

Environmental
Geotechnical
Specialists



PHASE 1 ENVIRONMENTAL DESK STUDY & COAL MINING RISK ASSESSMENT REPORT

job number	C2812/22/E/4293	date	August 2022
site address	Land North Side of Cooper Lane Hoylandswaine Sheffield S36 7JE		
written by	H. Henshall	checked by	R. Palmer
issued by	H. Henshall		



Please consider the environment before printing this report.



Environmental
Geotechnical
Specialists

Rogers Geotechnical Services Ltd
Offices 1 & 2 Barncliffe Business Park, Near Bank, Shelley, Huddersfield, HD8 8LU
☎ 01484 604354 Company No. 5130864

<ENVIRONMENTAL> <GEOTECHNICAL>

Contents

		Page
1.	Introduction	1
2.	Review and Summary of Published Data	2
2.1	Historical Land Use	3
2.2	Published Geology and Geological Hazards	3
2.3	Construction Issues	4
2.3.1	Foundation Construction	4
2.3.2	Site Won Materials	4
2.3.3	Disposal of Site Materials	4
2.4	Mining and Natural Cavities	5
2.5	Waste Management and Gas Monitoring	6
2.6	Hydrogeology, Hydrology	7
2.7	Sensitive Land Use	8
2.8	Industrial Land Use and Potential Sources of Contamination	8
3.	Preliminary Qualitative Risk Assessment	9
3.1	Conceptual Ground Model & Preliminary Qualitative Risk Assessment	9
4.	Coal Mining Risk Assessment	14
4.1	Geological Appraisal	14
4.2	Risk Assessment	15
4.3	Risks Posed by Shallow Coal Workings	15
4.4	Risks Posed by Coal Workings at Depth	16
4.5	Risks Posed by mine Gas	16
4.6	Risks Posed by Mine Entries	16
5.	Intrusive Investigation	17
5.1	Site Investigation Philosophy	17
5.2	Site Specific Investigation	18
5.2.1	Contamination Assessment	18
5.2.2	Geotechnical and Mining Legacy Assessment	19
5.	References	21

Appendices

1.	Groundsure Reports
2.	Historical Maps
3.	Site Plans
4.	Photographs
5.	Coal Authority CON29M Report
6.	Coal Authority Shaft Plan and Data Sheets
7.	Coal Features Plan



Report on a Phase One Desk Study and Coal Mining Risk Assessment

Location: Land North Side of Cooper Lane,
Hoylandswaine, Sheffield, South Yorkshire, S36 7JE

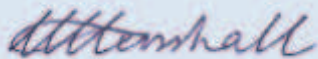
For: S. Rymer

Consultants: Progressive Architecture

Report No. C2812/22/E/4293

Report date: August 2022

For and on behalf of **Rogers Geotechnical Services Ltd**



Hattie Henshall BSc, FGS
Graduate Engineer



Rob Palmer MSc FGS ACIEH
Senior Geo-environmental Engineer

1. Introduction

The site comprises an area of land located to the north of Cooper Lane, Hoylandswaine, Sheffield, S36 7JE. The site is approximately 0.15 hectares in size and its National Grid reference is centred around 426698 405725.

It is understood that the development proposals currently comprise the construction of a new residential dwelling, with associated landscaping and access driveway. The two-storey building shall be constructed in the north-western corner of the site, with a swimming pool proposed on the ground floor of the south-western section. In order to assist with this decision-making process, and any planning and construction aspects of the development, a phase one environmental desk study and coal mining risk assessment has been commissioned and is the subject of this report.

In accordance with issued guidance, a site walkover was conducted on the 25th July 2022 and the following observations were made:

General site description/current site use

The site comprises a disused stable building and an associated paddock. Distinct cracking was observed on the internal breeze block walls.

Site boundaries/access

The site is accessible via Cooper Lane, Hoylandswaine, Sheffield.

Topography

The boundaries of the site slope downwards towards the east, whereas the site itself is relatively flat.

Surface cover of site

Hardstanding surface cover surrounds the stable building, now covered with pioneer vegetation. The paddock area is predominantly covered by grass.

Visible evidence of contamination/ contaminative sources

Metal containers of an unknown use were present within the stable building, and some building and/or demolition material was observed. However, there were no other visible signs of contamination present during the time of the walkover.

Presence of vegetation and wildlife

Vegetation associated with rough ground was present on site. There were no obvious signs of invasive flora, fauna, nesting birds, burrowing animals or edible plants observed during the time of the site walkover.

Services

The status of underground services is unknown. There were no overhead services present within the site at the time of the walkover.

Site neighbours

The site is located within a predominantly undeveloped, agricultural area.

In order to ensure that the site is fully characterised and to comply with the Environment Act 1995¹, a Phase One Desk Study has been commissioned by the client. The desk study is intended to assess the environmental impact of historical, current and future factors on the development. This report will present the data obtained and provide a conceptual ground model and preliminary risk assessment as well as discussing the scope of any intrusive investigation that may be required. This report does not consider ecological impacts (e.g. bats) or botanical risks (e.g. Japanese Knotweed).

2. Review and Summary of Published Data

As a part of this desk study the following data has been considered.

- | | |
|---|--------------|
| • Groundsure Reports | - Appendix 1 |
| • Historical maps | - Appendix 2 |
| • Site Plans | - Appendix 3 |
| • Photographs | - Appendix 4 |
| • Coal Authority CON29M Report (supplied by the client) | - Appendix 5 |
| • Coal Authority Shaft Plan and Data Sheets | - Appendix 6 |
| • Coal Features Plan | - Appendix 7 |

The data obtained from the above-mentioned sources has been summarised below².

¹S57 of the Environment Act 1995 inserted the contaminated land regime into the Environmental Protection Act 1990 (Part 2A). The regime 'provides a risk-based approach to the identification and remediation of land where contamination poses an unacceptable risk to human health or the environment' See <http://www.environment-agency.gov.uk/research/planning/40405.aspx>. This places a duty on local authorities to inspect their areas for contaminated land and require its remediation using the 'suitable for use' approach. Much of this duty is discharged via the planning regime under the Town and Country Planning Act 1990 as historical land contamination is a 'material planning consideration.' The local authorities are required to secure the removal of unacceptable risks via remediation of the land, to therefore ensure the site is suitable for its new use. This is fulfilled via completion of a Phase One Environmental Desk Study, Phase Two Intrusive Investigation, Phase Three Remediation Strategy and Phase Four Validation Report. Therefore, as a minimum, once a site has been developed it should not be capable of being designated as 'contaminated land' under Part 2A of the Environmental Protection Act 1990, as inserted by the Environment Act 1995 (see also PPS 23 Planning and Pollution Control Section 8)

² This report is a summary only and reference must be made in full to the information provided in the Groundsure Report.

2.1 Historical Land Use

Table 1: Historical Land Use³

HISTORICAL MAPPING SUMMARY		
Map Dates	On site	Within 250m
1891 – 1906	The site is undeveloped and presumed to be agricultural.	The surrounding 250m area is predominantly undeveloped, with a stream or beck present from 50m N with a W-E trend. However, several farms are located in the surrounding area, approximately 150m SW, 170m SE and 200m. Wells are located around 20m SW and 145m SW. An air shaft is located 200m SE and a 'dayhole' (mine shaft) 205m SE.
1960 – 2003	There are no changes to the site during this period recorded on the historical maps. However, it is understood that unlicensed opencast mining was undertaken on site at an unknown time during this period.	The farm located 150m SW is now labelled 'Mount Pleasant Farm' and the farm 170m SE is now 'Guyder Bottom Farm'. A mine and associated foot bridge are now located 150m E. A Works is also present with associated tanks from 226m SE, titled 'Sewage Works' from 1993.
2010	A building is present on site, presumed to be the stable block.	The surrounding 250m area remains relatively unchanged.

NB. All distances given are approximate only.

2.2 Published Geology and Geological Hazards

Table 2: Geological Data for the Site

BGS MAPPING DATA			
Strata Type	Strata Name ⁴	Previous Name ⁴	Description ⁵
Infilled Ground	Infilled Ground	-	Infilled ground is an area where the pre-existing land surface has been excavated (worked ground) and subsequently partially or wholly backfilled (made ground). Variable in composition; e.g. a backfilled quarry, landfill. The infilled ground at this site is presumed to be associated with unlicensed opencast mining.
Superficial Geology	N/A	N/A	Not indicated to underlie the site.
Solid Geology	Pennine Lower Coal Measures Formation	Grey Measures of Yorkshire and Nottinghamshire	Interbedded grey mudstone, siltstone and pale grey sandstone, commonly with mudstones containing marine fossils in the lower part, and more numerous and thicker coal seams in the upper part.
GEOLOGICAL FEATURES			
Type	Location	Features	Comments
Mining Activity	On site	Coal mining	The study site is located within the specified search distance of an identified mining area.
		Non-coal Mining	Localised small-scale underground mining is not recorded to have occurred.
Faults	32m N 131m W 172m W 216m E	Faults	Normal faults, displacements unknown. These faults are not anticipated to affect the site.

³ See Appendix 2

⁴ Sources: British Geological Survey (NERC) Map Sheets 87; Barnsley; Solid and Drift Edition, and Geology of Britain Viewer [online resource from www.bgs.ac.uk]

⁵ Sources: British Geological Survey (NERC) Lexicon of Named Rock Units [online resource from www.bgs.ac.uk]

Landslip Deposits	No data	No data	No data.
BGS BOREHOLE DATA			
Reference⁶	Location	Strata Description	Depth
There are no BGS borehole records within 250m of the site.			
NATURAL GROUND SUBSIDENCE & HAZARDS⁷			
Type		Risk Rating	
Potential for shrinking or swelling clay ground stability		Very low.	
Potential for running sand ground stability		Negligible.	
Potential for compressible ground stability		Moderate.	
Potential for collapsible ground stability hazards		Very Low.	
Potential for landslide ground stability		Very Low.	
Potential for ground dissolution stability		Negligible.	
Radon		The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level. No radon protective measures are necessary.	

2.3 Construction Issues

2.3.1 Foundation Construction

On the basis of infilled ground being recorded beneath the site, as well as the evidence for opencast mining, it is unlikely that shallow strip or spread foundations will be suitable at this site. Deeper foundations, such as piles, should be considered for the site. Moreover, any foundation designs must take into consideration the presence of residual opencast mining features such as a high wall. It should be appreciated that an intrusive investigation will be required to produce a suitable foundation design.

2.3.2 Site Won Materials

It is unlikely that any materials present beneath the site surface will be suitable for use during the construction phase. However, this can be assessed further during any intrusive site investigation.

2.3.3 Disposal of Site Materials

Contamination/WAC testing is recommended to be undertaken to establish the nature of the underlying infilled ground before disposal of this material to a licensed landfill site.

⁶ <http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html>

⁷ See Groundsure report

2.4 Mining and Natural Cavities

2.4.1 Coal Mining

The Groundsure Report states that the site is within an area that may be affected by coal mining. Using the available online data from the Coal Authority, it can be concluded that the site is in an area where unlicensed opencast mining has occurred, and that mining by such methods has taken place on site. Mining is likely to have occurred within a coal seam that is recorded to outcrop on site. There are limited publicly available records in relation to these workings; they also don't appear on any historical maps, despite the large area that has been worked. As such, it would be prudent to obtain Mine Abandonment Plans from the Coal Authority in order to fully characterise the nature of the coal workings on site.

A CON29M Coal Mining Report (ref 51003093871001) was supplied by the client and is summarised as follows:

Table 3: Summary of the Coal Authority's CON29M Coal Mining Report:

Has the report highlighted evidence or potential of:			
Ref	Mining Feature	Yes/No	Comments
1	Past Underground Coal Mining	No	The property is not within a surface area that could be affected by any past recorded underground coal mining. However, the property is in an area where the Coal Authority believes there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered, particularly prior to any site works or future development activity, as ground movement could still be a risk.
2	Present Underground Coal Mining	No	The property is not within a surface area that could be affected by present underground mining.
3	Future Underground Coal Mining	No	The property is not in an area where the Coal Authority has received an application for, and is currently considering whether to grant a licence to remove or work coal by underground methods. The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods. The property is not in an area likely to be affected from any planned future underground coal mining. However, reserves of coal exist in the local area which could be worked at some time in the future. No notices have been given under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.
4	Mine Entries	Yes	Within, or within 20m of, the boundary of the property there are 2 mine entries, the approximate positions are shown on the enquiry boundary plot. There is no record of what steps, if any, have been taken to treat the mine entries.
5	Coal Mining Geology	No	The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.
6	Past Opencast Coal Mining	Yes	The property is within the boundary of an opencast site from which coal has been removed by opencast methods.
7	Present Opencast Coal Mining	No	The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.
8	Future Opencast Coal Mining	No	There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

9	Coal Mining Subsidence	No	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 31st October 1994. There is no current Stop Notice delaying the start of remedial works or repairs to the property. The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.
10	Mine Gas	No	The Coal Authority has no record of a mine gas emission requiring action.
11	Hazards Relating to Coal Mining	No	The property has not been subject to remedial works, by or on behalf of the Coal Authority, under its Emergency Surface Hazard Call Out procedures.

Additionally, a Mine Entry Plan and Data Sheets Report (ref 51003255462001) was obtained from the Coal Authority which is summarised as follows:

Table 4: Summary of the Coal Authority's "Shaft Plan and Data Sheets" Report:

Mining Feature:		Comments
1	Adit (ref 426405-005)	- Source: 2nd Ed. 1/10560 Scale Geological Survey Map - Probable adit azimuth: 184° - Treatment details: unknown. - Easting: 426707 - Northing: 405774
2	Adit (ref 426405-006)	- Source: 2nd Ed. 1/10560 Scale Geological Survey Map - Probable adit azimuth: 185° - Treatment details: unknown. - Easting: 42752 - Northing: 405770

It should be appreciated that information obtained from the Coal Authority website highlights that the departure of the above-mentioned features is 10m. This means that the mine entries could be situated 10m in any direction from the recorded position. With reference to CIRIA document C758 Abandoned Mine Workings Manual, when determining a risk zone, the departure should be taken into consideration. A departure of 10m is usual indicative of the entry being recorded on a geological plan, as opposed to say Ordnance Survey or mine abandonment plans. Geological plans can often be poor in accuracy and precision; thus, a greater departure is credited to the position of the entry.

2.4.2 Non-Coal Mining

Localised small-scale underground mining is not recorded to have occurred.

2.5 Waste Management and Gas Monitoring

Table 5: Landfill Data and Artificial Ground, Recorded and Anticipated

ENVIRONMENT AGENCY, LOCAL AUTHORITY, BGS & HISTORIC LANDFILLS			
Waste Type	Location	Comments	Monitoring Requirement
Active Landfill	Within 250m	None recorded within 250m	N
Historic Landfill	Within 250m	None recorded within 250m	N
Historic waste sites	Within 250m	None recorded within 250m	N
Licensed waste sites	Within 250m	None recorded within 250m	N

Waste Exceptions	Within 250m	All waste exemptions are at least 395m away from the site.	N
MADE GROUND & INFILLED GROUNDWORKINGS			
Description	Location	Comments	Monitoring Requirement
Records of Potentially Infilled Features	On site	Made Ground associated with Historical Construction	Y
	On site	Infilled Ground associated with Unlicensed Opencast Mining	Y
	20m SW, 145m SW	Wells	Y
	200m SE	Air Shaft	Y
	205m SE	Mine shaft ('Dayhole') and associated foot bridge	Y
	226m SE	Sewage Works	Y

2.6 Hydrogeology, Hydrology

Table 6: Ground/Controlled Water Sensitivity and Flooding

ENVIRONMENT AGENCY AQUIFER DESIGNATION⁸		
Strata	Designation	Description
Solid Geology 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.
GROUNDWATER SENSITIVITY⁹		
Description	Location	Details
Source Protection Zone	-	None recorded within 250m.
Abstraction Licences	-	None recorded within 250m.
Records of Part A(2) and Part B Activities and Enforcements	-	None recorded within 250m.
Records of Licensed Discharge Consents	194m E	Address: Hoylandswaine STW, Cooper Lane. Effluent Type: Sewage. Most Recent Effective Date: 10/03/2010.
High Soil Leaching Potential	On site	Leaching Class: High.
CONTROLLED WATERS¹⁰		
Description	Location	Details
River Network Entries	26m S to 229m E	15 inland rivers not influenced by normal tidal action, 2 lakes, lochs or reservoirs.
Surface Water Features	Within 250m	13 surface water records present within 250m. Unknown type.

⁸ See Appendix 1

⁹ See Appendix 1

¹⁰ See Appendix 1

POLLUTION INCIDENTS ¹¹			
Pollutant	Receptor	Location	Date
There are no pollution incidents recorded within 250m of the site.			
ENVIRONMENT AGENCY FLOOD RISK ¹²			
Description	Location	Details	
Zone 2	-	The site is not situated within a Zone 2 flood plain.	
Zone 3	-	The site is not situated within a Zone 3 flood plain.	
Flood Defences	-	None recorded within 250m.	
Groundwater Flooding Area	-	Limited potential for groundwater flooding to occur.	

2.7 Sensitive Land Use

Table 7: Sensitive Land Uses within 250m

REGISTERED SENSITIVE LAND USES ¹³		
Description	Location	Details
Nitrate Vulnerable Zone	On site	River Dearne. Type: Surface Water. Status: Existing.
Green Belt Land	On site	South and West Yorkshire.

2.8 Industrial Land Use and Potential Sources of Contamination

In order for a conceptual site model and preliminary risk assessment to be completed the historical maps and Groundsure data requires analysis to identify any past or present activities on the site and in the area that may have the potential to cause contamination on the site. Guidance has been issued by the Environment Agency, NHBC and Chartered Institute of Environmental Health.¹⁴ Within this document, annex 3 provides examples of important contaminants that are associated with individual uses of land. This data assists in the formulation of any chemical testing regime.

Those that we consider potentially contaminative according to the guidance are given below:

Table 8: Potentially Contaminative Sources

HISTORICAL		
Land Use	Location	Classification
Historical Construction	On site	Artificial/made ground.
Unlicensed Opencast Mining	On site	Infilled ground.
Wells	20m SW, 145m SW	Unspecified works/factories/features.
Air Shaft	200m SE	
Mine Shaft ('Dayhole')	205m SE	
Sewage Works	226m SE	

¹¹ See Appendix 1

¹² See Appendix 1

¹³ See Appendix 1

¹⁴ Guidance for the Safe Development of Housing on Land Affected by Contamination, R&D Publication 66: 2008 Volume 1 and 2.

CURRENT		
Land Use	Location	Classification
There are no current potentially contaminative sources located within 250m of the site.		

3. Preliminary Qualitative Risk Assessment

The potential of contamination hazards on the land has been identified and the risks associated with them are assessed in the following preliminary risk assessment in accordance with industry practice and the 'suitable for use' approach. This has been conducted using the source-pathway-receptor approach. This method dictates that there must be a risk contaminant produced at a 'source' in sufficient concentration to cause harm and there must be a 'pathway' for the contaminant to reach an identifiable 'receptor' for the linkage to be proved and a contamination hazard to be considered present. Not all substances are contaminants and not all contaminants are considered to be a risk. Indeed, DEFRA and The Environment Agency state that **'a contaminant is a substance which has the potential to cause harm, while a risk itself is considered to exist if such a substance is present in sufficient concentration to cause harm and a pathway exists for a receptor to be exposed to the substance.'**

R&D Publication 66: 2008 states that the groups at risk of harm (receptors) can be identified by the following categorisation:

1. Humans: site personnel, end users, visitors and adjacent land users.
2. The water environment – receptors: groundwater, surface water, coastal waters and artificial drainage.
3. Ecosystems: plants and animals.
4. Construction/building materials/services

In order to complete a conceptual site model and therefore a preliminary risk assessment, an appraisal of the sources of contamination, potential and actual, on and in the area of the site has therefore been completed with reference to this pollution linkage.¹⁵

3.1 Conceptual Ground Model & Preliminary Qualitative Risk Assessment

It is understood that the development proposals currently comprise the construction of a new residential dwelling and associated landscaping. In view of the sensitivity of the end users it is considered that the soil screening values (SSVs) for a residential with plant uptake end use should be employed.

