SITE CONDITION REPORT TEMPLATE

For full details, see H5 *SCR guide for applicants* v2.0 4 August 2008

COMPLETE SECTIONS 1-3 AND SUBMIT WITH APPLICATION

DURING THE LIFE OF THE PERMIT: MAINTAIN SECTIONS 4-7

AT SURRENDER: ADD NEW DOC REFERENCE IN 1.0; COMPLETE SECTIONS 8-10; & SUBMIT WITH YOUR SURRENDER APPLICATION.

Revision	Date	Originator	Approver	Comments
Version 1.0	August 2008	Blue Phoenix		New document
Version 2.0	October 2023	SLR Consulting		Updated for site expansion.

1.0 SITE DETAILS	
Name of the applicant	Blue Phoenix Limited (formerly Ballast Pheonix Limited)
Activity address	Blue Phoenix – Sheffield IBA Facility Beeley Wood Clay Wheels Lane Sheffield South Yorkshire S6 1NF
National grid reference	SK 31896 92138

Document reference and dates for Site Condition Report at permit application and surrender	Original – August 2008

Document references for site plans (including location and boundaries)	Drawing EP2 Site Layout and Environmental Permit Boundary (July 2023).

Note:
In Part A of the application form you must give us details of the site's location and provide us with a site plan. We need a detailed site plan (or plans) showing:

- Site location, the area covered by the site condition report, and the location and nature of the activities and/or waste facilities on the site.
- Locations of receptors, sources of emissions/releases, and monitoring points.
- Site drainage.
- Site surfacing.

If this information is not shown on the site plan required by Part A of the application form then you should submit the additional plan or plans with this site condition report.

2.0 Condition of the land at permit issue	
Environmental setting including: • geology • hydrogeology • surface waters	The underlying strata comprises made ground of the kind found typically in re-worked coal measures. The type of soil and rock materials encountered included soft to very soft gravelly clay and clayey gravel of mudstone with sandstone cobbles. All surface waters drain to a catch-pit on site made for this purpose.
Pollution history including: • pollution incidents that may have affected land • historical land-uses and associated contaminants • any visual/olfactory evidence of existing contamination • evidence of damage to pollution prevention measures	The pollution history of the site is unknown**.** The site was, until recently owned and operated by Union Carbide. Union Carbide operated a chemical production process at the site until 1993. The main process at the site was the production of carbon products for the local steel industry. There is no visual evidence of existing contamination. Or damage to pollution prevention measures
Evidence of historic contamination, for example, historical site investigation, assessment, remediation and verification	Analysis of the sub-soils on the site showed The level of contaminants is in concentrations below the relevant screening values. It is therefore concluded that site

reports (where available)	soils present a very low risk to site end users, and no remediation is required in this respect.
Baseline soil and groundwater reference data	Planning documentation for Sheffield site
Supporting information	

3.0 Permitted activities	
Permitted activities	Receiving IBA
Non-permitted activities undertaken	Storage, Screening, Blending, Crushing, Loading/Unloading - Weighing
Document references for: • plan showing activity layout; and • environmental risk assessment.	

Note:

In Part B of the application form you must tell us about the activities that you will undertake at the site. You must also give us an environmental risk assessment. This risk assessment must be based on our guidance (*Environmental Risk Assessment - EPR H1*) or use an equivalent approach.

It is essential that you identify in your environmental risk assessment all the substances used and produced that could pollute the soil or groundwater if there were an accident, or if measures to protect land fail.

These include substances that would be classified as 'dangerous' under the Control of Major Accident Hazards (COMAH) regulations and also raw materials, fuels, intermediates, products, wastes and effluents.

If your submitted environmental risk assessment does not adequately address the risks to soil and groundwater we may need to request further information from you or even refuse your permit application.

4.0 Changes to the activity	
Have there been any changes to the activity boundary?	Permit variation V006 added land to the original permit boundary. Permit boundary including extension to the boundary shown in Drawing EP2 Site Layout and Environmental Permit Boundary (July 2023).
Have there been any changes to the permitted activities?	Permit variation 006 proposes the following; - Increased to the permitted annual throughput at the site of 100,000 tpa, increasing the sites annual throughput to 300,000tpa; - Addition of a surface water attenuation lagoon for attenuation of surface water runoff from the Site's extension area; - Incorporate a point source discharge to sewer from the new attenuation lagoon. No changes were proposed to permitted activities or waste types accepted to the site.
Have any 'dangerous substances' not identified in the Application Site Condition Report been used or produced as a result of the permitted activities?	No
Checklist of supporting information	Drawing EP2 Site Layout and Environmental Permit Boundary Phase 1 Geo-environmental Assessment Report (ref. JAD/C5146/11280August 2022)

5.0 Measures taken to protect land	
A Phase 1 Geo-Environmental Assessment was completed in August 2022. The report states that the overall risk to human health from on site soils contamination is considered to be low. The risk from off-site sources of contamination is considered to be low. The risk from permanent ground gases is considered to be low to moderate. The overall risk to controlled waters is considered to be low.	
Checklist of supporting information	Phase 1 Geo-Environmental Assessment August 2022

6.0 Pollution incidents that may have had an impact on land, and their remediation	
BPL are not aware of any pollution incidents that may have had an impact on the land during their operation of the site.	
Checklist of supporting information	

7.0 Soil gas and water quality monitoring (where undertaken)	
None.	
Checklist of supporting information	

BROWNFIELD SOLUTIONS LTD

GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

BLUE PHOENIX GROUP

Blue Phoenix, Sheffield

Phase I Geo-Environmental Assessment Report

JAD/C5146/11280

August 2022

PROJECT QUALITY CONTROL DATA SHEET

Site Name:	Blue Phoenix, Sheffield		
Document Name:	[Title]		
Reference:	JAD/C5146/11280		
Status:	-	11/08/2022	Final.

Issued By:	**Client:**	**Engineer/Project Manager:**
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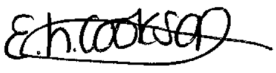
	Contact:	Contact: Huw West

Written by:	Checked by:	Approved by:
		
J Donkin BSc (Hons) MSc FGS Graduate Project Engineer	M Shore BSc (Hons) AMIEnvSc Senior Project Engineer	L Cookson BSc Ind (Hons) MIEnvSc FGS Senior Project Engineer

CONTENTS

DRAWINGS

Drawing Number	Rev	Title
140602-DWG	-	New IBA Processing Plant
C5146/01	-	Site Location Plan
C5146/02	-	Site Features Plan

APPENDICIES	
Appendix	**Title**
Photographs	Site Walkover Photographs
Appendix A	BSL Methodology and Guidance
Appendix B	Historical Maps
Appendix C	Geo-Environmental Data Report
Appendix D	BGS Exploratory Hole Records
Appendix E	Mining Search Report
Appendix F	UXO Screening Map

1.0 INTRODUCTION

1.1 Context

This report describes a desk-based Phase I Geo-Environmental Assessment Report carried out by Brownfield Solutions Limited (BSL) for Blue Phoenix Group as instructed by Stirling Maynard on a site off Beeley Wood Lane, Sheffield and has been completed in general accordance with the following guidance:

- Environment Agency guidance - Land Contamination: Risk Management (LCRM).
- BS 10175:2011+A2:2017 Investigation of Potentially Contaminated Sites.
- BS5930: 2015+A1:2020 Code of Practice for Ground Investigations.
- BS EN 1997-1:2004+A1:2013 Eurocode 7. Geotechnical design. General rules plus UK National Annex.
- BS EN 1997-2:2007 Eurocode 7 Geotechnical design. Ground investigation and testing plus UK National Annex.

Definitions of terms and acronyms used within this report is presented in Section 0.

1.2 Proposed Development

The proposed development is for an industrial end use comprising a new process building (portal frame construction), IBA product storage and mobile plant maintenance areas. A new concrete slab is proposed to be constructed over the existing concrete.

Proposed development plans have been provided to BSL by the client and are appended to this report.

1.3 Objectives and Scope

The objectives of this assessment were to determine the environmental setting and ground conditions of the site, highlighting potential areas of concern that may govern the redevelopment.

The scope of works comprises a Phase I Assessment and site walk-over, with a review of the site, surroundings, historical uses and environmental setting in order to develop a preliminary Conceptual Site Model (CSM).

This report is intended to meet the requirements of a Preliminary Investigation as defined in BS10175:2011+A2:2017 and has been produced in general accordance with the recommendations for a Tier 1 Preliminary Risk Assessment as described in LCRM guidance.

1.4 Limitations

This Phase 1 Geo-Environmental Assessment Report has been prepared in accordance with the relevant legislative framework, guidance and risk assessment methodology as outlined in Appendix A.

The findings and opinions conveyed via this assessment are based on information obtained from a number of sources as detailed within this report, BSL have assumed this information is correct and reliable. Nevertheless, BSL cannot and does not guarantee the authenticity or reliability of the information it has relied upon.

BSL have used reasonable skill, care and diligence in the production of this report. There may be other conditions prevailing on the site which are outside the scope of work and have not been highlighted by this assessment and therefore have not been taken into account by this report. Responsibility cannot be accepted for such site conditions not revealed by the assessment.

This report has been prepared for the sole use and reliance of the Client, Blue Phoenix Group. No other third party may rely upon or reproduce the contents of this report without the written permission of Brownfield Solutions Ltd (BSL); a charge may be levied against such approval. If any unauthorised third party comes into possession of this report, then they rely on it at their own risk and BSL do not owe them any Duty of Care.

Any recommendations made in this report should be confirmed with the Regulatory Authorities prior to implementation to ensure compliance.

This assessment has been based on the proposed planning layouts provided. Any subsequent change to the planning layout may have an impact on the validity of recommendations made within this report. Furthermore, new information, changed practices or new legislation may necessitate revised interpretation of the report after the date of its submission.

The site plans enclosed in this report should not be scaled off. Any site boundary line depicted on plans does not imply legal ownership of land.

Notwithstanding site observations concerning the presence or otherwise of archaeological issues, asbestos-containing materials (ACM) or invasive weeds (e.g. Japanese knotweed), this report does not constitute a formal survey of these potential issues and specialist advice should be sought.

2.0 THE SITE

2.1 Location

The site is located off Beeley Wood Lane, Sheffield, S6 1QT. It is situated approximately 5Km northwest of Sheffield City Centre, centred on National Grid Reference 432125 392105 as shown on the Site Location Plan, Drawing No. C5146/01.

2.2 Site Description

A site reconnaissance survey was carried out at the site on 25th July 2022. The main site features and potential issues identified during this survey are detailed below and are shown on the Site Features Plan, Drawing No. C5146/02.

Feature	Description
Site Area	The site covers approximately 3.63 hectares.
Site Access	Access to the site is gained off Beeley Wood Lane to the southeast of the site.
Current Land Use and Site Features	The western part of the site is occupied by large stockpiles of ashy materials used as part of the current works, with concrete hardstanding present covering the full area. A lagoon and processing plant are present in the western corner. The western part of the site is segregated by palisade fencing and concrete barriers and is a controlled area with regards to access. The eastern part of the site is generally disused and comprises areas of concrete slabs with vegetation growing through. A small area is sued for storage of crates, pallets and materials, with a bunded tank of unknown contents also present. The tank is reported as being owned by an adjacent business unit. A covered concrete channel is present in the eastern part of the site, however it is unknown what its purpose is. Manhole covers for drainage were also noted in the east of the site. It was reported anecdotally by a site operative that the site does not have mains gas or electric.
Potential Sources of Gross Contamination	The western part of the site is occupied by large stockpiles of materials containing ash.
Vegetation	Low-level vegetation is present growing through the concrete slabs in the east of the site.
Topography	The site is generally flat however the site area is located on a hill and there is a retaining wall along the north of the site, with the land beyond at a higher elevation.
Site Boundaries	The site is enclosed by palisade fencing to the north, west and southwest. The site is bordered to the southeast and east by industrial buildings and areas of demolished former industrial buildings.
Surrounding Area	The site is set on a hillside on the outskirts of Sheffield within the Beeley Wood Sustainable Industries Park, with industrial and commercial premises located to the south and east. Land to the north and west comprises open fields and Beeley Wood. The River Don passes southwest and south of the site approximately 110m away at its nearest point, beyond which are residential properties of the Middlewood district.

3.0 GEO-ENVIRONMENTAL SETTING

Historical Setting

A review of the available historical Ordnance Survey Maps and satellite imagery has been conducted, with the pertinent issues that may have affected the site, or its environs, summarised below. The Historical Maps are presented in Appendix B. A review of the historical industrial data within the geo-environmental data report has also been undertaken below, the report is presented in Appendix C.

Notable features on site, and potentially contaminative or geotechnically relevant features within 100m of the site boundary have been presented. Any features that have potentially been infilled will be considered up to 250m from the site boundary.

Feature	Distance (m) & Direction	Years Present	Description
Electrode Works	On site	1957 to present	The site remained undeveloped until industrial works unit a nearby electrode works expanded into the east of the site between 1956 and 1957. Between 1957 and 1961 the works expanded again to cover the entire site. These works are listed as an electrode works from the 1961 mapping to 1991. From 1993 the buildings are listed as generic works and between 2001 and 2010 most of the buildings were demolished the remaining structures remain in place to the present day.
Unspecified storage tanks	On site	1972 to 1993	Storage tanks were first shown in the west of the site in the 1972 mapping and remain listed up to 1993; the most recent available mapping carried out at a scale that shows the tanks.
Electricity Substation	Adjoining south boundary	1961 to 1993	An electricity substation was constructed between 1957 and 1961 and remains listed up to 1993; the most recent available mapping carried out at a scale that shows the substation.
Unspecified storage tanks	From 7m east	1972 to 1981	Storage tanks were first shown to the east and south of the site in the 1972 mapping and remain listed up to 1981; the most recent available mapping carried out at a scale that shows the tanks.
Railway	20m north	1850 to present	A railway is present to the north of the site from the earliest available mapping to the present day.
Chimneys	From 100m east	1972 to present	Chimneys to the east of the site were first listed in 1972 however the associated electrode works were constructed between 1938 and 1948 and it is possible the chimneys were present from an earlier date.

In summary, the map evidence indicates that the site was occupied by agricultural fields and woodland since the earliest available mapping (1850) until electrode works were constructed between 1956 and 1957. Many of the buildings have since been demolished.

The site was historically set within a wooded valley, with a railway passing the north-eastern site border. Industrial buildings began to be constructed in close proximity to the site in the early 1940's, with the site currently surrounded by both in use and disused industrial buildings to the south and east, forming part of the Beeley Wood Sheffield Sustainable Industries Park. Woodland and agricultural land is present to the north and west.

Published Geology

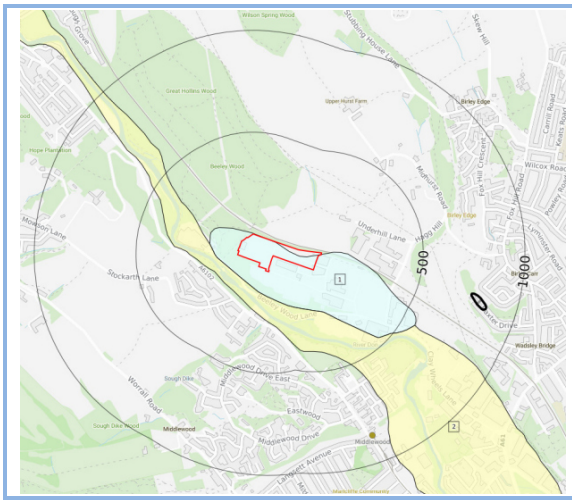
The following publications of the British Geological Survey (BGS) were examined in respect of the geology underlying the site:

- 1:50,000 Scale Geological Map Sheet EW100_sheffield_v4. Solid and Drift Edition.
- 1:10,000 Scale Geological Map Sheet SK39SW. Solid and Drift Edition.

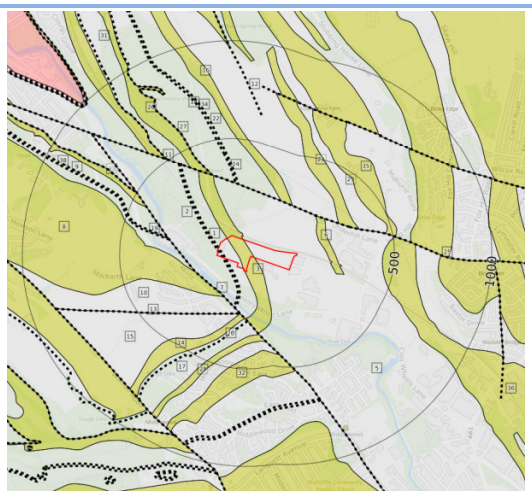
- British Geological Survey (BGS) Geology of Britain Map Viewer.
- Coal Authority Interactive Map.
- BGS Geology Sheet 100 Memoir of Sheffield, 1957.

Extracts of the 1:10,000 geological mapping from the Geo-Environmental Data Report are presented below for reference:

BGS 1:10 000 Superficial Geology



BGS 1:10 000 Solid Geology



Made Ground
Information from the environmental data report and BGS mapping indicates that the site is underlain by Made Ground, which is likely associated with levelling of the valley slope during construction of the current buildings.

Superficial Deposits
The site is indicated to be predominantly underlain by Till (Diamicton). This stratum typically comprises poorly sorted sand, gravel, clay and silt deposits.

Along the site's north-eastern boundary there is indicated to be a small area where no superficial soils are shown to be present.

Solid Geology
The deeper solid geology underlying the superficial deposits is indicated to be part of the Pennine Lower Coal Measures Formation, typically comprising mudstone, siltstone and sandstone strata. In addition, sandstone of the Loxley Edge Rock is present centrally at the site.

No faults are shown on or within an influencing distance of the site.

The site is in an area where coal seams are abundant, with a fossil horizon and a coal seam (the Halifax Hard seam) inferred as sub-cropping in the far west of the site, trending in a northwest-southeast direction. A Coal Mining Risk Assessment (CMRA) (reference C5146/11290) has been carried out by BSL to assess seam locations, depths, thickness and associated potential risks in detail and should be read in conjunction with this report.

BGS Exploratory Hole Records

There are 17 BGS borehole records located on site, however these are generally listed as 'confidential' and cannot be accessed publicly. If the client has access to historical borehole data for the site it would

be prudent to provide these to BSL so that this report can be updated with any relevant information. BSL has requested the release of several records pertaining to the site but at the time of writing this request was not fulfilled.

There nearest publicly available BGS borehole record located within a relevant distance to the site is located 77m south of the site and identifies the following stratigraphy:

A summary of the ground conditions is presented in the table below.

Reference	Distance from Site (m) and Direction	Depth Made Ground (m)	Depth Superficial Deposits (m)	Depth Solid Geology (m)
SK39SW8	77m South	GL-6.20 – Clay and fill	6.20 – 11.80 – Clay	11.80 – 192.32 Mudstone, siltstone, sandstone, and coal.

The BGS Borehole Logs are presented in Appendix D.

Mining and Mineral Extraction

Coal Mining
The online Coal Authority Interactive Map layers have been reviewed and the details are summarised in the table below:

Relevant Interactive Map Data	Issue at Subject Site?
Coal Authority Reporting Area	Yes
High Risk Development Area	Yes

As the site lies within the Coal Authority Reporting Area, a mining search has been undertaken as the site could be affected by past or current coal mining.

The mining searches are presented in Appendix E, the main findings of which are presented below.

Highlighted Evidence	Issue	Details
Past Underground Mining	No	
Present Underground Mining	Yes	The site is in an area where it is likely that workable coal at shallow depths has been mined before records were kept.
Future Underground Mining	No	
Mine Entries	No	
Past, present and future opencast coal mining	Yes	There are no known mine shafts within, or within 20 metres of, the boundary of the property. However; an adit is located approximately 85m south of the site which is projected to pass beneath the site centrally in a southwest – northeast orientation. This is listed as a Spineway Road within the mining report.
Coal mining subsidence	No	
Mine gas	No	
Withdrawal of support	No	
Information from the Cheshire Brine Subsidence Compensation Board	No	

Hydrogeology

Based on the inferred geology, a summary of the Environment Agency aquifer designations is presented in the table below:

Stratum	Coverage	Aquifer Designation
Pennine Lower Coal Measures Formation	Full Site	Secondary (A) Aquifer. These are 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.
Till (Diamicton)	Full Site	Superficial deposits on site have not been given an aquifer designation but are indicated to be cohesive and likely unproductive strata.

A summary of the pertinent hydrogeological features within the Geo-Environmental Data Report are provided below:

Feature	Distance (m) & Direction	Details
Nearest Active Groundwater Abstraction	66m S	Details: General Washing/Process Washing Direct Source: GROUNDWATERS Point: BOREHOLE - MILLSTONE GRIT – WADSLEY BRIDGE Data Type: Point Annual Volume (m^3): 7,300 Original Start Date: 08/02/1967 Version Start Date: 23/03/2017
Nearest Active Potable Groundwater Abstraction	-	None within 2000m
Source Protection Zones	-	None within 500m.

Hydrology

A summary of the pertinent hydrological aspects within the Geo-Environmental Data Report are provided below:

Feature	Distance (m) & Direction	Details
Nearest Watercourse	110m SW	The River Don
Nearest Active Surface Water Abstraction	On site	Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: SURFACE WATER Point: STREAM-WADSLEY BRIDGE-SHEFFIELD Data Type: Point Annual Volume (m^3): 2,546 Original Start Date: 20/01/1966
Closest Active Licenced Discharge Consent	111m SW	Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: EPRAP3224XA Receiving Water: MILL RACE TRIB OF RIVER DON Effective Date: 15/10/2010

Information obtained from the Environment Agency (EA) Risk of Flooding from Rivers and the Sea (RoFRaS) database indicates that the site is not within a flood risk area.

The site is not indicated to lie within an EA designated Zone 2 or Zone 3 flood plain.

The British Geological Survey indicate there is a potential for groundwater flooding at the subject site, with a low risk rating.

No further consideration of flood risk is undertaken in this report. Specialist flood risk advice should be sought with regards to drainage and flooding.

Landfill and Waste Management Sites

Local Authority records and high detail historical mapping indicate that there were five historic refuse tips within 500m of the site between 1965 and 1971. All five of these refuse tips were likely associated with earthworks or weir construction along the River Don and, given their age and small size, are not considered to constitute significant sources of ground gas.

There are three recorded historic landfills within 500m, the nearest is recorded 260m west at Beely Wood, Forge registered to Spencer Clark Metal Industries, stated to accept inert wastes no start date is supplied and the last record of the site dates to 1977.

There are three historical waste management site recorded within 250m of the site, the closest is a waste transfer station 3m to the south which appears to have ceased operations since 2012. The site is currently used to recover metal and produce aggregates from IBA (Incinerator Bottom Ash).

Environmental Regulatory Data

A summary of the relevant environmental aspects, both on site and within 250m of the site contained in the Geo-Environmental Data Report, are presented in the table below:

Entry	On-site	0 – 50m	50 – 250m	Details
Recent Industrial Land Uses	1	3	23	A slurry bed is present on site with other land uses relating to recycling and aggregates industries, vehicle repair or nearby electrical substations. An unspecified tank is indicated to be 7m east of the site and the closest chimney is 41m south of the site.
Current or Recent Fuel Stations	0	0	0	
Licensed Industrial Activities (Part A(1))	3	0	0	The three licensed activities all relate to Blue Phoenix Limited operate the Sheffield IBA Facility. Licensed for the "recovery or a mix of recovery and disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving treatment of slags and ashes". One license is still indicated to be effective.
Licensed Pollutant Release (Part A(2)/B)	0	0	0	
Radioactive Substances	0	0	0	
Pollution Incidents (EA/NRW)	0	0	1	The only record within 250m was in 2003 and was 112m to the south east, it is recorded as "Atmospheric Pollutants and Effects" and a Category 2 impact (significant) to air.

In regard to the entries identified above, only on site entries and nearby electrical substations are considered to be of significant relevance to be carried forward to the preliminary CSM. No other entries require further consideration.

Radon

Information from the environmental database report indicates the property is in an area where <1% of properties are above the Action Level for radon, and therefore radon protective measures are not required in accordance with BRE Report 211 'Radon – Guidance on protective measures for new dwellings' 2015 Edition.

UXO Risk

In accordance with CIRIA Report C681, BSL have reviewed non-specialist UXO data for the site using the Zetica Regional Bomb Risk Map. The map indicates the site to be in an area where the bomb risk appears

to be moderate. Therefore, a Preliminary UXO Risk Assessment was carried out by Brimstone Site Investigation.

The Preliminary UXO Risk Assessment concluded that while a Stage 2 Detailed Risk Assessment is not considered necessary prior to works commencing a UXO Safety Awareness Briefing to all personnel conducting ground works would be prudent.

A copy of the UXO Desk Studies is presented within Appendix E.

4.0 PHASE 1 SUMMARY AND RISK ASSESSMENT

4.1 Introduction

The risk posed by any contaminants in soil or groundwater will depend on the nature and level of the source, the probability of exposure occurring, the potential pollution pathway and the likely effects on the receptors.

A contaminant is defined as a substance that has the potential to cause harm, a risk is considered to exist if such a substance is present at sufficient concentrations to cause harm and if a pathway is present through which a receptor could be exposed to the contaminant.

The following sections discuss the identified potential on-site and off-site sources, and any pollution that could impact receptors via the pathways associated with the proposed development. Pollution linkages are assessed which may represent a risk to human health and/or controlled water receptors from the information gained from the Phase I Assessment searches. The assessment has been carried out on a qualitative basis and aims to produce a complete and comprehensive Preliminary Conceptual Site Model.

Three potential impacts exist for any given site and all three need to be considered in the qualitative risk assessment, these are:

- On-site impacts.
- The site impacting its surroundings.
- Off-site sources impacting the subject site.

4.2 Potential Contaminative Sources

On-Site
From the information obtained, the following sources have been identified which may affect the redevelopment of the site for commercial end use:

- Made ground associated with the electrode works.
- IBA stockpiled on site
- Unspecified storage tanks
- Ground gas from coal measures.

Off-Site
The following off-site sources have been identified which may affect the redevelopment of the site:

- Railway (abutting the site to the north).
- Electricity substation (abutting the site to the south).
- Unspecified storage tanks (from 7m east)
- Chimneys from 41m south east
- Refuse tips from 133m south west

Associated Contaminants
The contaminants commonly associated with the potential sources of contamination identified are tabulated below:

Contaminative Sources	Department of the Environment Industry Profile or Other Source	Commonly Associated Contaminants
On Site		
Made Ground	-	Heavy metals, polycyclic aromatic hydrocarbons (PAHs), asbestos, ground gases (carbon dioxide and methane).
Solid Geology – Coal Measures	CIRIA C665	Carbon dioxide, methane, carbon monoxide and hydrogen sulphide.
Incinerator Bottom Ash (IBA) Stockpiles	Waste recycling treatment and disposal sites	Heavy metals, oils, hydrocarbons, asbestos, ground gases (carbon dioxide and methane).
Off Site		
Railway	Railway Land Engineering works - Railway	Heavy metals, polycyclic aromatic hydrocarbons (PAHs), Total Petroleum Hydrocarbons (TPH), PCBs.
Electricity Substation	Electrical Works	Poly Chlorinated Biphenyls (PCBs), oils
Tank (possible USTs)	-	Petroleum Hydrocarbons
Chimneys	Miscellaneous industries	Heavy metals, ash, slag, hydrocarbons, PAHs, asbestos

4.3 Pathways

A pathway is defined as a medium by which a contaminant comes into contact with, or otherwise impacts a receptor.

At this stage the potential contaminants identified above are considered to present potential risks to site end users and controlled waters through the following pathways:

Potential Pathways	
Pathways in respect to Human Health	• Dermal contact with contamination. • Inhalation of dusts. • Inhalation of gases or vapours in both indoor and outdoor air.
Pathways in respect to Controlled Waters – Surface water	• Surface run-off /over land flow. • Drainage discharge. • Base flow from groundwater.
Pathways in respect to Controlled Waters – Groundwater	• Leaching of mobile contamination into groundwater via the unsaturated zone. • Migration of perched groundwater in any permeable soils or along existing or proposed service runs. • Migration into the saturated zone and flow through the aquifers underlying the site.
Pathways in respect to Property/structures/water pipes	• Direct contact with substances deleterious to building materials and potable water supply pipelines. • Migration of ground gases (methane) into confined spaces (explosion and damage to property).

4.4 Receptors

The identified receptors are listed below:

- Commercial end users (human health).
- Structures/Property/Potable water supply pipes.
- Nearest watercourse. The River Don 110m south-west (Controlled waters).
- Bedrock Aquifer. Pennine Lower Coal Measures Formation (Controlled waters).

Under current UK health and safety legislation, employers are required to carry out their own appropriate site-specific risk assessments and mitigation to protect employees. It has been assumed that any future construction works onsite will be undertaken in compliance with these requirements. Therefore, construction workers have not been specifically considered as part of this assessment.

4.5 Preliminary Conceptual Site Model (CSM)

The information obtained in the previous sections has been used to compile a Preliminary CSM. The identified potential contaminants and receptors have been assessed in the table below as to whether a plausible source-pathway-receptor pollutant linkage for the proposed end use of the site exists. The risk classification has been estimated in accordance with information in the BSL Guidance and Methodology in Appendix A.

The Preliminary CSM's are presented in the tables overleaf, any assessed risk above moderate will possibly require further action:

Human Health						
Potential Source	**Potential Pathway**	**Potential Receptor**	**Likelihood**	**Severity**	**Level of Risk**	**Justification**
On site Made ground Metals, PAH's, asbestos	Root uptake, ingestion, direct contact, inhalation of dusts	End-users	Low Likelihood	Medium	Low	It is likely that contaminants are present within the made ground however the presence of hardstanding across the commercial development will break the pathway to site end users. Further investigation and assessment will be required to confirm the risk.
On site Made Ground Metals and organic contamination	Migration into/chemical attack of water supply pipelines	Water Pipelines / End users	Low Likelihood	Medium	Low	If present, contaminants within the soil/groundwater could potentially attack the clean potable water supply pipe, contaminants should be assessed to determine the correct pipe material and level of precautions required.
On site Tank Petroleum hydrocarbons, VOCs	Root uptake, ingestion, direct contact, inhalation of dusts	End-users	Low Likelihood	Medium	Low	It is considered a low likelihood that contaminants associated with tanks would migrate onto the site given the relatively impermeable nature of the underlying superficial deposits. Further investigation will be required to confirm the risk.
On site Made ground Ground Gas (carbon dioxide and methane)	Migration into confined spaces, inhalation and asphyxiation/ explosion	End-users / property / structures	Unlikely	Severe	Moderate/ low	Any made ground is likely to comprise inert construction materials, however if putrescible materials are present these could generate ground gases. The ground has generation potential is assessed as being low, however, the installation of standpipes with a gas monitoring programme will confirm the risk.
On site Natural Geology - Coal Ground Gas (carbon dioxide and methane)	Migration into confined spaces, inhalation and asphyxiation/ explosion	End-users / property / structures	Unlikely	Severe	Moderate/ low	While the site does lie within the Coal Authority Reporting Area and there are records of an adit associated with mining of gannister given the expected depth to the shallowest recorded coal seam,, the lack of recorded mine entries in the vicinity of the site, the anticipated thickness of the superficial deposits, and the relatively impermeable nature of the superficial and bedrock deposits, it is considered unlikely that there is any significant migration of gases to the surface from coal seams and mine workings underlying the site.
Off site Electricity Substation PCBs	Ingestion, direct contact, inhalation of dusts	End-users	Unlikely	Mild/ Minor	Very low	The mobility of this contaminant is low and any volumes present are likely to be small. In addition, the proposed development will be covered in hardstanding which will break the pathway to site end users. The risk is considered to be very low.

Human Health						
Potential Source	**Potential Pathway**	**Potential Receptor**	**Likelihood**	**Severity**	**Level of Risk**	**Justification**
Off site Tank Petroleum hydrocarbons, VOCs	Root uptake, ingestion, direct contact, inhalation of dusts	End-users	Unlikely	Medium	Low	It is considered unlikely that contaminants associated with tanks would migrate onto the site given the relatively impermeable nature of the underlying superficial deposits that would limit lateral migration and hardstanding that would break the pathway to end users.. Further investigation will be required to confirm the risk.
Off site Chimneys Metals, ash, slag, hydrocarbons, PAHs, asbestos	Root uptake, ingestion, direct contact, inhalation of dusts	End-users	Unlikely	Medium	Low	The mobility of this contaminant is low and the volume of contamination present in chimneys are typically small. In addition, the proposed development will be covered in hardstanding which will break the pathway to site end users. The risk is considered to be low.
Off site Refuse tips Ground Gas (carbon dioxide and methane)	Migration into confined spaces, inhalation and asphyxiation/ explosion	End-users / property / structures	No Linkage	Severe	No Linkage	Given the impermeable natural of underlying superficial strata, small volume, distance from site, and age of these landfill sites there is considered to be no viable linkage between the refuse tips and site. The risk to end-users has therefore been discounted.

Controlled Waters						
Potential Source	**Potential Pathway**	**Potential Receptor**	**Likelihood**	**Severity**	**Level of Risk**	**Justification**
Made Ground PAH's, Metals	Overland flow, / migration through saturated zone	River Don (Surface waters)	Unlikely	Medium	Low	It is considered contaminants associated with the made ground and other past industrial uses are unlikely to impact the River Don. This is due to the low permeability of the clay soils underlying the site, and the presence of drainage and hardstanding at the site which will minimise infiltration of rainwater and leaching potential of contamination in soils, if present. Therefore a low risk is posed to the river from the made ground.
	Leaching through unsaturated zone / Migration through saturated zone	Secondary A Aquifer (Ground-water)	Unlikely	Medium	Low	The site is currently surfaced in hardstanding and will remain so, with a new surface water drainage system installed which will further reduce the risk to controlled waters.

Human Health Risk – Soils Contamination Summary
Based on the preliminary CSM and the current use of the site, the overall risk from land contamination at the site is considered to be **low to moderate** for a redeveloped site. This would need to be confirmed by appropriate intrusive investigation, testing and assessment.

Human Health Risk – Ground Gas Summary
A potential on-site gas source has been identified associated with potential made ground and the underlying coal measures. Potentially viable linkages are considered to exist and the preliminary CSM considers these sources to be of low to moderate risk.

In accordance with BS8576 and CIRIA C665 as set out in Appendix A of this report, the gas generation potential is considered to be low. The sensitivity of the development is low on account of the proposed commercial use.

In line with current guidance, it is recommended that ground gas monitoring should comprise 6 visits over a 2 month period.

However; risks have been identified within the Coal Mining Risk Assessment pertaining to the potential for unrecorded shallow mine workings at the site due to the presence of a coal outcrop in the west of the site. If shallow unrecorded mine workings are identified then this risk assessment should be revised and additional monitoring may be required.

Controlled Waters Risk - Summary
Based on the preliminary CSM, BSL believes the overall risk to controlled waters at the site is **low**.

The above assessed level of risk will need to be confirmed by intrusive investigation and quantitative risk assessment.

PRELIMINARY GEOTECHNICAL ASSESSMENT

Hazard Identification

A preliminary geotechnical hazard identification exercise has been undertaken in general accordance with the Highways England document CD 622, 'Managing geotechnical risk'. Potential geotechnical hazards based on the expected ground conditions are listed below:

- Made ground of unknown nature; if placed in a non-engineered manner may cause excessive settlement of foundations, highways and infrastructure.
- Presence of obstructions in the ground from historical developments (e.g relict foundations) causing difficulties with excavations or penetrative works (e.g. piling).
- Attack of buried concrete by aggressive ground conditions; the site may contain unknown made ground and potentially sulphate bearing soils. The coal measures are known to be high in naturally occurring sulphates and potentially pyritic.
- Shrink / swell of clay; settlement / heave of foundations and floor slabs when located within the influence of trees and vegetation.
- Running sands or loose landfill materials leading to difficulty with excavation due to trench collapse.
- Shallow groundwater/groundwater rise causing resulting in difficulties with excavations due to trench collapse.
- Mining subsidence; the site is in an area of former shallow coal mine workings.
- UXO; the site lies within an area at moderate risk from unexploded ordnance.

In respect to potential for mining induced stability, the site is in an area of probable shallow coal mine workings and will likely require further investigation. Reference to the BSL site specific Coal Mining Risk Assessment should be made to determine the risks.

The above identified geotechnical hazards will need to be considered as part of further investigations and assessments.

Foundation and Geotechnical Design

The proposed development will comprise a new process building, IBA Product Storage and Mobile Plant Maintenance with a new concrete slab to be constructed over the existing concrete surfacing. The type of foundation solution should be informed by an onsite intrusive investigation to confirm ground conditions and obtain geotechnical parameters for preliminary foundation and floor slab design. Intrusive investigation should also obtain data to allow appropriate concrete classification in accordance with BRE SD1 and for preliminary highways/pavement design.

Sustainable Drainage Systems (SuDS)

Given the site is underlain by low permeability clays, it is unlikely that drainage to SuDS such as traditional soakaways will be suitable. Furthermore, deep made ground deposits are anticipated across the site.

6.0 OTHER DEVELOPMENT CONSTRAINTS

6.1 Constraint Identification

A formal survey of asbestos within structures is not covered in this report. It should be noted that an asbestos demolition survey will be required prior to any demolition of structures. If asbestos is present in soils, these will need to be dealt with in accordance with the Control of Asbestos Regulations (CAR) 2012.

No invasive species have been noted during the walkover, however it would be prudent to undertake a specialist survey prior to any works on site.

Notwithstanding any site observations concerning archaeological or ecological features, this report does not constitute a formal survey of these potential issues and specialist advice should be sought.

The preliminary risk assessment undertaken within this Phase I Assessment may identify potential risks to site demolition and construction workers. However, full consideration of occupational health and safety issues is beyond the scope of this report, with employers required to carry out their own site-specific risk assessments and mitigation as appropriate.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 Geo-Environmental Summary

The site was occupied by agricultural fields and woodland from the earliest available mapping (1850) until electrode works were constructed between 1956 and 1957. Many of the buildings have since been demolished and the site repurposed for the production of aggregate from IBA, however based on the proposed commercial development, the overall risk to human health from on site soils contamination is considered to be low.

The risk from off-site sources of contamination is considered to be low.

The risk from permanent ground gases is considered to be low to moderate.

The overall risk to controlled waters is considered to be low.

Intrusive investigations will be required to confirm the above assessed levels of risks and determine remedial requirements, if any.

7.2 Geotechnical Summary

Intrusive investigations will be required to confirm the most suitable foundation solution and to obtain parameters for concrete classification, floor slab and highways design.

The site is potentially influenced by mining related subsidence. A desk-based Coal Mining Risk Assessment (CMRA) will be required to assess the risk in further detail and an intrusive coal mining investigation will potentially be required.

Drainage to SuDS is unlikely to be a viable option for the.

7.3 Further Work

To confirm the risks to the identified receptors and confirm the ground conditions in respect to the identified geotechnical and geo-environmental risks, an appropriate intrusive investigation will need to be undertaken. The following further works are recommended, although this list is not exhaustive and should be read in conjunction with any planning conditions that are applicable to the site:

- Intrusive ground investigation comprising:
  - Windowless sampling and cable percussive drilling.
  - Installation of standpipes in boreholes to allow gas concentrations and groundwater levels to be monitored.
  - Geotechnical testing of soils
  - Contamination analyses of soil
- Assessment and recommendations based on the above, including requirements for further work, if necessary.

ABBREVIATIONS AND DEFINITIONS

GLOSSARY	
Term / Abbreviation	**Definition**
AST	Above Ground Storage Tank.
B(a)P	Benzo (a) Pyrene.
BGS	British Geological Survey.
BRE	Building Research Establishment.
BS	British Standard.
BSL	Brownfield Solutions Ltd.
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes.
CBR	California Bearing Ratio (used in pavement/highways design).
CAR 2012	Control of Asbestos Regulations (2012).
CBCB	Cheshire Brine Compensation Board.
CBCD	Cheshire Brine Compensation District.
CBR	California Bearing Ratio.
CIEH	Chartered Institute of Environmental Health.
CIRIA	Construction Industry Research Association.
CL:AIRE	Contaminated Land: Applications in Real Environments.
CLEA	Contaminated Land Exposure Assessment.
CLO	Contaminated Land Officer.
COMAH	Control of Major Accident Hazards.
Contamination	Presence of a substance which is in, on or under land, and which has the potential to cause significant harm or to cause significant pollution of controlled water. There is no assumption in this definition that harm results from the presence of the contamination. Naturally enhanced concentrations of harmful substances can fall within this definition of contamination. Contamination may relate to soils, surface water, groundwater or ground gas.
Controlled Waters	Inland freshwater (any lake, pond or watercourse above the freshwater limit), water contained in underground strata and any coastal water between the limit of highest tide or the freshwater line to the three-mile limit of territorial waters.
CPT	Cone Penetration Test.
CSM	Conceptual Site Model. A schematic hypothesis of the nature and sources of contamination, potential migration pathways (including description of the ground and groundwater) and potential receptors, developed on the basis of the information from the preliminary investigation and refined during subsequent phases of investigation and which is an essential part of the risk assessment process. The conceptual site model is initially derived from the information obtained by the preliminary investigation (i.e. the Phase I Phase I Assessment). This conceptual model is used to focus subsequent investigations, where these are considered to be necessary, in order to meet the objectives of the investigations and the risk assessment. The results of intrusive investigations can provide additional data that can be used to further refine the conceptual site model.
DCP	Dynamic Cone Penetrometer.
DNAPL	Dense Non-Aqueous Phase Liquid.
DoWCoP	Definition of Waste Code of Practice.
DWS	Drinking Water Standard.
EA	Environment Agency.
EHO	Environmental health Officer.
EQS	Environmental Quality Standard.
GAC	Generic Assessment Criteria.

GLOSSARY	
Term / Abbreviation	**Definition**
GDR	Geotechnical Design Report.
GFR	Geotechnical Feedback Report.
GIR	Ground Investigation Report.
GSV	Gas Screening Value.
Harm	Adverse effect on the health of living organisms, or other interference with ecological systems of which they form part, and, in the case of human health, including property/structures and water supply pipelines.
Hazard	Inherently dangerous quality of a substance, procedure or event.
HDPE	High Density Polyethylene.
HSV	Hand Shear Vane.
K	Modulus of Subgrade Reaction.
LCRM	Land Contamination: Risk Management (EA guidance).
LNAPL	Light Non-Aqueous Phase Liquid (petrol, diesel, kerosene).
LOD	Limit of Detection (for particular method adopted).
MMP	Materials Management Plan.
Mv	Modulus of Volume of Compressibility.
ND	Not Detected.
NHBC	National House Building Council.
NR	Not Recorded.
OS	Ordnance Survey.
PAH	Polycyclic Aromatic Hydrocarbon.
Pathway	Mechanism or route by which a contaminant comes into contact with, or otherwise affects, a receptor.
PCB	Poly-Chlorinated Biphenyl.
PCSM	Preliminary Conceptual Site Model.
pH	Scale used to specify how acidic or basic a water-based solution is.
PHC	Petroleum Hydrocarbons.
PID	Photo Ionisation Detector.
PNEC	Predicted No-Effect Concentration.
Precision	Level of agreement within a series of measurements of a parameter.
PSD	Particle Size Distribution.
PVC	Polyvinyl Chloride.
Receptor	Human health, living organisms, ecological systems, controlled waters (surface waters and groundwater within aquifers), atmosphere, structures and utilities that could potentially be adversely affected by contaminant(s).
Risk	Probability of the occurrence, magnitude and consequences of an unwanted adverse effect on a receptor.
Risk Assessment	Process of establishing, to the extent possible, the existence, nature and significance of risk.
Sampling	Methods and techniques used to obtain a representative sample of the material under investigation.
SOM	Soil Organic Matter.
Source	Location from which contamination is, or was, derived. This could possibly be the location of the highest soil, groundwater or gas concentration of the contaminant(s).
SPT	Standard Penetration Test.
SVOCs	Semi Volatile Organic Compounds.
TOC	Total Organic Carbon.
TPH CWG	Total Petroleum Hydrocarbon (Criteria Working Group).

GLOSSARY	
Term / Abbreviation	**Definition**
TVOCs	Total volatile organic compounds.
UCS	Unconfined Compressive Strength.
Uncertainty	Parameter, associated with the result of a measurement that characterises the dispersion of the values that could reasonably be attributed to the measurement.
UST	Underground Storage Tank.
UXO	Unexploded Ordnance.
VCCs	Vibro Concrete Columns.
VSCs	Vibro Stone Columns
VOCs	Volatile Organic Compounds.
WAC	Waste Assessment Criteria.
WFD (in waste context)	Waste Framework Directive.
WFD (in water context)	Water Framework Directive.
Units	**Definition**
°	Degrees
Φ	Phi angle (in degrees)
g/l	Grams per Litre
Km	Kilometres
kPa	Kilo Pascal (Equivalent to kN/m^2)
$KN/m^2/mm$	Kilo Newton per metered squared per millimeter
kN/m^2	Kilo Newtons per metre squared
kPa	Kilo Pascal (Equivalent to kN/m^2)
l/hr	Litres per hour
MJ/kg	Mega joule per kilogram
MN	Mega Newton
M^2/MN	Mega Newton per metre squared
M	Metres
m bgl	Metres Below Ground Level
m OD	Metres Ordnance Datum (sea level)
µg/l	Micrograms per Litre (parts per billion)
µm	Micrometre
mb	Millibars (atmospheric pressure)
mg/kg	Milligrams per kilogram (parts per million)
mg/m^3	Milligram per metre cubed
mm	Millimetre
ppb	Parts Per Billion
Ppm	Parts Per Million

REFERENCES

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BS 10175:2011+A2:2017 'Investigation of Potentially Contaminated sites - code of practice'. 2017.

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CIRIA C753 'The SuDS Manual'. 2015.

