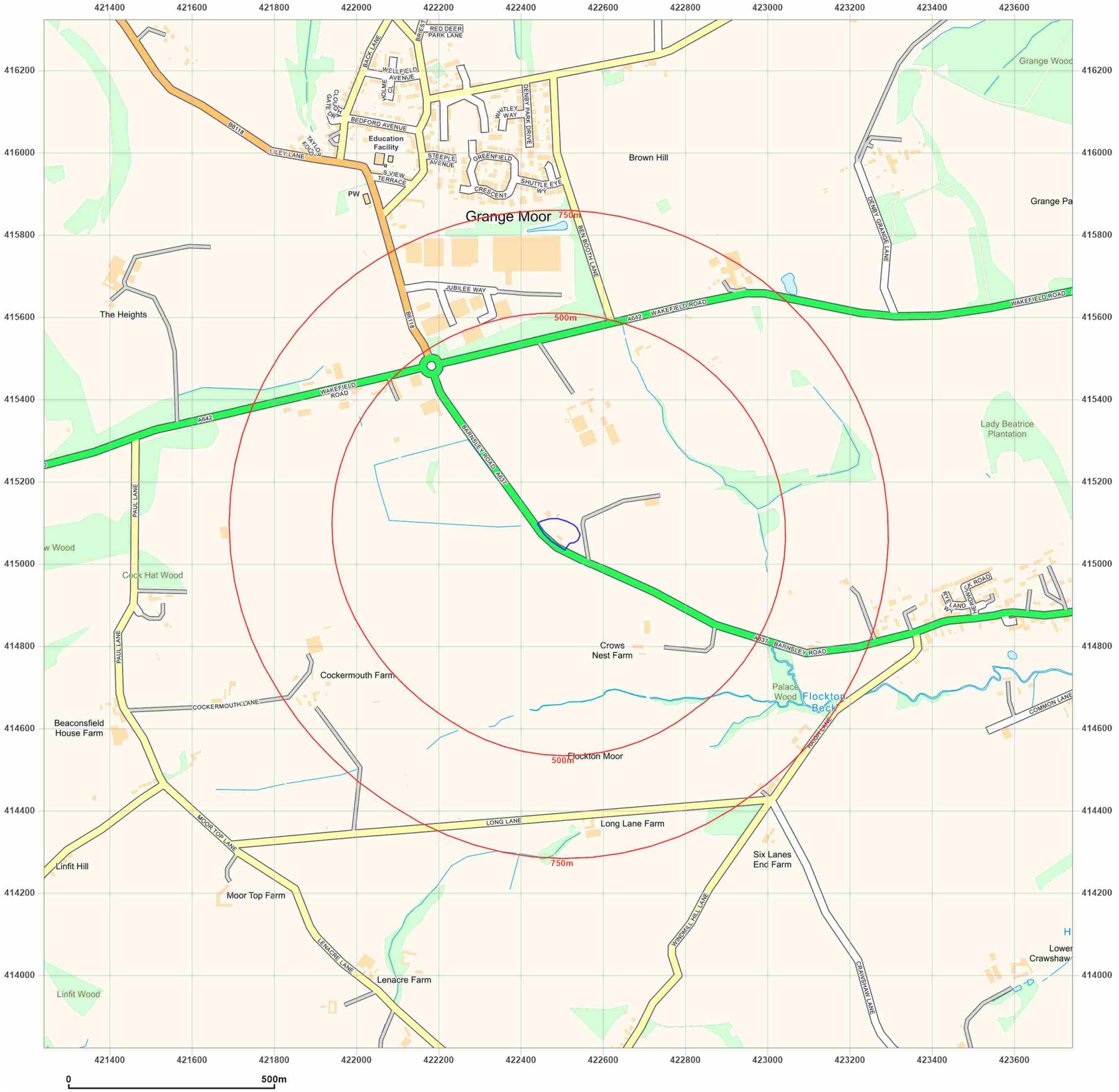

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Grid Ref: 422491, 415073

Map Name: National Grid
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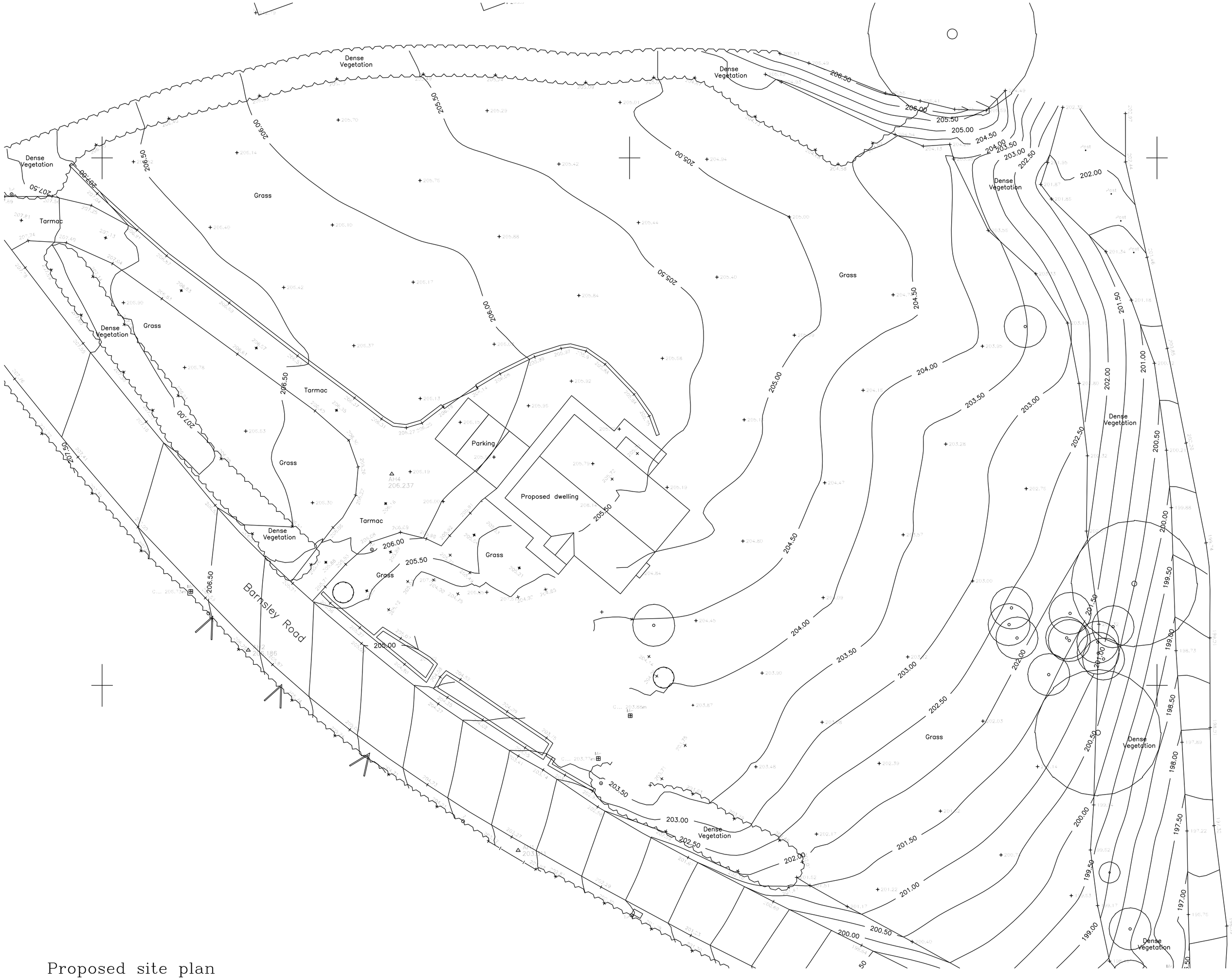
APPENDIX C – PROPOSED DEVELOPMENT PLAN



Proposed site plan

Scale 1:200

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NOTE TO CONTRACTOR

Check all dimensions prior to commencing works or ordering any materials
On no account are any works whatsoever including foundations to be undertaken outside the boundary of the site without the express permission of the adjoing owner

NOTE TO CLIENT

It is your responsibility to check with the Statutory Authorities where all the services, particularly those outside the property are located, and to advise the Contractor accordingly, prior to accepting his quotation for the works

NOTE

This may have both cost and safety issues

NOTE TO CLIENT / BUILDER

These Works may be subject to CDM Legislation depending on the nature of the works & the contract period
It is your reponsibility to check. You can ring the HSE to find out & what your responibilities are

FOR PLANNING PURPOSES ONLY
NOT TO BE USED FOR CONSTRUCTION

REVISION	DATE	DESCRIPTION

CHARTERED ARCHITECTS
NEIL BOWEN
R.I.B.A.