¹⁵ This assessment has been based on the information as to the proposed development that has been provided by the client. If the plans should change, the assessment should be re-evaluated.

The preliminary risk assessment has been evaluated with reference to the following ratings and definitions:

- N/A -** A source-pathway-receptor linkage is not considered to exist and therefore a risk assessment is not required.
- Low -** A pollution linkage is unlikely and/or the likelihood of harm occurring is low and of minor consequence.
- Moderate -** The linkage exists but further field or laboratory data is required to confirm that the contaminant has reached the receptor and the levels of contaminant are harmful.
- High -** The linkage exists and the available data indicates that significant harm may be caused and remedial action could be necessary.

Table 9: Conceptual Site Model and Preliminary Qualitative Risk Assessment

CONCEPTUAL SITE MODEL				PRELIMINARY RISK ASSESSMENT	
Pathways	Receptor	Linkage Present?	Risk Rating	Notes	
Direct contact/dermal absorption/soil ingestion	Operative	Yes – operatives are likely to come in contact with the soil.	Moderate	There are potential on and off-site sources of contamination that may have caused contamination of the site.	
	End User	Yes – end users are likely to come in contact with the soil.	Moderate	Further testing required to reach a firm conclusion.	
	Neighbours	Yes – no immediate residential neighbours present and the on-site source laterally extends on to the neighbouring land.	Low	To be assessed during any intrusive works.	
Inhalation of Dust/Vapours	Operative	Yes – contact with soil likely during works and vapours may accumulate in enclosed spaces.	Moderate	There are potential on and off-site sources of contamination that may have caused contamination of the site.	
	End User	Yes – vapours may accumulate in enclosed spaces.	Moderate	Construction activities may create dust on and off site, which, if contaminated, could adversely affect operatives, end users and neighbours.	
	Neighbours	Yes – neighbours within 250m that could be affected by airborne dust.	Low to Moderate	In the event that harmful vapours are present they may accumulate in enclosed spaces, affecting operatives, end users and neighbours. Further testing required to reach a firm conclusion.	
Ingestion of fruit/vegetables and/or waters	Operative	Yes – edible plants or contained water sources may be proposed as part of the development.	Moderate		
	End User	Yes – soft landscaping proposed as part of the new development.	Moderate	There are potential on and off-site sources of contamination that may have caused contamination of the site. Further testing required to reach a firm conclusion.	
	Neighbours	No – no immediate neighbours present.	N/A		

Migration of hazardous gases via permeable strata	Operative	Yes – possible off-site sources and potential source on site associated with unlicensed opencast mining.	Moderate	Possible source on site and within 250m. A programme of monitoring is recommended but is suggested to be limited to 6 readings over 3 months in the first instance.
	End User		Moderate	
	Neighbours	No – no immediate neighbours present.	N/A	No further action required.
Spillage/loss/run off direct to receiving water	Controlled Waters	Yes – possible source on site and controlled waters within 250m.	Moderate	There are potential on and off-site sources of contamination that may have caused contamination of the site.
Migration via permeable unsaturated strata	Controlled Waters	Yes – possible source on site and Secondary A aquifer beneath the site.	Moderate	Controlled waters within 250m. Secondary A aquifer underlies the site. Permeability of underlying geology should be assessed.
Run off via drainage/sewers etc	Controlled Waters	Yes – possible source on site.	Moderate	Further testing required to reach a firm conclusion.
Direct contact with contaminated soils	Plants	Yes – some soft landscaping areas may be present as part of the proposed development.	Moderate	There are potential on and off-site sources of contamination that may have caused contamination of the site.
Uptake via root system			Moderate	Any on site sources of contamination could migrate to neighbouring properties. Further testing required to reach a firm conclusion.
Direct contact with contaminated soils/ Direct contact with contaminated groundwater	Building Materials	Yes – possible source on and off site and foundation and service installation materials may be affected by the site soil.	Moderate	There are potential on and off-site sources of contamination that may have caused contamination of the site. Further testing required to reach a firm conclusion.

Migration of mine gas via permeable strata	Operative	Yes – in an area affected by coal mining activity and where shallow workings may be present.	Moderate	Further knowledge required to reach a firm conclusion.
	End User			
Exposure to Radon	Operative	No – not in a radon affected area.	N/A	The publication BR211 states that no protection measures are necessary.
	End User			
Mining Instability	End User	Yes – the site is in an area where underground mining has occurred via Opencast Mining. Further details are unknown.	Moderate	Further knowledge required to reach a firm conclusion. This will require an intrusive site investigation.
Unexploded Ordnance (UXO) Risk	Operative	Yes – the Zetica ¹⁶ online maps indicate that the site is at low risk from UXO.	Low	No further action required.

Notes:

1. The above data and table is a qualitative assessment of the probable risks identified at this site, based on the information made available to us from the client, third party professional data and walkover survey.
2. Should any additional or new data come to light, the risk assessment should be revisited and any necessary changes made to any recommendations resulting from this study.
3. Where further testing is recommended as part of the risk assessment, this is in order to provide a quantitative assessment of any contamination issues. It should at all times be considered that uncertainties may remain, and therefore any testing regime and ground investigation philosophy should be ready to accommodate any necessary alterations should any data come to light or it become evident that it has not been previously considered.

¹⁶ Pre-desk study assessment [online resource from www.zeticauxo.com].

4. Coal Mining Risk Assessment

4.1 Geological Appraisal

On the basis of the information revealed from the Geology of Britain Viewer¹⁵, it is noted that the site is situated within the Pennine Lower Coal Measures Formation. The regional solid geology appears to dip gently towards the north east, approximately 4°.

There are two notable coal seams that are shown to outcrop within the local area. Information regarding these seams is summarised as follows:

Table 10: Summary of Coal Seams Within the Vicinity of the Site

Seam Name	Seam thickness ^{5*}	Outcrop distance from site ^{5*}	Anticipated depth below site
Whinmoor Coal (W)	0.2m to 1.8m	On site	At or close to surface level (likely extracted)
Cumberworth Thin Coal (CT)	0m to 0.2m	13m to 15m S (from proposed driveway)	Within 10m

In this instance, it is considered that the Whinmoor Coal seam will be revealed at or close to the surface level within the southern section of site, with the projected outcrop of this seam being located in the southern area of the site, away from where the building is to be developed. It is expected that this seam has been subject to mining via opencast methods. Interestingly, the outcrop of the Whinmoor Coal has a bulbous outcrop shape. It is anticipated that prior to the opencast workings, the outcrop could have had a straight linear trend across the centre of the site. However, the outcrop is now shown to follow the deposit of the infilled ground towards the southern boundary.

Stratigraphically, the next seam within the sequence¹⁷ is the Cumberworth Thin (CT). This seam is expected to be present within 10m depth of the Whinmoor Coal seam. The Cumberworth Thin coal outcrops approximately 15m south of the site, roughly following the trend of Cooper Lane. This seam is indicated to have a thin thickness, reaching only 0.2m where fully formed. Therefore, it is anticipated that such a seam will unlikely have been subject to extensive mining. Nonetheless, if known to be close to the surface, this may have been removed during the opencast workings. However, it is unlikely that such a coal seam shall have been subject to underground workings.

¹⁷ In accordance within the Generalised Vertical Section

4.2 Risk Assessment

The risk to the stability of the proposed residential development has been evaluated from the data obtained and with reference to the following ratings and definitions:

- Low - The possibility of instability is unlikely therefore no further action is necessary.
- Moderate - The possibility of instability is likely and further investigation or remedial action may be required.
- High - The possibility of instability is highly likely and further investigation or remedial action will be necessary.

Table 11: Development Specific Risk Assessment

Item	Risk attributed to	Coal Seam(s) & Features Considered	Risk Rating
4.3	Shallow coal workings	Whinmoor Coal	High
		Cumberworth Thin	Low
4.4	Coal workings at depth	The Coal Authority report indicates that the property is not within a surface area that could be affected by past underground mining.	Low
4.5	Mine gas	Shallow coal workings.	Moderate
4.6	Mine entries	Adit 426405-005	Low
		Adit 426405-006	Low

4.3 Risks Posed by Shallow Coal Workings

On the basis of all of the information provided above, the Whinmoor Coal seam and the Cumberworth Thin coal seam are likely to be present within 30m of the surface at the site and are therefore considered to be shallow. Whilst these seams may be of limited thickness, unlicensed opencast mining is recorded to have occurred on site. The site is therefore located within a development high risk area, as defined by the Coal Authority, which concludes that there is a credible risk of both mine gas and instability to any development at this site.

It may be noted that guidance available from both the NHBC and the CIRIA publication, SP32 - *construction over abandoned mine workings*, suggests that competent overburden thickness above a coal seam should be greater than 10 times the thickness of a seam plus seam thickness in order that the collapse of workings would pose a low risk to surface structures.

On this basis, assuming a maximum thickness of the coal seams, the table below suggests the thickness of competent overburden required above each seam to mitigate instability at the surface.

The required thickness of the competent overburden is as follows:

Table 12: Required Thickness of Competent Overburden

Seam Name	Seam thickness	Anticipated depth below site	Required thickness of competent overburden
Whinmoor Coal	0.2m to 1.8m	At or close to surface level – likely removed	19.8m
Cumberworth Thin (CT)	0.0m to 0.2m	Within 10m of the surface level	2.2m

Given the thickness of the Whinmoor Coal, it is acceptable that opencast workings are likely to have occurred on-site. Therefore, a high-risk rating has been assigned to this seam, and further investigation is recommended to prove or disprove the presence of mining activity.

With regards to the Cumberworth Thin, it is considered that this seam shall unlikely have been worked via underground methods beneath the site, given the impersistent nature and maximum thickness. As such, a low risk rating has been assigned to this seam.

It should be appreciated that no further seams are anticipated to be present within 30m of the site surface. Indeed, the next coal seam in the sequence is the Penistone Green Coal, which will be present at excessive depths.

4.4 Risks Posed by Coal Workings at Depth

In regard to deeper mining which could affect the site, the property is not recorded to have had past underground mining at depth.

4.5 Risks Posed by Mine Gas

This assessment has identified that there is potential for shallow mine workings to be present beneath the proposed development. Whilst the CON29M Coal Mining Report has not reported any incidents of mine gas within the vicinity of the development, shallow mining activity represents a credible source of ground gas. As such, a moderate risk rating has been assigned, and further assessment may be required. Should evidence of workings be proven via further intrusive works, it is strongly recommended that a detailed gas risk assessment is undertaken in accordance with relevant guidance.

4.6 Risks Posed by Mine Entries

The CON29M Coal Mining Report and the Shaft Plan and Data Sheets Report refer to two adits within close proximity to the site (~30m N and NE), references: 426405-005 (with an adit bearing of 184°) and 426405-006 (with an adit bearing of 185°). This would suggest that adit 426405-005, if present, could intersect the site.

It should be noted that there are no treatment details provided for the adits. Indeed, very limited information is present, with the departure of the entries suggesting that the records from which the adit details have been abstracted may not be reliable. For example, topographically, the adits are situated at the top of a small slope, with the orientation of the adits suggesting that they would be sunk down and out of the slope (to the south), which seems unlikely. Moreover, the adit directions would appear to be opposite to the dip of the solid geology in the area, thus the entries would not be

following the dip of the coal seam. It would seem more likely that these entries, if present, would extend underground to the north and north-east of the site and follow the Whinmoor Coal beneath the surface.

It is anticipated that such features, if present, would have been sunk prior to the opencast workings. They may well have been installed as exploratory entries to enable the opencast workings. If so, such features will have been removed as part of the opencast operations. To that affect, and also considering the above information with regards to the likely entry direction, it seems very unlikely that such features will extend beneath the site and building.

As a consequence of the above, a low risk has been assigned for the mine entry features. However, the Coal Authority are the final arbiters on such matters, and they may have further information in relation to these entries which may provide further clarity on their presence or absence. Should they be deemed to represent a risk to the surface stability of the property, then intrusive investigation will be required in order to gain information with regards to the depth and width of adit 005, as this adit could extend beneath the property; see Appendix 7. However, in any event, it is not considered that any further action would be required for adit 006, unless the position of the building is subject to change.

5. Intrusive Investigation

5.1 Site Investigation Philosophy

The information from the Phase 1 Desk Study shows there are potential sources of contamination on the site and in the surrounding area. In view of the above, any intrusive investigation should be undertaken in accordance with the sampling strategies given in BS10175: 2011 +A2:2017 and CLR4:1994. These two sampling strategies may be classified as:

- Non-Targeted – using a defined sampling pattern (BS10175)
- Targeted – based on prior knowledge and professional judgement (CLR4)

These sampling strategies are considered in more detail below. However, it is emphasised that they can be used individually or in combination depending on the depth of site knowledge.

Non-Targeted Sampling

If no obvious 'hot spots' of contamination have been identified on a site, it would be recommended that a stratified random pattern of sampling points be considered. This work should be undertaken with reference to BS10175: 2011 +A2: 2017 *Investigation of potentially contaminated sites – Code of practice: 7.6*, and BS5930 2015 + A1:2020, *Code of practice for ground investigations*.

Targeted Sampling

If a possible 'hot spot' of contamination has been identified on a site, it is recommended that a herringbone pattern of sampling points be considered in the immediate vicinity. If strong evidence of contamination has then been identified, it is recommended that sampling be highly focused to reflect that evidence and the investigator's experience. This work should be undertaken with reference to CLR4, *Sampling Strategies for Contaminated Land, 1994*.

The density of sampling required is defined in BS10175: 2011: +A2: 2017: 7.7.2.2.3, which indicates that an *exploratory* investigation usually requires a lower density sample spacing than does a *main* investigation. The BS goes on to state that *the actual density should depend upon the confidence and robustness required of decisions that will be based on the information obtained. Thus, the area and depth of interest will be related to the contaminants present, the pathways and the receptors. Typical densities of sampling grids can vary from 25m to 50m centres for exploratory investigations, and 10m to 25m centres for main investigations.*

5.2 Site Specific Investigation

In view of the information provided above it is considered that an investigation of the site should include the following main elements.

5.2.1 Contamination Assessment

It may be appreciated that BS 10175 clause 7.7.2.2.3 suggests that the number of sampling points at the site should be based on a minimum of three testing locations, or the size of the site with respect to the appropriate grid spacing, whichever the greater. On the basis of the site area being 0.15ha, the number of sampling points at the site should be considered with respect to the table below.

Table 13: Summary of Sampling Strategy					
NUMBER OF SAMPLING POINTS					
	Soil	Water	Asbestos	Standpipes	Standpipe Readings
Exploratory Investigation 50m x 50m grid	3	-	3	3	A minimum of 4 readings over 1 month would be required as per risk assessment, however any regime must consider the guidance detailed below.
Target Areas	None identified.				

Chemical testing should be undertaken on the above grid spacing and the following standard testing regime should be undertaken:

- **Metals** – Cd, Cr, Cu, Hg, Ni, Pb, Zn, V.
- **Semi Metals and Non-Metals** – As, Se, Free Cyanide and Phenols.
- **Hydrocarbons** – Polycyclic aromatic hydrocarbons (PAH EPA16), Total petroleum hydrocarbons (TPH CWG).
- **Others** – pH, Organic Content.
- **Asbestos**.

Sampling Method

Investigation should include the installation of three gas monitoring standpipes for subsequent monitoring. Furthermore, soils should be obtained for chemical sampling. The sampling strategy should employ the non-targeted strategy given above, i.e. at least three sampling points.

Gas Monitoring

The final gas monitoring regime should be undertaken in accordance with Table 4.2 of CIRIA C665: 2007: *Assessing risks posed by hazardous ground gasses to buildings*. In that document guidance for the frequency of monitoring is provided on tables 5.5a and 5.5b *Typical/idealised frequency and period of monitoring* on page 60. For convenience, these tables have been combined and reproduced below.

Table 14: Typical/idealised Frequency and Period of Monitoring.

Sensitivity of development	Generation potential of source				
	Very low	Low	Moderate	High	Very High
Low (commercial)	4/1	6/2	6/3	12/6	12/12
Moderate (flats)	6/2	6/3	9/6	12/12	24/24
High (residential + gardens)	6/3	9/6	12/6	24/12	24/24

Notes:

- The first number is the minimum number of readings and the second number is the minimum period in months, for example 4/1 – four sets of readings over 1 month.
- At least two sets of readings must be at low and falling atmospheric pressure (but not restricted to periods below 1000mb) known as worst case conditions.
- The frequency and period stated are considered to represent typical minimum requirements. Depending on specific circumstances fewer or additional readings may be required (e.g. any such variation subject to site specific justification). The NHBC guidance is also recommending these periods/frequencies of monitoring.
- Historical data can be used as part of the data set.
- Not all sites will require gas monitoring. However, this would need to be confirmed with demonstrable evidence.
- Placing high sensitivity end use on a high hazard site is not normally acceptable unless the source is removed or treated to reduce its gassing potential. Under such circumstances long-term monitoring may not be appropriate or required.
- This guidance should be read in conjunction with BS 8576:2013 figure 6 which may justify fewer readings in the first instance, where the generation potential is considered to be very low to low. However, this should be undertaken pragmatically, and further readings obtained according to the above table, where a potentially significant source is identified and initial readings suggest that remedial measures are not necessary.

5.2.2 Geotechnical and Mining Legacy Assessment

In addition to the above contamination assessment which is likely to be required by planning authorities and insurance providers, the following investigation strategy could be considered:

Sampling Method – Foundations

Due to the presence of opencast mining on site, it may be pragmatic to undertake dynamic probing in a linear or grid trend in the first instance, in order to assess the depth to rockhead and to assess the presence of any residual mining features such as a high wall. It may become apparent that deeper boreholes are necessary in order to characterise the ground conditions on site, involving a cable percussive rig with rotary follow on drilling techniques.

In light of the potential risks of instability at the site from the working of shallow coal via opencast methods, it cannot be recommended that development takes place without further investigation to conclusively determine the presence of any workings, the condition of the infilled ground and possibly the nature and/or treatment of the mine entries. This work should include physical drilling methods to explore the ground conditions.

General practice is to undertake rotary openhole boreholes to 30m depth at three locations across the site to mitigate against the potential for drilling through intact columns associated with pillar and stall workings. However, in this case, the risk of instability is due to extensive infilled deposits associated with opencast workings. Therefore, drilling to these depths may not be necessary and the objective should be to clarify the thickness of infilled ground and obtain sufficient core samples of the rock to allow suitable foundation design to be completed. A reasonable approach would be to complete four boreholes, with initial percussive drilling to rock head, followed by at least 9.0m of rotary coring at each location. Whilst a rotary drilling rig is on site, it may be prudent to extend one borehole to 30m below the top of the rockhead to confidently discount any underground workings. If coal or workings are revealed within this extended borehole, then other boreholes may also need to be extended in depth at two further locations.

As discussed above, it is anticipated that the adits will be absent beneath the site, on account of the topography and dip of the solid geology. However, the Coal Authority may still request investigation in order to prove this opinion. As such, five rotary openhole boreholes could be undertaken in a line at spacings of 2m in order to target and prove/disprove the presence of Adit-005. It is considered that this frequency would cover the 10m departure. The positions of the boreholes would likely need to be marked out using GPS equipment.

It is considered that approval should be sought with the Local Authority as to the efficacy of this approach. A Coal Authority permit would need to be obtained to complete the work. It is of note that Rogers Geotechnical Services would be happy to assist in any further intrusive investigation that may be required.

