

Phase 1 Preliminary Risk Assessment

22 November 2023

Concept Design Architects

Edgegate Farm, Huddersfield Road, Milnrow, OL16 3TJ

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1. Introduction

The following document is a Phase 1 Preliminary Risk Assessment carried out by Oakshire Environmental, and includes details of the site, environmental setting, contaminant linkages and an evaluation of risk.

1.1 Project Overview

The client's proposed project involves prior approval for change of use from agricultural building to 4 no. dwellinghouses (Use Class C3) including installation of new windows and doors at Edgegate Farm, Huddersfield Road, Milnrow, OL16 3TJ. Oakshire Environmental have carried out a Phase 1 Preliminary Risk Assessment, as described below.

1.2 Purpose of Investigation

The objectives of the Phase 1 Preliminary Risk Assessment were to:

- Develop a detailed assessment of the site.
- Identify potential contamination sources, receptors and pathways at the site.
- Assess the level of potential contamination risk.
- Determine the requirement or scope of further investigations.

1.3 Scope of Work

- Brief introductory information has been noted to provide context to the report and include an Introduction, Project Overview, Scope of Work and Limitations.
- To develop a detailed assessment of the site, desk studies have been carried out to collate information obtained from sources including the British Geological Society, Environment Agency and Ordnance Survey on planning and site history, ground conditions and environmental setting.
- This information has been used to identify potential contamination sources, receptors and pathways at the site, as part of an initial Conceptual Site Model.
- To assess the level of potential contamination risk, a Conceptual Site Model has been produced to categorise the potential severity of the impact of the contaminant linkage on the receptor and the probability of the contaminant linkage being present.
- Following the assessment of contaminant linkages, an evaluation of contamination risk has been conducted to determine the requirement and scope of further investigations.
- Supporting appendix include photographs, maps, and plans of the site.

1.4 Limitations

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This report excludes consideration of potential hazards arising from any activities at the site other than normal use and occupancy for the intended land uses. Hazards associated with any other activities have not been assessed and must be subject to a specific risk assessment by the parties responsible for those activities. Oakshire Environmental does not warrant or guarantee that the site is free of hazardous or potentially hazardous materials or conditions. It should be noted that this report has been produced for environmental purposes only.

2. Site

The following section provides a description of the site, location and proposed development, in addition to, planning and site history, utilising information obtained from the client and publicly available sources.

2.1 Site Description and Location

The site is located at Edgegate Farm off Huddersfield Road to the north east of Oldham and is approximately 0.07ha. The site is comprised of a detached barn constructed of block work and corrugated steel. There is no visible evidence of contamination at or in the vicinity of the site.

The site is bordered by yard areas to the north west, north east and south east including parked caravans to the north west, waste materials in skips and agricultural equipment, machinery and vehicles to the south east. To the south west there are stable buildings, residential dwellings and shipping containers within the wider farm complex. The surrounding area is predominantly agricultural with some isolated residential dwellings and villages.

National Grid Reference: SD 96588 11428

2.2 Proposed Development

The proposed development involves the change of use of the existing agricultural building to four dwellings including the development of lawn areas at the south east and parking and planting at the north west.

2.3 Relevant Planning History

A search of Rochdale Borough Council's planning website identified the following relevant applications at and near the site.

Table 1: Planning applications at or near the site

Application No.	Year	Address	Proposal	Decision	Details
92/D28868	1993	Lower White Slack Farm Higher Ogden (300m west of the site)	Erection Of Agricultural Building	Prior Approval Not Required	No contaminated land conditions applied
96/D32986	1996	Edge Gate Farm Newhey (20m south west of the site)	Construction Of Replacement Dwelling And Garage	Grant subject to conditions	No contaminated land conditions applied
01/D38420	2001	Edgegate Farm, Huddersfield Road (10m south west of the site)	Rebuild Of Livestock/Stable Building	Grant subject to conditions	No contaminated land conditions applied
02/D40518	2004	Edgegate Farm, Huddersfield Road (on-site)	Erection Of Livestock Building	Grant subject to conditions	No contaminated land conditions applied
14/00704/FUL	2014	Higher White Slack Farm Huddersfield Road (310m west of the site)	Erection of single storey agricultural building for storage of farm machinery	Grant subject to conditions	No contaminated land conditions applied
20/00432/CONS	2020	Barneys Bar And Restaurant Rochdale Road (230m south of the site)	Consultation from Oldham BC in relation to retrospective change of use from commercial (A3/A4) to a single 4 bedroom residential dwelling (C3)	Advice issued	No contaminated land conditions applied
21/00060/FUL	2021	Higher White Slack Farm Huddersfield Road (300m west of the site)	Extension to existing agricultural building	Grant subject to conditions	No contaminated land conditions applied

2.4 Site History

A detailed assessment of historical Ordnance Survey maps and associated data has highlighted the below on-site and off-site, current and historical land uses.

Table 2: Description of the site and surrounding area over time, according to historical maps

Year	Site Description	Surrounding Area
1851	No development on the site	Surrounding area is predominantly open fields with isolated dwellings and/or agricultural buildings Residential dwellings and/or agricultural buildings labelled as Edge Gate and Ogden Edge to the south west and Higher White Slack and Lower White Slack to the west Lodgings labelled as Moor Cock Inn 290m south west Sandstone Quarry 450m north
1893 - 1895		Pond 100m north Residential dwellings and/or agricultural buildings labelled as Cherry Top 230m south Cherry Farm 350m south Sandstone Quarry no longer operational
1906		Residential dwellings and/or agricultural buildings at Cherry Clough to the south east
1930		Pond to the north no longer shown New ponds 200m and 260m north west Cuttings 430m north east adjacent to reservoir 470m north east
1963 - 1964	Site forms part of an agricultural field	Buildings at Cherry Clough include dwellings, agricultural buildings and a restaurant Cherry Top now labelled as Fairplay Café New buildings as Cherry Top Farm (formerly Cherry Farm) Additional agricultural buildings 330m south east and a tank 350m south east
1981		Pond 200m north west no longer shown
2000	Site forms part of a storage yard with containers and materials	Storage yard with containers and materials bordering the site to the north east and south east Materials and vehicles stored in yard areas to the north west and west Agricultural building 15m south
2005		New agricultural building 10m south west Hardstanding developed 30m west
2017	Agricultural building on the site	Hardstanding curtailing the site Caravans parked to the north west Yard area with agricultural equipment and machinery to the south east New agricultural building 60m south west
2018		New agricultural building 5m south
2021		Small outbuilding 10m south east Shipping containers and an agricultural building on hardstanding 30m west
2023		Yard area to the south east extended to the north east and a pond excavated 50m east

3. Environmental Setting

The following section provides information on the environmental setting of the site, utilising data from the British Geological Survey (BGS), the Department for Environment, Food and Rural Affairs (DEFRA), the Coal Authority and Public Health England (PHE).