Office F7
Flexspace
Monckton Road
Wakefield, WF2 7AS
Email : neil@neilbowenarchitects.co.uk
Phone : 01924 380873

Project

Proposed replacement dwelling at 5 Barnsley Road, Flockton, Wakefield, WF4 4DN for Mr S Lo

Drawing

Proposed Site Plan

Date 23/05/2025

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Drg No 16

APPENDIX D – COAL MINING RISK ASSESSMENT

RB Geotechnical

7 Carr Manor View, Leeds, LS17 5AG

Telephone: 07909331251

Email: rbgeotechnical@gmail.com

Appendix D – 5 Barnsley Road

Coal Mining Risk Assessment

August 2025

RB Geotechnical

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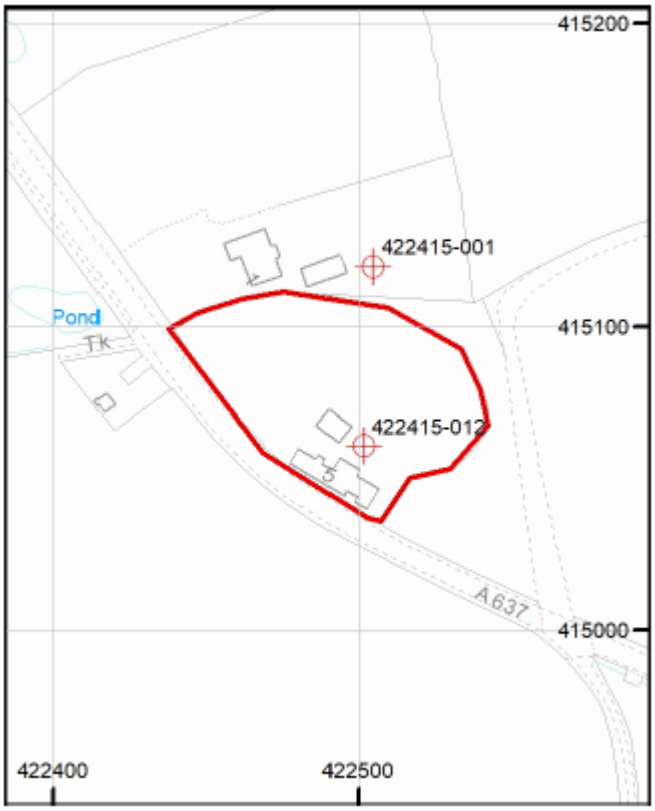
Telephone: 07909331251

Email: rbgeotechnical@gmail.com



Report Title	5 Barnsley Road Coal Mining Risk Assessment	**Site Address**	5 Barnsley Road, Flockton, Wakefield, WF4 4DN
Author	RB Geotechnical	**Contamination / Geotechnical**	Geotechnical
Work Stage	Coal Mining Risk Assessment	**Report Date**	August 2025
Brief Description of the Report Contents	A desk-based assessment on the risks posed by coal mining to the site and the proposed new development		

RB Geotechnical

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Telephone: 07909331251

Email: rbgeotechnical@gmail.com

Document Control

Project:	5 Barnsley Road Coal Mining Risk Assessment
Client:	Mr Steve Lo.
Job Number:	RBG476

Prepared and Issued by Ross Blake BSc MSc FGS, Engineer. Signed:

Issue	Date	Status
001	August 2025	Final

RB Geotechnical

7 Carr Manor View, Leeds, LS17 5AG

Telephone: 07909331251

Email: rbgeotechnical@gmail.com

Contents Page

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APPENDIX CONTENTS

7 Carr Manor View, Leeds, LS17 5AG

Telephone: 07909331251

Email: rbgeotechnical@gmail.com

Disclaimer

This report was produced by RB Geotechnical for Mr Steve Lo (The Client), for the specific purpose of a Coal Mining Risk Assessment for the planning application related to the proposed demolition of the existing house and construction of a new one further along the garden at 5 Barnsley Road in Flockton. This report may not be used by anyone else other than the client without their express permission. In any event, RB Geotechnical accepts no liability for any costs, liabilities or losses arising from the use of reliance upon the contents of this report by anyone other than the client.

