

**Environmental
Geotechnical
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PHASE 1 ENVIRONMENTAL DESK STUDY

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

Location: **St Begas Chapel Site**
Crossings Close, Cleator Moor, Cumbria, CA25 5QH

For: South North Group Architecture Ltd

Report No. C2064/21/E/3181

Report date: July 2022

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

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1. Introduction

The site is located on Crossings Close, Cleator Moor, Cumbria, CA25 5QH. The site is approximately 0.52 hectares in size and its National Grid reference is centred around 301088 515511.

It is understood that the development proposals currently comprise the development of eleven new residential dwellings with associated parking, gardens and soft landscaping. In order to assist with this decision-making process, and any planning and construction aspects of the development, a phase one environmental desk study has been commissioned and is the subject of this report.

In accordance with issued guidance, a site walkover was conducted on the 12th July 2022 and the following observations were made:

General site description/current site use

The site comprises a disused church. Much of the site area to the south west of the church building was noted to be overgrown and inaccessible. Site clearance will be required prior to any investigation or development. Church building shows some signs of disrepair and some possible cracking was observed on the northern elevation. A water course was observed to cross the south western part of site with Environment Agency infrastructure including a filter trap noted on site, the water course was observed to be culverted below the cycle path to the south of site.

Site boundaries/access

The site is accessible from Crossings Close, with a gate and temporary fencing observed in the north east of the site. The site is bounded to the south east by a public cycle path, A stone wall was also observed along this boundary. The remaining boundaries were heavily vegetated and an apparent bund was observed along the north western boundary.



Topography

Generally, the site gently slopes towards the south west. The surface of the site is hummocky across south east of the site, potential vegetation covered stockpiles were also observed across this area. The northern boundary appears to be formed by bund.

Surface cover of site

Asphalt hardstanding was observed to cover the north of the site. Stockpiled demo waste was observed to cover the area immediately south of the church structure. The majority of site was observed to be heavily overgrown with vegetation.

Visible evidence of contamination/ contaminative sources

Stockpiles of demolition rubble were observed to the south of the church, the stockpiled materials were noted to include brick, concrete, roof tiles and slates, clay pipes and sandstone blocks. Fibrous potential pipe lagging or insulation was also observed. The interior of the church could not be inspected but there is potential for the presence of asbestos containing materials associated with the fabric of the building.

Presence of vegetation and wildlife

The site was observed to be heavily overgrown, particularly around the peripheries and to the south of the church. Tree species including beech, willow, hawthorn, buddleia, ash and gorse were observed.

Services

The status of underground services is unknown. There were no overhead services present within the site at the time of the walkover. However, scars were observed in road at the site entrance, which indicate underground service enter site at northern boundary. No manholes or trench scars were observed on site.

Site neighbours

The site is located within a predominantly residential setting with agricultural land to the south-west.

In order to ensure that the site is fully characterised and to comply with the Environment Act 1995¹, a Phase One Desk Study and Coal Mining Risk Assessment has been commissioned by South North Group Architecture Ltd. 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).

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. 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 Plan | - Appendix 3 |
| • Photographs | - Appendix 4 |
| • Consultants Mining Report | - Appendix 5 |

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

2.1 Historical Land Use

Table 1: Historical Land Use³

HISTORICAL MAPPING SUMMARY		
Map Dates	On site	Within 250m
1863	Railway lines and sidings associated with Whinnyhill Collieries run parallel to the northern and western boundaries of the site and exit the site to the south-west. A small outbuilding linked to the railway lines is located on the south-western corner of the site. Feature inferred to be either a track or wagonway crosses the southern portion of the site from the outbuilding towards the south-east corner of the site.	Railway lines and buildings are located within the immediate 250m area. A reservoir is also present from 200m NE. Otherwise, the surrounding area is predominantly undeveloped. Also present: • Hematite Iron Works – 25m NW • Unspecified Heap – 25m NW
1898 – 1926	Building on south-west of site has been demolished. Mineral railway line present on site has been expanded with additional lines, cuttings and sidings shown Drain only shown along south western boundary and running south-eastwards across the site.	'L.M. & S.R Cleator & Workington' railway line is present 80m SW. Residential dwellings have been erected from 20m NE to 250m NE. Another railway station and associated railway buildings and lines are present from 70m SE. Hematite Iron and Steel works and associated pits are present from 100m NE and E. Also present: • Unspecified Heaps – 26m W, 125m E • Goods shed – 81m W • Unspecified Tank – 198m NW • Cuttings – 215m NW
1938 – 1951	The site remains relatively unchanged.	The surrounding area remains largely the same plus: • Unspecified Heaps – 15m NW, 29m W • Cuttings – 70m SW, 174m NE, 207m NW, 215m NW • Railway Sidings – 70m SW, 241m S • Unspecified Ground Workings – 103m E • Gravel Pit – 115m E • Refuse Heap – 116m E • Unspecified Disused Pit – 208m SE
1962 – 1969	The mineral railway line is no longer present, but the associated embankments and landscaping still remain. Issues recorded on site associated with the drain in the south west running south-eastwards across the site.	A slag heap is present from 190m SE. Further residential dwellings have been developed from 80m NW, extending to 250m NW. Also present: • Unspecified Heaps – 5m NW • Unspecified Factories – 93m E • Unspecified Ground Workings – 129m E • Cuttings – 166m E, 207m NW • Refuse Heap – 200m SE
1970	Embankments and sidings no longer shown along north and western boundaries of the site.	The 'L.M. & S.R Cleator & Workington' railway line is now dismantled. Further residential dwellings have been developed from 10m SE and from 50m N and NW.
1982 – 2003	St Bega's RC Church has been erected in the northern area of the site.	Further residential dwellings are developed during this period. The surrounding 250m area becomes highly developed, plus: • Electricity Substations – 42m E, 42m NE, 43m NE • Unspecified Tanks – 142m E, 143m E

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

³ See Appendix 2



2004 – 2022 The site remains relatively unchanged. The surrounding area remains highly developed.

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
Superficial Geology	Till	-	Till is unsorted and unstratified drift, generally overconsolidated, deposited directly by and underneath a glacier without subsequent reworking by water from the glacier. It consists of a heterogeneous mixture of clay, sand, gravel, and boulders varying widely in size and shape.
Solid Geology	Pennine Middle Coal Measures Formation	Middle Coal Measures Formation	Interbedded grey mudstone, siltstone, pale grey sandstone and commonly coal seams, with a bed of mudstone containing marine fossils at the base, and several marine fossil-bearing mudstones in the upper half of the unit.
	Brassy Coal (BRSY)	-	Coal seam of the Pennine Middle Coal Measures Formation recorded to outcrop in the south of the site, trending approximately north-south.
	Black Metal Coal (BMT)	-	Coal seam of the Pennine Middle Coal Measures Formation recorded to outcrop in the north of the site, trending approximately north-south.
	Whitehaven Sandstone Formation	Whitehaven Sandstone Whitehaven Sandstone Series	Red to purple-brown, cross-bedded sandstones with vari-coloured mudstone and siltstone. Thin coal seams, marls and limestone beds with fossils present locally.
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	Iron Ore (non vein and bedded) Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered.
Linear Features	On site	Fault (inferred)	A normal fault is recorded to cross the central part of site, trending approximately east-west and is indicated to down throw to the south.
Landslip Deposits	No data	No data	Not indicated to present on site or within the surrounding area.
BGS BOREHOLE DATA			
Reference ⁶	Location	Strata Description	Depth
NY01NW492	178m E	MADE GROUND (Slag fill)	2.44m
NY01NW493	203m E	MADE GROUND (Ash and gravel fill)	6.55m
NY01NW494	215m E		3.96m
NY01NW490	199m E	MADE GROUND (Ash and gravel fill)	6.096m
NY01NW491	238m E		

⁴ Sources: British Geological Survey (NERC) Map Sheets 28; Whitehaven; Bedrock and Superficial Deposits; 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]

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



NATURAL GROUND SUBSIDENCE & HAZARDS ⁷	
Type	Risk Rating
Potential for shrinking or swelling clay ground stability	Very Low.
Potential for running sand ground stability	Very Low.
Potential for compressible ground stability	Negligible.
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 in a lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). No radon protective measures are necessary.

2.3 Construction Issues

2.3.1 Foundation Construction

On the basis of the prevailing geology and assuming areas of significantly filled ground may be present (due to mining activity), it is anticipated that a deeper foundation solution may be required at this site. The possibility for unrecorded shallow coal workings to be present beneath the site should also be considered. It should be appreciated that an intrusive investigation will be required to validate this opinion.

2.3.2 Site Won Materials

Where sandstone outcrops, it is possible that the resulting soil may provide a suitable bulk granular fill and may prove suitable for re-compaction.

2.3.3 Disposal of Site Materials

If made ground is present then contamination/WAC testing will be required to establish the nature of the underlying soil before disposal to a licensed landfill site. However, it is anticipated that the naturally occurring soils would not be significantly contaminated, thus would probably be accepted by a waste disposal site catering for inert material.

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. A Coal Authority Mining Report has therefore been obtained that is included in Appendix 5 of this report and may be summarised as follows:

⁷ See Groundsure report

**Table 3: Summary of the Consultant's Coal Mining Report**

Has the report highlighted evidence or potential of:			
Ref	Mining Feature	Yes/No	Comments
1	Underground Coal Mining	Yes	Past underground mining is recorded to have occurred in 4 coal seams between 38m and 161m depth and worked between 1870 and 1900. The seams are recorded to dip at between 18.4° and 29.7° to the south and south west below the property.
2	Probable Unrecorded Shallow Workings	No	None.
3	Spine Roadways at Shallow Depth	No	No spine roadway recorded at shallow depth.
4	Mine Entries	Yes	One shaft (301515-002) is recorded on site. One shaft (301515-001) is recorded approximately 18m south west of the site. No treatment details are offered for either shaft.
5	Abandoned mine plans	Yes	Plans of abandoned mine workings below the site are suggested to be available by the Coal Authority.
6	Outcrops	No	No outcrops recorded.
7	Geological Faults	Yes	A fault is recorded to cross the site.
8	Opencast Mines	No	None recorded within 500 metres of the enquiry boundary.
9	Coal Authority Managed Tips	No	None recorded within 500 metres of the enquiry boundary.
10	Site Investigations	No	None recorded within 50 metres of the enquiry boundary
11	Remediated Sites	No	None recorded within 50 metres of the enquiry boundary.
12	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.
13	Mine Gas	No	None recorded within 500 metres of the enquiry boundary.
14	Mine Water Treatment Schemes	No	None recorded within 500 metres of the enquiry boundary.
15	Future underground mining	No	For further information please see section 3 of the Consultant's Coal Mining Report (ref 51003263753001).
16	Coal mining licensing	No	
17	Court orders	No	
18	Section 46 notices	No	
19	Withdrawal of support notices	No	
20	Payments to owners of former copyhold land	No	

2.4.2 Non-Coal Mining

Localised small scale underground iron ore (non vein and bedded) mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered.



2.5 Waste Management and Gas Monitoring

Table 4: Landfill Data and Artificial Ground, Recorded and Anticipated			
ENVIRONMENT AGENCY, LOCAL AUTHORITY, BGS & HISTORIC LANDFILLS			
Waste Type	Location	Comments	Monitoring Requirement
Active Landfill	-	None recorded within 250m	-
Historic Landfill	On site	St Begas, Whitehaven Road. Waste Type: Inert. Last Recorded: 13/04/1979.	Y
Historic waste sites	-	None recorded within 250m	-
Licenced waste sites	-	None recorded within 250m	-
Waste Exceptions	-	None recorded within 250m	-
MADE GROUND & INFILLED GROUNDWORKINGS			
Description	Location	Comments	Monitoring Requirement
Records of Potentially Infilled Features	On site	Historical Construction	Y
	On site	Mineral Railway Line and Sidings	N
	On site	Mine shaft	Y
	5m NW to 125m E	Unspecified Heaps	N
	70m SW to 241m S	Railway Sidings	N
	81m W	Goods Shed	N
	93m E	Unspecified Factories	N
	From 100m NE and E	Iron Works and Pits	Y
	115m E	Gravel Pit	Y
	142m E to 198m NW	Unspecified Tanks	N
	70m SW to 215m NW	Cuttings	N
	103m E & 129m E	Unspecified Ground Workings	Y
	116m E & 200m SE	Refuse Heaps	N
	142m E to 198m NW	Unspecified Tanks	N
	208m SE	Unspecified Disused Pit	Y



2.6 Hydrogeology, Hydrology

Table 5: Ground/Controlled Water Sensitivity and Flooding

ENVIRONMENT AGENCY AQUIFER DESIGNATION ⁸			
Strata	Designation	Description	
Superficial Aquifer	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general, these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.	
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 SENSITIVITY ⁹			
Description	Location	Details	
Source Protection Zone ¹⁰	-	None recorded within 250m.	
Abstraction Licences	-	None recorded within 250m.	
Discharge Consents	100m SE	Crossings Close and Norbeck Park A, Cumbria. Effluent Type: Sewage Discharges.	
	107m SE	Rear Garden of 16 Crossings Close, Cumbria. Effluent Type: Sewage Discharges.	
	109m SE	Norbeck Park A, Cumbria. Effluent Type: Sewage Discharges.	
	234m S	Crossings Close, Cumbria. Effluent Type: Sewage Discharges.	
Records of Part A(2) and Part B Activities and Enforcements	-	None recorded within 250m.	
Soil Leaching Potential	On Site	Leaching class: Low. Vulnerability: Low.	
CONTROLLED WATERS ¹⁰			
Description	Location	Details	
River Network Entries	On site	A partially culverted drain is recorded on site, may be culverted along northern site boundary.	
	104m SE	Nor Beck	
	235m SW	Drain.	
Surface Water Features	Within 250m	5 surface water features within 250m.	
POLLUTION INCIDENTS ¹¹			
Pollutant	Receptor	Location	Date
None recorded within 250m of site.			
ENVIRONMENT AGENCY FLOOD RISK ¹²			
Description	Location	Details	
Zone 2	On site	The site is situated within a Zone 2 flood plain.	
Zone 3	On site	The site is situated within a Zone 3 flood plain.	
Risk of Flooding from Rivers and Sea	On site	Highest risk on site: High. Western half of site is predominantly low to medium risk.	

⁸ See Appendix 1⁹ See Appendix 1¹⁰ See Appendix 1¹¹ See Appendix 1¹² See Appendix 1



Historical Flood Events	On site	Date of flood: 5 th November 1999.
Flood Defences	-	None recorded within 250m.
Surface Water Flooding	On site	Highest risk on site: 1 in 1000 year, 0.3m to 1.0m.
Groundwater Flooding	On site	Highest risk on site: Low.

2.7 Sensitive Land Use

Table 6: Sensitive Land Uses within 250m

REGISTERED SENSITIVE LAND USES ¹³		
Description	Location	Details
None identified within 250m of the proposed development		

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 7: Potentially Contaminative Sources

HISTORICAL		
Land Use	Location	Classification / Comments
Historical construction	On site	Potential for made ground and substructures associated with historical construction and demolition activities on site.
Historical industrial land uses	On site	Collieries
	Within 250m	There are eighteen historical industrial land uses recorded within 250m of the site, these include unspecified heaps, iron works, iron and steel works, industrial estate, unspecified factories, unspecified ground workings, gravel pit, refuse heap and an unspecified disused pit. The nearest being unspecified heaps 5m north west of site.
Railway Land	On site	Historical mineral railway line and sidings recorded on site. A minimum of two separate periods of excavations and infilling are recorded to have occurred from historical maps during the past combined with recorded land filling.
	Within 250m	There are three historical railway land uses recorded within 250m of the site, the nearest being railway sidings 70m south west of site.
Tanks	Within 250m	There are three historical tanks recorded within 250m of site, the nearest being 142m east. Unlikely to affect the site.
Energy features	Within 250m	There are six historical electricity substations recorded within 250m of the site, the nearest being 42m E. Unlikely to affect the site.
Garages	Within 250m	There are three historical garages recorded within 250m of site, the nearest being 227m south east. Unlikely to affect the site.

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
Construction/demolition activity	On Site	During site walkover mounds of construction/demolition rubble was noted. Unknown heavily vegetated mounds were also observed on the site.
Electricity Substation	49m E	Energy features.
Agricultural Contractors	77m SE	Recent industrial land uses.

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

¹⁷This 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.



3.1 Conceptual Ground Model & Preliminary Qualitative Risk Assessment

It is understood that the development proposals currently comprise the development of eleven new residential dwellings with associated parking, gardens and soft 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.

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 8: 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.	High	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	Any on site sources of contamination could migrate to neighbouring properties.
	Neighbours	Yes – possible source on site and immediate neighbours are present.	Moderate	Further testing required to reach a firm conclusion.
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. Potential asbestos containing materials (ACM) observed during site walkover.
	End User	Yes – vapours may accumulate in enclosed spaces.	Moderate	Any on site sources of contamination could migrate to neighbouring properties. Construction activities may create dust on and off site, which, if contaminated, could adversely affect operatives, end users and neighbours.
	Neighbours	Yes – neighbouring properties present and possible inhalation of dust during the works.	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	No – no edible plants or contained water sources in the area of the proposed new works.	N/A	
	End User	Yes – soft landscaping and garden areas 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	Yes – residential dwellings present within 250m of the proposed development.	Moderate	



Migration of hazardous gases via permeable strata	Operative	Yes – possible off-site sources and potential source on site associated with historical construction, collieries and railway land use.	Moderate	Possible source on site and within 250m. A programme of monitoring is recommended but is suggested to be limited to 4 readings over one month in the first instance. If significant made ground considered capable of producing harmful gases is revealed during the investigation works, the monitoring regime may require reconsideration to take into account a higher potential risk.
	End User		Moderate	
	Neighbours		Low to Moderate	
Spillage/loss/run off direct to receiving water	Controlled Waters	Yes – Drain and culvert observed on south of site	High	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 Undifferentiated and Secondary A Aquifers beneath the site.	Moderate	Controlled waters on site and within 250m. Secondary Undifferentiated and Secondary A Aquifers underlie 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	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.
Direct contact with contaminated groundwater				
Migration of mine gas via permeable strata	Operative	Yes – in an area affected by coal mining activity, mine shaft and fault recorded on site.	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 property is in an area where underground mining in 4 coal seams between 38m and 161m depth and worked between 1870 and 1900 has occurred. A mine shaft is also recorded on site. Outcropping coal seams are recorded on the geological map.	Moderate	Please see section 4. For further information.
Unexploded Ordinance (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 majority of the site is underlain by Pennine Middle Coal Measures Formation strata with the Whitehaven Sandstone Formation recorded to underlain the south western part of site. The CA Consultants Coal Mining report indicates that the coal seams worked below the site dip at between 18.4° and 29.7° to the south and south west. The geological map does not record any dip indicators within the relevant fault block, however, the outcrop pattern suggests the shallow strata dip to the east.

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

Table 9: Summary of Coal Seams Within the Vicinity of the Site.

Seam Name	Seam thickness ^{5*}	Outcrop distance from site ^{5*}	Anticipated depth below site
Brassy Coal (BRSY)	Unknown	On site (south of site) 35m west (north of site)	Uncertain but anticipated at or close to surface level in the south of site and within 20m depth in the north of site.
Black Metal Coal (BMT)	Unknown	On site (north of site)	Uncertain but anticipated at or close to surface level in the north of site.

In this instance, whilst it is expected that the Brassy Coal and Black Metal Coal seams should be present at shallow depths beneath the site, it is difficult to accurately predict a depth of the Brassy Coal in the north of the site due to the scarcity of relevant shallow degree dip information, which could considerably alter the depth the seam is expected.

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 10: Development Specific Risk Assessment**

Item	Risk attributed to	Coal Seam(s) Considered	Risk Rating
4.3	Shallow coal workings	Brassy Coal (BRSY) Black Metal Coal (BMT)	Moderate
4.4	Coal workings at depth	Recorded past underground mining.	Low
4.5	Mine gas	Recorded coal workings and potential for shallow coal workings in addition to the presence of mine shaft and fault recorded on site.	Moderate
4.6	Mine shafts	Two shafts identified by the Consultant Coal Mining Report, one indicated to be on site.	High
		Potential for unrecorded mine entries associated with outcropping coal seams.	Moderate

4.3 Risks Posed by Shallow Coal Workings

On the basis of all of the information provided above, the Brassy Coal and Black Metal Coal seams could be present within 30m of the surface at the site. Whilst the thickness of the seams is uncertain, the possibility of the seams being worked below the site cannot be ruled out. Historic coal and ironstone mining activity is evident in the nearby area, and therefore it is considered that if coal was known to be close to ground level it could have been removed illicitly via shallow mining methods with relative ease.

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 in order that the collapse of workings would pose a low risk to surface structures.

Due to the uncertainty around the depth and thickness of the coal seams, it is possible that there may not be a sufficient thickness of competent overburden above them in order to prevent the risk of instability posed by the presence of any illicit workings. Therefore, a moderate risk rating has been assigned to the Brassy Coal and Black Metal Coal seams, and further investigation is recommended to prove or disprove the presence of illicit mining activity.

4.4 Risks Posed by Coal Workings at Depth

In regard to deeper mining which could affect the site, the workings recorded in the Brick (Bannock) Coal are considered too deep to affect surface stability at the site. As such, a low risk rating has been assigned. However, this may require re-assessment if shallow workings are encountered above the Brick (Bannock) Coal.

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 Consultants 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. The risk assessment should take into consideration the current site conditions, and should be subject to reassessment after the formulation and/or completion of any remedial measures and proposed foundation solution. These documents should be prepared by a suitably experienced and qualified specialist.

4.6 Risks Posed by Mine Shafts

The Consultants Mining Report records one shaft on site (ref: 301515-002) and a second shaft approximately 18m south (ref: 301515-002) and the Coal Authority online interactive map indicates a departure of 8m and a diameter of 2m for both shafts. No treatment details are available for these shafts.

In the context of the guidance given by CIRIA SP32 – *Construction over abandoned mine workings* it should be appreciated that the minimum distance for siting structures from open or poorly filled shafts depends primarily on the nature and thickness of the surface deposits. This would presumably be on the basis that a significant ground collapse within intact rock would be improbable, therefore the crater associated with a collapse shaft would be located within the soils above the rock. The zone of influence (ZOI) of a shaft, (i.e. the area of in which a shaft could be located, and inclusive of the crater associated with a collapse), is calculated by taking into consideration the depth to rockhead, plus the diameter of the shaft, plus the departure of the shaft. The departure being the uncertainty in the precise location of the shaft. Therefore, assuming a depth to rock of 10m (conservative estimate) the ZOI for both shafts is 20m.

Based on the above, the ZOI of the recorded shaft on site intersects does not intersect the footprint of any proposed structures. However, it should be noted that the actual location of the shaft and the depth to rockhead will require confirmation and re-assessment of the risk level may be required. As such, the risk is considered low to moderate and works to locate the shaft and prove the depth to rock are recommended.

It should be appreciated that as the site is in an area of historical mining (pre-1876) and particularly as there are potentially shallow unrecorded workings indicated in the CA report, there will be a moderate risk of unrecorded mine entries of exploratory shafts. In order to mitigate this risk, any anomalously deep made ground encountered during future ground investigations would be suspect and should be investigated further. All excavations to natural ground completed during the development of the site should be inspected for anomalous made ground that could represent unrecorded mine entries and if encountered should be investigated accordingly under CA licence.



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 +A1:2013 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 +A1: 2013 *Investigation of potentially contaminated sites – Code of practice*: 7.6, and BS 5930: 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: +A1: 2013: 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 0.52ha, the number of sampling points at the site should be considered with respect to the table below.

Table 11: Summary of Sampling Strategy					
NUMBER OF SAMPLING POINTS					
	Soil	Water / Leachate	Asbestos	Standpipes	Standpipe Readings
Exploratory Investigation 50m x 50m grid	3	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	In addition to the above the bund observed along the northern boundary, likely representative of the former railway embankment, should be targeted for specific soils and asbestos sampling.				

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 in the first instance, i.e. at least three sampling points, if it is anticipated that made ground is significant across the site. However, if the made ground at the site is thought to be localised to specific areas, then the traditional testing may be required. It should be possible to carry out the above work with a windowless sampling drilling rig. A mechanical excavator should be utilised to expose the material that forms the bund along the northern boundary and a targeted sampling regime should be undertaken.



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 12: 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 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

It is anticipated that a windowless sampling drilling rig will be able to gain sufficient data in regard to the near surface soils. Such equipment should be able to undertake Standard Penetration Testing (SPT) and/or Dynamic Probing. However, should significant thickness of fill be revealed (associated with historic colliery landfill activities) deeper boreholes may be needed for sufficient foundation design. This could include a combination of cable percussive and rotary drilling techniques.

Soakaway Design

Should soakaway data be required for drainage design, trial pits could be excavated and infiltration tests conducted. Alternatively, these tests could be undertaken within boreholes. It should be appreciated however, should significant thicknesses of fill or contamination be revealed, then soakaways may be deemed to be an inappropriate form of surface water drainage.

Geotechnical Testing

An allowance for geotechnical testing of the soils and rock should be included in any ground investigation. Selected samples should be targeted adjacent to areas where high water demand trees such as beech and willow, which have been observed on the site during the walkover. Such trees may introduce an increased risk of desiccation of cohesive deposits.

Coal Mining Risk Assessment

The property is in an area where the Coal Authority believe there is coal at or close to the surface. This coal may have been worked at some time in the past. Further investigation is strongly recommended in order to prove or disprove the presence of illicit mining activity and to assess the thickness of competent overburden.

General practice is to undertake rotary openhole boreholes at three locations across the site to mitigate against the potential for drilling through intact columns associated with pillar and stall workings. Furthermore, it is normal to investigate the ground to 30m below ground level; any workings below this depth are unlikely to result in significant instability. However, in this case, the risk of instability is due to shallow workings, therefore, drilling to these depths may not be necessary and the objective should be to ensure that the shallow seams are un-worked or have sufficient competent cover. It may therefore be possible, in the first instance, to undertake one borehole to 30m below the top of the rockhead, with the remaining boreholes proving the depth and continuity of the coal seam(s). In any event, it is considered that approval should be sought with the Local Authority as to the efficacy of this approach.

In addition, it is recommended that a trial trenching investigation is undertaken to locate the recorded mine shaft.



5.2.3 Reporting

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

- o Geotechnical recommendations.
- o Contamination assessment.
- o Contamination remediation strategy.
- o Any recommendations for further work, if required and including validation reports where site remediation is necessary.
- o Report on the presence on coal Workings.

As soon is as practicable, and prior to the above, this Phase 1 report should be forwarded to the relevant authorities, in order to ensure they have sufficient time to review and discuss any issues.