Table 3: Summary of the site's environmental setting

Environmental Factor		Details	
Hydrogeology	Aquifer Designation	Superficial	No superficial deposits underlying the site
		Bedrock	Secondary A
	Groundwater Vulnerability	Superficial	N/A
		Bedrock	Moderate
	Source Protection Zones and Abstractions		Site does not lie within a Source Protection Zone, Drinking Water Protected Area or Drinking Water Safeguard Zone
Hydrology	Water Network		Land drains 210m east and 240m south
Geology	Artificial Ground		Made ground at Rooden Reservoir 500m north east
	Superficial Deposits		No superficial deposits underlying the site
	Bedrock Geology		Pennine Lower Coal Measures Formation - Interbedded mudstone, siltstone and sandstone, commonly with mudstones containing marine fossils in the lower part, and more numerous and thicker coal seams in the upper part Rough Rock - Coarse-grained feldspathic sandstone, cross-bedded, bordering the site to the east
	Superficial Permeability		N/A
	Bedrock Permeability		Low to High
	Borehole Records		No borehole records showing ground conditions within 500m of the site
Workings	Mining and Ground Workings		East of the site is situated on a coal outcrop and is designated as a 'Development High Risk Area' No mine entries within 500m of the site Pond 100m north from 1893 to 1930 Ponds 200m and 260m north west from 1930 and one is no longer shown in 1981 Cuttings 430m north east and reservoir 470m north east from 1930
Radon	PHE UKradon		5-10% probability of being above action level
Waste and Landfill	Historical Landfill		None within 1km of the site
	Permitted Waste Sites		None within 1km of the site

4. Initial Conceptual Site Model

The following section outlines potential contamination sources, pathways and receptors, utilising information gathered in the previous sections, to develop an initial conceptual site model.

4.1 Potential Contamination Sources

Information collated through detailed desk studies has identified the following potential sources of contamination.

Agricultural Activity

The agricultural building on the site was constructed in 2005 and has been used to house livestock and for the storage of agricultural machinery and animal feed/bedding. The adjacent land has also been used as a storage yard for agricultural machinery. It is possible that shallow soil adjacent to the site will have been contaminated with hydrocarbons and potentially heavy metals from spillages and leakages from machinery and stored waste materials. The gravel hardstanding in these areas will mitigate the risk to underlying soil to a degree, however, contaminants may have permeated through this material to the underlying soil.

Barrels of cooking oil were identified in the yard area adjacent to the agricultural building to the south east associated with a catering trailer. Contamination is possible from accidental spillages during the use or transportation of this oil along with leakages during its storage before and after use. This is likely to be localised and is not likely to be significant, however, given that this is where proposed gardens will be situated, there is a potential risk to future residents.

Given the presence of springs and issues in the surrounding area, groundwater beneath the site may be shallow and is, therefore, may be impacted by contamination in shallow soil.

Infilled Ground

Historical maps and aerial photos show that there were ponds to the north and north west of the site that are no longer shown in 1930 and 1981 suggesting that these may have been infilled. Where contaminated material has been used as infill, this may impact the site if contaminants are able to leach through soil. In addition, where putrescible material has been used as infill, ground gases may be produced when these materials degrade. Given the size of ponds, their distance from the site and the time elapsed since any potential infilling is likely to have occurred, the risk of contaminant leaching and ground gas production is likely to be low.

Historical Coal Mining

The site is partly within a 'Development High Risk Area' due to the presence of a coal outcrop, however, there is no evidence of coal mining in the vicinity of the site suggesting a low risk of contamination from this source.

4.2 Potential Contamination Receptors

Given the proposed use of the site, the following receptors are considered:

- Residential end users
- Controlled waters

4.3 Potential Contamination Pathways

Based on the expected on-site receptors, relevant pathways for the above receptors include:

- Ingestion/inhalation of contaminated soil dust
- Dermal contact with contaminated soil
- Inhalation of soil vapours
- Ingestion of homegrown produce
- Permeation into drinking water pipes
- Ground gas permeation into the building
- Leaching through soil
- Surface runoff

Pathways between off-site sources and off-site receptors is beyond the scope of this assessment.

4.4 Risk Assessment Methodology

The potential level of risk posed by a particular source is determined by assessing the potential severity of the impact of the contaminant linkage on the receptor, if it is assumed to be present, and the probability of the contaminant linkage being present.

Severities are categorised from Minor to Severe and probabilities are categorised from Unlikely to High Likelihood to give a potential level of risk output.

Table 4: Risk Matrix

Probability	Severity of Consequence			
	Severe	Medium	Mild	Minor
High Likelihood	Very High Risk	High Risk	Moderate Risk	Low / Moderate Risk
Likely	High Risk	Moderate Risk	Low / Moderate Risk	Low Risk
Low Likelihood	Moderate Risk	Low / Moderate Risk	Low Risk	Very Low Risk
Unlikely	Low / Moderate Risk	Low Risk	Very Low Risk	Very Low Risk

Very High Risk

There is a high probability that severe harm could arise to a designated receptor from an identified source; or there is evidence that severe harm to a designated receptor is currently happening.

High Risk

Harm is likely to arise to a designated receptor from an identified source.

Moderate Risk

It is possible that harm could arise to a designated receptor from an identified source. It is relatively unlikely that any such harm would be severe or if any harm were to occur it is more likely that the harm would be relatively mild.

Low Risk

It is possible that harm could arise to a designated receptor from an identified source, however, it is likely that this harm, if realised, would normally be mild.

Very Low Risk

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.

4.5 Conceptual Site Model

The information in this section has been compiled to produce an initial conceptual site model outlining the potential sources, pathways and receptors to consider at the site. The level of risk was categorised by considering the severity and probability, as outlined in the previous section.