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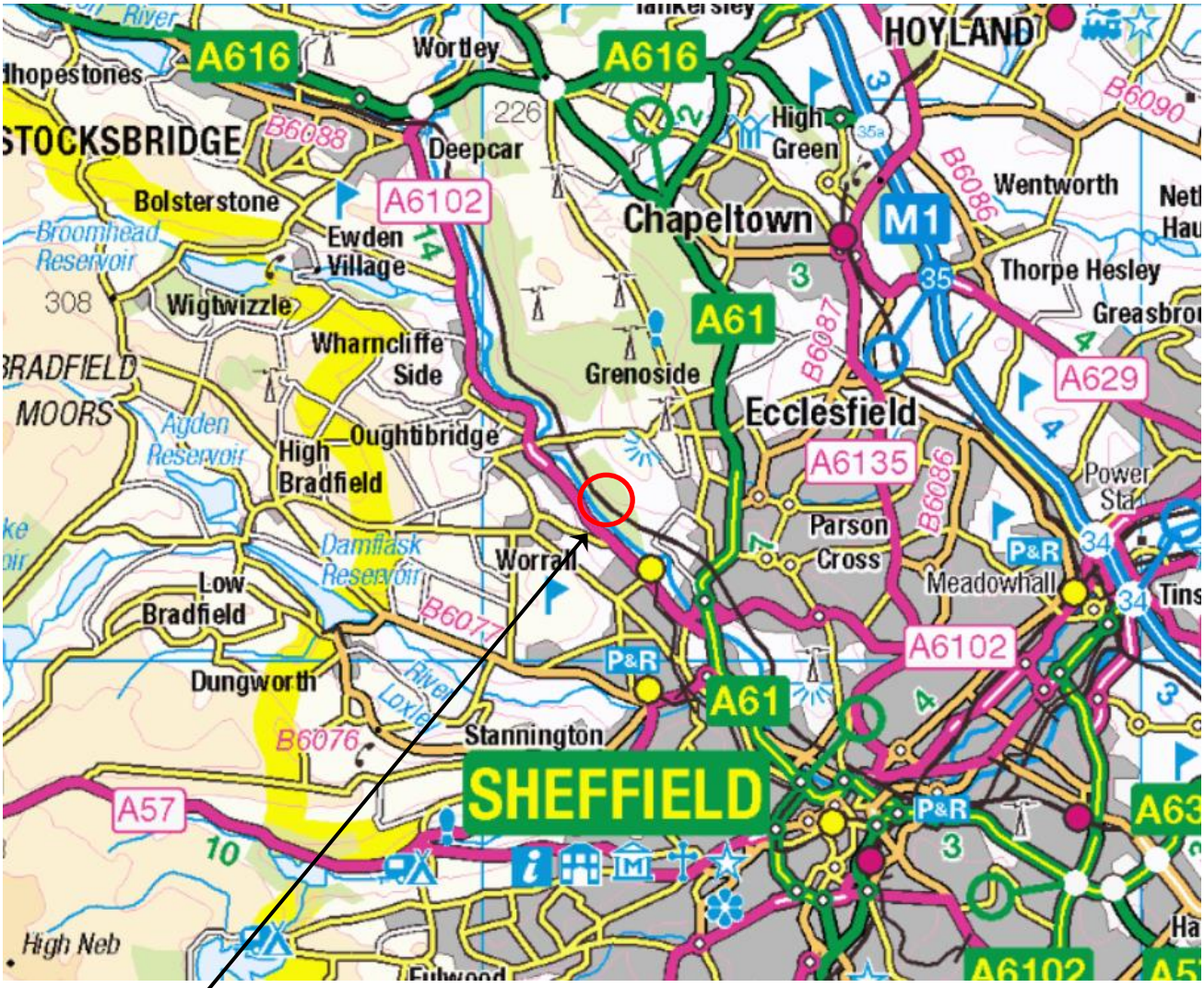
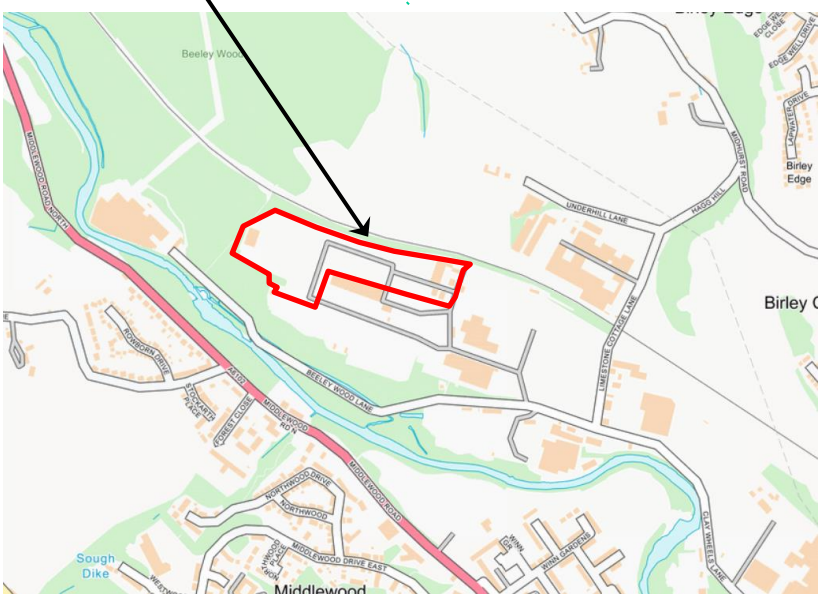
DRAWINGS



SITE LOCATION

NEAREST POSTCODE: S6 1QT

SITE ENTRANCE WHAT3WORDS: ///HEDGE.ELBOW.PENCIL



REV	DATE	DESCRIPTION	BY	CKD

BROWNFIELD SOLUTIONS LTD
GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

CLIENT
STERLING MAYNARD

PROJECT TITLE
BLUE PHOENIX, IBA RECYCLING FACILITY, SHEFFIELD

DRAWING TITLE
SITE LOCATION PLAN

DRAWING No.	REVISION	SCALE	DATE
C5146/01	-	NTS	18/07/22

DRAWN BY	CHECKED BY
SD	MS

KEY

- APPROXIMATE SITE BOUNDARY
- IBA STOCKPILE
- SLURRY PIT

REV	DATE	DESCRIPTION	BY	CKD

BROWNFIELD SOLUTIONS LTD
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CLIENT
STERLING MAYNARD

PROJECT TITLE
BLUE PHOENIX, IBA RECYCLING FACILITY, SHEFFIELD

DRAWING TITLE
SITE FEATURES PLAN

DRAWING No.	REVISION	SCALE	DATE
C5146/02	-	NTS	11/08/22

DRAWN BY	CHECKED BY
JAD	MS

APPENDIX A

BSL Methodology and Guidance

BSL Phase I Geo-Environmental Assessment Reports - Methodology and Guidance

This Appendix provides information on the approaches, methods and guidance used by Brownfield Solutions Ltd in the preparation of this report.

The term 'geo-environmental' is used to describe aspects relating to ground-related environmental issues (such as potential soils and groundwater contamination). The term 'geotechnical' is used to describe aspects relating to the physical nature of the site (such as foundation requirements). It should be noted that this is an integrated investigation and these two main aspects are related, unless otherwise specified within the report.

Phase I reports are written in general accordance with the description of a Preliminary Investigation as defined in BS10175:2011+A2:2017 and are also produced in general accordance with the recommendations for a Tier 1 Preliminary Risk Assessment as described in LCRM guidance

The first stage of the investigation and assessment of a site is the Preliminary Investigation/Tier 1 Preliminary Risk Assessment, often referred to as a Phase 1 Desk Study, comprising a desk study and walk-over survey and collation of desk-based searches, which culminates in the Preliminary Risk Assessment and the development of a preliminary/initial Conceptual Site Model (CSM). From this are identified any potential geotechnical and geo-environmental hazards and the qualitative degree of risk associated with them.

From the geo-environmental perspective, the hazard Identification process uses professional judgement to evaluate all the hazards in terms of possible contaminant linkages (of source-pathway-receptor). Possible contaminant linkages are potentially unacceptable risks in terms of the current contaminated land regime legal framework and require either remediation or further assessment. These are normally addressed via intrusive ground investigation and generic risk assessment as part of Phase II investigations and reports.

Contaminated Land - Legislative Background

Environmental liabilities and risks have been evaluated in terms of a source -pathway - target relationship in accordance with the approach set out in:

- The 1995 Environment Act.
- The DETR circular 02/2000 Environmental Protection Act 1990: Part IIA Contaminated Land.
- The Contaminated Land (England) Regulations 2000.
- Environment Agency (EA) - Land Contamination Risk Management (LCRM) 2019.

Contaminated land is defined within the legislative framework as land which is in such condition by reason of substances in, on or under the land that:

1) Significant harm is being caused or there is a significant possibility of such harm being caused.
2) Significant pollution of controlled waters is being or is likely to be caused.

The potential for harm is based on the presence of three factors:

Source - substances that are potential contaminants or pollutants that may cause harm.
Pathway - a potential route by which contaminants can move from the source to the receptor.
Receptor - a receptor that may be harmed, for example the water environment, humans and water.

Where a source, pathway and target are all present a pollutant linkage exists and there is potential for harm to be caused. The presence of a source does not automatically imply that a contamination problem exists, since contamination must be defined in terms of pollutant linkages and unacceptable risk of harm. The nature and importance of both pathways and receptors are site specific and will vary according to the intended end use of the site, its characteristics and its surroundings.

The key principle which supports the SPR approach is 'suitable for use' criteria. This requires remedial action only where contamination is considered to pose unacceptable actual or potential risks to health or the environment and, taking into account the proposed use of the site.

Relevant Guidance Documents
This report has been prepared in accordance with the list of guidance below, however the list is not exhaustive:

- DETR: Circular 02/2000: Environmental Protection Act 1990: Part IIA: Contaminated land. 2012.
- Environment Agency technical advice to third parties on Pollution of Controlled Waters for Part IIA of the EPA1990, May 2002.
- BS 10175:2011+A2:2017.
- Environment Agency (EA) - Land Contamination Risk Management (LCRM). 2019.

Relevant Legislative Documents
The following is a non-exhaustive list of legislative framework documents that has been considered in the production of this report:

- The Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance (2012).
- The Environment Protection Act (1990).
- The Water Resources Act (1991).
- The Environment Act (1995).
- The Contaminated Land (England) Act (2000).
- The Pollution Prevention and Control (England and Wales) Regulations (2000).
- The Landfill Regulations (England and Wales) Regulations (2002).
- The Landfill (England and Wales) (Amendment) Regulations (2004).
- Contaminated Land (England) Regulations (2012).

- Health and Safety at Work Act.
- National Planning Policy Framework (NPPF) 2021.

Contaminated Land Risk Assessment Approach

Contaminated Land Risk Assessment is a technique that identifies and considers the associated risk, determines whether the risks are significant and whether action needs to be taken. The four main stages of risk assessment are:

Hazard Identification ➡ Hazard Assessment ➡ Risk Estimation ➡ Risk Evaluation.

LCRM outlines the framework to be followed for risk assessment in the UK. The framework is designed to be consistent with UK legislation and policies including planning. The starting point of the risk assessment is to identify the context of the problem and the objectives of the process. Under LCRM, three tiers of risk assessment exist – Stage/Tier Preliminary Risk Assessment, Stage 2 Generic Quantitative and Stage 3 Detailed Quantitative.

Further information can be found at the below site:
https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm

Formulating and developing a conceptual model for the site is an important requirement of risk assessment, this supports the identification and assessment of pollutant linkages. Development of the conceptual model forms the main part of preliminary risk assessment, and the model is subsequently refined or revised as more information and understanding is obtained through the risk assessment process.

Risk is a combination of the likelihood of an event occurring and the magnitude of its consequences. Therefore, both the likelihood and the consequences of an event must be taken into account when assessing risk.

The risk assessment process needs to take into account the degree of confidence required in decisions. Identification of uncertainties is an essential step in risk assessment.

The likelihood of an event is classified on a four-point system using the following terms and definitions from CIRIA C552:

High likelihood: There is a pollution linkage and an event appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution.

Likely: There is a pollution linkage and all the elements are present and in the right place, which means it is probable that an event will occur. Circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term.

Low likelihood: There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain even over a longer period such event would take place, and is less likely in the short term.

Unlikely: There is a pollution linkage but circumstances are such that it is improbable the event would occur even in the long term.

The severity is also classified using a system based on CIRIA C552. The terms and definitions are:

Severe: Short term (acute) risk to human health likely to result in 'significant harm' as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. A short-term risk to a particular ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Draft Circular on Contaminated Land', DETR 2000);

Examples – High concentrations of contaminant on surface of recreation area, major spillage of contaminants from site into controlled waters, explosion causing building to collapse;

Medium: Chronic damage to human health ('significant harm' as defined in DETR 2000). Pollution of sensitive water resources. A significant change in a particular ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Draft Circular on Contaminated Land', DETR 2000);
Examples - Concentrations of contaminants exceed the generic assessment criteria, leaching of contaminants from a site to a Principal or Secondary Aquifer, death of species within a designated nature reserve;

Mild: Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ('significant harm' as defined in 'Draft Circular on Contaminated Land', DETR 2000). Damage to sensitive buildings, structures, services or the environment;
Examples – Pollution of non-classified groundwater or damage to buildings rendering it unsafe to occupy.

Minor: harm, not necessarily significant harm, which may result in financial loss or expenditure to resolve. Non-permanent health effects to human health (easily prevented by use of personal protective clothing etc). Easily repairable effects of damage to buildings, structures and services.
Examples – Presence of contaminants at such concentrations PPE is required during site work, loss of plants in landscaping scheme or discolouration of concrete.

Once the likelihood and severity have been determined, a risk category can be assigned using the table below.

		Consequences			
		Severe	Medium	Mild	Minor
Probability	Highly likely	Very high	High	Moderate	Moderate/low
	Likely	High	Moderate	Moderate/low	Low
	Low likelihood	Moderate	Moderate/low	Low	Very low
	Unlikely	Moderate/low	Low	Very Low	Very low
	No Linkage	Negligible			

Definitions of the risk categories obtained from the above table are as follows together with an assessment of the further work that might be required:

Very high: There is a high probability that severe harm could arise to a designated receptor from an identified hazard or there is evidence that severe harm is currently happening. This risk, if realised, could result in substantial liability. Urgent investigation and remediation are likely to be required.

High: Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation is required and remedial works may be necessary in the short term and are likely over the longer term.

Moderate: It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it would be more likely to be relatively mild. Investigation is normally required to clarify the risk and determine the liability. Some remedial works may be required in the longer term.

Low: It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.

Very Low: There is a low possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.

Some linkages may be identified which constitutes a theoretical connection between a source and a receptor, but professional judgement shows them not to be possible for some reason. These are labelled 'no linkage' in the summary table, which give rise to a **negligible** risk category and no further action is required.

Ground Gas Risk Assessment Guidance

BS8485:2015+A1:2019, BS 8576:2013, CIRIA C665 and CL:AIRE RB17 are the current guidance which gives up-to-date advice on all aspects of ground gas. They outline good practice in investigation, the collection of relevant data and monitoring programmes in a risk-based approach to ground gas contamination.

Within BS8485:2015+A1:2019, BS 8576:2013 and CIRIA C665, two semi-quantitative methods are set out for the assessment of risk:

1 For low rise housing with a ventilated under floor void at minimum 150 mm (Boyle and Witherington).
2 For all other development types (Wilson and Card).

Both methods use the concept of Gas Screening Values (GSVs) to identify levels of risk. The mitigation and management of potentially unacceptable risk is described with reference to both passive and active systems of gas. Source removal is also discussed as an option. A sperate approach is discussed under the RB17 header further below.

The aim of the guidance is for a consistent approach to decision making, particularly relating to the scope of protective design measures on a site-specific basis.

Legislative Framework
BS8485:2015+A1:2019, BS 8576:2013 and CIRIA C665 provides technical guidance, however they also recognise the context into which the guidance has to be employed. Government policy is based upon a "suitable for use approach", which is relevant to both the current and proposed future use of land. When considering the current use of land, Part IIA of the Environment Protection Act 1990 provides the regulatory regime. The presence of hazardous ground gases could provide the "source" in a "pollutant linkage" which could lead the regulator to determine that considerable harm or there is a significant possibility of such harm being caused. Under such circumstances, the regulator would determine the land to be "contaminated land" under the provisions of the Act, setting out the process of remediation as described in the DETR Circular 02/2000 *Statutory guidance on contaminated land.*

Generation Potential of Sources
BS 8576:2013 Figure 6 provides a basis for assessing the generation potential from sources identified as part of the Phase I Assessment. These are summarised below:

Generation Potential	Typical Sources
Very Low	• Natural carbonate soil and strata, e.g. chalk and limestone. • Natural soil strata with a low degradable organic content, e.g. alluvium, peat. • In-filled pond less than 15 m diameter, in-filled before 1930s to 1940s. • Made ground with low degradable organic content (e.g. up to 5% organic material such as pieces of wood, pieces of paper, rags, etc. with a high proportion of ash and no food or other easily degradable waste). • Mine workings shallow or shaft (where there is clear evidence that they are flooded). • Inert landfill sites.
Low	• Natural soil strata with a high degradable organic content (DOC). • Made ground with total organic carbon (TOC) up to 6% (e.g. dock silt, no food or other easily degradable waste).

Generation Potential	Typical Sources
	• Foundry sand (includes phenolic binders, rags and wood that decay, albeit at low rates). • Landfill 1945 to mid 1960s (see also Moderate below).
Moderate	• Sewage sludge. • Mine workings – unflooded, more than 50 years since last worked (gas is liberated from coal when mine workings are excavated; this continues for up to about 50 years). • Landfill 1945 to mid 1960s (this could also be "low" or, if disturbed, "high").
High	• Landfill mid 1960s to early 1990s. • Mine workings – unflooded – less than 50 years since last worked.
Very High	• Municipal landfill sites. • Landfill early 1990s onward.

Frequency and Duration of Monitoring

The monitoring period for a specific site covers the "worst case" scenario. A "worst case" scenario will typically occur during falling atmospheric pressure and, in particular, weather conditions such as rainfall, frost and dry weather.

The benefits of the additional information and whether it is likely to change the scope of gas protection should be considered, as are the consequences of failing to characterise adequately pollutant linkages. Investigations concerned with soil gas are required to provide monitoring data sufficient to allow prediction of worst case conditions enabling the confident assessment of risk and subsequent design of appropriate gas protection schemes. Monitoring programmes should not be an academic exercise in data collection. CL:AIRE publication TB17 "Ground Gas Monitoring and 'Worst-Case' Conditions" provides further guidance.

Below are matrices that will aid in determining an appropriate number of gas monitoring visits and the length of monitoring period.

Typical/idealised periods of monitoring

		Generation of Potential Source				
		Very Low	Low	Moderate	High	Very High
Sensitivity of Development	Low (Commercial)	1 month	2 months	3 months	6 months	12 months
	Moderate (Apartments)	2 months	3 months	6 months	12 months	24 months
	High (Low rise Residential)	3 months	6 months	6 months	12 months	24 months

Typical/idealised frequency of monitoring/Number of Visits Required

		Gas Generation of Potential Source				
		Very Low	Low	Moderate	High	Very High
Sensitivity of Development	Low (Commercial)	4	6	6	12	12
	Moderate (Apartments)	6	6	9	12	24
	High (Low rise Residential)	6	9	12	24	24

Note

1 NHBC guidance also recommends this period of monitoring (Boyle and Witherington, 2007).

2 Generation potential of sources based on descriptions within BS 8576:2013.

3 At least two sets of readings should be at low and falling atmospheric pressure (but not restricted to periods below <1000 mb) known as worst case conditions. Historical data can be used as part of the data set (Table 5.5b).

It is recommended that newly installed monitoring wells are left for 24 hours to allow the soil gas to reach equilibrium. It should be recognised, however, that some soil gas regimes could take considerably longer (up to seven days). Interpretation of any initial readings should take this equilibrium process into account.

RB17 Approach

CL:AIRE RB17 (Card et al 2012) is a pragmatic approach to ground gas risk assessment and was developed because gas concentration, pressure and flow rate measured in a well headspace may not be representative of the conditions in the surrounding formation.

In these low-risk situations, the approach is to use the conceptual site model and the estimation of the likely gas generation from a source to identify where or if gas monitoring is required to better define the risks.

Under this approach, for sites with natural soils only with no credible methane source, then no action is required (no monitoring or gas protection measures) as this represents Characteristic Situation 1 (CS1).

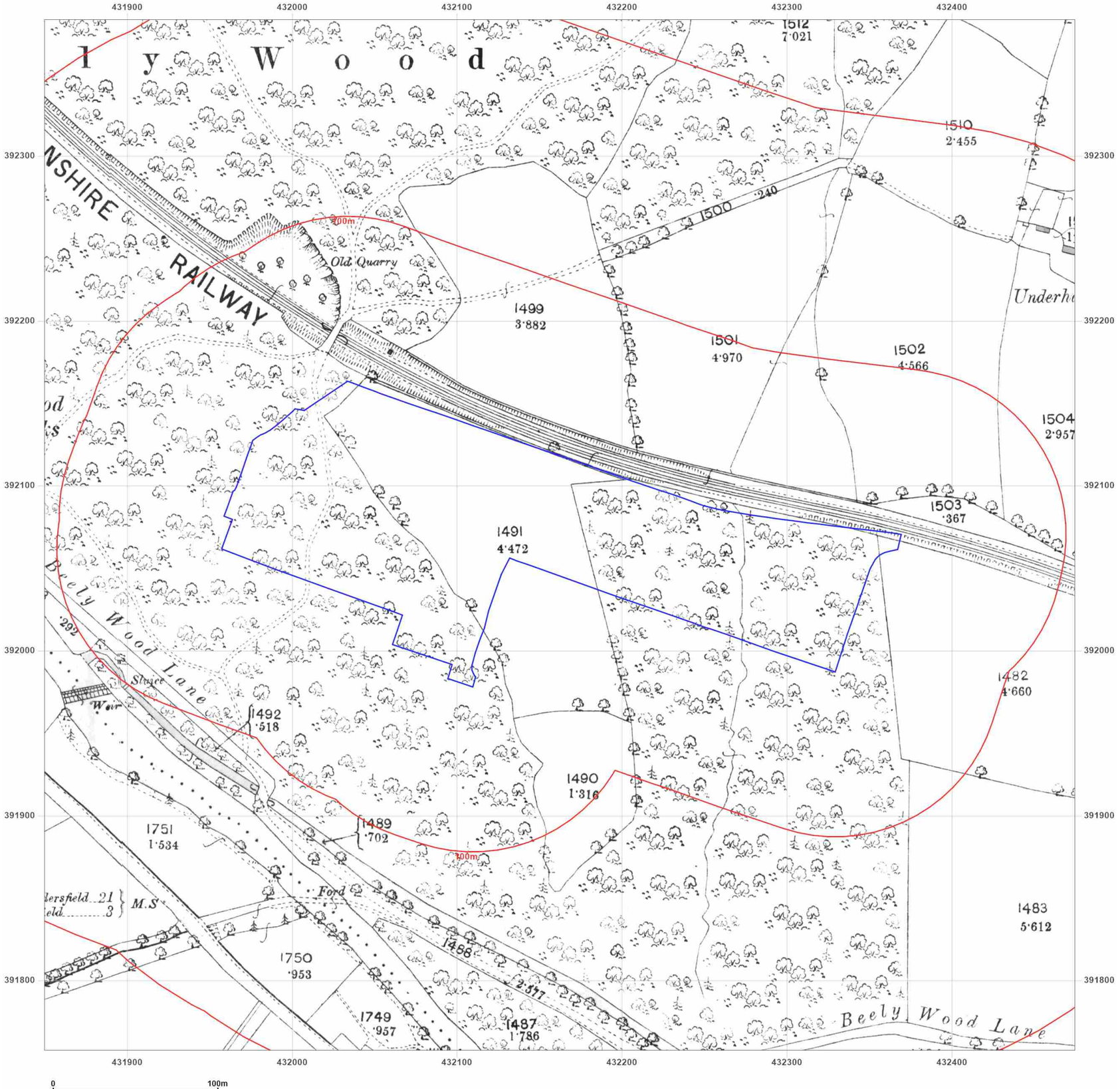
Unexploded Ordnance (UXO) Guidance

Clients have a legal duty under the CDM 2015 Regulations to provide designers and contractors with project-specific health and safety information needed to identify hazards and risks. This includes the possibility of unexploded ordnance (UXO) being encountered on the site. Further details are given in CIRIA report C681.

BSL carry out non-specialist UXO screening exercises by considering any evidence of UK defence activities on or near the site evident from gathered desk study information and the unexploded aerial delivered bomb (UXB) online risk maps produced by Zetica. Other data sources are available, but as a first stage screening exercise the freely available online Zetica maps have been used. The level of risk stated is that determined by Zetica, a company experienced and considered competent in the assessment of UXO.

APPENDIX B

Historical Maps



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GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

Site Details:

BLUE PHOENIX, 2 BEELEY WOOD, BEELEY WOOD LANE, SHEFFIELD, S6 1QT

Client Ref: C5146-3287-SD
Report Ref: BRO-8910867_LS_1_1
Grid Ref: 432162, 392070

Map Name: County Series
Map date: **1892**
Scale: 1:2,500
Printed at: 1:2,500

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Revised 1892
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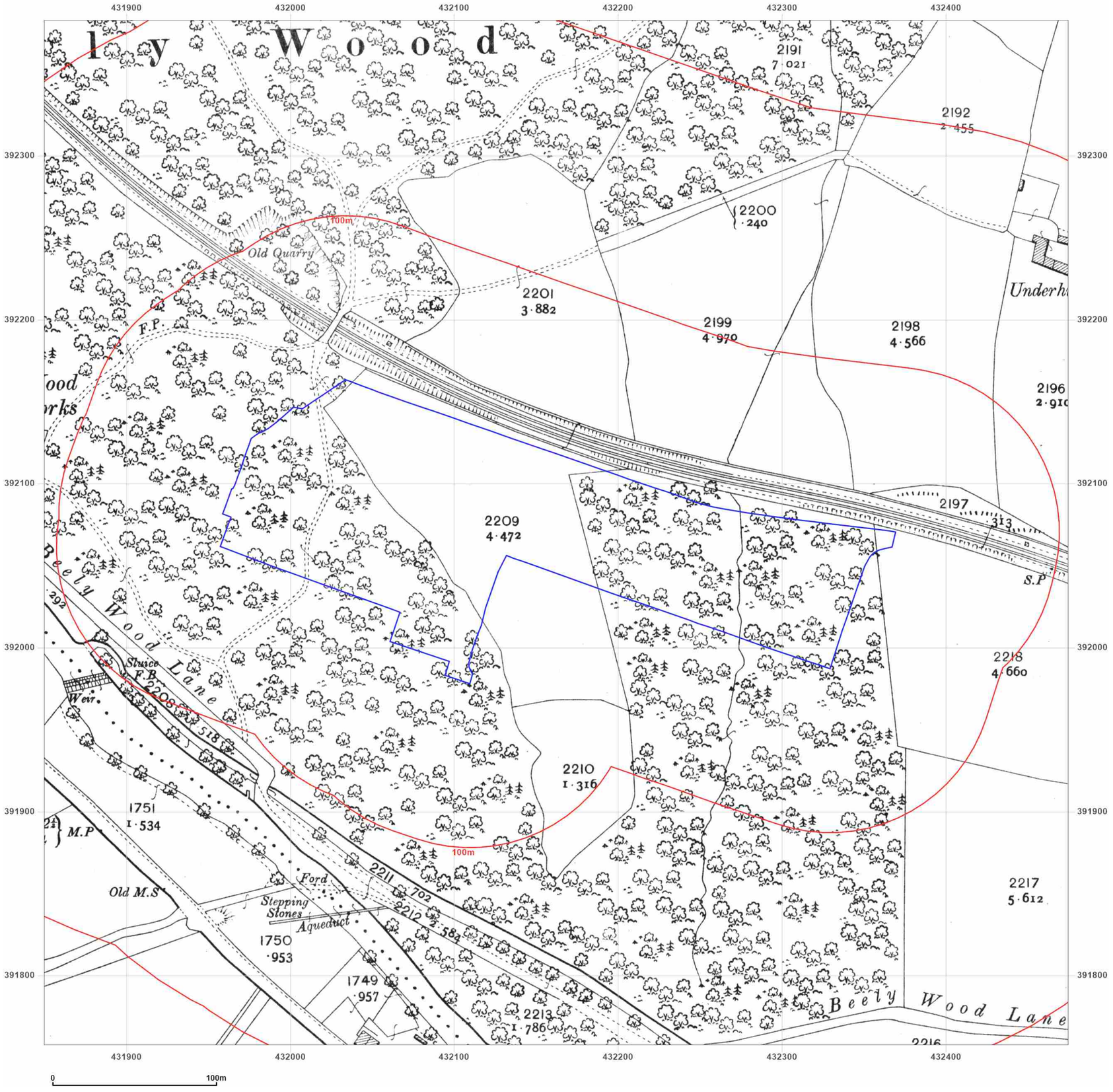

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Client Ref: C5146-3287-SD
Report Ref: BRO-8910867_LS_1_1
Grid Ref: 432162, 392070

Map Name: County Series
Map date: **1905**
Scale: 1:2,500
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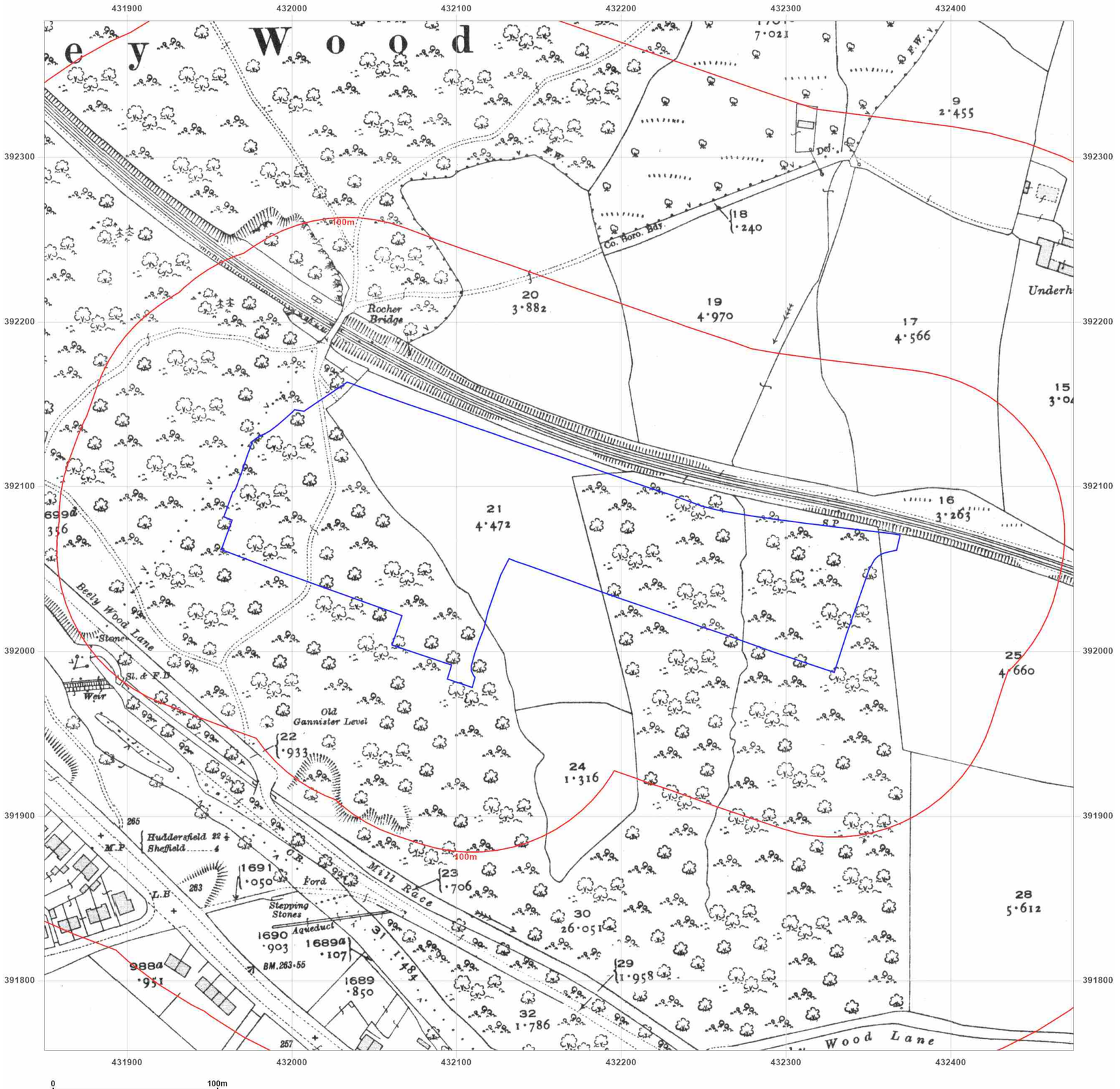

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Client Ref: C5146-3287-SD
Report Ref: BRO-8910867_LS_1_1
Grid Ref: 432162, 392070

Map Name: County Series
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Report Ref: BRO-8910867_LS_1_1
Grid Ref: 432162, 392070

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Surveyed 1958
Revised 1958
Edition N/A
Copyright 1959
Levelled 1930

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Revised 1957
Edition N/A
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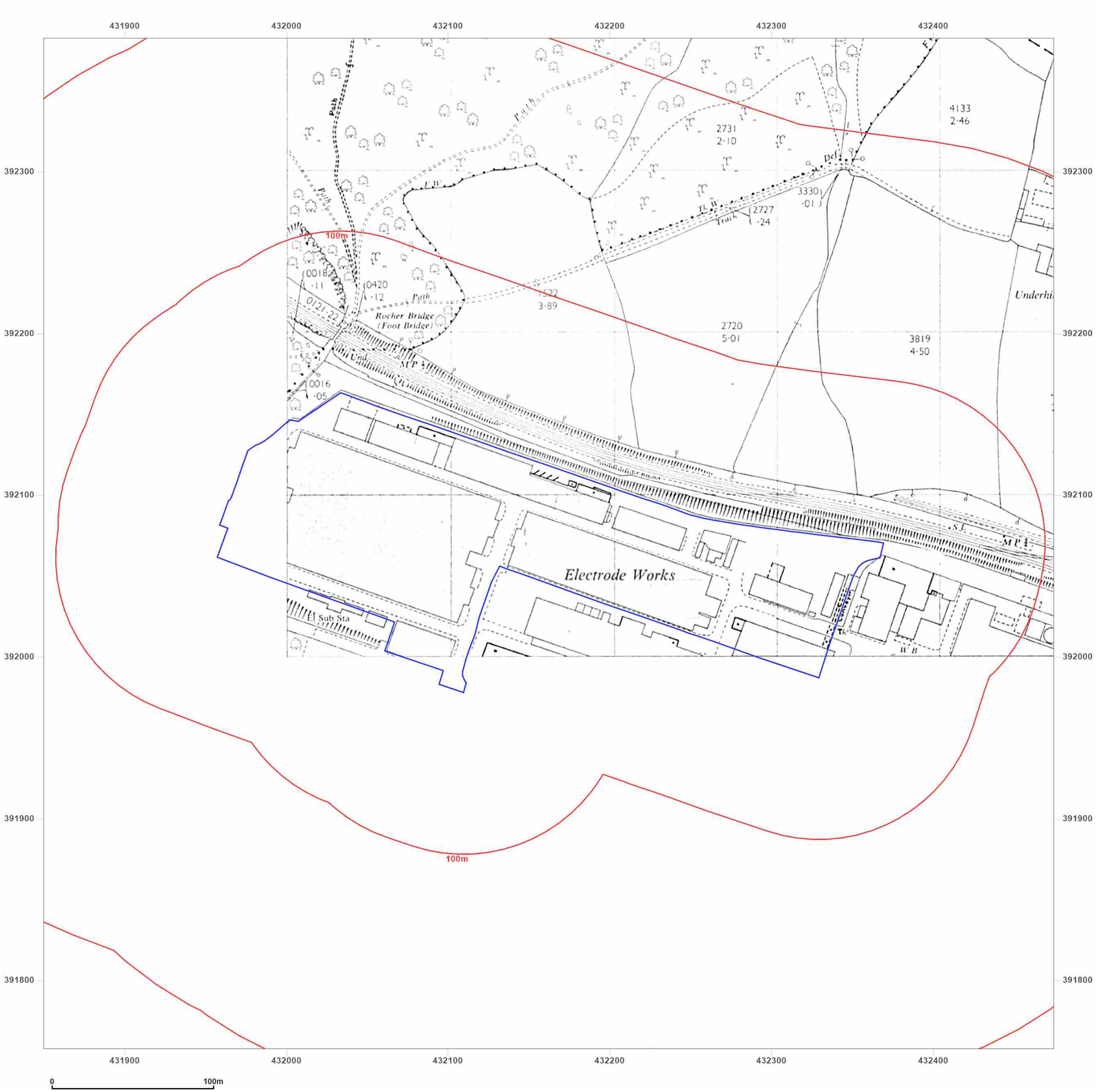

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Report Ref: BRO-8910867_LS_1_1
Grid Ref: 432162, 392070

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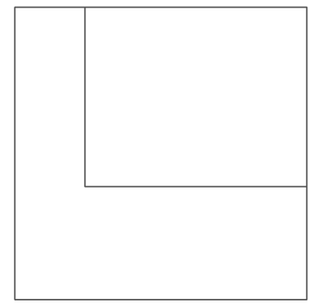
Revised N/A
Edition N/A
Copyright N/A
Levelled 1961



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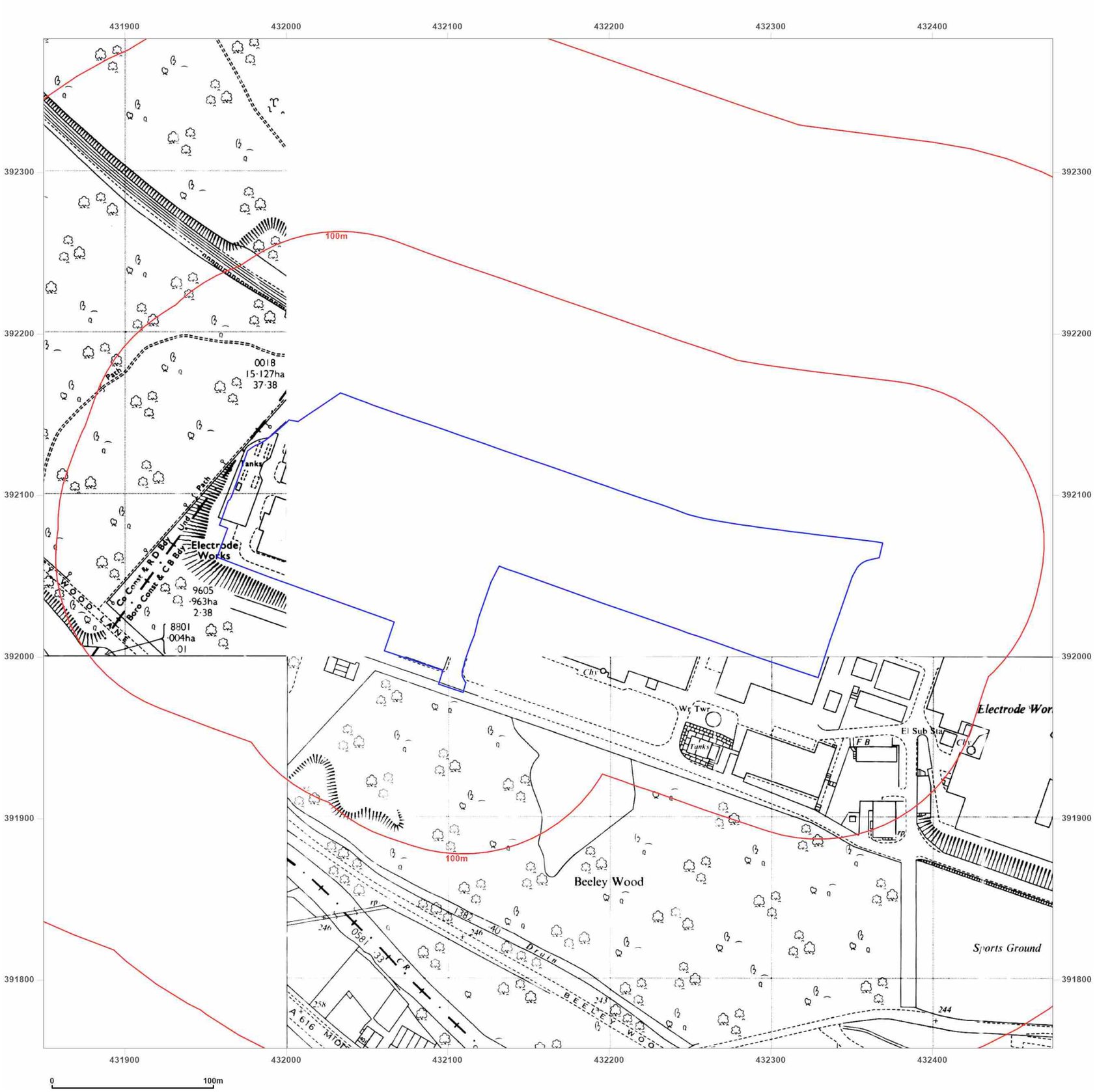

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Client Ref: C5146-3287-SD
Report Ref: BRO-8910867_LS_1_1
Grid Ref: 432162, 392070

Map Name: National Grid
Map date: **1970-1972**
Scale: 1:2,500
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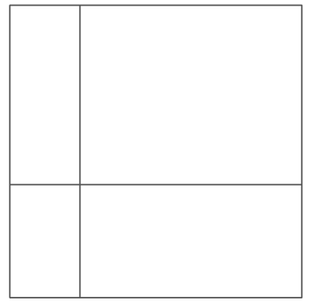
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A



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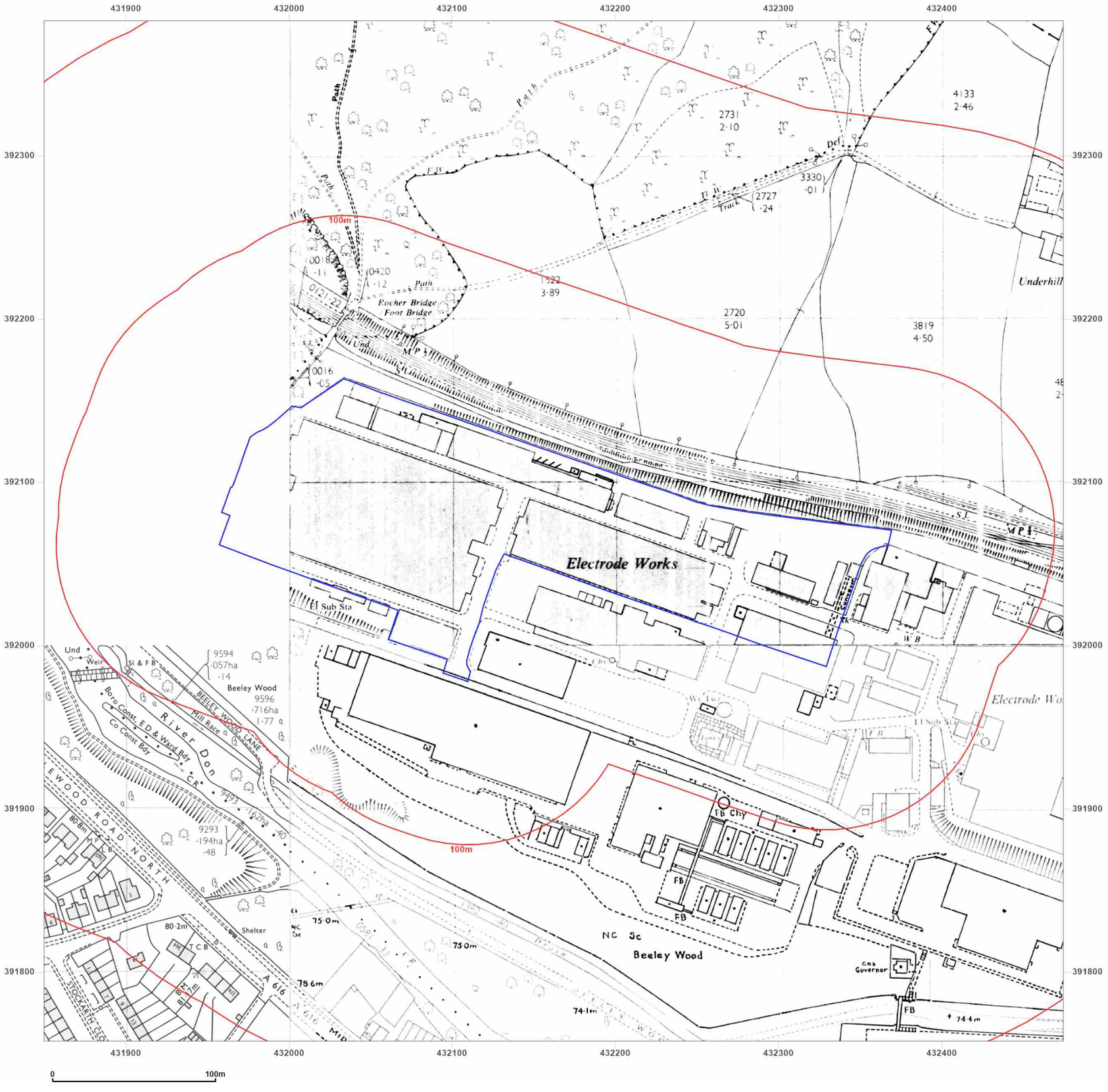

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Report Ref: BRO-8910867_LS_1_1
Grid Ref: 432162, 392070

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Scale: 1:2,500

Printed at: 1:2,500

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Revised N/A
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Client Ref: C5146-3287-SD
Report Ref: BRO-8910867_LS_1_1
Grid Ref: 432162, 392070

Map Name: National Grid

Map date: **1991**

Scale: 1:2,500

Printed at: 1:2,500

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Revised N/A
Edition N/A
Copyright 1991
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Surveyed 1961
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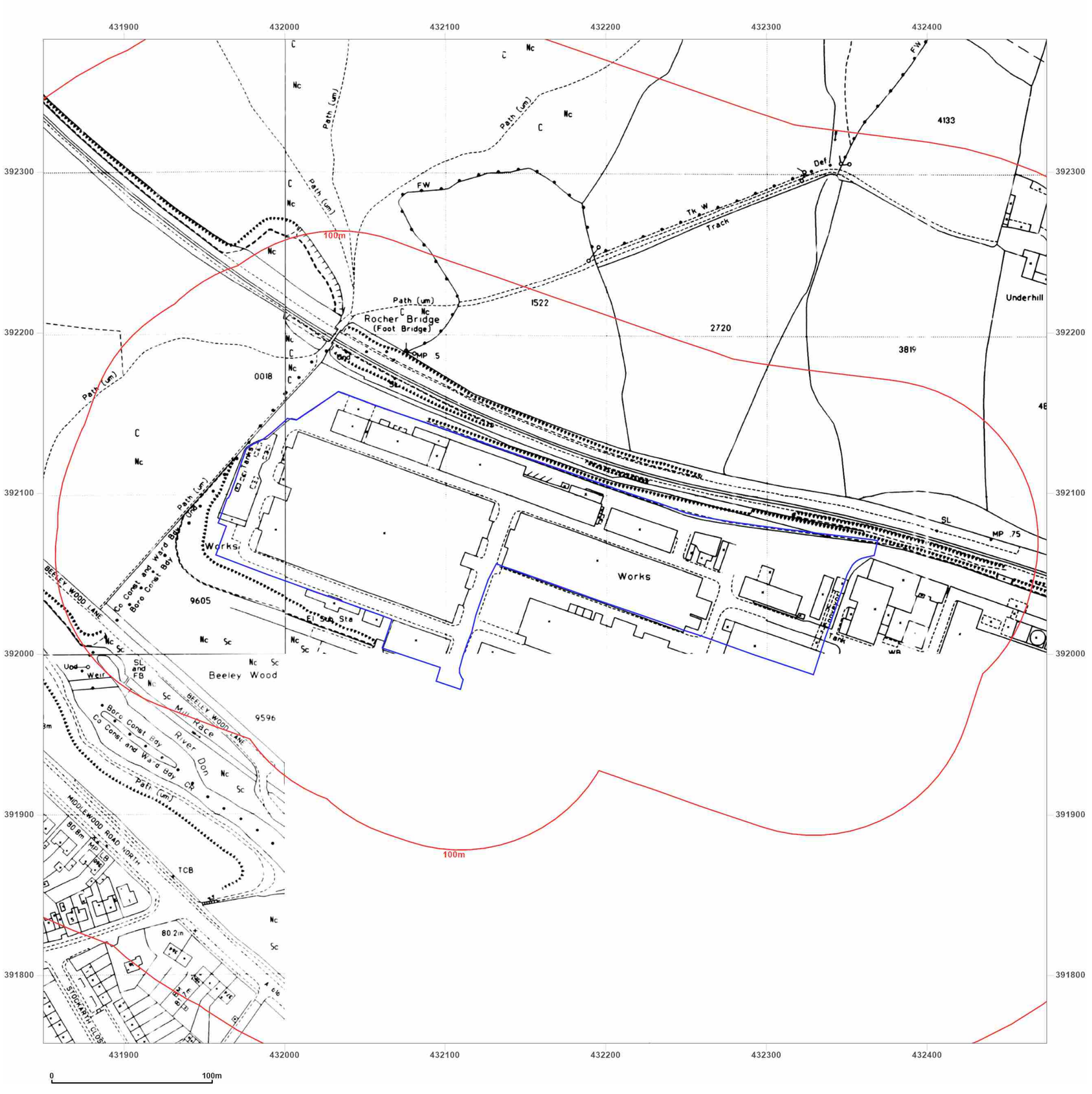

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Client Ref: C5146-3287-SD
Report Ref: BRO-8910867_LS_1_1
Grid Ref: 432162, 392070

Map Name: National Grid
Map date: 1993
Scale: 1:2,500
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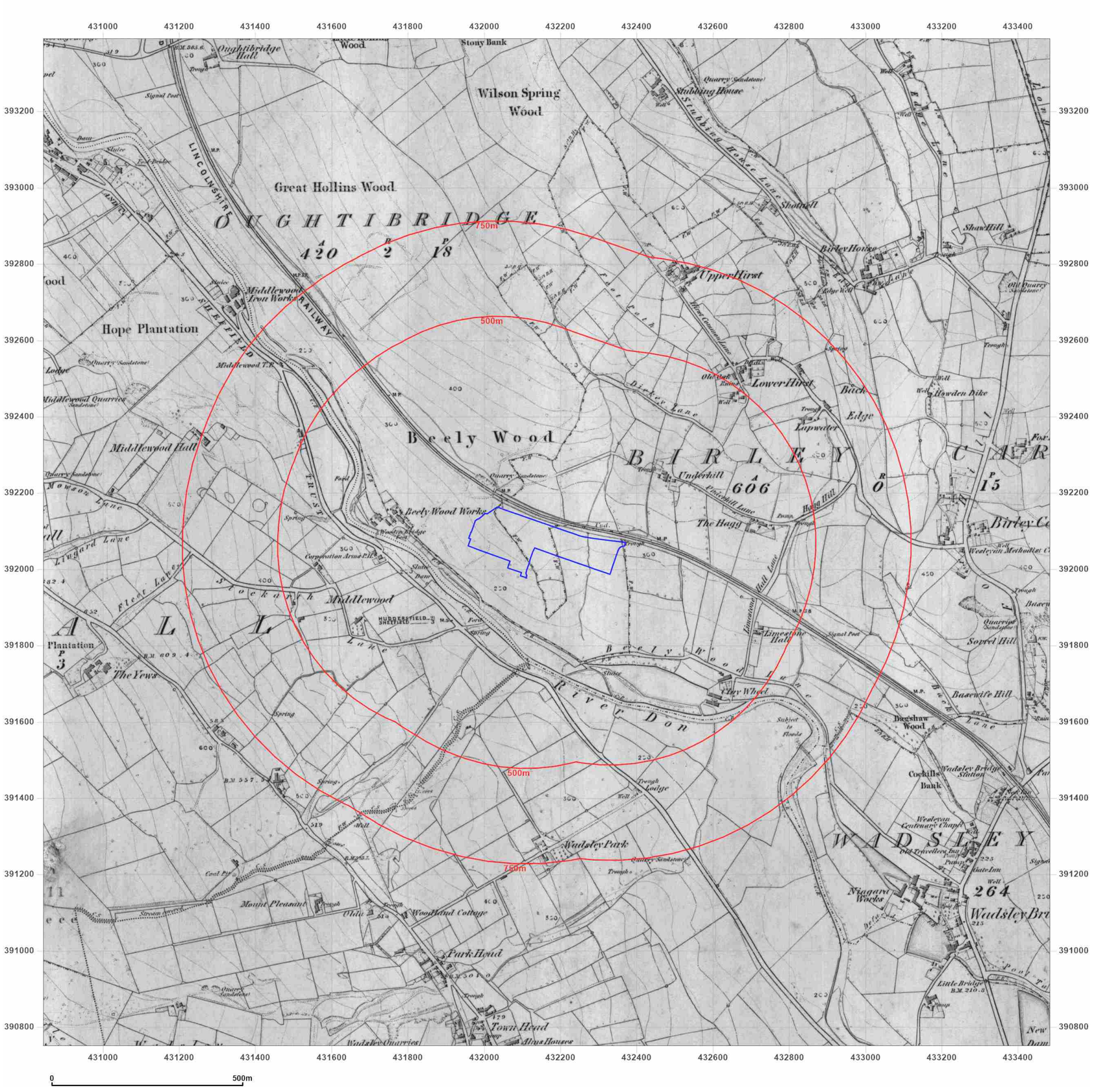