6. References

- British Standards Institution (2015 + A1: 2020), BS 5930: *Code of practice for ground investigations*, B.S.I., London.
- British Standards Institution (2011) +A1:2013, 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

ST BEGAS CHAPEL SITE, CROSSINGS CLOSE, CLEATOR MOOR, CA25 5QH

Order Details

Date: 06/07/2022
Your ref: C2064_21_E_3181_PO-2228
Our Ref: GS-8882839

Site Details

Location: 301088 515511
Area: 0.52 ha
Authority: [Copeland Borough Council](#)



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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>	3	6	36	78	-
19	1.2	<u>Historical tanks</u>	0	0	3	19	-
20	1.3	<u>Historical energy features</u>	0	6	0	18	-
21	1.4	Historical petrol stations	0	0	0	0	-
22	1.5	<u>Historical garages</u>	0	0	3	0	-
22	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
23	2.1	<u>Historical industrial land uses</u>	3	9	47	99	-
29	2.2	<u>Historical tanks</u>	0	0	9	23	-
31	2.3	<u>Historical energy features</u>	0	6	0	52	-
33	2.4	Historical petrol stations	0	0	0	0	-
33	2.5	<u>Historical garages</u>	0	0	9	1	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
35	3.1	Active or recent landfill	0	0	0	0	-
35	3.2	Historical landfill (BGS records)	0	0	0	0	-
36	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
36	3.4	<u>Historical landfill (EA/NRW records)</u>	1	0	1	1	-
37	3.5	Historical waste sites	0	0	0	0	-
37	3.6	Licensed waste sites	0	0	0	0	-
37	3.7	<u>Waste exemptions</u>	0	0	0	28	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
41	4.1	<u>Recent industrial land uses</u>	0	1	1	-	-
42	4.2	<u>Current or recent petrol stations</u>	0	0	0	1	-
42	4.3	Electricity cables	0	0	0	0	-
42	4.4	Gas pipelines	0	0	0	0	-
42	4.5	Sites determined as Contaminated Land	0	0	0	0	-



42	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
43	4.7	Regulated explosive sites	0	0	0	0	-
43	4.8	Hazardous substance storage/usage	0	0	0	0	-
43	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
43	4.10	<u>Licensed industrial activities (Part A(1))</u>	0	0	0	2	-
44	4.11	<u>Licensed pollutant release (Part A(2)/B)</u>	0	0	0	1	-
44	4.12	Radioactive Substance Authorisations	0	0	0	0	-
44	4.13	<u>Licensed Discharges to controlled waters</u>	0	0	8	1	-
46	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
46	4.15	Pollutant release to public sewer	0	0	0	0	-
46	4.16	List 1 Dangerous Substances	0	0	0	0	-
47	4.17	List 2 Dangerous Substances	0	0	0	0	-
47	4.18	<u>Pollution Incidents (EA/NRW)</u>	0	0	0	3	-
47	4.19	Pollution inventory substances	0	0	0	0	-
48	4.20	Pollution inventory waste transfers	0	0	0	0	-
48	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
49	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
51	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
53	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
54	5.4	<u>Groundwater vulnerability- soluble rock risk</u>	Identified (within 0m)				
54	5.5	Groundwater vulnerability- local information	None (within 0m)				
55	5.6	<u>Groundwater abstractions</u>	0	0	0	0	2
56	5.7	<u>Surface water abstractions</u>	0	0	0	0	4
57	5.8	Potable abstractions	0	0	0	0	0
58	5.9	Source Protection Zones	0	0	0	0	-
58	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
59	6.1	<u>Water Network (OS MasterMap)</u>	2	3	6	-	-



60	<u>6.2</u>	<u>Surface water features</u>	1	0	4	-	-
61	<u>6.3</u>	<u>WFD Surface water body catchments</u>	1	-	-	-	-
61	<u>6.4</u>	<u>WFD Surface water bodies</u>	0	0	0	-	-
61	<u>6.5</u>	<u>WFD Groundwater bodies</u>	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
63	<u>7.1</u>	<u>Risk of flooding from rivers and the sea</u>	High (within 50m)				
64	<u>7.2</u>	<u>Historical Flood Events</u>	1	3	1	-	-
64	7.3	Flood Defences	0	0	0	-	-
65	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
65	7.5	Flood Storage Areas	0	0	0	-	-
66	<u>7.6</u>	<u>Flood Zone 2</u>	Identified (within 50m)				
67	<u>7.7</u>	<u>Flood Zone 3</u>	Identified (within 50m)				
Page	Section	Surface water flooding					
68	<u>8.1</u>	<u>Surface water flooding</u>	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	Groundwater flooding					
70	<u>9.1</u>	<u>Groundwater flooding</u>	Low (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
71	<u>10.1</u>	<u>Sites of Special Scientific Interest (SSSI)</u>	0	0	0	0	1
72	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
72	<u>10.3</u>	<u>Special Areas of Conservation (SAC)</u>	0	0	0	0	1
72	10.4	Special Protection Areas (SPA)	0	0	0	0	0
73	10.5	National Nature Reserves (NNR)	0	0	0	0	0
73	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
73	<u>10.7</u>	<u>Designated Ancient Woodland</u>	0	0	0	0	1
73	10.8	Biosphere Reserves	0	0	0	0	0
74	10.9	Forest Parks	0	0	0	0	0
74	10.10	Marine Conservation Zones	0	0	0	0	0
74	10.11	Green Belt	0	0	0	0	0
74	10.12	Proposed Ramsar sites	0	0	0	0	0



74	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
75	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
75	10.15	Nitrate Sensitive Areas	0	0	0	0	0
75	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
76	<u>10.17</u>	<u>SSSI Impact Risk Zones</u>	1	-	-	-	-
77	<u>10.18</u>	<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
79	11.1	World Heritage Sites	0	0	0	-	-
79	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
79	11.3	National Parks	0	0	0	-	-
79	11.4	Listed Buildings	0	0	0	-	-
80	11.5	Conservation Areas	0	0	0	-	-
80	11.6	Scheduled Ancient Monuments	0	0	0	-	-
80	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
81	<u>12.1</u>	<u>Agricultural Land Classification</u>	Grade 3 (within 250m)				
82	12.2	Open Access Land	0	0	0	-	-
82	12.3	Tree Felling Licences	0	0	0	-	-
82	<u>12.4</u>	<u>Environmental Stewardship Schemes</u>	1	0	0	-	-
82	<u>12.5</u>	<u>Countryside Stewardship Schemes</u>	1	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
84	<u>13.1</u>	<u>Priority Habitat Inventory</u>	0	1	4	-	-
85	<u>13.2</u>	<u>Habitat Networks</u>	0	1	0	-	-
85	13.3	Open Mosaic Habitat	0	0	0	-	-
85	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
86	<u>14.1</u>	<u>10k Availability</u>	Identified (within 500m)				
87	14.2	Artificial and made ground (10k)	0	0	0	0	-
88	14.3	Superficial geology (10k)	0	0	0	0	-

88	14.4	Landslip (10k)	0	0	0	0	-
89	14.5	Bedrock geology (10k)	0	0	0	0	-
89	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
90	15.1	<u>50k Availability</u>	Identified (within 500m)				
91	15.2	<u>Artificial and made ground (50k)</u>	0	0	2	1	-
92	15.3	Artificial ground permeability (50k)	0	0	-	-	-
93	15.4	<u>Superficial geology (50k)</u>	1	0	2	1	-
94	15.5	<u>Superficial permeability (50k)</u>	Identified (within 50m)				
94	15.6	Landslip (50k)	0	0	0	0	-
94	15.7	Landslip permeability (50k)	None (within 50m)				
95	15.8	<u>Bedrock geology (50k)</u>	2	1	2	7	-
96	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
96	15.10	<u>Bedrock faults and other linear features (50k)</u>	3	1	8	8	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
98	16.1	<u>BGS Boreholes</u>	0	1	6	-	-
Page	Section	Natural ground subsidence					
100	17.1	<u>Shrink swell clays</u>	Very low (within 50m)				
101	17.2	<u>Running sands</u>	Very low (within 50m)				
102	17.3	<u>Compressible deposits</u>	Negligible (within 50m)				
103	17.4	<u>Collapsible deposits</u>	Very low (within 50m)				
104	17.5	<u>Landslides</u>	Very low (within 50m)				
105	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
107	18.1	Natural cavities	0	0	0	0	-
108	18.2	<u>BritPits</u>	0	2	1	4	-
109	18.3	<u>Surface ground workings</u>	1	7	26	-	-
111	18.4	<u>Underground workings</u>	1	0	0	10	25
112	18.5	Historical Mineral Planning Areas	0	0	0	0	-



<u>113</u>	<u>18.6</u>	<u>Non-coal mining</u>	2	1	2	7	11
<u>115</u>	<u>18.7</u>	<u>Mining cavities</u>	0	0	0	1	5
116	18.8	JPB mining areas	None (within 0m)				
<u>116</u>	<u>18.9</u>	<u>Coal mining</u>	Identified (within 0m)				
116	18.10	Brine areas	None (within 0m)				
117	18.11	Gypsum areas	None (within 0m)				
117	18.12	Tin mining	None (within 0m)				
117	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
<u>118</u>	<u>19.1</u>	<u>Radon</u>	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
<u>119</u>	<u>20.1</u>	<u>BGS Estimated Background Soil Chemistry</u>	4	5	-	-	-
120	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
120	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
121	21.1	Underground railways (London)	0	0	0	-	-
121	21.2	Underground railways (Non-London)	0	0	0	-	-
122	21.3	Railway tunnels	0	0	0	-	-
<u>122</u>	<u>21.4</u>	<u>Historical railway and tunnel features</u>	5	1	12	-	-
123	21.5	Royal Mail tunnels	0	0	0	-	-
<u>123</u>	<u>21.6</u>	<u>Historical railways</u>	0	0	2	-	-
123	21.7	Railways	0	0	0	-	-
124	21.8	Crossrail 1	0	0	0	0	-
124	21.9	Crossrail 2	0	0	0	0	-
124	21.10	HS2	0	0	0	0	-



Recent aerial photograph



Capture Date: 10/10/2018

Site Area: 0.52ha



Recent site history - 2016 aerial photograph



Capture Date: 16/08/2016

Site Area: 0.52ha



Recent site history - 2008 aerial photograph



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Capture Date: 05/10/2008

Site Area: 0.52ha



Recent site history - 2000 aerial photograph



Capture Date: 16/06/2000

Site Area: 0.52ha



Recent site history - 1999 aerial photograph



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Capture Date: 26/07/1999

Site Area: 0.52ha



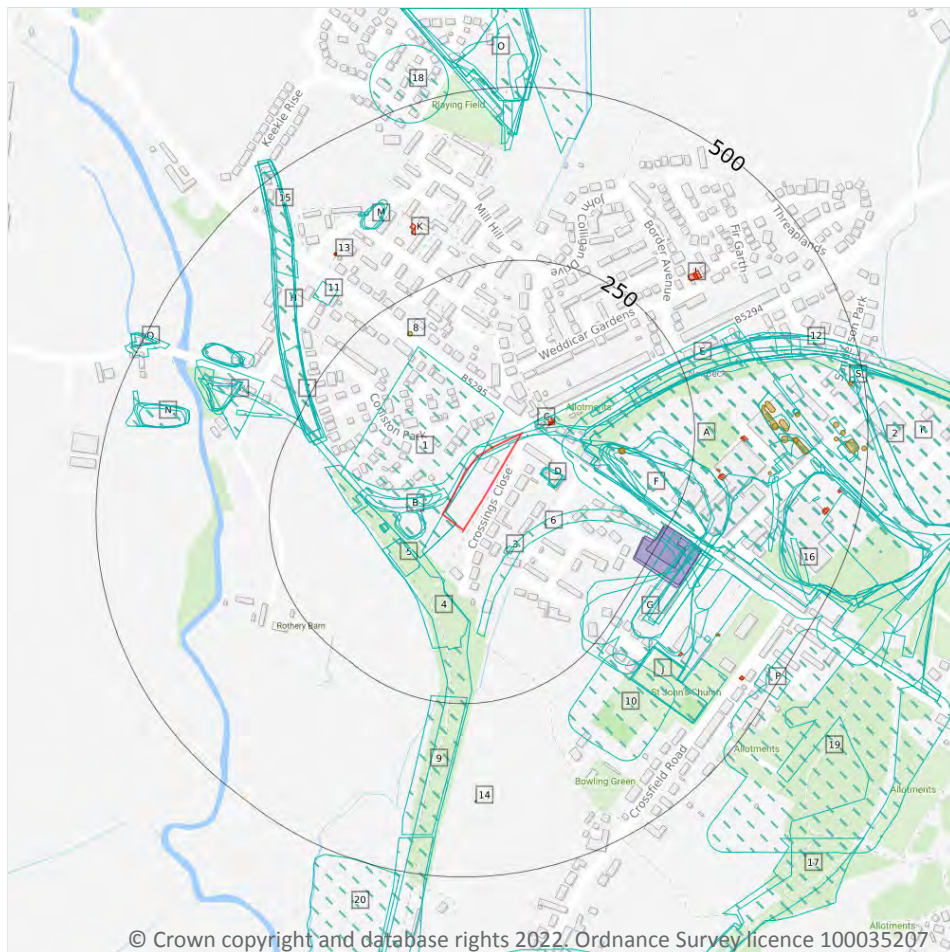
OS MasterMap site plan



Site Area: 0.52ha



1 Past land use



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

1.1 Historical industrial land uses

Records within 500m

123

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

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

ID	Location	Land use	Dates present	Group ID
1	On site	Collieries	1863	553179



ID	Location	Land use	Dates present	Group ID
2	On site	Mineral Railway Sidings	1926	637602
A	On site	Railway Sidings	1863 - 1898	609946
B	5m NW	Unspecified Heaps	1969	555724
B	15m NW	Unspecified Heap	1951	610964
C	23m NE	Railway Building	1926	557777
B	25m NW	Unspecified Heap	1863	631243
A	25m NE	Iron Works	1863	608683
B	29m W	Unspecified Heap	1898 - 1938	617494
D	53m SE	Railway Station	1938 - 1951	605430
D	53m SE	Railway Station	1898	633829
D	54m SE	Railway Station	1926	616344
A	61m E	Iron Works	1951	622547
3	65m SE	Railway Building	1926 - 1951	634208
4	70m SW	Railway Sidings	1938 - 1951	589868
5	70m SW	Cuttings	1938 - 1951	595269
6	71m SE	Mineral Railway Sidings	1898	620005
B	80m W	Goods Shed	1926	617383
B	81m W	Goods Shed	1898	615894
B	81m W	Goods Shed	1938	629722
A	85m E	Iron and Steel Works	1898	552167
A	85m E	Railway Sidings	1938	590488
A	85m E	Iron Works	1926 - 1938	591089
A	93m E	Industrial Estate	1993	557731
A	93m E	Unspecified Factories	1969	588148
E	103m E	Unspecified Ground Workings	1951	581283
B	109m W	Railway Station	1898 - 1938	595819
F	115m E	Gravel Pit	1951	570616
F	116m E	Refuse Heap	1938	626648



ID	Location	Land use	Dates present	Group ID
F	121m E	Refuse Heap	1926	591112
F	125m E	Unspecified Heap	1898	561701
F	129m E	Unspecified Ground Workings	1969	581280
E	166m E	Cuttings	1969	597016
E	166m E	Cuttings	1993	632133
E	174m NE	Cuttings	1898	608076
E	174m NE	Cuttings	1926 - 1938	624056
7	198m NW	Cuttings	1993	625087
G	200m SE	Refuse Heap	1969	630692
H	204m NW	Cuttings	1926	601499
H	207m NW	Cuttings	1969	625181
H	207m NW	Cuttings	1951	635039
G	208m SE	Unspecified Disused Pit	1951	548666
H	215m NW	Cuttings	1938	590811
H	215m NW	Cuttings	1898	611074
9	241m S	Railway Sidings	1951	586554
G	260m SE	Unspecified Pit	1938	605573
G	274m SE	Refuse Heap	1926	634285
G	275m SE	Refuse Heap	1938	607688
10	276m SE	Cemetery	1951	553690
G	287m SE	Railway Sidings	1951	597104
11	307m NW	Smithy	1898	580585
I	314m NW	Collieries	1863	553178
J	320m SE	Grave Yard	1938	627134
J	320m SE	Grave Yard	1898	635290
J	323m SE	Grave Yard	1926	630800
I	342m NW	Unspecified Heap	1863	600352
A	343m E	Unspecified Tanks	1926 - 1938	617920



ID	Location	Land use	Dates present	Group ID
I	344m NW	Unspecified Heap	1926	600337
I	345m NW	Unspecified Heap	1898	591401
I	345m NW	Unspecified Heap	1938	626020
I	347m NW	Unspecified Heap	1969	619674
J	348m SE	Unspecified Pit	1898	595877
I	350m NW	Unspecified Heap	1951	611914
12	353m E	Railway Sidings	1898	586556
A	355m E	Unspecified Tanks	1898 - 1926	619542
I	357m NW	Unspecified Heap	1926	594242
I	357m NW	Unspecified Heap	1938	608196
I	357m NW	Unspecified Heap	1898	623908
M	358m NW	Unspecified Heap	1863 - 1898	626797
M	359m NW	Unspecified Heap	1926	606841
I	361m NW	Unspecified Heap	1969	607046
I	361m NW	Unspecified Heap	1951	636768
M	361m NW	Unspecified Heap	1938 - 1951	623332
H	365m NW	Cuttings	1993	611581
A	368m E	Unspecified Ground Workings	1951	581277
A	371m E	Unspecified Tanks	1898 - 1926	632600
J	377m SE	Unspecified Pit	1926	607053
M	380m NW	Old Coal Shaft	1863	548070
M	382m NW	Unspecified Old Shaft	1898 - 1938	612982
M	383m NW	Unspecified Old Shaft	1951	621938
N	390m W	Refuse Heap	1938	591704
N	390m W	Refuse Heap	1926	609290
A	393m E	Unspecified Tank	1898	597100
A	393m E	Unspecified Tank	1938	632144
N	394m W	Unspecified Ground Workings	1969	581282



ID	Location	Land use	Dates present	Group ID
A	394m E	Gravel Pit	1951	570615
N	394m W	Refuse Heap	1951	605424
A	394m E	Unspecified Tank	1926	617542
A	396m E	Refuse Heap	1926	631474
A	399m E	Refuse Heap	1938	602978
A	399m E	Unspecified Heap	1863 - 1898	606602
O	409m N	Disused Colliery	1951	598015
O	409m N	Unspecified Disused Mine	1969	632161
15	409m NW	Cuttings	1993	602605
16	417m E	Refuse Heap	1863	594555
A	419m E	Unspecified Ground Workings	1951	581276
A	431m E	Lime Kilns	1863	553350
O	431m N	Coal Pit	1863	552018
O	432m N	Disused Unspecified Mine	1993	613629
O	435m N	Railway Sidings	1863 - 1898	589721
A	444m E	Unspecified Tanks	1898	570304
17	444m S	Railway Sidings	1948	593036
A	456m E	Refuse Heap	1938	604326
A	457m E	Refuse Heap	1926	623094
A	457m E	Unspecified Tanks	1898	570306
Q	463m NW	Corn Mill	1863	590391
R	470m E	Refuse Heap	1938	592539
P	473m SE	Unspecified Depot	1993	554063
18	473m N	Unspecified Disused Pit	1951	548676
19	474m SE	Unspecified Commercial/Industrial	1951	576973
O	479m N	Unspecified Disused Pit	1926	604170
O	479m N	Unspecified Disused Pit	1938	604043
S	480m E	Unspecified Tank	1926	550986



ID	Location	Land use	Dates present	Group ID
S	480m E	Unspecified Tanks	1938	570307
O	481m N	Disused Colliery	1898	609357
Q	481m NW	Corn Mill	1938	611215
Q	481m NW	Corn Mill	1898	624388
Q	481m NW	Corn Mill	1926	606254
O	483m N	Unspecified Ground Workings	1969 - 1993	622245
R	486m E	Refuse Heap	1926	602113
R	487m E	Gravel Pit	1951	570617
O	493m N	Unspecified Heap	1951	614835
20	499m S	Sewage Works	1938	615326

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

22

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
F	142m E	Unspecified Tank	1982 - 1997	77185
F	143m E	Unspecified Tank	1987	77107
8	198m NW	Unspecified Tank	1925	72880
A	286m E	Unspecified Tank	1899 - 1925	76891
A	348m E	Tanks	1925	74972
A	354m E	Tanks	1925	74976
A	361m E	Unspecified Tank	1863	72871
A	362m E	Unspecified Tank	1899	72894



ID	Location	Land use	Dates present	Group ID
A	372m E	Tanks	1899 - 1925	77753
A	375m E	Unspecified Tank	1899 - 1925	77614
J	389m SE	Unspecified Tank	1925	76981
14	390m S	Tank or Trough	1863	75503
A	392m E	Tanks	1925	74970
J	392m SE	Unspecified Tank	1899	77049
A	393m E	Unspecified Tank	1899	72872
A	396m E	Unspecified Tank	1899 - 1925	77239
A	450m E	Unspecified Tank	1899	72895
A	451m E	Unspecified Tank	1899	72897
A	460m E	Unspecified Tank	1899	72896
A	468m E	Tanks	1899	74971
S	477m E	Unspecified Tank	1925	72892
A	492m E	Unspecified Tank	1899	72909

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

24

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'.

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

ID	Location	Land use	Dates present	Group ID
C	42m E	Electricity Substation	1997	42720
C	42m E	Electricity Substation	1996	42986
C	42m E	Electricity Substation	1995	43198
C	42m E	Electricity Substation	1995	43646



ID	Location	Land use	Dates present	Group ID
C	42m NE	Electricity Substation	1987	43191
C	43m NE	Electricity Substation	1991	43340
A	291m E	Electricity Substation	1982 - 1997	43234
A	293m E	Electricity Substation	1987	42984
A	316m E	Electricity Substation	1982 - 1997	42882
A	319m E	Electricity Substation	1987	43632
K	324m NW	Electricity Substation	1992	42079
L	329m NE	Electricity Substation	1982 - 1985	42650
K	333m NW	Electricity Substation	1987	42078
L	337m NE	Electricity Substation	1987	42755
L	337m NE	Electricity Substation	1969	43729
L	340m NE	Electricity Substation	1995 - 1997	43540
13	355m NW	Gas Governor	1987 - 1992	43111
J	359m SE	Electricity Substation	1995 - 1997	42921
A	448m E	Electricity Substation	1982 - 1997	43253
A	450m E	Electricity Substation	1987	43481
P	450m SE	Electricity Substation	1995 - 1997	42879
P	451m SE	Electricity Substation	1987 - 1991	43298
A	464m E	Electricity Substation	1995 - 1997	42935
A	465m E	Electricity Substation	1987 - 1991	43148

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

3

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'.

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

ID	Location	Land use	Dates present	Group ID
G	227m SE	Garage	1982 - 1997	14053
G	228m SE	Garage	1987	13928
G	240m SE	Garage	1961 - 1969	14192

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

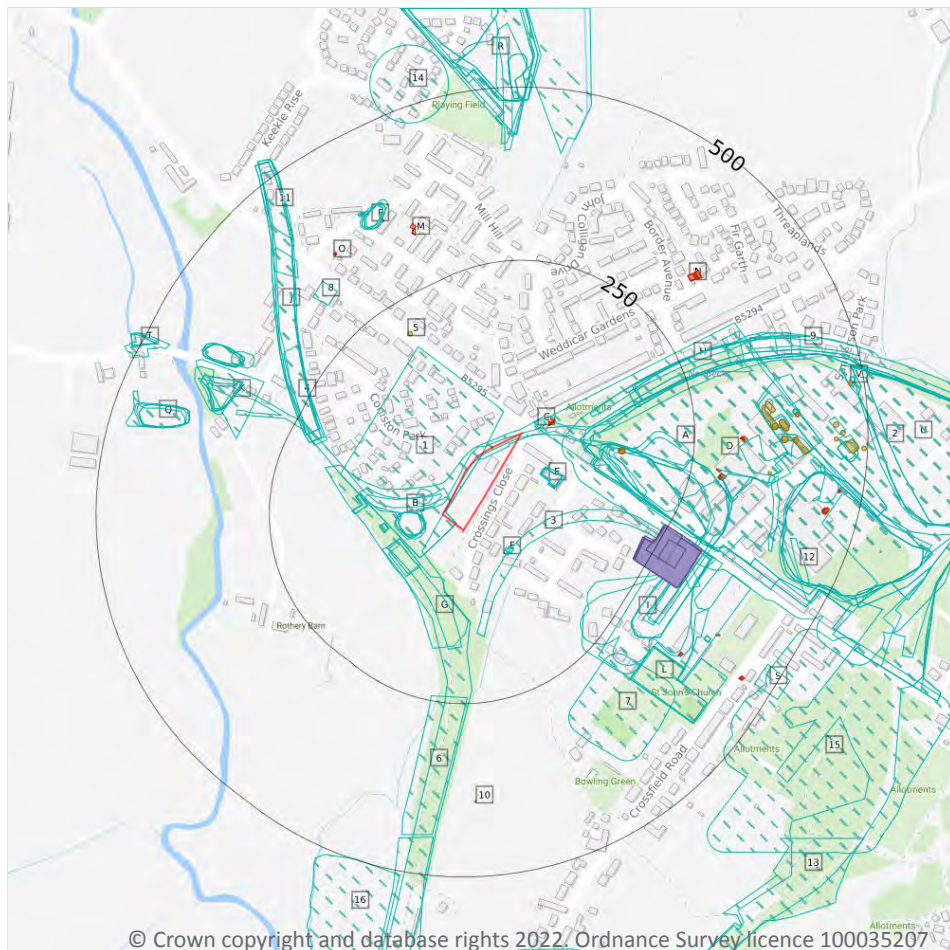
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Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

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



2 Past land use - un-grouped



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

2.1 Historical industrial land uses

Records within 500m

158

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 23**

ID	Location	Land Use	Date	Group ID
1	On site	Collieries	1863	553179
2	On site	Mineral Railway Sidings	1926	637602
A	On site	Railway Sidings	1863	609946



ID	Location	Land Use	Date	Group ID
B	5m NW	Unspecified Heaps	1969	555724
B	15m NW	Unspecified Heap	1951	610964
C	23m NE	Railway Building	1926	557777
B	25m NW	Unspecified Heap	1863	631243
D	25m NE	Iron Works	1863	608683
B	29m W	Unspecified Heap	1926	617494
B	29m W	Unspecified Heap	1926	617494
B	29m W	Unspecified Heap	1938	617494
B	29m W	Unspecified Heap	1898	617494
E	53m SE	Railway Station	1951	605430
E	53m SE	Railway Station	1938	605430
E	53m SE	Railway Station	1898	633829
E	54m SE	Railway Station	1926	616344
D	61m E	Iron Works	1951	622547
F	65m SE	Railway Building	1951	634208
F	68m SE	Railway Building	1938	634208
F	68m SE	Railway Building	1926	634208
B	70m SW	Cuttings	1938	595269
G	70m SW	Railway Sidings	1938	589868
3	71m SE	Mineral Railway Sidings	1898	620005
B	75m SW	Cuttings	1951	595269
G	75m SW	Railway Sidings	1951	589868
B	80m W	Goods Shed	1926	617383
B	81m W	Goods Shed	1938	629722
B	81m W	Goods Shed	1898	615894
D	85m E	Railway Sidings	1938	590488
D	85m E	Iron Works	1938	591089
D	85m E	Iron and Steel Works	1898	552167