1.0 INTRODUCTION

RB Geotechnical was commissioned by the client to carry out a Coal Mining Risk Assessment for the proposed new residential development at 5 Barnsley Road in Flockton, in order to assess the risk of possible unrecorded mining activities.

Terms and Conditions

Although every effort has been made to ensure the accuracy of the information contained herein, no checks have been carried out to ensure the accuracy of information obtained from third parties and no liability can be accepted for any errors or misinterpretation of the third-party information where it has been incorporated into this report.

This assessment is compliant with the latest Coal Authority Guidance from the Coal Authority Website, with this report structured as advised by this guidance. This report is concerned only with precautions related to potential mining issues.

Site Location and Description

The 0.48ha sized site is situated at 5 Barnsley Road in Flockton, West Yorkshire. It is currently occupied by a rectangular bungalow type building along the Southern site boundary, with a double detached garage just behind this. There is a tarmac hardstanding driveway and courtyard just off the road towards the garages. The rest of the site is open grass gardens.

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Email: rbgeotechnical@gmail.com

The National Grid Reference for the centre of the site is 422494, 415078.

Proposed Development

The site is to have the current house and buildings demolished, and a new large detached house is to be constructed further into the garden. The proposed development plan is shown in Appendix C.

Scope of the Coal Mining Risk Assessment

The purpose of this Coal Mining Risk Assessment is to:

- Present a desk-based review of all available information on the coal mining issues which are relevant to the application site;
- Use that information to identify and assess the risks to the proposed development, from coal mining legacy;
- Set out appropriate mitigation measures to address the coal mining legacy issues affecting the site, including any necessary remedial works and/or demonstrate how coal mining issues have influenced the proposed development;
- Demonstrate to the Coal Authority that the application site is, or can be made, safe and stable to meet the requirements of national planning policy with regard to development on unstable land.

2.0 SOURCES OF INFORMATION USED

The following information has been reviewed in this Risk Assessment, extracts from which are appended:

- A Coal Authority Coal Mining Report Dated 15th August 2025 – Appendix E; and
- Site Geological information obtained from the British Geological Survey Website (www.bgs.ac.uk). Map extract in Appendix F.

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3.0 IDENTIFICATION AND ASSESSMENT OF SITE-SPECIFIC COAL MINING RISKS

The table below summarises the potential risks associated with coal mining legacy for the proposed development site, identified from the listed sources above.

Coal Mining Issue	YES	NO	Comment
3.1 Underground Coal Mining (Recorded at shallow depths)		X	
3.2 Underground Coal Mining (probable at shallow depths)	X		**Site in Development High Risk Area with probable mining at shallow depths. Intrusive Investigation Required**
3.3 Mine entries (shafts and adits)	X		**Mine entry mapped directly on site. Intrusive Investigation Required**
3.4 Coal mining geology (faults and fissures)		X	
3.5 Record of past mine gas emissions		X	
3.6 Recorded coal mining surface hazard		X	

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3.7 Surface mining (opencast workings)		X	
3.8 Coal at or Close to Surface which could have been mined in past		X	
3.9 Coal Seam Directly Beneath Site/Adjacent to site		X	

3.1 Underground Coal Mining (Recorded at Shallow Depths)

Where Coal Mining has taken place at depths shallower than 30m below ground level, there is a risk of potential ground stability issues that could arise.

The Coal Authority Mining Report, included in Appendix E and the Coal Authority Interactive viewer, states that the site is not in an area of recorded shallow coal mine workings (workings shallower than 30m below ground level).

3.2 Underground Coal Mining (Probable at Shallow Depths)

An area of probable shallow coal mine workings is classified as a site that is in the Development High Risk Area, in which no records of mining exist, but where it is likely that workable coal may be present at shallow depths and could have been mined in the past.

The Coal Authority Interactive Viewer and the Coal Authority Coal Mining Report confirms that the site is situated within an area of probable shallow mine workings.