Table 5: Conceptual site model

Sources	Pathways	Receptors	Severity	Probability	Potential Level of Risk	
Agricultural Activity	Ingestion/inhalation of contaminated soil dust Dermal contact with contaminated soil Inhalation of soil vapours Ingestion of homegrown produce Permeation into drinking water pipes	Residential end users	Medium	Low Likelihood	Low to Moderate	It is possible that shallow soil adjacent to the site will have been contaminated with hydrocarbons and potentially heavy metals from spillages and leakages from machinery. The gravel hardstanding in these areas will mitigate the risk to underlying soil to a degree, however, contaminants may have permeated through this material to the underlying soil. Contamination is possible from accidental spillages during the use or transportation of cooking oil along with leakages during its storage before and after use. This is likely to be localised and is not likely to be significant, however, given that this is where proposed gardens will be situated, there is a potential risk to future residents.
	Leaching through soil Surface runoff	Controlled waters	Medium	Low Likelihood	Low to Moderate	Given the presence of springs and issues in the surrounding area, groundwater beneath the site may be shallow and is, therefore, may be impacted by contamination in shallow soil.
Infilled Ground	Ingestion/inhalation of contaminated soil dust Dermal contact with contaminated soil Inhalation of soil vapours Ingestion of homegrown produce Permeation into drinking water pipes Ground gas permeation into the building	Residential end users	Medium	Unlikely	Low	Where contaminated material has been used as infill, this may impact the site if contaminants are able to leach through soil. In addition, where putrescible material has been used as infill, ground gases may be produced when these materials degrade. Given the size of ponds, their distance from the site and the time elapsed since any potential infilling is likely to have occurred, the risk of contaminant leaching and ground gas production is likely to be low.
Historical Coal Mining	Ingestion/inhalation of contaminated soil dust Dermal contact with contaminated soil Inhalation of soil vapours Ingestion of homegrown produce Permeation into drinking water pipes Ground gas permeation into the building	Residential end users	Medium	Unlikely	Low	The site is partly within a 'Development High Risk Area' due to the presence of a coal outcrop, however, there is no evidence of coal mining in the vicinity of the site suggesting a low risk of contamination from this source.

5. Conclusions

5.1 Risk Evaluation

The initial conceptual site model identified the following potential contaminant linkages present at the site and the following conclusions have been drawn:

- There is a **low to moderate risk** to residential end users from the ingestion/inhalation of contaminated soil dust, dermal contact with contaminated soil, inhalation of soil vapours, ingestion of homegrown produce and permeation into drinking water pipes from agricultural activity on and in the vicinity of the site.
- There is a **low to moderate risk** to controlled waters from the leaching and surface runoff of contaminants from agricultural activity on and in the vicinity of the site.
- There is a **low risk** to residential end users from the ingestion/inhalation of contaminated soil dust, dermal contact with contaminated soil, inhalation of soil vapours, ingestion of homegrown produce, permeation into drinking water pipes and ground gas permeation into the building from infilled ground to the north and north west.
- There is a **low risk** to residential end users from the ingestion/inhalation of contaminated soil dust, dermal contact with contaminated soil, inhalation of soil vapours, ingestion of homegrown produce, permeation into drinking water pipes and ground gas permeation into the building from historical coal mining in the vicinity of the site.

Based on the findings of this Phase 1 Preliminary Risk Assessment, the risk to residential end users and controlled waters is considered to be low to moderate.

6. References

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Appendix - Site Maps & Plans