ID	Location	Land Use	Date	Group ID
D	90m E	Iron Works	1926	591089
D	93m E	Unspecified Factories	1969	588148
D	93m E	Industrial Estate	1993	557731
H	103m E	Unspecified Ground Workings	1951	581283
D	104m E	Railway Sidings	1898	609946
B	109m W	Railway Station	1926	595819
B	109m W	Railway Station	1938	595819
B	109m W	Railway Station	1898	595819
A	115m E	Gravel Pit	1951	570616
A	116m E	Refuse Heap	1938	626648
A	121m E	Refuse Heap	1926	591112
A	121m E	Refuse Heap	1926	591112
A	125m E	Unspecified Heap	1898	561701
A	129m E	Unspecified Ground Workings	1969	581280
H	166m E	Cuttings	1969	597016
H	166m E	Cuttings	1993	632133
H	174m NE	Cuttings	1938	624056
H	174m NE	Cuttings	1898	608076
H	178m NE	Cuttings	1926	624056
4	198m NW	Cuttings	1993	625087
I	200m SE	Refuse Heap	1969	630692
J	204m NW	Cuttings	1926	601499
J	207m NW	Cuttings	1951	635039
J	207m NW	Cuttings	1969	625181
I	208m SE	Unspecified Disused Pit	1951	548666
J	215m NW	Cuttings	1938	590811
J	215m NW	Cuttings	1898	611074
6	241m S	Railway Sidings	1951	586554

ID	Location	Land Use	Date	Group ID
I	260m SE	Unspecified Pit	1938	605573
I	274m SE	Refuse Heap	1926	634285
I	274m SE	Refuse Heap	1926	634285
I	275m SE	Refuse Heap	1938	607688
7	276m SE	Cemetery	1951	553690
I	287m SE	Railway Sidings	1951	597104
8	307m NW	Smithy	1898	580585
K	314m NW	Collieries	1863	553178
L	320m SE	Grave Yard	1938	627134
L	320m SE	Grave Yard	1898	635290
L	323m SE	Grave Yard	1926	630800
K	342m NW	Unspecified Heap	1863	600352
D	343m E	Unspecified Tanks	1938	617920
K	344m NW	Unspecified Heap	1926	600337
K	344m NW	Unspecified Heap	1926	600337
K	345m NW	Unspecified Heap	1938	626020
K	345m NW	Unspecified Heap	1898	591401
K	347m NW	Unspecified Heap	1969	619674
L	348m SE	Unspecified Pit	1898	595877
K	350m NW	Unspecified Heap	1951	611914
D	352m E	Unspecified Tanks	1926	617920
9	353m E	Railway Sidings	1898	586556
D	355m E	Unspecified Tanks	1898	619542
K	357m NW	Unspecified Heap	1938	608196
K	357m NW	Unspecified Heap	1898	623908
K	357m NW	Unspecified Heap	1926	594242
K	357m NW	Unspecified Heap	1926	594242
P	358m NW	Unspecified Heap	1863	626797



ID	Location	Land Use	Date	Group ID
P	359m NW	Unspecified Heap	1926	606841
P	359m NW	Unspecified Heap	1926	606841
K	361m NW	Unspecified Heap	1951	636768
K	361m NW	Unspecified Heap	1969	607046
P	361m NW	Unspecified Heap	1951	623332
D	362m E	Unspecified Tanks	1926	619542
P	363m NW	Unspecified Heap	1938	623332
P	363m NW	Unspecified Heap	1898	626797
J	365m NW	Cuttings	1993	611581
D	368m E	Unspecified Ground Workings	1951	581277
D	371m E	Unspecified Tanks	1898	632600
D	375m E	Unspecified Tanks	1926	632600
L	377m SE	Unspecified Pit	1926	607053
L	377m SE	Unspecified Pit	1926	607053
P	380m NW	Old Coal Shaft	1863	548070
P	382m NW	Unspecified Old Shaft	1938	612982
P	382m NW	Unspecified Old Shaft	1898	612982
P	383m NW	Unspecified Old Shaft	1926	612982
P	383m NW	Unspecified Old Shaft	1926	612982
P	383m NW	Unspecified Old Shaft	1951	621938
Q	390m W	Refuse Heap	1938	591704
Q	390m W	Refuse Heap	1926	609290
Q	390m W	Refuse Heap	1926	609290
D	393m E	Unspecified Tank	1938	632144
D	393m E	Unspecified Tank	1898	597100
Q	394m W	Unspecified Ground Workings	1969	581282
D	394m E	Gravel Pit	1951	570615
Q	394m W	Refuse Heap	1951	605424

ID	Location	Land Use	Date	Group ID
D	394m E	Unspecified Tank	1926	617542
D	396m E	Refuse Heap	1926	631474
D	396m E	Refuse Heap	1926	631474
D	399m E	Refuse Heap	1938	602978
D	399m E	Unspecified Heap	1898	606602
R	409m N	Disused Colliery	1951	598015
R	409m N	Unspecified Disused Mine	1969	632161
11	409m NW	Cuttings	1993	602605
12	417m E	Refuse Heap	1863	594555
D	419m E	Unspecified Ground Workings	1951	581276
D	431m E	Lime Kilns	1863	553350
R	431m N	Coal Pit	1863	552018
R	432m N	Disused Unspecified Mine	1993	613629
D	434m E	Unspecified Heap	1863	606602
R	435m N	Railway Sidings	1863	589721
D	444m E	Unspecified Tanks	1898	570304
13	444m S	Railway Sidings	1948	593036
D	456m E	Refuse Heap	1938	604326
D	457m E	Refuse Heap	1926	623094
D	457m E	Refuse Heap	1926	623094
D	457m E	Unspecified Tanks	1898	570306
T	463m NW	Corn Mill	1863	590391
U	470m E	Refuse Heap	1938	592539
S	473m SE	Unspecified Depot	1993	554063
14	473m N	Unspecified Disused Pit	1951	548676
15	474m SE	Unspecified Commercial/Industrial	1951	576973
R	479m N	Unspecified Disused Pit	1926	604170
R	479m N	Unspecified Disused Pit	1938	604043



ID	Location	Land Use	Date	Group ID
R	479m N	Unspecified Disused Pit	1938	604043
V	480m E	Unspecified Tank	1926	550986
V	480m E	Unspecified Tanks	1938	570307
R	481m N	Disused Colliery	1898	609357
R	481m N	Railway Sidings	1898	589721
T	481m NW	Corn Mill	1938	611215
T	481m NW	Corn Mill	1898	624388
T	481m NW	Corn Mill	1926	606254
R	483m N	Unspecified Ground Workings	1969	622245
R	483m N	Unspecified Ground Workings	1993	622245
U	486m E	Refuse Heap	1926	602113
U	486m E	Refuse Heap	1926	602113
U	487m E	Gravel Pit	1951	570617
R	493m N	Unspecified Heap	1951	614835
16	499m S	Sewage Works	1938	615326

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

32

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 23**

ID	Location	Land Use	Date	Group ID
A	142m E	Unspecified Tank	1982	77185
A	142m E	Unspecified Tank	1985	77185
A	142m E	Unspecified Tank	1991	77185
A	143m E	Unspecified Tank	1987	77107
A	144m E	Unspecified Tank	1995	77185



ID	Location	Land Use	Date	Group ID
A	144m E	Unspecified Tank	1995	77185
A	144m E	Unspecified Tank	1996	77185
A	144m E	Unspecified Tank	1997	77185
5	198m NW	Unspecified Tank	1925	72880
D	286m E	Unspecified Tank	1899	76891
D	286m E	Unspecified Tank	1925	76891
D	348m E	Tanks	1925	74972
D	354m E	Tanks	1925	74976
D	361m E	Unspecified Tank	1863	72871
D	362m E	Unspecified Tank	1899	72894
D	372m E	Tanks	1899	77753
D	372m E	Tanks	1925	77753
D	375m E	Unspecified Tank	1899	77614
D	375m E	Unspecified Tank	1925	77614
L	389m SE	Unspecified Tank	1925	76981
10	390m S	Tank or Trough	1863	75503
D	392m E	Tanks	1925	74970
L	392m SE	Unspecified Tank	1899	77049
D	393m E	Unspecified Tank	1899	72872
D	396m E	Unspecified Tank	1899	77239
D	396m E	Unspecified Tank	1925	77239
D	450m E	Unspecified Tank	1899	72895
D	451m E	Unspecified Tank	1899	72897
D	460m E	Unspecified Tank	1899	72896
D	468m E	Tanks	1899	74971
V	477m E	Unspecified Tank	1925	72892
D	492m E	Unspecified Tank	1899	72909

This data is sourced from Ordnance Survey / Groundsure.



2.3 Historical energy features

Records within 500m

58

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

Features are displayed on the Past land use - un-grouped map on **page 23**

ID	Location	Land Use	Date	Group ID
C	42m E	Electricity Substation	1995	43646
C	42m E	Electricity Substation	1995	43198
C	42m E	Electricity Substation	1996	42986
C	42m E	Electricity Substation	1997	42720
C	42m NE	Electricity Substation	1987	43191
C	43m NE	Electricity Substation	1991	43340
D	291m E	Electricity Substation	1982	43234
D	291m E	Electricity Substation	1985	43234
D	291m E	Electricity Substation	1991	43234
D	292m E	Electricity Substation	1995	43234
D	292m E	Electricity Substation	1995	43234
D	292m E	Electricity Substation	1996	43234
D	292m E	Electricity Substation	1997	43234
D	293m E	Electricity Substation	1987	42984
D	316m E	Electricity Substation	1982	42882
D	316m E	Electricity Substation	1985	42882
D	316m E	Electricity Substation	1991	42882
D	317m E	Electricity Substation	1995	42882
D	317m E	Electricity Substation	1995	42882
D	317m E	Electricity Substation	1996	42882
D	317m E	Electricity Substation	1997	42882
D	319m E	Electricity Substation	1987	43632
M	324m NW	Electricity Substation	1992	42079



ID	Location	Land Use	Date	Group ID
N	329m NE	Electricity Substation	1982	42650
N	329m NE	Electricity Substation	1985	42650
M	333m NW	Electricity Substation	1987	42078
N	337m NE	Electricity Substation	1987	42755
N	337m NE	Electricity Substation	1969	43729
N	340m NE	Electricity Substation	1995	43540
N	340m NE	Electricity Substation	1995	43540
N	340m NE	Electricity Substation	1996	43540
N	340m NE	Electricity Substation	1997	43540
O	355m NW	Gas Governor	1992	43111
O	355m NW	Gas Governor	1987	43111
L	359m SE	Electricity Substation	1995	42921
L	359m SE	Electricity Substation	1995	42921
L	359m SE	Electricity Substation	1996	42921
L	359m SE	Electricity Substation	1997	42921
D	448m E	Electricity Substation	1982	43253
D	448m E	Electricity Substation	1985	43253
D	448m E	Electricity Substation	1991	43253
D	449m E	Electricity Substation	1995	43253
D	449m E	Electricity Substation	1995	43253
D	449m E	Electricity Substation	1996	43253
D	449m E	Electricity Substation	1997	43253
D	450m E	Electricity Substation	1987	43481
S	450m SE	Electricity Substation	1995	42879
S	450m SE	Electricity Substation	1995	42879
S	450m SE	Electricity Substation	1996	42879
S	450m SE	Electricity Substation	1997	42879
S	451m SE	Electricity Substation	1987	43298



ID	Location	Land Use	Date	Group ID
S	452m SE	Electricity Substation	1991	43298
D	464m E	Electricity Substation	1995	42935
D	464m E	Electricity Substation	1995	42935
D	464m E	Electricity Substation	1996	42935
D	464m E	Electricity Substation	1997	42935
D	465m E	Electricity Substation	1987	43148
D	466m E	Electricity Substation	1991	43148

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

10

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'.

Features are displayed on the Past land use - un-grouped map on **page 23**

ID	Location	Land Use	Date	Group ID
I	227m SE	Garage	1982	14053
I	227m SE	Garage	1985	14053
I	227m SE	Garage	1991	14053
I	228m SE	Garage	1987	13928
I	230m SE	Garage	1995	14053
I	230m SE	Garage	1995	14053

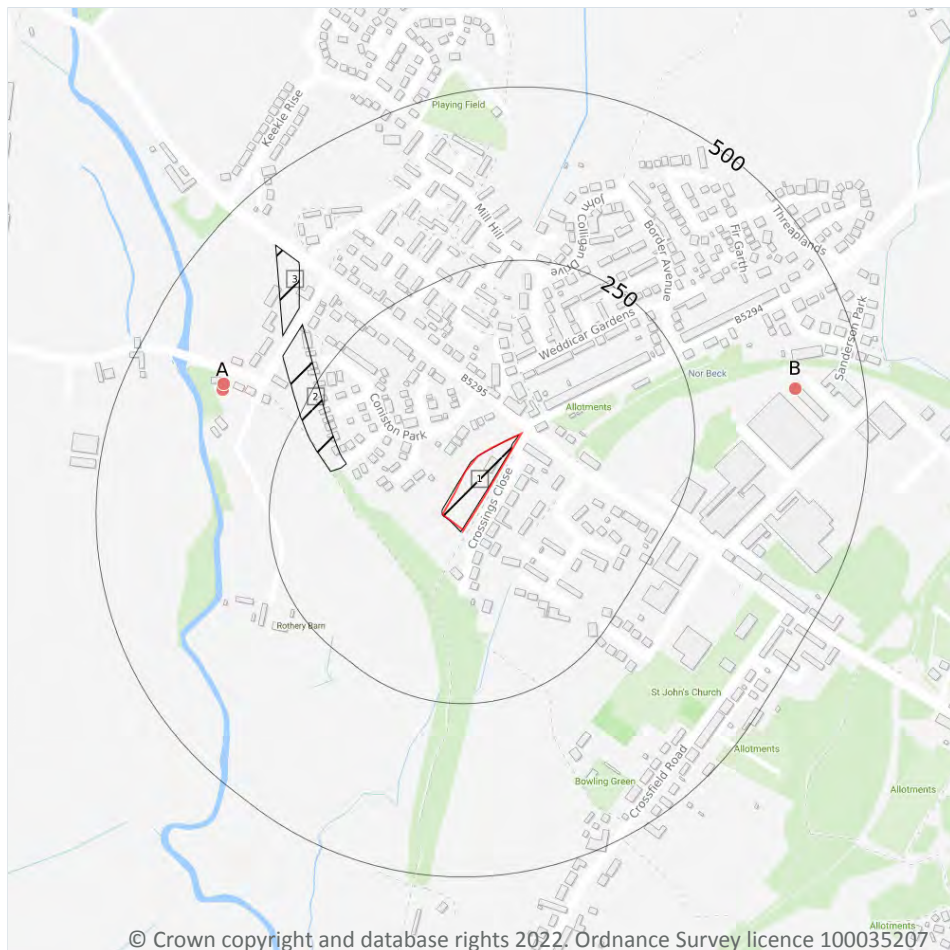


ID	Location	Land Use	Date	Group ID
I	230m SE	Garage	1996	14053
I	230m SE	Garage	1997	14053
I	240m SE	Garage	1961	14192
I	261m SE	Garage	1969	14192

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Historical landfill (EA/NRW)
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

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

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

3.2 Historical landfill (BGS records)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m

0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m

3

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

Features are displayed on the Waste and landfill map on **page 35**

ID	Location	Details		
1	On site	Site Address: St Begas, Whitehaven Road, Cleator Moor Licence Holder Address: -	Waste Licence: - Site Reference: - Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: Rev J V Cahalane Licence Holder: - First Recorded - Last Recorded: 13/04/1979
2	157m NW	Site Address: Railway Cuttings, Whinney Hill, Cleator Moor, Cumbria Licence Holder Address: 55 Washington Street, Workington, Cumbria	Waste Licence: Yes Site Reference: 58 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 20/02/1979 Licence Surrender: 08/02/1993	Operator: - Licence Holder: Newdale Construction Limited First Recorded 31/12/1979 Last Recorded: 30/09/1985
3	328m NW	Site Address: Railway Cuttings, Whinney Hill, Cleator Moor, Cumbria Licence Holder Address: 55 Washington Street, Workington, Cumbria	Waste Licence: Yes Site Reference: 58 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 20/02/1979 Licence Surrender: 08/02/1993	Operator: - Licence Holder: Newdale Construction Limited First Recorded 31/12/1979 Last Recorded: 30/09/1985

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**28**

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 35**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	365m NW	Ballinorig CLEATOR MOOR Cumbria CA25 5QR	EPR/SE5257JF/ A001	Disposing of waste exemption	Agricultural Waste Only	Deposit of agricultural waste consisting of plant tissue under a Plant Health notice
A	365m NW	Ballinorig CLEATOR MOOR Cumbria CA25 5QR	EPR/SE5257JF/ A001	Disposing of waste exemption	Both agricultural and non- agricultural waste	Deposit of waste from dredging of inland waters
A	365m NW	Ballinorig CLEATOR MOOR Cumbria CA25 5QR	EPR/SE5257JF/ A001	Disposing of waste exemption	Both agricultural and non- agricultural waste	Deposit of waste from a portable sanitary convenience
A	365m NW	Ballinorig CLEATOR MOOR Cumbria CA25 5QR	EPR/SE5257JF/ A001	Disposing of waste exemption	Both agricultural and non- agricultural waste	Burning waste in the open



ID	Location	Site	Reference	Category	Sub-Category	Description
A	365m NW	Ballinorig CLEATOR MOOR Cumbria CA25 5QR	EPR/SE5257JF/ A001	Storing waste exemption	Both agricultural and non- agricultural waste	Storage of waste in a secure place
A	365m NW	Ballinorig CLEATOR MOOR Cumbria CA25 5QR	EPR/SE5257JF/ A001	Treating waste exemption	Both agricultural and non- agricultural waste	Aerobic composting and associated prior treatment
A	365m NW	Ballinorig CLEATOR MOOR Cumbria CA25 5QR	EPR/SE5257JF/ A001	Treating waste exemption	Both agricultural and non- agricultural waste	Screening and blending of waste
A	365m NW	Ballinorig CLEATOR MOOR Cumbria CA25 5QR	EPR/SE5257JF/ A001	Treating waste exemption	Both agricultural and non- agricultural waste	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
A	365m NW	Ballinorig CLEATOR MOOR Cumbria CA25 5QR	EPR/SE5257JF/ A001	Using waste exemption	Both agricultural and non- agricultural waste	Spreading waste on agricultural land to confer benefit
A	365m NW	Ballinorig CLEATOR MOOR Cumbria CA25 5QR	EPR/SE5257JF/ A001	Using waste exemption	Both agricultural and non- agricultural waste	Use of waste for a specified purpose
A	365m NW	Ballinorig CLEATOR MOOR Cumbria CA25 5QR	EPR/SE5257JF/ A001	Using waste exemption	Both agricultural and non- agricultural waste	Use of waste to manufacture finished goods
A	368m NW	BALLINORIG, WHINNEY HILL, CLEATOR MOOR, CA25 5QR	WEX173516	Treating waste exemption	On a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
A	368m NW	BALLINORIG, WHINNEY HILL, CLEATOR MOOR, CA25 5QR	WEX173516	Storing waste exemption	On a farm	Storage of waste in a secure place



ID	Location	Site	Reference	Category	Sub-Category	Description
A	368m NW	BALLINORIG, WHINNEY HILL, CLEATOR MOOR, CA25 5QR	WEX173516	Disposing of waste exemption	On a farm	Burning waste in the open
A	368m NW	BALLINORIG, WHINNEY HILL, CLEATOR MOOR, CA25 5QR	WEX173516	Using waste exemption	On a farm	Use of waste in construction
A	368m NW	BALLINORIG, WHINNEY HILL, CLEATOR MOOR, CA25 5QR	WEX173516	Disposing of waste exemption	On a farm	Deposit of agricultural waste consisting of plant tissue under a Plant Health notice
A	368m NW	BALLINORIG, WHINNEY HILL, CLEATOR MOOR, CA25 5QR	WEX173516	Treating waste exemption	On a farm	Aerobic composting and associated prior treatment
A	368m NW	BALLINORIG, WHINNEY HILL, CLEATOR MOOR, CA25 5QR	WEX015755	Disposing of waste exemption	On a farm	Deposit of agricultural waste consisting of plant tissue under a Plant Health notice
A	368m NW	BALLINORIG, WHINNEY HILL, CLEATOR MOOR, CA25 5QR	WEX015755	Disposing of waste exemption	On a farm	Burning waste in the open
B	400m E	Plot 12, Leconfield Streen, cleator Moor, Whitehaven, ca25 5qb	WEX077556	Treating waste exemption	Not on a farm	Sorting mixed waste
B	400m E	plot 12, leconfield streen, cleator moor, whitehaven, ca255qb	WEX077696	Storing waste exemption	Not on a farm	Storage of waste in secure containers
B	400m E	plot 12, leconfield streen, cleator moor, whitehaven, ca255qb	WEX077696	Storing waste exemption	Not on a farm	Storage of waste in a secure place
B	400m E	plot 12, leconfield streen, cleator moor, whitehaven, ca255qb	WEX077696	Treating waste exemption	Not on a farm	Cleaning, washing, spraying or coating relevant waste
B	400m E	plot 12, leconfield streen, cleator moor, whitehaven, ca255qb	WEX077696	Treating waste exemption	Not on a farm	Manual treatment of waste
B	400m E	plot 12, leconfield streen, cleator moor, whitehaven, ca255qb	WEX077696	Treating waste exemption	Not on a farm	Recovery of scrap metal
B	400m E	plot 12, leconfield streen, cleator moor, whitehaven, ca255qb	WEX077696	Using waste exemption	Not on a farm	Use of waste in construction

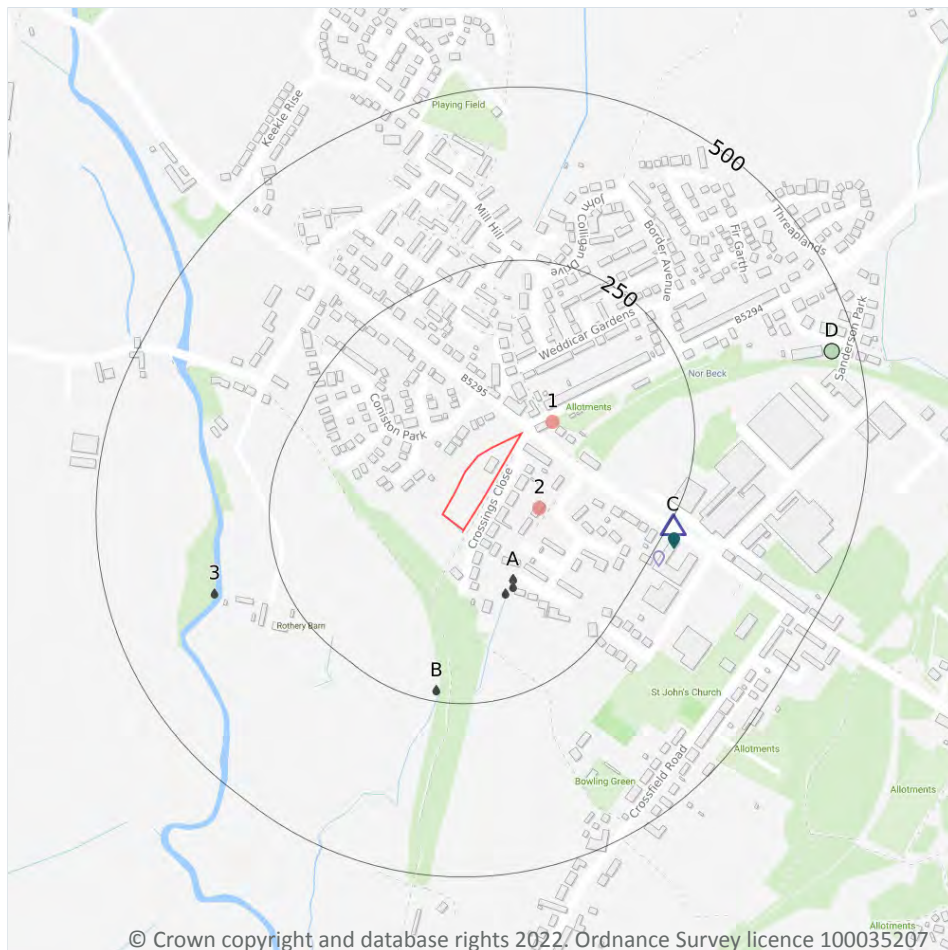


ID	Location	Site	Reference	Category	Sub-Category	Description
B	400m E	plot 12, leconfield streen, cleator moor, whitehaven, ca255qb	WEX077696	Using waste exemption	Not on a farm	Use of waste in the construction of entertainment or educational installations etc
B	400m E	plot 12, leconfield streen, cleator moor, whitehaven, ca255qb	WEX077696	Using waste exemption	Not on a farm	Use of waste for a specified purpose

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
- △ Current or recent petrol stations
- Part A(1) industrial activities
- Licensed pollutant release (Part A(2)/B)
- Licensed Discharges to controlled waters
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

2

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 41**

ID	Location	Company	Address	Activity	Category
1	49m E	Electricity Sub Station	Cumbria, CA25	Electrical Features	Infrastructure and Facilities
2	77m SE	S Kenyon	12, Norbeck Park, Cleator Moor, Cumbria, CA25 5RL	Agricultural Contractors	Contract Services

This data is sourced from Ordnance Survey.