Intrusive investigation works will be required on site to assess for the potential of these unrecorded workings, which could have an affect on any new proposed development.

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3.3 Mine Entries (Shafts and Adits)

The Mine Entry dataset is a set of data showing mapped mine entries and shaft dating back to as far as 1872.

The Coal Authority Mining Report included as Appendix E, shows a mine entry just off site to the North, which is noted as being filled to British Coal Specification in 1989. The report also identifies an additional mine entry point directly on the site, of which the treatment details are currently unknown.

Any intrusive investigation on site, must also include an assessment to discover the condition of this mine entry.

3.4 Coal Mining Geology (Faults and Fissures and underlying Bedrock)

Faults and Fissures can result in ground instability, and pathways of ground gases and groundwater.

The site is mapped as being underlain by bedrock of the Birstall Rock Sandstone Formation.

No faults or coal seams are mapped within 250m of the site boundary.

3.5 Records of Past Mine Gas Emissions

The Coal Authority Mining Report in Appendix A indicates that the site has no record of mine gas emissions that require action.

3.6 Recorded Coal Mining Surface Hazard

There are no recorded coal mining surface hazards noted.

3.7 Surface Mining (Opencast Mining)

Surface Mining Areas denote an area of coal that has been extracted using opencast surface excavations.

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The Coal Authority Mining Report indicates that the site is not in an area of past or present opencast mining.

Opencast mining is shown to have historically taken place from approximately 200m to the North of the site.

3.8 Coal at or close to the surface that could have been mined in the past

The site is in not an area where coal is geologically mapped as being at or close to the surface and that could have been mined in the past.

3.9 Coal Seam Directly Beneath/Adjacent to the Site

No coal seams are mapped within 250m of the site boundary.

4.0 MITIGATION STRATEGY PROPOSED AND CONCLUSIONS

The site is identified as being within a Coal Authority Development High Risk Area, with probable shallow mine workings and the presence of a mine entry point directly on the site itself.

RB Geotechnical believe that the site is therefore at risk of being in an area which could be affected by historical mine workings that could affect the proposed development.

An intrusive investigation will be required in order to fully assess the risks posed by potential unrecorded mine workings on the site, in addition to establishing the condition of the existing mine entry point on the site. The following works are recommended:

- Rotary Open Hole Boreholes to establish the underlying ground conditions and the presence or absence of mine workings;

7 Carr Manor View, Leeds, LS17 5AG

Telephone: 07909331251

Email: rbgeotechnical@gmail.com

- Reduced Level Dig, with an excavator, around the area of the mine entry on the site. This is required in order to establish the condition of this mine entry and if it has been suitably treated.

Following this intrusive investigation,

The Coal Authority Permission

Prior written permission from The Coal Authority is required for intrusive activities which will disturb or enter any coal seams, coal mine workings, or coal mine entries (shafts and adits). Further information on The Coal Authority's permissions process can be found at:
www.coal.gov.uk/services/permissions/index.cfm

APPENDIX E – COAL AUTHORITY MINING REPORT

The Coal Authority

CON29M
coal mining report

5 BARNSLEY ROAD, FLOCKTON, WAKEFIELD, KIRKLEES, WF4 4DN

Known or potential coal mining risks

Further action

These additional reports can give further detail on the risks identified:

- Mine entry interpretive report

For more information please see our Further action reports on page 11

Professional opinion

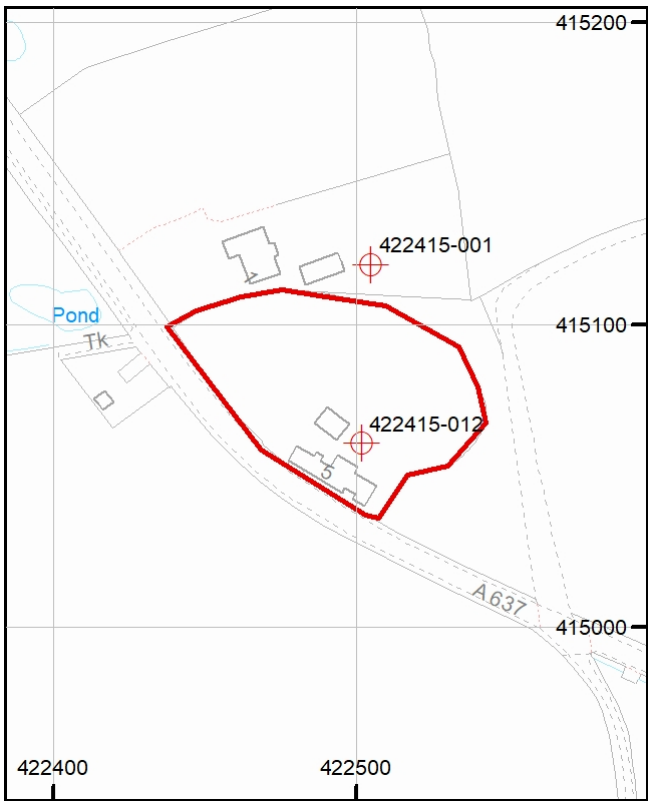
According to the official mining information records held by the Coal Authority at the time of this search, evidence of, or the potential for, coal mining related features have been identified. In view of the coal mining circumstances we would recommend that any planned or future development should follow detailed technical advice before beginning work on site. Please see page 3 for further details on Future development.

Enquiry boundary

Key

Approximate position of enquiry boundary shown

Disused mineshaft



We can confirm that the location is **on the coalfield**

Map data

This report is prepared in accordance with the latest Law Society's Guidance Notes 2018, the User Guide 2018 and the Coal Authority's Terms and Conditions applicable at the time the report was produced.

Accessibility

If you would like this information in an alternative format, please contact our communications team on 0345 762 6848 or email communications@coal.gov.uk.

What if this information changes?

If this report is for a residential property, insurance is included to cover any loss in property value caused by any changes in the information contained in this report. Please see the attached certificate of insurance for the terms and conditions of this insurance. The insurance does not cover non-residential property or further action reports.

Professional opinion

Mine entries

The enquiry boundary shows the approximate location of the disused mine entry/entries referred to in this report. Property owners have the benefit of statutory protection (under the Coal Mining Subsidence Act 1991). This contains provision for the making good, to the reasonable satisfaction of the owner, of physical damage caused by disused coal mine workings including disused coal mine entries. A leaflet setting out the rights and obligations of either the Coal Authority or other responsible persons under the 1991 Act can be obtained by visiting www.coal.gov.uk. Please note this Act is not valid where coal was worked or extracted by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester.

If you wish to discuss the relevance of any of the information contained in this report, you should seek the advice of a qualified mining engineer or surveyor. If you or your advisor wishes to examine the source plans from which the information has been taken, these are available to view, at our Coal Authority head office in Mansfield. To book an appointment please call 0345 762 6848. Should you or your advisor wish to carry out a physical investigation that may enter, disturb or interfere with any disused mine entry, prior permission must be sought from the owner. For coal mine entries, the owner will normally be the Coal Authority.

The Coal Authority, regardless of responsibility and in conjunction with other public bodies, provide an emergency, 24 hour call out facility in coalfield areas to assess the public safety implications of mining features (including disused mine entries). To report an emergency you can call 0800 288 4242.

Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority.

MINE GAS: Please note, if there are no recorded instances of mine gas within the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

If you are looking to develop, or undertake works, within a coal mining development high risk area your Local Authority planning department may require a Coal Mining Risk Assessment to be undertaken by a qualified mining geologist or engineer. Should you require any additional information then please contact the Coal Authority on 0345 762 6848 or email cmra@coal.gov.uk.

Detailed findings

Information provided by the Coal Authority in this report is compiled in response to the Law Society's CON29M Coal Mining enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL.

1 Past underground coal mining

The property is in a surface area that could be affected by underground mining in 5 seams of coal at shallow to 160m depth, and last worked in 1964.

2 Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

3 Future underground coal mining

The property is not in an area where the Coal Authority has received an application for, and is currently considering whether to grant a licence to remove or work coal by underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

4 Mine entries

Within, or within 20 metres of, the boundary of the property there are 2 mine entries, the approximate positions of which are shown on the enquiry boundary plot. For reasons of clarity, mine entry symbols may not be drawn to the same scale as the plan.

Our records disclose the following information:

422415-001. was filled to British Coal specifications in January 1989.