Description

Site location plan

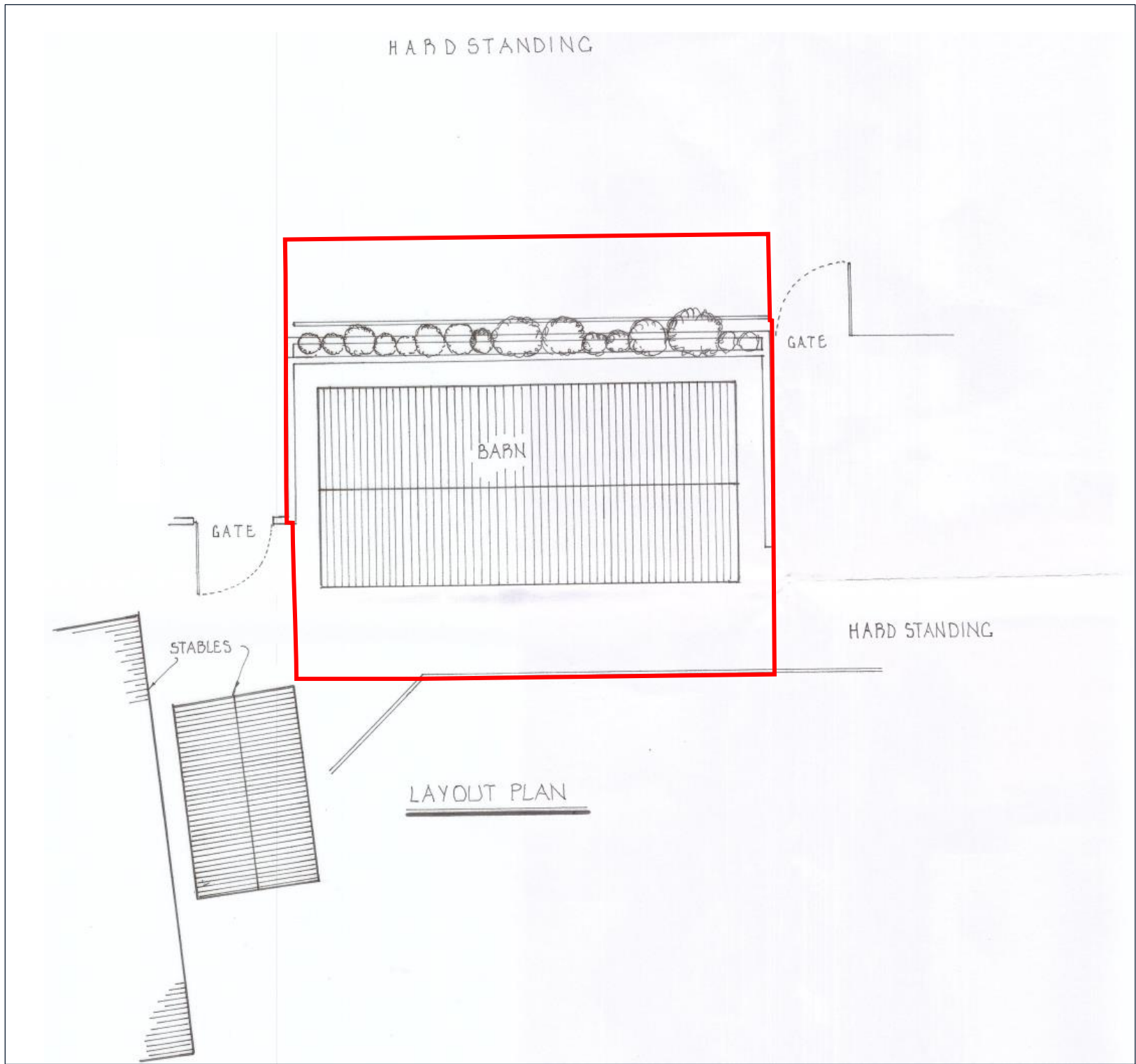
Sources

Contains OS data © Crown copyright and database rights

Key

Site boundary

▲ North



Appendix - Site Maps & Plans

Description

Existing site plan

Sources

S. Ingram & Associates

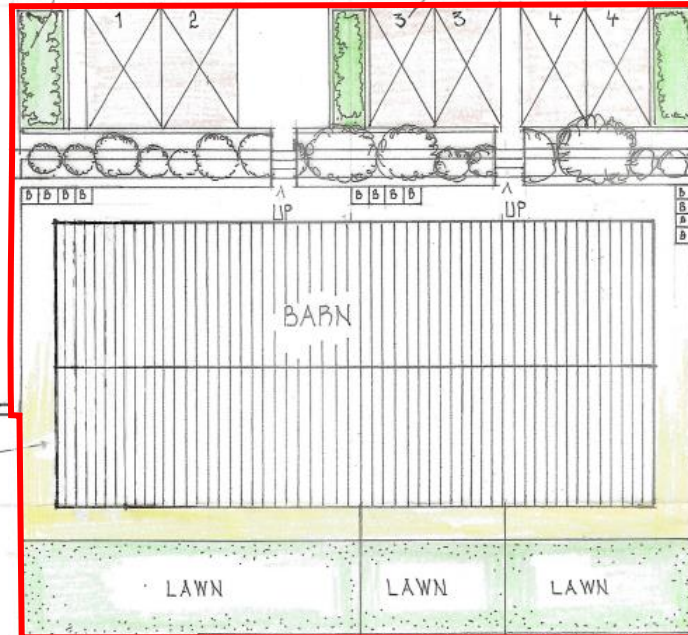
Key

Site boundary

HARD STANDING

STONE KERBS &
PLANTERS

CAR SPACES 5M X 2.5M



Appendix - Site Maps & Plans

Description

Proposed site plan

Sources

S. Ingram & Associates

Key

Site boundary



Appendix - Site Photos

Description

Photo of the existing agricultural building on the site and curtailing hardstanding, facing east

Sources

Concept Design Architects



Appendix - Site Photos

Description

Photo of hardstanding and parked caravans to the north west of the site, facing north east

Sources

Concept Design Architects



Appendix - Site Photos

Description

Photo of waste materials stored in skips and agricultural machinery to the north east of the site, facing south east

Sources

Concept Design Architects



Appendix - Site Photos

Description

Photo showing waste materials in a skip to the north east of the site, facing west

Sources

Concept Design Architects



Appendix - Site Photos

Description

Photo of agricultural equipment and machinery along with a catering trailer and barrels of cooking oil in yard area to the south east of the site, facing north

Sources

Concept Design Architects



Appendix - Site Photos

Description

Photo of agricultural equipment and materials in yard area to the south east of the site, facing west

Sources

Concept Design Architects



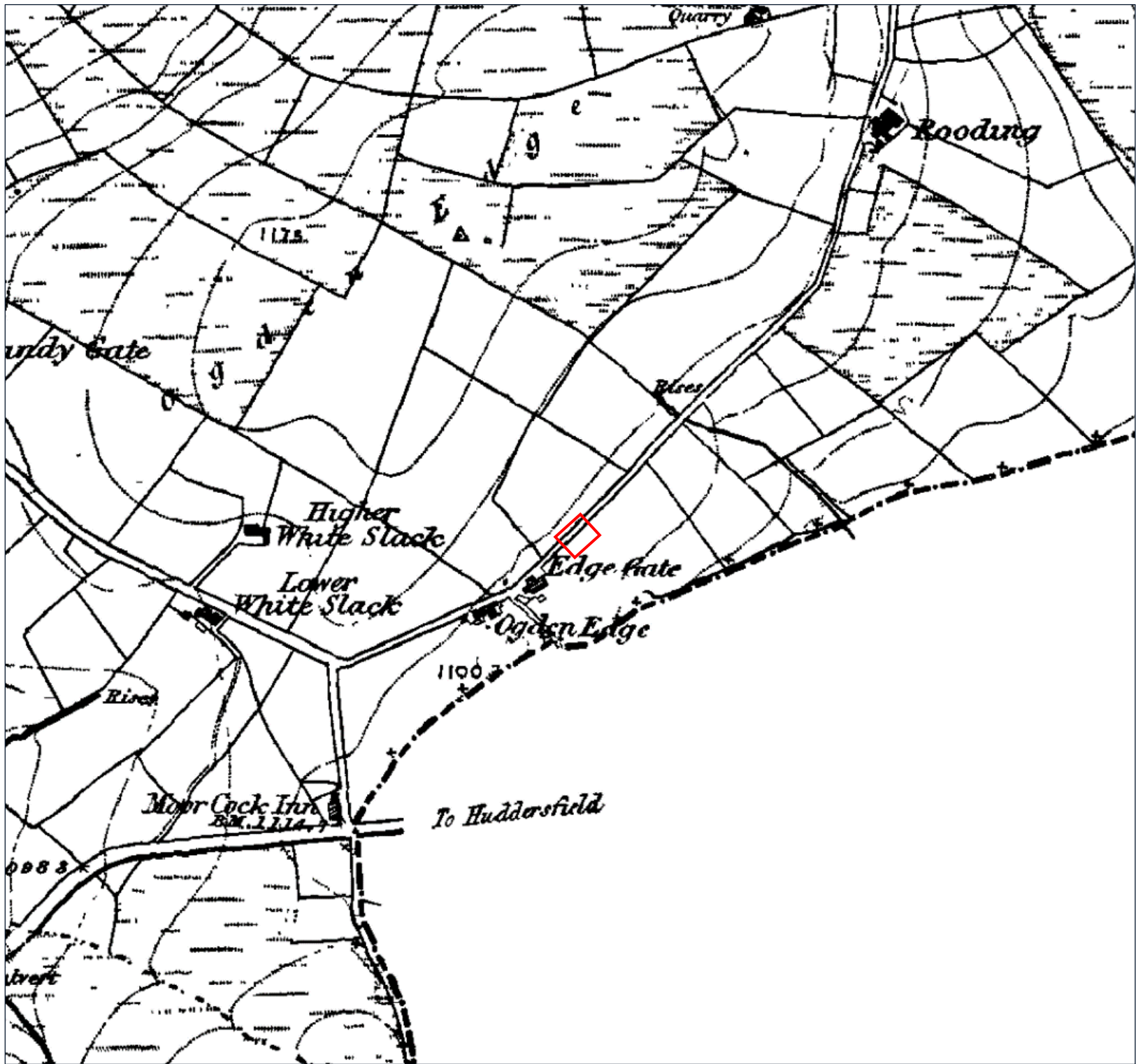
Appendix - Site Photos

Description

Photo of agricultural equipment, machinery and vehicles in yard area to the south east of the site, facing north east