Soakaway Design

It should be noted that soakaway tests are not deemed suitable for extensive deposits of made or infilled ground. Therefore, if such ground is revealed, then alternative drainage should be sought.

Geotechnical Testing

An allowance for geotechnical testing of the soils and rock should be included in any ground investigation.

5.2.3 Reporting

The above data will need to be formulated into a formal assessment that should include the following:

- Geotechnical recommendations.
- Coal mining investigation assessment.
- Contamination assessment.
- Contamination remediation strategy.
- Any recommendations for further work, if required and including validation reports where site remediation is necessary.

As soon is as practicable, and prior to the above, this Phase 1 Desk Study and Coal Mining Risk Assessment Report should be forwarded to the relevant authorities, in order to ensure they have sufficient time to review and discuss any issues, particularly with regards to the mining investigation.

6. References

- British Standards Institution (2015), BS5930 2015 + A1:2020: *Code of practice for site investigations*, B.S.I., London.
- British Standards Institution (2007), Amendment No 1 to BS5930: *Code of practice for ground investigations*, B.S.I., London.
- British Standards Institution (2011) +A2:2017, BS 10175: *Investigation of potentially contaminated sites – Code of Practice*, British Standards Institute.
- British Standards Institution (2013), BS 8576 Guidance on Investigations for Ground Gas – Permanent Gases and Volatile Organic Compounds.
- Department for Environment, Food and Rural Affairs and the Environment Agency, DEFRA R&D Publications, Environment Agency, Bristol.
- CLR 2, 1994, *Guidance on preliminary site inspection of contaminated land*, Volume 1.
- CLR 4, 1994, *Sampling Strategies for contaminated land*.
- R&D Publication 66: 2008 Guidance for the Safe Development of Housing on Land Affected by Contamination.
- CIRIA Report C665 (2007), Assessing risks posed by ground gasses in buildings.
- The Environment Agency: Groundwater source protection.

Appendix 1

Groundsure Reports

LAND NORTH SIDE OF COOPER LANE, HOYLANDSWAINE, SHEFFIELD, S36 7JE

Order Details

Date: 20/07/2022
Your ref: C2812_22_E_4293_PO-2250
Our Ref: GS-8916896

Site Details

Location: 426698 405725
Area: 0.15 ha
Authority: [Barnsley Metropolitan Borough Council](#)



Summary of findings

p. 2

Aerial image

p. 8

OS MasterMap site plan

p.13

groundsure.com/insightuserguide

Summary of findings

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



25	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
26	4.7	Regulated explosive sites	0	0	0	0	-
26	4.8	Hazardous substance storage/usage	0	0	0	0	-
26	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
26	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
26	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
27	4.12	Radioactive Substance Authorisations	0	0	0	0	-
27	4.13	<u>Licensed Discharges to controlled waters</u>	0	0	18	4	-
31	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
31	4.15	Pollutant release to public sewer	0	0	0	0	-
31	4.16	List 1 Dangerous Substances	0	0	0	0	-
31	4.17	List 2 Dangerous Substances	0	0	0	0	-
31	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
32	4.19	Pollution inventory substances	0	0	0	0	-
32	4.20	Pollution inventory waste transfers	0	0	0	0	-
32	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
33	5.1	Superficial aquifer	None (within 500m)				
34	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
35	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
36	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
36	5.5	Groundwater vulnerability- local information	None (within 0m)				
37	5.6	<u>Groundwater abstractions</u>	0	0	0	0	15
41	5.7	Surface water abstractions	0	0	0	0	0
42	5.8	<u>Potable abstractions</u>	0	0	0	0	2
42	5.9	Source Protection Zones	0	0	0	0	-
43	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
44	6.1	<u>Water Network (OS MasterMap)</u>	0	3	14	-	-



46	6.2	<u>Surface water features</u>	0	2	11	-	-
46	6.3	<u>WFD Surface water body catchments</u>	1	-	-	-	-
47	6.4	<u>WFD Surface water bodies</u>	0	1	0	-	-
47	6.5	<u>WFD Groundwater bodies</u>	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
48	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
48	7.2	Historical Flood Events	0	0	0	-	-
48	7.3	Flood Defences	0	0	0	-	-
49	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
49	7.5	Flood Storage Areas	0	0	0	-	-
50	7.6	Flood Zone 2	None (within 50m)				
50	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
51	8.1	<u>Surface water flooding</u>	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding					
53	9.1	<u>Groundwater flooding</u>	Negligible (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
54	10.1	<u>Sites of Special Scientific Interest (SSSI)</u>	0	0	0	0	1
55	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
55	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
55	10.4	Special Protection Areas (SPA)	0	0	0	0	0
55	10.5	National Nature Reserves (NNR)	0	0	0	0	0
56	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
56	10.7	<u>Designated Ancient Woodland</u>	0	0	0	1	10
57	10.8	Biosphere Reserves	0	0	0	0	0
57	10.9	Forest Parks	0	0	0	0	0
57	10.10	Marine Conservation Zones	0	0	0	0	0
57	10.11	<u>Green Belt</u>	1	0	0	0	0
58	10.12	Proposed Ramsar sites	0	0	0	0	0



58	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
58	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
58	10.15	Nitrate Sensitive Areas	0	0	0	0	0
59	10.16	<u>Nitrate Vulnerable Zones</u>	1	0	1	0	0
60	10.17	<u>SSSI Impact Risk Zones</u>	1	-	-	-	-
61	10.18	<u>SSSI Units</u>	0	0	0	0	1
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
62	11.1	World Heritage Sites	0	0	0	-	-
62	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
62	11.3	National Parks	0	0	0	-	-
62	11.4	Listed Buildings	0	0	0	-	-
63	11.5	Conservation Areas	0	0	0	-	-
63	11.6	Scheduled Ancient Monuments	0	0	0	-	-
63	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
64	12.1	<u>Agricultural Land Classification</u>	Grade 3 (within 250m)				
65	12.2	Open Access Land	0	0	0	-	-
65	12.3	Tree Felling Licences	0	0	0	-	-
65	12.4	<u>Environmental Stewardship Schemes</u>	0	0	1	-	-
65	12.5	<u>Countryside Stewardship Schemes</u>	0	0	1	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
67	13.1	<u>Priority Habitat Inventory</u>	0	4	5	-	-
68	13.2	<u>Habitat Networks</u>	1	1	2	-	-
68	13.3	Open Mosaic Habitat	0	0	0	-	-
69	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
70	14.1	<u>10k Availability</u>	Identified (within 500m)				
71	14.2	<u>Artificial and made ground (10k)</u>	1	1	2	3	-
73	14.3	Superficial geology (10k)	0	0	0	0	-



73	14.4	Landslip (10k)	0	0	0	0	-
74	14.5	<u>Bedrock geology (10k)</u>	2	2	11	16	-
76	14.6	<u>Bedrock faults and other linear features (10k)</u>	2	2	8	8	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
78	15.1	<u>50k Availability</u>	Identified (within 500m)				
79	15.2	<u>Artificial and made ground (50k)</u>	1	0	0	1	-
80	15.3	<u>Artificial ground permeability (50k)</u>	1	0	-	-	-
81	15.4	Superficial geology (50k)	0	0	0	0	-
81	15.5	Superficial permeability (50k)	None (within 50m)				
81	15.6	Landslip (50k)	0	0	0	0	-
81	15.7	Landslip permeability (50k)	None (within 50m)				
82	15.8	<u>Bedrock geology (50k)</u>	2	2	7	10	-
84	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
84	15.10	<u>Bedrock faults and other linear features (50k)</u>	1	2	11	12	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
86	16.1	BGS Boreholes	0	0	0	-	-
Page	Section	Natural ground subsidence					
87	17.1	<u>Shrink swell clays</u>	Very low (within 50m)				
89	17.2	<u>Running sands</u>	Very low (within 50m)				
91	17.3	<u>Compressible deposits</u>	Moderate (within 50m)				
93	17.4	<u>Collapsible deposits</u>	Very low (within 50m)				
94	17.5	<u>Landslides</u>	Low (within 50m)				
96	17.6	<u>Ground dissolution of soluble rocks</u>	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
97	18.1	Natural cavities	0	0	0	0	-
98	18.2	BritPits	0	0	0	0	-
98	18.3	<u>Surface ground workings</u>	0	0	1	-	-
98	18.4	<u>Underground workings</u>	0	0	1	3	7
99	18.5	Historical Mineral Planning Areas	0	0	0	0	-



99	18.6	Non-coal mining	0	0	0	0	0
99	18.7	Mining cavities	0	0	0	0	0
99	18.8	JPB mining areas	None (within 0m)				
100	18.9	<u>Coal mining</u>	Identified (within 0m)				
100	18.10	Brine areas	None (within 0m)				
100	18.11	Gypsum areas	None (within 0m)				
100	18.12	Tin mining	None (within 0m)				
100	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
101	19.1	<u>Radon</u>	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
102	20.1	<u>BGS Estimated Background Soil Chemistry</u>	2	1	-	-	-
102	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
102	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
103	21.1	Underground railways (London)	0	0	0	-	-
103	21.2	Underground railways (Non-London)	0	0	0	-	-
104	21.3	Railway tunnels	0	0	0	-	-
104	21.4	<u>Historical railway and tunnel features</u>	0	0	2	-	-
104	21.5	Royal Mail tunnels	0	0	0	-	-
104	21.6	Historical railways	0	0	0	-	-
105	21.7	Railways	0	0	0	-	-
105	21.8	Crossrail 1	0	0	0	0	-
105	21.9	Crossrail 2	0	0	0	0	-
105	21.10	HS2	0	0	0	0	-



Recent aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2022. All Rights Reserved.

Capture Date: 30/05/2021

Site Area: 0.15ha



Recent site history - 2018 aerial photograph



Capture Date: 29/06/2018

Site Area: 0.15ha



Recent site history - 2012 aerial photograph



Capture Date: 26/03/2012

Site Area: 0.15ha



Recent site history - 2009 aerial photograph



Capture Date: 11/09/2009

Site Area: 0.15ha



Recent site history - 1999 aerial photograph



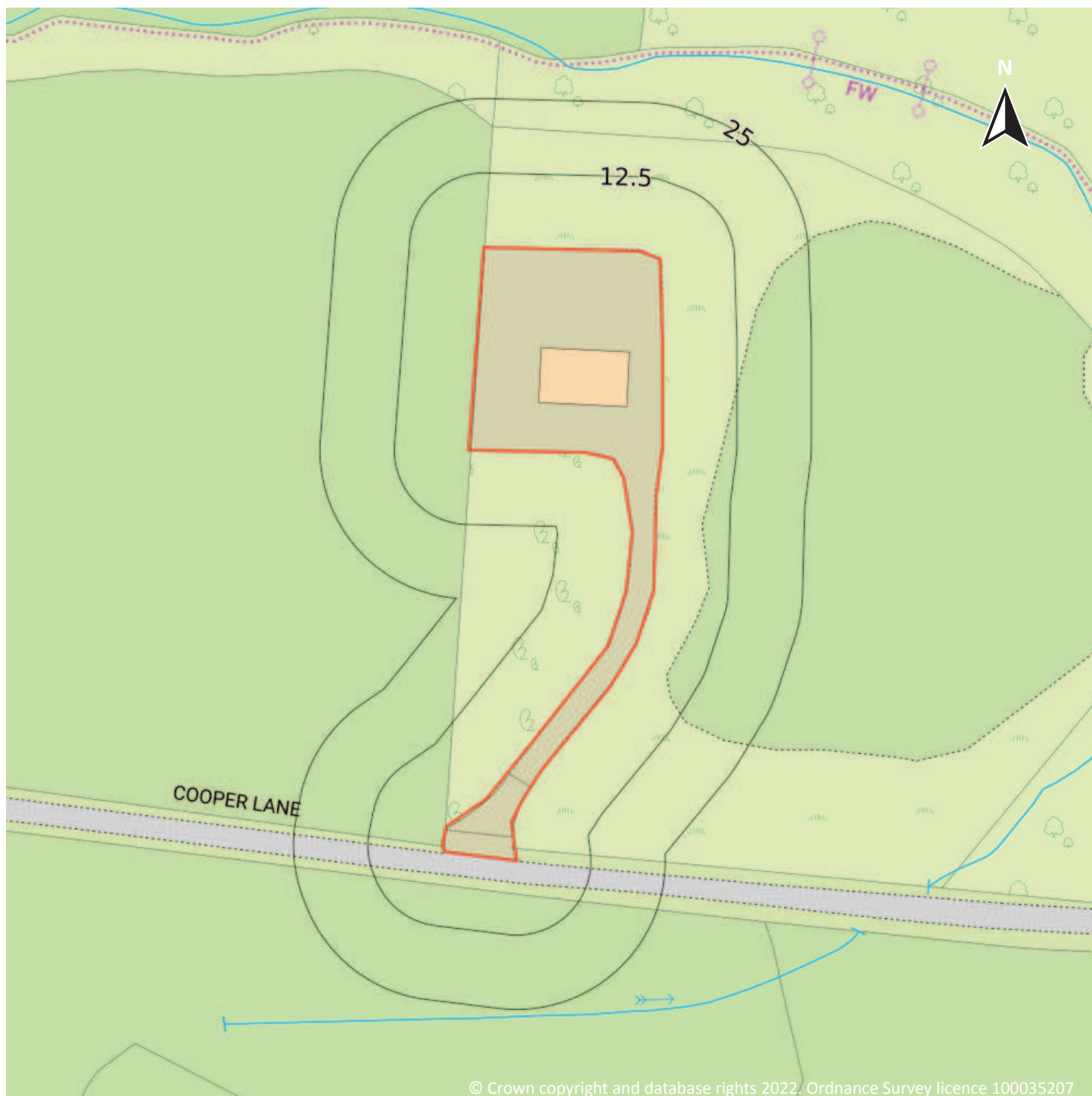
Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2022. All Rights Reserved

Capture Date: 10/07/1999

Site Area: 0.15ha



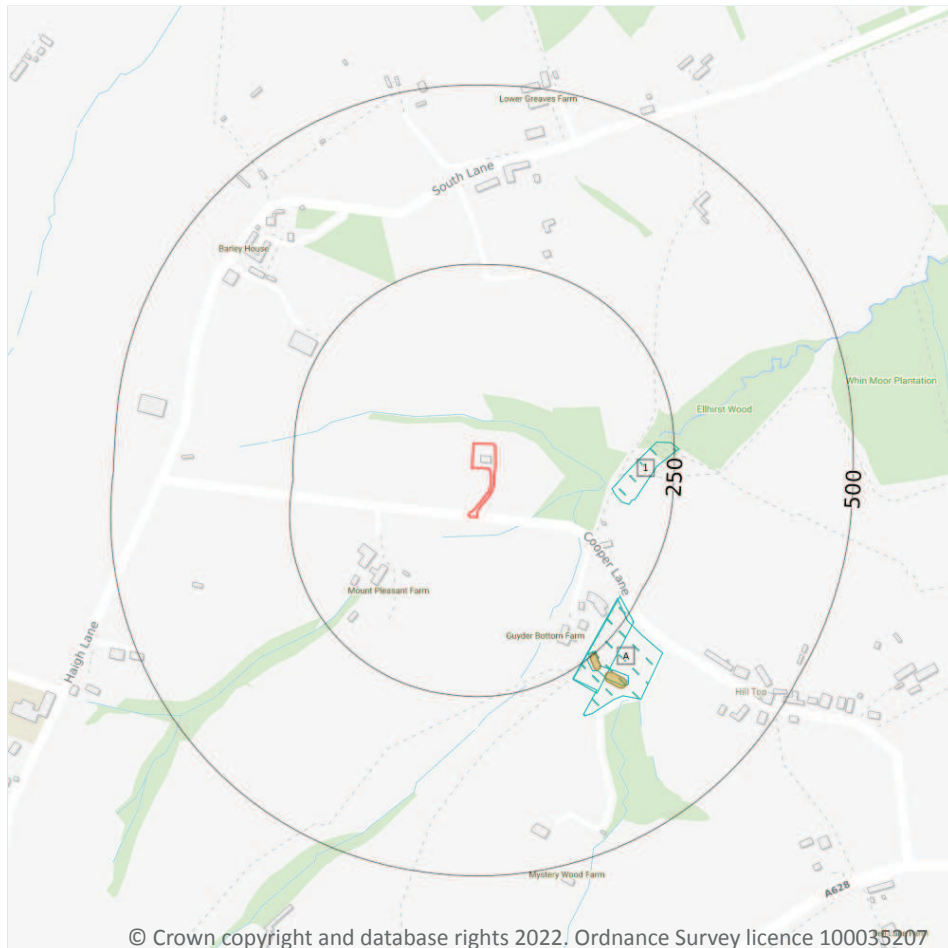
OS MasterMap site plan



Site Area: 0.15ha



1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks

1.1 Historical industrial land uses

Records within 500m

4

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	165m E	Unspecified Mine	1965	1455549



ID	Location	Land use	Dates present	Group ID
A	226m SE	Sewage Works	1983	1423660
A	227m SE	Unspecified Works	1965	1438968
A	245m SE	Unspecified Tanks	1965 - 1983	1509735

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

2

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

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

ID	Location	Land use	Dates present	Group ID
A	248m SE	Tanks	1959 - 1993	236627
A	282m SE	Tanks	1993	230467

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.



1.4 Historical petrol stations

Records within 500m**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 ungrouped 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 ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

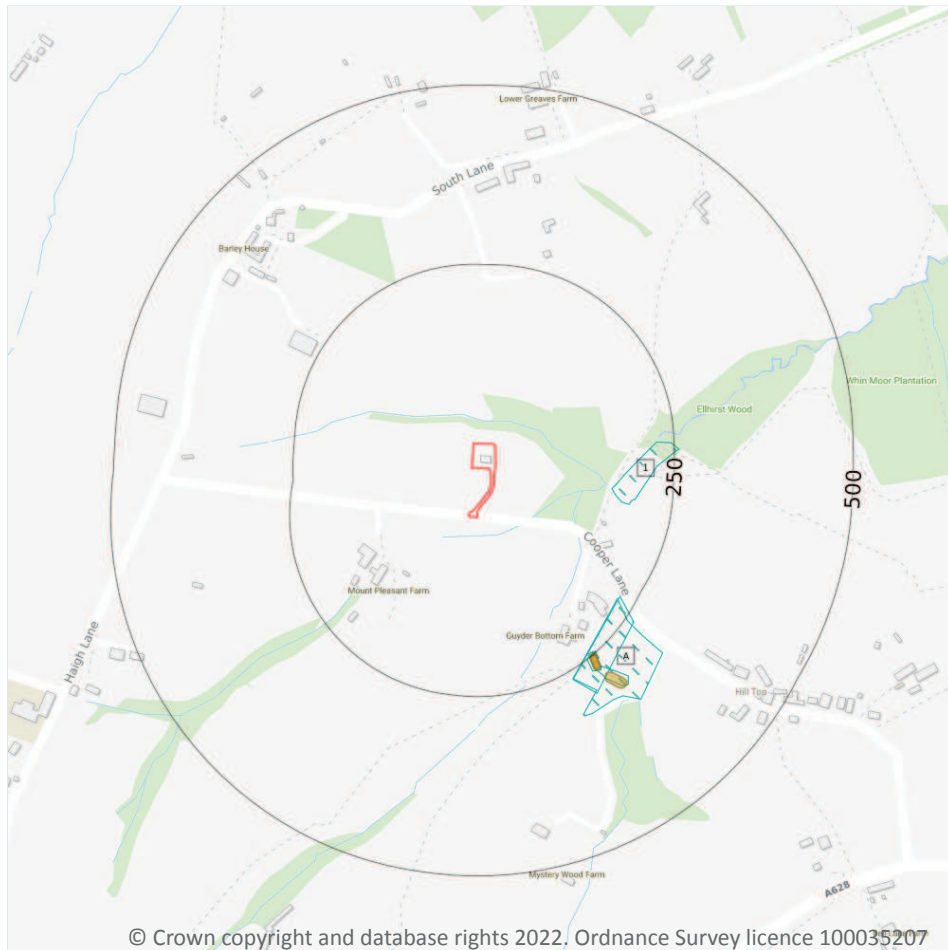
1.6 Historical military land

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

2.1 Historical industrial land uses

Records within 500m

5

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 17**

ID	Location	Land Use	Date	Group ID
1	165m E	Unspecified Mine	1965	1455549
A	226m SE	Sewage Works	1983	1423660
A	227m SE	Unspecified Works	1965	1438968



ID	Location	Land Use	Date	Group ID
A	245m SE	Unspecified Tanks	1983	1509735
A	248m SE	Unspecified Tanks	1965	1509735

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

4

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 17**

ID	Location	Land Use	Date	Group ID
A	248m SE	Tanks	1959	236627
A	250m SE	Tanks	1976	236627
A	251m SE	Tanks	1993	236627
A	282m SE	Tanks	1993	230467

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.