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Client Ref:	C5146-3287-SD
Report Ref:	BRO-8910867
Grid Ref:	432163, 392070

Map Name:	County Series
Map date:	**1850**
Scale:	1:10,560
Printed at:	1:10,560

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Edition 1850
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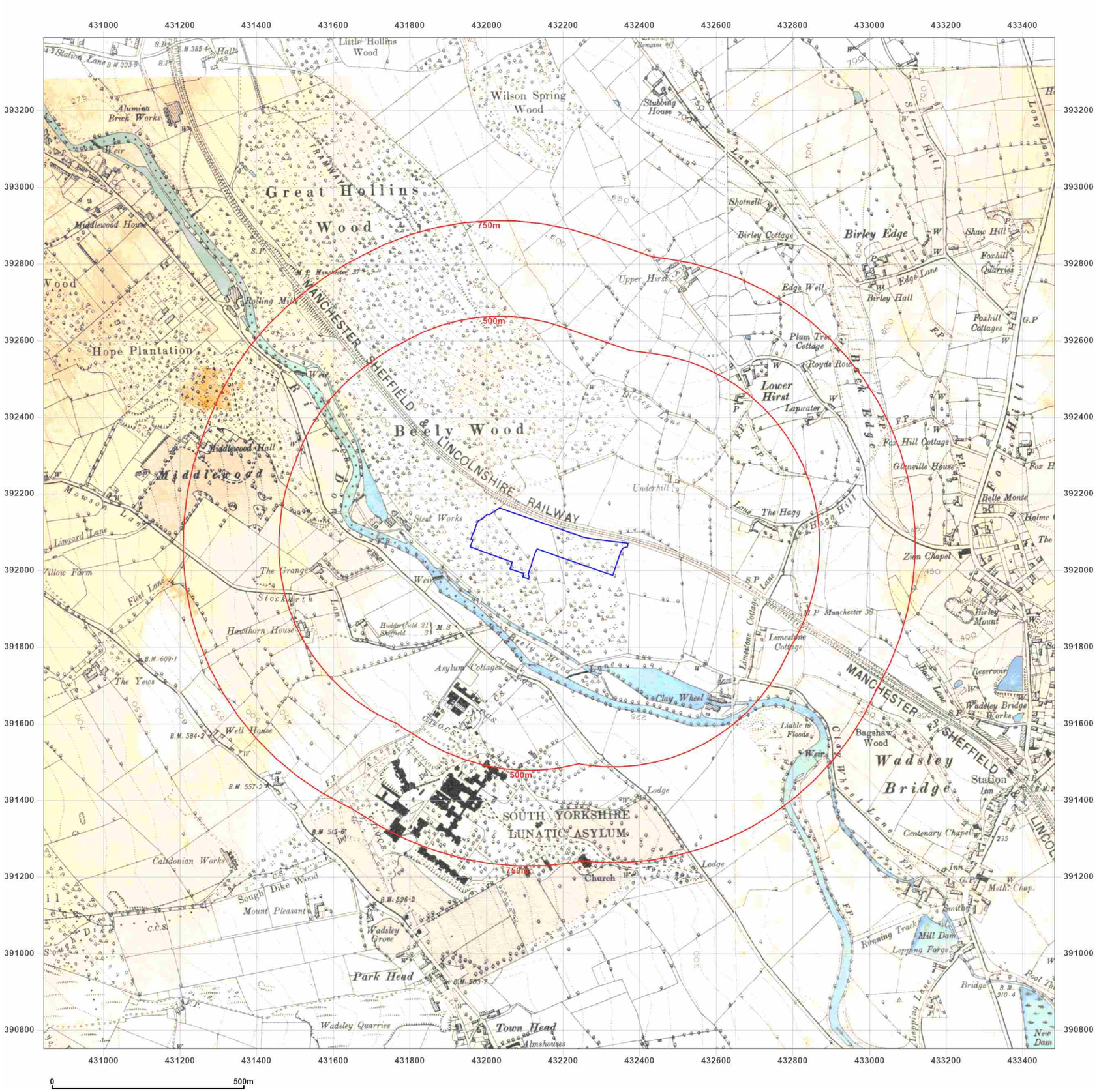

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Site Details:

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Client Ref: C5146-3287-SD
Report Ref: BRO-8910867
Grid Ref: 432163, 392070

Map Name: County Series

Map date: **1890-1891**

Scale: 1:10,560

Printed at: 1:10,560

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Revised 1891
Edition N/A
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Levelled N/A

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Copyright N/A
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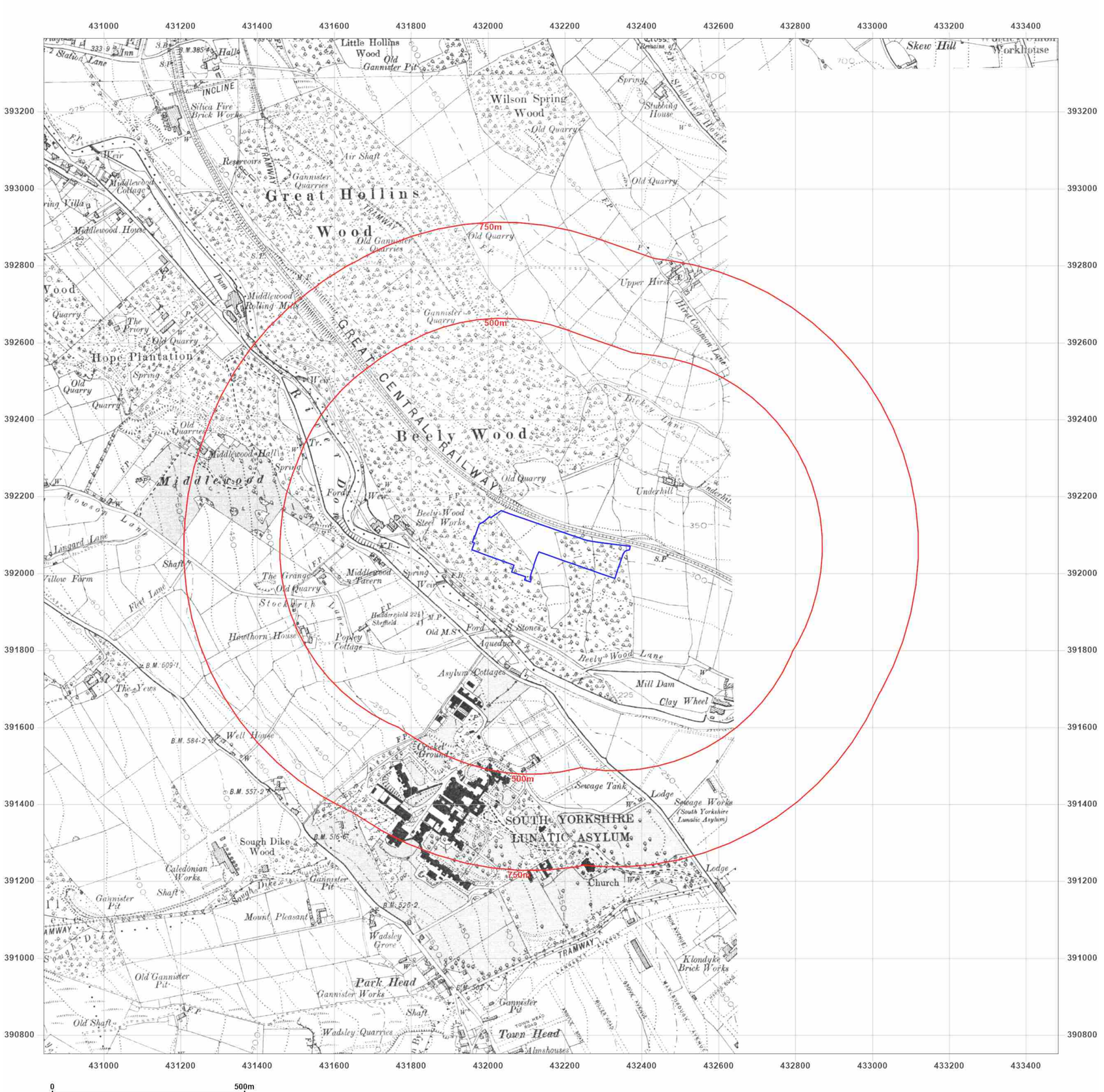

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Client Ref: C5146-3287-SD
Report Ref: BRO-8910867
Grid Ref: 432163, 392070

Map Name: County Series

Map date: **1901**

Scale: 1:10,560

Printed at: 1:10,560

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Levelled N/A

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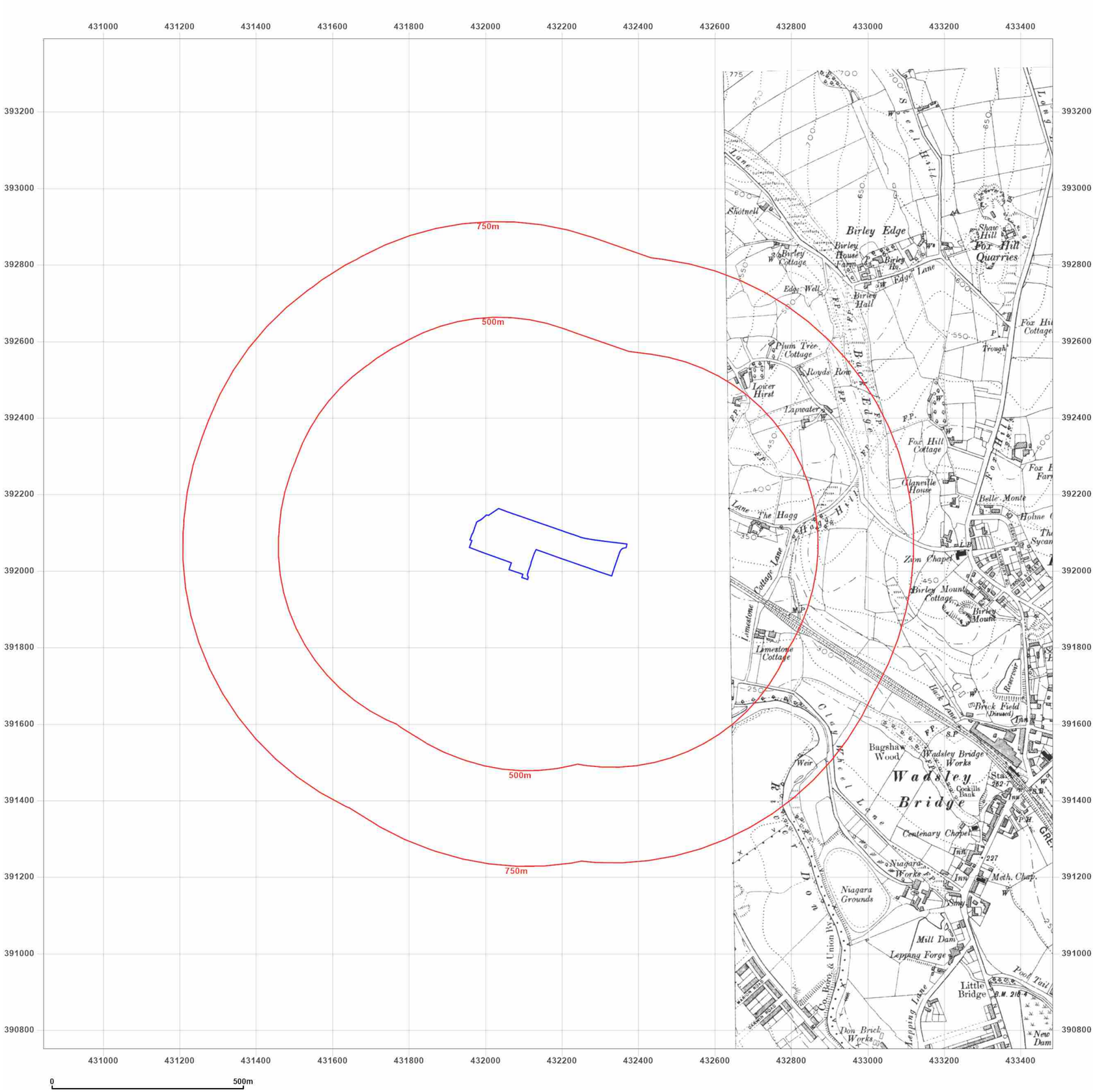

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BLUE PHOENIX, 2 BEELEY WOOD, BEELEY WOOD LANE, SHEFFIELD, S6 1QT

Client Ref: C5146-3287-SD
Report Ref: BRO-8910867
Grid Ref: 432163, 392070

Map Name: County Series
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Printed at: 1:10,560

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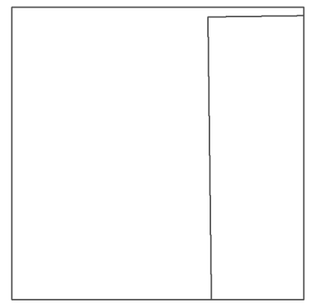

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Edition 1902
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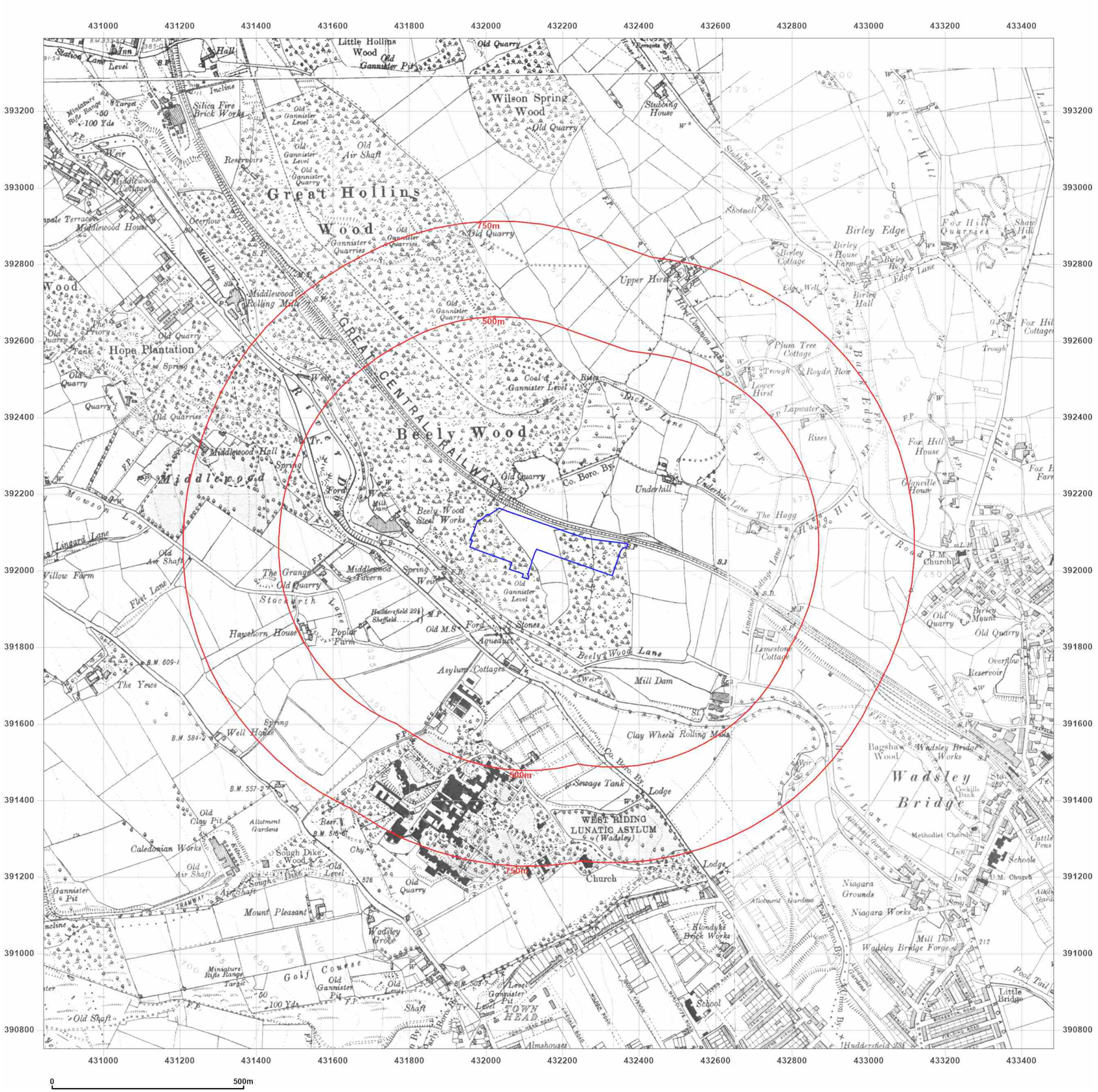

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Report Ref: BRO-8910867
Grid Ref: 432163, 392070

Map Name: County Series

Map date: **1920-1924**

Scale: 1:10,560

Printed at: 1:10,560

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Revised 1920
Edition N/A
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Levelled N/A

Surveyed 1851
Revised 1920
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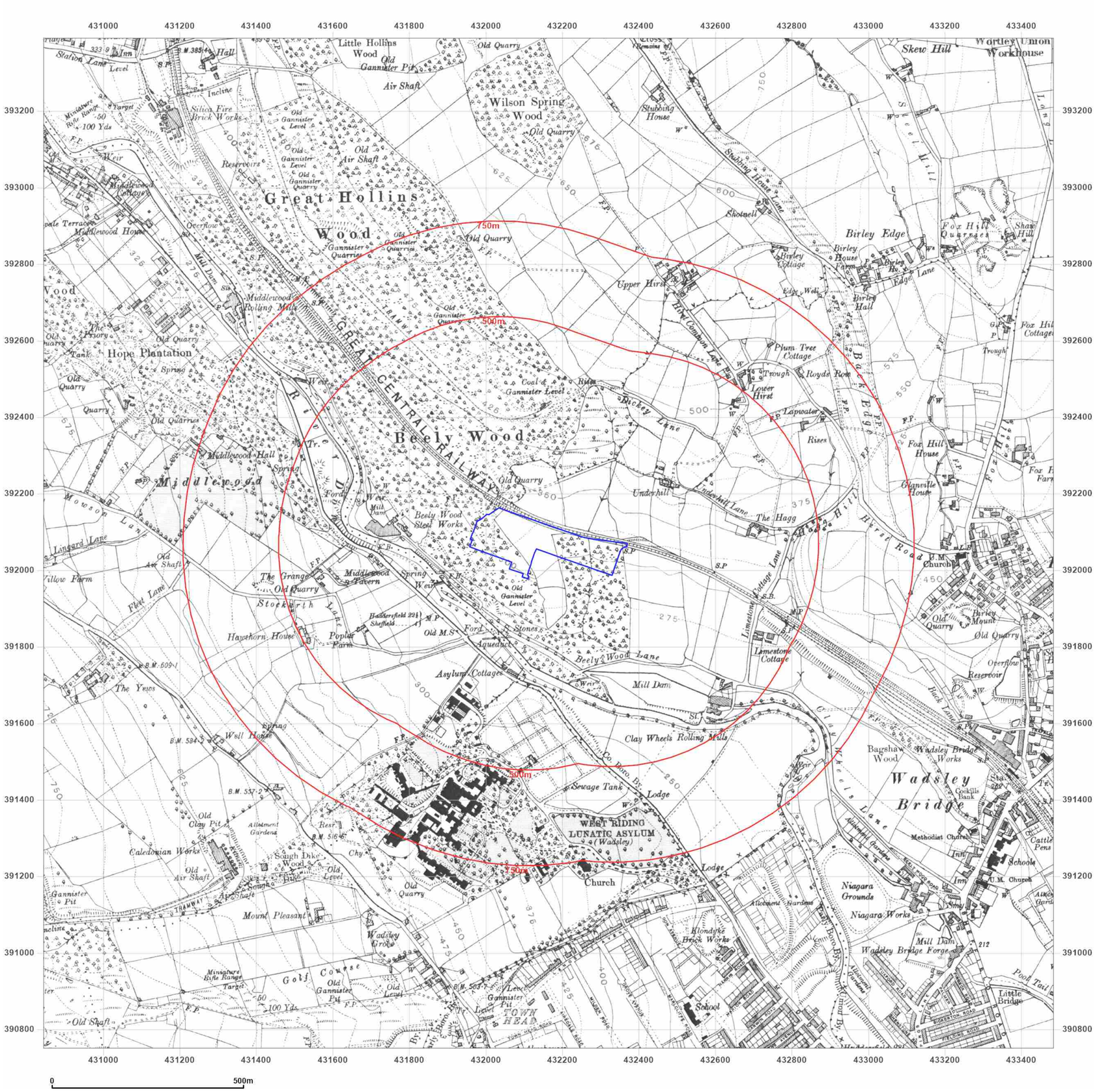

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GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

Site Details:

BLUE PHOENIX, 2 BEELEY WOOD, BEELEY WOOD LANE, SHEFFIELD, S6 1QT

Client Ref: C5146-3287-SD
Report Ref: BRO-8910867
Grid Ref: 432163, 392070

Map Name: County Series

Map date: **1924**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1851
Revised 1924
Edition N/A
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Levelled N/A

Surveyed 1851
Revised 1924
Edition 1924
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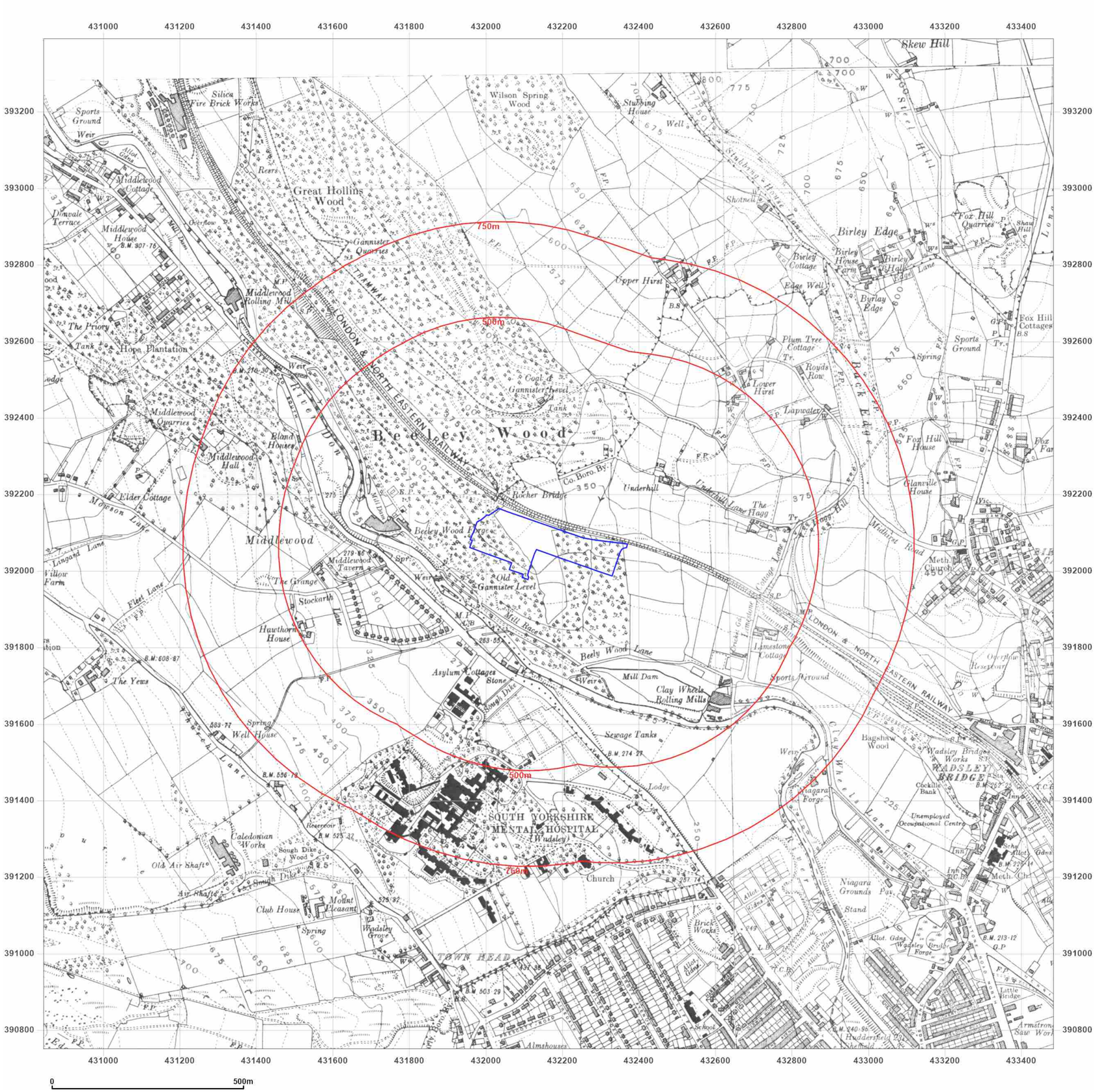

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Site Details:

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Client Ref: C5146-3287-SD
Report Ref: BRO-8910867
Grid Ref: 432163, 392070

Map Name: County Series

Map date: **1934-1935**

Scale: 1:10,560

Printed at: 1:10,560

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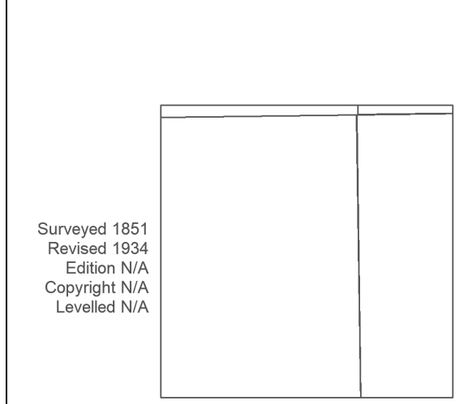

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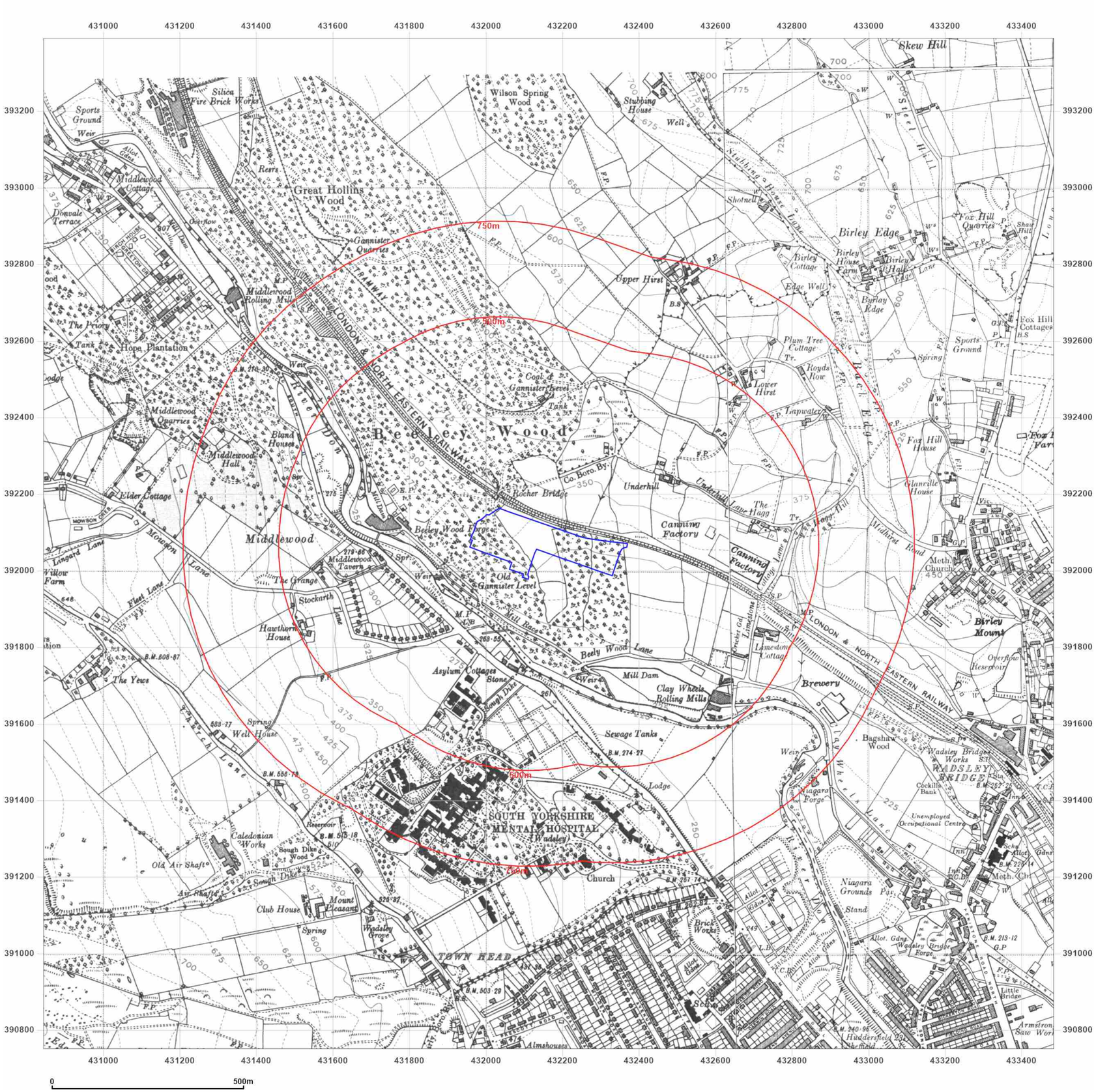

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GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

Site Details:

BLUE PHOENIX, 2 BEELEY
WOOD, BEELEY WOOD LANE,
SHEFFIELD, S6 1QT

Client Ref:	C5146-3287-SD
Report Ref:	BRO-8910867
Grid Ref:	432163, 392070

Map Name:	County Series
Map date:	**1938**
Scale:	1:10,560
Printed at:	1:10,560

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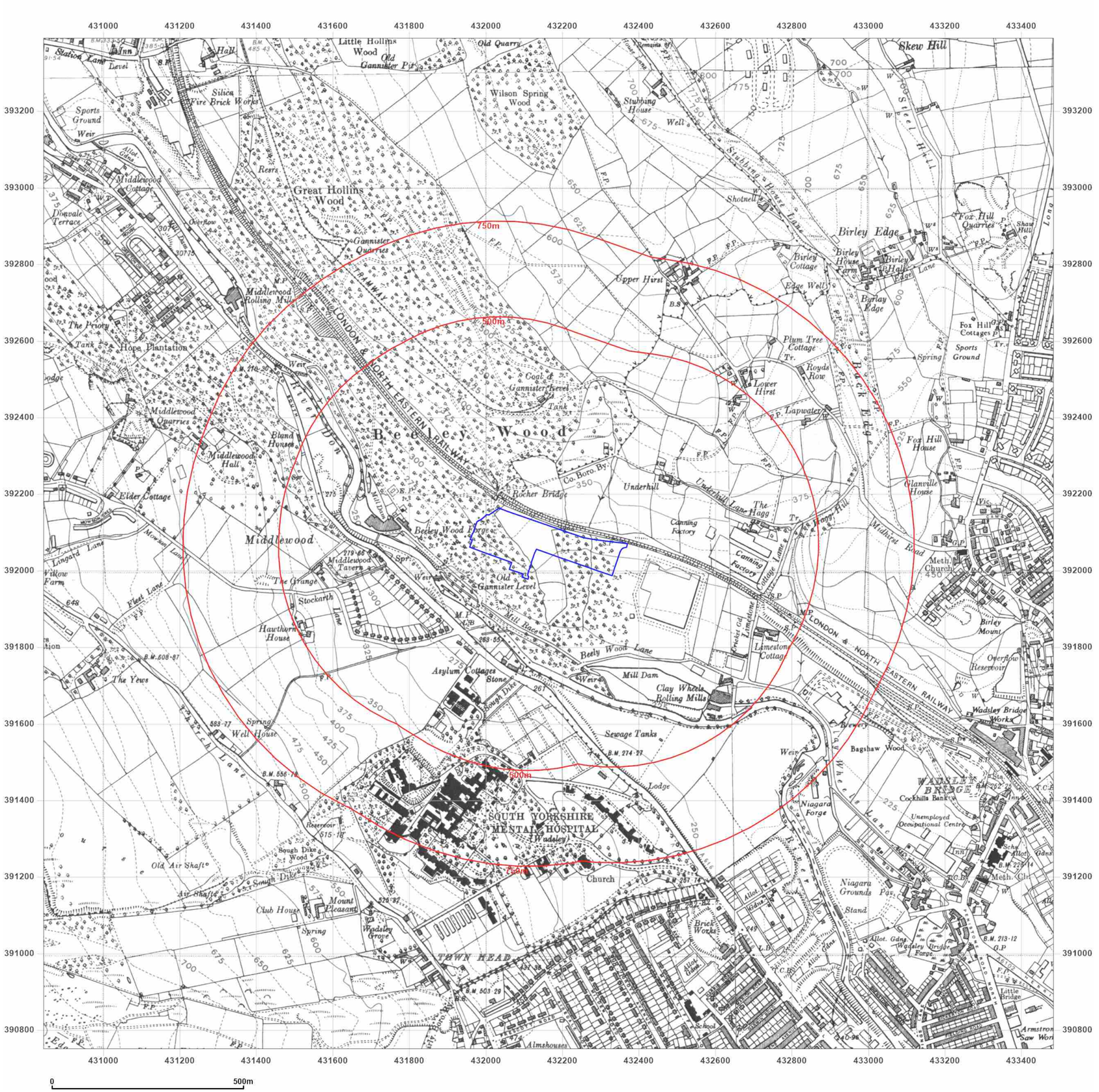

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GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

Site Details:

BLUE PHOENIX, 2 BEELEY WOOD, BEELEY WOOD LANE, SHEFFIELD, S6 1QT

Client Ref:	C5146-3287-SD
Report Ref:	BRO-8910867
Grid Ref:	432163, 392070
Map Name:	County Series
Map date:	**1948**
Scale:	1:10,560
Printed at:	1:10,560

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Edition 1948
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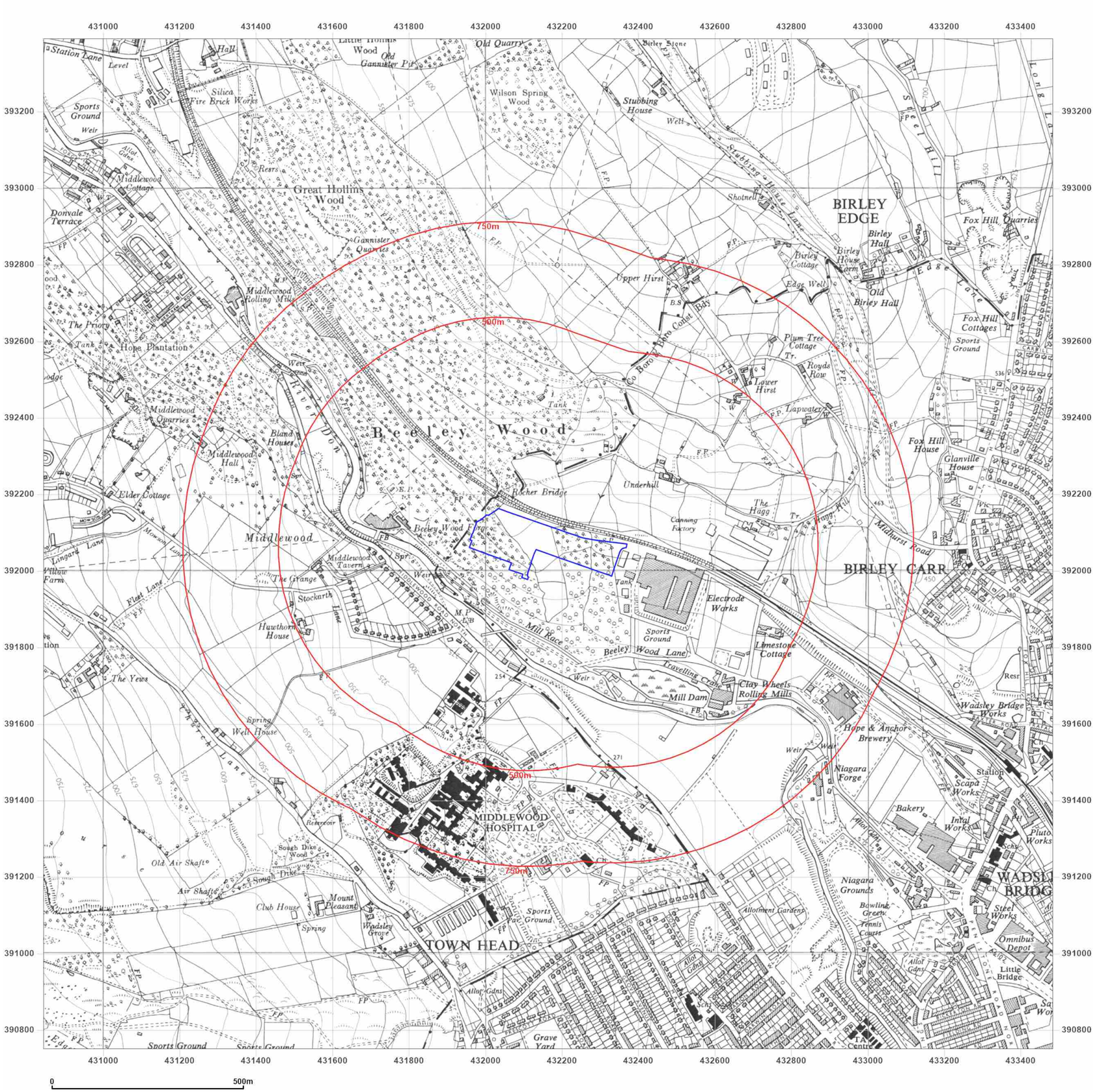

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GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

Site Details:

BLUE PHOENIX, 2 BEELEY WOOD, BEELEY WOOD LANE, SHEFFIELD, S6 1QT

Client Ref: C5146-3287-SD
Report Ref: BRO-8910867
Grid Ref: 432163, 392070

Map Name: Provisional
Map date: **1956**
Scale: 1:10,560
Printed at: 1:10,560

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Revised 1955
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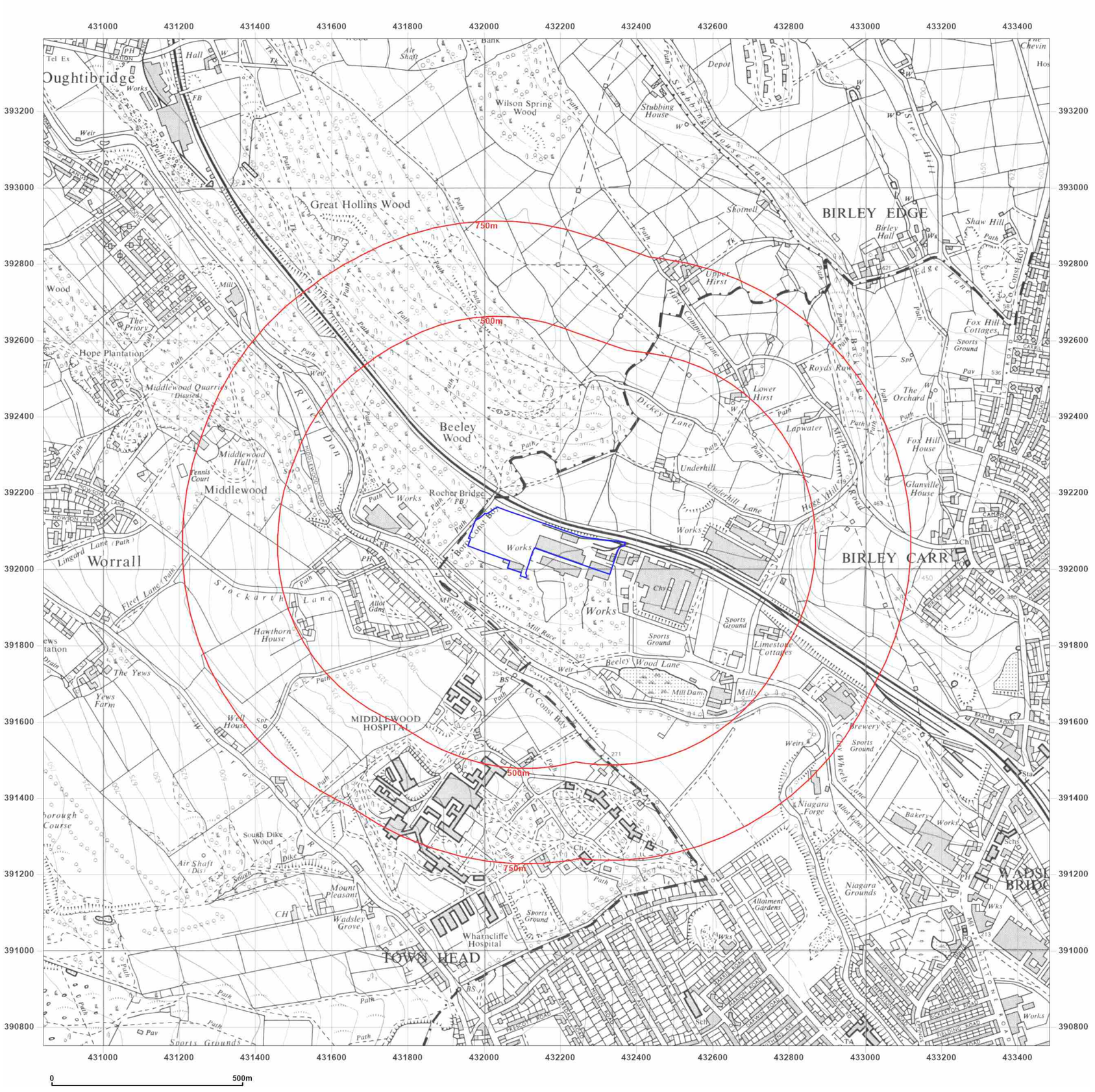

Site Details:

BLUE PHOENIX, 2 BEELEY
WOOD, BEELEY WOOD LANE,
SHEFFIELD, S6 1QT

Client Ref:	C5146-3287-SD
Report Ref:	BRO-8910867
Grid Ref:	432163, 392070

Map Name:	Provisional
Map date:	**1966**
Scale:	1:10,560
Printed at:	1:10,560

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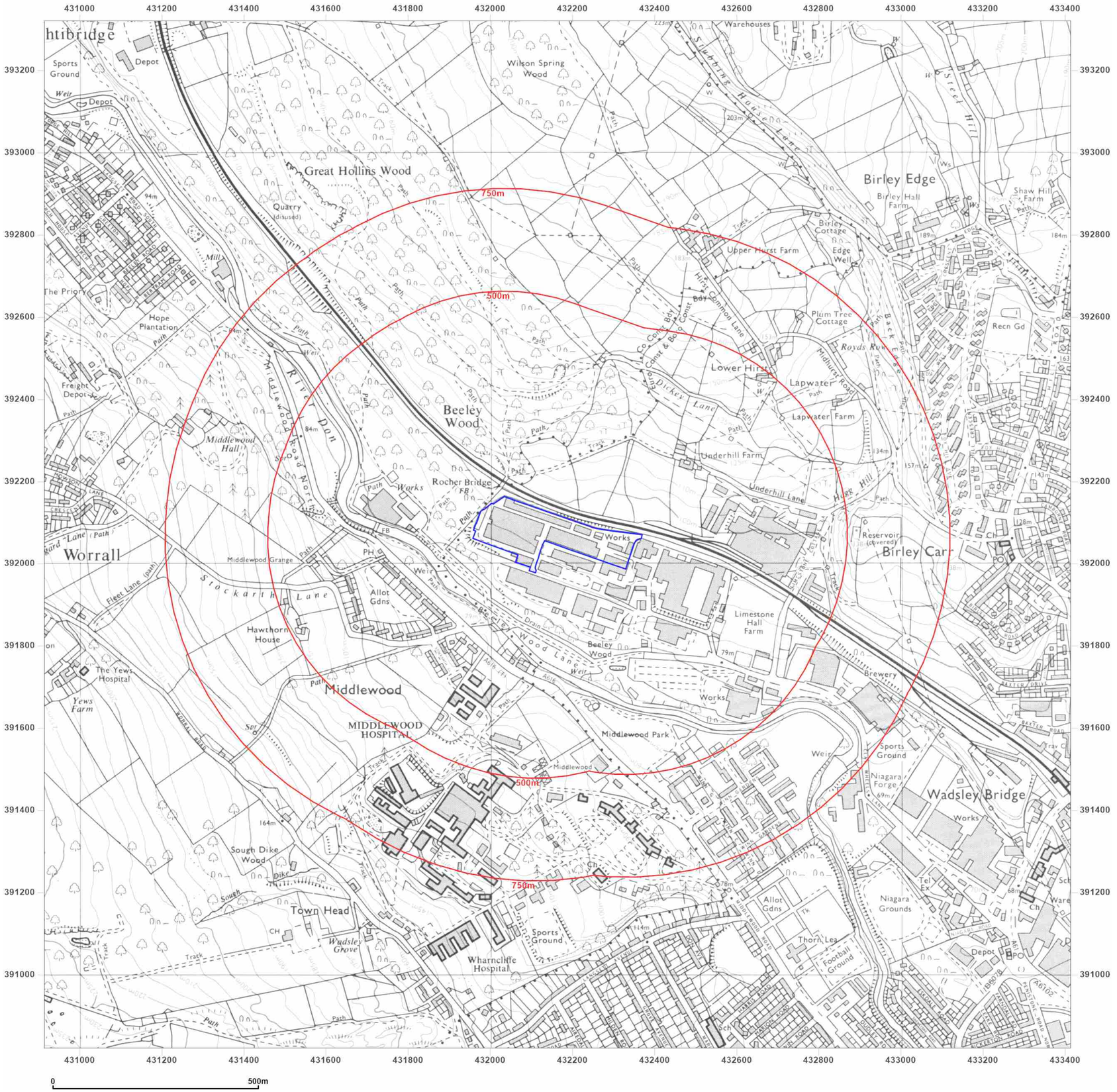

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GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

Site Details:

BLUE PHOENIX, 2 BEELEY WOOD, BEELEY WOOD LANE, SHEFFIELD, S6 1QT

Client Ref: C5146-3287-SD
Report Ref: BRO-8910867
Grid Ref: 432163, 392070

Map Name: National Grid

Map date: **1981**

Scale: 1:10,000

Printed at: 1:10,000

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Site Details:

BLUE PHOENIX, 2 BEELEY WOOD, BEELEY WOOD LANE, SHEFFIELD, S6 1QT

Client Ref: C5146-3287-SD
Report Ref: BRO-8910867
Grid Ref: 432163, 392070

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

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GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

Site Details:

BLUE PHOENIX, 2 BEELEY WOOD, BEELEY WOOD LANE, SHEFFIELD, S6 1QT

Client Ref: C5146-3287-SD
Report Ref: BRO-8910867
Grid Ref: 432163, 392070

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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2010

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Production date: 18 July 2022