422415-012. Treatment details unknown.*

*For your information, before the coal industry was nationalised in 1947, there was no requirement for a mine operator to record mine entry treatment details when a mine was abandoned. Therefore, it is not unusual for us to have no treatment details for many of the 176,000 recorded mine entries on our database. Despite this lack of information, please be assured that the fact we have no treatment recorded does not necessarily mean that the mine entry was left untreated when abandoned.

For an additional fee, the Coal Authority can provide a Mine Entry Interpretive Report. The report will provide a separate assessment for the mine entry/entries referred to in this report. It gives an opinion on the likelihood of mining subsidence damage caused from ground movement as a consequence of the mine entry/entries. It also gives details of the remedies available for subsidence damage where the mine entry was sunk in connection with coal mining.

Please note that it may not be possible to produce a report if the main building to the property cannot be identified from Coal Authority plans (ie for development sites and new build).

For further advice on how to order this additional information please visit www.groundstability.com.

5 Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

6 Past opencast coal mining

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

7 Present opencast coal mining

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8 Future opencast coal mining

There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

9 Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

10 Mine gas

The Coal Authority has no record of a mine gas emission requiring action.

11 Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Coal Authority, under its Emergency Surface Hazard Call Out procedures.

Statutory cover

Coal mining subsidence

In the unlikely event of any coal mining related subsidence damage, the Coal Authority or the mine operator has a duty to take remedial action in respect of subsidence caused by the withdrawal of support from land or property in connection with lawful coal mining operations.

When the works are the responsibility of the Coal Authority, our dedicated public safety and subsidence team will manage the claim. The house or land owner ("the owner") is covered for these works under the terms of the Coal Mining Subsidence Act 1991 (as amended by the Coal Industry Act 1994). Please note, this Act does not apply where coal was worked or gotten by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester.

If you believe your land or property is suffering from coal mining subsidence damage and you need more information on what to do next, please use the following link to our website which sets out what your rights are and what you need to consider before making a claim.
www.gov.uk/government/publications/coal-mining-subsidence-damage-notice-form

Coal mining hazards

Our public safety and subsidence team provide a 24 hour a day, 7 days a week hazard reporting service, to help protect the public from hazards caused by past coal workings, such as a mine shaft or shallow working collapse. To report any hazards please call 0800 288 4242. Further information can be found on our website: www.gov.uk/coalauthority.

On behalf of the insurer

Coal Mining Report Insurance Policy Schedule

Policy number: 30505418

The insurer: Liberty Legal Indemnities – underwritten by Liberty Mutual Insurance Europe SE

Binding Authority contract number: RNMFP2503841

Property: 5 BARNSLEY ROAD, FLOCKTON, WAKEFIELD, KIRKLEES, WF4 4DN

Report reference number: 51003518708001

Limit of cover: £100,000.00

Dated: 15 August 2025

This policy and schedule shall be read together and any word or expression to which a specific meaning has been attached in either shall bear such meaning wherever it may appear.

Where a Coal Mining Report has been obtained in connection with a sale of the property, cover is provided for the benefit of a purchaser and their lender; in the case of a re-mortgage or where the existing owner chooses to obtain a Coal Mining Report, cover is provided for the benefit of the owner and their lender.

The policy offers protection against loss sustained by the owner of the property if any new problems or adverse entries are revealed in a subsequent Coal Mining Report which were not revealed by the original report to which the policy was attached.

The insured shall at all times comply with the requirements of the Conditions of this Policy.

Coal Mining Report Terms and Conditions can be viewed online at this link:
https://www.groundstability.com//insurance/terms/20190404/terms.html

Glossary

Key terms

adit - horizontal or sloped entrance to a mine

coal mining subsidence - ground movement caused by the removal of coal by underground mining