4.2 Current or recent petrol stations

Records within 500m**1**

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 41**

ID	Location	Company	Address	LPG	Status
C	255m SE	NISA	Leconfield Street, Cleator Moor, Cumbria, CA25 5QA	No	Open

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

2

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

Features are displayed on the Current industrial land use map on **page 41**

ID	Location	Details	
C	261m SE	Operator: S BRANNAN & SONS LTD Installation Name: CLEATOR MOOR THERMOMETER FACTORY Process: INORGANIC CHEMICALS; USING MERCURY/CADMIUM AND COMPOUNDS IF RELEASE INTO AIR Permit Number: BM4201IE Original Permit Number: BM4201IE	EPR Reference: - Issue Date: 22/02/2005 Effective Date: 22/02/2005 Last date noted as effective: 01/01/2022 Status: SUPERCEDED

ID	Location	Details	
C	261m SE	Operator: S BRANNAN & SONS LTD Installation Name: CLEATOR MOOR THERMOMETER FACTORY Process: INORGANIC CHEMICALS; USING MERCURY/CADMIUM AND COMPOUNDS IF RELEASE INTO AIR Permit Number: LP3935LH Original Permit Number: BM4201IE	EPR Reference: - Issue Date: - Effective Date: 13/03/2006 Last date noted as effective: 01/01/2022 Status: SURRENDER EFFECTIVE

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

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

Records within 500m	1
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Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on **page 41**

ID	Location	Address	Details	
C	267m SE	Crossfield Garage Ltd, Leconfield Street, Cleator Moor, Cumbria, CA25 5QA	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	0
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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	9
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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 41**

ID	Location	Address	Details	
A	100m SE	CROSSINGS CLOSE 'C', CLEATOR MOOR, COPELAND, CUMBRIA	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01COP0084 Permit Version: 1 Receiving Water: NORBECK	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1995 Revocation Date: -
A	100m SE	NORBECK PARK A CSO (SITE 023A9), NORBECK PARK A, CLEATOR MOOR, CUMBRIA, CA25 5RL	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 017480286 Permit Version: 1 Receiving Water: NORBECK	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 30/09/1994 Revocation Date: 04/03/2018
A	100m SE	NORBECK PARK A CSO (SITE 023A9), NORBECK PARK A, CLEATOR MOOR, CUMBRIA, CA25 5RL	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 017480286 Permit Version: 2 Receiving Water: NORBECK	Status: VARIED UNDER EPR 2010 Issue date: 05/03/2018 Effective Date: 05/03/2018 Revocation Date: -
A	100m SE	NORBECK PARK A CSO (SITE 023A9), NORBECK PARK A, CLEATOR MOOR, CUMBRIA, CA25 5RL	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01COP0083 Permit Version: 1 Receiving Water: NORBECK	Status: CONSENT REVOKED OR REVISED - NEW CONSENT ISSUED (37(1)) Issue date: - Effective Date: 01/01/1995 Revocation Date: 01/01/1995
A	107m SE	REAR GARDEN OF 16 CROSSINGS CLOSE, CLEATOR MOOR, CUMBRIA, CA25 5QH	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 017480387 Permit Version: 1 Receiving Water: NOR BECK	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 23/10/2003 Effective Date: 23/10/2003 Revocation Date: -
A	109m SE	NORBECK PARK A CSO (SITE 023A9), NORBECK PARK A, CLEATOR MOOR, CUMBRIA, CA25 5RL	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 01COP0075 Permit Version: 1 Receiving Water: NOR BECK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 15/09/1993 Revocation Date: 15/09/1993
B	234m S	CROSSINGS CLOSE, CLEATOR MOOR, CUMBRIA	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 017470083 Permit Version: 1 Receiving Water: NORL BECK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 07/09/1993 Revocation Date: 07/09/1993



ID	Location	Address	Details	
B	234m S	CROSSINGS CLOSE, CLEATOR MOOR, CUMBRIA	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01COP0002 Permit Version: 1 Receiving Water: -	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 13/05/1993 Revocation Date: 01/01/1995
3	348m W	CROSSING CLOSE SSO, CLEATOR MOOR, CUMBRIA	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 017470010 Permit Version: 1 Receiving Water: RIVER KEEKLE	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 04/07/1979 Revocation Date: 30/07/1993

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

3

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

Features are displayed on the Current industrial land use map on **page 41**

ID	Location	Details	
D	462m E	Incident Date: 08/05/2003 Incident Identification: 156876 Pollutant: Specific Waste Materials Pollutant Description: Asbestos	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
D	462m E	Incident Date: 08/05/2003 Incident Identification: 156876 Pollutant: Inert Materials and Wastes:Specific Waste Materials Pollutant Description: Construction and Demolition Materials and Wastes:Asbestos	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
D	462m E	Incident Date: 08/05/2003 Incident Identification: 156876 Pollutant: Inert Materials and Wastes Pollutant Description: Construction and Demolition Materials and Wastes	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m

0

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

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



4.20 Pollution inventory waste transfers

Records within 500m

0

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

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

4.21 Pollution inventory radioactive waste

Records within 500m

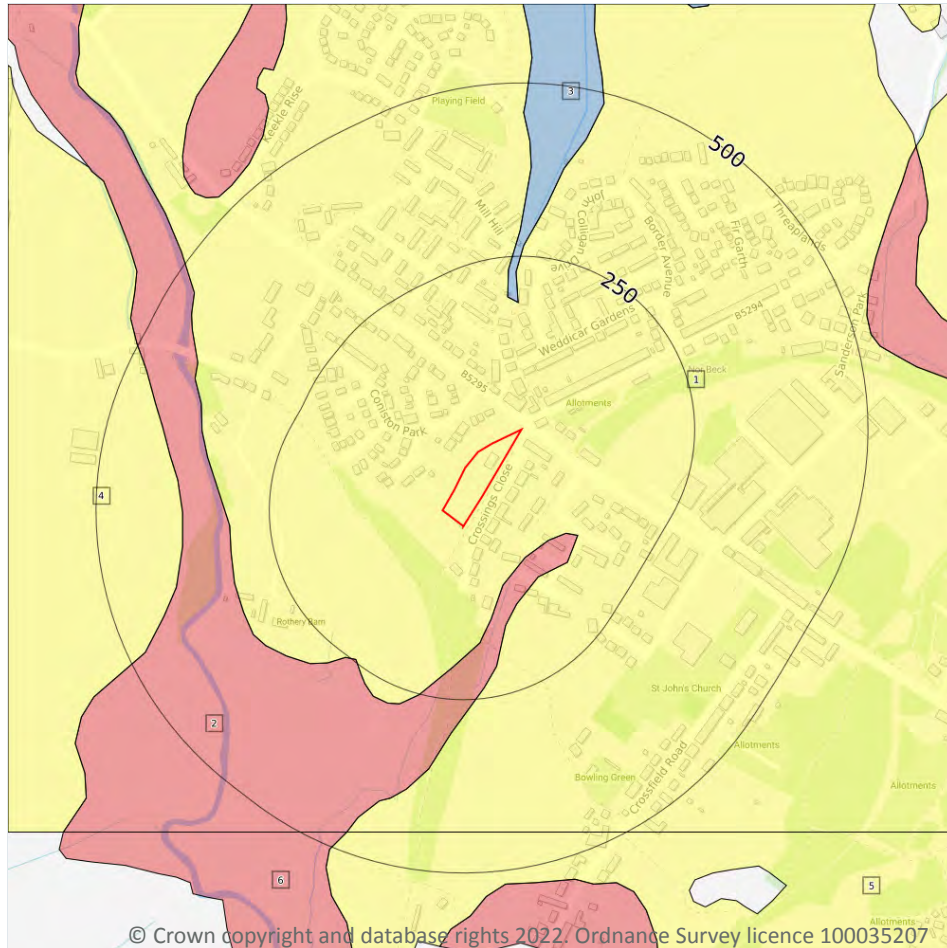
0

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

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



5 Hydrogeology - Superficial aquifer



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

5.1 Superficial aquifer

Records within 500m

6

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 49**

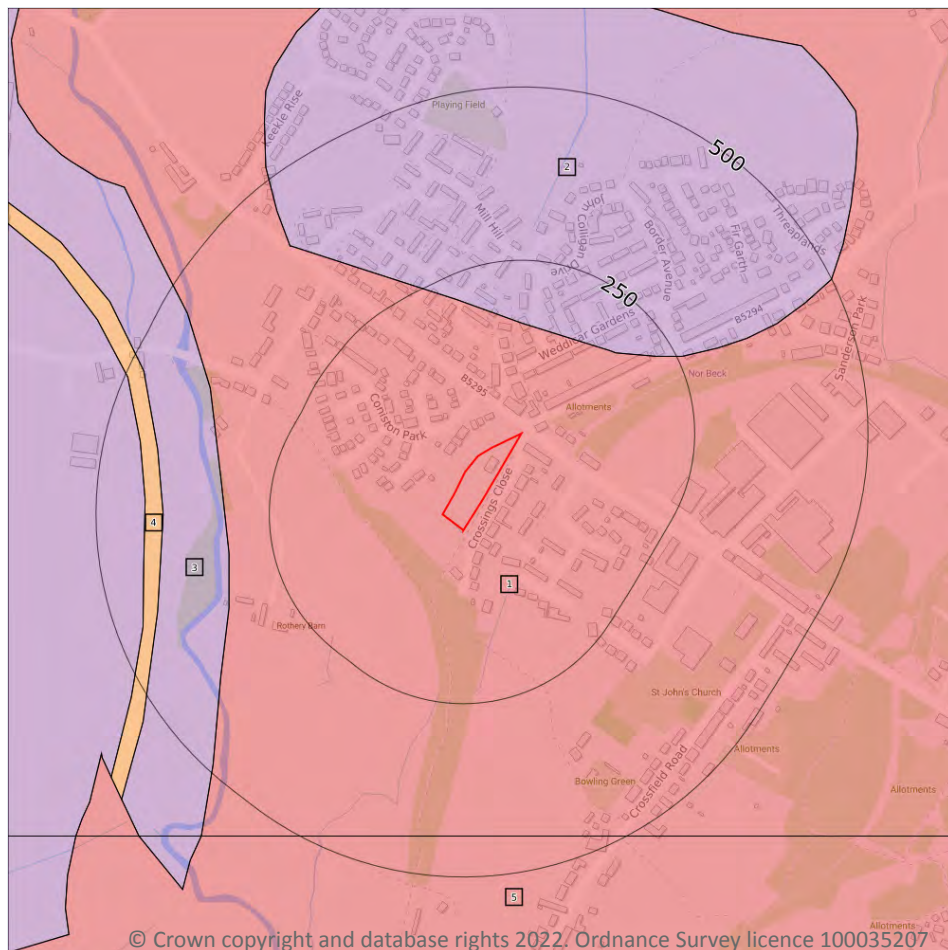
ID	Location	Designation	Description
1	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
2	98m SE	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



ID	Location	Designation	Description
3	183m N	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
4	375m W	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
5	441m S	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
6	472m S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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

Bedrock aquifer



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

5.2 Bedrock aquifer

Records within 500m

5

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 51**

ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	152m N	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

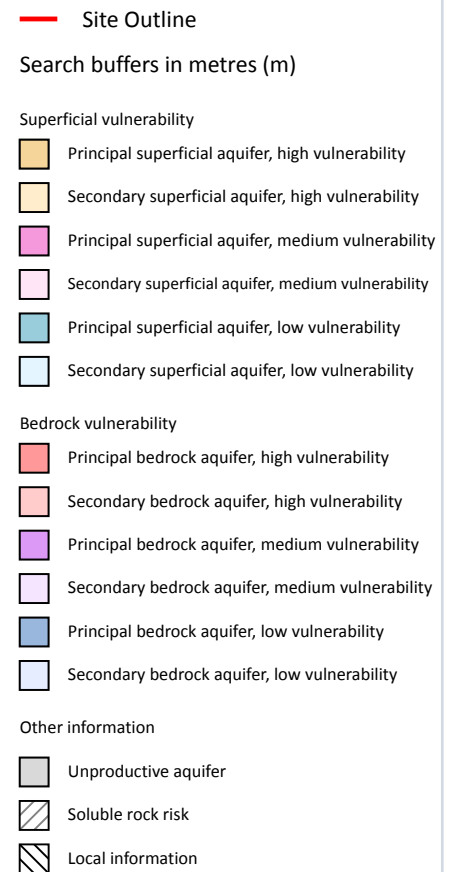
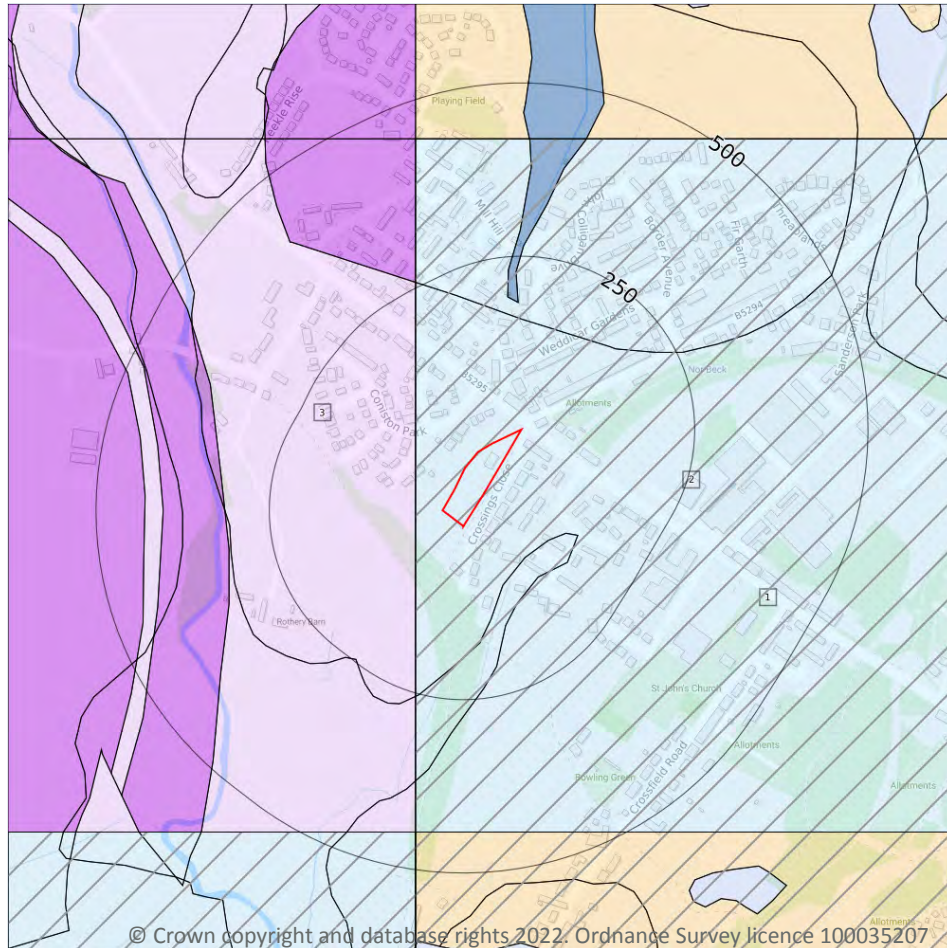


ID	Location	Designation	Description
3	312m W	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
4	403m W	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers
5	441m S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

2

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

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

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

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
3	39m W	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: High	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	1
------------------------	----------

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

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
2	Significant soluble rocks are likely to be present. Low possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow.	4.0%

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

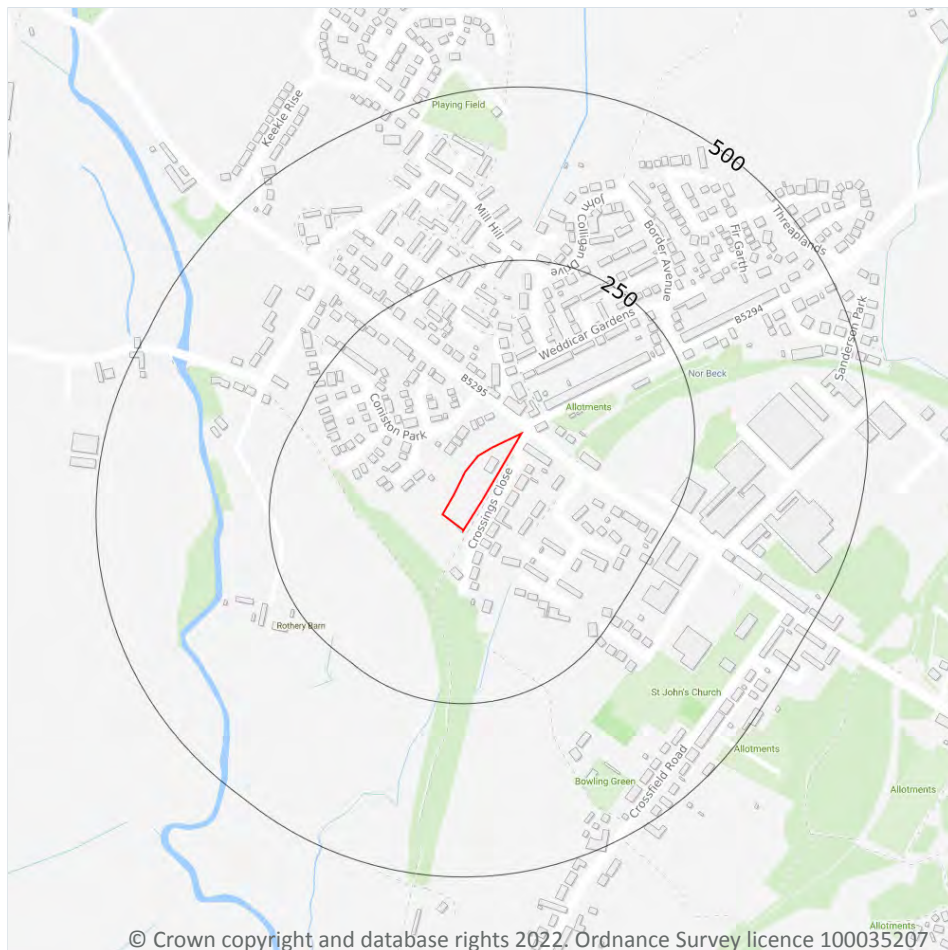
5.5 Groundwater vulnerability- local information

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
Point features
- 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

2

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 55**

ID	Location	Details	
-	1632m E	Status: Historical Licence No: 2774004002 Details: General Farming & Domestic Direct Source: Ground Water - North West Region Point: "WELL AT BIRKS FARM, CLEATOR MOOR, CUMBRIA" Data Type: Point Name: J CHARLTON & SONS Easting: 302700 Northing: 516100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 16/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 16/12/1965 Version End Date: -
-	1632m E	Status: Historical Licence No: 2774004002 Details: General Farming & Domestic Direct Source: Ground Water - North West Region Point: WELL AT BIRKS FARM, CLEATOR MOOR, CUMBRIA Data Type: Point Name: J CHARLTON & SONS Easting: 302700 Northing: 516100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 16/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 16/12/1965 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	4
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Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 55**

ID	Location	Details	
-	1428m SW	Status: Historical Licence No: 2774002010 Details: Make-Up or Top Up Water Direct Source: "Surface, Non-Tidal - North West Region" Point: "SPRING FED CATCHPIT @ WESTLAKES S&T PARK, MOOR ROW" Data Type: Point Name: WESTLAKES PROPERTIES LTD Easting: 299780 Northing: 514790	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: 28-Dec-15 Issue No: 1 Version Start Date: 29/12/2000 Version End Date: -

ID	Location	Details	
-	1428m SW	Status: Historical Licence No: 2774002010 Details: Make-Up or Top Up Water Direct Source: Surface, Non-Tidal - North West Region Point: SPRING FED CATCHPIT @ WESTLAKES S&T PARK, MOOR ROW Data Type: Point Name: WESTLAKES PROPERTIES LTD Easting: 299780 Northing: 514790	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: 28/12/2015 Issue No: 2 Version Start Date: 29/12/2000 Version End Date: -
-	1573m W	Status: Historical Licence No: 2774002010 Details: Make-Up or Top Up Water Direct Source: "Surface, Non-Tidal - North West Region" Point: "SPRING FED CATCHPIT @ WESTLAKES S&T PARK, MOOR ROW" Data Type: Point Name: WESTLAKES PROPERTIES LTD Easting: 299530 Northing: 515020	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: 28-Dec-15 Issue No: 1 Version Start Date: 29/12/2000 Version End Date: -
-	1573m W	Status: Historical Licence No: 2774002010 Details: Make-Up or Top Up Water Direct Source: Surface, Non-Tidal - North West Region Point: SPRING FED CATCHPIT @ WESTLAKES S&T PARK, MOOR ROW Data Type: Point Name: WESTLAKES PROPERTIES LTD Easting: 299530 Northing: 515020	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: 28/12/2015 Issue No: 2 Version Start Date: 29/12/2000 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m

0

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

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



5.9 Source Protection Zones

Records within 500m

0

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

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

5.10 Source Protection Zones (confined aquifer)

Records within 500m

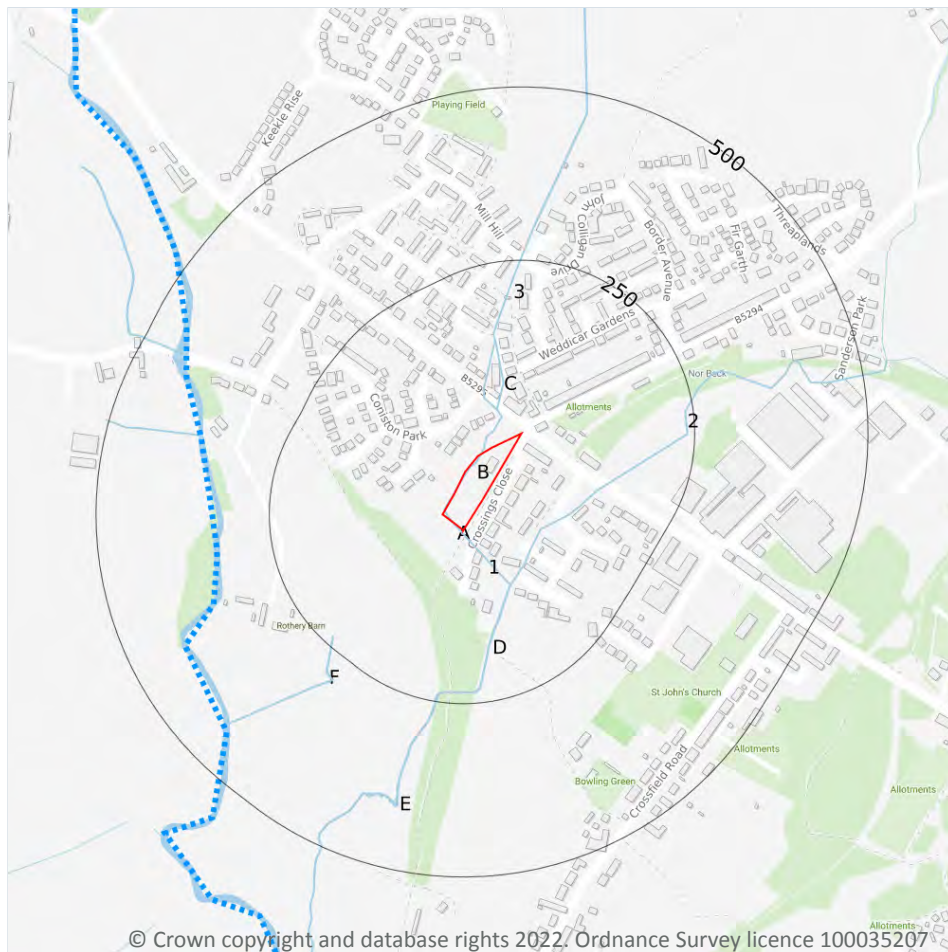
0

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

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



6 Hydrology



- Site Outline
- Search buffers in metres (m)
- Water Network (OS MasterMap)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- ⋯ WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m

11

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

Features are displayed on the Hydrology map on **page 59**

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



ID	Location	Type of water feature	Ground level	Permanence	Name
B	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
1	3m SW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
C	46m NW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
C	46m NW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
2	93m SE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Nor Beck
D	104m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Nor Beck
3	140m N	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
D	233m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Nor Beck
E	235m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Nor Beck
F	235m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

5

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 59**



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 59**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
B	On site	River	Keekle (lower)	GB112074070000	Ehen-Calder	South West Lakes

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 59**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
7	329m W	River	Keekle (lower)	GB112074070000	Moderate	Fail	Good	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.



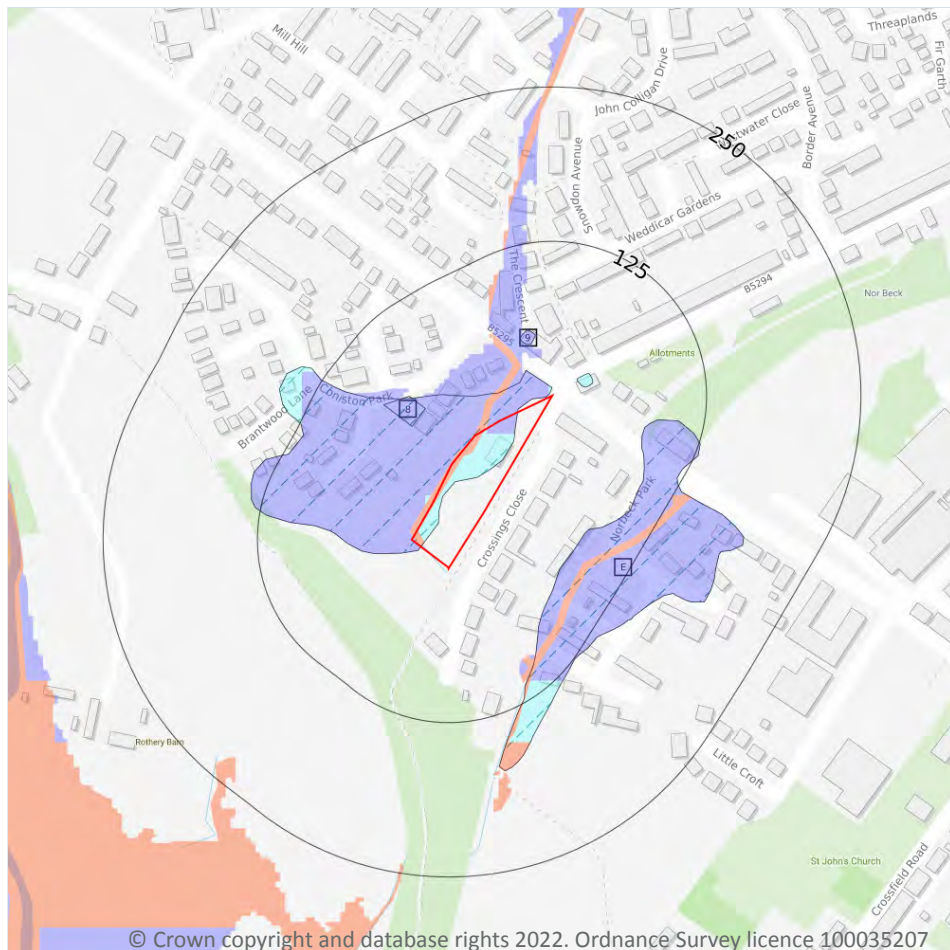
Features are displayed on the Hydrology map on **page 59**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
B	On site	Derwent and West Cumbria Lower Palaeozoic and Carboniferous Aquifers	<u>GB41202G103700</u>	Poor	Poor	Good	2019

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



7 River and coastal flooding



- Site Outline
- Search buffers in metres (m)
- River and coastal flooding:
- High
- Medium
- Low
- Very Low
- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences
- Flood Defences

7.1 Risk of flooding from rivers and the sea

Records within 50m

9

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).