2.5 Historical garages

Records within 500m

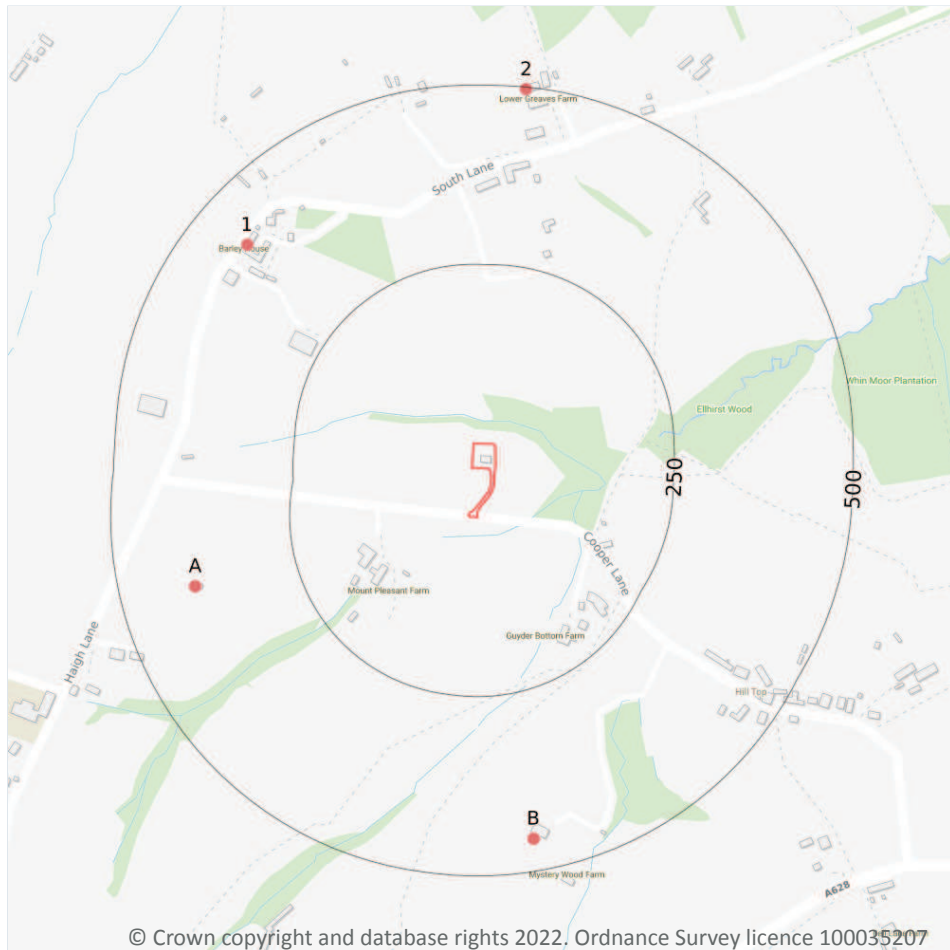
0

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

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



— Site Outline
Search buffers in metres (m)
● Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

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

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

3.2 Historical landfill (BGS records)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m**0**

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m**0**

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

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

3.5 Historical waste sites

Records within 500m**0**

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

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

3.6 Licensed waste sites

Records within 500m**0**

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

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

3.7 Waste exemptions

Records within 500m**14**

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 20**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	395m W	Boundary Farm Haigh Lane	EPR/PH0176YJ /A001	Disposing of waste exemption	Agricultural Waste Only	Deposit of waste from dredging of inland waters
A	395m W	Boundary Farm Haigh Lane	EPR/PH0176YJ /A001	Disposing of waste exemption	Agricultural Waste Only	Deposit of waste from a portable sanitary convenience
A	395m W	Boundary Farm Haigh Lane	EPR/PH0176YJ /A001	Disposing of waste exemption	Agricultural Waste Only	Burning waste in the open
1	421m NW	1, Orchard Fold Farm, South Lane, Barnsley, S75 4EF	WEX287932	Disposing of waste exemption	On a farm	Burning waste in the open
B	455m S	Mount Pleasant Farm Cooper Lane Sheffield South Yorkshire S36 7JE	EPR/AE5950J W/A001	Disposing of waste exemption	Agricultural Waste Only	Deposit of waste from dredging of inland waters
B	455m S	Mount Pleasant Farm Cooper Lane Sheffield South Yorkshire S36 7JE	EPR/AE5950J W/A001	Disposing of waste exemption	Agricultural Waste Only	Deposit of agricultural waste consisting of plant tissue under a Plant Health notice
B	455m S	Mount Pleasant Farm Cooper Lane Sheffield South Yorkshire S36 7JE	EPR/AE5950J W/A001	Disposing of waste exemption	Agricultural Waste Only	Burning waste in the open
B	455m S	Mount Pleasant Farm Cooper Lane Sheffield South Yorkshire S36 7JE	EPR/AE5950J W/A001	Using waste exemption	Agricultural Waste Only	Use of waste in construction
B	455m S	Mount Pleasant Farm Cooper Lane Sheffield South Yorkshire S36 7JE	EPR/AE5950J W/A001	Using waste exemption	Agricultural Waste Only	Spreading waste on agricultural land to confer benefit
B	455m S	Mount Pleasant Farm Cooper Lane Sheffield South Yorkshire S36 7JE	EPR/AE5950J W/A001	Using waste exemption	Agricultural Waste Only	Spreading waste on non-agricultural land to confer benefit
B	455m S	Mount Pleasant Farm Cooper Lane Sheffield South Yorkshire S36 7JE	EPR/AE5950J W/A001	Using waste exemption	Agricultural Waste Only	Burning of waste as a fuel in a small appliance
B	455m S	Mount Pleasant Farm Cooper Lane Sheffield South Yorkshire S36 7JE	EPR/AE5950J W/A001	Using waste exemption	Agricultural Waste Only	Use of waste for a specified purpose
B	455m S	Mount Pleasant Farm Cooper Lane Sheffield South Yorkshire S36 7JE	EPR/AE5950J W/A001	Using waste exemption	Non-Agricultural Waste Only	Use of effluent to clean a highway gravel bed

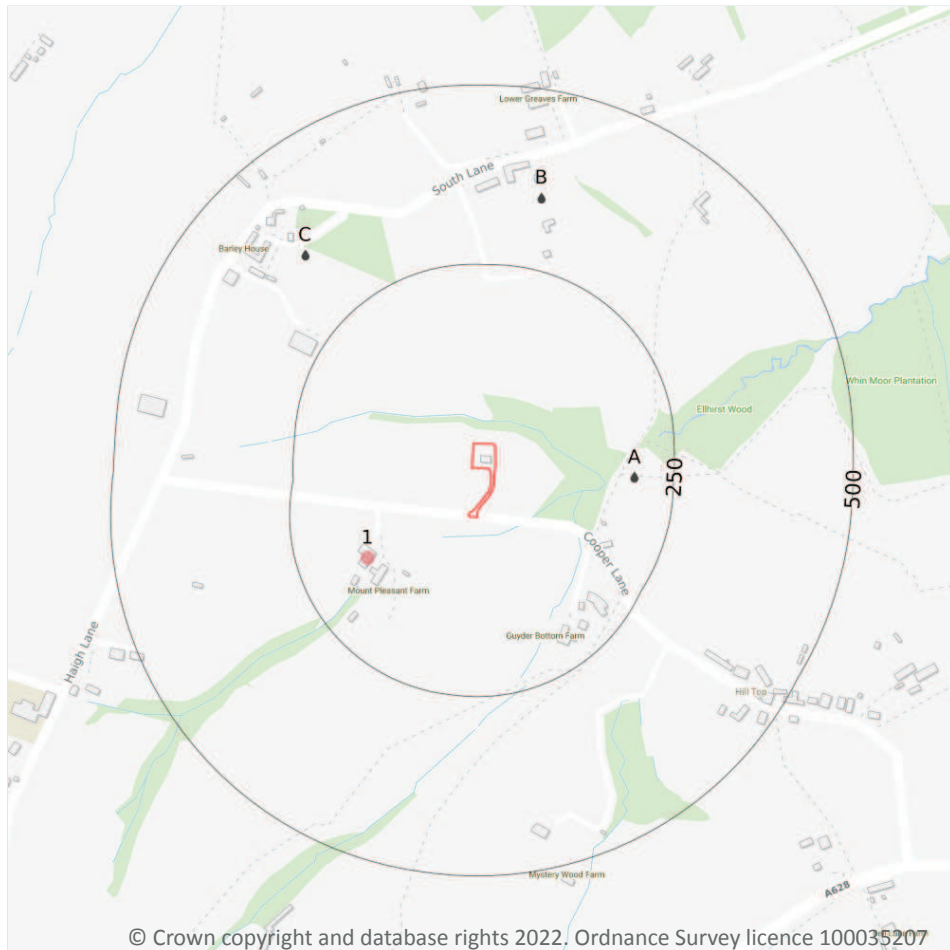


ID	Location	Site	Reference	Category	Sub-Category	Description
2	497m N	1, Orchard Fold Farm, South Lane, Barnsley, S75 4EF	WEX150386	Disposing of waste exemption	On a Farm	Burning waste in the open

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



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- Licensed Discharges to controlled waters

4.1 Recent industrial land uses

Records within 250m

1

Current potentially contaminative industrial sites.

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

ID	Location	Company	Address	Activity	Category
1	153m W	Derek Hattersley & Son Printers	Mount Pleasant Farm, Cooper Lane, Hoylandswaine, Barnsley, South Yorkshire, S36 7JE	Published Goods	Industrial Products

This data is sourced from Ordnance Survey.



4.2 Current or recent petrol stations

Records within 500m**0**

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m**0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m**0**

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m**0**

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m**0**

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m**0**

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m**0**

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m**0**

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m**0**

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

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

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

Records within 500m**0**

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

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m

22

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

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

ID	Location	Address	Details	
A	194m E	HOYLANDSWAINE STW, COOPER LANE, HOYLANDSWAINE, PENISTONE, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 2344 Permit Version: 1 Receiving Water: ELLHIRST BECK	Status: TRANSFERRED FROM R(PP)A 1951-1961 Issue date: 13/02/1968 Effective Date: 13/02/1968 Revocation Date: 07/12/1972
A	194m E	HOYLANDSWAINE STW, COOPER LANE, HOYLANDSWAINE, PENISTONE, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 2344 Permit Version: 1 Receiving Water: ELLHIRST BECK	Status: TRANSFERRED FROM R(PP)A 1951-1961 Issue date: 13/02/1968 Effective Date: 13/02/1968 Revocation Date: 07/12/1972
A	194m E	HOYLANDSWAINE STW, COOPER LANE, HOYLANDSWAINE, PENISTONE, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 2344 Permit Version: 1 Receiving Water: ELLHIRST BECK	Status: TRANSFERRED FROM R(PP)A 1951-1961 Issue date: 13/02/1968 Effective Date: 13/02/1968 Revocation Date: 07/12/1972
A	194m E	HOYLANDSWAINE STW, COOPER LANE, HOYLANDSWAINE, PENISTONE, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 2344 Permit Version: 3 Receiving Water: ELLHIRST BECK	Status: TRANSFERRED FROM R(PP)A 1951-1961 Issue date: 08/12/1972 Effective Date: 08/12/1972 Revocation Date: 31/05/1981



ID	Location	Address	Details	
A	194m E	HOYLANDSWAINE STW, COOPER LANE, HOYLANDSWAINE, PENISTONE, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 2344 Permit Version: 3 Receiving Water: ELLHIRST BECK	Status: TRANSFERRED FROM R(PP)A 1951-1961 Issue date: 08/12/1972 Effective Date: 08/12/1972 Revocation Date: 31/05/1981
A	194m E	HOYLANDSWAINE STW, COOPER LANE, HOYLANDSWAINE, PENISTONE, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 2344 Permit Version: 3 Receiving Water: ELLHIRST BECK	Status: TRANSFERRED FROM R(PP)A 1951-1961 Issue date: 08/12/1972 Effective Date: 08/12/1972 Revocation Date: 31/05/1981
A	194m E	HOYLANDSWAINE STW, COOPER LANE, HOYLANDSWAINE, PENISTONE, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 2344 Permit Version: 4 Receiving Water: ELLHIRST BECK	Status: TRANSFERRED FROM 1978 ORDER Issue date: 01/06/1981 Effective Date: 01/06/1981 Revocation Date: 29/07/1985
A	194m E	HOYLANDSWAINE STW, COOPER LANE, HOYLANDSWAINE, PENISTONE, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 2344 Permit Version: 4 Receiving Water: ELLHIRST BECK	Status: TRANSFERRED FROM 1978 ORDER Issue date: 01/06/1981 Effective Date: 01/06/1981 Revocation Date: 29/07/1985
A	194m E	HOYLANDSWAINE STW, COOPER LANE, HOYLANDSWAINE, PENISTONE, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 2344 Permit Version: 4 Receiving Water: ELLHIRST BECK	Status: TRANSFERRED FROM 1978 ORDER Issue date: 01/06/1981 Effective Date: 01/06/1981 Revocation Date: 29/07/1985
A	194m E	HOYLANDSWAINE STW, COOPER LANE, HOYLANDSWAINE, PENISTONE, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 2344 Permit Version: 5 Receiving Water: ELLHIRST BECK	Status: TRANSFERRED FROM COPA 1974 Issue date: 30/07/1985 Effective Date: 30/07/1985 Revocation Date: 31/12/2009



ID	Location	Address	Details	
A	194m E	HOYLANDSWAINE STW, COOPER LANE, HOYLANDSWAINE, PENISTONE, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 2344 Permit Version: 5 Receiving Water: ELLHIRST BECK	Status: TRANSFERRED FROM COPA 1974 Issue date: 30/07/1985 Effective Date: 30/07/1985 Revocation Date: 31/12/2009
A	194m E	HOYLANDSWAINE STW, COOPER LANE, HOYLANDSWAINE, PENISTONE, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 2344 Permit Version: 5 Receiving Water: ELLHIRST BECK	Status: TRANSFERRED FROM COPA 1974 Issue date: 30/07/1985 Effective Date: 30/07/1985 Revocation Date: 31/12/2009
A	194m E	HOYLANDSWAINE STW, COOPER LANE, HOYLANDSWAINE, PENISTONE, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 2344 Permit Version: 7 Receiving Water: ELLHIRST BECK	Status: TRANSFERRED FROM COPA 1974 Issue date: 24/09/2009 Effective Date: 01/01/2010 Revocation Date: 09/03/2010
A	194m E	HOYLANDSWAINE STW, COOPER LANE, HOYLANDSWAINE, PENISTONE, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 2344 Permit Version: 7 Receiving Water: ELLHIRST BECK	Status: TRANSFERRED FROM COPA 1974 Issue date: 24/09/2009 Effective Date: 01/01/2010 Revocation Date: 09/03/2010
A	194m E	HOYLANDSWAINE STW, COOPER LANE, HOYLANDSWAINE, PENISTONE, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 2344 Permit Version: 7 Receiving Water: ELLHIRST BECK	Status: TRANSFERRED FROM COPA 1974 Issue date: 24/09/2009 Effective Date: 01/01/2010 Revocation Date: 09/03/2010
A	194m E	HOYLANDSWAINE STW, COOPER LANE, HOYLANDSWAINE, PENISTONE, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 2344 Permit Version: 8 Receiving Water: ELLHIRST BECK	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 10/03/2010 Effective Date: 10/03/2010 Revocation Date: -



ID	Location	Address	Details	
A	194m E	HOYLANDSWAINE STW, COOPER LANE, HOYLANDSWAINE, PENISTONE, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 2344 Permit Version: 8 Receiving Water: ELLHIRST BECK	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 10/03/2010 Effective Date: 10/03/2010 Revocation Date: -
A	194m E	HOYLANDSWAINE STW, COOPER LANE, HOYLANDSWAINE, PENISTONE, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 2344 Permit Version: 8 Receiving Water: ELLHIRST BECK	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 10/03/2010 Effective Date: 10/03/2010 Revocation Date: -
B	349m N	WOOLGREAVES FARM, MATTHEW WHITEHEAD, SOUTH LANE, CAWTHORNE, BARNSELY, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: WRA8857 Permit Version: 1 Receiving Water: GROUNDWATER VIA SOAKAWAY	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 17/01/2006 Effective Date: 17/01/2006 Revocation Date: 25/07/2012
B	349m N	WOOLGREAVES FARM, MATTHEW WHITEHEAD, SOUTH LANE, CAWTHORNE, BARNSELY, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: WRA8857 Permit Version: 2 Receiving Water: GROUNDWATER VIA SOAKAWAY	Status: VARIED UNDER EPR 2010 Issue date: 26/07/2012 Effective Date: 26/07/2012 Revocation Date: -
C	353m NW	PROPERTIES AT ELMHURST FARM, SOUTH LANE, CAWTHORNE, NEAR BARNSELY, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: WRA7630 Permit Version: 1 Receiving Water: LAND	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 19/09/2000 Effective Date: 19/09/2000 Revocation Date: 25/07/2012
C	353m NW	PROPERTIES AT ELMHURST FARM, SOUTH LANE, CAWTHORNE, NEAR BARNSELY, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: WRA7630 Permit Version: 2 Receiving Water: LAND	Status: VARIED UNDER EPR 2010 Issue date: 26/07/2012 Effective Date: 26/07/2012 Revocation Date: -

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



4.14 Pollutant release to surface waters (Red List)

Records within 500m**0**

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

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

4.15 Pollutant release to public sewer

Records within 500m**0**

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m**0**

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

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

4.17 List 2 Dangerous Substances

Records within 500m**0**

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m**0**

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

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

5.1 Superficial aquifer

Records within 500m

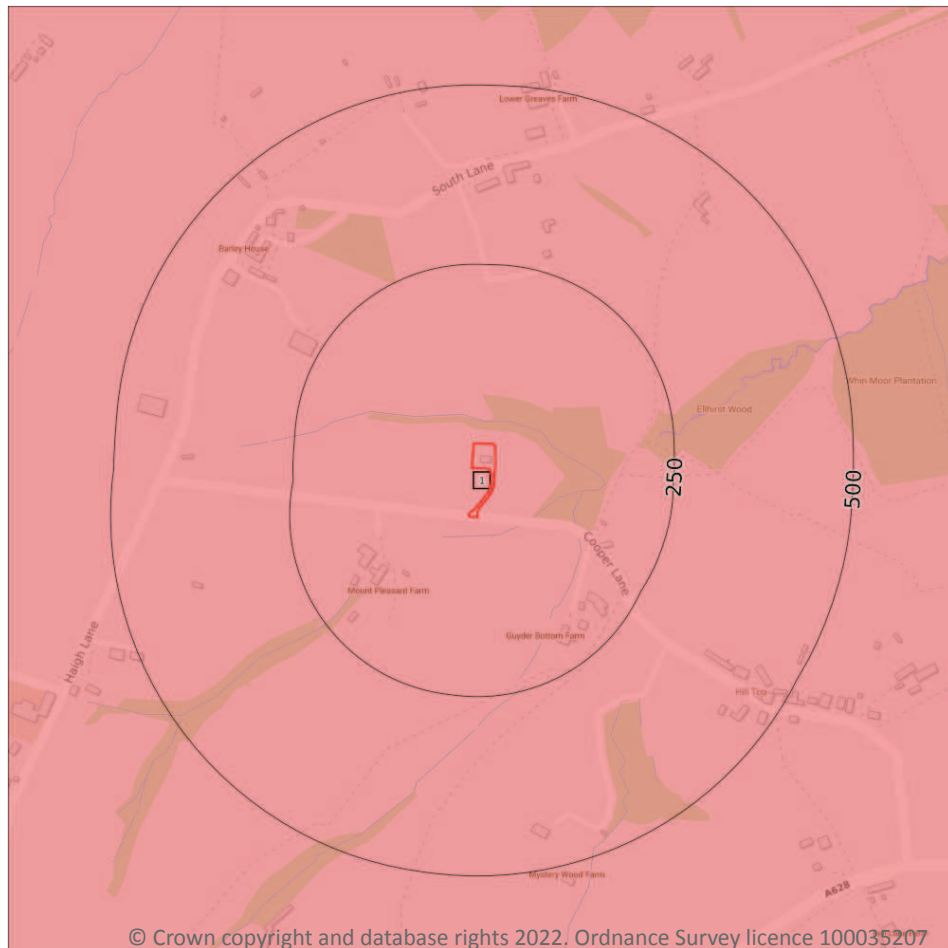
0

Aquifer status of groundwater held within superficial geology.