Map legend available at:
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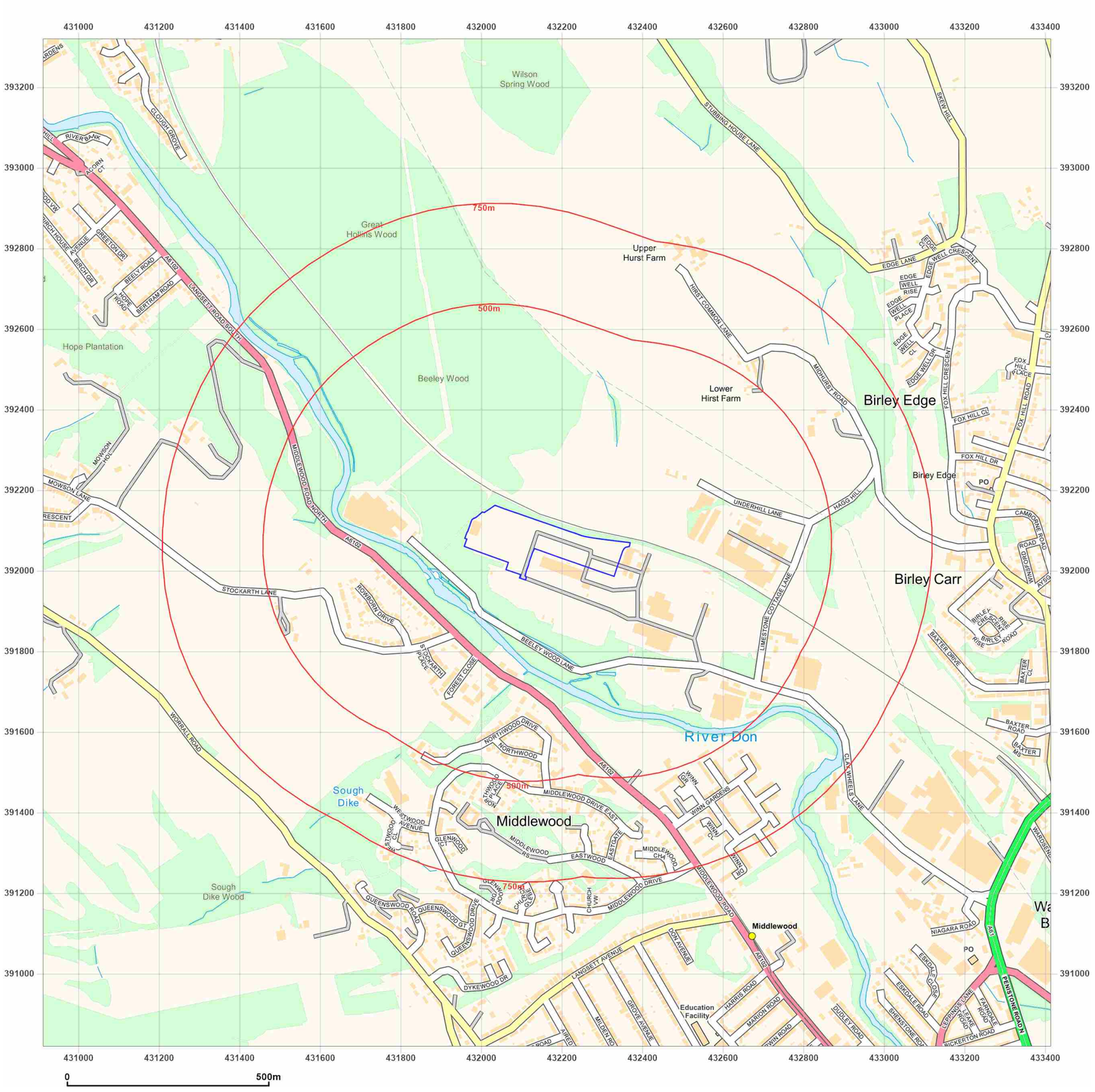

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GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

Site Details:

BLUE PHOENIX, 2 BEELEY WOOD, BEELEY WOOD LANE, SHEFFIELD, S6 1QT

Client Ref: C5146-3287-SD
Report Ref: BRO-8910867
Grid Ref: 432163, 392070

Map Name: National Grid
Map date: **2022**
Scale: 1:10,000
Printed at: 1:10,000

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2022

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Production date: 18 July 2022

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APPENDIX C

Geo-Environmental Data Report

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

BLUE PHOENIX, 2 BEELEY WOOD, BEELEY WOOD LANE, SHEFFIELD, S6 1QT

Order Details

Date: 18/07/2022

Your ref: C5146-3287-SD

Our Ref: BRO-8910869

Site Details

Location: 432125 392105

Area: 3.63 ha

Authority: Sheffield City Council

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

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	1.1	Historical industrial land uses	4	14	36	49	-
18	1.2	Historical tanks	1	2	9	15	-
20	1.3	Historical energy features	3	0	8	4	-
20	1.4	Historical petrol stations	0	0	0	0	-
21	1.5	Historical garages	0	0	0	0	-
21	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
22	2.1	Historical industrial land uses	4	17	43	62	-
27	2.2	Historical tanks	2	5	11	19	-
29	2.3	Historical energy features	4	0	10	7	-
30	2.4	Historical petrol stations	0	0	0	0	-
30	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
31	3.1	Active or recent landfill	0	0	0	0	-
31	3.2	Historical landfill (BGS records)	0	0	0	0	-
32	3.3	Historical landfill (LA/mapping records)	0	0	3	5	-
32	3.4	Historical landfill (EA/NRW records)	0	0	0	3	-
33	3.5	Historical waste sites	0	1	2	0	-
34	3.6	Licensed waste sites	0	7	6	3	-
39	3.7	Waste exemptions	0	0	1	18	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
42	4.1	Recent industrial land uses	1	3	23	-	-
44	4.2	Current or recent petrol stations	0	0	0	0	-
44	4.3	Electricity cables	0	0	0	0	-
44	4.4	Gas pipelines	0	0	0	0	-
44	4.5	Sites determined as Contaminated Land	0	0	0	0	-

45	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
45	4.7	Regulated explosive sites	0	0	0	0	-
45	4.8	Hazardous substance storage/usage	0	0	0	0	-
45	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
45	**4.10**	**Licensed industrial activities (Part A(1))**	3	0	0	4	-
47	**4.11**	**Licensed pollutant release (Part A(2)/B)**	0	0	0	1	-
47	4.12	Radioactive Substance Authorisations	0	0	0	0	-
47	**4.13**	**Licensed Discharges to controlled waters**	0	0	4	0	-
48	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
48	4.15	Pollutant release to public sewer	0	0	0	0	-
49	4.16	List 1 Dangerous Substances	0	0	0	0	-
49	**4.17**	**List 2 Dangerous Substances**	0	0	1	0	-
49	**4.18**	**Pollution Incidents (EA/NRW)**	0	0	1	8	-
50	4.19	Pollution inventory substances	0	0	0	0	-
51	4.20	Pollution inventory waste transfers	0	0	0	0	-
51	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
52	**5.1**	**Superficial aquifer**	Identified (within 500m)				
53	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
54	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
55	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
55	5.5	Groundwater vulnerability- local information	None (within 0m)				
56	**5.6**	**Groundwater abstractions**	0	0	3	0	10
60	**5.7**	**Surface water abstractions**	2	0	2	0	3
62	5.8	Potable abstractions	0	0	0	0	0
62	5.9	Source Protection Zones	0	0	0	0	-
62	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
63	**6.1**	**Water Network (OS MasterMap)**	1	1	23	-	-

66	6.2	Surface water features	0	0	6	-	-
66	6.3	WFD Surface water body catchments	1	-	-	-	-
66	6.4	WFD Surface water bodies	0	0	1	-	-
67	6.5	WFD Groundwater bodies	1	-	-	-	-

Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
68	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
69	7.2	Historical Flood Events	0	0	2	-	-
69	7.3	Flood Defences	0	0	0	-	-
69	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
70	7.5	Flood Storage Areas	0	0	0	-	-
71	7.6	Flood Zone 2	None (within 50m)				
71	7.7	Flood Zone 3	None (within 50m)				

Page	Section	Surface water flooding	
72	8.1	Surface water flooding	1 in 30 year, 0.3m - 1.0m (within 50m)

Page	Section	Groundwater flooding	
74	9.1	Groundwater flooding	Low (within 50m)

Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
75	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	1
76	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
76	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
76	10.4	Special Protection Areas (SPA)	0	0	0	0	0
76	10.5	National Nature Reserves (NNR)	0	0	0	0	0
77	10.6	Local Nature Reserves (LNR)	0	0	0	0	2
77	10.7	Designated Ancient Woodland	0	2	0	1	18
78	10.8	Biosphere Reserves	0	0	0	0	0
78	10.9	Forest Parks	0	0	0	0	0
79	10.10	Marine Conservation Zones	0	0	0	0	0
79	10.11	Green Belt	0	1	1	0	3
79	10.12	Proposed Ramsar sites	0	0	0	0	0

79	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
80	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
80	10.15	Nitrate Sensitive Areas	0	0	0	0	0
80	**10.16**	**Nitrate Vulnerable Zones**	0	0	0	0	2
81	**10.17**	**SSSI Impact Risk Zones**	1	-	-	-	-
82	**10.18**	**SSSI Units**	0	0	0	0	1
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
83	11.1	World Heritage Sites	0	0	0	-	-
84	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
84	11.3	National Parks	0	0	0	-	-
84	**11.4**	**Listed Buildings**	0	0	1	-	-
85	11.5	Conservation Areas	0	0	0	-	-
85	11.6	Scheduled Ancient Monuments	0	0	0	-	-
85	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
86	**12.1**	**Agricultural Land Classification**	Grade 4 (within 250m)				
87	12.2	Open Access Land	0	0	0	-	-
87	**12.3**	**Tree Felling Licences**	0	1	0	-	-
87	12.4	Environmental Stewardship Schemes	0	0	0	-	-
88	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
89	**13.1**	**Priority Habitat Inventory**	1	3	4	-	-
90	13.2	Habitat Networks	0	0	0	-	-
90	13.3	Open Mosaic Habitat	0	0	0	-	-
90	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
91	**14.1**	**10k Availability**	Identified (within 500m)				
92	**14.2**	**Artificial and made ground (10k)**	1	0	6	10	-
94	**14.3**	**Superficial geology (10k)**	1	0	1	0	-

95	14.4	Landslip (10k)	0	0	0	0	-
96	14.5	Bedrock geology (10k)	3	0	10	10	-
98	14.6	Bedrock faults and other linear features (10k)	2	0	3	10	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
99	15.1	50k Availability	Identified (within 500m)				
100	15.2	Artificial and made ground (50k)	0	0	0	0	-
100	15.3	Artificial ground permeability (50k)	0	0	-	-	-
101	15.4	Superficial geology (50k)	1	0	1	0	-
102	15.5	Superficial permeability (50k)	Identified (within 50m)				
102	15.6	Landslip (50k)	0	0	0	0	-
102	15.7	Landslip permeability (50k)	None (within 50m)				
103	15.8	Bedrock geology (50k)	3	0	10	10	-
105	15.9	Bedrock permeability (50k)	Identified (within 50m)				
105	15.10	Bedrock faults and other linear features (50k)	1	0	3	6	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
106	16.1	BGS Boreholes	17	18	26	-	-
Page	Section	Natural ground subsidence					
110	17.1	Shrink swell clays	Very low (within 50m)				
111	17.2	Running sands	Very low (within 50m)				
113	17.3	Compressible deposits	Negligible (within 50m)				
114	17.4	Collapsible deposits	Very low (within 50m)				
115	17.5	Landslides	Moderate (within 50m)				
117	17.6	Ground dissolution of soluble rocks	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
119	18.1	Natural cavities	0	0	0	0	-
120	18.2	BritPits	0	0	2	3	-
121	18.3	Surface ground workings	1	14	30	-	-
123	18.4	Underground workings	0	0	2	3	5
123	18.5	Historical Mineral Planning Areas	0	0	0	1	-

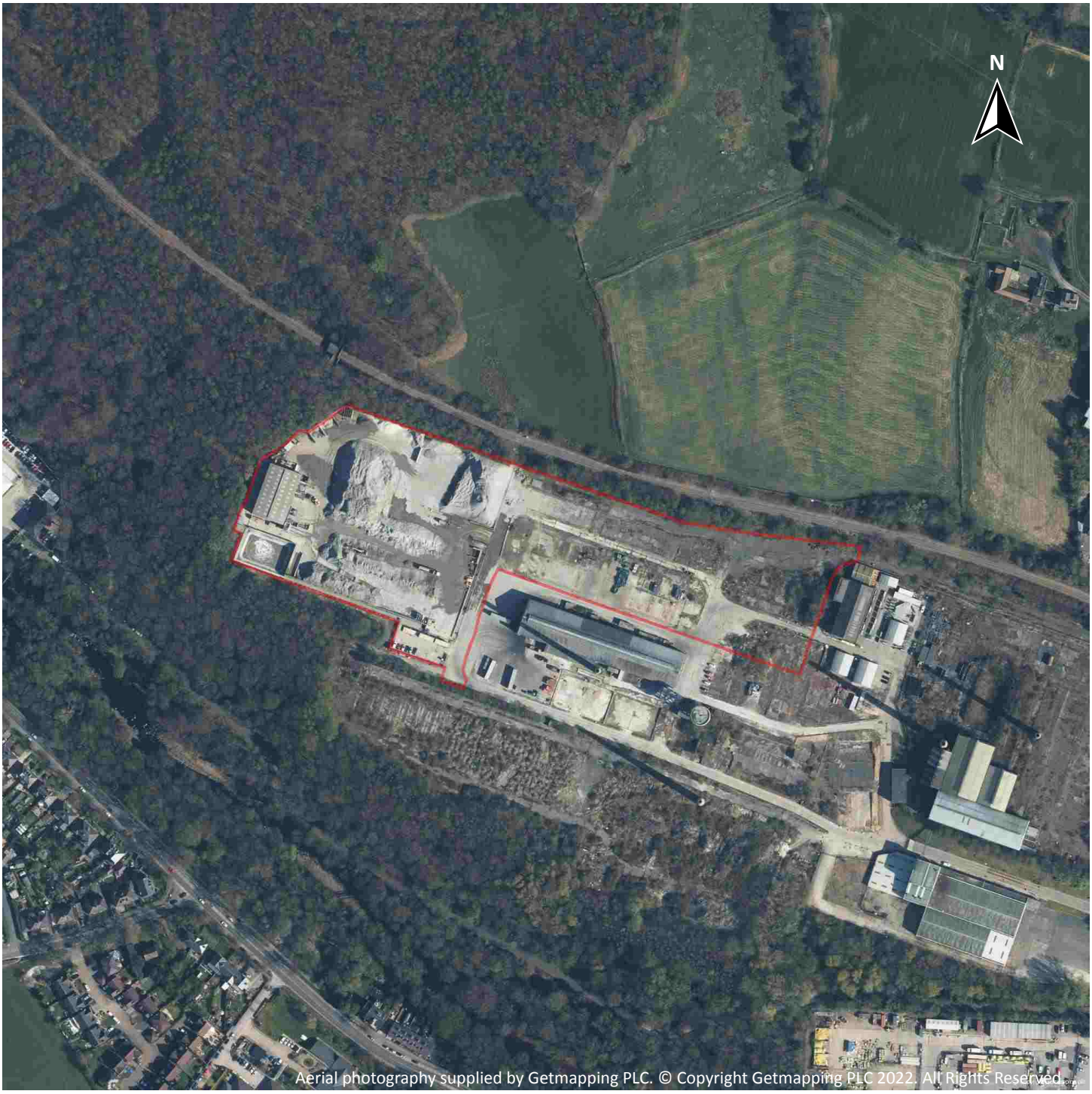
124	**18.6**	**Non-coal mining**	0	0	1	0	7
125	**18.7**	**Mining cavities**	0	0	0	1	0
125	18.8	JPB mining areas	None (within 0m)				
125	**18.9**	**Coal mining**	Identified (within 0m)				
126	18.10	Brine areas	None (within 0m)				
126	18.11	Gypsum areas	None (within 0m)				
126	18.12	Tin mining	None (within 0m)				
126	18.13	Clay mining	None (within 0m)				

Page	Section	Radon	
127	**19.1**	**Radon**	Less than 1% (within 0m)

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
128	**20.1**	**BGS Estimated Background Soil Chemistry**	13	4	-	-	-
129	**20.2**	**BGS Estimated Urban Soil Chemistry**	13	5	-	-	-
130	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-

Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
131	21.1	Underground railways (London)	0	0	0	-	-
131	21.2	Underground railways (Non-London)	0	0	0	-	-
132	21.3	Railway tunnels	0	0	0	-	-
132	**21.4**	**Historical railway and tunnel features**	6	4	7	-	-
133	21.5	Royal Mail tunnels	0	0	0	-	-
133	**21.6**	**Historical railways**	0	0	1	-	-
133	**21.7**	**Railways**	0	4	7	-	-
134	21.8	Crossrail 1	0	0	0	0	-
134	21.9	Crossrail 2	0	0	0	0	-
134	21.10	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 19/04/2021

Site Area: 3.63ha

Recent site history - 2018 aerial photograph

Capture Date: 27/06/2018

Site Area: 3.63ha

Recent site history - 2012 aerial photograph

Capture Date: 28/05/2012

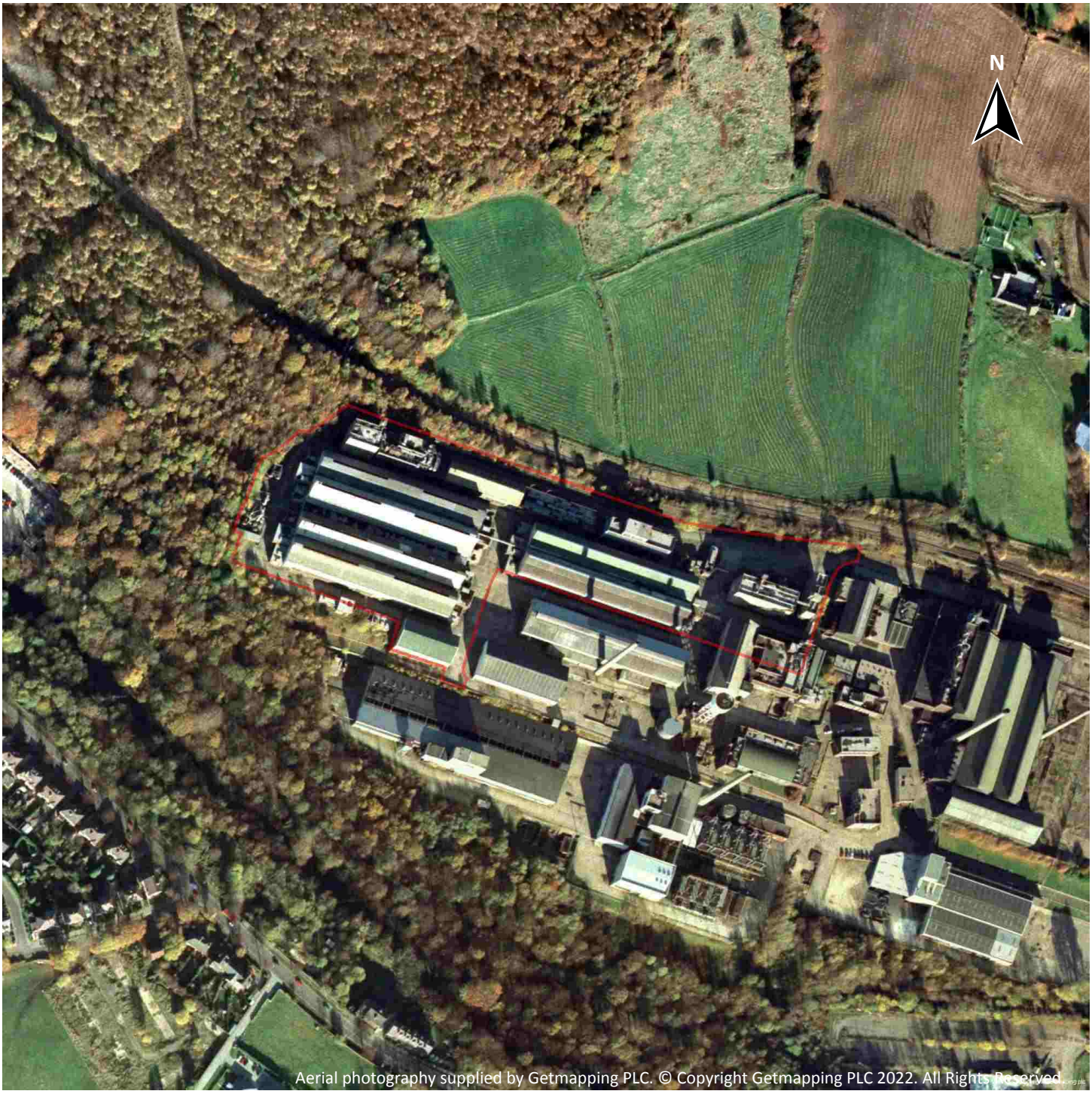
Site Area: 3.63ha

Recent site history - 2009 aerial photograph

Capture Date: 11/09/2009

Site Area: 3.63ha

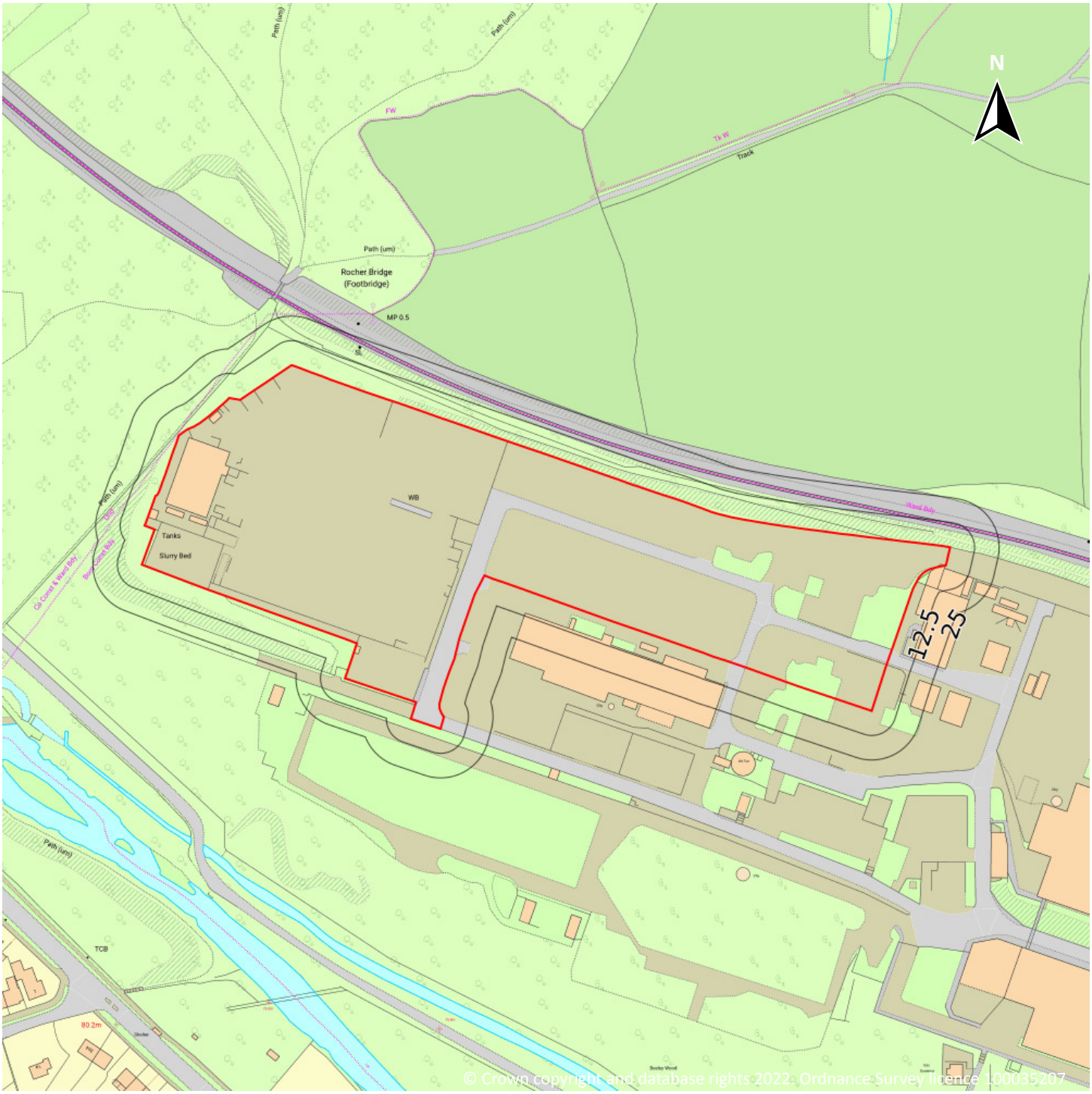
Recent site history - 1999 aerial photograph



Capture Date: 17/11/1999

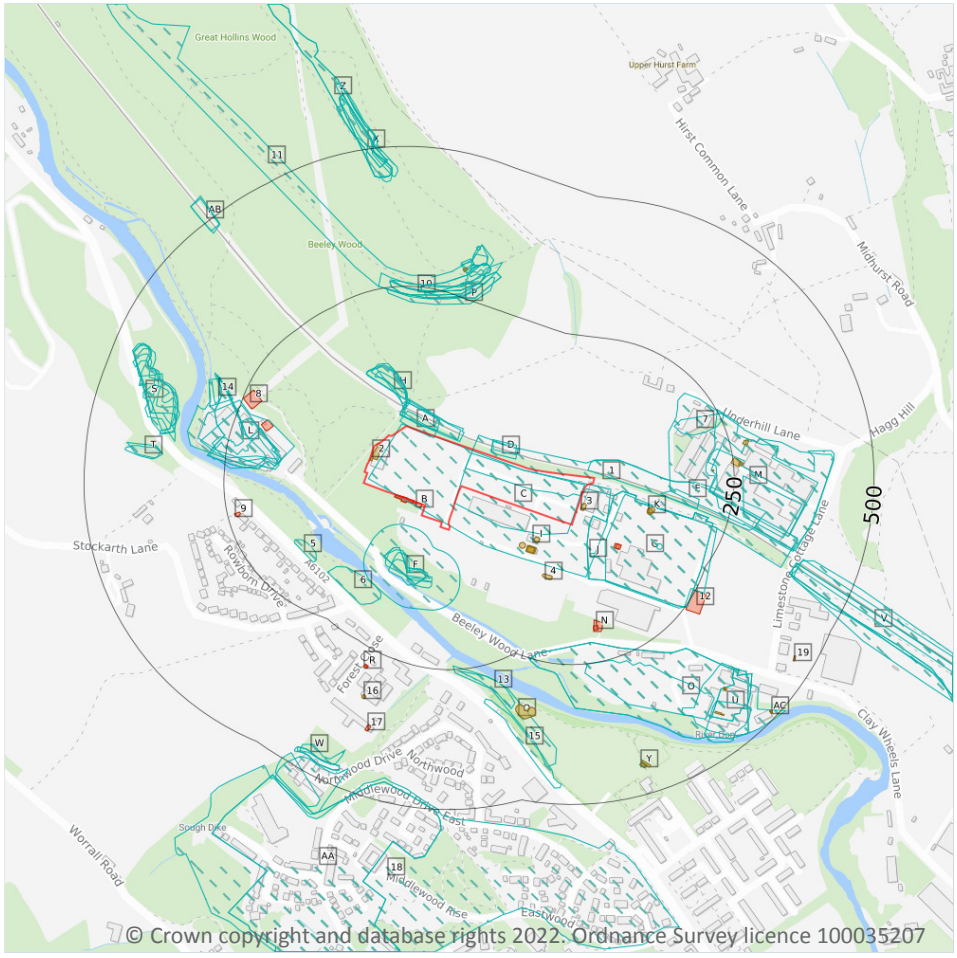
Site Area: 3.63ha

OS MasterMap site plan



Site Area: 3.63ha

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	103

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

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

ID	Location	Land use	Dates present	Group ID
1	**On site**	**Railway Sidings**	**1966**	**1621636**

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Cuttings**	**1924**	**1744883**
C	**On site**	**Unspecified Works**	**1966**	**1699847**
C	**On site**	**Unspecified Works**	**1981**	**1736412**
A	6m N	Cuttings	1948 - 1951	1625674
D	6m N	Cuttings	1938	1642859
A	7m N	Cuttings	1938	1678259
A	9m N	Cuttings	1890	1636485
E	10m N	Railway Sidings	1981	1676660
A	10m N	Cuttings	1901 - 1920	1698540
D	12m N	Cuttings	1951	1646272
F	26m S	Old Gannister Level	1920	1643387
G	29m E	Electrode Works	1951	1577255
G	29m E	Unspecified Works	1966	1620357
H	30m N	Unspecified Old Quarry	1924	1650838
H	41m N	Unspecified Old Quarry	1901 - 1920	1718800
H	48m N	Unspecified Pit	1948	1695219
H	49m N	Unspecified Quarry	1938	1581969
H	57m N	Unspecified Pit	1966 - 1981	1749918
G	60m SE	Unspecified Commercial/Industrial	1981	1562827
J	61m SE	Unspecified Tank	1951	1593146
F	70m SW	Unspecified Pit	1966	1638585
F	70m SW	Unspecified Pit	1951	1736833
F	71m SW	Old Gannister Level	1938	1663149
F	76m S	Gannister Level	1948	1579693
F	88m S	Old Gannister Level	1924	1617135
E	122m E	Cuttings	1951	1561844
L	133m W	Unspecified Works	1966 - 1981	1639314
M	135m E	Canning Factory	1938 - 1948	1715931

ID	Location	Land use	Dates present	Group ID
5	147m SW	Unspecified Heap	1938	1730818
6	150m SW	Unspecified Heap	1966	1569041
L	150m W	Steel Works	1920	1624065
L	150m W	Forge	1948	1712037
L	153m W	Steel Works	1890 - 1901	1622815
L	153m W	Steel Works	1924	1628207
G	156m E	Chimney	1966	1606024
L	158m W	Forge	1951	1622767
7	170m NE	Unspecified Heap	1966	1569124
L	177m W	Forge	1938	1629062
M	200m E	Unspecified Works	1966	1598429
M	205m E	Canning Factory	1951	1696537
M	207m E	Unspecified Commercial/Industrial	1981	1562826
O	213m S	Rolling Mills	1920	1666261
O	213m S	Rolling Mills	1938 - 1948	1698587
P	222m N	Refuse Heap	1924	1714473
P	231m N	Railway Sidings	1924	1560873
P	232m N	Refuse Heap	1920	1631434
P	232m N	Refuse Heap	1948	1721189
10	235m N	Refuse Heap	1938	1724540
11	235m N	Tramway Sidings	1938	1715028
P	238m N	Refuse Heap	1966	1647625
Q	243m S	Unspecified Heap	1951	1642053
P	244m N	Tramway Sidings	1948	1713608
P	244m N	Tramway Sidings	1920	1735664
O	250m S	Unspecified Mill	1966	1575427
13	253m S	Unspecified Heap	1966	1622488
M	266m E	Canning Factory	1938	1701806

ID	Location	Land use	Dates present	Group ID
14	266m W	Refuse Heap	1966	1596899
P	267m N	Railway Building	1920	1584856
P	277m N	Coal and Gannister Level	1924	1730876
P	290m N	Coal and Gannister Level	1920	1713825
P	294m N	Coal and Gannister Level	1948	1702427
P	294m N	Unspecified Tank	1938 - 1948	1719730
P	299m N	Unspecified Tank	1951	1675628
P	309m N	Unspecified Pit	1966 - 1981	1667917
15	310m S	Unspecified Ground Workings	1924	1565866
P	340m N	Coal and Gannister Level	1938	1719591
S	344m W	Unspecified Ground Workings	1924	1614796
S	346m W	Unspecified Heap	1920	1704125
S	348m W	Unspecified Ground Workings	1948	1661967
S	348m W	Unspecified Heaps	1938	1660733
S	354m W	Unspecified Heap	1951	1627126
T	362m W	Cuttings	1966	1561847
U	365m SE	Unspecified Works	1981	1598430
T	367m W	Unspecified Pit	1901	1609914
V	387m SE	Railway Sidings	1948	1711606
V	387m SE	Railway Sidings	1920	1728979
U	387m SE	Unspecified Mills	1966	1573167
U	387m SE	Rolling Mills	1951	1736330
V	389m SE	Railway Sidings	1951	1627237
V	390m SE	Railway Sidings	1924	1653564
V	395m SE	Railway Sidings	1938	1670643
U	408m SE	Rolling Mills	1924	1699489
W	434m SW	Unspecified Pit	1966 - 1981	1746632
X	438m N	Old Gannister Quarries	1924	1576564

ID	Location	Land use	Dates present	Group ID
Y	442m S	Sewage Tanks	1938	1693210
Y	442m S	Sewage Tanks	1948	1728587
X	446m N	Unspecified Ground Workings	1981	1719661
X	447m N	Unspecified Quarry	1901	1581968
X	447m N	Old Gannister Quarry	1920	1601479
X	447m N	Unspecified Ground Workings	1948	1730758
18	458m S	Mental Hospital	1938 - 1948	1661942
W	463m S	Unspecified Ground Workings	1924	1565867
W	463m SW	Unspecified Ground Workings	1938	1747335
W	464m SW	Unspecified Ground Workings	1948	1701786
Z	465m N	Unspecified Pits	1966	1626957
Z	465m N	Unspecified Pits	1951	1673908
AA	465m S	Hospital	1966 - 1981	1655519
AA	465m S	Hospital	1951	1748820
X	472m N	Unspecified Ground Workings	1938	1663990
AB	477m NW	Unspecified Pit	1938	1626495
AB	482m NW	Cuttings	1948 - 1951	1712759
W	484m SW	Unspecified Pit	1890	1705964

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**27**

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
2	**On site**	**Tanks**	**1971 - 1991**	**266754**
3	5m E	Unspecified Tank	1961 - 1993	273014
I	41m S	Unspecified Tank	1961	253633
I	58m S	Unspecified Tank	1993	253632
I	60m S	Tanks	1961	273478
I	60m S	Tanks	1968	274426
I	61m S	Tanks	1993	266849
4	98m S	Tanks	1993	260312
K	108m SE	Unspecified Tank	1961 - 1991	267925
K	109m SE	Unspecified Tank	1993	265447
M	211m E	Unspecified Tank	1957	253634
M	246m E	Unspecified Tank	1961	270030
M	259m E	Unspecified Tank	1968	269944
M	272m E	Cooling Tank	1961 - 1968	277406
P	295m N	Tanks	1934	260310
16	330m SW	Unspecified Tank	1892 - 1905	272986
Q	334m S	Tanks	1961	260311
U	398m SE	Unspecified Tank	1968	275482
U	398m SE	Unspecified Tank	1965	276948
U	401m SE	Unspecified Tank	1961	272730
U	421m SE	Tanks	1934	260313
Y	440m S	Sewage Tanks	1952	259439
Y	444m S	Sewage Tanks	1934	259438
19	461m SE	Unspecified Tank	1993	253872
AC	485m SE	Unspecified Tank	1968	271802
AC	486m SE	Unspecified Tank	1965 - 1984	275821
AC	488m SE	Unspecified Tank	1961	273945

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	15

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
B	**On site**	**Electricity Substation**	**1993**	**148513**
B	**On site**	**Electricity Substation**	**1968**	**157025**
B	**On site**	**Electricity Substation**	**1961 - 1991**	**166537**
J	84m SE	Electricity Substation	1968	153667
J	87m SE	Electricity Substation	1961	155316
N	175m S	Gas Governor	1961	167498
L	181m W	Electricity Substation	1971 - 1991	160116
N	185m S	Gas Governor	1993	166170
8	217m W	Electricity Substation	1971 - 1991	163303
9	227m W	Electricity Substation	1991	148510
12	246m SE	Electricity Substation	1993	148495
L	270m W	Electricity Substation	1971	148514
R	279m SW	Gas Governor	1977	158801
R	280m SW	Gas Governor	1984 - 1991	165748
17	377m S	Electricity Substation	1977 - 1991	164201

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.

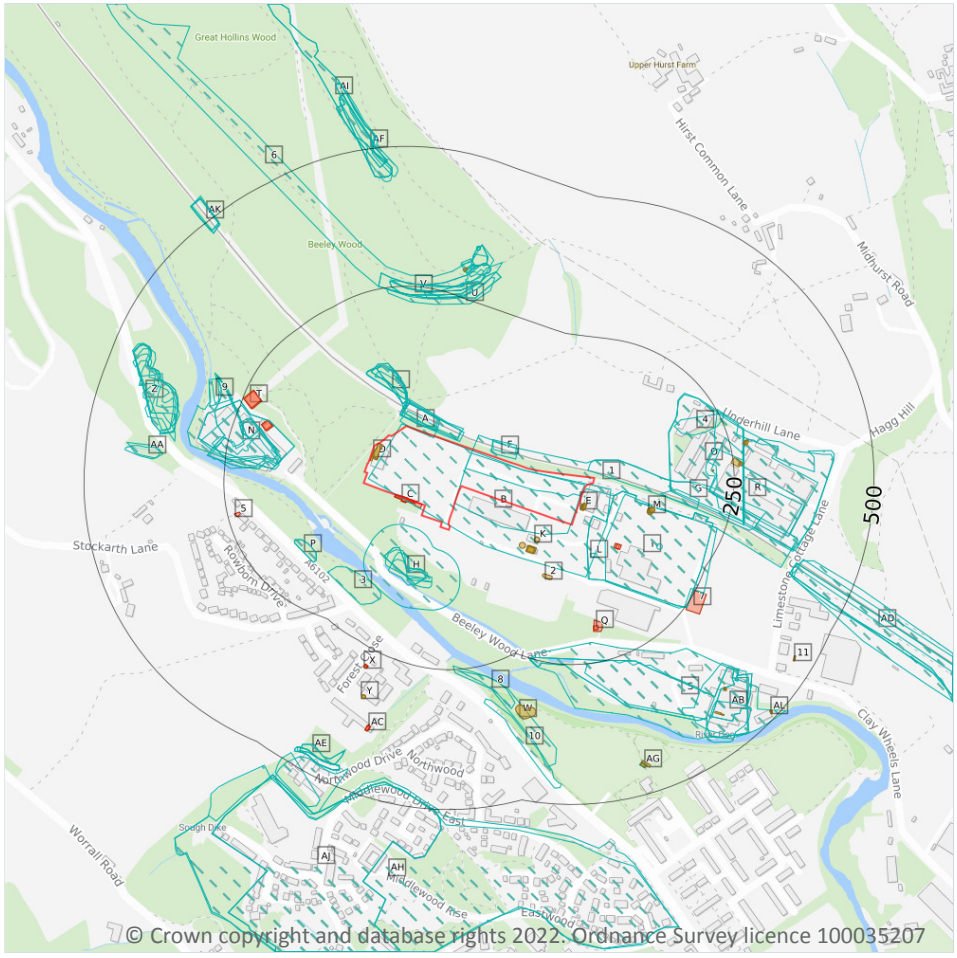
1.6 Historical military land

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	126

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 22**

ID	Location	Land Use	Date	Group ID
1	**On site**	**Railway Sidings**	**1966**	**1621636**
A	**On site**	**Cuttings**	**1924**	**1744883**
B	**On site**	**Unspecified Works**	**1981**	**1736412**

ID	Location	Land Use	Date	Group ID
B	**On site**	**Unspecified Works**	**1966**	**1699847**
A	6m N	Cuttings	1948	1625674
F	6m N	Cuttings	1938	1642859
A	7m N	Cuttings	1938	1678259
A	9m N	Cuttings	1890	1636485
G	10m N	Railway Sidings	1981	1676660
A	10m N	Cuttings	1920	1698540
A	10m N	Cuttings	1901	1698540
A	11m N	Cuttings	1951	1625674
F	12m N	Cuttings	1951	1646272
H	26m S	Old Gannister Level	1920	1643387
I	29m E	Unspecified Works	1966	1620357
I	29m E	Electrode Works	1951	1577255
J	30m N	Unspecified Old Quarry	1924	1650838
J	41m N	Unspecified Old Quarry	1901	1718800
J	41m N	Unspecified Old Quarry	1920	1718800
J	48m N	Unspecified Pit	1948	1695219
J	49m N	Unspecified Quarry	1938	1581969
J	57m N	Unspecified Pit	1981	1749918
J	57m N	Unspecified Pit	1966	1749918
I	60m SE	Unspecified Commercial/Industrial	1981	1562827
L	61m SE	Unspecified Tank	1951	1593146
H	70m SW	Unspecified Pit	1966	1638585
H	70m SW	Unspecified Pit	1951	1736833
H	71m SW	Old Gannister Level	1938	1663149
H	76m S	Gannister Level	1948	1579693
H	88m S	Old Gannister Level	1924	1617135
G	122m E	Cuttings	1951	1561844

ID	Location	Land Use	Date	Group ID
N	133m W	Unspecified Works	1981	1639314
N	133m W	Unspecified Works	1966	1639314
O	135m E	Canning Factory	1938	1715931
O	136m E	Canning Factory	1948	1715931
P	147m SW	Unspecified Heap	1938	1730818
P	147m SW	Unspecified Heap	1938	1730818
3	150m SW	Unspecified Heap	1966	1569041
N	150m W	Forge	1948	1712037
N	150m W	Steel Works	1920	1624065
N	153m W	Steel Works	1901	1622815
N	153m W	Steel Works	1924	1628207
I	156m E	Chimney	1966	1606024
N	158m W	Forge	1951	1622767
N	159m W	Steel Works	1890	1622815
4	170m NE	Unspecified Heap	1966	1569124
N	177m W	Forge	1938	1629062
R	200m E	Unspecified Works	1966	1598429
R	205m E	Canning Factory	1951	1696537
R	207m E	Unspecified Commercial/Industrial	1981	1562826
S	213m S	Rolling Mills	1938	1698587
U	222m N	Refuse Heap	1924	1714473
U	231m N	Railway Sidings	1924	1560873
U	232m N	Refuse Heap	1948	1721189
U	232m N	Refuse Heap	1920	1631434
6	235m N	Tramway Sidings	1938	1715028
V	235m N	Refuse Heap	1938	1724540
V	235m N	Refuse Heap	1938	1724540
U	238m N	Refuse Heap	1966	1647625

ID	Location	Land Use	Date	Group ID
S	240m S	Rolling Mills	1948	1698587
S	240m S	Rolling Mills	1920	1666261
W	243m S	Unspecified Heap	1951	1642053
U	244m N	Tramway Sidings	1948	1713608
U	244m N	Tramway Sidings	1920	1735664
S	250m S	Unspecified Mill	1966	1575427
8	253m S	Unspecified Heap	1966	1622488
R	266m E	Canning Factory	1948	1715931
R	266m E	Canning Factory	1938	1701806
9	266m W	Refuse Heap	1966	1596899
U	267m N	Railway Building	1920	1584856
U	277m N	Coal and Gannister Level	1924	1730876
U	290m N	Coal and Gannister Level	1920	1713825
U	294m N	Coal and Gannister Level	1948	1702427
U	294m N	Unspecified Tank	1948	1719730
U	295m N	Unspecified Tank	1938	1719730
U	299m N	Unspecified Tank	1951	1675628
U	309m N	Unspecified Pit	1981	1667917
U	309m N	Unspecified Pit	1966	1667917
10	310m S	Unspecified Ground Workings	1924	1565866
U	340m N	Coal and Gannister Level	1938	1719591
U	340m N	Coal and Gannister Level	1938	1719591
Z	344m W	Unspecified Ground Workings	1924	1614796
Z	346m W	Unspecified Heap	1920	1704125
Z	348m W	Unspecified Ground Workings	1948	1661967
Z	348m W	Unspecified Heaps	1938	1660733
Z	348m W	Unspecified Heaps	1938	1660733
Z	354m W	Unspecified Heap	1951	1627126

ID	Location	Land Use	Date	Group ID
AA	362m W	Cuttings	1966	1561847
AB	365m SE	Unspecified Works	1981	1598430
AA	367m W	Unspecified Pit	1901	1609914
AD	387m SE	Railway Sidings	1948	1711606
AD	387m SE	Railway Sidings	1920	1728979
AB	387m SE	Unspecified Mills	1966	1573167
AB	387m SE	Rolling Mills	1951	1736330
AD	389m SE	Railway Sidings	1951	1627237
AD	390m SE	Railway Sidings	1924	1653564
AD	395m SE	Railway Sidings	1938	1670643
AB	408m SE	Rolling Mills	1924	1699489
AE	434m SW	Unspecified Pit	1981	1746632
AE	434m SW	Unspecified Pit	1966	1746632
AF	438m N	Old Gannister Quarries	1924	1576564
AG	442m S	Sewage Tanks	1938	1693210
AG	442m S	Sewage Tanks	1938	1693210
AG	442m S	Sewage Tanks	1948	1728587
AF	446m N	Unspecified Ground Workings	1981	1719661
AF	447m N	Unspecified Quarry	1901	1581968
AF	447m N	Old Gannister Quarry	1920	1601479
AF	447m N	Unspecified Ground Workings	1948	1730758
AH	458m S	Mental Hospital	1948	1661942
AE	463m S	Unspecified Ground Workings	1924	1565867
AE	463m SW	Unspecified Ground Workings	1938	1747335
AE	463m SW	Unspecified Ground Workings	1938	1747335
AE	464m SW	Unspecified Ground Workings	1948	1701786
AI	465m N	Unspecified Pits	1966	1626957
AI	465m N	Unspecified Pits	1951	1673908

ID	Location	Land Use	Date	Group ID
AJ	465m S	Hospital	1981	1655519
AJ	465m S	Hospital	1966	1655519
AJ	465m S	Hospital	1951	1748820
AH	469m S	Mental Hospital	1938	1661942
AF	472m N	Unspecified Ground Workings	1938	1663990
AF	472m N	Unspecified Ground Workings	1938	1663990
AK	477m NW	Unspecified Pit	1938	1626495
AK	477m NW	Unspecified Pit	1938	1626495
AK	482m NW	Cuttings	1951	1712759
AK	483m NW	Cuttings	1948	1712759
AE	484m SW	Unspecified Pit	1890	1705964

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**37**

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 22**

ID	Location	Land Use	Date	Group ID
D	**On site**	**Tanks**	**1971**	**266754**
D	**On site**	**Tanks**	**1991**	**266754**
E	5m E	Unspecified Tank	1968	273014
E	6m E	Unspecified Tank	1993	273014
E	9m E	Unspecified Tank	1961	273014
E	9m E	Unspecified Tank	1991	273014
K	41m S	Unspecified Tank	1961	253633
K	58m S	Unspecified Tank	1993	253632
K	60m S	Tanks	1961	273478

ID	Location	Land Use	Date	Group ID
K	60m S	Tanks	1968	274426
K	61m S	Tanks	1993	266849
2	98m S	Tanks	1993	260312
M	108m SE	Unspecified Tank	1968	267925
M	109m SE	Unspecified Tank	1993	265447
M	111m SE	Unspecified Tank	1961	267925
M	111m SE	Unspecified Tank	1991	267925
O	211m E	Unspecified Tank	1957	253634
O	246m E	Unspecified Tank	1961	270030
O	259m E	Unspecified Tank	1968	269944
O	272m E	Cooling Tank	1968	277406
O	275m E	Cooling Tank	1961	277406
U	295m N	Tanks	1934	260310
Y	330m SW	Unspecified Tank	1892	272986
Y	330m SW	Unspecified Tank	1905	272986
W	334m S	Tanks	1961	260311
AB	398m SE	Unspecified Tank	1968	275482
AB	398m SE	Unspecified Tank	1965	276948
AB	401m SE	Unspecified Tank	1961	272730
AB	421m SE	Tanks	1934	260313
AG	440m S	Sewage Tanks	1952	259439
AG	444m S	Sewage Tanks	1934	259438
11	461m SE	Unspecified Tank	1993	253872
AL	485m SE	Unspecified Tank	1968	271802
AL	486m SE	Unspecified Tank	1965	275821
AL	486m SE	Unspecified Tank	1981	275821
AL	486m SE	Unspecified Tank	1984	275821
AL	488m SE	Unspecified Tank	1961	273945

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	21

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 22**

ID	Location	Land Use	Date	Group ID
C	**On site**	**Electricity Substation**	**1968**	**157025**
C	**On site**	**Electricity Substation**	**1961**	**166537**
C	**On site**	**Electricity Substation**	**1991**	**166537**
C	**On site**	**Electricity Substation**	**1993**	**148513**
L	84m SE	Electricity Substation	1968	153667
L	87m SE	Electricity Substation	1961	155316
Q	175m S	Gas Governor	1961	167498
N	181m W	Electricity Substation	1971	160116
N	184m W	Electricity Substation	1991	160116
Q	185m S	Gas Governor	1993	166170
T	217m W	Electricity Substation	1971	163303
T	219m W	Electricity Substation	1991	163303
5	227m W	Electricity Substation	1991	148510
7	246m SE	Electricity Substation	1993	148495
N	270m W	Electricity Substation	1971	148514
X	279m SW	Gas Governor	1977	158801
X	280m SW	Gas Governor	1984	165748
X	280m SW	Gas Governor	1991	165748
AC	377m S	Electricity Substation	1977	164201
AC	378m S	Electricity Substation	1984	164201
AC	378m S	Electricity Substation	1991	164201