Features are displayed on the River and coastal flooding map on **page 63**

Distance	Flood risk category
On site	High
0 - 50m	High

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

7.2 Historical Flood Events

Records within 250m	5
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Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

Features are displayed on the River and coastal flooding map on **page 63**

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
A	On site	Flooding 05_11_1999	1999-11-05 1999-11-05	Main river	Channel capacity exceeded (no raised defences)	Fluvial
B	24m NE	Cleator Moor 12_10_2005	2005-10-11 2005-10-12	Sewer	Local drainage/surface water	No data
8	44m NW	11/10/2017 Fluvial Flood Event - Cleator Moor	2017-10-11 2017-10-12	Other	Local drainage/surface water	No data
9	45m N	Cleator Moor 12_10_2005	2005-10-11 2005-10-12	Sewer	Local drainage/surface water	No data
E	77m SE	Flooding 05_11_1999	1999-11-05 1999-11-05	Main river	Channel capacity exceeded (no raised defences)	Fluvial

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

7.3 Flood Defences

Records within 250m	0
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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



- Site Outline
- Search buffers in metres (m)
- Flood zone 2
- Flood zone 3

7.6 Flood Zone 2

Records within 50m

1

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.

Features are displayed on the River and coastal flooding map on **page 63**

Location	Type
On site	Zone 2 - (Fluvial /Tidal Models)

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

7.7 Flood Zone 3

Records within 50m

1

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.

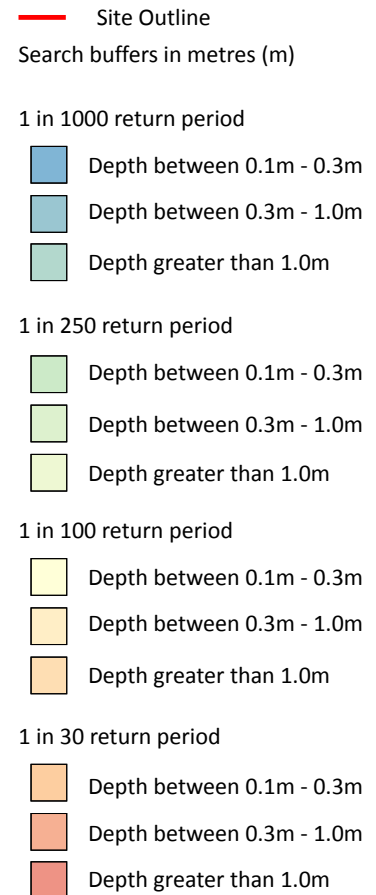
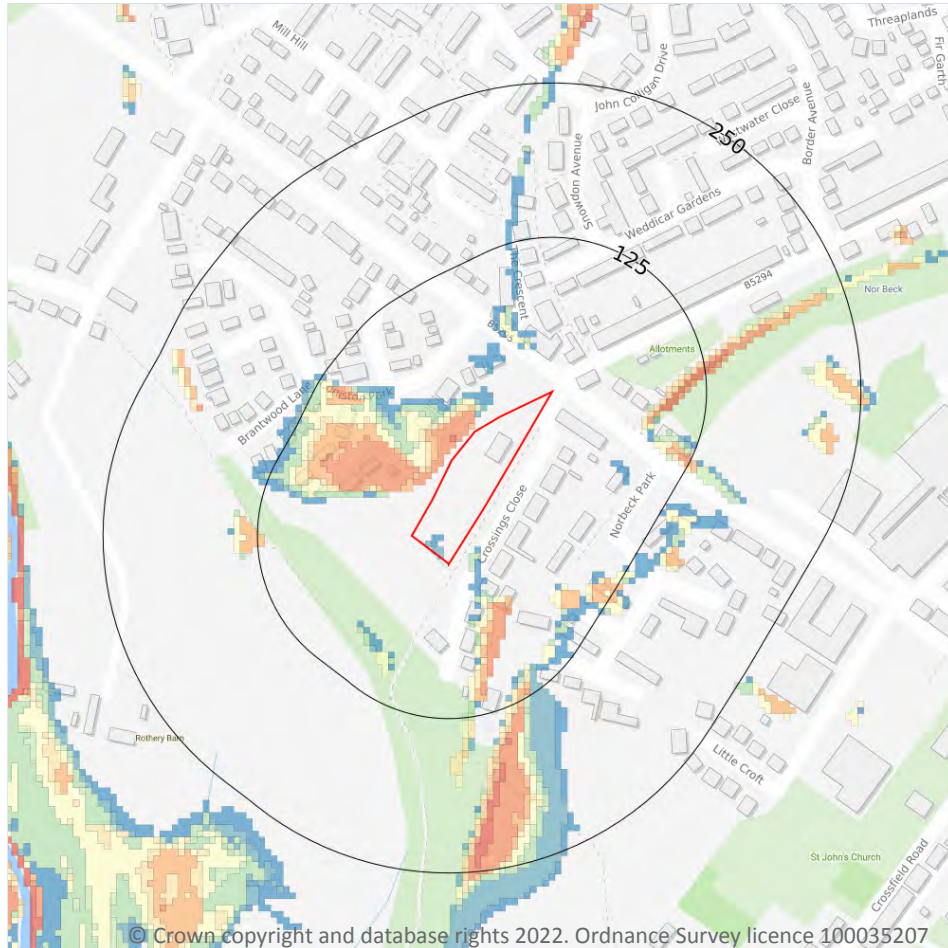
Features are displayed on the River and coastal flooding map on **page 63**

Location	Type
On site	Zone 3 - (Fluvial Models)

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

1 in 1000 year, 0.3m - 1.0m

Highest risk within 50m

1 in 30 year, Greater than 1.0m

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

Features are displayed on the Surface water flooding map on **page 68**

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

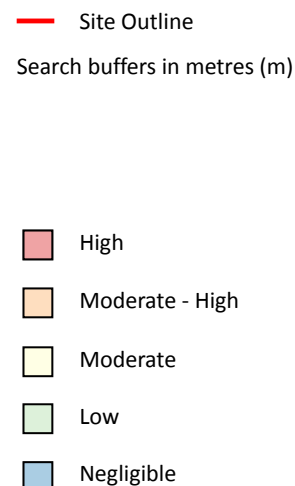
The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Between 0.3m and 1.0m
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

Low

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

Features are displayed on the Groundwater flooding map on **page 70**

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Sites of Special Scientific Interest (SSSI)
- + Special Areas of Conservation (SAC)
- Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

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 71**

ID	Location	Name	Data source
-	1718m SE	River Ehen (Ennerdale Water to Keekle Confluence)	Natural England

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m

0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m

1

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

Features are displayed on the Environmental designations map on **page 71**

ID	Location	Name	Features of interest	Habitat description	Data source
-	1718m SE	River Ehen	Brook lamprey; Atlantic salmon; Freshwater pearl mussel.	Inland water bodies (Standing water, Running water); Coniferous woodland; Broad-leaved deciduous woodland	Natural England

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

1

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 71**

ID	Location	Name	Woodland Type
-	1795m N	Unknown	Ancient & Semi-Natural Woodland

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

10.8 Biosphere Reserves

Records within 2000m

0

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

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



10.9 Forest Parks

Records within 2000m

0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m

0

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

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

10.11 Green Belt

Records within 2000m

0

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

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

10.12 Proposed Ramsar sites

Records within 2000m

0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

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

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



10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

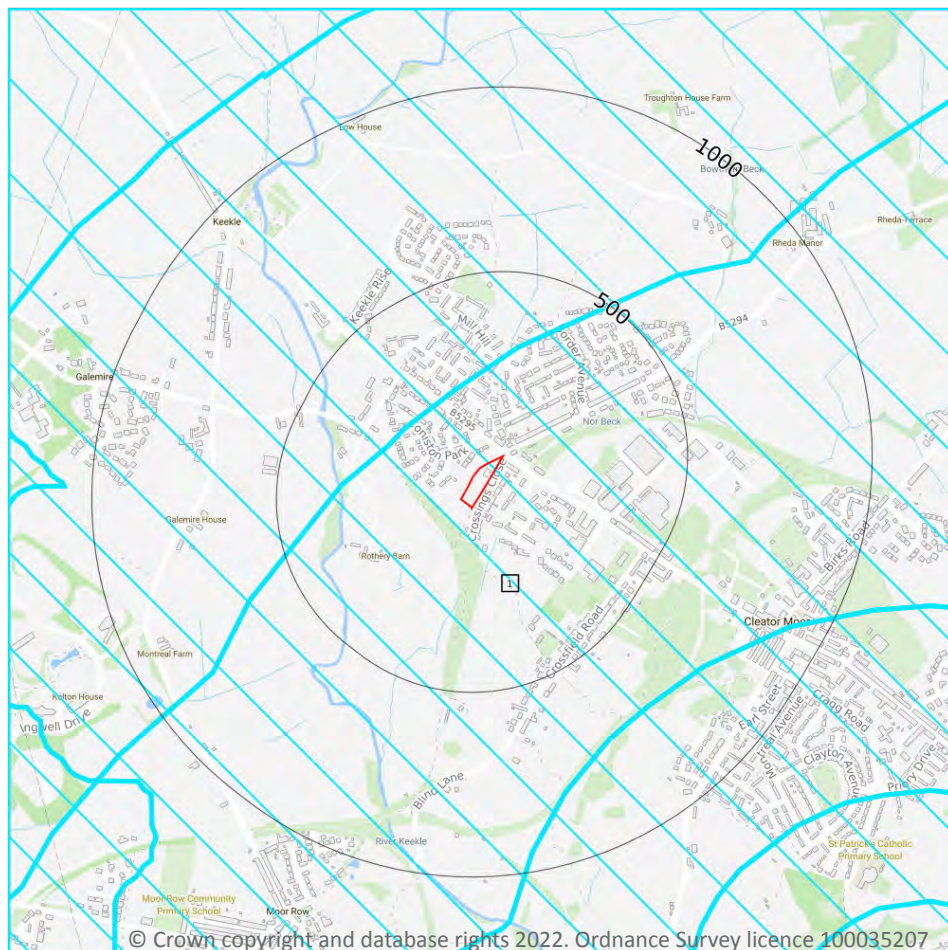
Records within 2000m

0

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

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

SSSI Impact Zones and Units



- 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 76**

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Pipelines, pylons and overhead cables. any transport proposal including road, rail and by water (excluding routine maintenance). airports, helipads and other aviation proposals. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, review of minerals permissions (romp), extensions, variations to conditions etc. oil & gas exploration/extraction. Rural non-residential - Large non residential developments outside existing settlements/urban areas where footprint exceeds 1ha. Rural residential - Any residential development of 100 or more houses outside existing settlements/urban areas. Air pollution - Any industrial/agricultural development that could cause air pollution (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m², manure stores > 250t). Combustion - General combustion processes >20mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. incl: inert landfill, non-hazardous landfill, hazardous landfill. Composting - Any composting proposal with more than 75000 tonnes maximum annual operational throughput. incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Discharges - Any discharge of water or liquid waste of more than 5m³/day to ground (ie to seep away) or to surface water, such as a beck or stream. Water supply - Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m² or more.

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	1
-----------------------------	----------

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

Features are displayed on the SSSI Impact Zones and Units map on **page 76**

ID: -

Location: 1718m SE

SSSI name: River Ehen (Ennerdale Water to Keekle Confluence)

Unit name: Old Units 3-6

Broad habitat: Rivers And Streams

Condition: Unfavourable - Declining

Reportable features:

Feature name	Feature condition	Date of assessment
Atlantic salmon, <i>Salmo salar</i>	Unfavourable - No change	13/08/2012



Feature name	Feature condition	Date of assessment
Population of Schedule 5 mollusc - Margaritifera margaritifera, Freshwater Pearl Mussel	Unfavourable - Declining	13/08/2012
Rivers and Streams	Unfavourable - No change	13/08/2012
S1029 Freshwater pearl mussel, Margaritifera margaritifera	Unfavourable - Declining	13/08/2012
S1106 Atlantic salmon, Salmo salar	Unfavourable - No change	13/08/2012

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



11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m

0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

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

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

11.3 National Parks

Records within 250m

0

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

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

11.4 Listed Buildings

Records within 250m

0

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



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

11.5 Conservation Areas

Records within 250m

0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m

0

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

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

11.7 Registered Parks and Gardens

Records within 250m

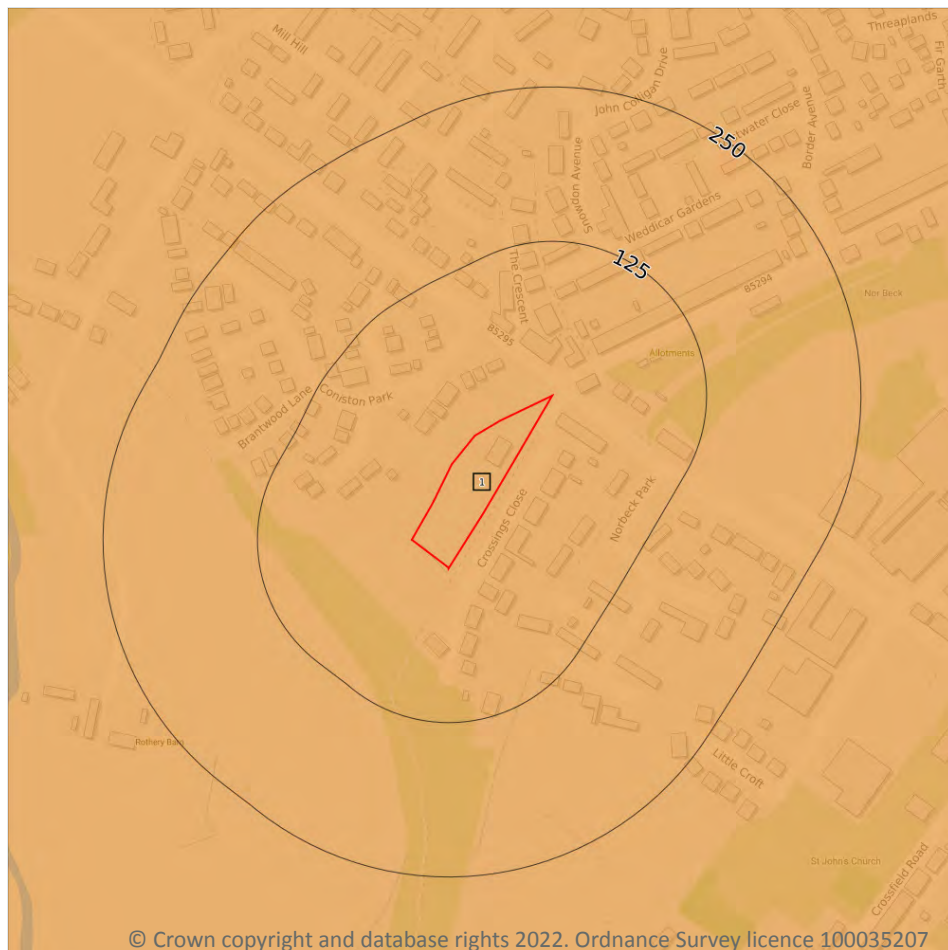
0

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

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



12 Agricultural designations



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

12.1 Agricultural Land Classification

Records within 250m

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 81**

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
On site	AG00626952	Entry Level Stewardship	01/10/2014	30/09/2019

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.

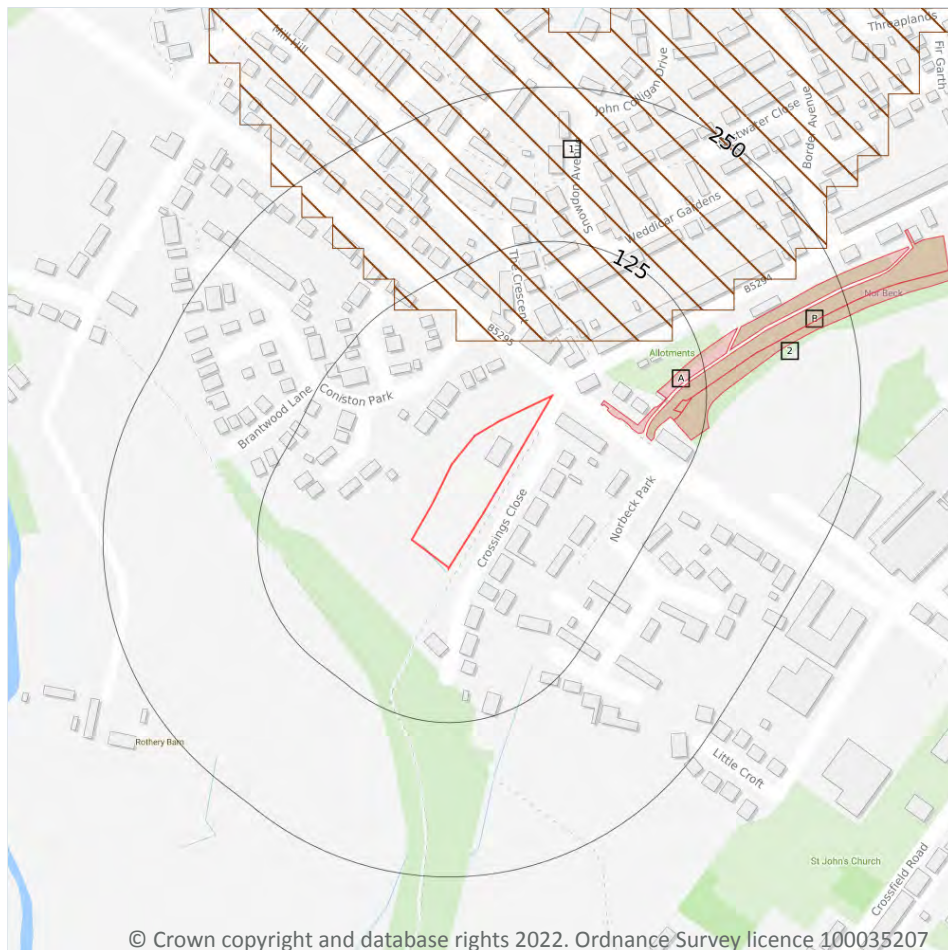
Location	Reference	Scheme	Start Date	End Date
On site	818751	Countryside Stewardship (Middle Tier)	01/01/2020	31/12/2024



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

13.1 Priority Habitat Inventory

Records within 250m

5

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 84**

ID	Location	Main Habitat	Other habitats
A	40m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
B	82m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	99m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	100m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)



ID	Location	Main Habitat	Other habitats
B	149m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	1
----------------------------	----------

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 84**

ID	Location	Type	Habitat
1	44m N	Network Enhancement Zone 2	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.

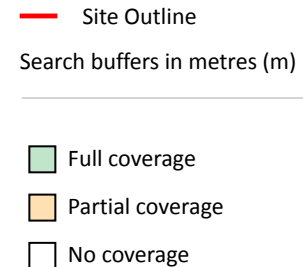
13.4 Limestone Pavement Orders

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 86**

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

This data is sourced from the British Geological Survey.

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

14.2 Artificial and made ground (10k)

Records within 500m

0

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.

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

14.5 Bedrock geology (10k)

Records within 500m

0

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.

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— 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.

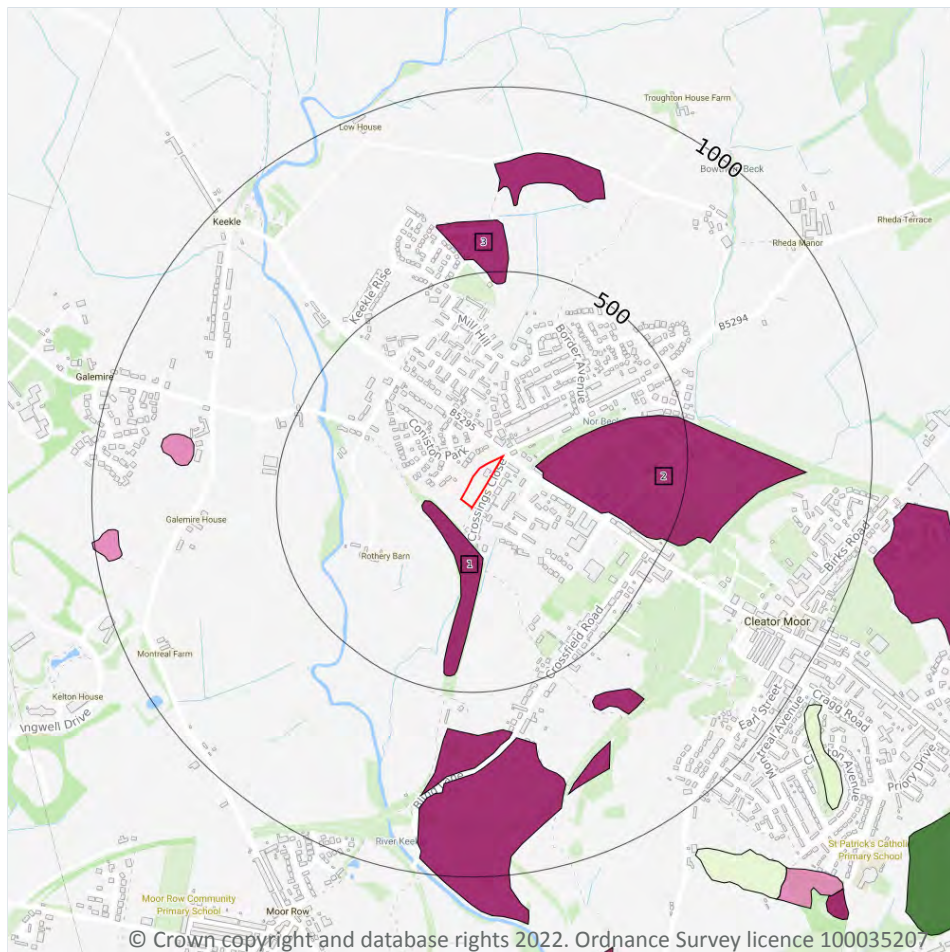
Features are displayed on the Geology 1:50,000 scale - Availability map on **page 90**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	EW028_whitehaven_v4

This data is sourced from the British Geological Survey.



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



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

15.2 Artificial and made ground (50k)

Records within 500m

3

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

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 91**

ID	Location	LEX Code	Description	Rock description
1	60m SW	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	93m E	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
3	467m N	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.



15.3 Artificial ground permeability (50k)

Records within 50m

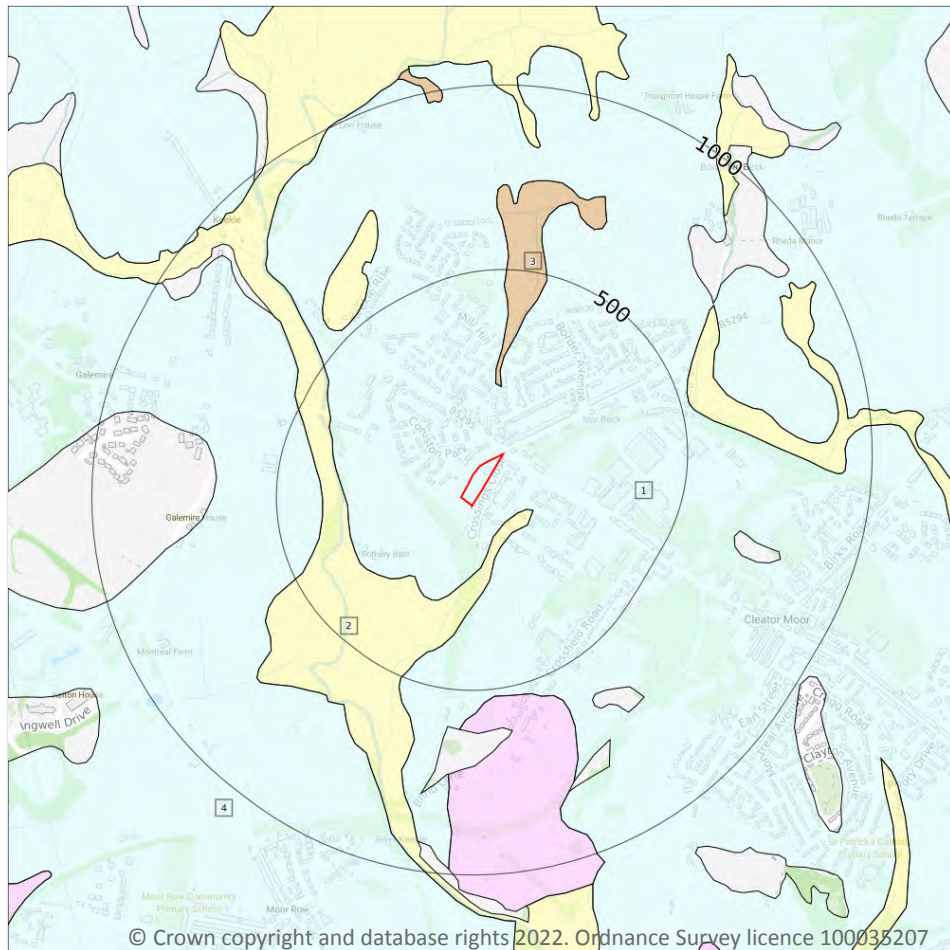
0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m

4

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 93**

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	TILL, DEVANSIAN	DIAMICTON
2	98m SE	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
3	183m N	PEAT-P	PEAT	PEAT



ID	Location	LEX Code	Description	Rock description
4	375m W	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1
---------------------------	----------

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

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0
----------------------------	----------

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

This data is sourced from the British Geological Survey.