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



Bedrock aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive

5.2 Bedrock aquifer

Records within 500m

1

Aquifer status of groundwater held within bedrock geology.

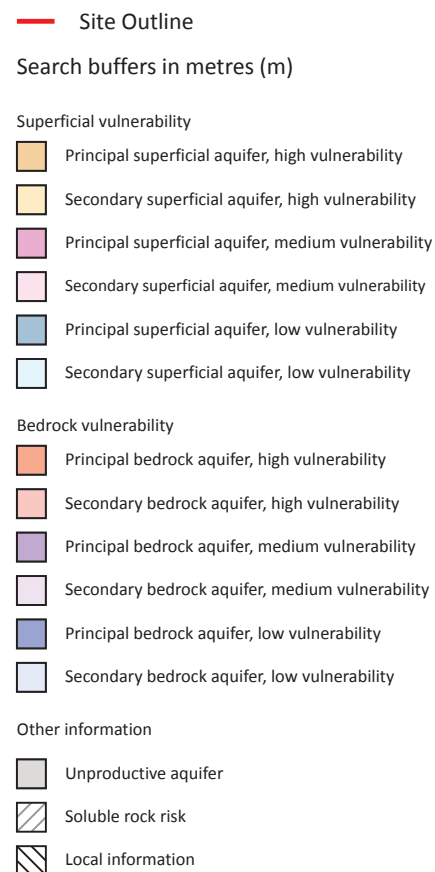
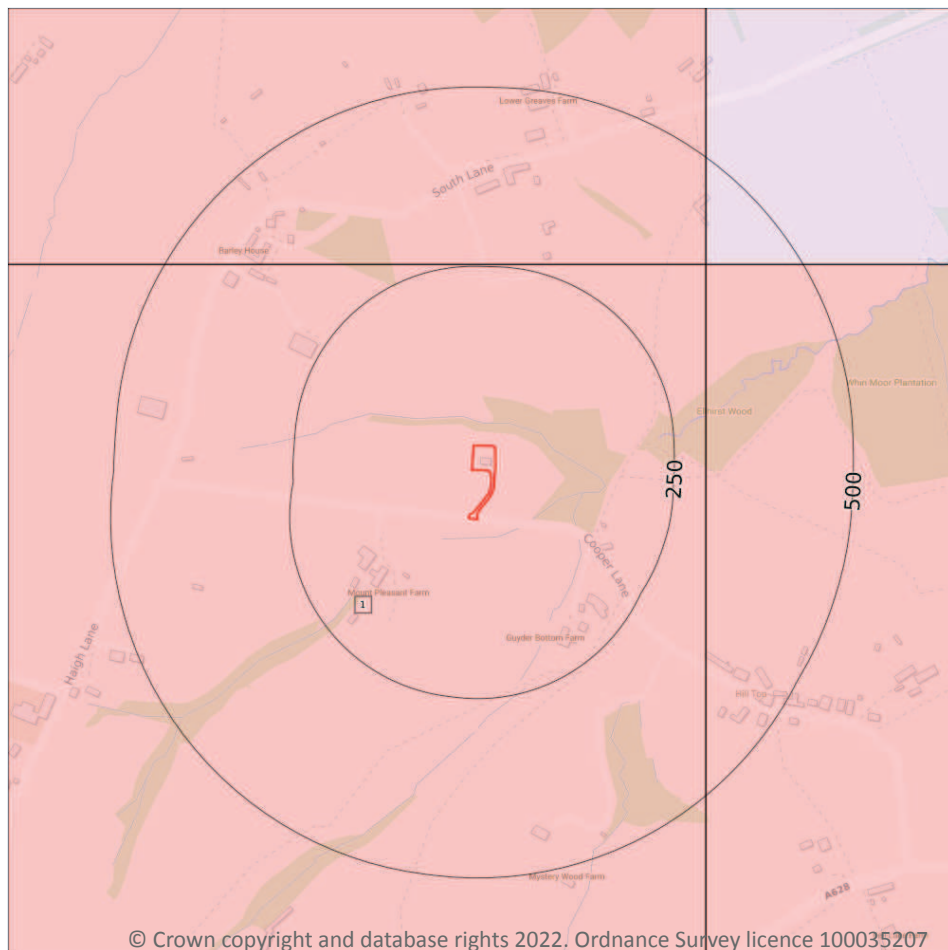
Features are displayed on the Bedrock aquifer map on **page 34**

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

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



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

1

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 35**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300- 550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High 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
Polygon features
- Drinking water abstraction licences
Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m

15

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 37**

ID	Location	Details	
-	1052m N	Status: Historical Licence No: 2/27/08/055 Details: General use relating to Secondary Category (High Loss) Direct Source: GROUNDWATERS Point: SPRING Data Type: Line Name: NAYLOR BROTHERS (CLAYWARE) LIMITED Easting: 426700 Northing: 406800	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: 17/03/1966 Version End Date: -
-	1052m N	Status: Historical Licence No: 2/27/08/055 Details: General use relating to Secondary Category (High Loss) Direct Source: GROUNDWATERS Point: SPRING - CAWTHORPE Data Type: Point Name: NAYLOR BROTHERS (CLAYWARE) LIMITED Easting: 426700 Northing: 406800	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: 17/03/1966 Version End Date: -
-	1052m N	Status: Historical Licence No: 2/27/08/055 Details: General use relating to Secondary Category (High Loss) Direct Source: GROUNDWATERS Point: SPRING-CAWTHORPE Data Type: Point Name: NAYLOR DRAINAGE LTD Easting: 426700 Northing: 406800	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 16/06/2003 Version End Date: -
-	1052m N	Status: Historical Licence No: 2/27/08/055 Details: General Use Relating To Secondary Category (High Loss) Direct Source: GROUNDWATERS Point: SPRING - CAWTHORPE Data Type: Point Name: NAYLOR DRAINAGE LTD Easting: 426700 Northing: 406800	Annual Volume (m ³): 23867 Max Daily Volume (m ³): 65.462 Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -



ID	Location	Details	
-	1164m NE	Status: Historical Licence No: 2/27/08/055 Details: General use relating to Secondary Category (High Loss) Direct Source: GROUNDWATERS Point: TANYARD BECK - CAWTHORPE Data Type: Point Name: NAYLOR BROTHERS (CLAYWARE) LIMITED Easting: 427200 Northing: 406800	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: 17/03/1966 Version End Date: -
-	1164m NE	Status: Historical Licence No: 2/27/08/055 Details: General Use Relating To Secondary Category (High Loss) Direct Source: GROUNDWATERS Point: TANYARD BECK-CAWTHORPE Data Type: Point Name: NAYLOR DRAINAGE LTD Easting: 427200 Northing: 406800	Annual Volume (m ³): 23867 Max Daily Volume (m ³): 65.462 Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -
-	1335m N	Status: Historical Licence No: NE/027/0008/008 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: GROUNDWATERS Point: BOREHOLE- COAL MEASURES - CLOUGH GREEN - CAWTHORNE Data Type: Point Name: NAYLOR DRAINAGE LTD Easting: 426917 Northing: 407065	Annual Volume (m ³): 20000 Max Daily Volume (m ³): 70 Original Application No: - Original Start Date: 01/07/2013 Expiry Date: 31/03/2017 Issue No: 1 Version Start Date: 01/07/2013 Version End Date: -
-	1335m N	Status: Historical Licence No: NE/027/0008/008 Details: Process Water Direct Source: GROUNDWATERS Point: BOREHOLE- COAL MEASURES - CLOUGH GREEN - CAWTHORNE Data Type: Point Name: NAYLOR DRAINAGE LTD Easting: 426917 Northing: 407065	Annual Volume (m ³): 20000 Max Daily Volume (m ³): 70 Original Application No: - Original Start Date: 01/07/2013 Expiry Date: 31/03/2017 Issue No: 1 Version Start Date: 01/07/2013 Version End Date: -



ID	Location	Details	
-	1335m N	Status: Historical Licence No: NE/027/0008/008 Details: Dust Suppression Direct Source: GROUNDWATERS Point: BOREHOLE- COAL MEASURES - CLOUGH GREEN - CAWTHORNE Data Type: Point Name: NAYLOR DRAINAGE LTD Easting: 426917 Northing: 407065	Annual Volume (m ³): 20000 Max Daily Volume (m ³): 70 Original Application No: - Original Start Date: 01/07/2013 Expiry Date: 31/03/2017 Issue No: 1 Version Start Date: 01/07/2013 Version End Date: -
-	1335m N	Status: Active Licence No: NE/027/0008/008/R01 Details: Dust Suppression Direct Source: GROUNDWATERS Point: BOREHOLE- COAL MEASURES - CLOUGH GREEN - CAWTHORNE Data Type: Point Name: NAYLOR DRAINAGE LTD Easting: 426917 Northing: 407065	Annual Volume (m ³): 20,000 Max Daily Volume (m ³): 70 Original Application No: - Original Start Date: 01/04/2017 Expiry Date: 31/03/2029 Issue No: 1 Version Start Date: 01/04/2017 Version End Date: -
-	1335m N	Status: Active Licence No: NE/027/0008/008/R01 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: GROUNDWATERS Point: BOREHOLE- COAL MEASURES - CLOUGH GREEN - CAWTHORNE Data Type: Point Name: NAYLOR DRAINAGE LTD Easting: 426917 Northing: 407065	Annual Volume (m ³): 20,000 Max Daily Volume (m ³): 70 Original Application No: - Original Start Date: 01/04/2017 Expiry Date: 31/03/2029 Issue No: 1 Version Start Date: 01/04/2017 Version End Date: -
-	1335m N	Status: Active Licence No: NE/027/0008/008/R01 Details: Process Water Direct Source: GROUNDWATERS Point: BOREHOLE- COAL MEASURES - CLOUGH GREEN - CAWTHORNE Data Type: Point Name: NAYLOR DRAINAGE LTD Easting: 426917 Northing: 407065	Annual Volume (m ³): 20,000 Max Daily Volume (m ³): 70 Original Application No: - Original Start Date: 01/04/2017 Expiry Date: 31/03/2029 Issue No: 1 Version Start Date: 01/04/2017 Version End Date: -



ID	Location	Details	
-	1861m W	Status: Historical Licence No: 2/27/08/084 Details: General Farming & Domestic Direct Source: GROUNDWATERS Point: SPRING FED TROUGH Data Type: Point Name: LINLEY Easting: 424840 Northing: 405300	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 26/02/1969 Expiry Date: - Issue No: 100 Version Start Date: 07/01/1970 Version End Date: -
-	1968m W	Status: Historical Licence No: 2/27/08/077 Details: General Farming & Domestic Direct Source: GROUNDWATERS Point: SPRING Data Type: Line Name: WHITTLESTONE Easting: 424700 Northing: 405700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 26/05/1966 Expiry Date: - Issue No: 100 Version Start Date: 30/06/1976 Version End Date: -
-	1969m W	Status: Historical Licence No: 2/27/08/077 Details: General Farming & Domestic Direct Source: GROUNDWATERS Point: SPRING 1 - CHERRY TREE FARM Data Type: Point Name: WHITTLESTONE Easting: 424700 Northing: 405700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 26/05/1966 Expiry Date: - Issue No: 100 Version Start Date: 30/06/1976 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	0
-----------------------------	----------

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

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



5.8 Potable abstractions

Records within 2000m

2

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 37**

ID	Location	Details	
-	1335m N	Status: Historical Licence No: NE/027/0008/008 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: GROUNDWATERS Point: BOREHOLE- COAL MEASURES - CLOUGH GREEN - CAWTHORNE Data Type: Point Name: NAYLOR DRAINAGE LTD Easting: 426917 Northing: 407065	Annual Volume (m ³): 20000 Max Daily Volume (m ³): 70 Original Application No: - Original Start Date: 01/07/2013 Expiry Date: 31/03/2017 Issue No: 1 Version Start Date: 01/07/2013 Version End Date: -
-	1335m N	Status: Active Licence No: NE/027/0008/008/R01 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: GROUNDWATERS Point: BOREHOLE- COAL MEASURES - CLOUGH GREEN - CAWTHORNE Data Type: Point Name: NAYLOR DRAINAGE LTD Easting: 426917 Northing: 407065	Annual Volume (m ³): 20,000 Max Daily Volume (m ³): 70 Original Application No: - Original Start Date: 01/04/2017 Expiry Date: 31/03/2029 Issue No: 1 Version Start Date: 01/04/2017 Version End Date: -

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

5.9 Source Protection Zones

Records within 500m

0

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

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



5.10 Source Protection Zones (confined aquifer)

Records within 500m

0

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

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



ID	Location	Type of water feature	Ground level	Permanence	Name
A	30m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
6	47m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	116m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	124m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	142m SE	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-
C	142m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	155m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
7	158m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Ellhirst Beck
D	173m SE	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	182m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	184m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	187m SE	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	195m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-



ID	Location	Type of water feature	Ground level	Permanence	Name
C	218m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
8	225m SE	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-
F	229m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Ellhirst Beck

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

13

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 44**

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 44**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
2	On site	River	Silkstone Beck from Source to Cawthorne Dyke	GB104027057560	Dearne	Don and Rother

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



6.4 WFD Surface water bodies

Records identified

1

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

Features are displayed on the Hydrology map on **page 44**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
3	23m N	River	Silkstone Beck from Source to Cawthorne Dyke	GB104027057560	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 44**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
1	On site	Don & Rother Millstone grit & Coal Measures	GB40402G992300	Poor	Poor	Good	2019

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



7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m**0**

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

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

7.2 Historical Flood Events

Records within 250m**0**

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

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

7.3 Flood Defences

Records within 250m**0**

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

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



7.4 Areas Benefiting from Flood Defences

Records within 250m

0

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

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

7.5 Flood Storage Areas

Records within 250m

0

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

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



River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m

0

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

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

7.7 Flood Zone 3

Records within 50m

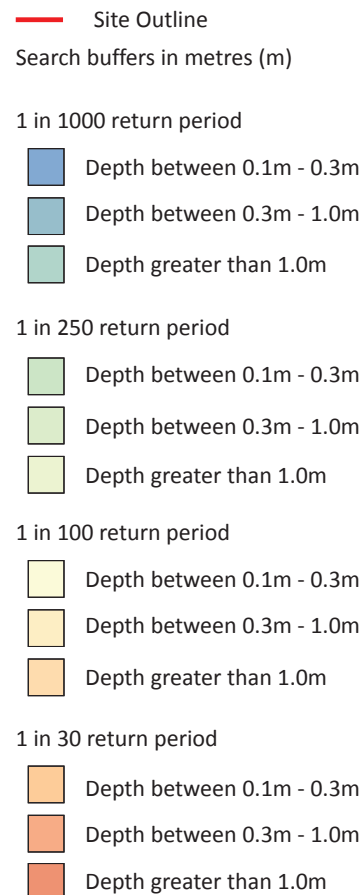
0

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

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



8 Surface water flooding



8.1 Surface water flooding

Highest risk on site

Negligible

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 51**

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

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

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

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

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

9.1 Groundwater flooding

Highest risk on site

Negligible

Highest risk within 50m

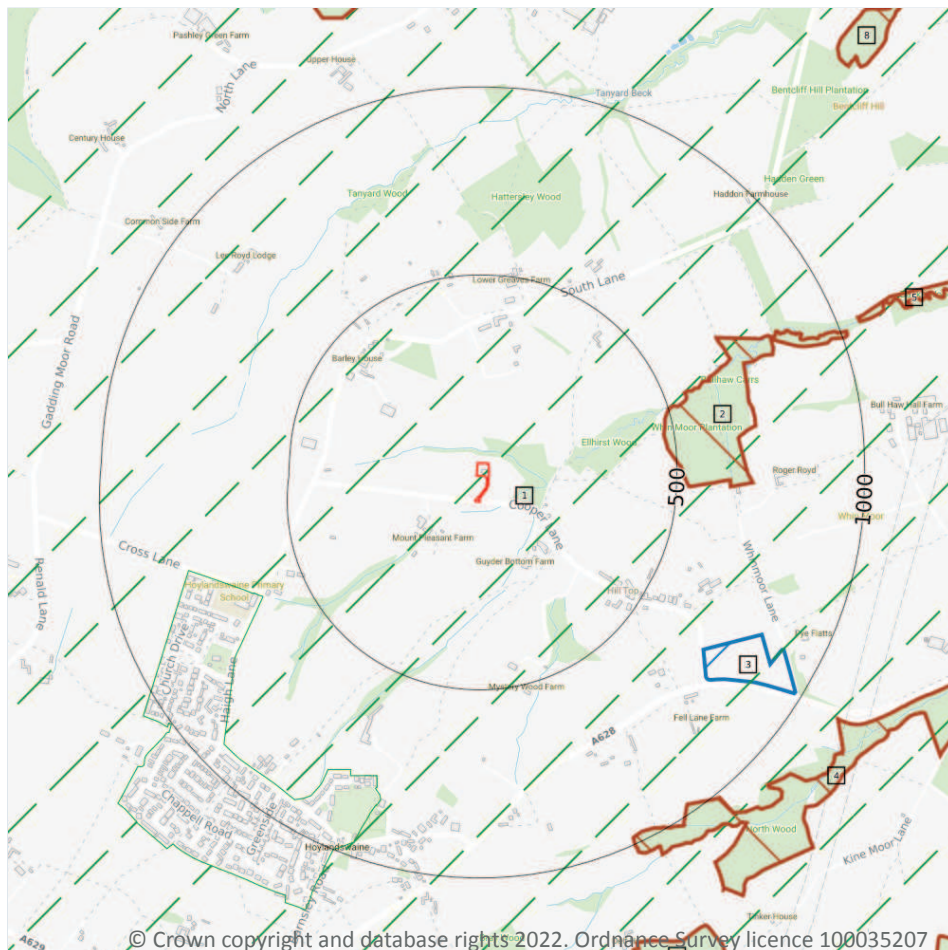
Negligible

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

Features are displayed on the Groundwater flooding map on **page 53**

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Sites of Special Scientific Interest (SSSI)
- Designated Ancient Woodland
- Green Belt

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 54**

ID	Location	Name	Data source
3	713m SE	Pye Flatts Meadows	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