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

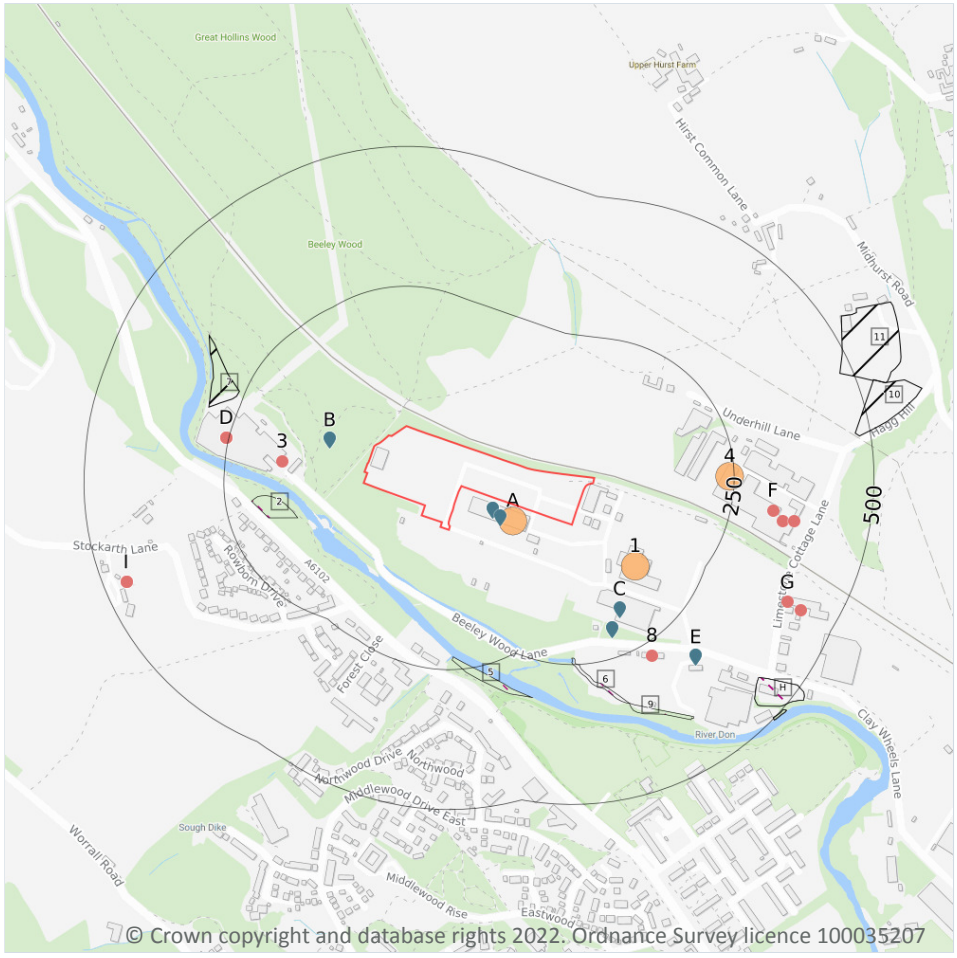
2.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



Site Outline

Search buffers in metres (m)

Historical landfill (EA/NRW)

Historical landfill (LA/OS)

Historical waste sites

Licensed waste sites

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	8

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

Features are displayed on the Waste and landfill map on **page 31**

ID	Location	Site address	Source	Data type
2	133m SW	Refuse Tip	1971 mapping	Polygon
5	227m S	Refuse Tip	1968 mapping	Polygon
6	238m S	Refuse Tip	1968 mapping	Polygon
9	335m S	Refuse Tip	1968 mapping	Polygon
H	431m SE	Refuse Tip	1968 mapping	Polygon
H	431m SE	Refuse Tip	1965 mapping	Polygon
H	498m SE	Refuse Tip	1968 mapping	Polygon
H	499m SE	Refuse Tip	1965 mapping	Polygon

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	3

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

Features are displayed on the Waste and landfill map on **page 31**

ID	Location	Details		
7	260m W	Site Address: Beeley Wood, Forge Licence Holder Address: -	Waste Licence: - Site Reference: 4400/(70) Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: - Licence Holder: Previously Spencer Clark Metal Industries First Recorded - Last Recorded: 31/10/1977

ID	Location	Details		
10	473m E	Site Address: Lapwater Farm, Midhurst Road, Sheffield Licence Holder Address: Nursery Lane, Sprotbrough, Doncaster	Waste Licence: Yes Site Reference: 4400/S231, WD20 S231 Waste Type: Inert, Industrial, Commercial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 01/04/1980 Licence Surrender: 29/04/1994	Operator: - Licence Holder: VHE Plant Services Limited First Recorded 01/04/1980 Last Recorded: 29/04/1994
11	477m NE	Site Address: Lapwater Farm, Midhurst Road, Sheffield Licence Holder Address: Nursery Lane, Sprotbrough, Doncaster	Waste Licence: Yes Site Reference: S231(10), 4400/S321, 4400/S306, WD20 S306, WD20/S321, 4400/0132 Waste Type: Inert, Industrial, Commercial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 31/12/1980 Licence Surrender: 14/06/1988	Operator: - Licence Holder: VHE Plant Services Limited First Recorded 31/12/1980 Last Recorded: 14/06/1988

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

3.5 Historical waste sites

Records within 500m **3**

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

Features are displayed on the Waste and landfill map on **page 31**

ID	Location	Address	Further Details	Date
A	3m S	Site Address: Yorkshire Wastecare Ltd, 2 Beeley Wood Lane, Beeley Wood Recycling Village, SHEFFIELD, South Yorkshire, S6 1QT	Type of Site: Waste Transfer Station Planning application reference: 11/03496/FUL Description: Scheme comprises use of land as waste transfer station. An application (ref: 11/03496/FUL) for detailed planning permission was submitted to Sheffield C.C. Data source: Historic Planning Application Data Type: Point	01/09/2012

ID	Location	Address	Further Details	Date
1	110m SE	Site Address: Beeley Wood Recycling, Village, 2 Beeley Wood Lane, Theaker Recycling Ltd, SHEFFIELD, South Yorkshire, S6 1QT	Type of Site: Recycling Facility Planning application reference: 11/00566/FUL Description: Scheme comprises construction of industrial building and use of land for timber recycling, open material storage and vehicle hardstanding. Construction - steel cladding walls; mono pitched, steel cladding roof; metal, roller shutter doors; black top su acing, hardcore site works. An application (ref: 11/00566/FUL) for detailed planning permission was submitted to Sheffield C.C. The start date, contract period and project value are for guideline only. Detailed plans submitted. Data source: Historic Planning Application Data Type: Point	06/08/2012
4	216m E	Site Address: Nutwood Trading Estate,18, Limestone Cottage Lane, SHEFFIELD, South Yorkshire, S6 1NJ	Type of Site: Waste Recycling Centre Planning application reference: 11/01814/CHU Description: Scheme comprises change of use of storage unit to skip hire and waste recycling premises, and construction of associated storage bays. An application (ref: 11/01814/CHU) for detailed planning permission was withdrawn from Sheffield C.C. A detailed planni ng application has been withdrawn. Data source: Historic Planning Application Data Type: Point	-

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

3.6 Licensed waste sites

Records within 500m	**16**

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

Features are displayed on the Waste and landfill map on **page 31**

ID	Location	Details		
A	22m S	Site Name: Beeley Wood Recycling Village Site Address: Beeley Wood Recycling Village, Claywheels Lane, Sheffield, South Yorkshire, S6 1NF Correspondence Address: -	Type of Site: Physico-Chemical Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WAS193 EPR reference: EA/EPR/BB3602XW/V Operator: Waste Recycling And Diversion Limited Waste Management licence No: 101374 Annual Tonnage: 324998	Issue Date: 29/01/2010 Effective Date: 21/05/2014 Modified: 19/06/2014 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified
A	22m S	Site Name: 4recycling Ltd Site Address: Beeley Wood Recycling Village, Claywheels Lane, Sheffield, South Yorkshire, S6 1NF Correspondence Address: -	Type of Site: 75kte HCI Waste TS + treatment Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 4RE041 EPR reference: EA/EPR/FP3697EB/V002 Operator: 4recycling Limited Waste Management licence No: 101374 Annual Tonnage: 324998	Issue Date: 29/01/2010 Effective Date: - Modified: 31/03/2011 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified
A	22m S	Site Name: Beeley Wood Recycling Village Site Address: Beeley Wood Recycling Village, Claywheels Lane, Sheffield, South Yorkshire, S6 1NF Correspondence Address: -	Type of Site: Physico-Chemical Treatment Facility Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BEE038 EPR reference: EA/EPR/CB3307HX/T001 Operator: U D R Beeley Wood Limited Waste Management licence No: 101374 Annual Tonnage: 324998	Issue Date: 29/01/2010 Effective Date: 10/12/2014 Modified: 19/06/2014 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred

ID	Location	Details		
A	22m S	Site Name: 4recycling Ltd Site Address: Beeley Wood Recycling Village, Claywheels Lane, Sheffield, South Yorkshire, S6 1NF Correspondence Address: -	Type of Site: Physico-Chemical Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 4RE041 EPR reference: EA/EPR/FP3697EB/V002 Operator: 4recycling Limited Waste Management licence No: 101374 Annual Tonnage: 324998	Issue Date: 29/01/2010 Effective Date: - Modified: 31/03/2011 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified
A	22m S	Site Name: Beeley Wood Recycling Village Site Address: Beeley Wood Recycling Village, Claywheels Lane, Sheffield, South Yorkshire, S6 1QT Correspondence Address: -	Type of Site: Physico-Chemical Treatment Facility Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WRD001 EPR reference: EA/EPR/DB3709KJ/T001 Operator: Waste Recycling And Destruction Limited Waste Management licence No: 101374 Annual Tonnage: 324998	Issue Date: 29/01/2010 Effective Date: 30/09/2016 Modified: 19/06/2014 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred
A	22m S	Site Name: Beeley Wood Sustainable Business Park Site Address: Beeley Wood Sustainable Business Park, Claywheels Lane, Sheffield, South Yorkshire, S6 1QT Correspondence Address: -	Type of Site: Physico-Chemical Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WRD001 EPR reference: EA/EPR/DB3709KJ/V002 Operator: Waste Recycling And Destruction Limited Waste Management licence No: 101374 Annual Tonnage: 324998	Issue Date: 29/01/2010 Effective Date: 30/09/2016 Modified: 22/07/2021 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified
A	30m S	Site Name: 4recycling Beeley Wood Site Address: Beeley Wood Recycling Village, Claywheels Lane, Sheffield, South Yorks, S6 1NF Correspondence Address: -	Type of Site: 75kte HCI Waste TS + treatment Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 4RE041 EPR reference: FP3697EB/A001 Operator: 4recycling Limited Waste Management licence No: 101374 Annual Tonnage: 0	Issue Date: 29/01/2010 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued

ID	Location	Details		
B	78m W	Site Name: Sheffield I B A Facility Site Address: Beeley Wood, Clay Wheels Lane, Sheffield, South Yorks, S6 1NF Correspondence Address: -	Type of Site: Physical Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BAL140 EPR reference: EA/EPR/ZP3492EG/V002 Operator: Ballast Phoenix Limited Waste Management licence No: 102910 Annual Tonnage: 100000	Issue Date: 02/07/2012 Effective Date: - Modified: 11/11/2013 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified
B	78m W	Site Name: Sheffield I B A Facility Site Address: Beeley Wood, Clay Wheels Lane, Sheffield, South Yorkshire, S6 1NF Correspondence Address: -	Type of Site: Physical Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BAL140 EPR reference: EA/EPR/ZP3492EG/V003 Operator: Ballast Phoenix Ltd Waste Management licence No: 102910 Annual Tonnage: 100000	Issue Date: 02/07/2012 Effective Date: - Modified: 17/03/2016 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: To PPC
C	173m SE	Site Name: Waste Recyling & Destruction Site Address: Beeley Wood Ind Park, Claywheels Lane, Sheffield, South Yorkshire, S6 1QT Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WAS056 EPR reference: EA/EPR/CP3497LB/V Operator: Waste Recycling & Destruction Limited Waste Management licence No: 100662 Annual Tonnage: 74999	Issue Date: 02/12/2008 Effective Date: - Modified: 27/10/2015 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified

ID	Location	Details		
C	200m S	Site Name: Waste Recyling & Destruction Ltd Transfer Station Site Address: Claywheels Lane, Beeley Wood Ind Park, Sheffield, South Yorks, S6 1NF Correspondence Address: -	Type of Site: 75kte HCI Waste TS + treatment Size: >= 25000 tonnes 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WAS056 EPR reference: CP3497LB/A001 Operator: Waste Recycling & Destruction Ltd Waste Management licence No: 100662 Annual Tonnage: 0	Issue Date: 02/12/2008 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
C	200m S	Site Name: Waste Recyling & Destruction Ltd Transfer Station Site Address: Claywheels Lane, Beeley Wood Ind Park, Sheffield, South Yorks, S6 1NF Correspondence Address: Loxley Manor, Loxley Road, Sheffield, South Yorks, S6 6RW	Type of Site: 75kte HCI Waste TS + treatment Size: >= 25000 tonnes 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WAS056 EPR reference: EA/EPR/CP3497LB/A001 Operator: Waste Recycling & Waste Destruction Ltd Waste Management licence No: 100662 Annual Tonnage: 0	Issue Date: 12/2/2008 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
C	200m S	Site Name: Waste Recyling & Destruction Site Address: Beeley Wood Ind Park, Claywheels Lane, Sheffield, South Yorkshire, S6 1NF Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WAS056 EPR reference: EA/EPR/CP3497LB/V003 Operator: Waste Recycling & Destruction Ltd Waste Management licence No: 100662 Annual Tonnage: 74999	Issue Date: 02/12/2008 Effective Date: - Modified: 03/09/2013 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified

ID	Location	Details		
E	324m SE	Site Name: Arundel Works Site Address: - Correspondence Address: Yelsway Lane, Waterhouses, Staffordshire, ST10 3AZ	Type of Site: Household, Commercial & Industrial Waste T Stn Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: GLA004 EPR reference: - Operator: Glacier A R M Limited Waste Management licence No: 65051 Annual Tonnage: 0	Issue Date: 04/12/2000 Effective Date: 20/09/2002 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred
E	324m SE	Site Name: Arundel Works Site Address: - Correspondence Address: Yelsway Lane, Waterhouses, Staffordshire, ST10 3AZ	Type of Site: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GLA004 EPR reference: - Operator: Glacier A R M Limited Waste Management licence No: 65051 Annual Tonnage: 0	Issue Date: 04/12/2000 Effective Date: 20/09/2002 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred
E	324m SE	Site Name: Arundel Works Site Address: Kimberley Road, Leeds, West Yorkshire, LS9 6LZ Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GLA004 EPR reference: EA/EPR/CP3094ZB/S004 Operator: Glacier A R M Limited Waste Management licence No: 65051 Annual Tonnage: 150000	Issue Date: 19/03/1999 Effective Date: 20/09/2002 Modified: - Surrendered Date: Sep 20 2006 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered

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

3.7 Waste exemptions

Records within 500m	19

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.

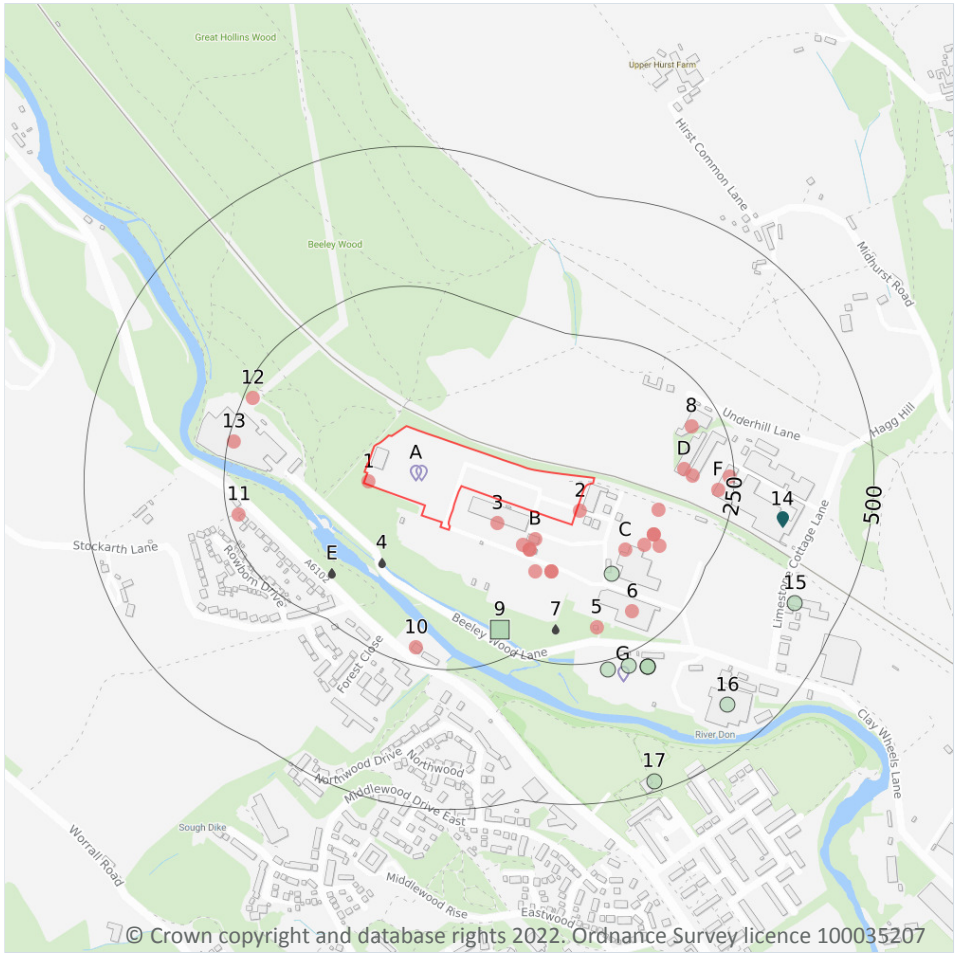
Features are displayed on the Waste and landfill map on **page 31**

ID	Location	Site	Reference	Category	Sub-Category	Description
3	149m W	-	WEX239752	Using waste exemption	Not on a farm	Use of waste in construction
D	255m W	BEELEY WOOD WORKS, CLAYWHEELS LANE, SHEFFIELD, S6 1ND	WEX234545	Using waste exemption	Not on a farm	Use of waste in construction
D	255m W	BEELEY WOOD WORKS, CLAYWHEELS LANE, SHEFFIELD, S6 1ND	WEX234545	Using waste exemption	Not on a farm	Use of waste for a specified purpose
D	255m W	Beeley Wood Weir, Beeley Wood Lane, Sheffield, S6 1ND	WEX068542	Using waste exemption	Not on a farm	Use of waste in construction
D	255m W	BEELEY WOOD WORKS, CLAYWHEELS LANE, SHEFFIELD, S6 1ND	WEX079693	Using waste exemption	Not on a farm	Use of waste in construction
D	255m W	BEELEY WOOD WORKS, CLAYWHEELS LANE, SHEFFIELD, S6 1ND	WEX079693	Using waste exemption	Not on a farm	Use of waste for a specified purpose
8	274m SE	Arundel Works Claywheels Lane SHEFFIELD S6 1LZ	EPR/CE5044TA/A001	Treating waste exemption	Non-Agricultural Waste Only	Preparatory treatments (baling, sorting, shredding etc)
F	324m E	WATES HOUSE, STATION APPROACH, LEATHERHEAD, KT22 7SW	WEX097034	Storing waste exemption	Not on a farm	Storage of waste in a secure place
F	345m E	HAGUE PLANT LTD, LIMESTONE COTTAGE LANE, SHEFFIELD, S6 1NJ	WEX151586	Using waste exemption	Not on a farm	Use of waste in construction
F	365m E	HAGUE PLANT LTD, LIMESTONE COTTAGE LANE, SHEFFIELD, S6 1NJ	WEX288938	Using waste exemption	Not on a farm	Use of waste in construction
G	407m SE	Limestone Cottage Lane Sheffield S6 1NJ	EPR/EE5945EB/A001	Using waste exemption	Non-Agricultural Waste Only	Use of waste in construction
G	436m SE	Container 30 Limestone Cottage Lane South Yorkshire S6 1NJ	EPR/WF0235QZ/A001	Treating waste exemption	Non-Agricultural Waste Only	Recovery of scrap metal
I	461m SW	Hawthorne Farm Stockarth Lane SHEFFIELD S35 0JT	EPR/RF0500PP/A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of waste in secure containers
I	461m SW	Hawthorne Farm Stockarth Lane SHEFFIELD S35 0JT	EPR/RF0500PP/A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of waste in a secure place

ID	Location	Site	Reference	Category	Sub-Category	Description
I	461m SW	Hawthorne Farm Stockarth Lane SHEFFIELD S35 0JT	EPR/RF0500PP/A001	Treating waste exemption	Non-Agricultural Waste Only	Sorting mixed waste
I	461m SW	Hawthorne Farm Stockarth Lane SHEFFIELD S35 0JT	EPR/RF0500PP/A001	Treating waste exemption	Non-Agricultural Waste Only	Manual treatment of waste
I	461m SW	Hawthorne Farm Stockarth Lane SHEFFIELD S35 0JT	EPR/RF0500PP/A001	Treating waste exemption	Non-Agricultural Waste Only	Mechanical treatment of end-of-life tyres
I	461m SW	Hawthorne Farm Stockarth Lane SHEFFIELD S35 0JT	EPR/RF0500PP/A001	Treating waste exemption	Non-Agricultural Waste Only	Recovery of scrap metal
I	461m SW	Hawthorne Farm Stockarth Lane SHEFFIELD S35 0JT	EPR/RF0500PP/A001	Using waste exemption	Non-Agricultural Waste Only	Use of depolluted end-of-life vehicles for vehicle parts

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

Part A(1) industrial activities

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

Licensed Discharges to controlled waters

List 2 Dangerous Substances

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	27

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 42**

ID	Location	Company	Address	Activity	Category
1	**On site**	**Slurry Bed**	**South Yorkshire, S6**	**Waste Storage, Processing and Disposal**	**Infrastructure and Facilities**
2	7m E	Tank	South Yorkshire, S6	Tanks (Generic)	Industrial Features
3	41m S	Chimney	South Yorkshire, S6	Chimneys	Industrial Features

ID	Location	Company	Address	Activity	Category
B	45m S	Water Tower	South Yorkshire, S6	Water Pumping Stations	Industrial Features
B	63m S	Tank	South Yorkshire, S6	Tanks (Generic)	Industrial Features
B	66m S	Tank	South Yorkshire, S6	Tanks (Generic)	Industrial Features
B	66m S	Tanks	South Yorkshire, S6	Tanks (Generic)	Industrial Features
B	92m S	Tanks	South Yorkshire, S6	Tanks (Generic)	Industrial Features
B	92m S	Tank	South Yorkshire, S6	Tanks (Generic)	Industrial Features
B	100m S	Chimney	South Yorkshire, S6	Chimneys	Industrial Features
C	105m SE	Chimney	South Yorkshire, S6	Chimneys	Industrial Features
C	126m E	Tank	South Yorkshire, S6	Tanks (Generic)	Industrial Features
C	134m E	Works	South Yorkshire, S6	Unspecified Works Or Factories	Industrial Features
C	142m SE	Waste Recycling & Destruction	Beeley Wood Recycling Village 2, Beeley Wood Lane, Sheffield, South Yorkshire, S6 1QT	Recycling, Reclamation and Disposal	Recycling Services
C	142m SE	International Stones UK Ltd	Beeley Wood Recycling Village 2, Beeley Wood Lane, Sheffield, South Yorkshire, S6 1QT	Stone Quarrying and Preparation	Extractive Industries
D	161m E	Spitfire Graveyard	Unit 24 Nutwood Trading Estate, Limestone Cottage Lane, Sheffield, South Yorkshire, S6 1NJ	Vehicle Repair, Testing and Servicing	Repair and Servicing
C	161m E	Chimney	South Yorkshire, S6	Chimneys	Industrial Features
D	176m E	Turbocare 24	Unit 23, Limestone Cottage Lane, Sheffield, South Yorkshire, S6 1NJ	Engines	Industrial Products
5	189m S	Gas Governor Station	South Yorkshire, S6	Gas Features	Infrastructure and Facilities
6	189m SE	Works	South Yorkshire, S6	Unspecified Works Or Factories	Industrial Features
8	197m NE	Airflow	Northern Works, Underhill Lane, Sheffield, South Yorkshire, S6 1NL	Ovens and Furnaces	Industrial Products
10	218m S	Limestone Self Storage	401, Middlewood Road North, Sheffield, South Yorkshire, S35 0HF	Container and Storage	Transport, Storage and Delivery
F	222m E	Nutwood Garage	Unit 49 Nutwood Trading Estate, Limestone Cottage Lane, Sheffield, South Yorkshire, S6 1NJ	Vehicle Repair, Testing and Servicing	Repair and Servicing

ID	Location	Company	Address	Activity	Category
11	230m W	Electricity Sub Station	South Yorkshire, S35	Electrical Features	Infrastructure and Facilities
12	233m W	Electricity Sub Station	South Yorkshire, S6	Electrical Features	Infrastructure and Facilities
13	240m W	Works	South Yorkshire, S6	Unspecified Works Or Factories	Industrial Features
F	242m E	Winston & Allan	Unit 7-9, Limestone Cottage Lane, Sheffield, South Yorkshire, S6 1NJ	Cutting, Drilling and Welding Services	Construction Services

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m	7

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

Features are displayed on the Current industrial land use map on **page 42**

ID	Location	Details	
A	**On site**	**Operator: BALLAST PHOENIX LTD** **Installation Name: SHEFFIELD IBA FACILITY** **EPR/FP3732WU** **Process: RECOVERY OR A MIX OF RECOVERY AND DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING TREATMENT OF SLAGS AND ASHES** **Permit Number: XP3430YE** **Original Permit Number: FP3732WU**	**EPR Reference: -** **Issue Date: 01/06/2017** **Effective Date: 01/06/2017** **Last date noted as effective: 01/01/2022** **Status: SUPERCEDED**
A	**On site**	**Operator: BALLAST PHOENIX LTD** **Installation Name: SHEFFIELD IBA FACILITY** **EPR/ZP3492EG** **Process: RECOVERY OR A MIX OF RECOVERY AND DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING TREATMENT OF SLAGS AND ASHES** **Permit Number: FP3732WU** **Original Permit Number: FP3732WU**	**EPR Reference: -** **Issue Date: 17/03/2016** **Effective Date: 17/03/2016** **Last date noted as effective: 01/01/2022** **Status: SUPERCEDED**
A	**On site**	**Operator: BLUE PHOENIX LIMITED** **Installation Name: SHEFFIELD IBA FACILITY** **EPR/FP3732WU** **Process: RECOVERY OR A MIX OF RECOVERY AND DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING TREATMENT OF SLAGS AND ASHES** **Permit Number: SP3006BC** **Original Permit Number: FP3732WU**	**EPR Reference: -** **Issue Date: 06/02/2020** **Effective Date: 06/02/2020** **Last date noted as effective: 01/01/2022** **Status: EFFECTIVE**
G	282m S	Operator: GLACIER ARM LIMITED Installation Name: SHEFFIELD ATERNATIVE RAW MATERIAL FACILITY Process: ASSOCIATED PROCESS Permit Number: EP3835SK Original Permit Number: EP3835SK	EPR Reference: - Issue Date: 17/05/2005 Effective Date: 17/05/2005 Last date noted as effective: 01/01/2022 Status: SUPERCEDED
G	282m S	Operator: GLACIER ARM LIMITED Installation Name: SHEFFIELD ATERNATIVE RAW MATERIAL FACILITY Process: RECOVERY OF WASTE; HAZARDOUS WASTE >10T/D BY RECYCLING INORGANICS (NOT METALS) Permit Number: EP3835SK Original Permit Number: EP3835SK	EPR Reference: - Issue Date: 17/05/2005 Effective Date: 17/05/2005 Last date noted as effective: 01/01/2022 Status: SUPERCEDED
G	282m S	Operator: GLACIER ARM LIMITED Installation Name: SHEFFIELD ATERNATIVE RAW MATERIAL FACILITY Process: RECOVERY OF WASTE; HAZARDOUS WASTE >10T/D BY RECYCLING INORGANICS (NOT METALS) Permit Number: EP3832LR Original Permit Number: EP3835SK	EPR Reference: - Issue Date: - Effective Date: 20/09/2006 Last date noted as effective: 01/01/2022 Status: SURRENDER EFFECTIVE

ID	Location	Details	
G	282m S	Operator: GLACIER ARM LIMITED Installation Name: SHEFFIELD ATERNATIVE RAW MATERIAL FACILITY Process: ASSOCIATED PROCESS Permit Number: EP3832LR Original Permit Number: EP3835SK	EPR Reference: - Issue Date: - Effective Date: 20/09/2006 Last date noted as effective: 01/01/2022 Status: SURRENDER EFFECTIVE

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

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

Records within 500m	**1**

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.

Features are displayed on the Current industrial land use map on **page 42**

ID	Location	Address	Details	
14	343m E	Pennine Lubricants Ltd, Unit 35 Knutwood Trading Estate, Limestone Cottage Lane, Sheffield, S6 1NJ	Process: Waste Oil Burner 0.4 MW Status: New Legislation Applies Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	**0**

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m	**4**

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 42**

ID	Location	Address	Details	
4	111m SW	BALLAST PHOENIX LIMITED, BEELEY WOOD, CLAY WHEELS LANE, SHEFFIELD, SOUTH YORKSHIRE, S6 1NF	Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: EPRAP3224XA Permit Version: 1 Receiving Water: MILL RACE TRIB OF RIVER DON	Status: NEW ISSUED UNDER EPR 2010 Issue date: 15/10/2010 Effective Date: 15/10/2010 Revocation Date: -
E	171m S	UNION CARBIDE, CLAYWHEELS LANE, SHE, FFIELD 6.-OUTLET 1	Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: 2647 Permit Version: 1 Receiving Water: RIVER DON	Status: REVOKED - UNSPECIFIED Issue date: 01/04/1985 Effective Date: 01/04/1985 Revocation Date: 30/06/1994
E	171m S	UNION CARBIDE, CLAYWHEELS LANE, SHE, FFIELD 6.-OUTLET 1	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: 378 Permit Version: 1 Receiving Water: RIVER DON	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: 01/04/1985 Effective Date: 01/04/1985 Revocation Date: 30/06/1994
7	189m S	UNION CARBIDE, CLAYWHEELS LANE, SHE, FFIELD 6 -OUTLET 3	Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: 3531 Permit Version: 1 Receiving Water: BLACKBURN MEADOWS WPC WORKS	Status: REVOKED - UNSPECIFIED Issue date: 01/01/1986 Effective Date: 01/01/1986 Revocation Date: 30/06/1994

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m	**0**

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

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

4.15 Pollutant release to public sewer

Records within 500m	**0**

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m	0

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

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

4.17 List 2 Dangerous Substances

Records within 500m	1

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.

Features are displayed on the Current industrial land use map on **page 42**

ID	Location	Name	Status	Receiving Water	Authorised Substances
9	200m SE	A P W - Enclosure Systems, Sheffield	Not Active	Unknown	Lead, Nickel, Zinc

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	9

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 42**

ID	Location	Details	
C	112m SE	Incident Date: 23/07/2003 Incident Identification: 176112 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Chemical Odour	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant)
G	266m S	Incident Date: 25/06/2003 Incident Identification: 168748 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Dust	Water Impact: Category 3 (Minor) Land Impact: Category 2 (Significant) Air Impact: Category 2 (Significant)
G	271m S	Incident Date: 16/06/2005 Incident Identification: 320713 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Ammonia/Amine Odour	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant)

ID	Location	Details	
G	287m SE	Incident Date: 22/05/2003 Incident Identification: 160096 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
G	287m SE	Incident Date: 22/05/2003 Incident Identification: 160096 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Dust	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
G	287m SE	Incident Date: 22/05/2003 Incident Identification: 160096 Pollutant: Atmospheric Pollutants and Effects:Atmospheric Pollutants and Effects Pollutant Description: Dust:Other Atmospheric Pollutant or Effect	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
15	419m SE	Incident Date: 09/11/2002 Incident Identification: 119816 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
16	425m SE	Incident Date: 25/01/2005 Incident Identification: 289254 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Ammonia/Amine Odour	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant)
17	481m S	Incident Date: 30/03/2005 Incident Identification: 302194 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant)

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

4.19 Pollution inventory substances

Records within 500m	**0**

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

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

4.20 Pollution inventory waste transfers

Records within 500m	0

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

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

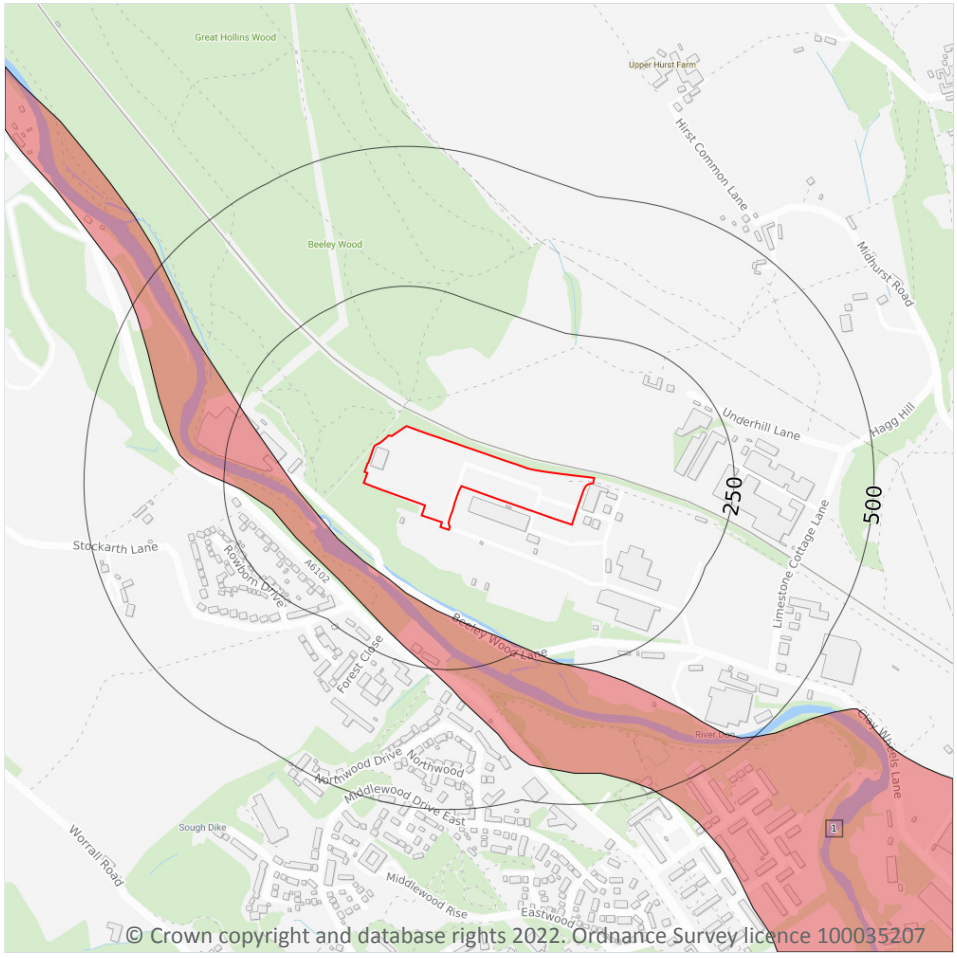
4.21 Pollution inventory radioactive waste

Records within 500m	0

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

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

5 Hydrogeology - Superficial aquifer



Site Outline

Search buffers in metres (m)

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

5.1 Superficial aquifer

Records within 500m	1

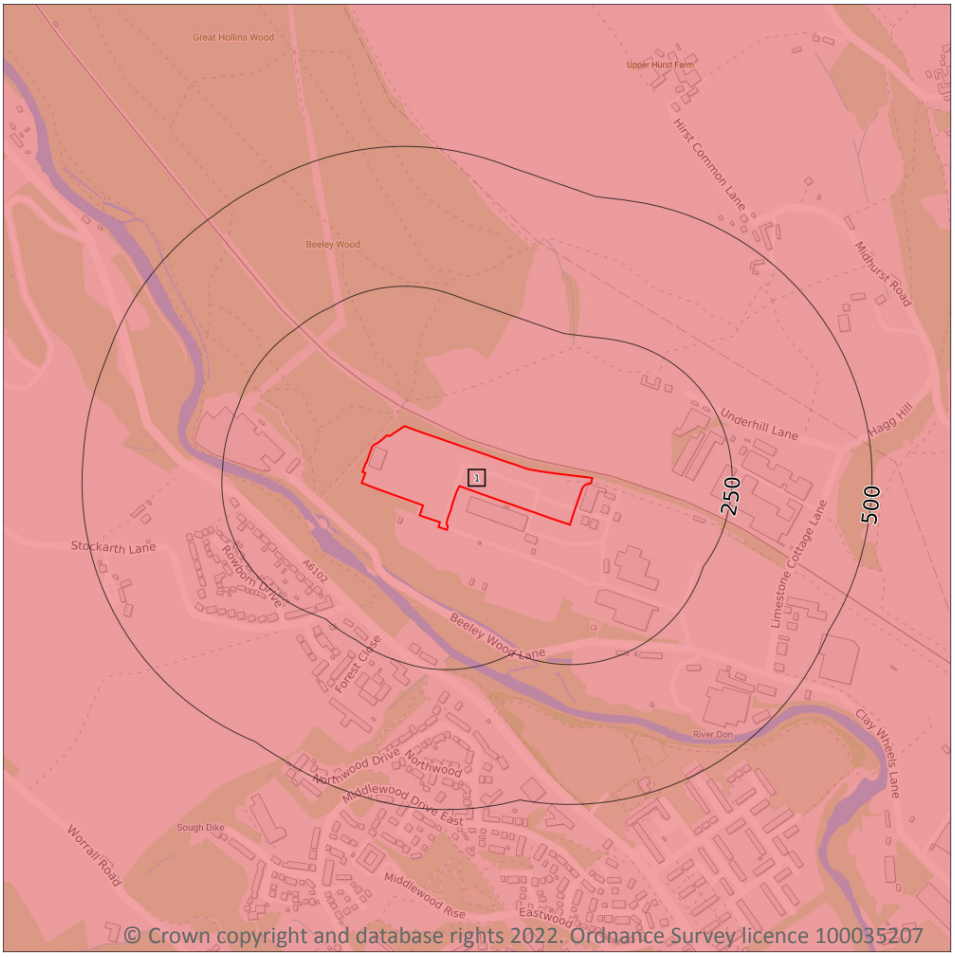
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 52**

ID	Location	Designation	Description
1	99m SW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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

Bedrock aquifer



Site Outline

Search buffers in metres (m)

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

5.2 Bedrock aquifer

Records within 500m	1

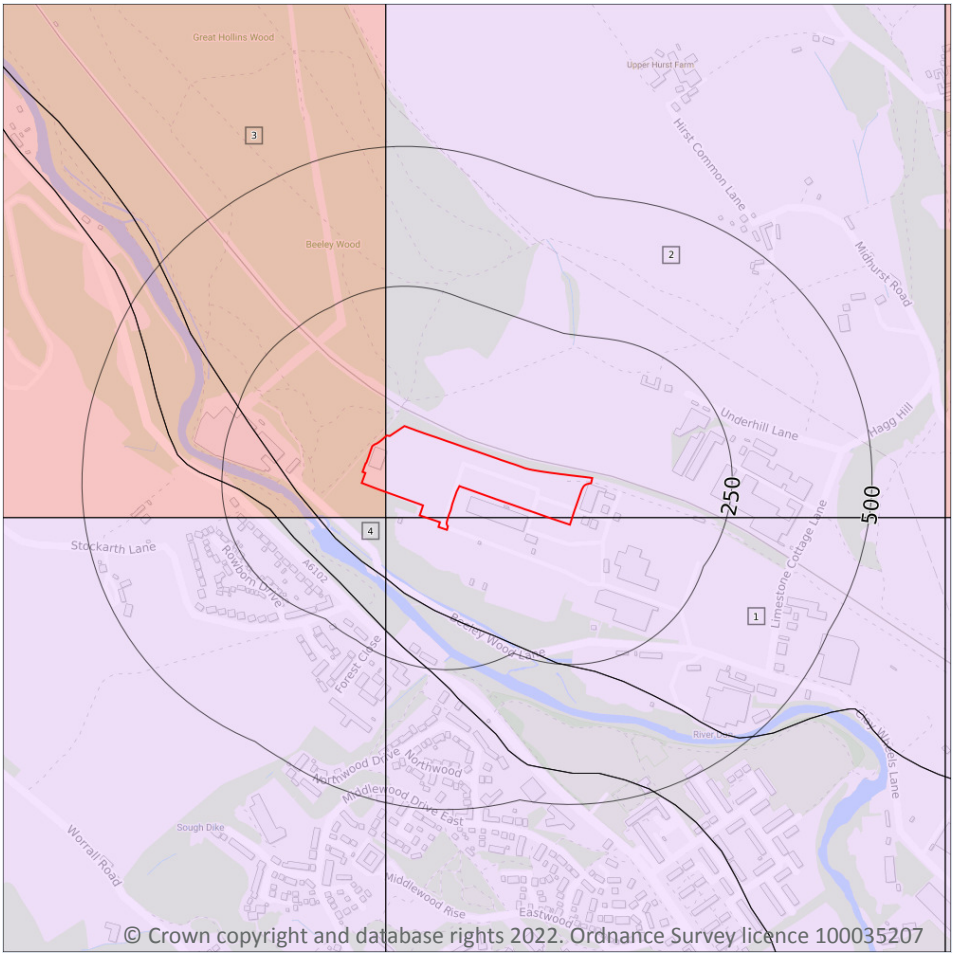
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 53**

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**

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	4

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 54**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	**On site**	**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**
2	**On site**	**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**
3	**On site**	**Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer**	**Leaching class: Intermediate Infiltration value: <40% Dilution value: 300-550mm/year**	**Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data**	**Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures**
4	43m 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.