Sources

Concept Design Architects



Appendix – Historical Maps

Description

Historical map dated 1851

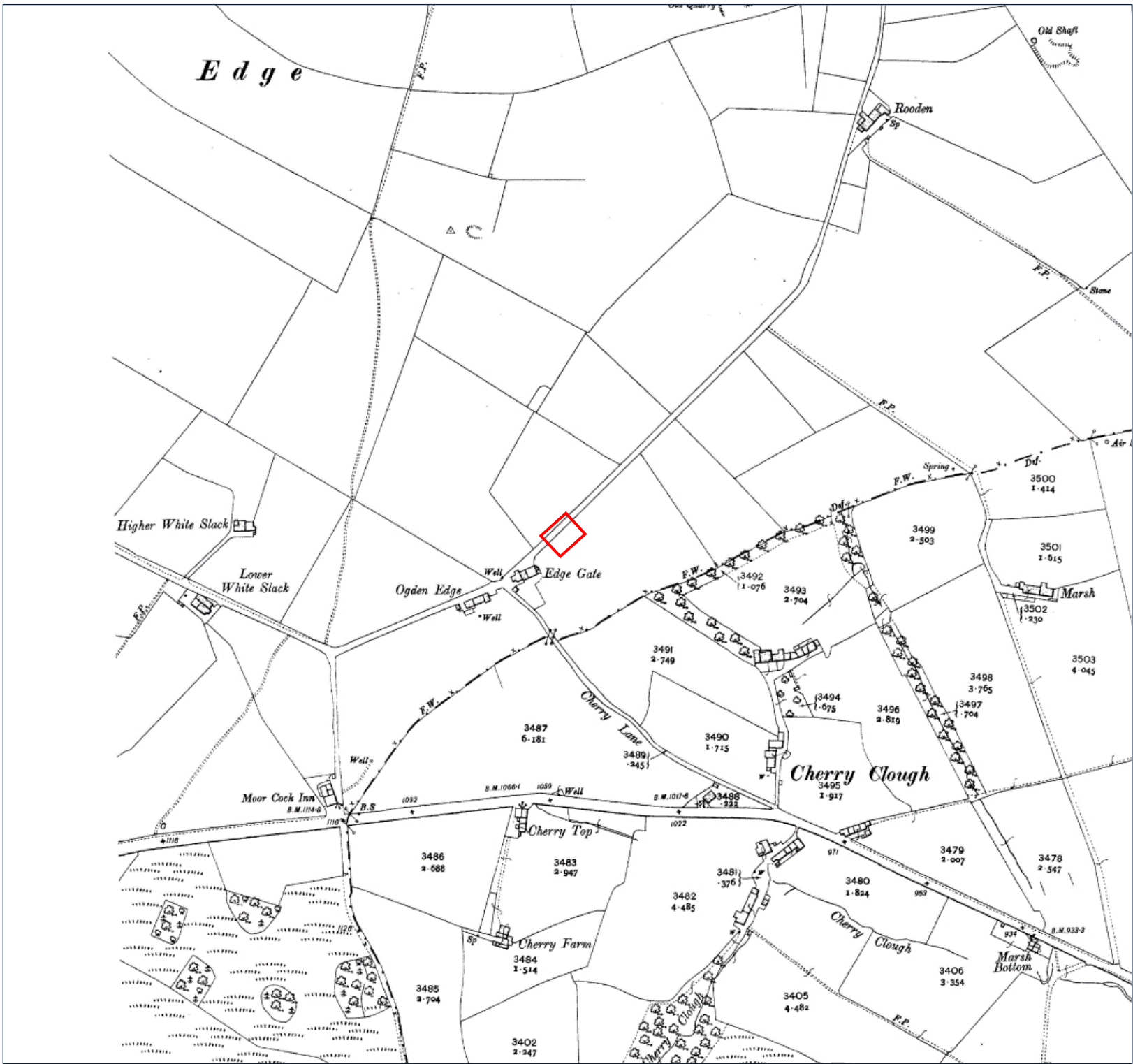
Scale: 1:10,560

Sources

Landmark Information Group

Key

	Site boundary
	North



Appendix – Historical Maps

Description

Historical map dated 1906

Scale: 1:2,500

Sources

Landmark Information Group

Key

	Site boundary
▲	North



Appendix – Historical Maps

Description

Historical map dated 1930

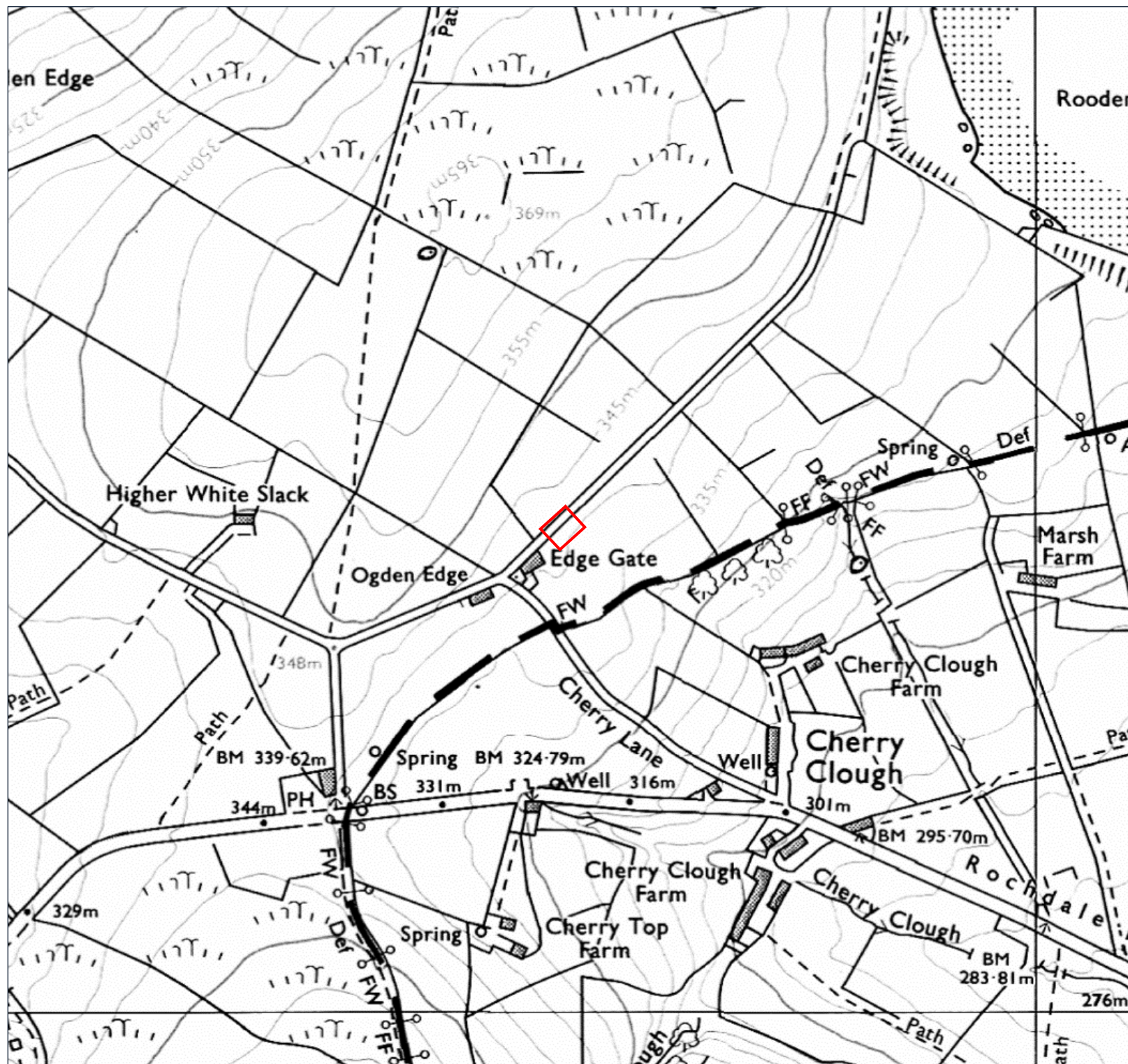
Scale: 1:2,500

Sources

Landmark Information Group

Key

	Site boundary
▲	North



Appendix – Historical Maps	
Description	
Historical map dated 1981	
Scale: 1:10,000	
Sources	
Landmark Information Group	
Key	
	Site boundary
	North