0

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

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

10.7 Designated Ancient Woodland

Records within 2000m

11

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 54**

ID	Location	Name	Woodland Type
2	473m E	Unknown	Ancient & Semi-Natural Woodland
4	976m SE	North Wood	Ancient & Semi-Natural Woodland
5	1057m E	Unknown	Ancient & Semi-Natural Woodland
6	1237m N	Dixon Wood	Ancient & Semi-Natural Woodland
7	1246m S	Delf Wood	Ancient & Semi-Natural Woodland
8	1425m NE	Pease Grove	Ancient & Semi-Natural Woodland
-	1432m S	Coates Great Wood	Ancient & Semi-Natural Woodland
-	1490m W	Cat Hill Clough Wood	Ancient Replanted Woodland
-	1590m S	Coates Great Wood	Ancient Replanted Woodland
12	1605m SE	Coates Great Wood	Ancient Replanted Woodland
-	1969m SW	Shrogg Wood	Ancient & Semi-Natural Woodland

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

10.8 Biosphere Reserves

Records within 2000m**0**

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

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

10.9 Forest Parks

Records within 2000m**0**

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m**0**

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

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

10.11 Green Belt

Records within 2000m**1**

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

Features are displayed on the Environmental designations map on **page 54**

ID	Location	Name	Local Authority name
1	On site	South and West Yorkshire	Barnsley

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**

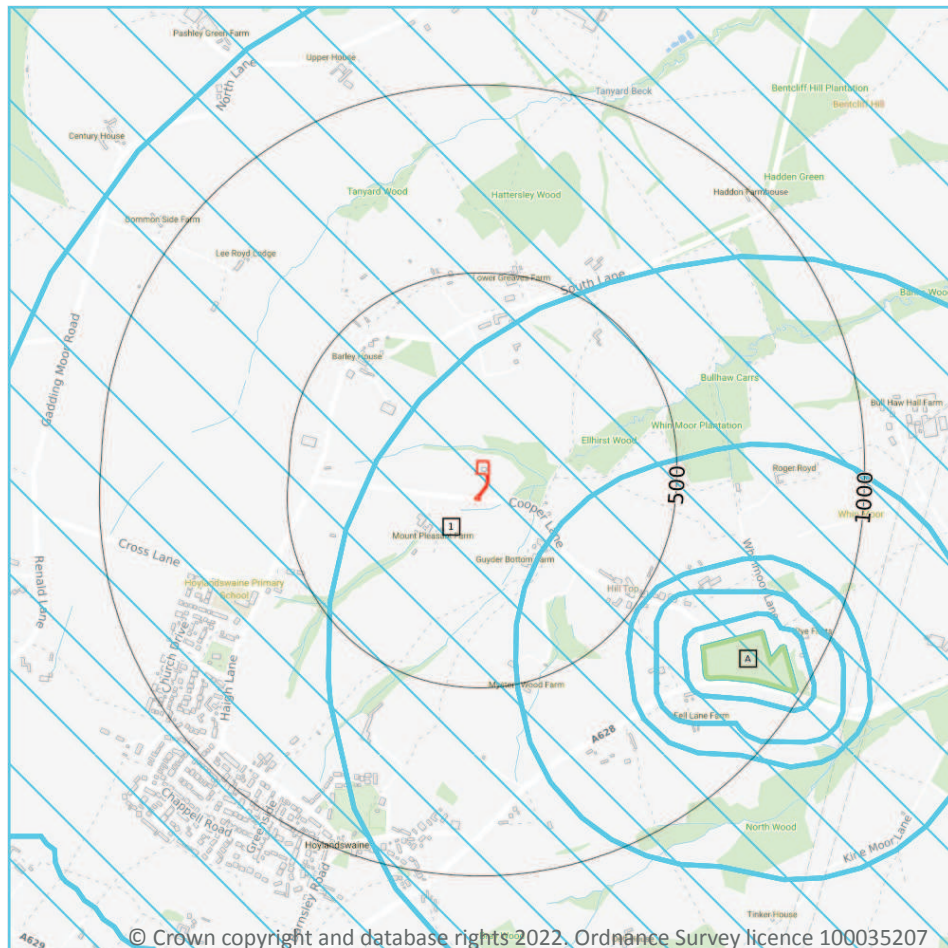
Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
On site	River Dearne NVZ	Surface Water	278	Existing
235m NE	River Dearne NVZ	Surface Water	278	Existing

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



SSSI Impact Zones and Units



- Site Outline
- Search buffers in metres (m)
- SSSI Impact Risk Zones
- SSSI Units
- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site

1

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

Features are displayed on the SSSI Impact Zones and Units map on **page 60**

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Airports, helipads and other aviation proposals. Minerals, Oil and Gas - Oil & gas exploration/extraction. Air pollution - Any industrial/agricultural development that could cause air pollution (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m², manure stores > 250t). Combustion - General combustion processes >20mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. incl: inert landfill, non-hazardous landfill, hazardous landfill. Composting - Any composting proposal with more than 500 tonnes maximum annual operational throughput. incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Discharges - Any discharge of water or liquid waste of more than 20m³/day to ground (ie to seep away) or to surface water, such as a beck or stream.

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 60**

ID: A
 Location: 713m SE
 SSSI name: Pye Flatts Meadows
 Unit name: Pye Flats Meadows
 Broad habitat: Neutral Grassland - Lowland
 Condition: Favourable
 Reportable features:

Feature name	Feature condition	Date of assessment
Lowland neutral grassland (MG5)	Favourable	15/07/2010

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



11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m

0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

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

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

11.3 National Parks

Records within 250m

0

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

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

11.4 Listed Buildings

Records within 250m

0

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



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

11.5 Conservation Areas

Records within 250m

0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m

0

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

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

11.7 Registered Parks and Gardens

Records within 250m

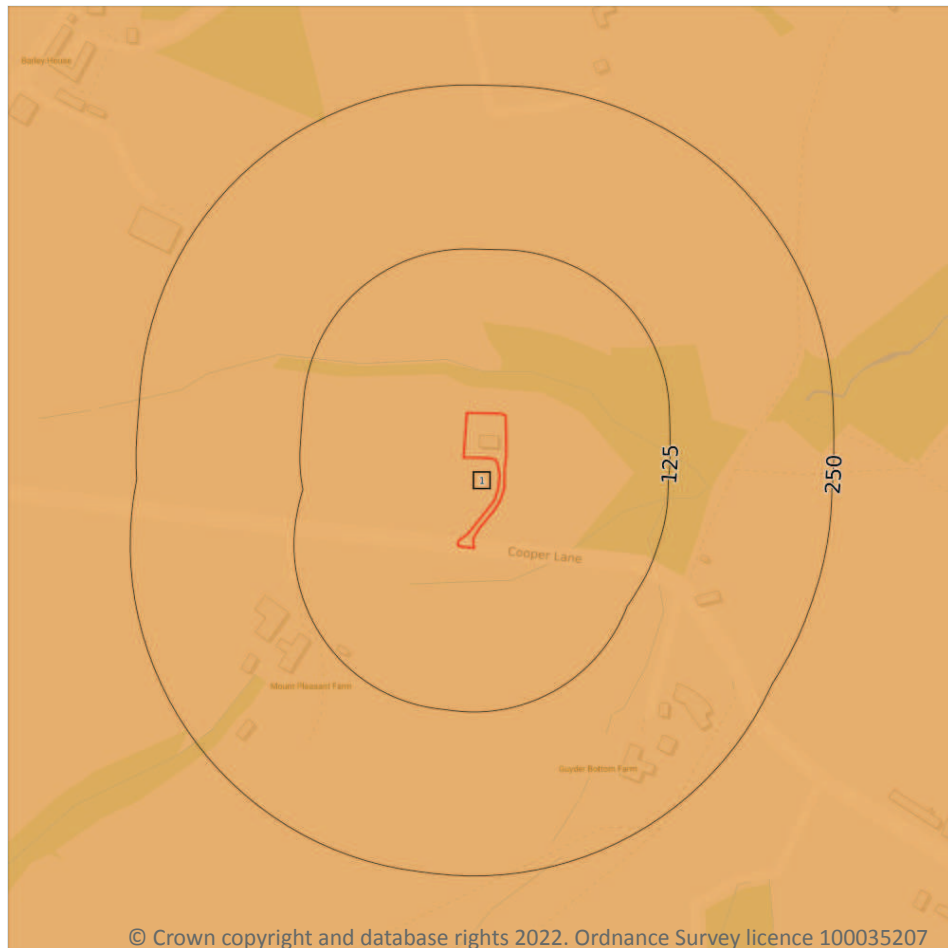
0

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

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



12 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

© Crown copyright and database rights 2022. Ordnance Survey licence 100035207

12.1 Agricultural Land Classification

Records within 250m

1

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 64**

ID	Location	Classification	Description
1	On site	Grade 3	Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

This data is sourced from Natural England.



12.2 Open Access Land

Records within 250m

0

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

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

12.3 Tree Felling Licences

Records within 250m

0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m

1

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.

Location	Reference	Scheme	Start Date	End date
232m S	AG00520174	Entry Level Stewardship	01/12/2013	30/11/2018

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

1

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

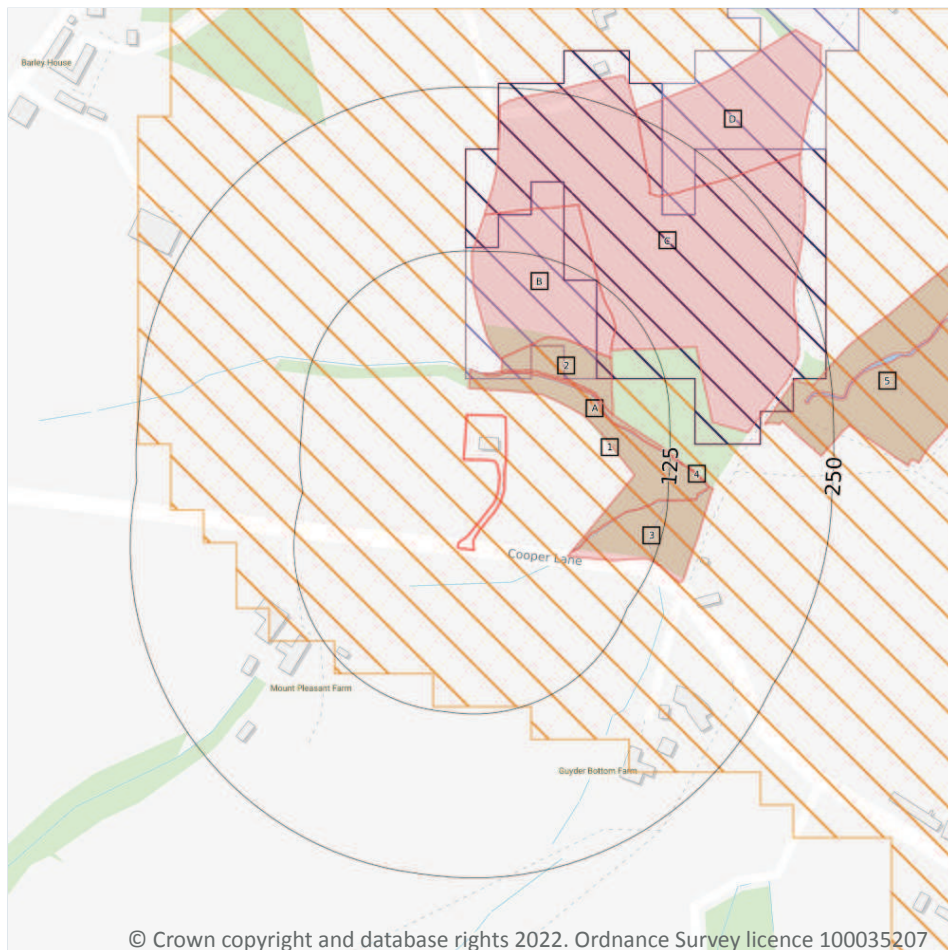
Location	Reference	Scheme	Start Date	End Date
232m S	821382	Countryside Stewardship (Middle Tier)	01/01/2020	31/12/2024



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

© Crown copyright and database rights 2022. Ordnance Survey licence 100035207

13.1 Priority Habitat Inventory

Records within 250m

9

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 67**

ID	Location	Main Habitat	Other habitats
1	19m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	30m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	34m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%); LMEAD (FEP + HLS)
B	43m N	Good quality semi-improved grassland	Main habitat: LMEAD (FEP + HLS)



ID	Location	Main Habitat	Other habitats
3	65m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
C	96m NE	Lowland meadows	Main habitat: LMEAD (FEP + HLS)
4	137m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
5	197m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
D	203m NE	Good quality semi-improved grassland	Main habitat: LMEAD (FEP + HLS)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m

4

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.

Features are displayed on the Habitat designations map on **page 67**

ID	Location	Type	Habitat
A	On site	Network Enhancement Zone 1	Not specified
B	28m N	Restorable Habitat	Not specified
C	76m NE	Primary Habitat	Lowland meadows
D	195m NE	Restorable Habitat	Not specified

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m

0

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

This data is sourced from Natural England.



13.4 Limestone Pavement Orders

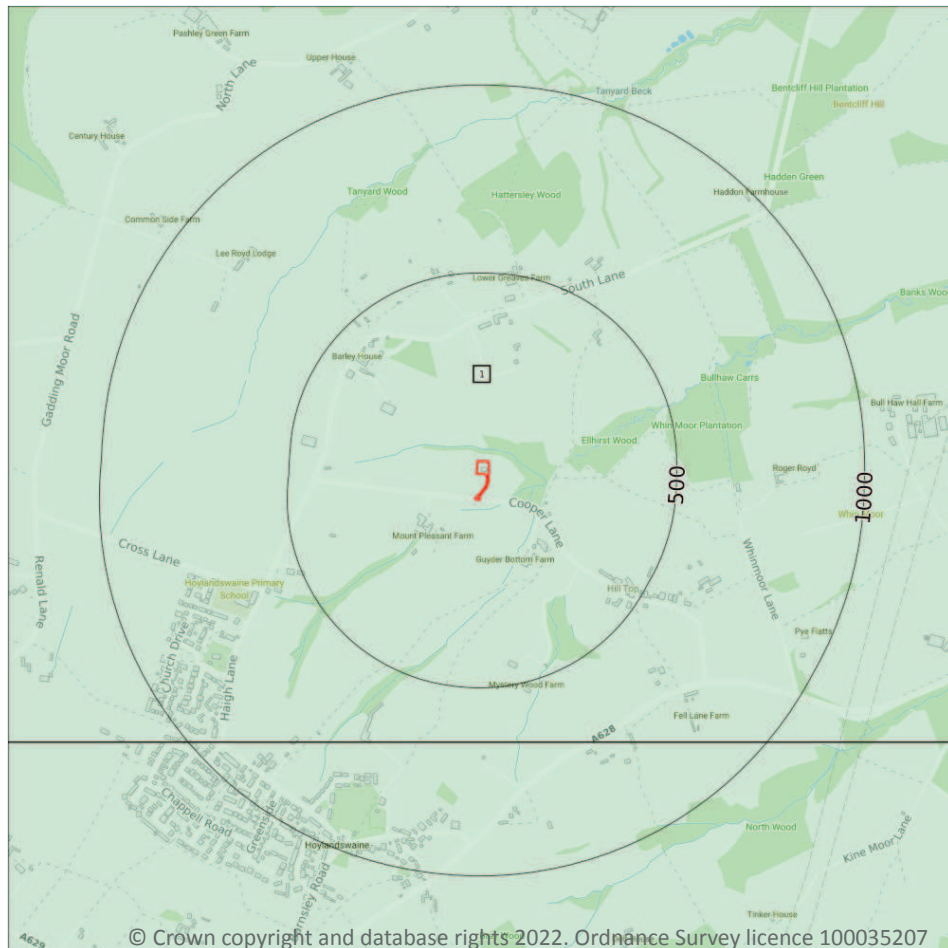
Records within 250m**0**

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

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



14.1 10k Availability

Records within 500m

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.

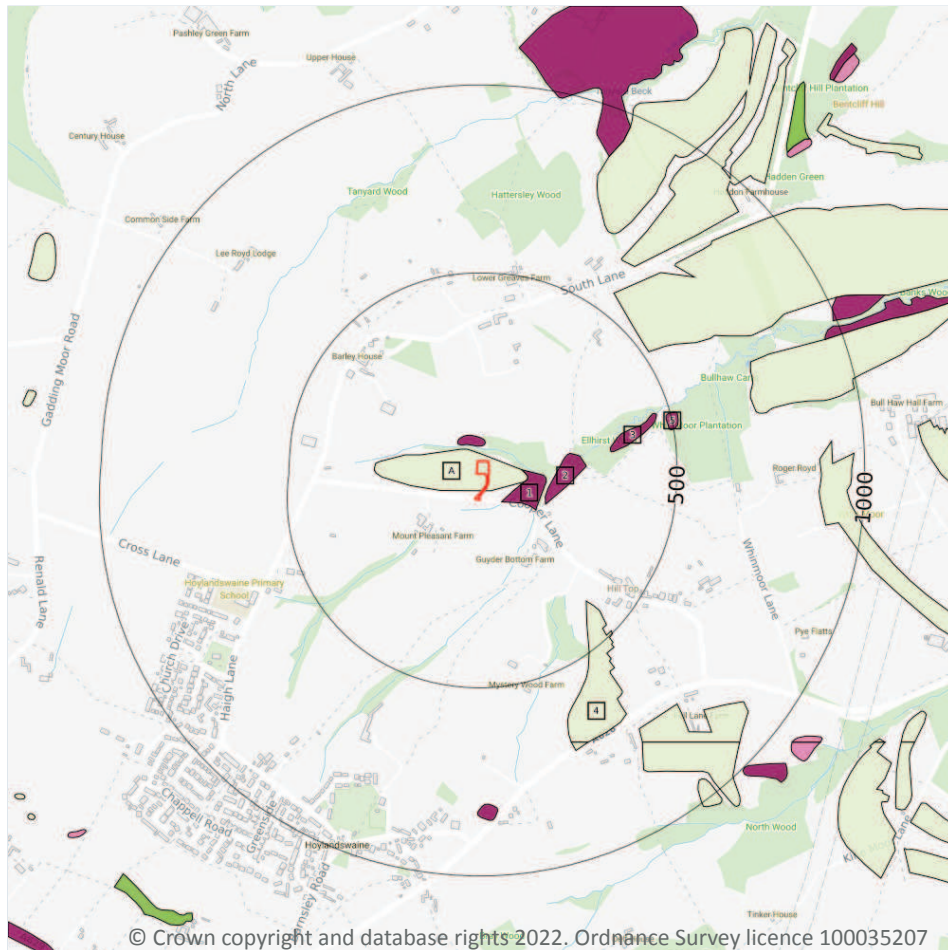
Features are displayed on the Geology 1:10,000 scale - Availability map on **page 70**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	SE20NE

This data is sourced from the British Geological Survey.



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



— Site Outline
Search buffers in metres (m)

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

14.2 Artificial and made ground (10k)

Records within 500m

7

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

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 71**

ID	Location	LEX Code	Description	Rock description
A	On site	WMGR-ARTDP	Infilled Ground	Artificial Deposit
A	40m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
1	55m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	156m E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit



ID	Location	LEX Code	Description	Rock description
3	326m E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	391m SE	WMGR-ARTDP	Infilled Ground	Artificial Deposit
5	485m E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m

0

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.