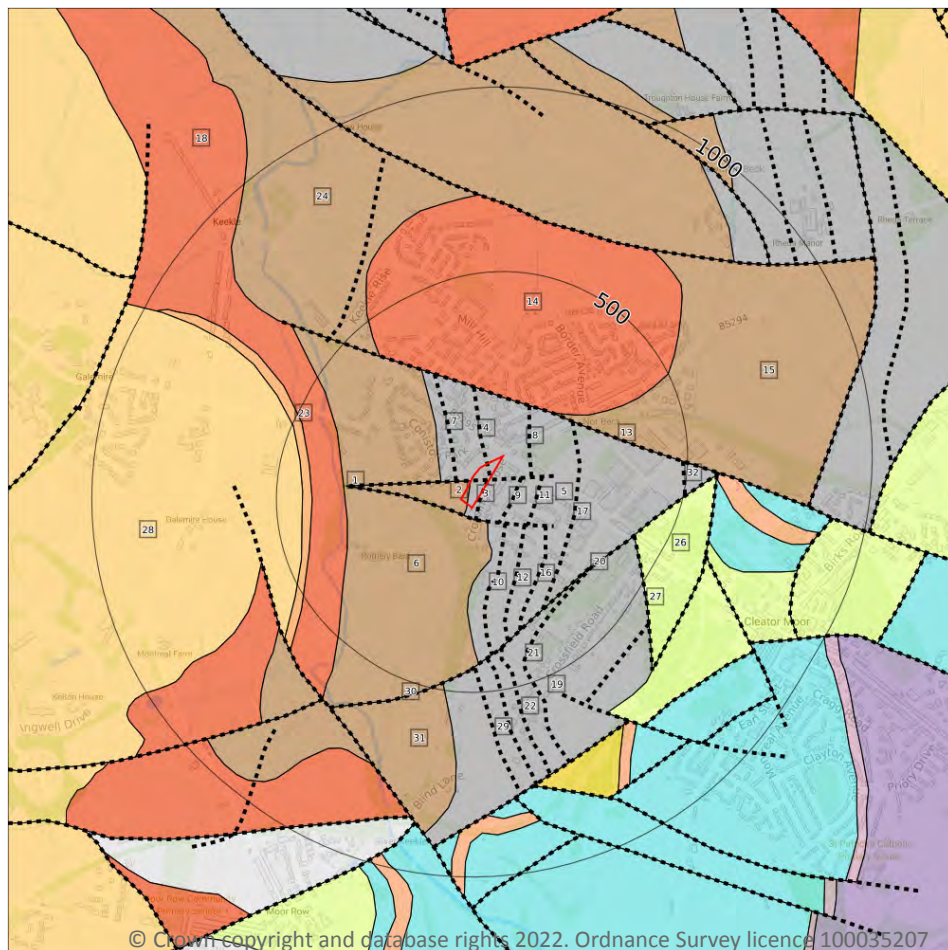
15.7 Landslip permeability (50k)

Records within 50m	0
---------------------------	----------

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

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

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

15.8 Bedrock geology (50k)

Records within 500m

12

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 95**

ID	Location	LEX Code	Description	Rock age
2	On site	WS-SDST	WHITEHAVEN SANDSTONE FORMATION - SANDSTONE	WESTPHALIAN
5	On site	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
6	28m S	WS-SDST	WHITEHAVEN SANDSTONE FORMATION - SANDSTONE	WESTPHALIAN

ID	Location	LEX Code	Description	Rock age
14	152m N	BK-BREC	BROCKRAM - BRECCIA	-
15	179m NE	WS-SDST	WHITEHAVEN SANDSTONE FORMATION - SANDSTONE	WESTPHALIAN
18	312m W	BK-BREC	BROCKRAM - BRECCIA	-
19	333m SE	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
23	403m W	SBSH-SIMD	ST BEES SHALE FORMATION - SILTSTONE AND MUDSTONE, INTERBEDDED	-
24	406m NW	WS-SDST	WHITEHAVEN SANDSTONE FORMATION - SANDSTONE	WESTPHALIAN
26	415m SE	SMGP-MDSS	STAINMORE FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	NAMURIAN
28	429m W	SBS-SDST	ST BEES SANDSTONE MEMBER - SANDSTONE	-
31	481m S	WS-SDST	WHITEHAVEN SANDSTONE FORMATION - SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	2
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A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

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

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	20
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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 95**



ID	Location	Category	Description
1	On site	FAULT	Fault, inferred, displacement unknown
3	On site	ROCK	Coal seam, inferred
4	On site	ROCK	Coal seam, inferred
7	35m NW	ROCK	Coal seam, inferred
8	72m E	ROCK	Coal seam, inferred
9	72m SE	ROCK	Coal seam, inferred
10	99m SE	ROCK	Coal seam, inferred
11	120m SE	ROCK	Coal seam, inferred
12	145m SE	ROCK	Coal seam, inferred
13	152m N	FAULT	Fault, inferred, displacement unknown
16	195m SE	ROCK	Coal seam, inferred
17	202m E	ROCK	Coal seam, inferred
20	333m SE	FAULT	Fault, inferred, displacement unknown
21	348m SE	ROCK	Coal seam, inferred
22	386m S	ROCK	Coal seam, inferred
25	410m S	ROCK	Coal seam, inferred
27	415m SE	FAULT	Fault, inferred, displacement unknown
29	435m S	ROCK	Coal seam, inferred
30	441m S	FAULT	Fault, inferred, displacement unknown
32	488m E	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline
Search buffers in metres (m)

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

16.1 BGS Boreholes

Records within 250m

7

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

Features are displayed on the Boreholes map on **page 98**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	24m W	301015 515466	CLEATOR MOOR COLLIERY NO.2 PIT (NO LOG)	-2.0	N	837981
2	178m E	301329 515555	INDUSTRIAL DEVELOPMENT CLEATOR MOOR 4	6.55	N	18667501
3	199m E	301352 515588	INDUSTRIAL DEVELOPMENT CLEATOR MOOR 1	6.09	N	18667499

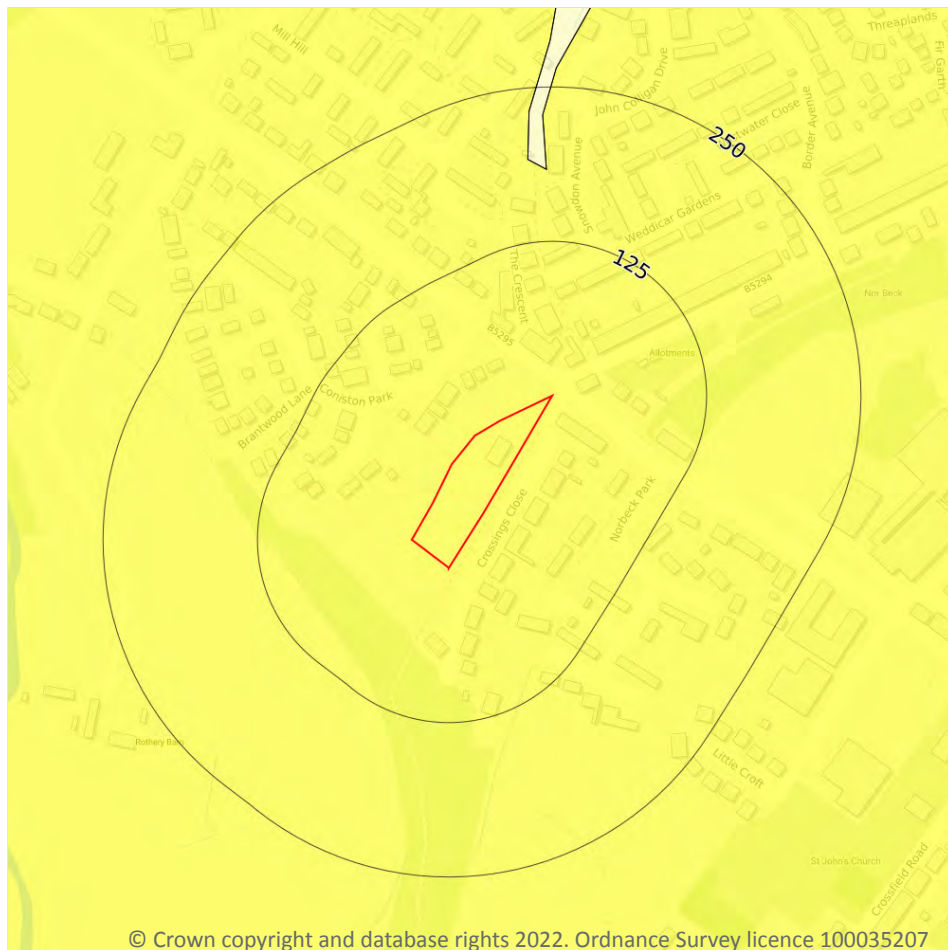


ID	Location	Grid reference	Name	Length	Confidential	Web link
4	203m E	301354 515551	INDUSTRIAL DEVELOPMENT CLEATOR MOOR 3	6.09	N	18667502
5	215m E	301360 515522	INDUSTRIAL DEVELOPMENT CLEATOR MOOR 5	6.09	N	18667503
6	233m SE	301367 515490	WYNDHAM PIT (NO LOG)	-2.0	N	837982
7	238m E	301390 515565	INDUSTRIAL DEVELOPMENT CLEATOR MOOR 2	6.09	N	18667500

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



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

17.1 Shrink swell clays

Records within 50m

1

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

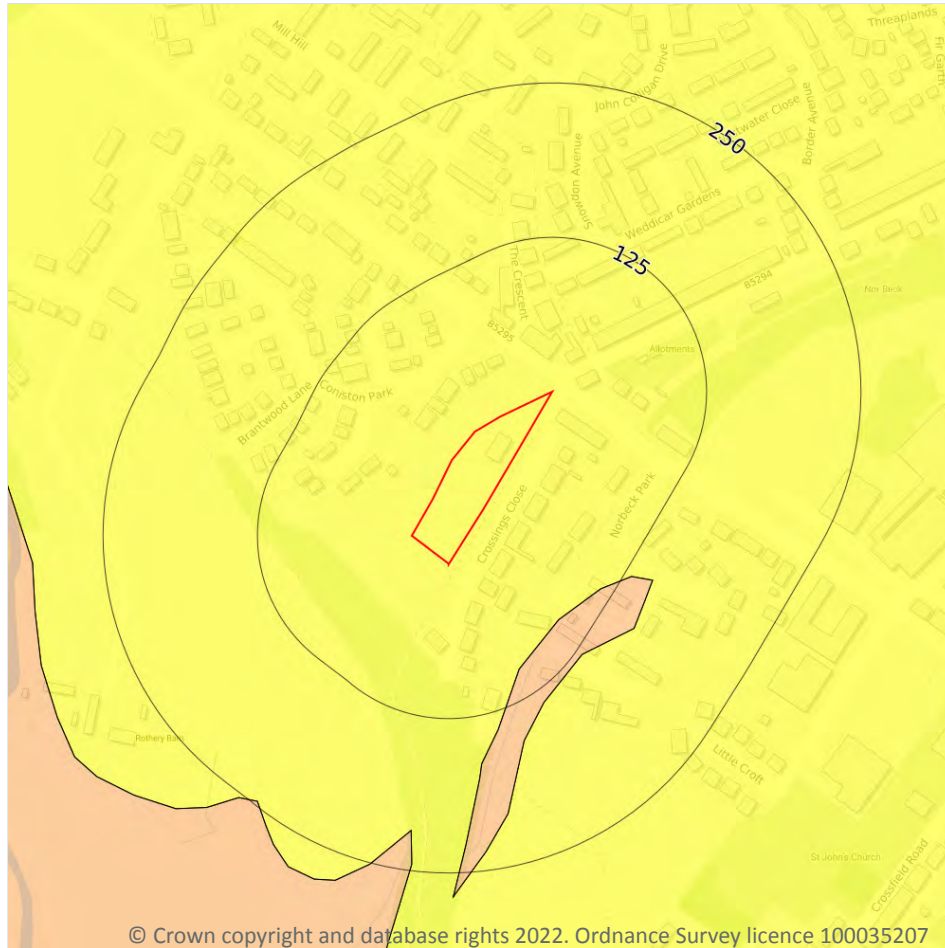
Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 100**

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



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

17.2 Running sands

Records within 50m

1

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

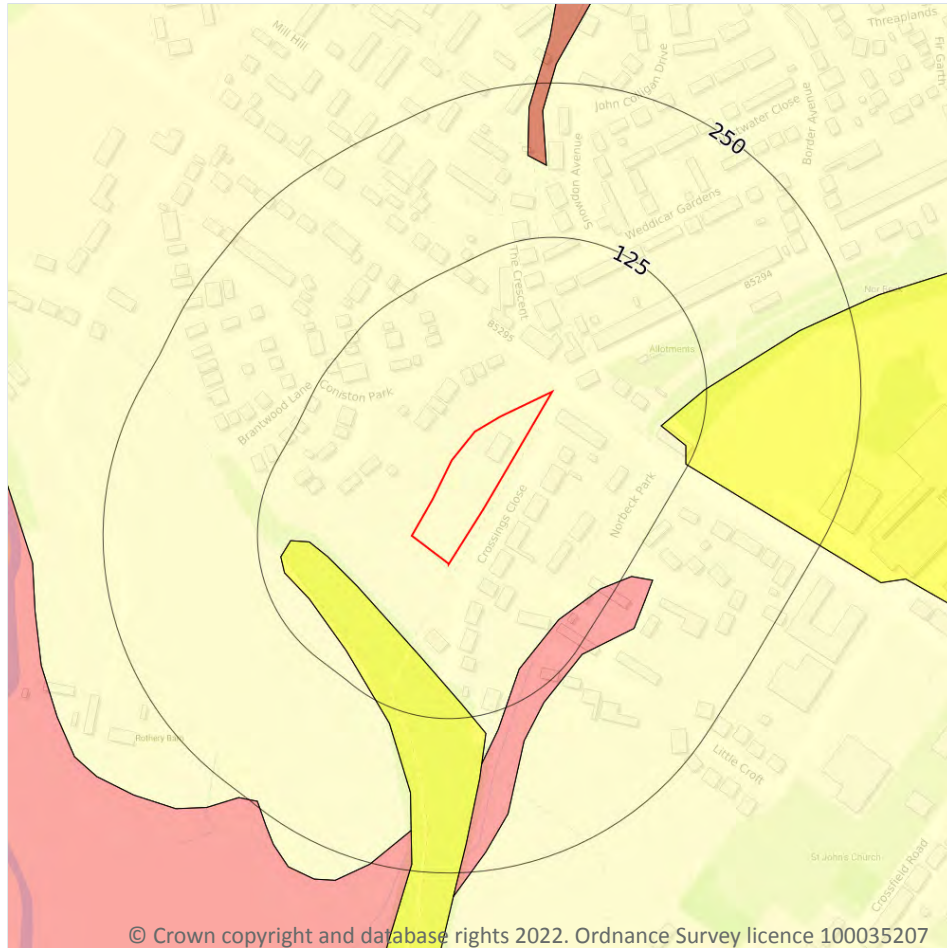
Features are displayed on the Natural ground subsidence - Running sands map on **page 101**

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



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

17.3 Compressible deposits

Records within 50m

1

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

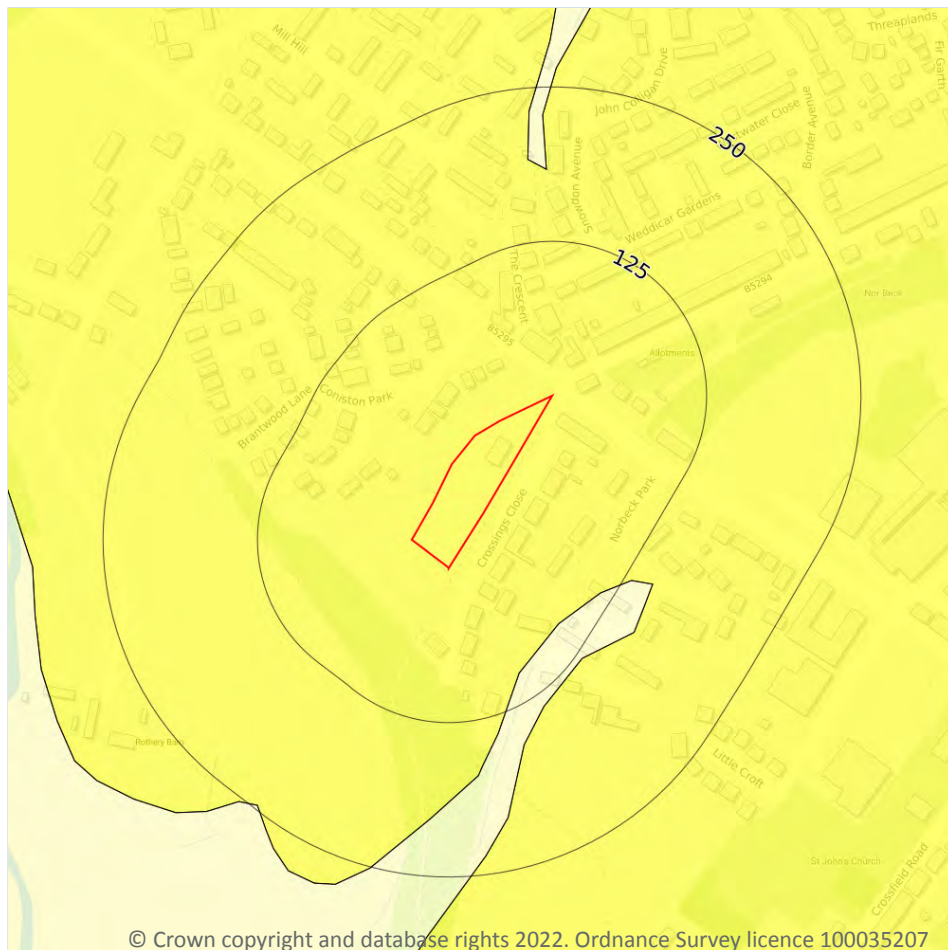
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 102**

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



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

17.4 Collapsible deposits

Records within 50m

1

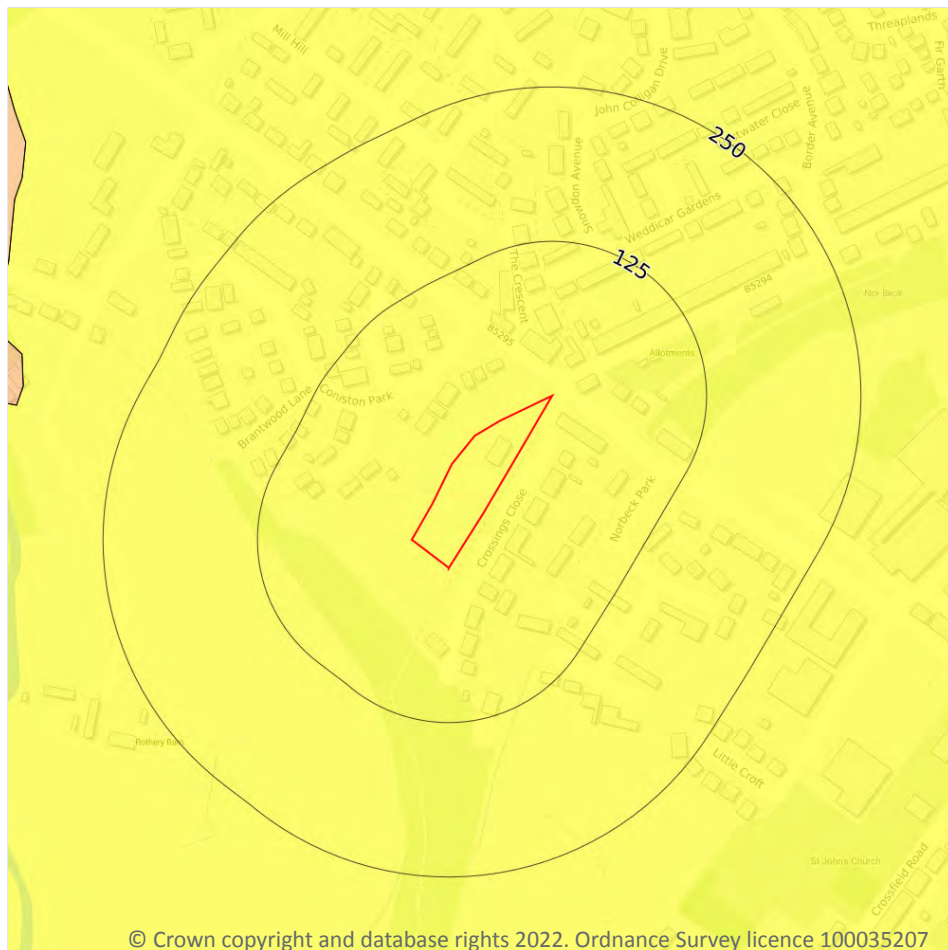
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 103**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



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

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17.5 Landslides

Records within 50m

1

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

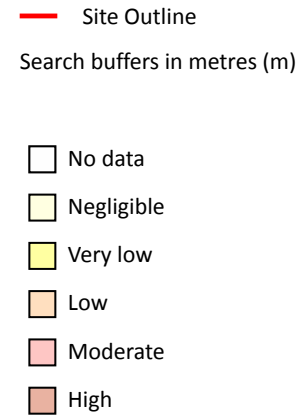
Features are displayed on the Natural ground subsidence - Landslides map on **page 104**

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



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.

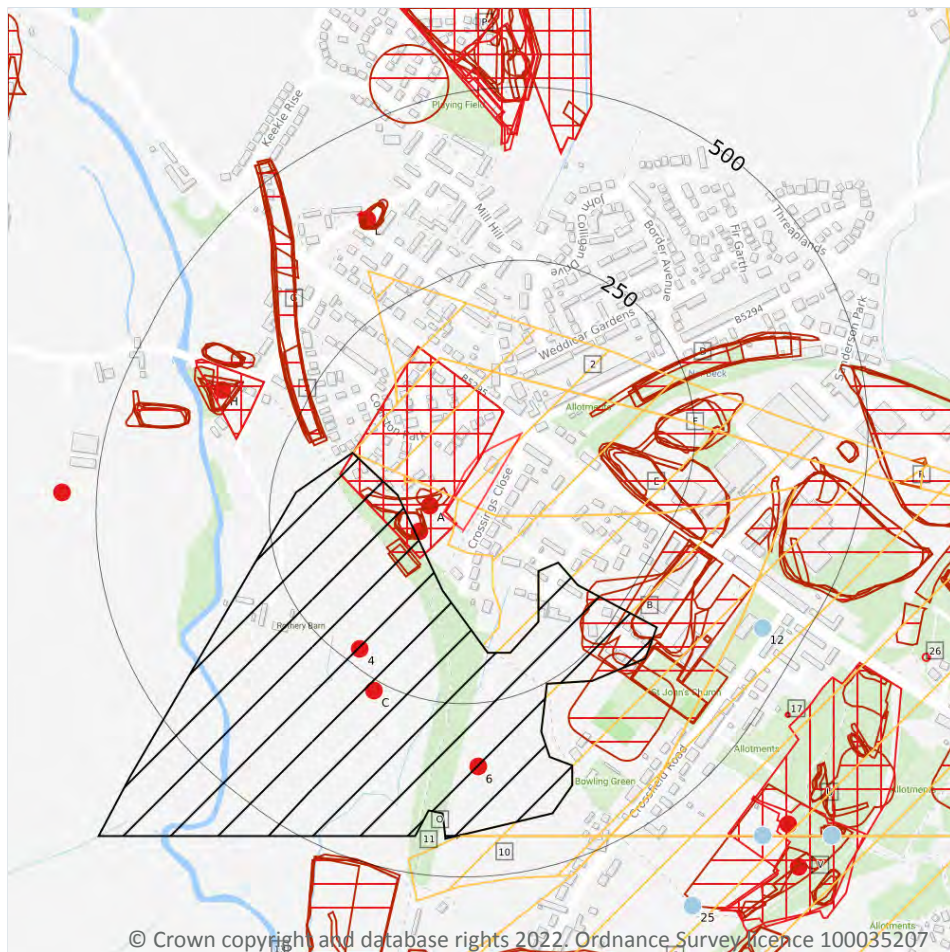
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 105**

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

7

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 107**

ID	Location	Details	Description
A	23m NW	Name: Whinny Hill Colliery, No 2 Pit Address: Keekle, WHITEHAVEN, Cumbria Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
A	41m SW	Name: Whinny Hill Colliery, Staple Pit Address: Keekle, WHITEHAVEN, Cumbria Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
4	226m SW	Name: Whinny Hill Colliery, Dean's Pit Address: Keekle, WHITEHAVEN, Cumbria Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
C	264m SW	Name: Whinny Hill Colliery, No 1 Pit Address: Keekle, WHITEHAVEN, Cumbria Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority



ID	Location	Details	Description
6	341m S	Name: Hope Pit Address: Keekle, WHITEHAVEN, Cumbria Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
H	365m NW	Name: Whinny Hill Colliery Address: Keekle, WHITEHAVEN, Cumbria Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
L	375m NW	Name: Henry Pit Address: Keekle, WHITEHAVEN, Cumbria Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	34
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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 107**

ID	Location	Land Use	Year of mapping	Mapping scale
A	On site	Collieries	1863	1:10560
A	5m NW	Unspecified Heaps	1969	1:10560
A	15m NW	Unspecified Heap	1951	1:10560
A	25m NW	Unspecified Heap	1863	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
A	29m W	Unspecified Heap	1926	1:10560
A	29m W	Unspecified Heap	1926	1:10560
A	29m W	Unspecified Heap	1938	1:10560
A	29m W	Unspecified Heap	1898	1:10560
A	70m SW	Cuttings	1938	1:10560
A	75m SW	Cuttings	1951	1:10560
D	103m E	Unspecified Ground Workings	1951	1:10560
E	115m E	Gravel Pit	1951	1:10560
E	116m E	Refuse Heap	1938	1:10560
E	121m E	Refuse Heap	1926	1:10560
E	121m E	Refuse Heap	1926	1:10560
E	125m E	Unspecified Heap	1898	1:10560
E	129m E	Unspecified Ground Workings	1969	1:10560
D	166m E	Cuttings	1969	1:10560
D	166m E	Cuttings	1993	1:10000
D	174m NE	Cuttings	1938	1:10560
D	174m NE	Cuttings	1898	1:10560
D	178m NE	Cuttings	1926	1:10560
F	193m E	Reservoir	1938	1:10560
F	193m E	Reservoir	1898	1:10560
F	194m E	Reservoir	1926	1:10560
F	196m E	Reservoir	1863	1:10560
3	198m NW	Cuttings	1993	1:10000
B	200m SE	Refuse Heap	1969	1:10560
G	204m NW	Cuttings	1926	1:10560
G	207m NW	Cuttings	1951	1:10560
G	207m NW	Cuttings	1969	1:10560
B	208m SE	Unspecified Disused Pit	1951	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
G	215m NW	Cuttings	1938	1:10560
G	215m NW	Cuttings	1898	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m

36

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 107**

ID	Location	Land Use	Year of mapping	Mapping scale
A	On site	Collieries	1863	1:10560
H	314m NW	Collieries	1863	1:10560
L	380m NW	Old Coal Shaft	1863	1:10560
L	382m NW	Unspecified Old Shaft	1938	1:10560
L	382m NW	Unspecified Old Shaft	1898	1:10560
L	383m NW	Unspecified Old Shaft	1951	1:10560
7	409m N	Disused Colliery	1951	1:10560
P	409m N	Unspecified Disused Mine	1969	1:10560
P	431m N	Coal Pit	1863	1:10560
P	432m N	Disused Unspecified Mine	1993	1:10000
16	481m N	Disused Colliery	1898	1:10560
17	535m SE	Unspecified Old Shaft	1898	1:10560
U	549m SE	Iron Ore Mine	1938	1:10560
V	568m SE	Iron Ore Mine	1898	1:10560
-	653m N	Disused Unspecified Mine	1993	1:10000
-	654m N	Unspecified Disused Mine	1969	1:10560
-	655m S	Iron Ore Mine	1898	1:10560
-	656m S	Iron Ore Mine	1938	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
-	662m S	Disused Iron Ore Mine	1948	1:10560
26	662m SE	Old Iron Shaft	1863	1:10560
AB	683m SE	Unspecified Old Shaft	1898	1:10560
-	684m SE	Unspecified Old Shaft	1938	1:10560
-	720m N	Disused Colliery	1926	1:10560
-	883m SE	Unspecified Old Shafts	1938	1:10560
-	883m SE	Unspecified Old Shafts	1898	1:10560
-	890m SE	Unspecified Old Shafts	1948	1:10560
-	892m S	Unspecified Old Shafts	1948	1:10560
-	895m S	Unspecified Old Shafts	1898	1:10560
-	895m S	Unspecified Old Shaft	1938	1:10560
-	896m S	Unspecified Old Shaft	1898	1:10560
-	901m S	Unspecified Old Shafts	1938	1:10560
-	906m S	Unspecified Old Shafts	1948	1:10560
-	942m S	Unspecified Old Shaft	1938	1:10560
-	942m S	Unspecified Old Shaft	1898	1:10560
-	970m NE	Coal Pit	1863	1:10560
-	984m S	Unspecified Old Shaft	1948	1:10560

This is 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

23

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 107**

ID	Location	Name	Commodity	Class	Likelihood
1	On site	Not available	Iron Ore (Non Vein)	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
B	On site	Not available	Iron Ore (Bedded)	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
C	47m SW	Not available	Iron Ore (Non Vein)	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
A	55m NW	Not available	Iron Ore (Bedded)	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
2	76m N	Not available	Iron Ore (Bedded)	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
O	407m S	Not available	Haematite	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
O	440m S	Not available	Haematite	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
10	441m S	Not available	Iron Ore (Bedded)	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered



ID	Location	Name	Commodity	Class	Likelihood
11	441m S	Not available	Haematite	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
O	441m S	Not available	Iron Ore (Non Vein)	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
13	446m S	Not available	Iron Ore (Non Vein)	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
S	489m SE	Not available	Iron Ore (Non Vein)	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
R	552m E	Not available	Iron Ore (Bedded)	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
R	552m E	Not available	Ironstone (bedded)	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
R	567m E	Not available	Ironstone (bedded)	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
19	581m E	Not available	Vein Mineral	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
-	785m E	Not available	Ironstone (bedded)	D	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
-	795m S	Not available	Iron Ore (Non Vein)	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered



ID	Location	Name	Commodity	Class	Likelihood
31	818m NE	Not available	Iron Ore (Bedded)	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
-	840m E	Not available	Iron Ore (Bedded)	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
-	920m SW	Not available	Iron Ore (Non Vein)	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
-	922m SW	Not available	Iron Ore (Non Vein)	E	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
-	930m NE	Not available	Iron Ore (Non Vein)	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	6
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Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

Features are displayed on the Mining, ground workings and natural cavities map on **page 107**

ID	Location	Mine Address	Mineral	Data source	Publisher
12	441m SE	Cleator Moor, Cumbria	Hematite	LISTING OF NEW MINERAL RECORDS OFFICE CATALOGUE.	UNPUBLISHED/DRAFT
V	617m SE	Stirlings No.4, Cumbria	Hematite	MINERAL PLANNING RIGHTS APPLICATION RECORDS.	UNPUBLISHED
25	634m SE	Crossfield Mines, Cumbria	Hematite	CATALOGUE OF MINING INFORMATION (OTHER THAN COAL, FIRECLAY & SLATE) FOR THE L.D	BGS
U	690m SE	Cleator Moor Mine, Crowgarth, Cumbria	Hematite	CATALOGUE OF MINING INFORMATION (OTHER THAN COAL, FIRECLAY & SLATE) FOR THE L.D	BGS



ID	Location	Mine Address	Mineral	Data source	Publisher
-	706m SE	Berrier Mine, Cumbria	Hematite	CATALOGUE OF MINING INFORMATION (OTHER THAN COAL, FIRECLAY & SLATE) FOR THE L.D	BGS
-	851m S	Montreal Mine, Cumbria	Hematite	CATALOGUE OF MINING INFORMATION (OTHER THAN COAL, FIRECLAY & SLATE) FOR THE L.D	BGS

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.