Appendix – Historical Maps

Description

Aerial photograph dated 2000

Sources

The GeoInformation Group

Key

Site boundary

▲ North



Appendix – Historical Maps

Description

Aerial photograph dated 2005

Sources

Infoterra Ltd & Bluesky

Key

■ Site boundary

▲ North



Appendix – Historical Maps

Description

Aerial photograph dated 2017

Sources

Google Earth

Key

Site boundary

▲ North



Appendix – Historical Maps

Description

Aerial photograph dated 2018

Sources

Google Earth

Key

Site boundary

North



Appendix – Historical Maps

Description

Aerial photograph dated 2021

Sources

Google Earth

Key

Site boundary

▲ North



Appendix – Historical Maps

Description

Aerial photograph dated 2023

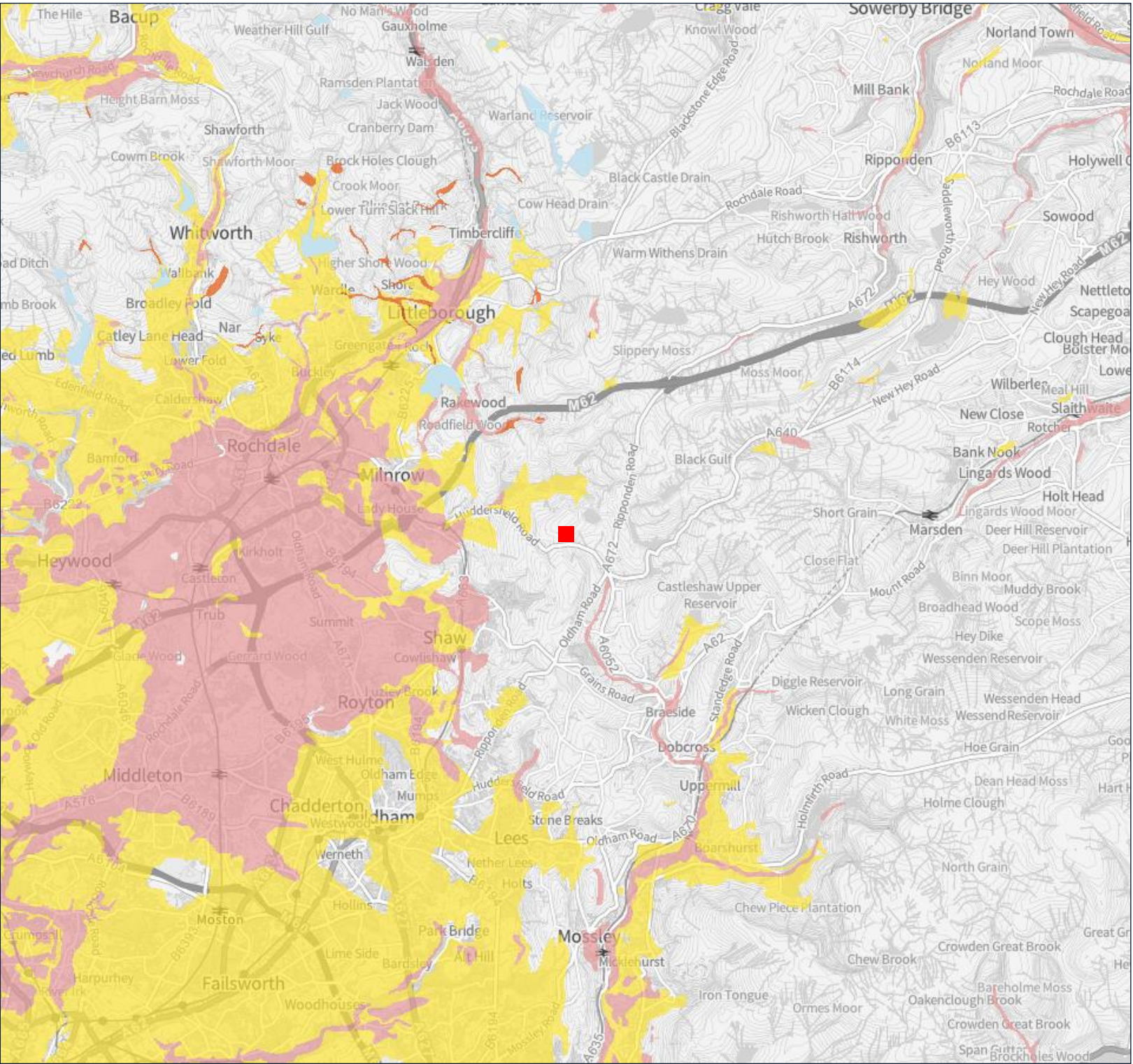
Sources

Google Earth

Key

Site boundary

North



Appendix - Geological Maps

Description

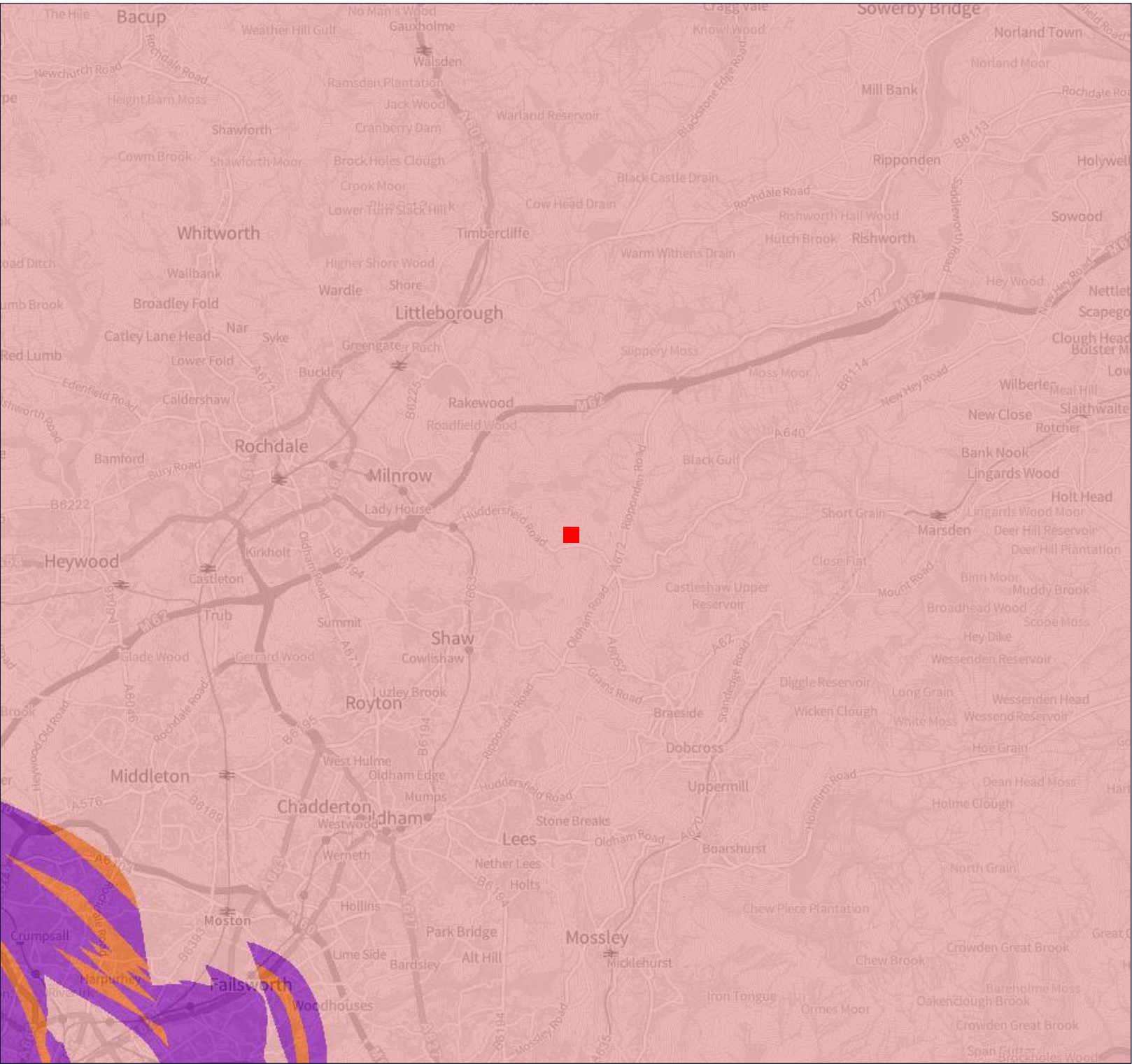
BGS map showing superficial hydrogeology on site

Sources

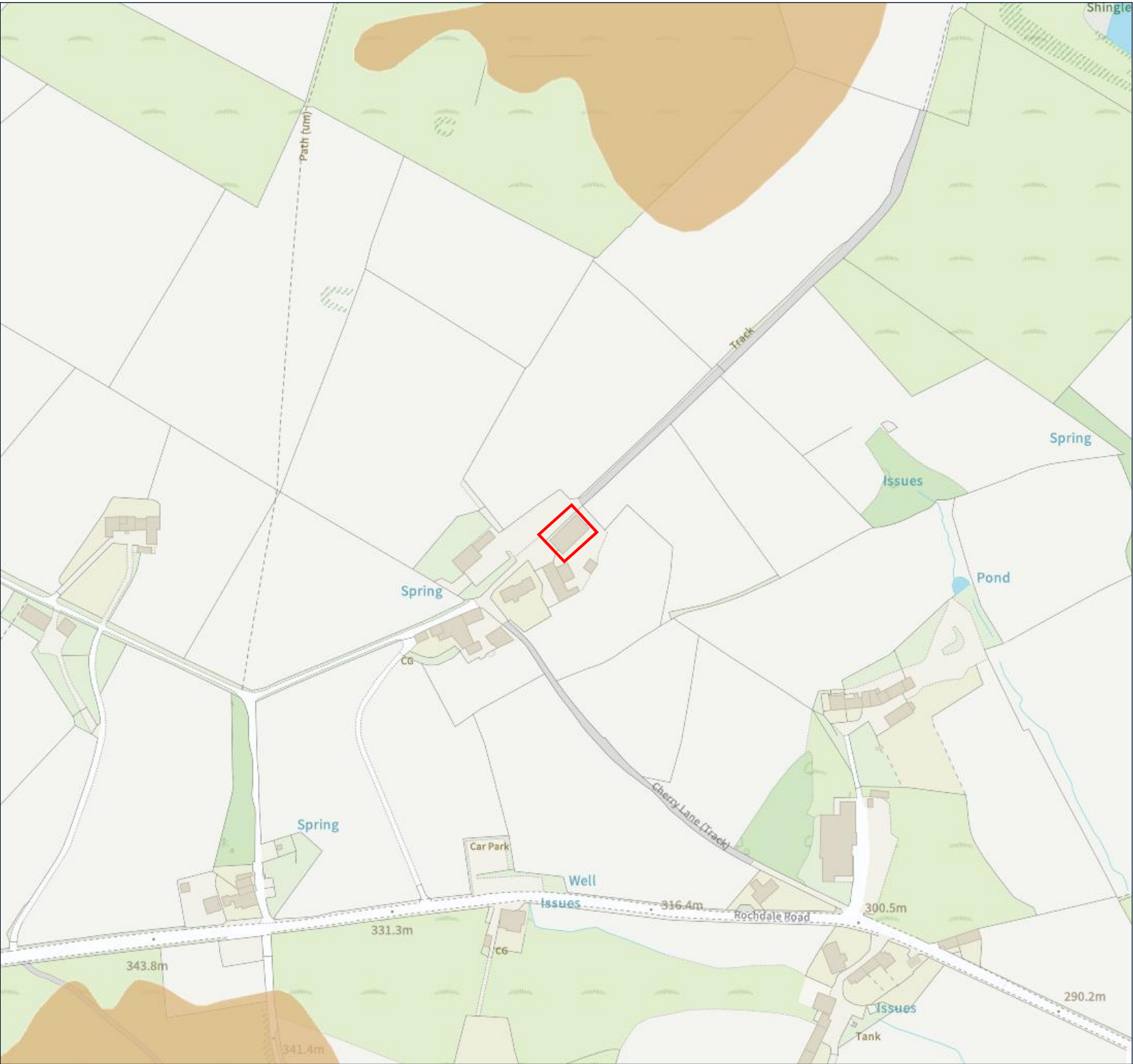
DEFRA Magic Map
British Geological Survey