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

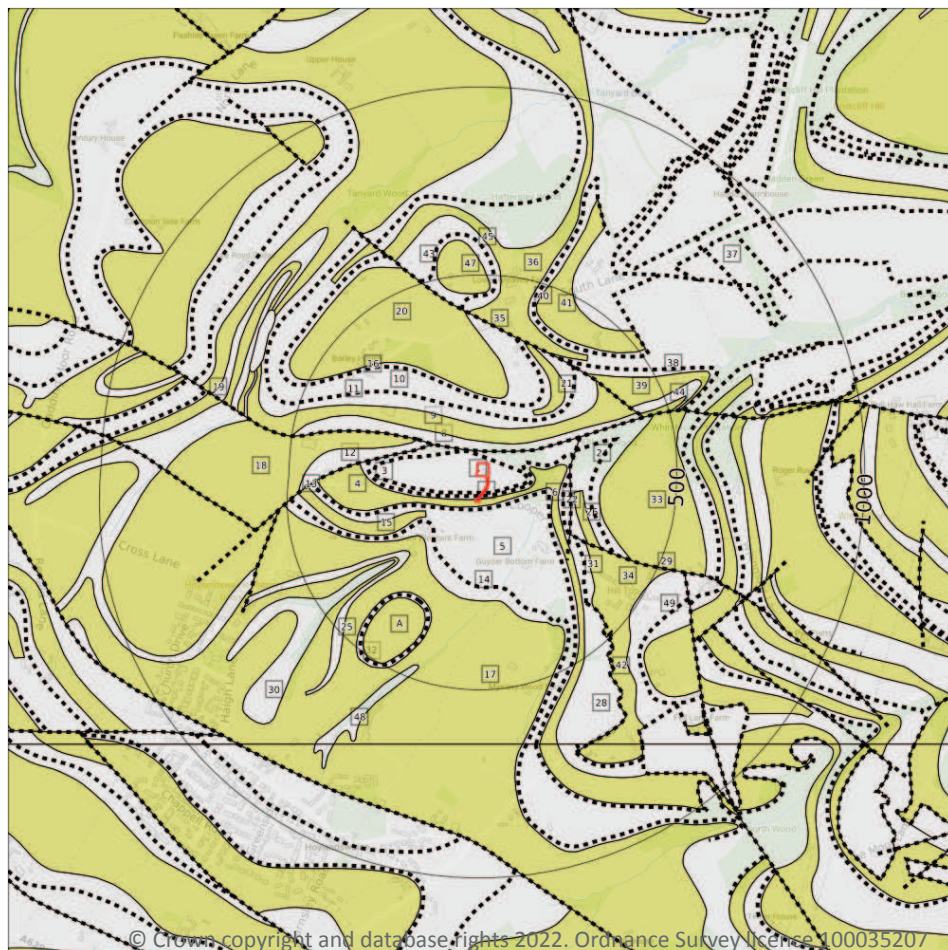
0

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

31

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 74**

ID	Location	LEX Code	Description	Rock age
1	On site	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
4	On site	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
5	12m S	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age



ID	Location	LEX Code	Description	Rock age
8	32m N	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
9	56m N	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
10	97m N	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
12	131m W	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
15	134m W	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
17	170m SW	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
18	172m W	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
20	176m N	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
21	178m NE	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
24	216m E	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
25	222m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
26	229m E	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
28	251m SE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
30	266m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
32	294m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
33	297m E	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
34	299m SE	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
A	313m SW	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
36	334m NE	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
37	335m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
39	351m NE	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
41	390m NE	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
43	402m N	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age



ID	Location	LEX Code	Description	Rock age
44	404m E	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
46	422m E	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
47	450m N	PF-SDST	Penistone Flags - Sandstone	Langsettian Sub-age
48	461m S	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
49	493m SE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m	20
----------------------------	-----------

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 74**

ID	Location	Category	Description
2	On site	ROCK	Coal seam, inferred
3	On site	ROCK	Coal seam, observed
6	20m S	ROCK	Coal seam, inferred
7	32m N	FAULT	Normal fault, inferred
11	129m N	ROCK	Coal seam, inferred
13	131m W	FAULT	Normal fault, inferred
14	131m SW	ROCK	Coal seam, inferred
16	166m N	ROCK	Coal seam, inferred
19	172m W	FAULT	Normal fault, inferred
22	201m E	ROCK	Coal seam, inferred
23	216m E	FAULT	Normal fault, inferred
27	234m E	ROCK	Coal seam, inferred
29	251m SE	FAULT	Normal fault, inferred

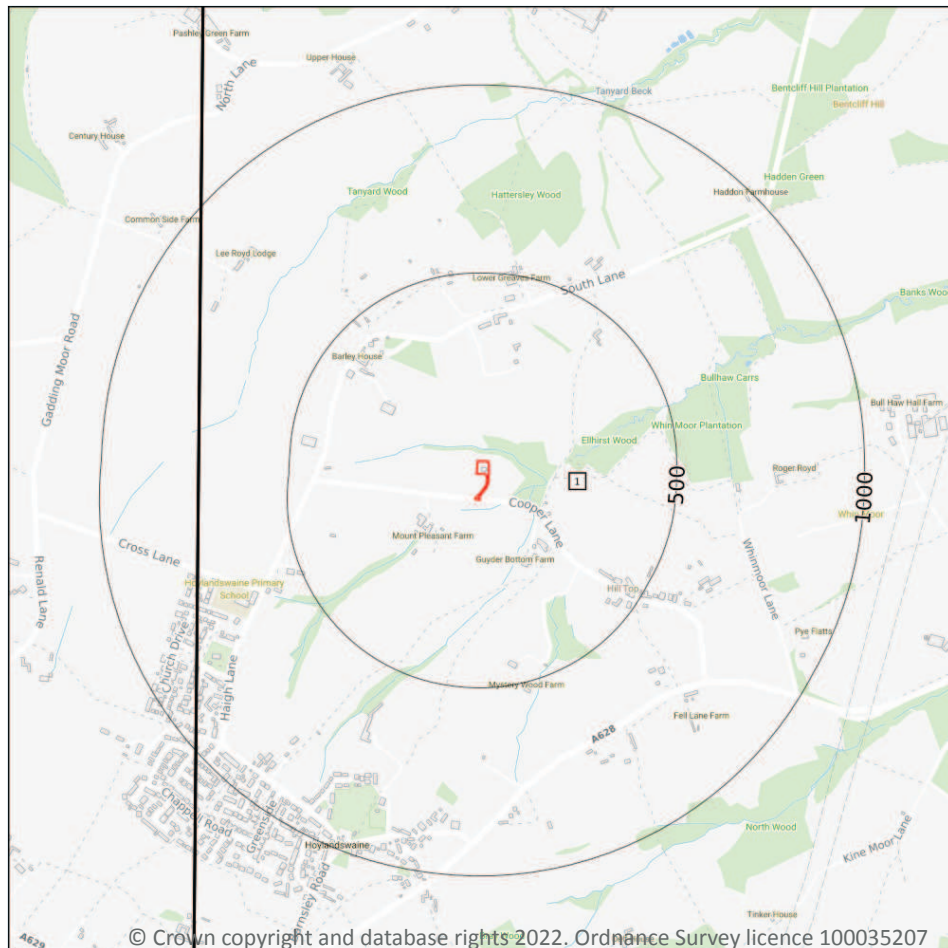


ID	Location	Category	Description
31	273m SE	ROCK	Coal seam, inferred
A	303m SW	ROCK	Coal seam, inferred
35	334m NE	FAULT	Normal fault, inferred
38	337m NE	ROCK	Coal seam, inferred
40	377m NE	ROCK	Coal seam, inferred
42	391m SE	ROCK	Coal seam, observed
45	410m N	ROCK	Coal seam, inferred

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.

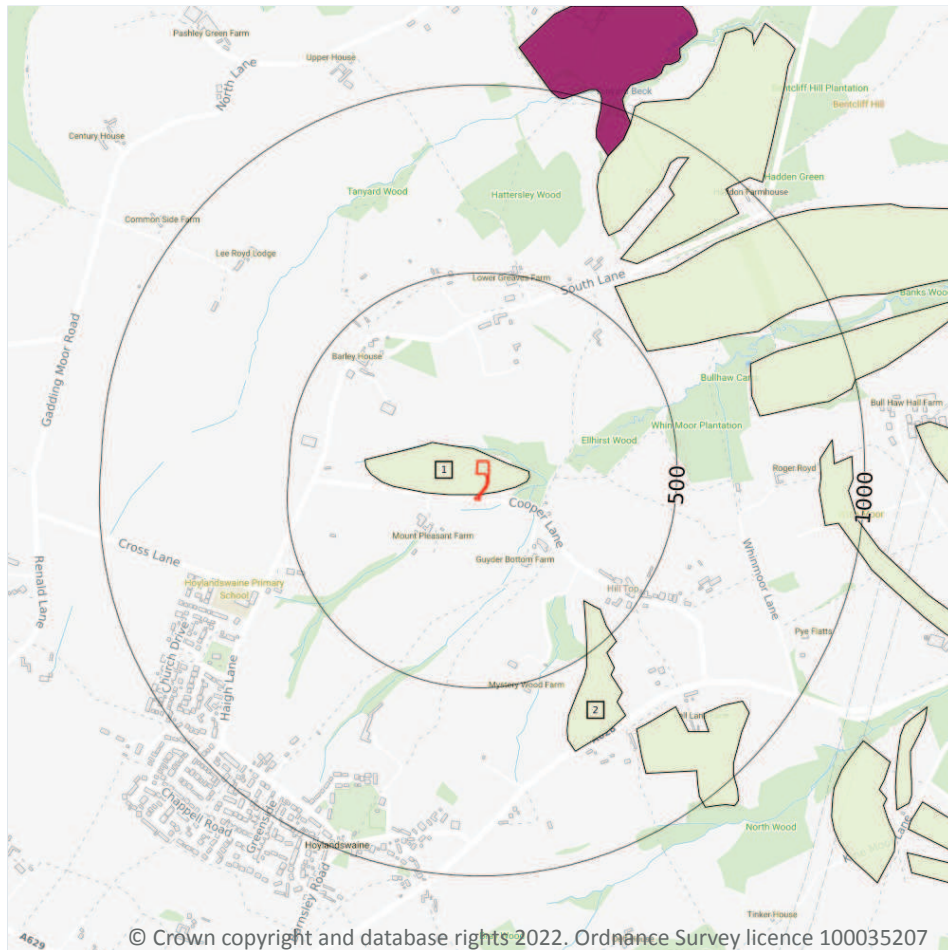
Features are displayed on the Geology 1:50,000 scale - Availability map on **page 78**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	Full	EW087_barnsley_v4

This data is sourced from the British Geological Survey.



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



- Site Outline
- Search buffers in metres (m)
- Made ground
 - Worked ground
 - Infilled ground
 - Disturbed ground
 - Landscaped ground

15.2 Artificial and made ground (50k)

Records within 500m

2

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

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 79**

ID	Location	LEX Code	Description	Rock description
1	On site	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT
2	386m SE	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.



15.3 Artificial ground 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 artificial deposits (the zone between the land surface and the water table).

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial

15.4 Superficial geology (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m

0

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

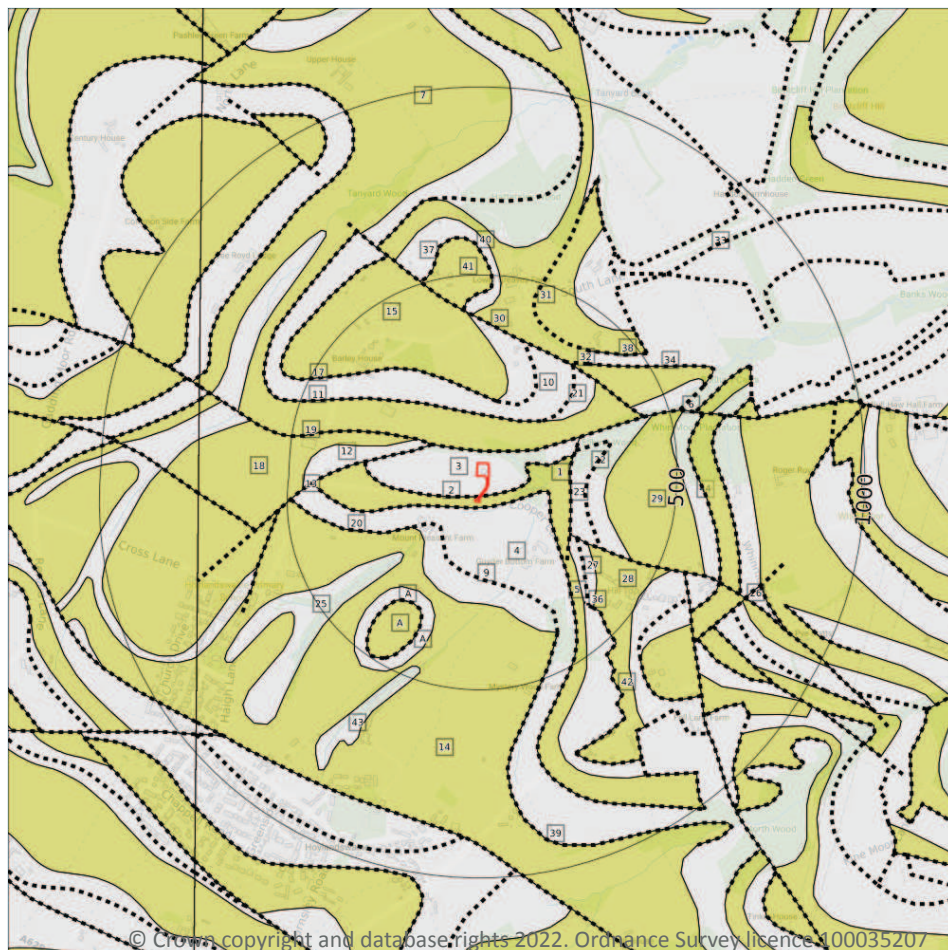
Records within 50m

0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

---- Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m

21

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 82**

ID	Location	LEX Code	Description	Rock age
1	On site	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
3	On site	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN



ID	Location	LEX Code	Description	Rock age
4	15m S	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
7	32m N	PF-SDST	PENISTONE FLAGS - SANDSTONE	WESTPHALIAN
10	125m N	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
12	131m W	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
14	167m SW	PF-SDST	PENISTONE FLAGS - SANDSTONE	WESTPHALIAN
15	167m N	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
18	172m W	PF-SDST	PENISTONE FLAGS - SANDSTONE	WESTPHALIAN
22	216m E	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
25	238m SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
A	282m SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
28	307m SE	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
29	310m E	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
A	317m SW	PF-SDST	PENISTONE FLAGS - SANDSTONE	WESTPHALIAN
31	334m NE	PF-SDST	PENISTONE FLAGS - SANDSTONE	WESTPHALIAN
33	374m NE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
37	395m N	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
41	408m N	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
43	466m S	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
44	489m E	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.



15.9 Bedrock permeability (50k)

Records within 50m

3

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	Fracture	High	Moderate
On site	Fracture	Moderate	Low
32m NW	Fracture	High	Moderate

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m

26

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 82**

ID	Location	Category	Description
2	On site	ROCK	Coal seam, inferred
5	15m S	ROCK	Coal seam, inferred
6	32m N	FAULT	Fault, inferred
8	96m E	ROCK	Coal seam, inferred
9	115m SW	ROCK	Coal seam, inferred
11	125m N	ROCK	Coal seam, inferred
13	131m W	FAULT	Fault, inferred
16	167m N	ROCK	Coal seam, inferred
17	167m N	ROCK	Coal seam, inferred
19	172m W	FAULT	Fault, inferred
20	181m W	ROCK	Coal seam, inferred
21	183m NE	ROCK	Coal seam, inferred



ID	Location	Category	Description
23	216m E	FAULT	Fault, inferred
24	234m E	ROCK	Coal seam, inferred
26	251m SE	FAULT	Fault, inferred
27	272m SE	ROCK	Coal seam, inferred
A	317m SW	ROCK	Coal seam, inferred
30	334m NE	FAULT	Fault, inferred
32	340m NE	ROCK	Coal seam, inferred
34	374m NE	ROCK	Coal seam, inferred
35	381m NE	ROCK	Coal seam, inferred
36	386m SE	ROCK	Coal seam, inferred
38	404m NE	ROCK	Coal seam, inferred
39	405m SE	ROCK	Coal seam, inferred
40	408m N	ROCK	Coal seam, inferred
42	414m SE	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.



16 Boreholes

16.1 BGS Boreholes

Records within 250m

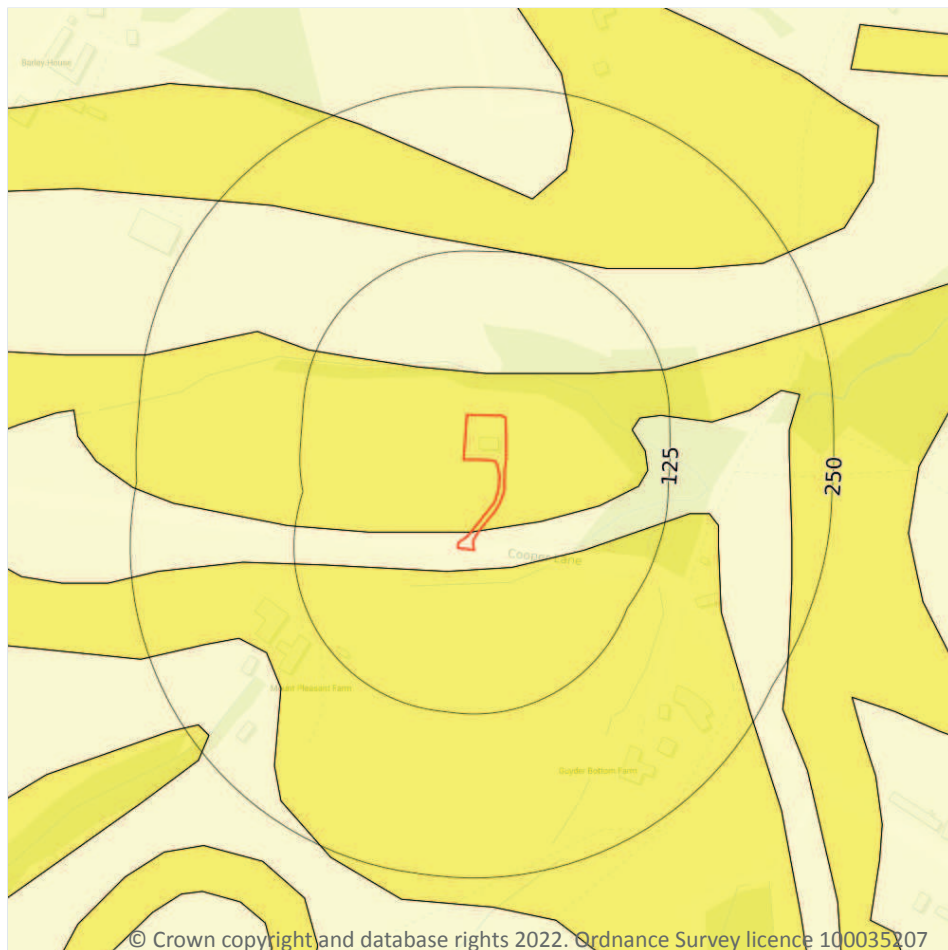
0

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

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.1 Shrink swell clays

Records within 50m

3

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 87**

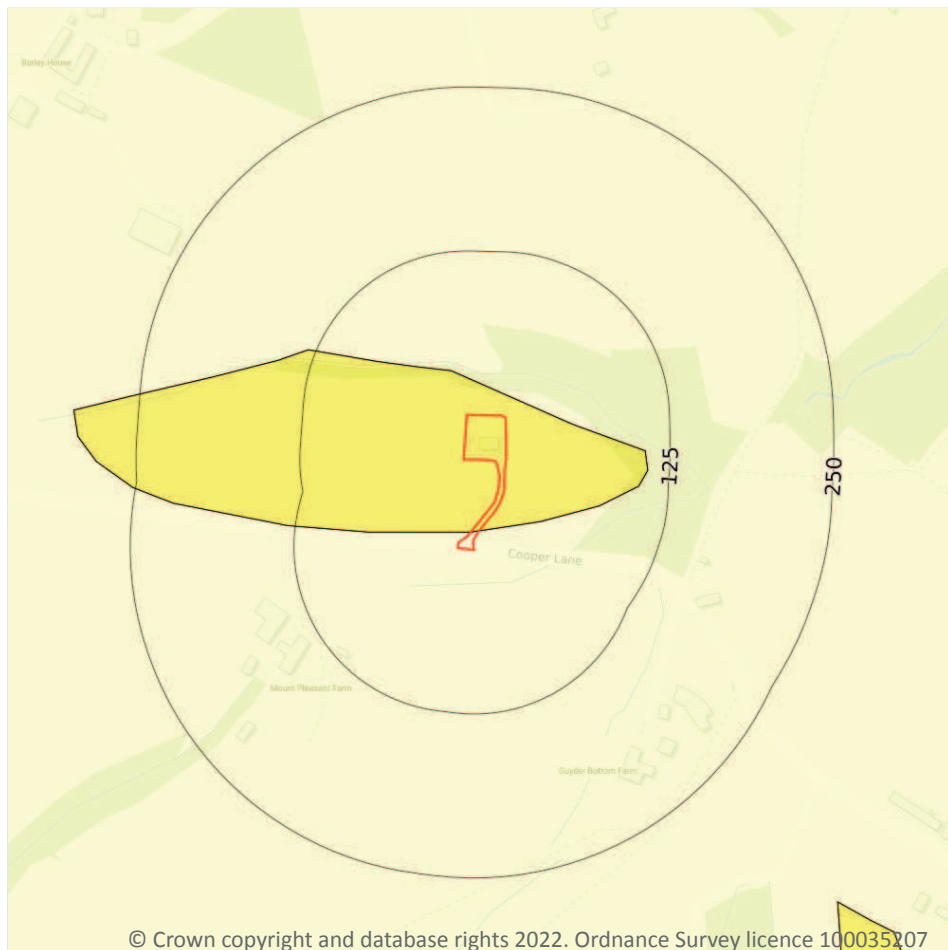
Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.
On site	Very low	Ground conditions predominantly low plasticity.
32m N	Negligible	Ground conditions predominantly non-plastic.