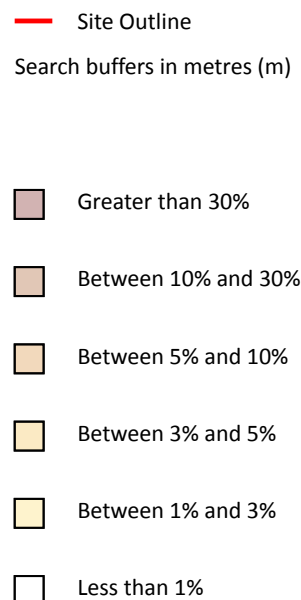
18.13 Clay mining

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 118**

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

9

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
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
28m 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
39m SW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
39m W	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
47m SW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
47m SW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.



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.

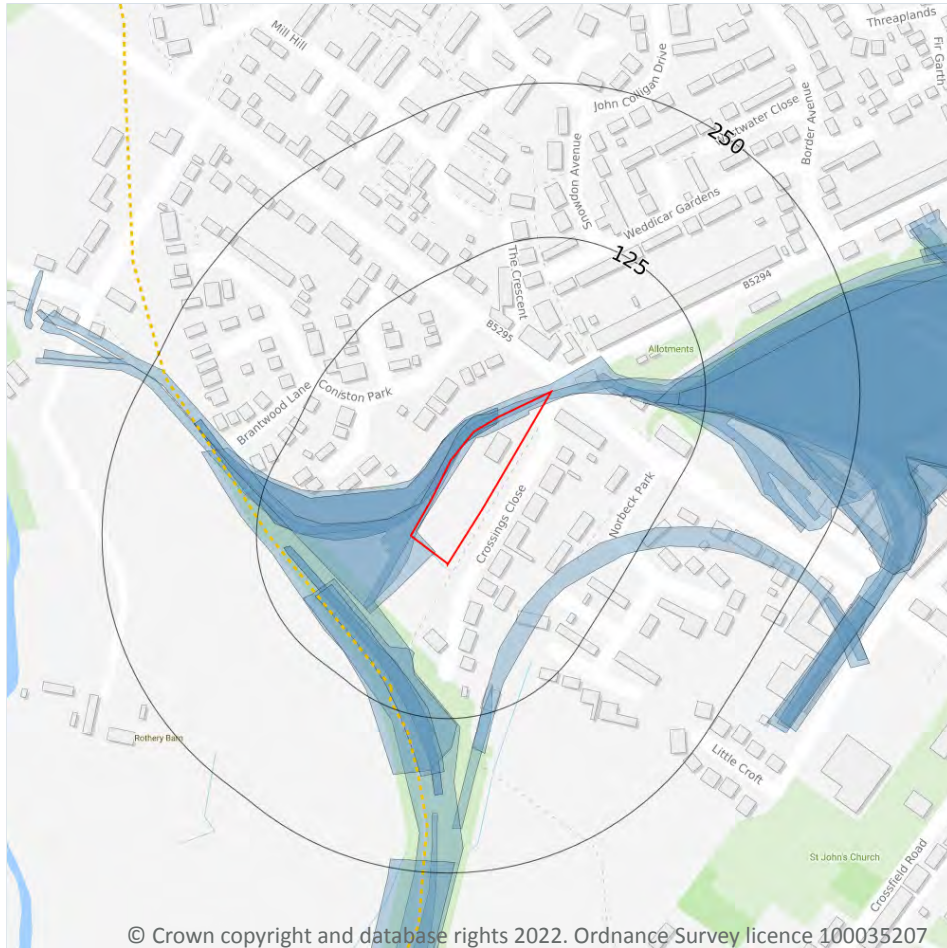
20.3 BGS Measured Urban Soil Chemistry

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
- Crossrail 1 Worksites
- 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	18
----------------------------	-----------

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 121**

Location	Land Use	Year of mapping	Mapping scale
On site	Mineral Railway Sidings	1899	2500
On site	Mineral Railway Sidings	1925	2500
On site	Railway Sidings	1863	2500
On site	Mineral Railway Sidings	1926	10560
On site	Railway Sidings	1863	10560
38m E	Railway Sidings	1863	2500
58m E	Railway Sidings	1899	2500
70m SW	Railway Sidings	1938	10560
71m SE	Mineral Railway Sidings	1898	10560
75m SW	Railway Sidings	1951	10560
75m E	Mineral Railway Sidings	1925	2500
79m SW	Railway Sidings	1899	2500
79m SW	Railway Sidings	1925	2500
85m E	Railway Sidings	1938	10560
104m E	Railway Sidings	1898	10560
104m S	Mineral Railway Sidings	1899	2500
202m S	Railway Sidings	1961	2500



Location	Land Use	Year of mapping	Mapping scale
241m S	Railway Sidings	1951	10560

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	2
----------------------------	----------

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

Features are displayed on the Railway infrastructure and projects map on **page 121**

Location	Description
89m SW	Abandoned
110m SW	Abandoned

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>.

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Appendix 2

Historical Maps

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Client Ref: C2064_21_E_3181_PO-2228
Report Ref: GS-8882838
Grid Ref: 301096, 515511

Map Name: County Series

Map date: 1863

Scale: 1:2,500

Printed at: 1:2,500



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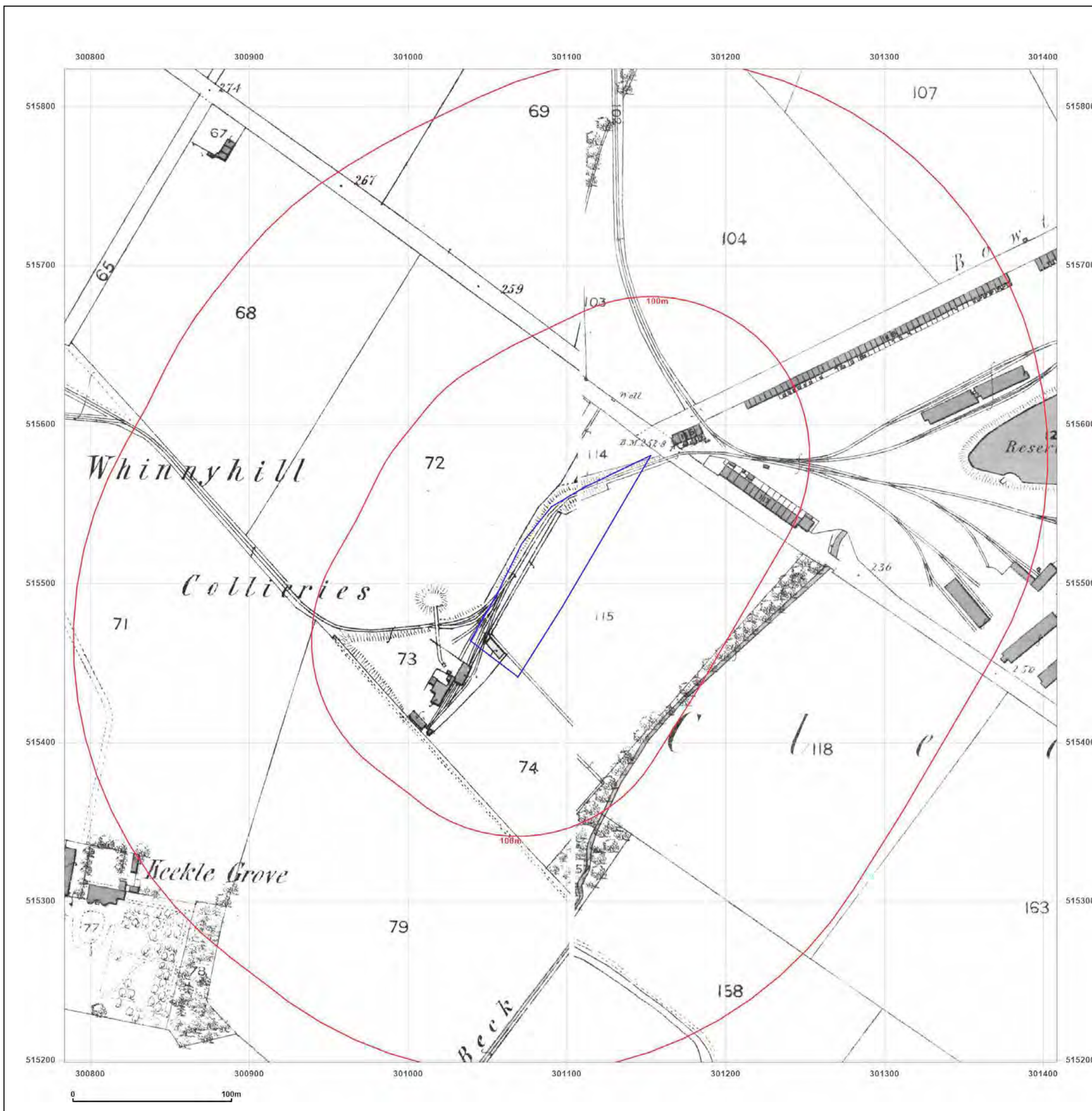


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Client Ref: C2064_21_E_3181_PO-2228
Report Ref: GS-8882838
Grid Ref: 301096, 515511

Map Name: County Series

Map date: 1863-1865

Scale: 1:2,500

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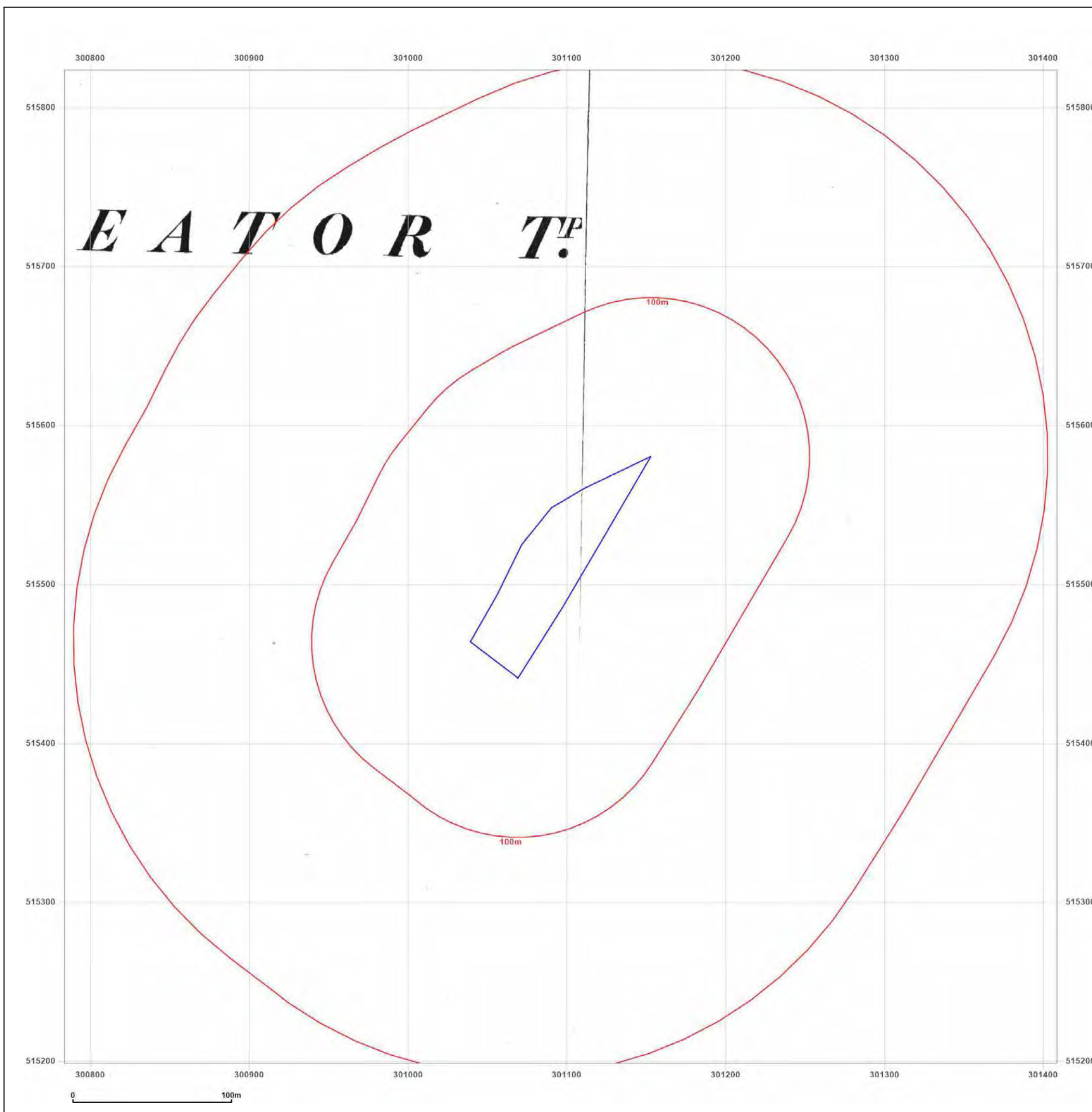


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Client Ref: C2064_21_E_3181_PO-2228
Report Ref: GS-8882838
Grid Ref: 301096, 515511

Map Name: County Series

Map date: 1899

Scale: 1:2,500

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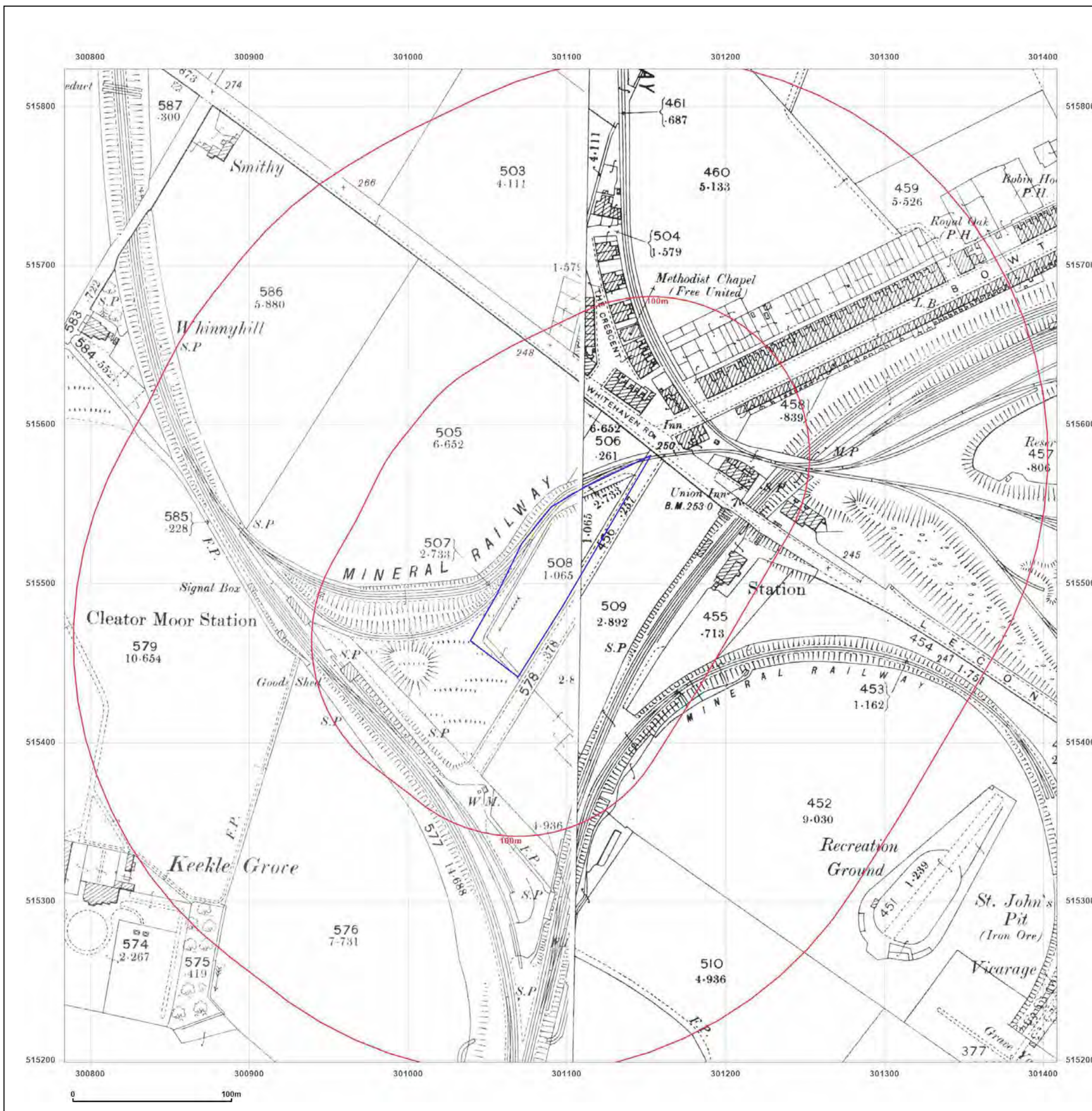


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Client Ref: C2064_21_E_3181_PO-2228
Report Ref: GS-8882838
Grid Ref: 301096, 515511

Map Name: County Series

Map date: 1925

Scale: 1:2,500

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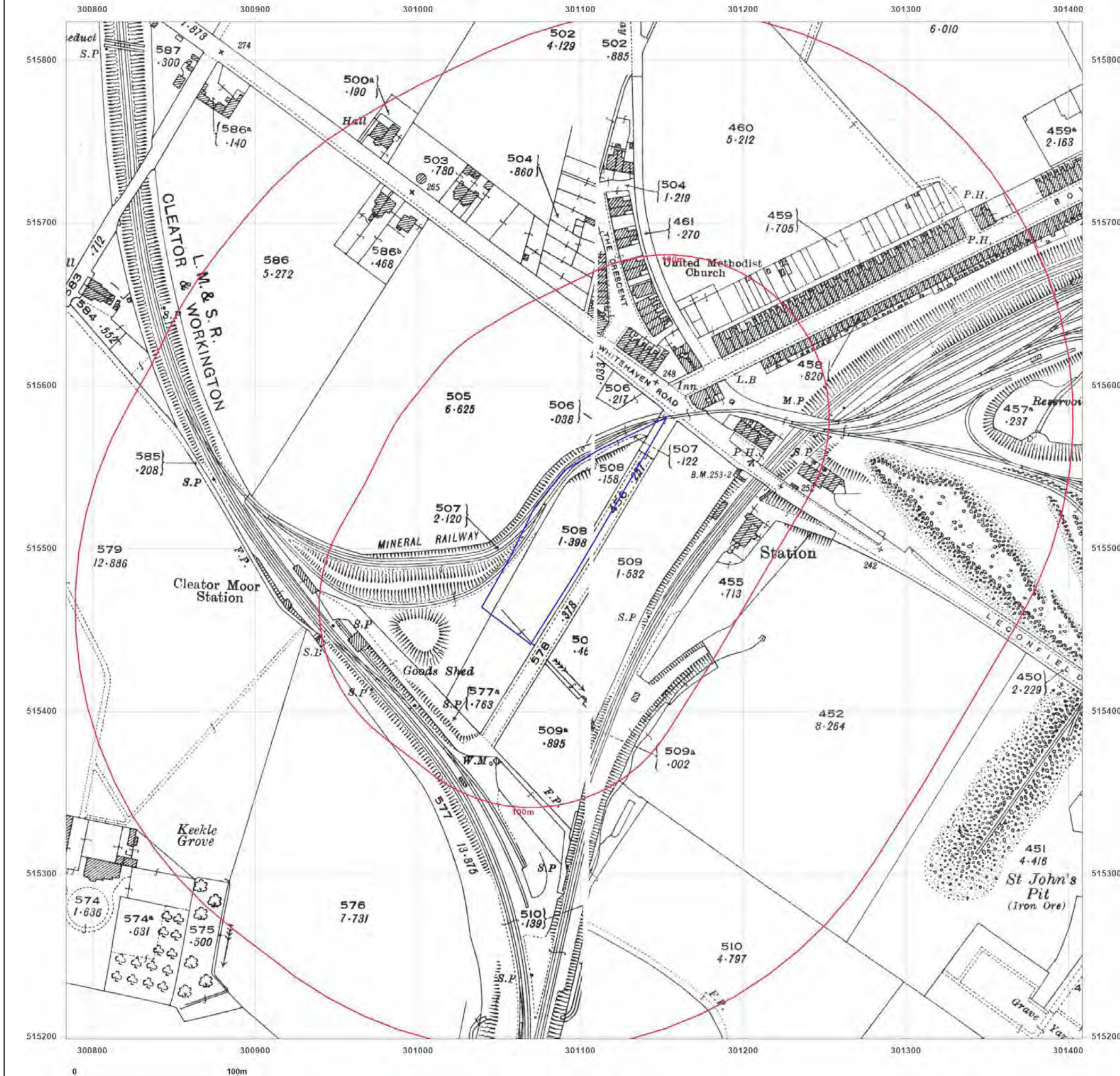


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Report Ref: GS-8882838
Grid Ref: 301096, 515511

Map Name: National Grid

Map date: 1962

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1961
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Edition N/A
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Levelled 1956