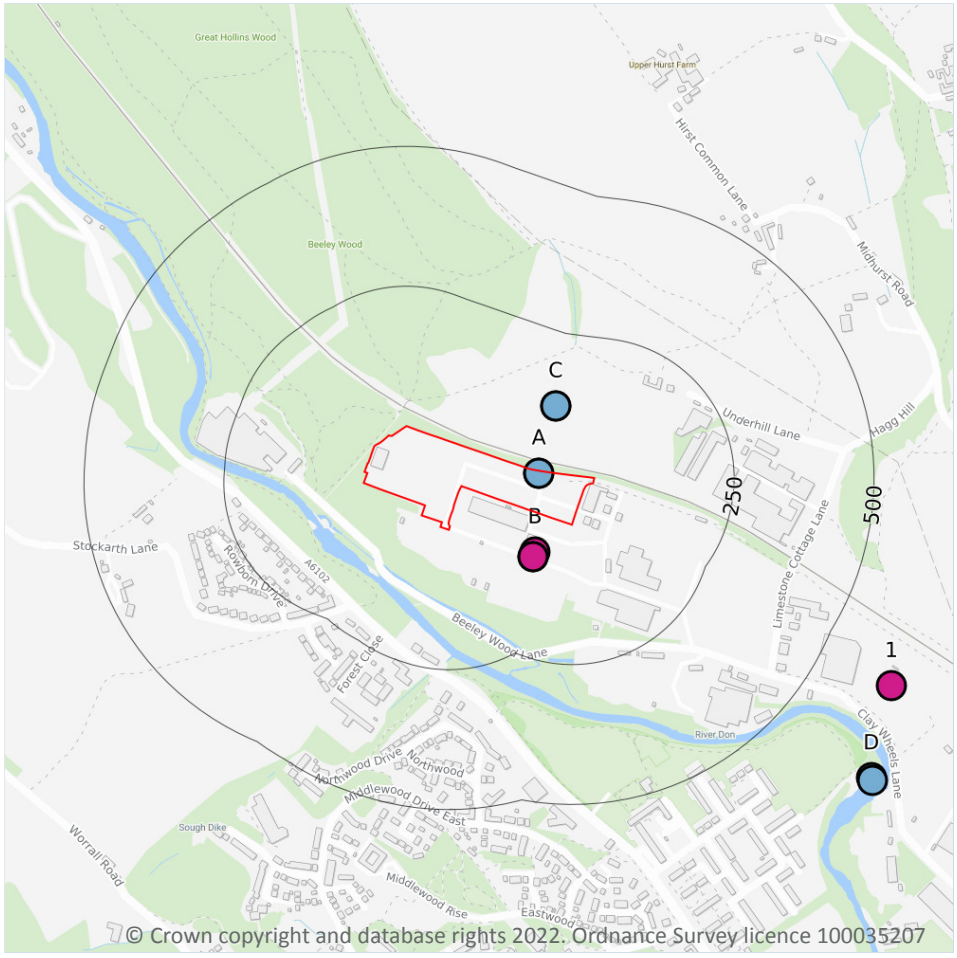
5.5 Groundwater vulnerability- local information

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	13

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 56**

ID	Location	Details	
B	66m S	Status: Active Licence No: 2/27/05/141 Details: General Washing/Process Washing Direct Source: GROUNDWATERS Point: BOREHOLE - MILLSTONE GRIT - WADSLEY BRIDGE Data Type: Point Name: Waste Recycling & Destruction Ltd Easting: 432263 Northing: 391939	Annual Volume (m^3): 7,300 Max Daily Volume (m^3): 21 Original Application No: NPS/WR/024978 Original Start Date: 08/02/1967 Expiry Date: - Issue No: 104 Version Start Date: 23/03/2017 Version End Date: -
B	76m S	Status: Historical Licence No: 2/27/05/141 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: UNION CARBIDE (UK) LIMITED Easting: 432260 Northing: 391930	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 08/02/1967 Expiry Date: - Issue No: 100 Version Start Date: 15/11/1968 Version End Date: -
B	76m S	Status: Historical Licence No: 2/27/05/141 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - MILLSTONE GRIT - WADSLEY BRIDGE Data Type: Point Name: Waste Recycling & Destruction Ltd Easting: 432260 Northing: 391930	Annual Volume (m^3): 363688 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/02/1967 Expiry Date: - Issue No: 103 Version Start Date: 01/08/2016 Version End Date: -
1	639m SE	Status: Historical Licence No: 2/27/05/042 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - SHEFFIELD Data Type: Point Name: HAGUE PLANT LTD Easting: 432900 Northing: 391700	Annual Volume (m^3): 363640 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/03/1996 Version End Date: -

ID	Location	Details	
-	1026m SW	Status: Historical Licence No: 2/27/05/094 Details: Spray Irrigation - Direct Direct Source: GROUNDWATERS Point: #NAME? Data Type: Point Name: HILLSBOROUGH GOLF CLUB LTD Easting: 431400 Northing: 391200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 23/02/1983 Version End Date: -
-	1026m SW	Status: Historical Licence No: 2/27/05/094 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: #NAME? Data Type: Point Name: HILLSBOROUGH GOLF CLUB LTD Easting: 431400 Northing: 391200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 23/02/1983 Version End Date: -
-	1026m SW	Status: Historical Licence No: 2/27/05/094 Details: Spray Irrigation - Direct Direct Source: GROUNDWATERS Point: SPRING Data Type: Point Name: HILLSBOROUGH GOLF CLUB LTD Easting: 431400 Northing: 391200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 23/02/1983 Version End Date: -
-	1026m SW	Status: Historical Licence No: 2/27/05/094 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: SPRING Data Type: Point Name: HILLSBOROUGH GOLF CLUB LTD Easting: 431400 Northing: 391200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 23/02/1983 Version End Date: -
-	1026m SW	Status: Active Licence No: 2/27/05/094 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: SPRING - HILLSBOROUGH Data Type: Point Name: HILLSBOROUGH GOLF CLUB LTD Easting: 431400 Northing: 391200	Annual Volume (m^3): 4,540 Max Daily Volume (m^3): 113.60 Original Application No: 3839 Original Start Date: 17/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 23/02/1983 Version End Date: -

ID	Location	Details	
-	1026m SW	Status: Active Licence No: 2/27/05/094 Details: Spray Irrigation - Direct Direct Source: GROUNDWATERS Point: SPRING - HILLSBOROUGH Data Type: Point Name: HILLSBOROUGH GOLF CLUB LTD Easting: 431400 Northing: 391200	Annual Volume (m^3): 4,540 Max Daily Volume (m^3): 113.60 Original Application No: 3839 Original Start Date: 17/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 23/02/1983 Version End Date: -
-	1737m N	Status: Historical Licence No: 2/27/05/007 Details: General Farming & Domestic Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - GRENOSIDE SHEFFIELD Data Type: Point Name: WATSONS ESTATE CO LTD Easting: 432100 Northing: 393900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 01/12/1965 Version End Date: -
-	1813m SE	Status: Historical Licence No: 2/27/05/005 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: CARLSBERG TETLEY BREWING LTD Easting: 433700 Northing: 390800	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 03/12/1996 Version End Date: -
-	1813m SE	Status: Historical Licence No: 2/27/05/005 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - WADSLEY BRIDGE SHEFFIELD Data Type: Point Name: CARLSBERG TETLEY BREWING LTD Easting: 433700 Northing: 390800	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 03/12/1996 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	7

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 56**

ID	Location	Details	
A	**On site**	**Status: Historical** **Licence No: 2/27/05/047** **Details: General Cooling (Existing Licences Only) (Low Loss)** **Direct Source: SURFACE WATER** **Point: UNNAMED STREAM-WADSLEY BRIDGE-SHEFFIELD** **Data Type: Point** **Name: UDR BEELEY WOOD LTD** **Easting: 432270** **Northing: 392080**	**Annual Volume (m^3): 2546** **Max Daily Volume (m^3): 127.3** **Original Application No: -** **Original Start Date: 20/01/1966** **Expiry Date: -** **Issue No: 101** **Version Start Date: 06/07/2004** **Version End Date: -**
A	**On site**	**Status: Active** **Licence No: 2/27/05/047** **Details: General Cooling (Existing Licences Only) (Low Loss)** **Direct Source: SURFACE WATER** **Point: STREAM-WADSLEY BRIDGE-SHEFFIELD** **Data Type: Point** **Name: Shackleton Ltd** **Easting: 432270** **Northing: 392080**	**Annual Volume (m^3): 2,546** **Max Daily Volume (m^3): 127.30** **Original Application No: NPS/WR/023120** **Original Start Date: 20/01/1966** **Expiry Date: -** **Issue No: 103** **Version Start Date: 01/08/2016** **Version End Date: -**
C	119m N	Status: Historical Licence No: 2/27/05/047 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: SURFACE WATER Point: UNNAMED STREAM - WADSLEY BRIDGE Data Type: Point Name: UNION CARBIDE (UK) LIMITED Easting: 432300 Northing: 392200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/01/1966 Version End Date: -

ID	Location	Details	
C	119m N	Status: Historical Licence No: 2/27/05/047 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: SURFACE WATER Point: UNNAMED STREAM - WADSLEY BRIDGE Data Type: Point Name: UNION CARBIDE (UK) LTD Easting: 432300 Northing: 392200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/01/1966 Version End Date: -
D	700m SE	Status: Historical Licence No: NE/027/0005/003 Details: Fish Pass/Canoe Pass Direct Source: SURFACE WATER Point: RIVER DON - NIAGRA SHEFFIELD Data Type: Point Name: SHEFFIELD CITY COUNCIL Easting: 432864 Northing: 391535	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 28/01/2010 Expiry Date: 31/03/2017 Issue No: 1 Version Start Date: 28/01/2010 Version End Date: -
D	706m SE	Status: Active Licence No: NE/027/0005/003/R01 Details: Fish Pass/Canoe Pass Direct Source: SURFACE WATER Point: RIVER DON - NIAGRA SHEFFIELD Data Type: Point Name: SHEFFIELD CITY COUNCIL Easting: 432867 Northing: 391530	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: NPS/WR/021604 Original Start Date: 01/04/2017 Expiry Date: 31/03/2029 Issue No: 1 Version Start Date: 01/04/2017 Version End Date: -
-	1596m N	Status: Active Licence No: 2/27/05/024 Details: General Use Relating To Secondary Category (Very Low Loss) Direct Source: SURFACE WATER Point: SLOUGH DYKE-OUGHTIBRIDGE-NEAR SHEFFIELD Data Type: Point Name: INTERMET REFRACTORY PRODUCTS LTD Easting: 431600 Northing: 393700	Annual Volume (m^3): 12,729 Max Daily Volume (m^3): 34.87 Original Application No: 1630 Original Start Date: 14/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	0

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

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

5.9 Source Protection Zones

Records within 500m	0

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

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

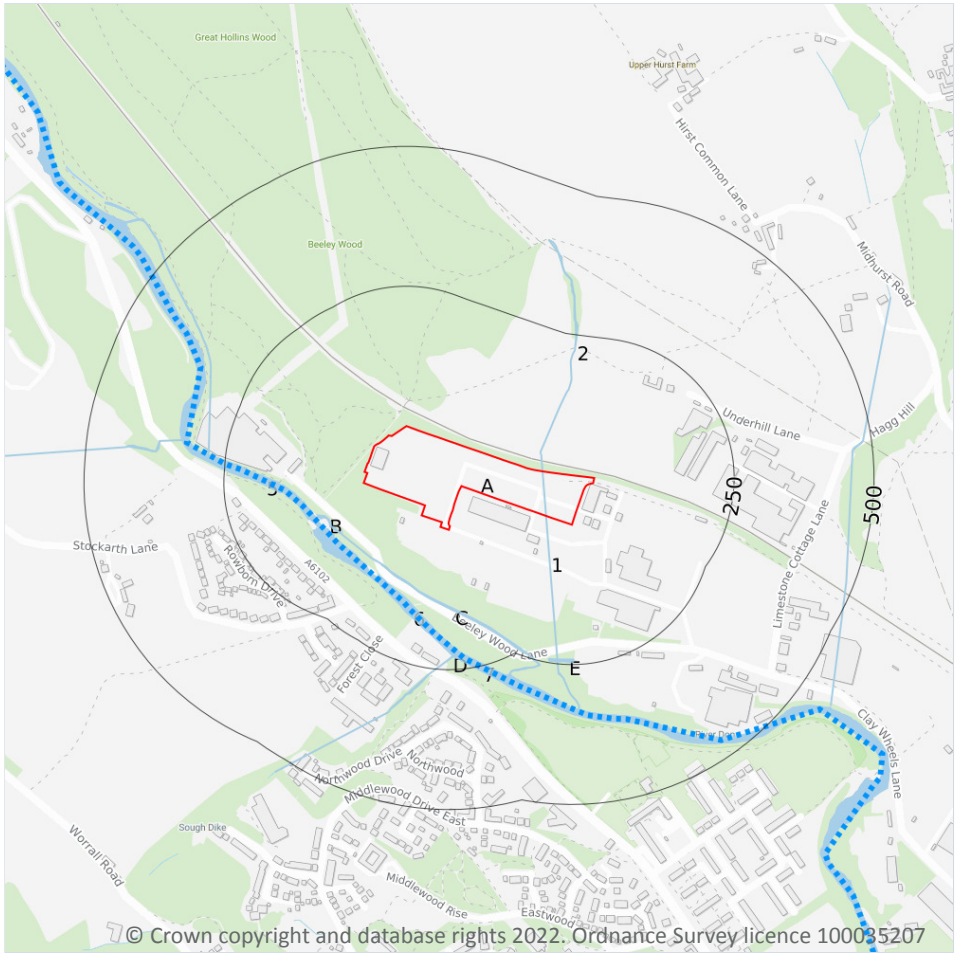
5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

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

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

6 Hydrology



Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	**25**

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

Features are displayed on the Hydrology map on **page 63**

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

ID	Location	Type of water feature	Ground level	Permanence	Name
2	29m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	90m SW	Manmade watercourse for water transfer.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Don
B	96m SW	Manmade watercourse for water transfer.	Underground	Watercourse contains water year round (in normal circumstances)	River Don
B	96m SW	Manmade watercourse for water transfer.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Don
B	100m SW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	River Don
B	104m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Don
B	110m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Don
5	111m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Don
B	111m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Don
B	112m SW	Manmade watercourse for water transfer.	Underground	Watercourse contains water year round (in normal circumstances)	River Don
C	112m SW	Manmade watercourse for water transfer.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Don
B	114m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Don
B	131m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Don

ID	Location	Type of water feature	Ground level	Permanence	Name
B	133m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Don
6	138m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Don
7	221m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Don
D	221m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Sough Dike
D	235m S	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Sough Dike
E	242m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	243m S	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	River Don
E	244m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	244m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	247m S	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-
E	248m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Don

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	6

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 63**

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 63**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	**On site**	**River**	**Don from Little Don to River Loxley confluence**	**GB104027057411**	**Don Upper**	**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 63**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
4	108m SW	River	Don from Little Don to River Loxley confluence	GB104027057411	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 63**

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

Site Outline

Search buffers in metres (m)

River and coastal flooding:

- High
- Medium
- Low
- Very Low
- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences
- Flood Defences

7.1 Risk of flooding from rivers and the sea

Records within 50m	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	2

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.

Features are displayed on the River and coastal flooding map on **page 68**

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
2	97m SW	2007 River Don Oughtibridge To Wadsley Bridge	2007-06-15 2007-06-30	Main river	Channel capacity exceeded (no raised defences)	Fluvial
4	140m W	June 2007 Surface Water Flooding Yorkshire	2007-06-15 2007-06-25	Other	Unknown	No data

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

7.3 Flood Defences

Records within 250m	0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

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

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

7.5 Flood Storage Areas

Records within 250m	0

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

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

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0

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

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

7.7 Flood Zone 3

Records within 50m	0

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

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

8 Surface water flooding

Site Outline
Search buffers in metres (m)

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

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

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

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

8.1 Surface water flooding

Highest risk on site	**1 in 30 year, 0.1m - 0.3m**
Highest risk within 50m	**1 in 30 year, 0.3m - 1.0m**

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

Features are displayed on the Surface water flooding map on **page 72**

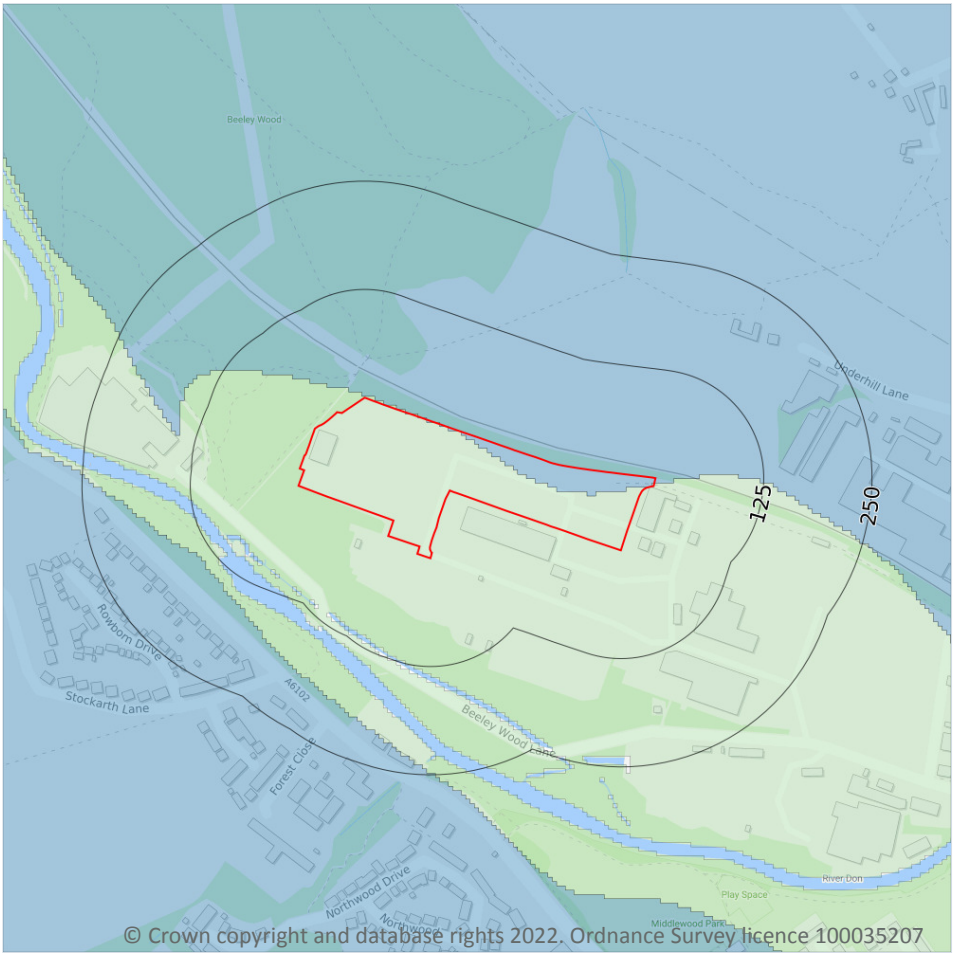
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.1m and 0.3m
1 in 30 year	Between 0.1m and 0.3m

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

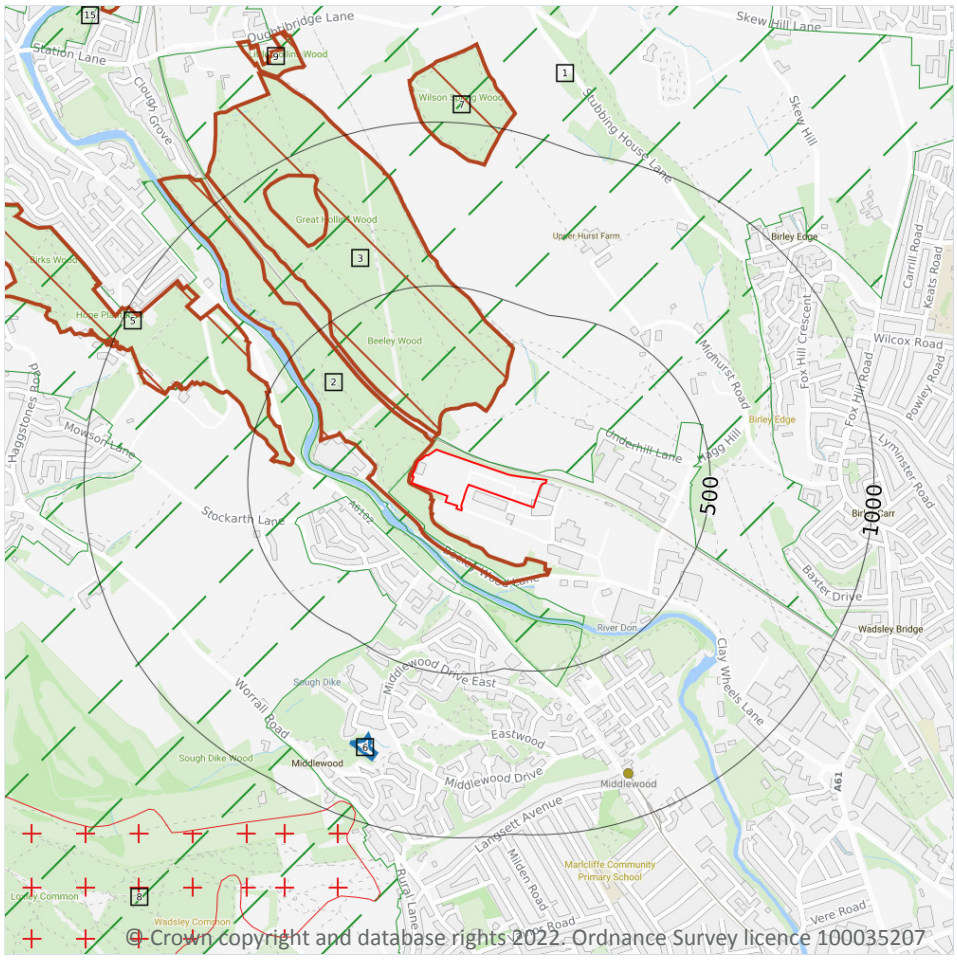
Highest risk on site	**Low**
Highest risk within 50m	**Low**

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 74**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	1

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

Features are displayed on the Environmental designations map on **page 75**

ID	Location	Name	Data source
6	741m S	Wadsley Fossil Forest	Natural England

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	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	2

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.

Features are displayed on the Environmental designations map on **page 75**

ID	Location	Name	Data source
8	958m S	Loxley & Wadsley Common	Natural England
-	1556m N	Wheata Woods	Natural England

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

10.7 Designated Ancient Woodland

Records within 2000m	21

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 75**

ID	Location	Name	Woodland Type
2	3m NW	Beeley Wood West	Ancient & Semi-Natural Woodland
3	44m N	Beeley Wood West	Ancient & Semi-Natural Woodland
5	367m W	Beeley Wood West	Ancient & Semi-Natural Woodland
7	882m N	Wilson Spring Wood	Ancient & Semi-Natural Woodland
9	1236m N	Beeley Wood West	Ancient & Semi-Natural Woodland
-	1551m N	Green Lane Spring	Ancient & Semi-Natural Woodland
-	1556m N	Green Lane Spring	Ancient & Semi-Natural Woodland
-	1582m N	Green Lane Spring	Ancient Replanted Woodland
-	1590m NW	Green Lane Spring	Ancient & Semi-Natural Woodland
-	1621m N	Green Lane Spring	Ancient Replanted Woodland
18	1634m NW	Green Lane Spring	Ancient & Semi-Natural Woodland

ID	Location	Name	Woodland Type
-	1658m SW	Loxley Common	Ancient & Semi-Natural Woodland
-	1696m N	Green Lane Spring	Ancient & Semi-Natural Woodland
-	1697m NW	Green Lane Spring	Ancient Replanted Woodland
-	1727m N	Green Lane Spring	Ancient & Semi-Natural Woodland
-	1747m N	Green Lane Spring	Ancient & Semi-Natural Woodland
-	1764m N	Green Lane Spring	Ancient Replanted Woodland
-	1817m N	Green Lane Spring	Ancient & Semi-Natural Woodland
-	1835m NW	Green Lane Spring	Ancient Replanted Woodland
-	1850m N	Green Lane Spring	Ancient & Semi-Natural Woodland
-	1948m NW	Green Lane Spring	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	5

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

Features are displayed on the Environmental designations map on **page 75**

ID	Location	Name	Local Authority name
1	2m NW	South and West Yorkshire	Sheffield
4	126m SW	South and West Yorkshire	Sheffield
-	1573m N	South and West Yorkshire	Barnsley
15	1585m NW	South and West Yorkshire	Sheffield
-	1873m NE	South and West Yorkshire	Sheffield

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

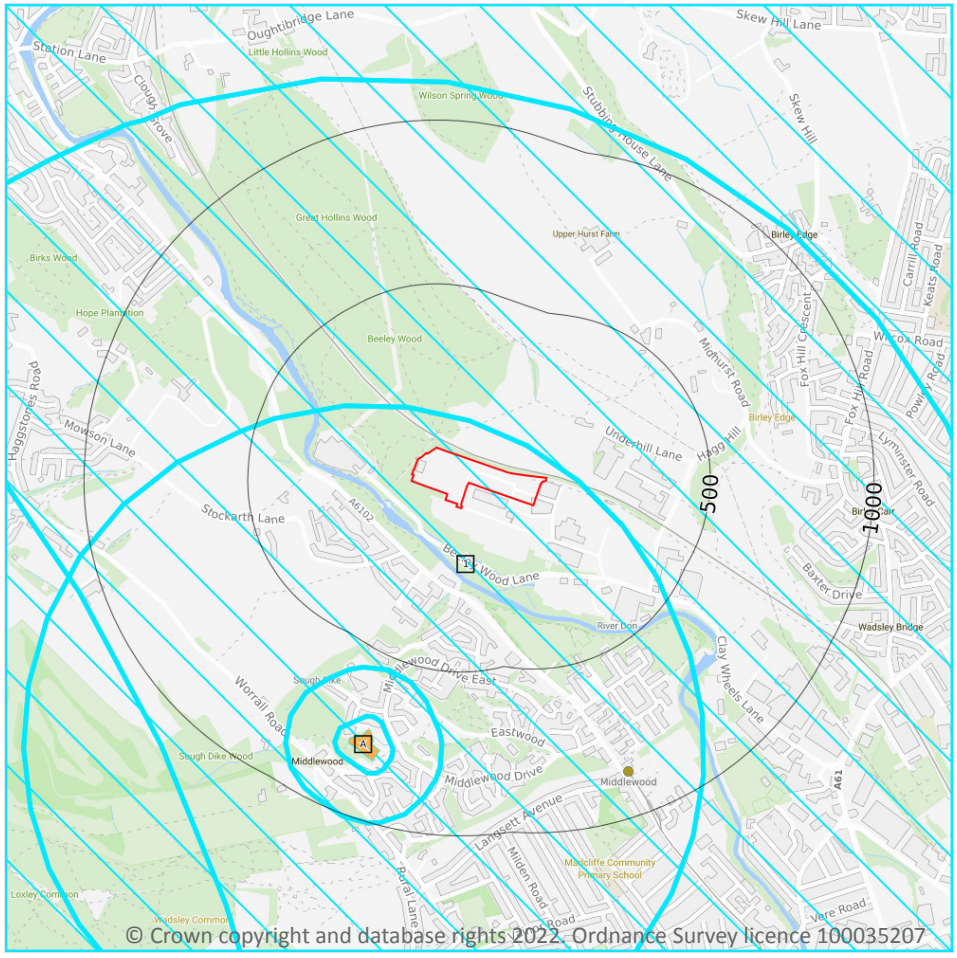
Records within 2000m	2

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
1214m NE	Blackburn Brook from Source to River Don NVZ	Surface Water	261	Existing
1732m E	Blackburn Brook from Source to River Don NVZ	Surface Water	261	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 81**

ID	Location	Type of developments requiring consultation
1	On site	**Infrastructure - Pipelines, pylons and overhead cables. any transport proposal including road, rail and by water (excluding routine maintenance). airports, helipads and other aviation proposals. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, review of minerals permissions (romp), extensions, variations to conditions etc. oil & gas exploration/extraction. Residential - Residential development of 100 units or more. Rural residential - Any residential development of 50 or more houses outside existing settlements/urban areas. Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 4000m². Combustion - General combustion processes >50mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. incl: inert landfill, non-hazardous landfill, hazardous landfill. Water supply - Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply .**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	**1**

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

Features are displayed on the SSSI Impact Zones and Units map on **page 81**

ID: A
Location: 741m S
SSSI name: Wadsley Fossil Forest
Unit name: Wadsley Fossil Forest
Broad habitat: Earth Heritage
Condition: Unfavourable - Declining
Reportable features:

Feature name	Feature condition	Date of assessment
FB - Palaeozoic Palaeobotany	Favourable	26/11/2010

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

11 Visual and cultural designations

Site Outline

Search buffers in metres (m)

Listed buildings

Conservation areas

Conservation areas - no data

National Parks

Areas of Outstanding Natural Beauty

Registered parks and gardens

Scheduled Monuments

World Heritage Sites

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	1

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

Features are displayed on the Visual and cultural designations map on **page 83**

ID	Location	Name	Grade	Reference Number	Listed date
1	194m SW	Milepost Approximately 50 Metres North of Junction With Stockarth Lane, Bradfield, Sheffield, S35	II	1314537	08/08/1985

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.

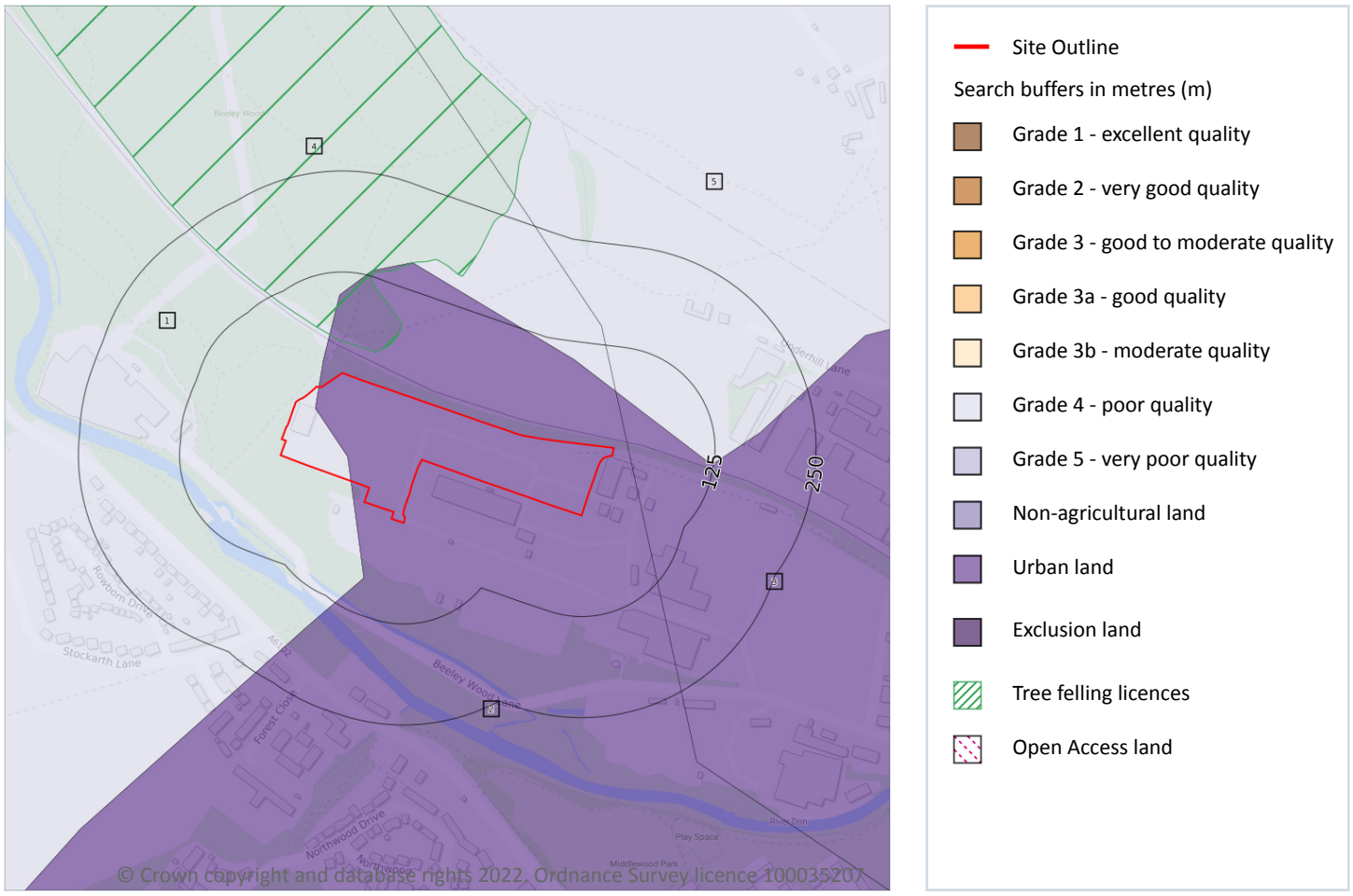
11.7 Registered Parks and Gardens

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



12.1 Agricultural Land Classification

Records within 250m	4

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 86**

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	**On site**	**Urban**	**-**
3	17m E	Urban	-
5	57m NE	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.

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	**1**

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.

Features are displayed on the Agricultural designations map on **page 86**

ID	Location	Description	Reference	Application date
4	38m N	Selective Fell/Thin (Unconditional)	012/8/10-11	20/05/2010

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	**0**

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

This data is sourced from Natural England.

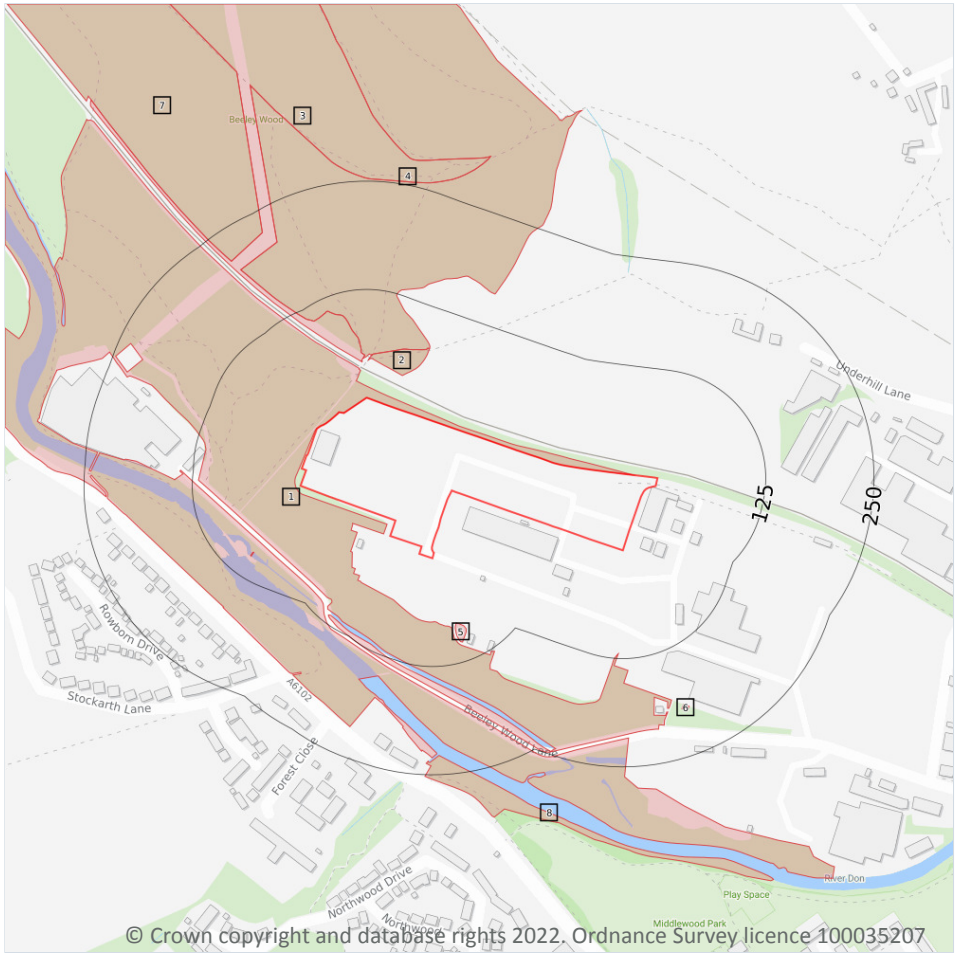
12.5 Countryside Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

13 Habitat designations



Site Outline

Search buffers in metres (m)

Priority Habitat Inventory
Open Mosaic Habitat
Limestone Pavement Orders

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

13.1 Priority Habitat Inventory

Records within 250m	**8**

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

Features are displayed on the Habitat designations map on **page 89**

ID	Location	Main Habitat	Other habitats
1	**On site**	**Deciduous woodland**	**Main habitat: DWOOD (INV > 50%)**
2	38m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	42m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
4	46m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

ID	Location	Main Habitat	Other habitats
5	79m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
6	191m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
7	214m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
8	228m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

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

This data is sourced from Natural England.

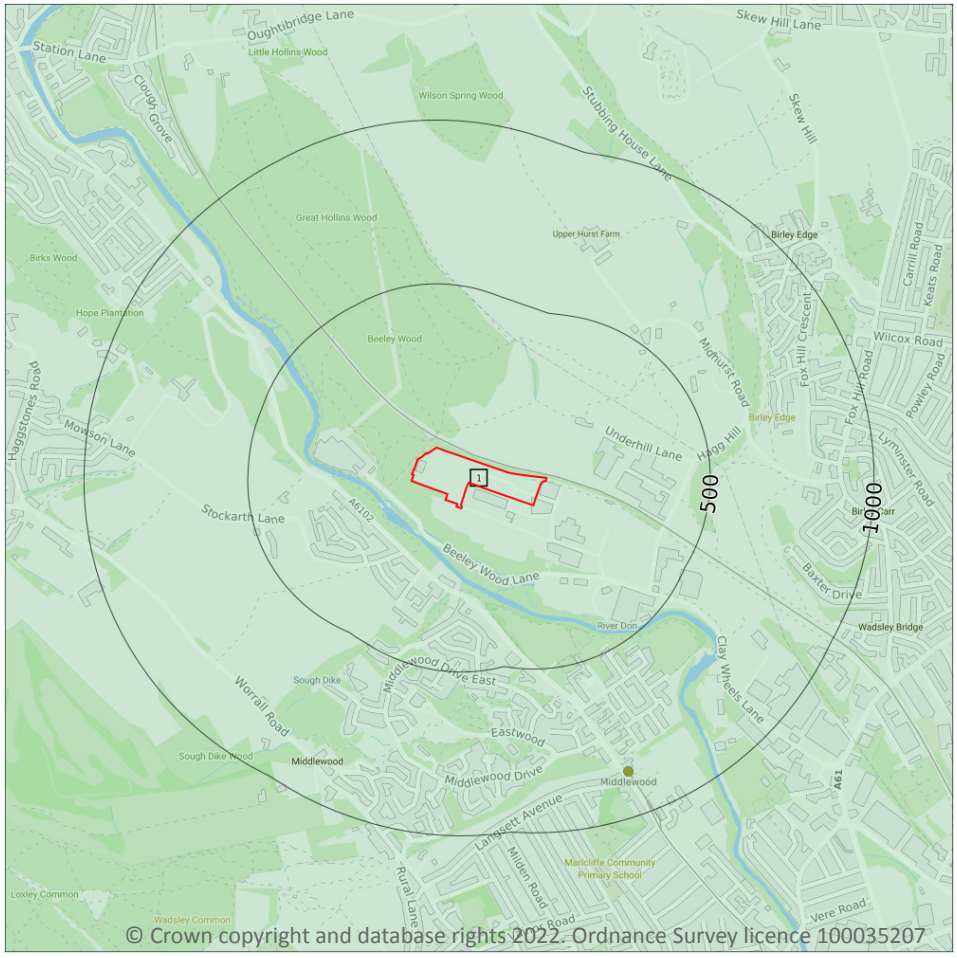
13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



Site Outline

Search buffers in metres (m)

Full coverage

Partial coverage

No coverage

14.1 10k Availability

Records within 500m	1

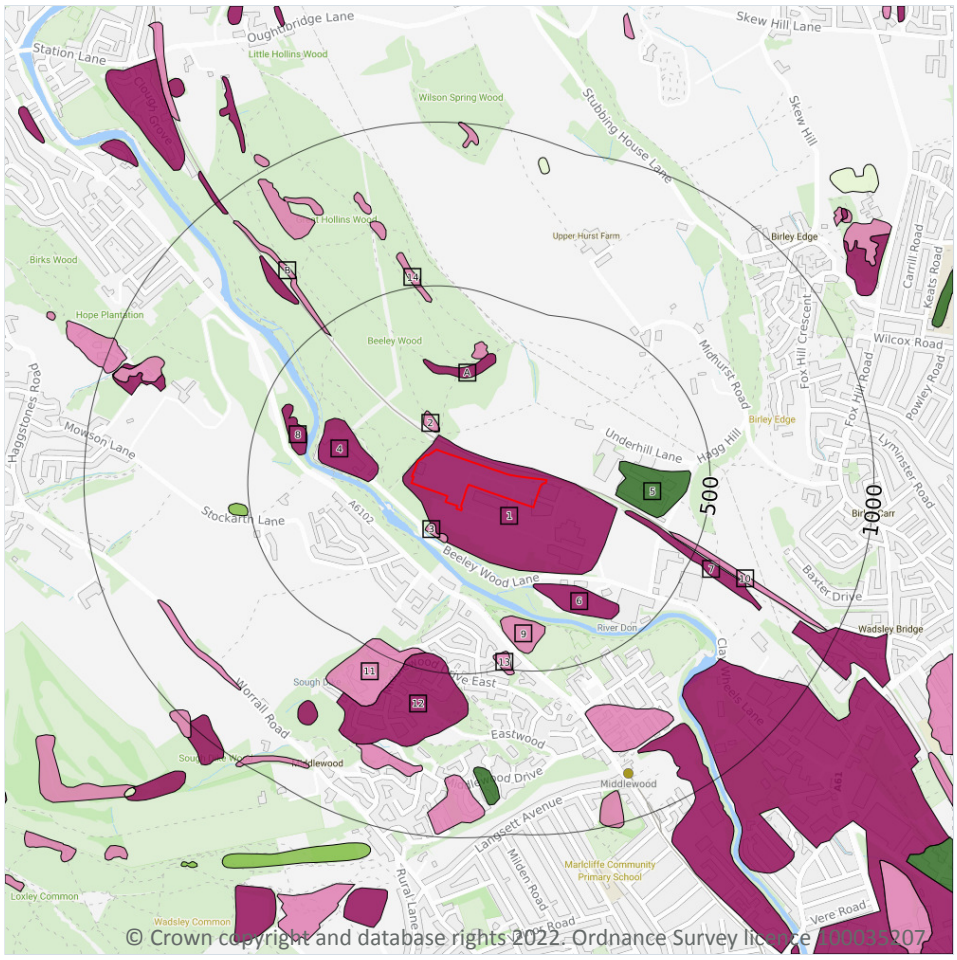
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 91**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**SK39SW**

This data is sourced from the British Geological Survey.

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



14.2 Artificial and made ground (10k)

Records within 500m	17

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.

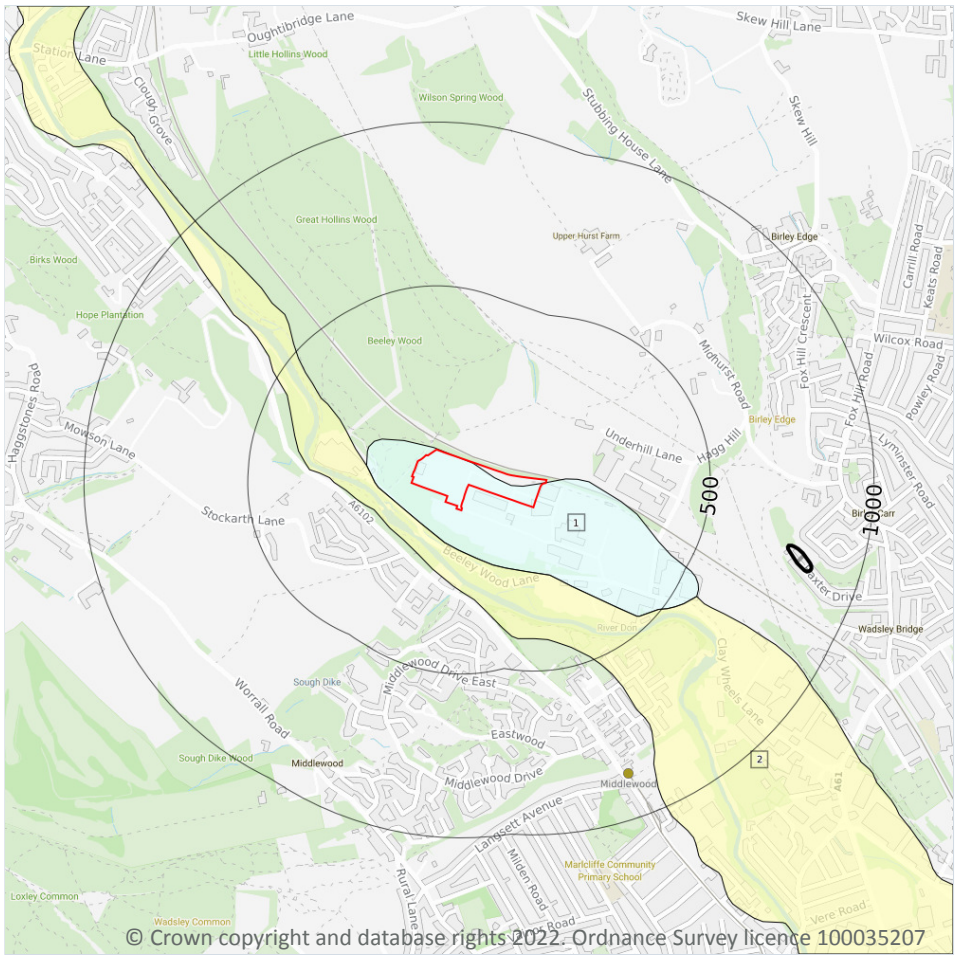
Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 92**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**MGR-ARTDP**	**Made Ground (Undivided)**	**Artificial Deposit**
2	54m N	WGR-VOID	Worked Ground (Undivided)	Void
3	75m SW	WGR-VOID	Worked Ground (Undivided)	Void
4	105m W	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

ID	Location	LEX Code	Description	Rock description
5	216m E	LSGR-UKNOWN	Landscaped Ground (Undivided)	Unknown/unclassified Entry
A	231m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
6	234m S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
7	257m E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
A	302m N	WGR-VOID	Worked Ground (Undivided)	Void
8	333m W	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
9	338m S	WGR-VOID	Worked Ground (Undivided)	Void
10	406m E	WGR-VOID	Worked Ground (Undivided)	Void
11	441m S	WGR-VOID	Worked Ground (Undivided)	Void
12	447m S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
13	447m S	WGR-VOID	Worked Ground (Undivided)	Void
14	450m N	WGR-VOID	Worked Ground (Undivided)	Void
B	466m NW	WGR-VOID	Worked Ground (Undivided)	Void

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

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

14.3 Superficial geology (10k)

Records within 500m	2

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 94**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TILMP-DMTN**	**Till, Mid Pleistocene - Diamicton**	**Diamicton**
2	76m SW	ALV-XVSZC	Alluvium - Gravel, Sand, Silt And Clay	Gravel, Sand, Silt And Clay

This data is sourced from the British Geological Survey.

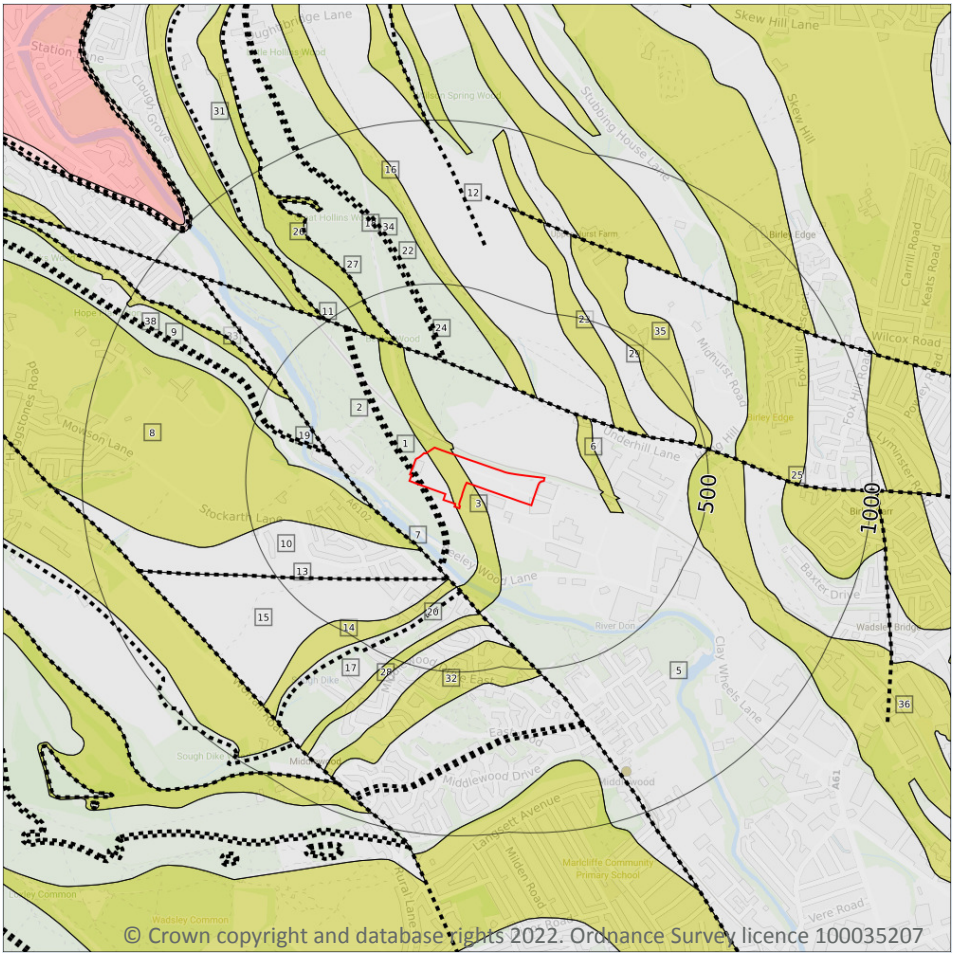
14.4 Landslip (10k)

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	23

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 96**

ID	Location	LEX Code	Description	Rock age
2	On site	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
3	On site	LER-SDST	Loxley Edge Rock - Sandstone	Langsettian Sub-age
5	On site	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age

ID	Location	LEX Code	Description	Rock age
6	130m NE	WHR-SDST	Wharncliff Rock - Sandstone	Langsettian Sub-age
8	137m SW	LER-SDST	Loxley Edge Rock - Sandstone	Langsettian Sub-age
9	141m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
10	167m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
12	216m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
14	218m S	CRS-SDST	Crawshaw Sandstone - Sandstone	Langsettian Sub-age
15	218m S	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
16	238m N	LER-SDST	Loxley Edge Rock - Sandstone	Langsettian Sub-age
17	241m S	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
18	250m N	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
23	265m NE	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
26	323m N	MBR-SDST	Middle Band Rock - Sandstone	Langsettian Sub-age
28	328m S	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
29	333m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
30	364m S	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
31	407m NW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
32	413m S	MBR-SDST	Middle Band Rock - Sandstone	Langsettian Sub-age
33	421m NW	MBR-SDST	Middle Band Rock - Sandstone	Langsettian Sub-age
35	425m NE	WHR-SDST	Wharncliff Rock - Sandstone	Langsettian Sub-age
36	440m E	GM-SDST	Greenmoor Rock - 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	**15**

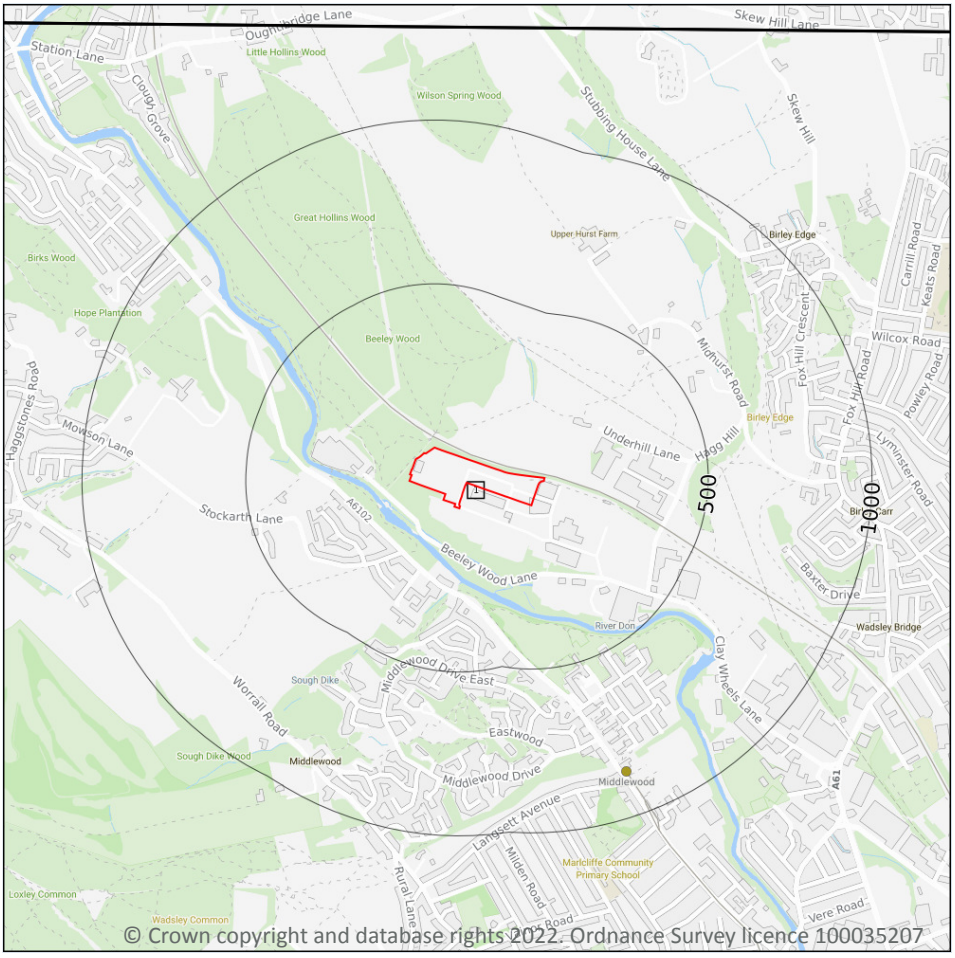
Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 96**

ID	Location	Category	Description
1	**On site**	**FOSSIL_HORIZON**	**Fossil horizon, marine band**
4	**On site**	**ROCK**	**Coal seam, inferred**
7	137m SW	FAULT	Normal fault, inferred
11	216m NE	FAULT	Normal fault, inferred
13	218m S	FAULT	Normal fault, inferred
19	253m W	FOSSIL_HORIZON	Fossil horizon, marine band
20	254m S	ROCK	Coal seam, inferred
21	263m W	ROCK	Coal seam, inferred
22	264m N	FOSSIL_HORIZON	Fossil horizon, marine band
24	269m N	ROCK	Coal seam, inferred
25	301m NE	FAULT	Normal fault, inferred
27	323m N	ROCK	Coal seam, inferred coincident with bedrock geology boundary
34	424m N	ROCK	Coal seam, inferred
37	461m SW	ROCK	Coal seam, inferred
38	470m W	FOSSIL_HORIZON	Fossil horizon, marine band

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 99**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**No coverage**	**Full**	**Full**	**Full**	**EW100_sheffield_v4**

This data is sourced from the British Geological Survey.