Coal Mining Subsidence Act 1991 - the Act setting out the duties of the Coal Authority to repair damage caused by coal mining subsidence

coal mining subsidence damage - damage to land, buildings or structures caused by the removal of coal by underground mining

coal seams - bed of coal of varying thickness

future opencast coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal from the surface

future underground coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal underground. Although it is unlikely, remaining coal reserves could create a possibility for future mining, which would be licensed by the Coal Authority

mine entries - collective name for shafts and adits

mine gas - reports of alleged mine gas emissions received by the Coal Authority within the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded

payments to owners of former copyhold land - historically, copyhold land gave rights to coal to the copyholder. Legislation was set up to allow others to work this coal, but they had to issue a notice and pay compensation if a copyholder came forward

shaft - vertical entry into a mine

site investigation - investigations of coal mining risks carried out with the Coal Authority's permission

stop notice - a delay to repairs because further coal mining subsidence damage may occur and it would be unwise to carry out permanent repairs

subsidence claim - a formal notice of subsidence damage to the Coal Authority since it was established on 31 October 1994

withdrawal of support - a historic notice informing landowners that the coal beneath their property was going to be worked

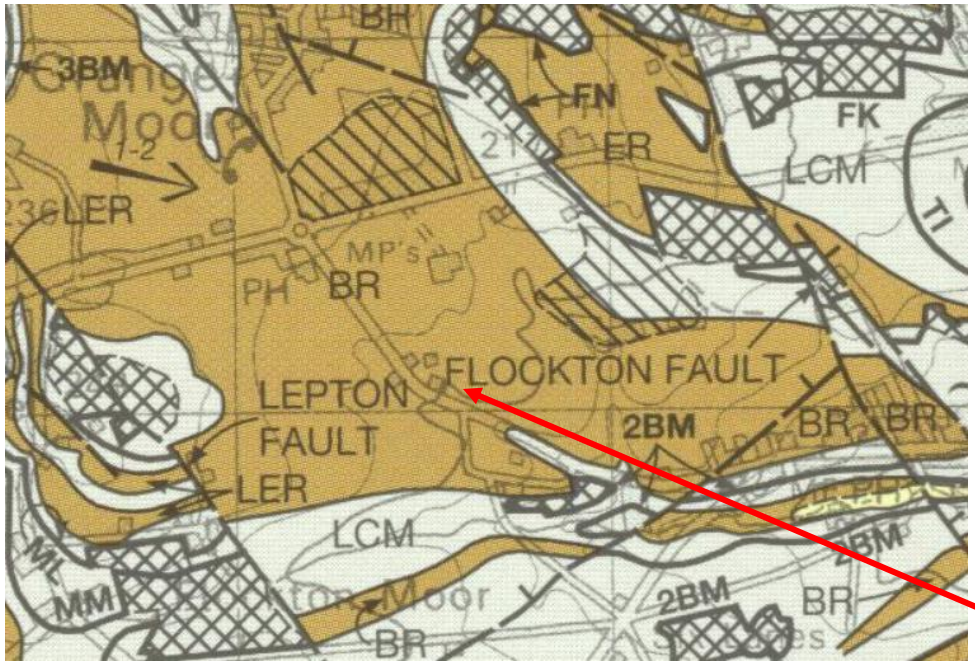
working facilities orders - a court order which gave permission, restricted or prevented coal mine workings

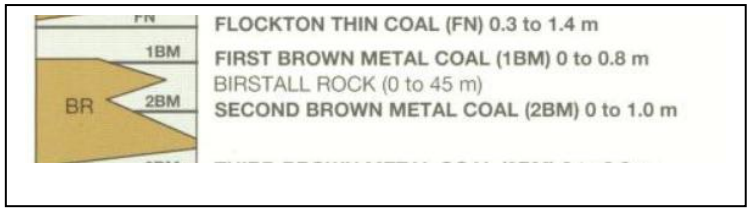
Further action reports

Mine entry interpretive report - assesses the risk of ground movement from mine entries in, or within 20 metres of, the property boundary. To order this report, use the same boundary as the CON29M report, then draw the building on the additional map screen.

For more information and to order this report please visit:
https://www2.groundstability.com/interpretive-report

APPENDIX F – GEOLOGICAL MAP EXTRACT


3BM
BR
FN
FK
ER
LCM
1-2
LER
MP's
PH
BR
FLOCKTON FAULT
LEPTON
FAULT
2BM
BR
LER
LCM
MM
2BM
BR
BR


FN
1BM
BR
2BM
FLOCKTON THIN COAL (FN) 0.3 to 1.4 m
FIRST BROWN METAL COAL (1BM) 0 to 0.8 m
BIRSTALL ROCK (0 to 45 m)
SECOND BROWN METAL COAL (2BM) 0 to 1.0 m

SITE