Key

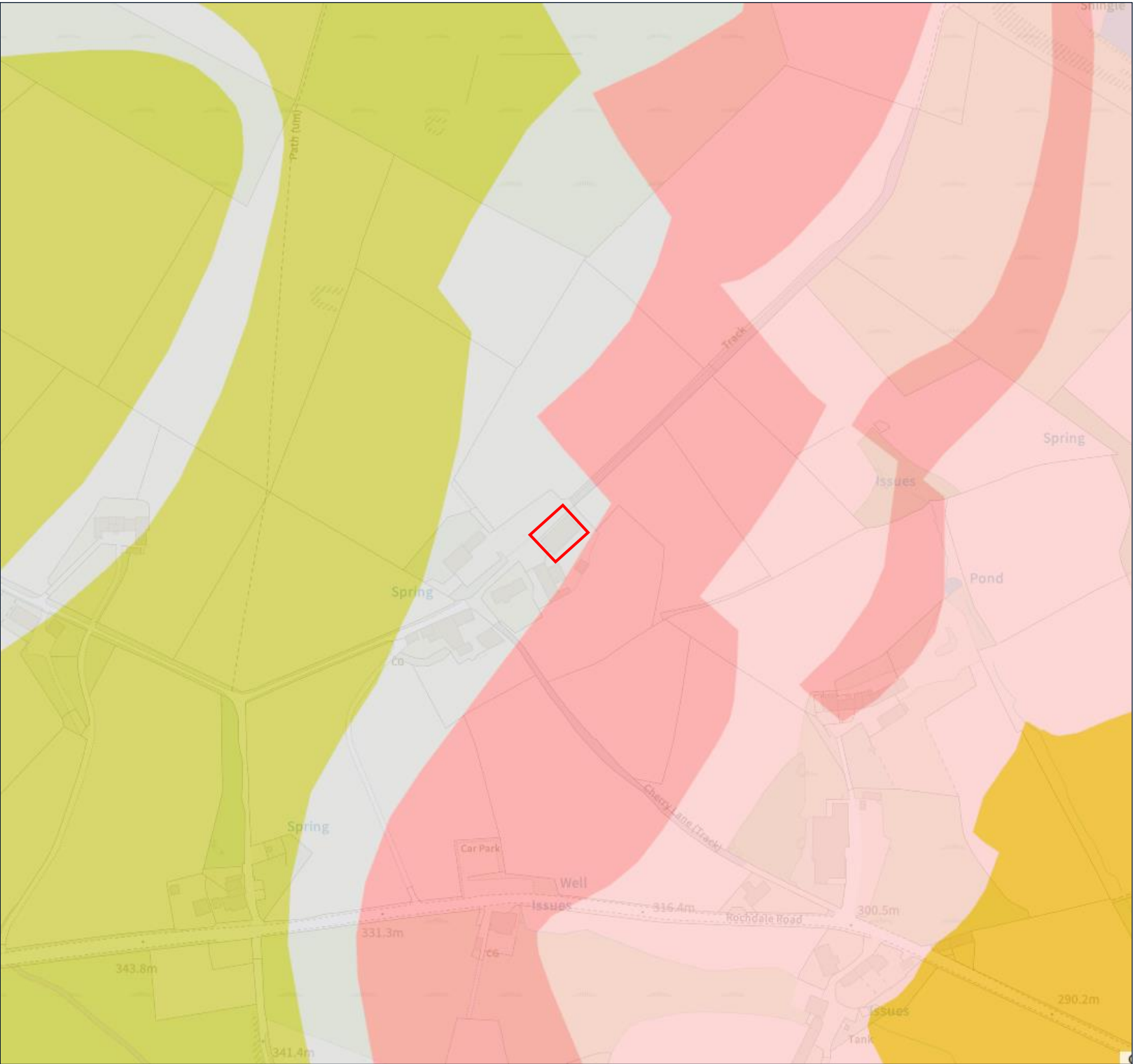
	Site location
	Principal
	Secondary A
	Secondary B
	Secondary Undifferentiated
	Unproductive
	North



Appendix - Geological Maps	
Description	
BGS map showing bedrock hydrogeology on site	
Sources	
DEFRA Magic Map British Geological Survey	
Key	
	Site location
	Principal
	Secondary A
	Secondary B
	Secondary Undifferentiated
	Unproductive
	North



Appendix - Geological Maps	
Description	
BGS map showing superficial deposits on site	
Sources	
British Geological Survey	
Key	
	Site boundary
	Peat
	North



Appendix - Geological Maps	
Description	
BGS map showing bedrock geology on site	
Sources	
British Geological Survey	
Key	
	Site boundary
	Pennine Lower Coal Measures Formation
	Rough Rock
	Woodhead Hill Rock
	Rossendale Formation
	Huddersfield White Rock
	North