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

15.2 Artificial and made ground (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

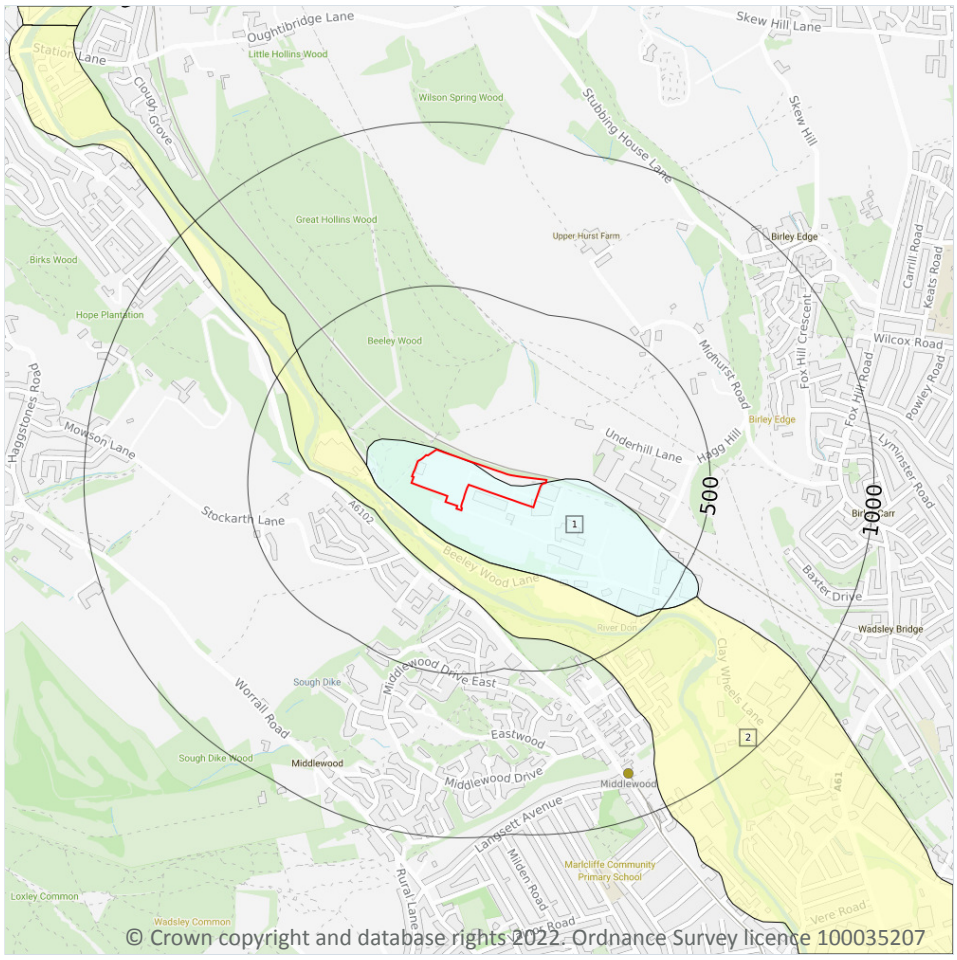
15.3 Artificial ground permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m	2

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 101**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TILMP-DMTN**	**TILL, MID PLEISTOCENE**	**DIAMICTON**
2	76m SW	ALV-XVSZC	ALLUVIUM	GRAVEL, SAND, SILT AND CLAY

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

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

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

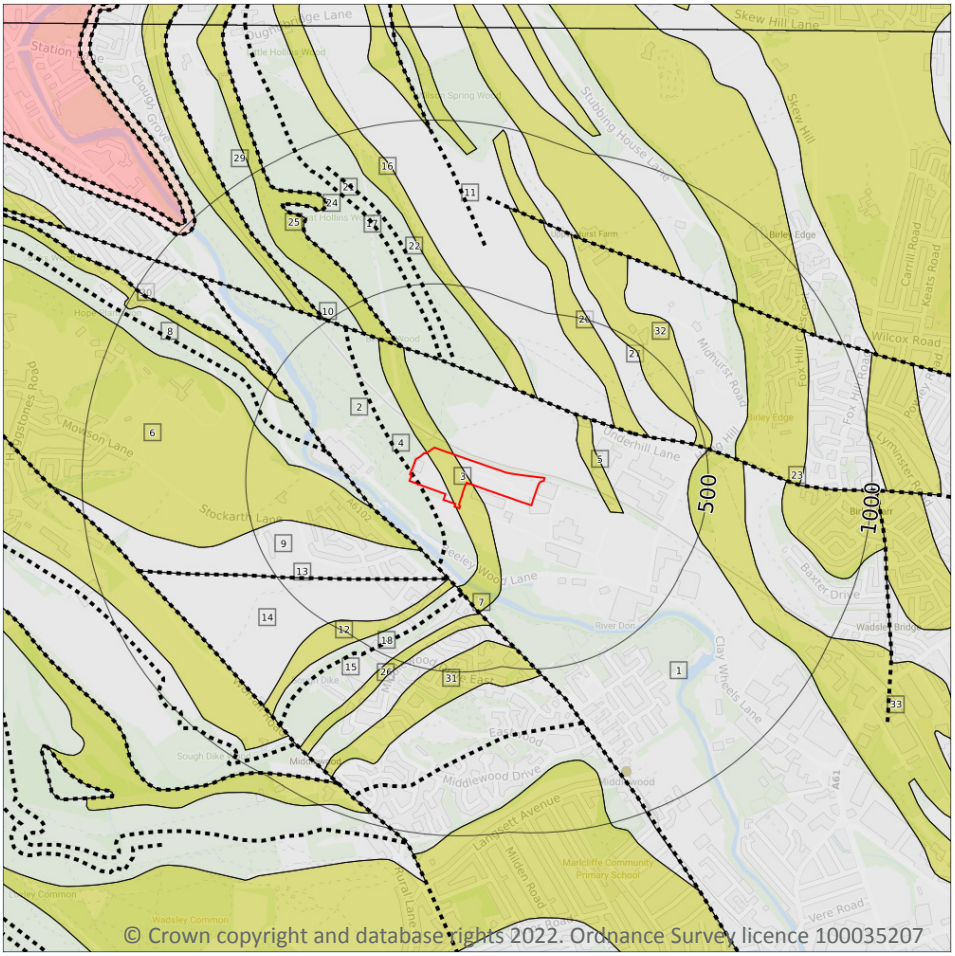
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m	23

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 103**

ID	Location	LEX Code	Description	Rock age
1	On site	PLCM-MDSI	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE AND SILTSTONE	WESTPHALIAN
2	On site	PLCM-MDSI	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE AND SILTSTONE	WESTPHALIAN
3	On site	LER-SDST	LOXLEY EDGE ROCK - SANDSTONE	WESTPHALIAN

ID	Location	LEX Code	Description	Rock age
5	130m NE	WHR-SDST	WHARNCLIFF ROCK - SANDSTONE	WESTPHALIAN
6	137m SW	LER-SDST	LOXLEY EDGE ROCK - SANDSTONE	WESTPHALIAN
8	140m SW	PLCM-MDSI	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE AND SILTSTONE	WESTPHALIAN
9	168m SW	PLCM-MDSI	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE AND SILTSTONE	WESTPHALIAN
11	216m NE	PLCM-MDSI	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE AND SILTSTONE	WESTPHALIAN
12	218m S	CRS-SDST	CRAWSHAW SANDSTONE - SANDSTONE	WESTPHALIAN
14	218m S	PLCM-MDSI	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE AND SILTSTONE	WESTPHALIAN
15	237m S	PLCM-MDSI	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE AND SILTSTONE	WESTPHALIAN
16	239m N	LER-SDST	LOXLEY EDGE ROCK - SANDSTONE	WESTPHALIAN
17	249m N	PLCM-MDSI	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE AND SILTSTONE	WESTPHALIAN
20	265m NE	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
25	323m N	MBR-SDST	MIDDLE BAND ROCK - SANDSTONE	WESTPHALIAN
26	328m S	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
27	333m NE	PLCM-MDSI	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE AND SILTSTONE	WESTPHALIAN
28	364m S	PLCM-MDSI	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE AND SILTSTONE	WESTPHALIAN
29	407m NW	PLCM-MDSI	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE AND SILTSTONE	WESTPHALIAN
30	410m NW	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
31	413m S	MBR-SDST	MIDDLE BAND ROCK - SANDSTONE	WESTPHALIAN
32	425m NE	WHR-SDST	WHARNCLIFF ROCK - SANDSTONE	WESTPHALIAN
33	440m E	GM-SDST	GREENMOOR ROCK - 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**
On site	**Fracture**	**Moderate**	**Low**

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	10

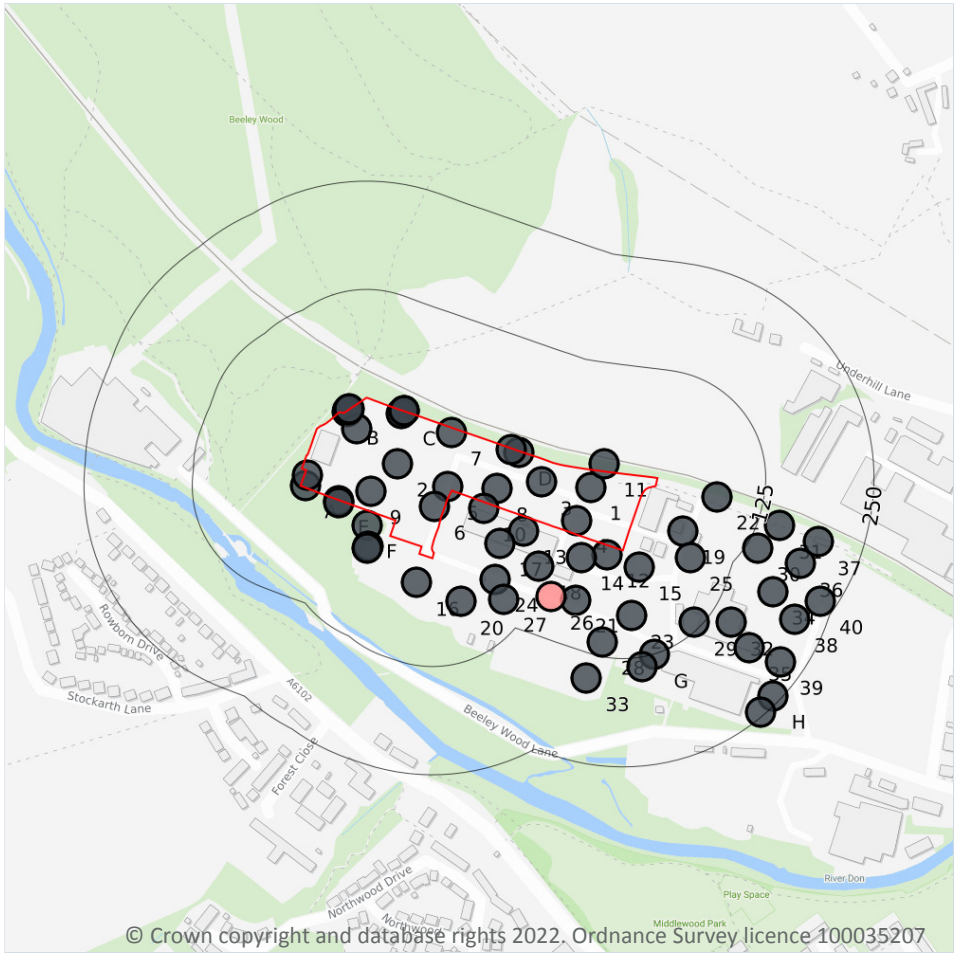
Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 103**

ID	Location	Category	Description
4	**On site**	**ROCK**	**Coal seam, inferred**
7	137m SW	FAULT	Fault, inferred
10	216m NE	FAULT	Fault, inferred
13	218m S	FAULT	Fault, inferred
18	260m S	ROCK	Coal seam, inferred
19	263m W	ROCK	Coal seam, inferred
21	268m N	ROCK	Coal seam, inferred
22	277m N	FOSSIL_HORIZON	Marine band
23	301m NE	FAULT	Fault, inferred
24	323m N	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.

16 Boreholes



Site Outline

Search buffers in metres (m)

Confidential

0 - 10m

10 - 30m

30m+

Unknown

16.1 BGS Boreholes

Records within 250m	61

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

Features are displayed on the Boreholes map on **page 106**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	On site	432292 392060	GROUND INVESTIGATION UCAR TP 22	-	Y	N/A
2	On site	432069 392087	GROUND INVESTIGATION UCAR TP 6	-	Y	N/A
3	On site	432235 392066	GROUND INVESTIGATION UCAR TP 13	-	Y	N/A

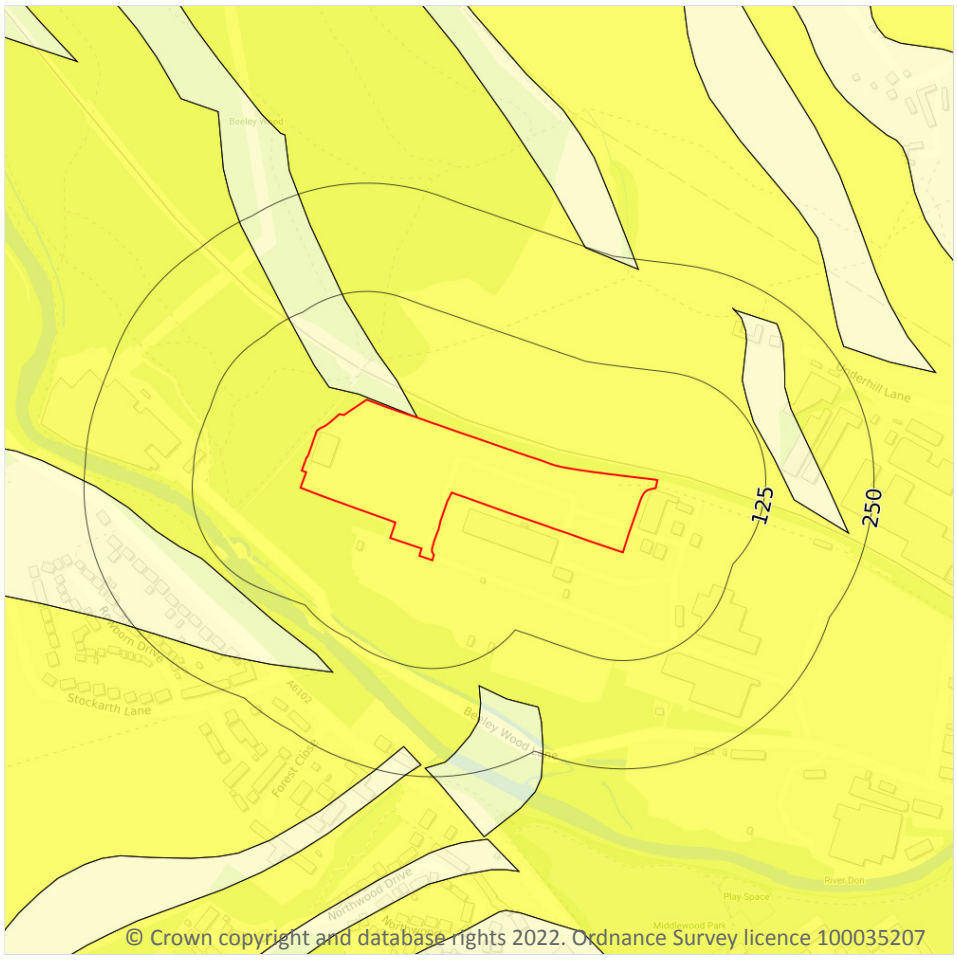
ID	Location	Grid reference	Name	Length	Confidential	Web link
4	**On site**	**432276 392022**	**GROUND INVESTIGATION UCAR TP 23**	**-**	**Y**	**N/A**
5	**On site**	**432127 392061**	**GROUND INVESTIGATION UCAR 2R**	**-**	**Y**	**N/A**
6	**On site**	**432112 392038**	**GROUND INVESTIGATION UCAR 3**	**-**	**Y**	**N/A**
7	**On site**	**432131 392123**	**GROUND INVESTIGATION UCAR TP 11**	**-**	**Y**	**N/A**
8	**On site**	**432184 392059**	**GROUND INVESTIGATION UCAR TP 14**	**-**	**Y**	**N/A**
9	**On site**	**432038 392056**	**GROUND INVESTIGATION UCAR 16**	**-**	**Y**	**N/A**
A	**On site**	**431963 392062**	**GROUND INVESTIGATION UCAR 1**	**-**	**Y**	**N/A**
A	**On site**	**431965 392074**	**GROUND INVESTIGATION UCAR TP 3**	**-**	**Y**	**N/A**
B	**On site**	**432011 392147**	**GROUND INVESTIGATION UCAR TP 1**	**-**	**Y**	**N/A**
B	**On site**	**432022 392128**	**GROUND INVESTIGATION UCAR TP 2**	**-**	**Y**	**N/A**
C	**On site**	**432076 392147**	**GROUND INVESTIGATION UCAR TP 4**	**-**	**Y**	**N/A**
C	**On site**	**432073 392145**	**GROUND INVESTIGATION UCAR TP 5**	**-**	**Y**	**N/A**
D	**On site**	**432209 392100**	**GROUND INVESTIGATION UCAR TP 12**	**-**	**Y**	**N/A**
D	**On site**	**432200 392104**	**GROUND INVESTIGATION UCAR WC-3L**	**-**	**Y**	**N/A**
C	0m N	432077 392148	GROUND INVESTIGATION UCAR WC-2U	-	Y	N/A
C	0m N	432077 392148	GROUND INVESTIGATION UCAR WC-2L	-	Y	N/A
B	1m NW	432012 392150	GROUND INVESTIGATION UCAR WC-1U	-	Y	N/A
B	1m NW	432013 392151	GROUND INVESTIGATION UCAR WC-1L	-	Y	N/A
E	1m S	432001 392044	GROUND INVESTIGATION UCAR 6	-	Y	N/A
E	3m S	432001 392042	GROUND INVESTIGATION UCAR TP 7	-	Y	N/A
10	7m S	432168 392036	GROUND INVESTIGATION UCAR TP 15	-	Y	N/A
11	9m N	432308 392087	GROUND INVESTIGATION UCAR TP 28	-	Y	N/A
12	11m S	432311 391982	GROUND INVESTIGATION UCAR TP 29	-	Y	N/A
13	16m S	432215 392010	GROUND INVESTIGATION UCAR 5	-	Y	N/A
F	17m S	432034 392016	GROUND INVESTIGATION UCAR TP 8	-	Y	N/A
14	23m S	432281 391979	GROUND INVESTIGATION UCAR TP 24	-	Y	N/A
15	27m SE	432348 391968	GROUND INVESTIGATION UCAR 9	-	Y	N/A
F	28m SW	432035 391992	GROUND INVESTIGATION UCAR 17	-	Y	N/A

ID	Location	Grid reference	Name	Length	Confidential	Web link
F	30m SW	432034 391990	GROUND INVESTIGATION UCAR TP 9	-	Y	N/A
16	33m S	432091 391950	GROUND INVESTIGATION UCAR 4	-	Y	N/A
17	39m S	432187 391995	GROUND INVESTIGATION UCAR TP 16	-	Y	N/A
18	49m S	432232 391969	GROUND INVESTIGATION UCAR 7	-	Y	N/A
19	58m E	432398 392010	GROUND INVESTIGATION UCAR TP 31	-	Y	N/A
20	60m SE	432142 391928	GROUND INVESTIGATION UCAR TP 19	-	Y	N/A
21	72m S	432275 391930	GROUND INVESTIGATION UCAR TP 25	-	Y	N/A
22	72m E	432438 392049	GROUND INVESTIGATION UCAR TP 30	-	Y	N/A
23	76m S	432339 391912	GROUND INVESTIGATION UCAR 10	-	Y	N/A
24	77m E	432182 391954	GROUND INVESTIGATION UCAR TP 17	-	Y	N/A
25	77m E	432407 391979	GROUND INVESTIGATION UCAR TP 32	-	Y	N/A
26	77m S	432246 391934	ACHESON ELECTRODES LTD 8	192.32	N	215946
27	95m SE	432192 391931	GROUND INVESTIGATION UCAR TP 18	-	Y	N/A
28	108m S	432305 391882	GROUND INVESTIGATION UCAR TP 26	-	Y	N/A
29	118m SE	432412 391904	GROUND INVESTIGATION UCAR 12	-	Y	N/A
G	126m S	432366 391867	GROUND INVESTIGATION UCAR TP 34	-	Y	N/A
G	136m S	432351 391853	GROUND INVESTIGATION UCAR 11	-	Y	N/A
30	138m SE	432485 391990	GROUND INVESTIGATION UCAR TP 43	-	Y	N/A
31	150m E	432510 392016	GROUND INVESTIGATION UCAR TP 35	-	Y	N/A
32	150m SE	432454 391904	GROUND INVESTIGATION UCAR TP 44	-	Y	N/A
33	153m S	432287 391840	GROUND INVESTIGATION UCAR 8	-	Y	N/A
34	179m E	432502 391940	GROUND INVESTIGATION UCAR TP 37	-	Y	N/A
35	184m SE	432475 391875	GROUND INVESTIGATION UCAR TP 39	-	Y	N/A
36	190m SE	432534 391972	GROUND INVESTIGATION UCAR TP 36	-	Y	N/A
37	199m E	432555 391997	GROUND INVESTIGATION UCAR 13	-	Y	N/A
38	214m E	432528 391908	GROUND INVESTIGATION UCAR TP 38	-	Y	N/A
39	223m SE	432511 391859	GROUND INVESTIGATION UCAR 14	-	Y	N/A
40	232m SE	432557 391929	GROUND INVESTIGATION UCAR TP 42	-	Y	N/A

ID	Location	Grid reference	Name	Length	Confidential	Web link
H	241m SE	432502 391819	GROUND INVESTIGATION UCAR TP 41	-	Y	N/A
H	246m SE	432488 391800	GROUND INVESTIGATION UCAR 15	-	Y	N/A

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

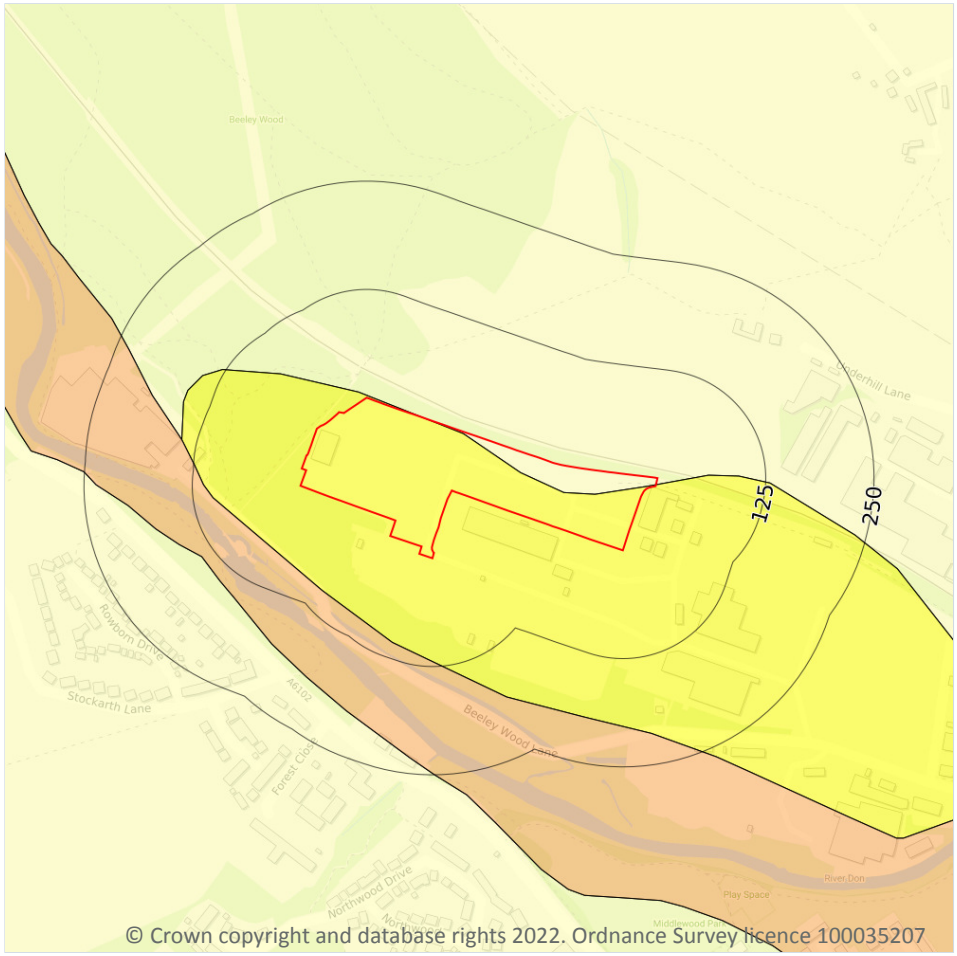
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 110**

Location	Hazard rating	Details
On site	**Very low**	**Ground conditions predominantly low plasticity.**
0m N	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.

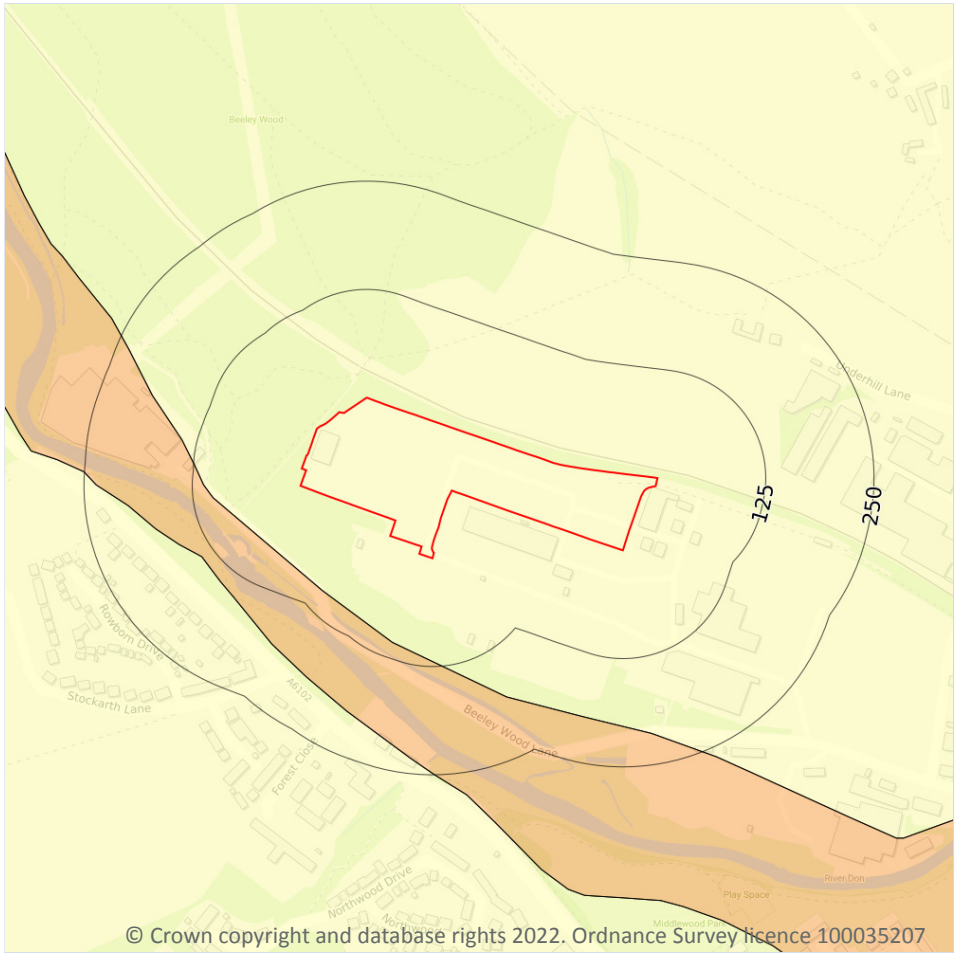
Features are displayed on the Natural ground subsidence - Running sands map on **page 111**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

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

17.3 Compressible deposits

Records within 50m	1

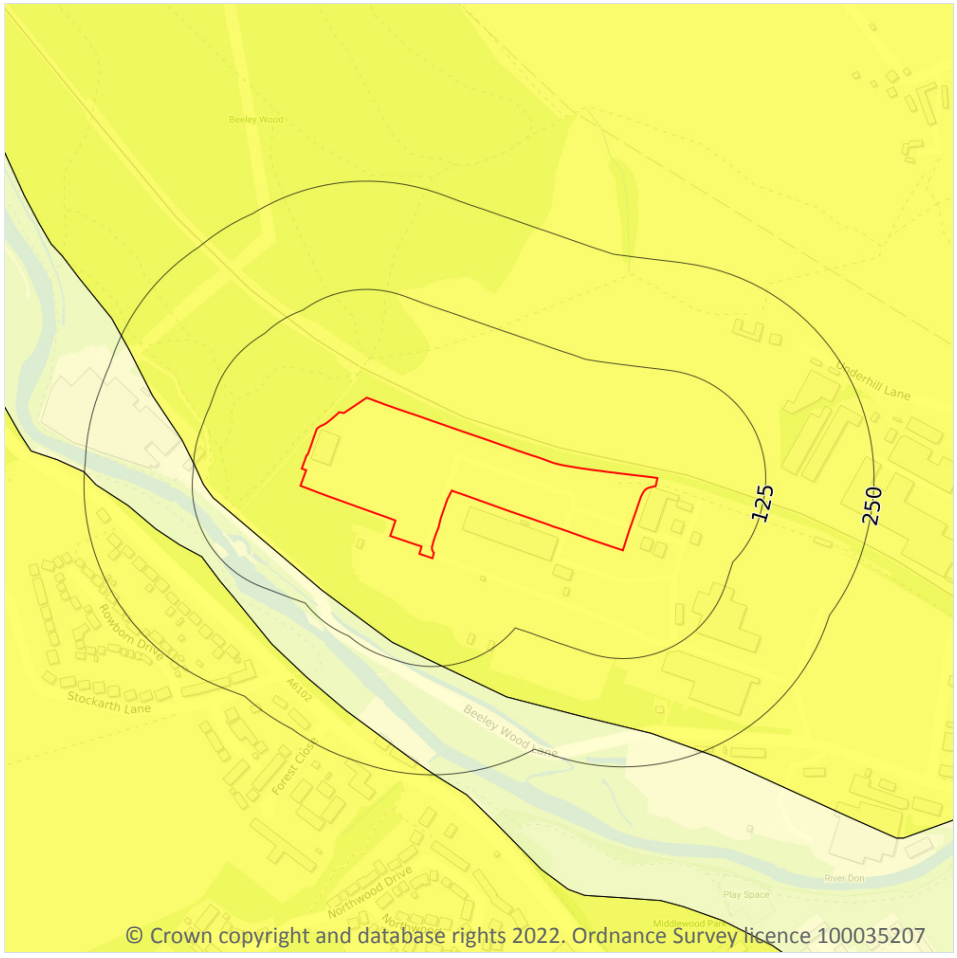
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 113**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



Site Outline

Search buffers in metres (m)

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

17.4 Collapsible deposits

Records within 50m	1

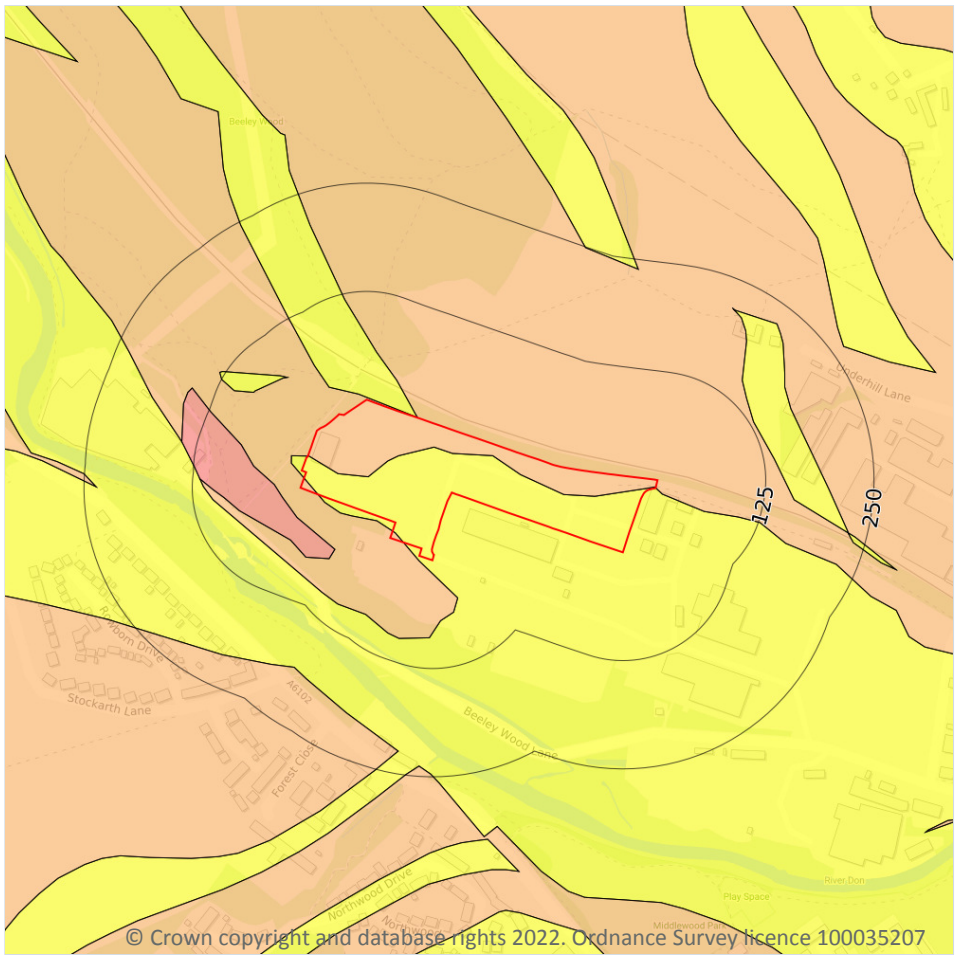
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 114**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

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

17.5 Landslides

Records within 50m	4

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.

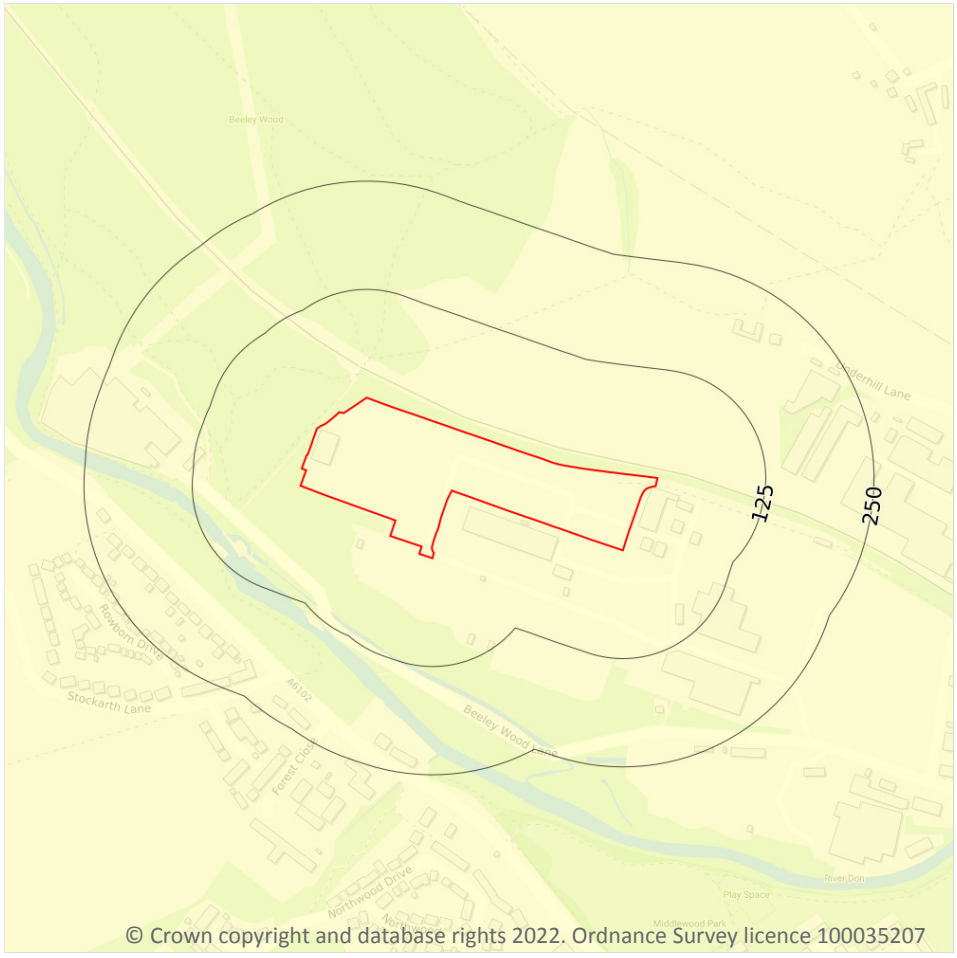
Features are displayed on the Natural ground subsidence - Landslides map on **page 115**

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
On site	**Low**	**Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.**
0m N	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.
23m SW	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

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

17.6 Ground dissolution of soluble rocks

Records within 50m	1

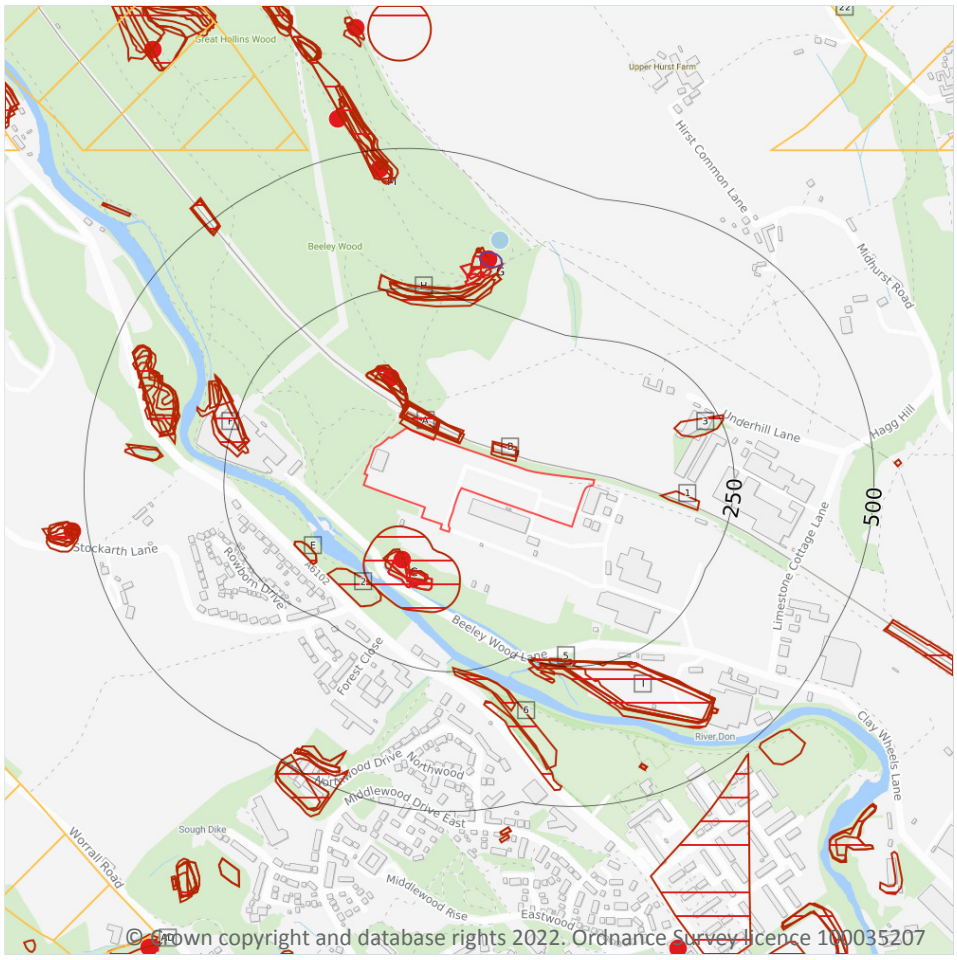
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 117**

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

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



Site Outline

Search buffers in metres (m)

- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities

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 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m	5

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 119**

ID	Location	Details	Description
C	83m SW	Name: Beeley Wood No 1 Mine Address: Oughtibridge, SHEFFIELD, South Yorkshire Commodity: Ganister Status: Ceased	Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
D	93m N	Name: Great Hollins Wood Address: Oughtibridge, SHEFFIELD, South Yorkshire Commodity: Ganister Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
G	333m N	Name: Beeley Wood No 1 Mine Address: Beeley Wood, Oughtibridge, SHEFFIELD, South Yorkshire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
M	465m N	Name: Oughtibridge District Mine Address: Oughtibridge, SHEFFIELD, South Yorkshire Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

ID	Location	Details	Description
M	465m N	Name: Oughtibridge District Mine Address: Oughtibridge, SHEFFIELD, South Yorkshire Commodity: Ganister Status: Ceased	Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	**45**

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 119**

ID	Location	Land Use	Year of mapping	Mapping scale
A	**On site**	**Cuttings**	**1924**	**1:10560**
A	6m N	Cuttings	1948	1:10560
B	6m N	Cuttings	1938	1:10560
A	7m N	Cuttings	1938	1:10560
A	9m N	Cuttings	1890	1:10560
A	10m N	Cuttings	1920	1:10560
A	10m N	Cuttings	1901	1:10560
A	11m N	Cuttings	1951	1:10560
B	12m N	Cuttings	1951	1:10560
C	26m S	Old Gannister Level	1920	1:10560
D	30m N	Unspecified Old Quarry	1924	1:10560
D	41m N	Unspecified Old Quarry	1901	1:10560
D	41m N	Unspecified Old Quarry	1920	1:10560
D	48m N	Unspecified Pit	1948	1:10560
D	49m N	Unspecified Quarry	1938	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
D	57m N	Unspecified Pit	1981	1:10000
D	57m N	Unspecified Pit	1966	1:10560
C	70m SW	Unspecified Pit	1966	1:10560
C	70m SW	Unspecified Pit	1951	1:10560
C	71m SW	Old Gannister Level	1938	1:10560
C	76m S	Gannister Level	1948	1:10560
C	88m S	Old Gannister Level	1924	1:10560
1	122m E	Cuttings	1951	1:10560
E	147m SW	Unspecified Heap	1938	1:10560
E	147m SW	Unspecified Heap	1938	1:10560
2	150m SW	Unspecified Heap	1966	1:10560
3	170m NE	Unspecified Heap	1966	1:10560
F	212m W	Water Body	1924	1:10560
F	215m W	Water Body	1948	1:10560
F	215m W	Water Body	1920	1:10560
F	218m W	Water Body	1938	1:10560
G	222m N	Refuse Heap	1924	1:10560
G	232m N	Refuse Heap	1948	1:10560
G	232m N	Refuse Heap	1920	1:10560
H	235m N	Refuse Heap	1938	1:10560
H	235m N	Refuse Heap	1938	1:10560
5	237m S	Pond	1981	1:10000
G	238m N	Refuse Heap	1966	1:10560
I	240m S	Water Body	1938	1:10560
I	240m S	Water Body	1948	1:10560
I	240m S	Water Body	1901	1:10560
I	240m S	Water Body	1920	1:10560
I	241m S	Water Body	1951	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
I	241m S	Pond	1890	1:10560
6	243m S	Unspecified Heap	1951	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	**10**

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, ground workings and natural cavities map on **page 119**

ID	Location	Land Use	Year of mapping	Mapping scale
C	76m S	Gannister Level	1948	1:10560
C	88m S	Old Gannister Level	1924	1:10560
G	277m N	Coal and Gannister Level	1924	1:10560
G	290m N	Coal and Gannister Level	1920	1:10560
G	294m N	Coal and Gannister Level	1948	1:10560
-	728m W	Old Air Shaft	1920	1:10560
-	731m W	Unspecified Shaft	1901	1:10560
-	735m W	Unspecified Old Shaft	1924	1:10560
AD	892m SW	Unspecified Old Level	1920	1:10560
AD	902m SW	Unspecified Old Level	1924	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	**1**

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 119**

ID	Location	Site Name	Mineral	Type	Planning Status	Planning Status Date
G	322m N	Beeley Wood	Sandstone	Surface mineral working	Valid	Not available

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	**8**

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).

Features are displayed on the Mining, ground workings and natural cavities map on **page 119**

ID	Location	Name	Commodity	Class	Likelihood
4	206m N	Not available	Ganister & Clay	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
11	527m N	Sheffield Area	Vein Mineral/Iron ore	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
15	670m NE	Sheffield Area	Vein Mineral/Iron ore	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
18	813m SW	Not available	Vein Mineral	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
20	829m NW	Sheffield Area	Vein Mineral/Iron ore	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
22	902m NE	Sheffield Area	Vein Mineral/Iron ore/Ganister & Clay	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered

ID	Location	Name	Commodity	Class	Likelihood
-	927m NW	Not available	Vein Mineral	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered
-	998m S	Not available	Vein Mineral	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	**1**

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.

Features are displayed on the Mining, ground workings and natural cavities map on **page 119**

ID	Location	Mine Address	Mineral	Data source	Publisher
G	373m N	Oughtibridge, South Yorkshire	Gannister	LISTING OF NEW MINERAL RECORDS OFFICE CATALOGUE.	UNPUBLISHED/DRAFT

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site	**0**

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	**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.

18.10 Brine areas

Records on site	0

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

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

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

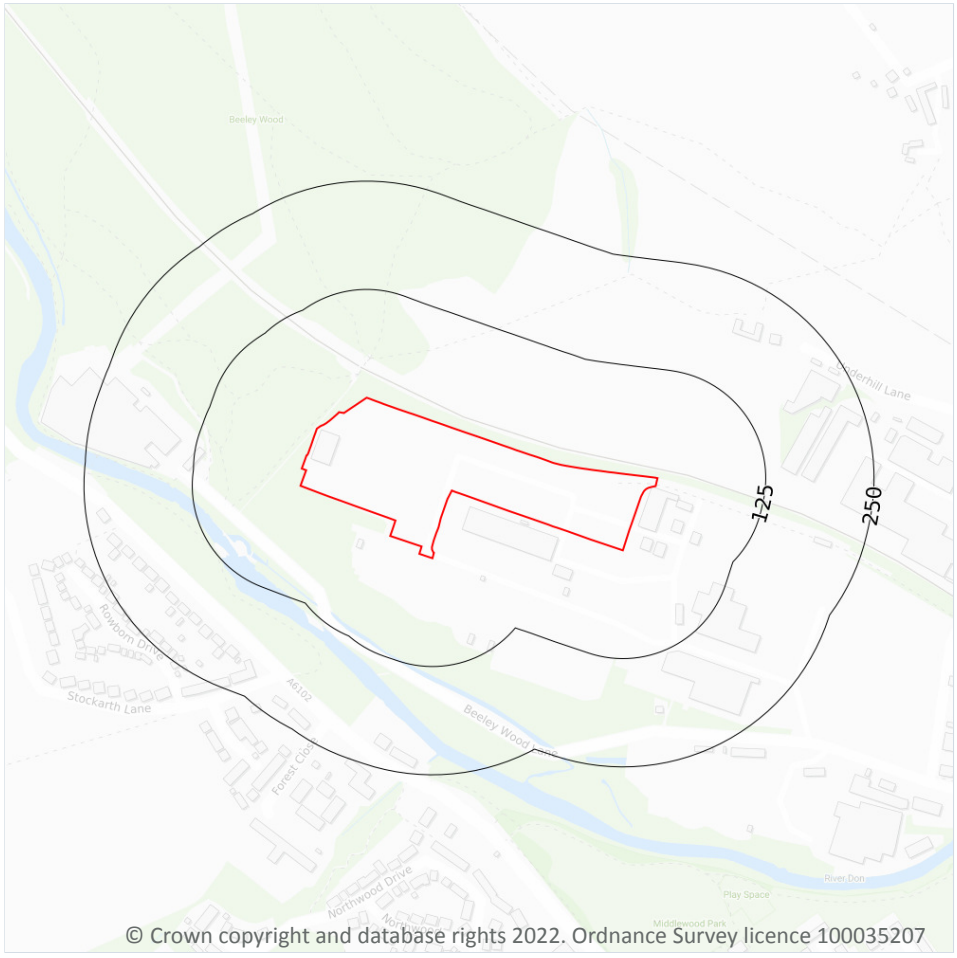
18.13 Clay mining

Records on site	0

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

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

19 Radon



Site Outline

Search buffers in metres (m)

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

19.1 Radon

Records on site	1

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

Features are displayed on the Radon map on **page 127**

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

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

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	17

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 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**120 - 180 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**120 - 180 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**120 - 180 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**120 - 180 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**120 - 180 mg/kg**	**15 - 30 mg/kg**

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
43m SW	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
43m W	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
43m SW	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
43m SW	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	**18**

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).