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 89**

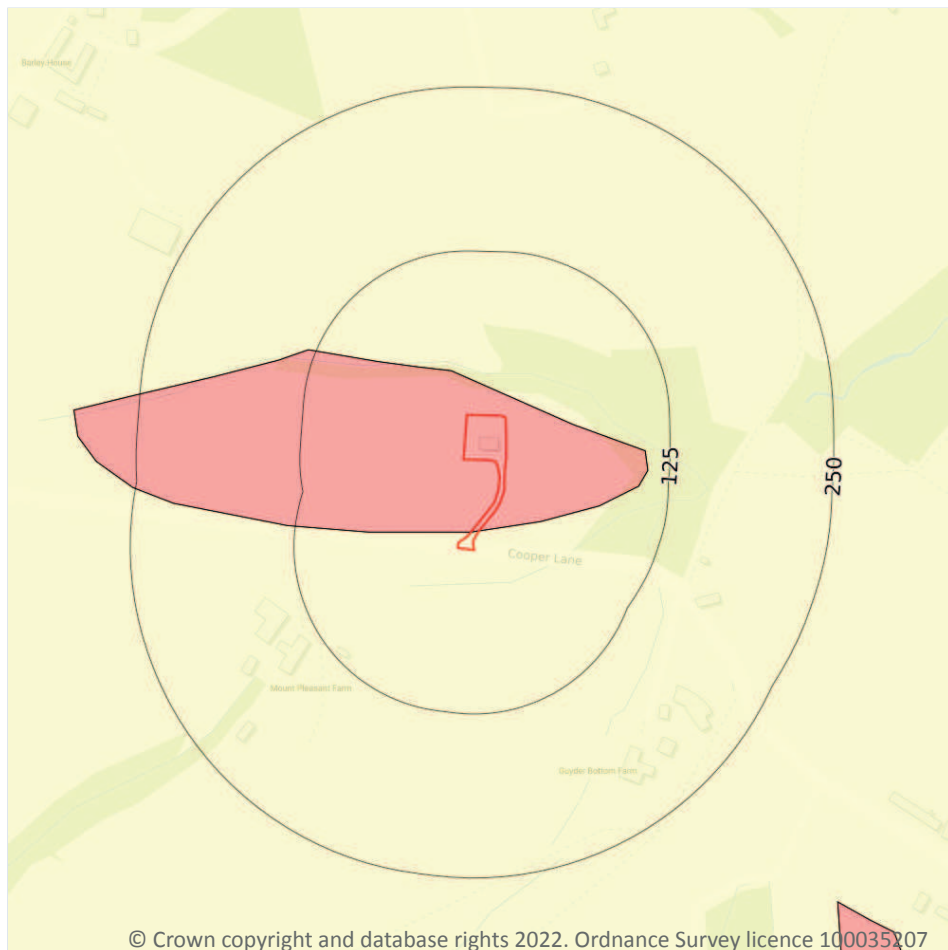
Location	Hazard rating	Details
On site	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

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

2

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

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

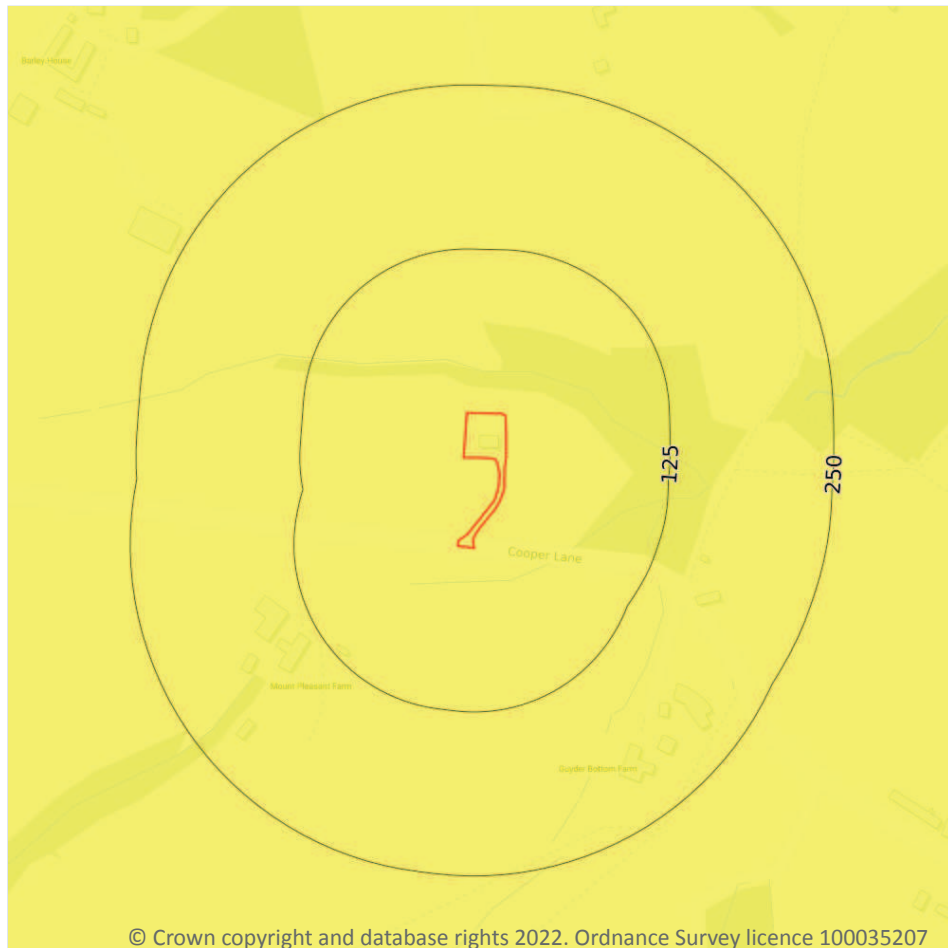
Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.
On site	Moderate	Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.



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

© Crown copyright and database rights 2022. Ordnance Survey licence 100035207

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.

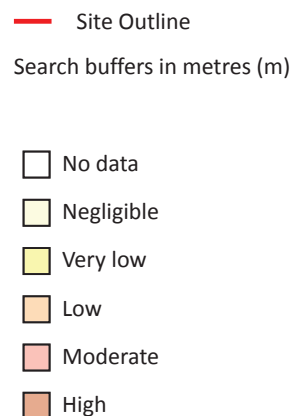
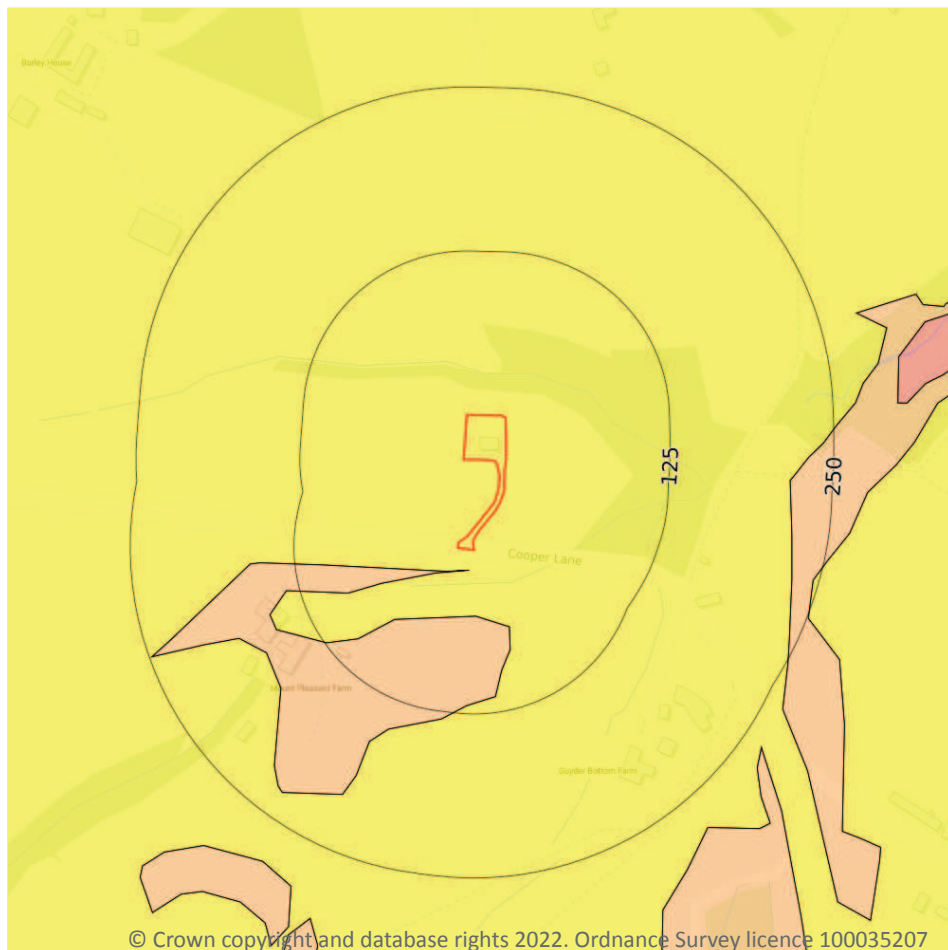
Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 93**

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



17.5 Landslides

Records within 50m

2

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

Features are displayed on the Natural ground subsidence - Landslides map on **page 94**

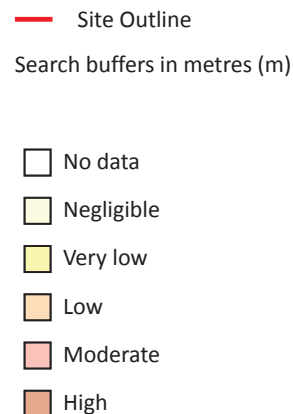
Location	Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

Location	Hazard rating	Details
16m S	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



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.

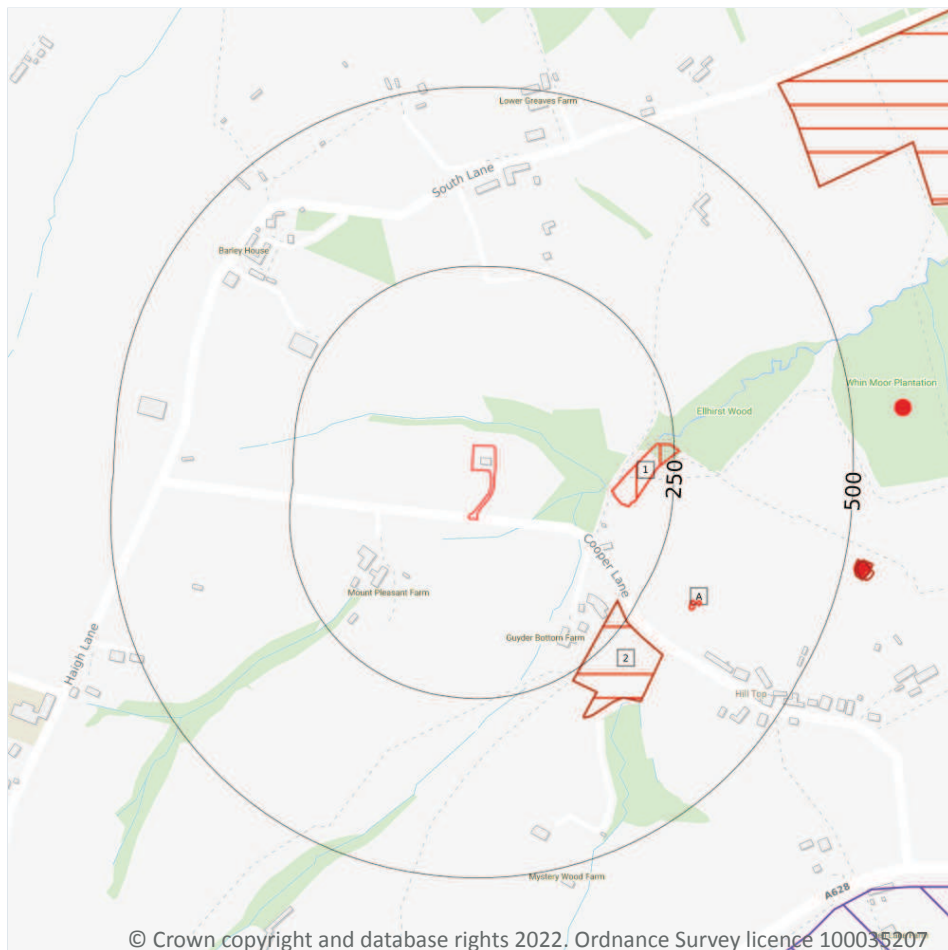
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 96**

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

0

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

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m

1

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 97**

ID	Location	Land Use	Year of mapping	Mapping scale
2	226m SE	Sewage Works	1983	1:10000

This data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m

11

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 97**

ID	Location	Land Use	Year of mapping	Mapping scale
1	165m E	Unspecified Mine	1965	1:10560
A	316m SE	Air Shaft	1948	1:10560
A	318m SE	Air Shaft	1951	1:10560
A	324m SE	Air Shaft	1903	1:10560
-	873m SE	Air Shaft	1983	1:10000
-	873m SE	Air Shaft	1948	1:10560
-	873m SE	Air Shaft	1903	1:10560
-	873m SE	Air Shaft	1965	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
-	873m SE	Air Shaft	1951	1:10560
-	973m E	Air Shaft	1983	1:10000
-	973m E	Air Shaft	1965	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

0

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

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m

0

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

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site

0

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

This data is sourced from Johnson Poole and Bloomer.



18.9 Coal mining

Records on site	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

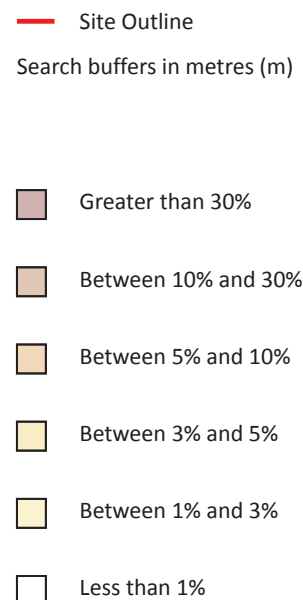
Records on site	0
-----------------	---

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



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 101**

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

3

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². 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 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
17m S	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m

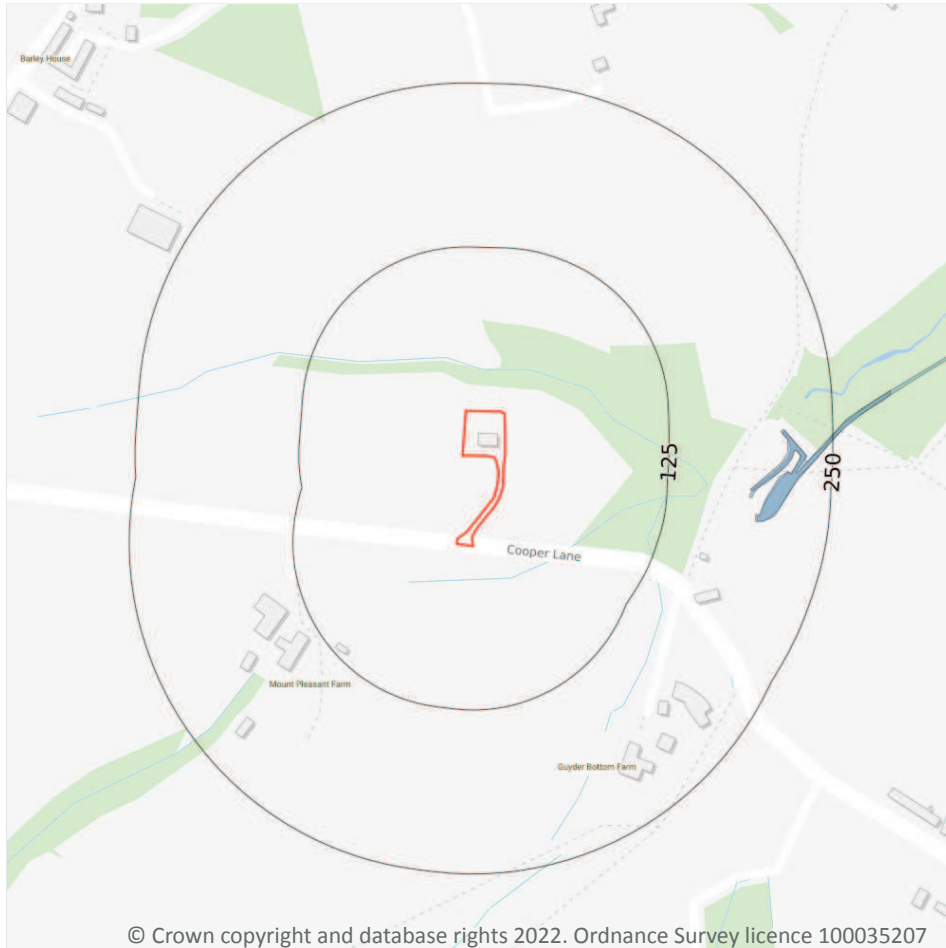
0

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 km².

This data is sourced from the British Geological Survey.



21 Railway infrastructure and projects



- Site Outline
- Search buffers in metres (m)
- C1 Crossrail 1 Stations
- Crossrail 1 Route
- C2 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

2

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 103**

Location	Land Use	Year of mapping	Mapping scale
188m E	Railway Sidings	1959	2500
188m E	Railway Sidings	1976	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

0

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

This data is sourced from OpenStreetMap.



21.7 Railways

Records within 250m**0**

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

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m**0**

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m**0**

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m**0**

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

This data is sourced from HS2 Ltd.

Data providers

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

Terms and conditions

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