Location	Arsenic (mg/kg)	Bioaccessible Arsenic (mg/kg)	Lead (mg/kg)	Bioaccessible Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Tin (mg/kg)
On site	**14**	**2.5**	**73**	**50**	**0.4**	**90**	**39**	**33**	**6**
On site	**14**	**2.5**	**72**	**49**	**0.4**	**91**	**39**	**33**	**6**
On site	**15**	**2.6**	**82**	**56**	**0.4**	**92**	**42**	**33**	**7**
On site	**15**	**2.6**	**80**	**55**	**0.4**	**92**	**42**	**33**	**7**
On site	**15**	**2.6**	**80**	**55**	**0.4**	**94**	**42**	**34**	**7**
On site	**15**	**2.6**	**77**	**53**	**0.4**	**95**	**41**	**34**	**6**
On site	**15**	**2.6**	**77**	**53**	**0.4**	**90**	**41**	**33**	**7**
On site	**16**	**2.8**	**86**	**59**	**0.4**	**93**	**44**	**33**	**8**
On site	**16**	**2.8**	**84**	**58**	**0.5**	**98**	**44**	**34**	**7**
On site	**16**	**2.8**	**85**	**58**	**0.4**	**91**	**43**	**33**	**8**

Location	Arsenic (mg/kg)	Bioaccessible Arsenic (mg/kg)	Lead (mg/kg)	Bioaccessible Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Tin (mg/kg)
On site	**16**	**2.8**	**85**	**58**	**0.4**	**94**	**44**	**34**	**7**
On site	**16**	**2.8**	**87**	**60**	**0.4**	**93**	**45**	**33**	**8**
On site	**16**	**2.8**	**86**	**59**	**0.5**	**96**	**45**	**34**	**7**
20m E	18	3.2	93	64	0.5	102	47	36	7
31m E	17	3	91	63	0.5	104	48	35	7
37m NW	17	3	89	61	0.4	95	46	34	8
43m SW	15	2.6	82	56	0.4	90	42	33	7
43m E	18	3.2	92	63	0.6	109	50	39	7

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m	**0**

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

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

Site Outline

Search buffers in metres (m)

- Crossrail 1 Stations
- Crossrail 1 Route
- Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

21.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	17

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.

Features are displayed on the Railway infrastructure and projects map on **page 131**

Location	Land Use	Year of mapping	Mapping scale
On site	**Railway Sidings**	**1968**	**2500**
On site	**Railway Sidings**	**1957**	**2500**
On site	**Railway**	**1922**	**-**
On site	**Railway**	**1905**	**-**
On site	**Railway**	**1890**	**-**
On site	**Railway Sidings**	**1966**	**10560**
10m N	Railway Sidings	1981	10000
25m N	Railway Sidings	1961	2500
26m N	Railway Sidings	1968	2500
26m N	Railway Sidings	1957	2500
181m E	Railway Sidings	1965	1250
231m N	Railway Sidings	1924	10560
232m S	Railway Sidings	1952	2500
235m N	Tramway Sidings	1938	10560
244m N	Tramway Sidings	1948	10560
244m N	Tramway Sidings	1920	10560
248m N	Tramway Sidings	1934	2500

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	1

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

Features are displayed on the Railway infrastructure and projects map on **page 131**

Location	Description
200m NW	Abandoned

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	11

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

Features are displayed on the Railway infrastructure and projects map on **page 131**

Location	Name	Type
11m N	Not given	Single Track
11m N	Stocksbridge Line	rail
16m N	Not given	Single Track
37m N	Not given	Single Track
88m N	Not given	Single Track
171m E	Not given	Single Track

Location	Name	Type
174m NW	Not given	Single Track
199m NW	Stocksbridge Line	rail
220m NW	Stocksbridge Line	rail
234m E	Not given	Single Track
249m E	Not given	Single Track

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

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

This data is sourced from HS2 ltd.

Data providers

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

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APPENDIX D

BGS Exploratory Hole Records

Name of Shaft or Bore given by Geological Survey: *Acheson Electrodes*

6-inch Map Registered No. 288 SE/W SK39SW/8

Geological Classification	Description of Strata	Thickness Ft	Thickness In.	Depth Ft	Depth In.
	Mudstone grey, rather silty with paler bands. Incipient colour banding about 8 to the inch some times seen, but most of banding is rather irregular.	6	10	575	9
	Mudstone grey, rather silty, micaceous, with vague poor banding. Plant-debris	8	3	584	0
	Mudstone grey compact, with banding at about 12 to the inch.	8	6	592	6
	Mudstone rather dark grey, frequent ironstone lenses and a few pyritic nodules. No fossils seen.	6	0	598	6
MARINE BAND	Marine Band.				
	Mudstone dark grey with marine fossils, the following changes noted:				
	Scattered, small, ill preserved goniatites.		3	598	9
	Small goniatites.	1	0	599	9
	Larger, well preserved goniatites.		4	600	1
	Ironstone lense at 600/3 & 600/7 with gastropods & lamellibranch		2	600	3
	goniatites scattered throughout, with Dunbarella seen at 600/4, 601/9, and Posidonia seen at 601/3 and 601/9, rather silty bed.	2	10	603	1
	Mudstone dark grey, silty with abundant mussels at top becoming vague downwards.		5	603	6
	Sandstone whitish, rather fine grained, massive with small unevennesses on bedding planes. Possibly rooty at top. Beds 9"-1/3 thick. Well marked jointing throughout. Ferruginous in parts.	12	5	615	11
	Sandstone grey, with poorly seen beds at intervals of 3" or less, mostly under 1½" thick.	4	7	620	6
	Mudstone grey, silty with mussels at two levels at least. Plant fragments at other levels and mussels here obscure	5	7	626	1
	Siltstone grey, with a single thin band of rather darker mudstone. Small ironstone nodules at some levels.	4	11	631	0

(5412) Wt.32837/PS.154 6m 10/64 G.W.B.Ltd. Gp.863

Name of Shaft or Bore given by Geological Survey:
Acheson Electrodes

6-inch Map Registered No.
~~268 SE/w~~ SK39SW/8

Geological Classification	Description of Strata	Thickness Ft	Thickness In.	Depth Ft	Depth In.
	? Ironstone and mussel at 496/0 and 496/1			496	2½
	Mudstone grey, silty with frequent paler silty bands up to ½" thick, these often have curved surfaces. Silty bands thinner and less prominent below 499, not seen below 500. Poorly preserved plant debris	4	11½	501	2
	Sandstone whitish, fine grained, massive except for a few even cross beds. Grey micaceous partings.	4	8	505	10
	Sandstone grey, bedding obscure but probably thin to very thin. Visible beds often curved wisps micaceous, changes slowly down to white with prominent bedding planes 1"-3" apart but each bed separated by laminated grey partings. Cross-bedding sometimes seen.	4	5	510	3
	Sandstone white, fine grained, cross bedded. Individual beds thick with odd wisps.	1	6	511	9
	Sandstone whitish, fine grained, cross bedded.		9	512	6
	Sandstone white fine grained but appears less fine at some levels, beds of variable thickness either cross bedded or undulating or curved wisps, cross bedding here and there. Grey micaceous partings only frequent in lowest 6 ft.	15	6	528	0
	Sandstone whitish, fine or very fine grained, with many grey micaceous partings some suggestive of ripples.	4	3	532	3
	Sandstone grey, fine grained, with whiter laminae and thin bands all made vague by small scale disturbances	3	1	535	4
	Sandstone whitish, fine grained, thin or very thin bedded. Bedding even with very dark partings prominent at top. Some beds are lenticular.	6	10	542	2
	Mudstone silty beds alternating closely with laminated siltstone. Bedding mainly even except for minor bioturbation at some levels. Beds are slightly banded with siltstone at two levels	11	7	553	9
	Mudstone grey, silty, with even silty laminae 1-5 mm thick. Thicker laminae have internal cross bedding.	15	2	568	11

(5412) Wt.32837/P8.154 6m 10/64 G.W.B.Ltd. Cp.863

Name of Shaft or Bore given by Geological Survey:
Acheson Electrodes

6-inch Map Registered No.
~~288 SE/a~~ SK 39 SW/8

Geological Classification	Description of Strata	Thickness Ft	Thickness In.	Depth Ft	Depth In.
	thick, much of the rest is unlaminated but a few lenses of siltstone occur. There is also a single massive grey siltstone in the middle, this with rafts is 8" thick. Colour banding of the rather silty mudstone is apparent at some levels from 472/0. At 476/0 - 477/6 there is dual banding, bands from 4 to the inch to 25-36 to the inch. Bands 7-8 to the inch at 478/6.				
	Mudstone mid grey, mainly rather silty, unbanded, the top 7" is more compact 1" ironstone band close to the base.	12	5	481	9
	Mudstone mid grey with banding vague at top, near ironstone lense. Bands occur at some horizons about 20 bands to the inch. Occasional minute faultlets seen shifting generally ½" band. At base bands 10 to the inch.	3	3	485	0
	Mudstone mostly about mid grey, the bulk of it unbanded but with obscure ~~banding~~ (about 8 to the inch) seen at several horizons and well seen (about 4 to the inch) in a compact silty bed three feet from top. A 7" bed about 4/- down has wispy laminae of siltstone which are whitish. There are also thin lenses of ironstone below this band which show some banding.	3	9	488	9
	Mudstone grey, fairly silty with plant fragments.	5	1½	493	10½
			1	493	11½
MARINE BAND	Marine Band Mudstone grey with marine fossils the following changes noted. Stony band with fauna well preserved goniatites and plant fragments.		½	494	0
	Carbonaceous parting with less abundant goniatite fragments.		½	494	½
	Barren bed goniatites in the main smaller than goniatites at top of the bed with abundant plant fragments. Intersected joints		6½	494	7
	Mudstone dark grey, fairly micaceous, brittle becoming softer down. Occasional pyritic nodules, small pyrite granules at 495/6. Well preserved fish scale at 495/2.		3	494	10
	Mudstone dark grey, shaly fracture becoming less shaly down.		8	495	6

(5412) Wt.32837/P5.154 4m. 10/64 G.W.B.Ltd. Cp.863

Name of Shaft or Bore given by Geological Survey: Acheson Electrodes

6-inch Map Registered No. ~~288 SE~~/W SK 39 SW/8

Geological Classification	Description of Strata	Thickness Ft	Thickness In.	Depth Ft	Depth In.
	they are under 1 mm. and discontinuous, but some are over 1 mm. and internal cross lensing can be seen in these. There are a few thicker silty bands, these may either be massive with or without rafts, or composed of cross laminated lenses, usually isolated from one another by silty partings but occasionally not. At one level 452/6 there is a transition between the massive and the lensed type, the latter passing upwards into the former through a 1" bed of slumps. Exceptionally the whole of a silt bed may be rafted or overturned. Fine massive silty mudstone in lowest 9" with whiter irregular rafts.	10	4	458	1
	Siltstone whitish, with close dark lamination and abundant downward kinking, often aligned for up to 2". Most aligned systems are inclined between 45° & 60°, but others are near vertical.	2	1	460	2
	Mudstone grey, silty, mostly compact but with a few mid grey softer bands. Prominent silty bands, mostly composed of closely associated cross lenses of siltstone. A 14" band which appears in the middle is exactly like the beds above 460/2 and strongly suggests inversion of the core, as the kinks are here apparently upward. If about 3 ft of core has been inverted this bed belongs at the top i.e. continuous with the last bed. There is also a 4" bed of sandstone close to the base.	6	0	466	2
	Sandstone white, fine grained, the top $10\frac{1}{2}$" is cross lensed. The next 14" even cross bedded, and the rest with dark partings at close intervals which increase in importance down. Downward kinking occurs in this lowest part also, but it is scattered and there is little or no alignment.	3	2	469	4
	Mudstone grey, silty, becomes softer down. Mid grey in some bands. Whitish silty bands composed of groups of cross lenses either separated by siltstone (Flaser) or resting directly on each other. There are about 8 bands they range from 3"-9"				

(5412) Wt.32837/PS.154 6m 10/64 G.W.B.Ltd. Gp.863

Name of Shaft or Bore given by Geological Survey: Acheson Electrodes

6-inch Map Registered No. 288 SE/W SK39SW/8

Geological Classification	Description of Strata	Thickness Ft	Thickness In.	Depth Ft	Depth In.
	ironstone nodules. Sphaerosiderite common c 2/6 from base. Some roots steeply inclined.	4	6	421	8
	Sandstone white, fine to very fine grained throughout. In three parts: obscure cross lensing at the top (2/- from the base) is underlain by close cross bedding (to 1/1 from base), and then cross laminated lensing at the bottom	3	4	425	0
	Sandstone white, mainly silty in which laminae of siltstone can be seen, fine grained, grey mica. Probably at first cross lensed.	1	0	426	0
	Sandstone white, fine grained but fine to medium grained in a distinct middle band. Much of it is cross bedded. The beds though very thin may reach 1". 1/3 at the middle is extensively disturbed with distorted rafts of black mudstone. The bedding is again very uneven in the lowest 5", with coaly partings.	5	8	431	8
	Sandstone grey, the top 10" is near siltstone. Very close brownish irony laminae at top. Then alternation of siltstone and sandstone beds up to 3/4" thick	2	5	434	1
	Sandstone whitish fine to very fine grained, mostly with poor cross lenses but two thin beds of even bedding in upper half. In the lowest 5" there are undulating dark partings which suggest ripples. At the base there are a few load casts.	2	2	436	3
	Mudstone grey, silty, micaceous with several bands of siltstone of the same colour at the top. Rafts at 437/3. Whitish silty laminae or wispy lenses, also wisps of irony material.	10	6	446	9
	Siltstone pale brownish probably irony, bedding is extremely close with some darker lamination. Abundant partly aligned kinking probably due to burrows.	1	0	447	9
	Mudstone grey, silty, much of it laminated with silt. The laminae are scattered except at some horizons, commonly				

(5412) Wt.32837/PS.154 6m 10/64 G.W.B.Ltd. Gp.863

Name of Shaft or Bore given by Geological Survey:
Acheson Electrodes

6-inch Map Registered No.
~~SE/W~~ SK39 SW/8

Geological Classification	Description of Strata	Thickness Ft	Thickness In.	Depth Ft	Depth In.
	in mudstone only 4 to 1" in ironstone bands. Below 410/1 an alternation of banded and nonbanded beds, fine banding 25 to 1".	13	5	410	5
	Mudstone grey, silty, no banding. Disturbed surfaces at 410/9, 411/1				
	Ironstone nodules at 410/8, 411/6.				
	large (3") plant fragment at 410/8	1	1½	411	6½
	Marine band				
	Mudstone grey with marine fossils the following changes noted.				
	Posidonia, small goniatites, microfossils at the top.		1	411	7½
	Abundant Dunbarella at this horizon.		1½	411	9
	Posidonia with occasional goniatites		1	411	10
	Essentially a banded bed with disturbed joints at the top, and an irregular disturbed surface from 412/2 - 412/6.				
POT CLAY	No fossils seen here but some fish fragments.				
MARINE	Irregular disturbed bed continues to 413/1.				
BAND	Pyritic nodules at 412/10, 413/0.				
	disturbed joint surfaces from 413/2	1	6½	413	4½
	Abundant well preserved goniatites in a more sandy band.		1	413	5½
	abundant goniatites.		1	413	6½
	Ironstone band with poorly preserved goniatites		4	413	10½
	goniatites and small Posidonia with an undated Orthoceras.		3½	414	2
	Abundant, well preserved Dunbarella with occasional Posidonia.		1½	414	3½
	less Dunbarella with occasional Posidonia		1	414	4½
	More fossil bed, with rare goniatite at 414/6		4½	414	9
	small Posidonia		1	414	10
	Dunbarella fragments.		2	415	0
	Mixed fauna, fragments of Dunbarella, Posidonia, goniatites		3	415	3
	Mudstone darker grey, shaly fracture				
POT CLAY COAL	more carbonaceous, mussels, ostracods		2	415	4
	Coal		2	415	6
	seatearth brown, with occasional silty lagers. (1/0 of core lost)	1	2	416	8
	seatearth brownish grey, silty, some large roots.		6	417	2
	Siltstone mainly grey, brownish in top foot, much of the rest is greenish: ill preserved roots and obscure				

Name of Shaft or Bore given by Geological Survey: Acheson Electrodes

6-inch Map Registered No. ~~288 SE/W~~ SK 39 SW/8

Geological Classification	Description of Strata	Thickness Ft	Thickness In.	Depth Ft	Depth In.
	Mudstone about mid grey, with scattered greyish, 1–2 mm thick laminae. Ironey beds ½ cm – 1 cm thick. One band of greyer silty micaceous mudstone in the middle 4½" thick	2	7	330	7
	Alternations of sandstone and laminated silty mudstone. Sandstones are whitish with uneven cross lensing, but top one with abundant wisps. Banding and lamination very close, one alternation eg = c 1/32".	4	3	334	10
	Mudstone grey, silty with siltstone and sandstone bands. The sandstones are whitish, silty and very thinly bedded, with vague cross lensing. There is well marked "kinking" type of bioturbation in some beds. Siltstones are as closely grouped laminae, or as groups of lenses or even in massive beds. Mudstone is silty and micaceous. Apart from bioturbation beds are usually even. Slumped at one level. A few softer darker beds in last 3/6. Comminuted plant debris at base	22	5	357	3
	Mudstone grey, silty micaceous at some horizons. Scattered thin siltstone bands up to 1½" thick from 360/9 – 362/0. 2" siltstone band at 370/11. Ill developed cyclic sedimentation seen, one cycle grading from ironstone at base to siltstone at top, 4 cycles seen in 1 ft of bed. Plant debris at the base.	22	2	379	5
	Siltstone with ironstone bands and vague cross lensing		11	380	4
	Mudstone mid grey, with colour banding and silty bands. Banding at top 5 bands to 1" at base 16 bands to 1". Some ironstone bands.	10	3	390	7
	Mudstone dark grey shaly, no banding. A few crush marks or Guilielmites seen. (core broken)	6	5	397	0
	Mudstone grey, slightly silty at the top. Banding present from 20 to the inch to 15 to the inch. 1½" ironstone bands with sharp lenticular ironstones at 399/8, 397/9, 408/7, 405/7. Banding 20 to 1 inch				

(5412) Wt.32837/PS.154 6m 10/64 G.W.B.Ltd. Gp.863

Name of Shaft or Bore given by Geological Survey: Acheson Electrodes

6-inch Map Registered No. 288 SE/W SK39 SW/8

Geological Classification	Description of Strata	Thickness Ft	Thickness In.	Depth Ft	Depth In.
	Mudstone dark grey becoming darker at the base. Rather silty and micaceous. Becomes compact downwards. Ferruginous bands. Plant debris.	5	2	241	8
	Mudstone a rather darker grey, micaceous compact, with plant debris		8	242	4
	Mudstone dark grey to black but paler in the top 1 ft. with thin ironstone lenses and abundant mussels	2	8	245	0
	Mudstone dark grey, shaly, with fish debris but no mussels.	3	6	248	6
	Mudstone mid grey, silty	4	5	252	11
	Mudstone dark grey, slightly silty with ironstone lenses. Small mussels present	1	7	254	6
	Mudstone dark grey, shaly, occasional micaceous partings. Fish debris common.	1	6	256	0
	Mudstone brown, rather silty, with abundant roots		6	256	6
	Mudstone grey, soft, rooty with abundant ironstone nodules	1	4	257	10
	Sandstone grey, nearly siltstone at the top, at some horizons 1"-4" beds of laminated micaceous silty mudstone show cross bedding seen. Bedding often disturbed at top. Vertical structures possibly roots seen.	4	2	262	0
	Sandstone whitish with abundant superimposed cross lenses.	1	11	263	11
	Flaser bed very micaceous silty mudstone, and lenses of silty sandstone		6	264	5
	Flaser bed 3" siltstone bed at the base	1	6	265	11
	Sandstone grey to whitish grey, fine grained, thick bedded in places but mostly rather massive, coarse mica at 278/0, partings with finer mica below 305/0. Most of beds 1'-1/0 thick, but one bed is as much as 3/0 thick. Very hard throughout. Slumped bed at 287/6 to 291/6 bells have reach vertical even slightly overturned. Jointed from 278/6 to 284/0. Ankerite possibly present at 305/0. Contorted coaly wisps at base, where the sandstone becomes medium grained in lowest 2/6	62	1	328	0

(5412) Wt.23837/P75.154 4m. 10/64 G.W.P.Ltd. Cp.863

Name of Shaft or Bore given by Geological Survey:
Acheson Electrodes

6-inch Map Registered No.
~~SE 59/W~~ SK 39SW/8

Geological Classification	Description of Strata	Thickness Ft	Thickness In.	Depth Ft	Depth In.
	Mudstone mid grey becoming darker down, micaceous, prominent ironstone lenses up to 3" thick. Fish debris, scales and spines. Mussels from 214/8, becoming frequent at 217/7 abundant in the darker beds, abnous on outside of cone, to 223/0.	8	4	223	0
	Mudstone dark grey, micaceous with abundant fish debris, scales and spines.		2	223	2
	Mudstone grey, silty, compact nearly siltstone at base. Plant debris		2	223	4
	Mudstone grey, silty, roots poorly preserved.		4	223	8
	Sandstone with distinct roots.		4	224	0
	Sandstone buff siliceous, fine grained, with ~~dark~~ micaceous partings ? Ripple Marks, Coarser at some levels, Sandstoroid in lower parts. Beds up to 1/0 thick.	3	1	227	1
	Sandstone	2	0	229	1
	Sandstone buff fine grained with cross bedded units which truncate each other. Beds thin, up to 2". Dark partings, most of which are even but some are curved.		9½	229	10½
	Sandstone very thin bedded.		3½	230	2
	Sandstone with abundant cross laminated lenses, bedding ferruginous at base.		5	230	7
	Sandstone fine grained with a few wisps of ferruginous cement in top five inches.	1	5	232	0
	Sandstone grey fine grained, mostly even bedding with beds ½"-¾" thick. Dark micaceous partings. Plant debris seen.	1	0	233	0
	Siltstone grey with micaceous muddy partings, lenticular beds. Plant debris. Ferruginous at the base	1	6	234	6
	Mudstone silty compact becoming softer down. Plant debris including a vague lepidodendron.		4	234	10
	Mudstone dark grey, becomes micaceous at the base, cone in cone structure at the top of the bed, coaly lense ~~pho~~ near top. Mussels abundant throughout.	1	8	236	6

(5412) Wt.32837/P8.154. 6m. 10/64. G.W.B.Ltd. Cp.863

Name of Shaft or Bore given by Geological Survey: Acheson Electrodes

6-inch Map Registered No. ~~288SE/W~~ SK 39 SW/8

Geological Classification	Description of Strata	Thickness Ft	Thickness In.	Depth Ft	Depth In.
	less compact. Ironstone nodules scattered throughout at 188/9, 190/6, 190/11 (1" nodule). 190/– downwards, nodules smaller (granules) but scattered in greater numbers. Plant fragments are less abundant but good plant stem fragment at 190	2	2	191	2
	Sandstone white to pale buff, siliceous, medium grained, prominent joints. Dark partings in the top 9", where roots seen. Slips of carbonaceous material at 193/0 – 193/8. (3" core lost)	5	1	196	3
	Siltstone grey, cross bedded, with irregular carbonaceous partings. Ironstone nodule at 198/8 displaces the bedding. Some bedding planes are slickensided. Plant debris with scattered pyrite.	2	5	198	8
	Ganister brownish, siliceous, with many roots (Pencil ganister).	1	11	200	7
	Sandstone grey, siliceous or (ganisteroid). Brownish patches where roots present. Beds are 5"–8" thick	1	11	202	6
	Sandstone grey, fine grained, with rather coarse mica. Becomes softer down. A few roots to 203/4.		10	203	4
	Sandstone pale grey, fine grained siliceous. Beds 1" to 10" thick separated by dark partings some of which are curved, and some impersistent. Some beds show signs of bioturbation (disturbance by some form of life).	2	4	205	8
	Sandstone pale grey, fine grained less siliceous. With an ½" silty micaceous mudstone parting. Sandstone very closely bedded.	1	10	207	6
	Sandstone grey, ferruginous cement has weathered brown, fine grained, slightly silty in the middle. Jointed in lower parts. Traces of roots.	2	6	210	0
	Mudstone grey, silty with a few muddy partings. Finely laminated at some horizons. No fossils seen.	2	2	212	2
	Mudstone mid grey, finely micaceous. Large lense of ironstone (3") at 213/5. 1½" ironstone band at 213/5 – 213/6½	1	4½	213	6½
	Mudstone grey, silty, compact, micaceous.	1	1½	214	8

(5412) Wt.32837/PS.154 6m 10/64 G.W.B.Ltd. Gp.863

Name of Shaft or Bore given by Geological Survey: Acheson Electrodes

6-inch Map Registered No. ~~288 SE/W~~ SK39SW/8

Geological Classification	Description of Strata	Thickness Ft	Thickness In.	Depth Ft	Depth In.
	fragments	15	0	149	3
	Mudstone somewhat less dark grey. Similar to beds above 134'	4	0	153	3
	Mudstone dark grey, with sharp hard lenses of ironstone 154'3" – 155/9	2	6	155	9
	Mudstone dark grey, banded. At 157/9 2 bands to 1". At 160/9 4 bands to 1". At 163/- 3 bands to 1". At 163/9 4 bands to 1". Then occasional banded beds to 173'5"	17	8	173	5
	Mudstone dark grey, finely micaceous with a few thin ironstone wisps and ironstone nodules.		7	174	0
	Mudstone dark grey. Not obviously banded, but at 176/8 incipient bands 6-8 to the inch. Mainly platy fracture more compact towards base. Mica increases downwards. Ironstone nodules throughout at 175/5, 175/6 – 176/-, 176/8 and 177/-. Obscure plant debris at 176/8 – 177 a more carbonaceous layer.	4	0	178	0
	Mudstone dark grey, less micaceous. At first soft then platy shaly fracture at 180/- becoming increasingly shaley at 182/9 – 183/-. ½" ironstone band at 178/9. A trail at 180/8 and fish scale at 181/6 and 182/2.	5	0	183	0
	Mudstone dark grey, micaceous patches, compact, more muddy at top. Ironstone nodules occur throughout at 183/9, 183/10, 186'9" with an ½" ironstone band at 186'/10. Occasional polished joint surfaces occur. At 186/- and 186/10 ~~ironstone(?)~~ pyrite nodule, possibly fossils. Plant debris which are are greasy black fragments with no mica	4	0	187	0
	Mudstone dull grey, micaceous becoming less micaceous downwards, but areas of concentrated mica occur. Ironstone nodules scattered throughout at 187/- (2" nodule) 188/3, 188/6 (cylindrical nodule) ~~at~~ ¾" ironstone band at 188/2. Shaly fracture. Polished joint surfaces occur. Plant fragments at 187/5, 187/6 piece of a stem, 188/6. At 188/10 good plant fragment (Lepidodendron)	2	0	189	0
	Mudstone dark grey, not very micaceous becoming less micaceous downwards, at 190 hardly any mica.				

Name of Shaft or Bore given by Geological Survey:
Acheson Electrodes

6-inch Map Registered No.
288 SE/W SK 39 SW/8

Geological Classification	Description of Strata	Thickness Ft	Thickness In.	Depth Ft	Depth In.
	the mudstone. An example of flaser bedding.		7	80	0
	Sandstone mushroom colour micaceous fine grained with abundant cross laminated lenses.	3	0	83	0
	Sandstone white at top medium grained with coarse bands. Scattered quartz grains ¼" in diameter in these bands. At top is thinly bedded. Where the beds are thick there is strongly marked cross bedding. Below 93' becomes fine grained. Ironstone nodules at 87" p. The base is steeply inclined (average depth taken)	12	0	95	0
	Mudstone grey, silty micaceous, with pale grey bands of silty sandstone. In places, there are softer brownish bands. Some of the bedding shows signs of disturbance.				
		4	+	99	4
	Sandstone light grey, medium grained with coarse bands, where quartz grains of up to ¼" in diameter can be seen. Some compact siliceous beds 2" - 5" thick	11	6	110	10
	Sandstone light grey, fine grained felspathic, cross bedding present	1	7	112	5
	Sandstone white micaceous fine grained, closely bedded. There is some felspar and dark partings. 4" lowest bed		4	112	9
	Mudstone grey, with micaceous lenses and very scattered ~~lenses~~ of irony material. Towards the top there are siltstone bands up to 1" thick. The bedding is mostly even throughout. Scattered plant fragments.	21	6	134	3
	Mudstone dark grey micaceous, massive, compact but becoming softer down. A few thin lenses of ironstone present. No plant				

(5412) Wt.33837/P5.154 4m 10/44 G.W.B.Ltd. Gp.863

(For Survey use only) Geological Classification	NATURE OF STRATA If measurements start below ground surface, state how far ...	Thickness Feet ...	 Inches ...	Depth Feet	 Inches
	Drillers log, no core recovered				
	clay and filled in ground.	10	6	10	6
	clay gravel and boulders	5	0	15	6
	More clay and filled in ground	4	2	19	8
	Sand, gravel and boulders, plus light brown clay	7	4	27	0
	Soil and peat	1	0	28	0
	Dark brown clay	1	6	29	6
	Dark grey mudstone	9	6	39	0
	Dark grey mudstone, broken core	1	0	40	0
	Dark mudstone	7	0	47	0
	Cores.				
	Mudstone grey, micaceous with flat soft bedding. Shaley bands present, along with a few bands of fine grained, grey brown sandstone with yellowish patches. Here are plant fragments scattered throughout (core broken)	7	0	54	0
	Sandstone whitish with patches of brown iron deposits. At some horizons even cross bedding is visible. In the upper horizons (at 56'6") there are prominent joints, the surfaces of which are covered in ironstone (pan). Irregular coaly layer at base, possibly derived from part of tree. (The core is split and broken with much loss above 72 ft.)	25	5	79	5
	Siltstone closely alternating with micaceous mudstones. The mica is coarse. There is cross laminated bedding in siltstone but not in				

SK 39 SW/8

RECORD OF WELL (SHAFT OR BORE)

(attach copy of analysis if available)

For Survey use only

1" NS. 100 N.

1" O.S. 102

GR SK 3224 59940

EXACT SITE OF WELL

At Acheson Electrodes Ltd. 292° and 1,350 yds from Wadsley Bridge Station & 358° and 750 yds from Middlewood Hospital Church.

Town or Village Wadsley Bridge, Sheffield

County Yorkshire Six-inch quarter sheet 288 SE/W SK 39 SW/8

For Mr. ...... State whether owner, tenant, builder, contractor, consultant, etc. :— ......

Address (if different from above) ......

Level of ground surface above sea-level (O.D.) 295 ft. If well-top is not at ground level, state how far ... {above; below; ...... ft.

SHAFT ...... ft.; diameter ...... ft.; Details of headings ......

BORE ...... ft.; diameter of bore: at top ...... ins.; at bottom ...... ins.

Details of permanent lining tubes ......

Water struck at depths of 88 ft. ft. below well-top.

TEST CONDITIONS

Rest-level of water ...... ft. above/below well-top. Suction at ...... ft. Yield on ...... hours'/days' test pumping at ...... galls. per ...... with depression to ...... ft. below well-top.

Recovery to rest-level in ...... mins./hours Capacity of pump ...... g.p.h. Date of measurements ......

NORMAL CONDITIONS

Description of permanent pumping equipment:

Make and/or type ...... Motive power ......

Capacity ...... gallons per hour. Suction at ...... ft.

Amount pumped ...... galls. per day. Estimated consumption ...... galls. per week.

Well made by Thos Matthews, Pendleton, Manchester Date of well 1966-67

Information from Mr A Crosby core examination (and G.G. Godwin)

ADDITIONAL NOTES

Core diameter 12" at the top to 398/3.
Core diameter 9" from 398/3.

WATER LEVEL

DEPTH OF CORE	FROM TOP
94' 6"	69' 9"
202' 0"	67' 6"
210' 0"	66' 0"
258' 6" } 268' 0" }	60' 3"
273' 0" } 310' 0" }	57' 0"
437' 0"	54' 0"
474' 0"	53' 0"

SPECIMEN NUMBERS.

AG 546 — AG 679

LOG OF STRATA OVERLEAF.

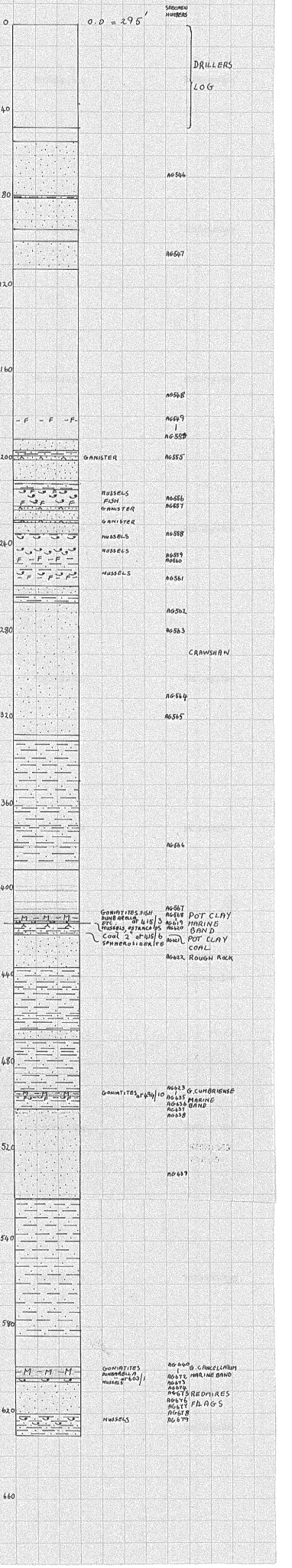
GEOLOGICAL SURVEY AND MUSEUM, SOUTH KENSINGTON, LONDON, S.W.7.	Date Received	1" O.S. Map No.	Site marked on 1" Map	(use symbol) on 6" Map

(*35243) Wt.44731/0424 12,000 3/48 A.& E.W.Ltd. Gp.685

ACHESON ELECTRODES

SK 39 SW/8

SCALE 40 Ft. to 1 INCH



APPENDIX E

Mining Search Report

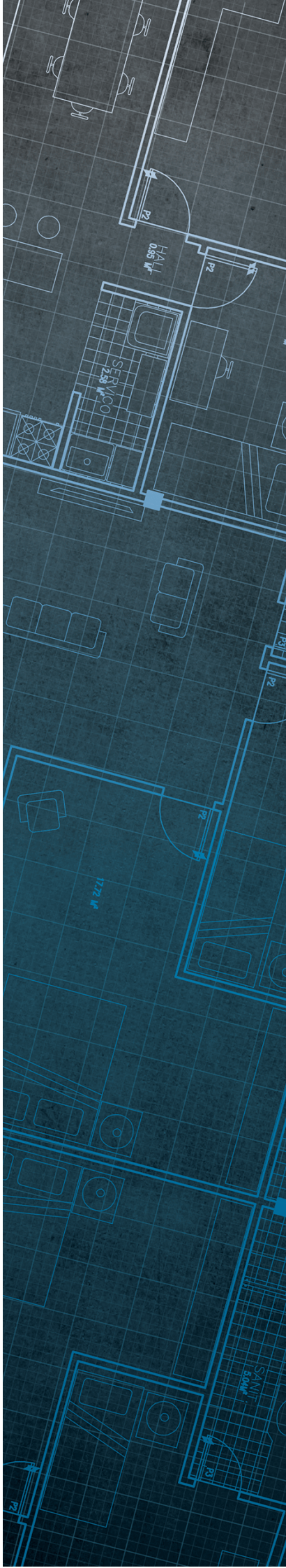
The Coal Authority

Consultants

Coal Mining Report

Blue Phoenix, 2 Beeley Wood,
Beeley Wood Lane, Sheffield, S6 1qt
South Yorkshire

Date of enquiry:	**18 July 2022**
Date enquiry received:	**18 July 2022**
Issue date:	**18 July 2022**
Our reference:	**51003255236001**
Your reference:	**BRO-8910868**



Consultants

Coal Mining Report

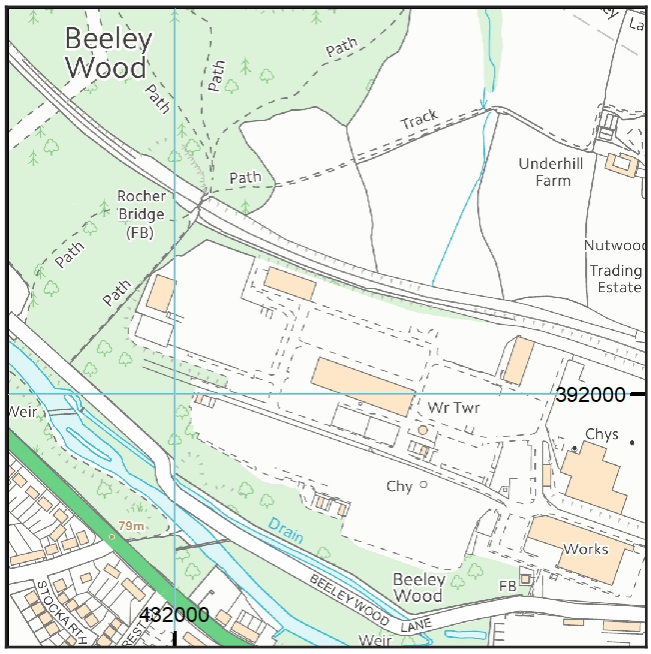
This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

GROUNDSURE LIMITED

Enquiry address

Blue Phoenix, 2 Beeley Wood, Beeley Wood Lane,
Sheffield, S6 1qt
South Yorkshire



Approximate position of property

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

@coalauthority
/company/the-coal-authority
/thecoalauthority
/thecoalauthority

Section 1 – Mining activity and geology

Past underground mining
No past mining recorded.

Probable unrecorded shallow workings
Yes.

Spine roadways at shallow depth

Distance to spine roadway (m)	Direction to spine roadway
Within	N/A

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Adit	432391-001	432012 391934		Coal	

Abandoned mine plan catalogue numbers
The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

DN1	12342	OM0

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
HALIFAX HARD	Coal	Yes	Within	N/A	143
HALIFAX HARD	Coal	Yes	8.3	South	335

Geological faults, fissures and breaklines
No faults, fissures or breaklines recorded.

Opencast mines
None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips
None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations

Distance to site investigation (m)	Direction
1.2	South

See Section 4 for further information.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

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.

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining
None recorded.

Coal mining licensing
None recorded within 200 metres of the enquiry boundary.

Court orders
None recorded.

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

Withdrawal of support notices
The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land
The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Section 4 – Further information

The following potential risks have been identified and as part of your risk assessment should be investigated further.

Site investigations

The site is within an area of previous interest. It is close to where the Coal Authority has received information relating to past site investigations.

The site requires further investigation and may influence how you approach your risk assessment.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please call us on 0345 762 6848 or email us at groundstability@coal.gov.uk.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk.**

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines
Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips
Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations
Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites
Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence
Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas
Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission.

Mine water treatment schemes
Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining
Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing
Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders
Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices
Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices
Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land
Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

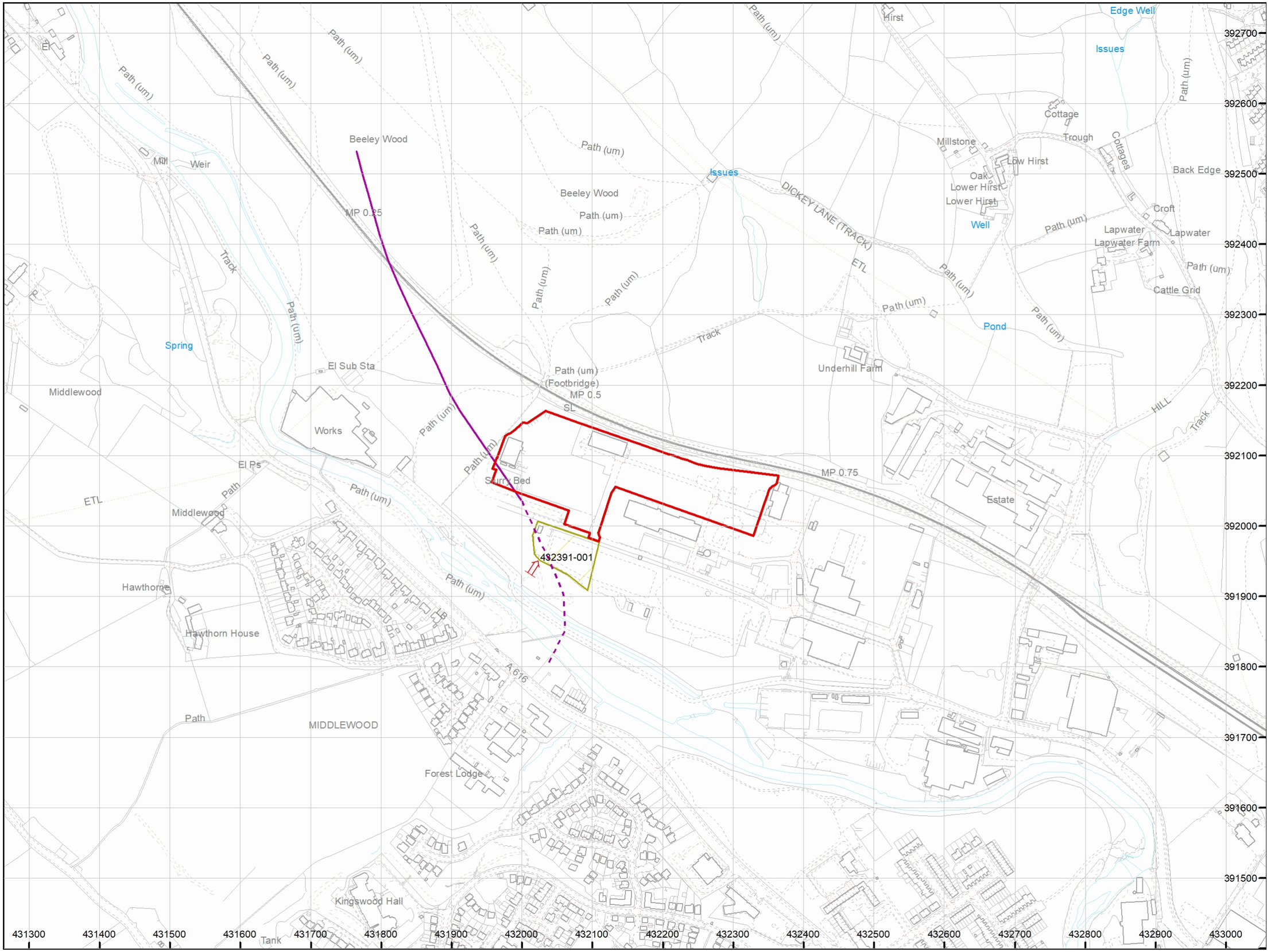
The Coal Authority

Summary of findings

The map highlights any specific surface or subsurface features within or near to the boundary of the site.

Key

- Approximate position of the enquiry boundary shown
- Disused adit
- Outcrop (Proven)
- Outcrop (Conjectured)
- Site investigations



How to contact us
0345 762 6848 (UK)
+44 (0)1623 637 000 (International)
www.groundstability.com

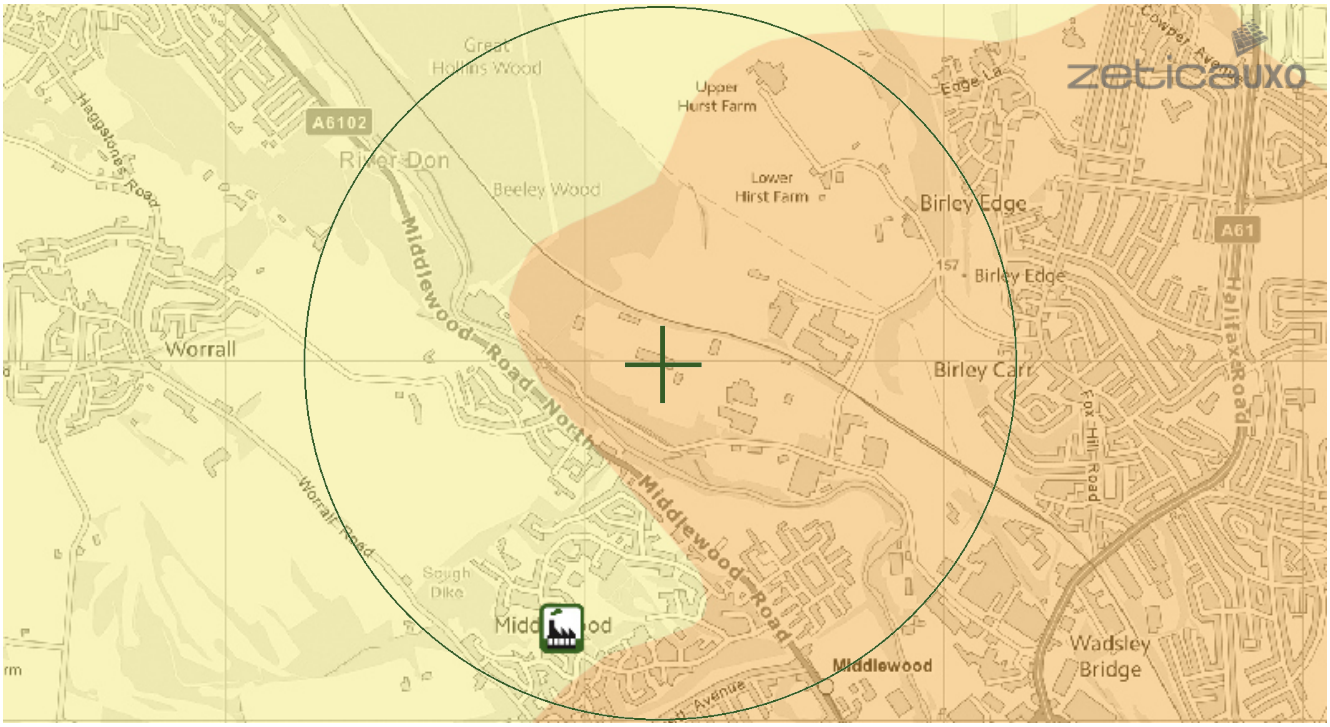
APPENDIX F

UXO Screening Map

UNEXPLODED BOMB RISK MAP

SITE LOCATION

Location: S6 1QT,
Map Centre: 432224,391994



LEGEND

High: Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.

Moderate: Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.

Low: Areas indicated as having 15 bombs per 1000acre or less.

miltary | **industry** | **UXO find**
transport | **dock** | **Luftwaffe targets**
utilities | **Bombing decoy** | **other**

How to use your Unexploded Bomb (UXB) risk map?

The map indicates the potential for Unexploded Bombs (UXB) to be present as a result of World War Two (WWII) bombing.

You can incorporate the map into your preliminary risk assessment* for potential Unexploded Ordnance (UXO) for a site. Using this map, you can make an informed decision as to whether more in-depth detailed risk assessment* is necessary.

What do I do if my site is in a moderate or high risk area?

Generally, we recommend that a detailed UXO desk study and risk assessment is undertaken for sites in a moderate or high UXB risk area.

Similarly, if your site is near to a designated Luftwaffe target or bombing decoy then additional detailed research is recommended.

More often than not, this further detailed research will conclude that the potential for a significant UXO hazard to be present on your site is actually low.

Never plan site work or undertake a risk assessment using these maps alone. More detail is required, particularly where there may be a source of UXO from other military operations which are not reflected on these maps.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirms that there is a low potential for UXO to be present on your site then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

A low risk really means that there is no greater probability of encountering UXO than anywhere else in the UK.

If you are unsure whether other sources of UXO may be present, you can ask for one of our **pre-desk study assessments (PDSA)**

If I have any questions, who do I contact?

tel: **+44 (0) 1993 886682**

email: **uxo@zetica.com**

web: **www.zeticauxo.com**

The information in this UXB risk map is derived from a number of sources and should be used in conjunction with the accompanying notes on our website: **(https://zeticauxo.com/downloads-and-resources/risk-maps/)**

It is important to note that this map is not a UXO risk assessment and should not be reported as such when reproduced.

*Preliminary and detailed UXO risk assessments are advocated as good practice by industry guidance such as CIRIA C681 'Unexploded Ordnance (UXO), a guide for the construction industry'.

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