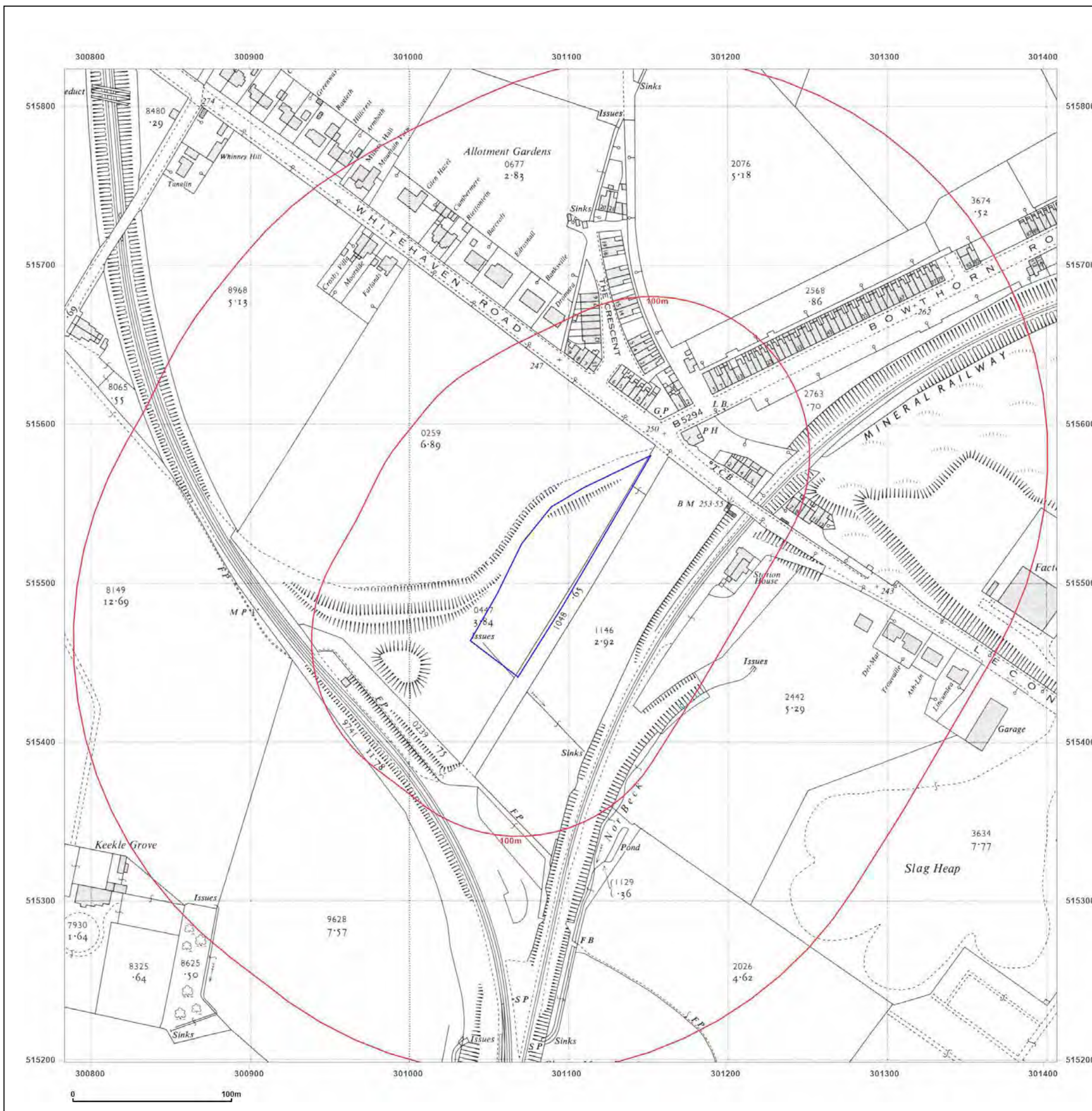


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Map Name: National Grid

Map date: 1970

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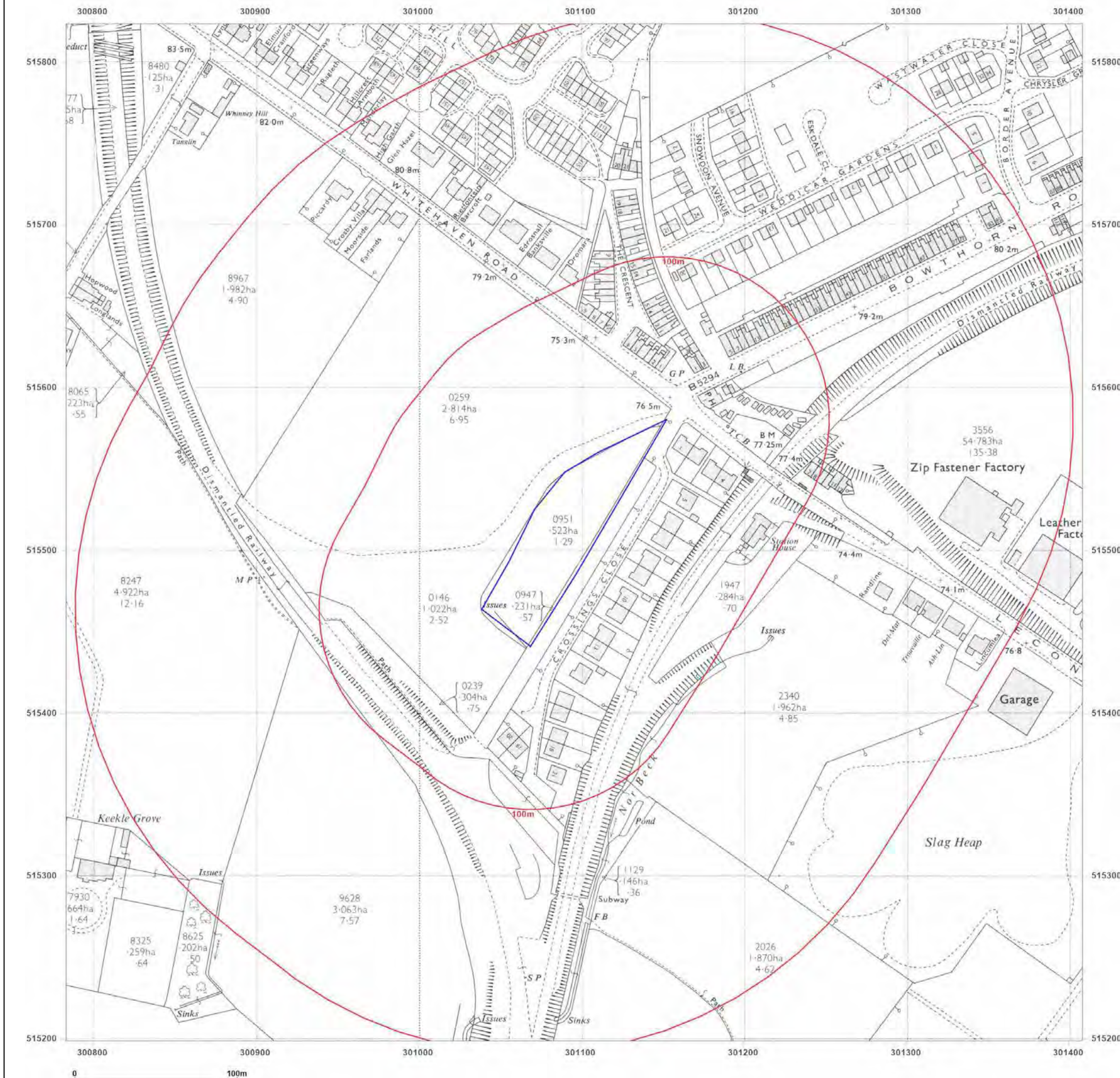


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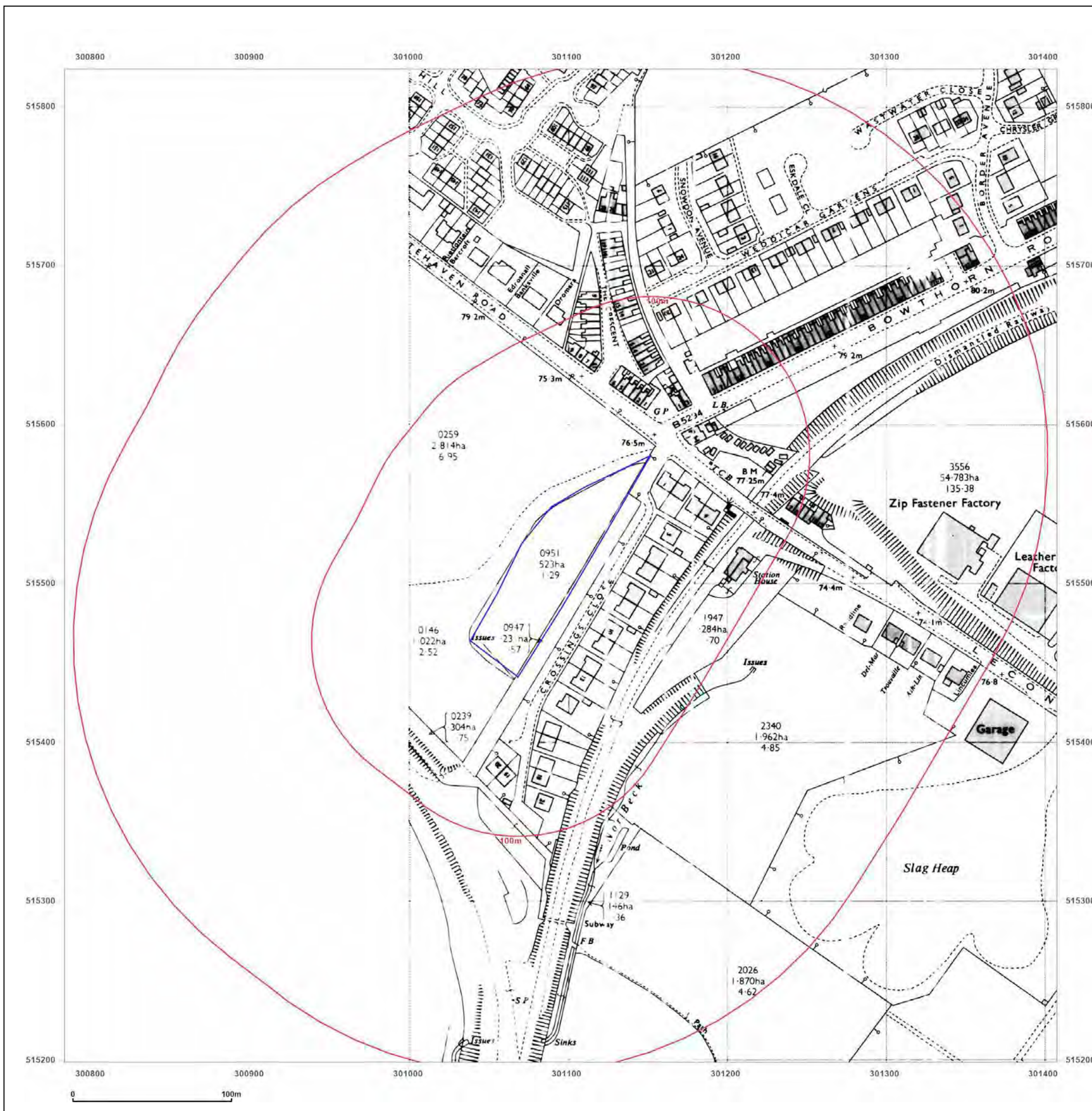


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Grid Ref: 301096, 515511

Map Name: National Grid

Map date: 1982-1985

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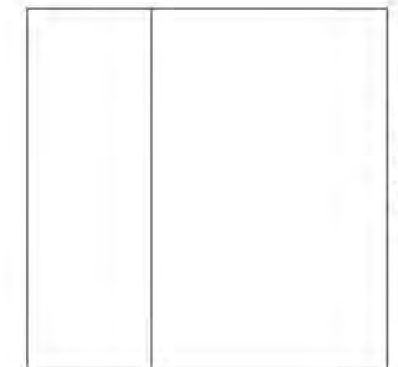
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Grid Ref: 301096, 515511

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Grid Ref: 301096, 515511

Map Name: National Grid

Map date: 1991-1992

Scale: 1:2,500

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Report Ref: GS-8882838
Grid Ref: 301096, 515511

Map Name: National Grid

Map date: 1994

Scale: 1:2,500

Printed at: 1:2,500



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Report Ref: GS-8882838
Grid Ref: 301096, 515511

Map Name: National Grid

Map date: 1995

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Map Name: National Grid

Map date: 1995

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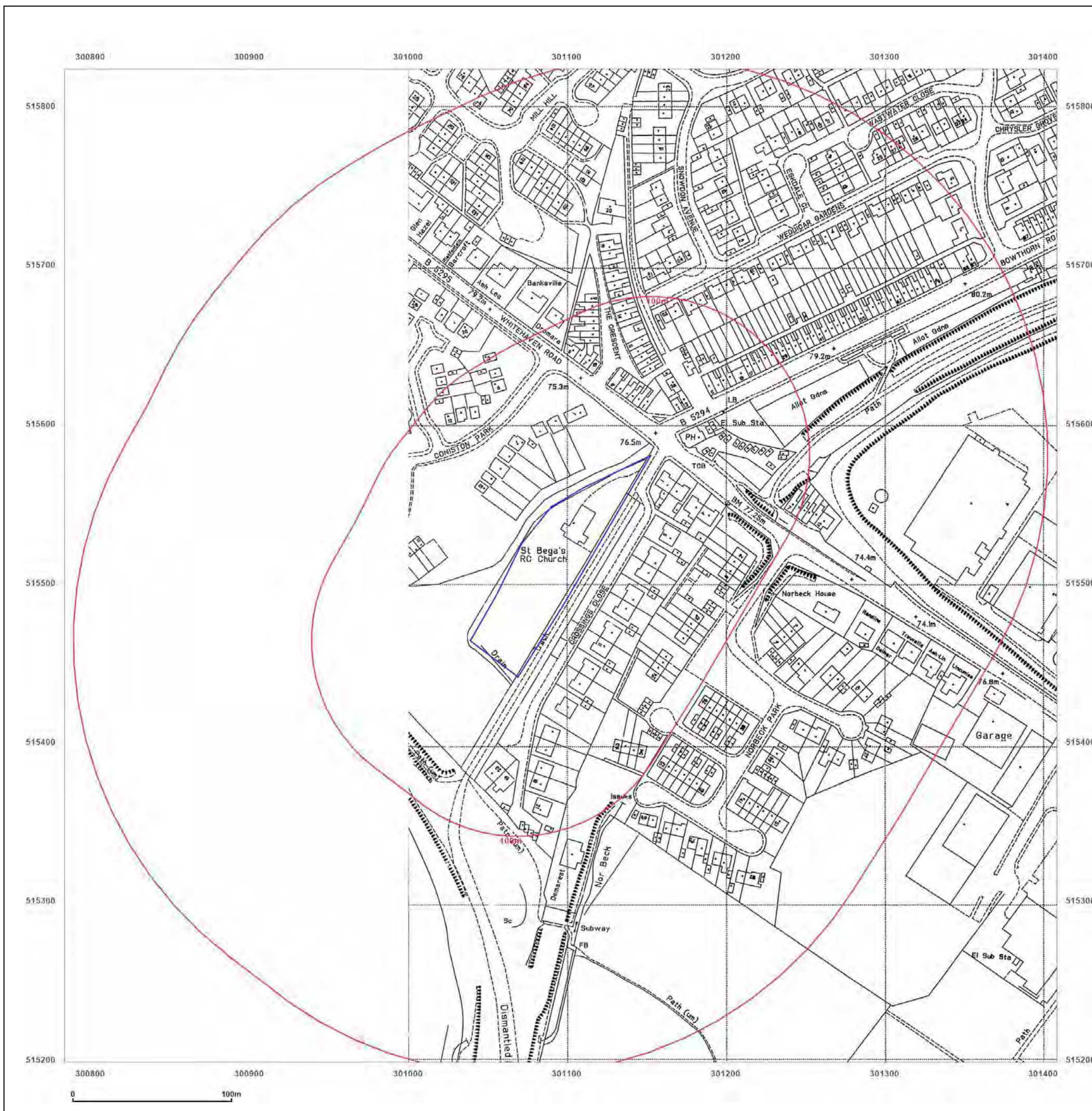


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Map Name: National Grid

Map date: 1995

Scale: 1:2,500

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Map Name: National Grid

Map date: 1995

Scale: 1:2,500

Printed at: 1:2,500



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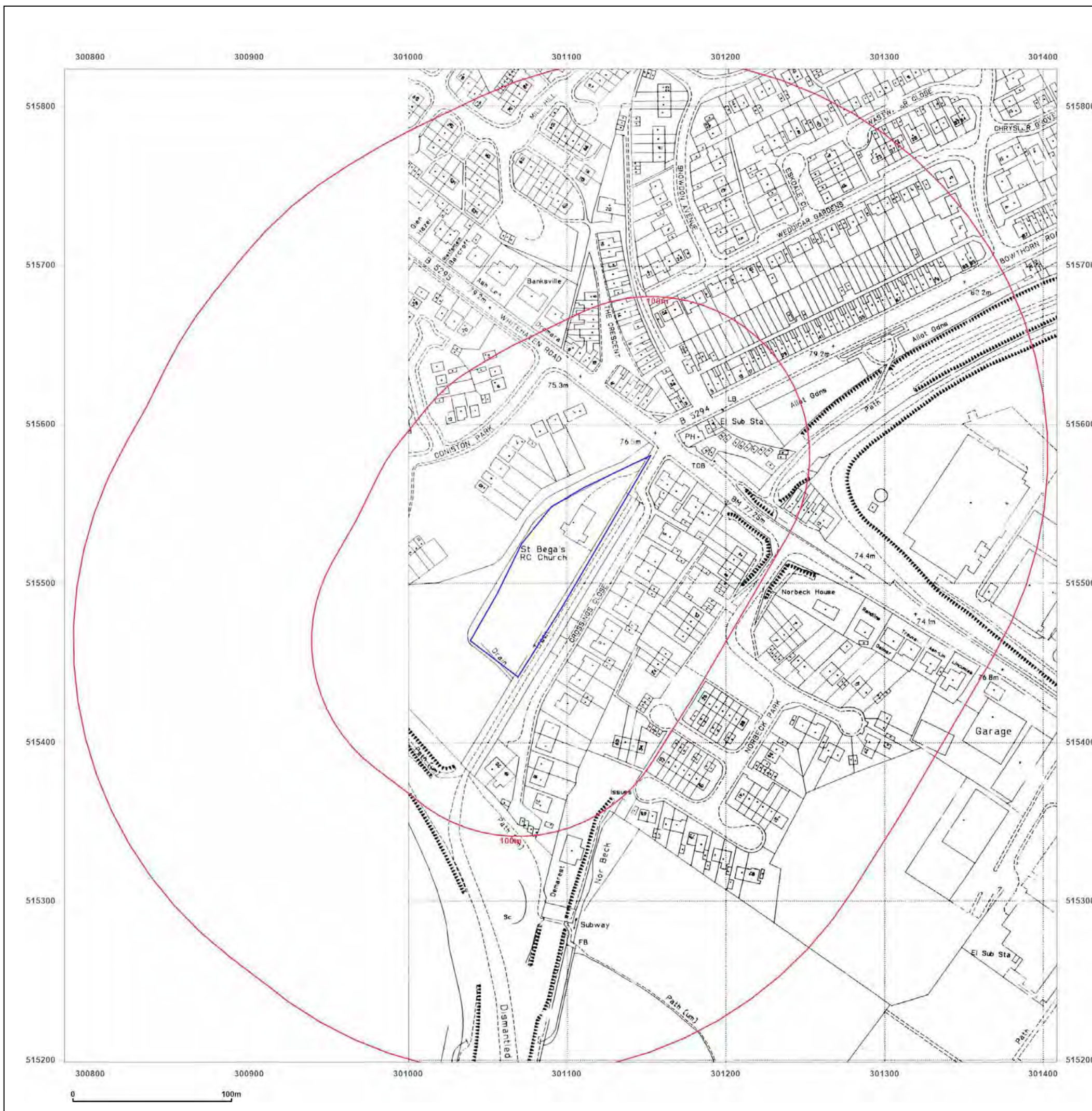


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Client Ref: C2064_21_E_3181_PO-2228
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Grid Ref: 301096, 515511

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



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Client Ref: C2064_21_E_3181_PO-2228
Report Ref: GS-8882838
Grid Ref: 301096, 515511

Map Name: County Series

Map date: 1926

Scale: 1:10,560

Printed at: 1:10,560



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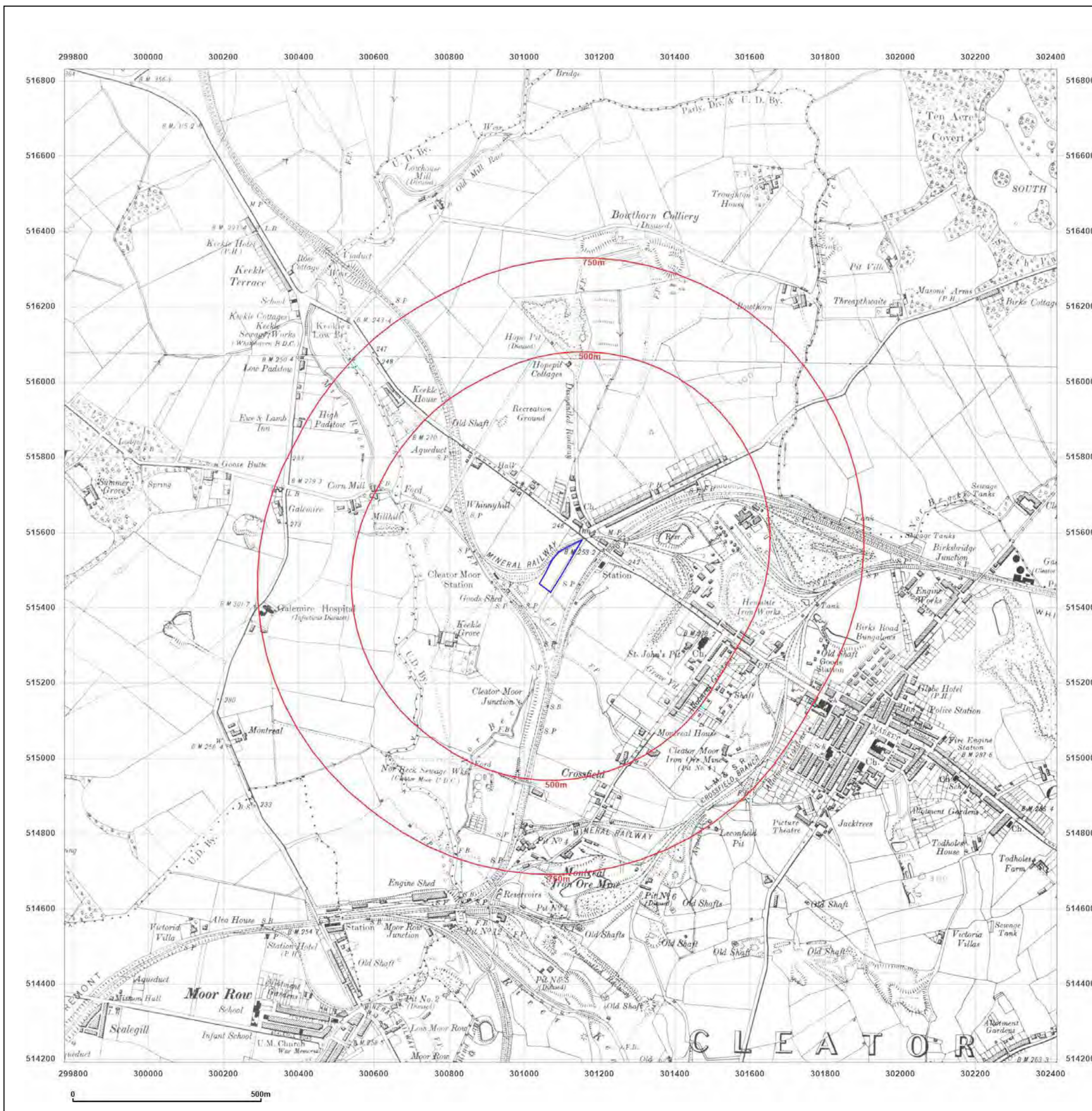


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Site Details:

ST BEGAS CHAPEL SITE,
CROSSINGS CLOSE, CLEATOR
MOOR, CA25 5QH

Client Ref: C2064_21_E_3181_PO-2228
Report Ref: GS-8882838
Grid Ref: 301096, 515511

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1863
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

Surveyed 1863
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

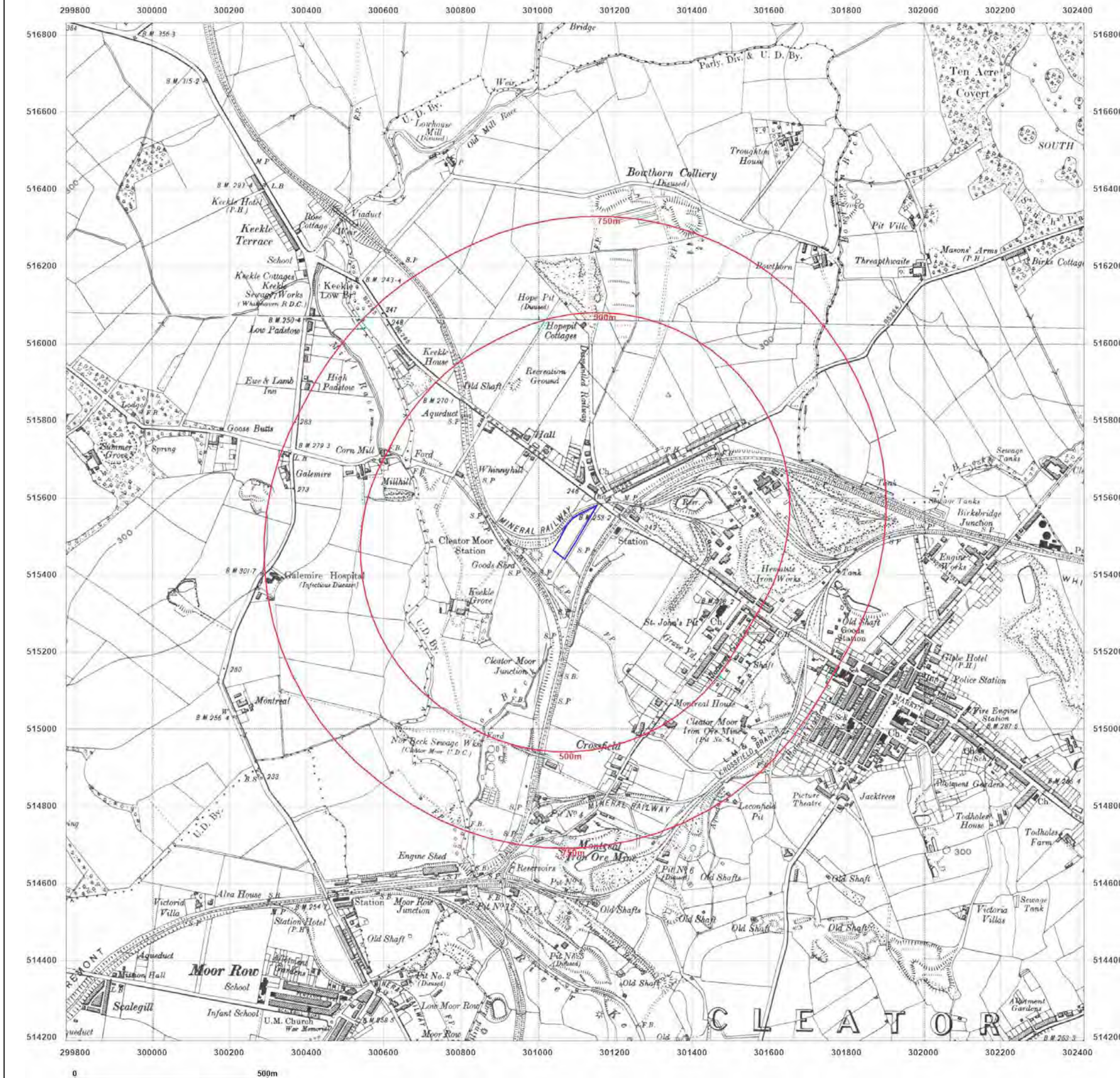


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Site Details:

ST BEGAS CHAPEL SITE,
CROSSINGS CLOSE, CLEATOR
MOOR, CA25 5QH

Client Ref: C2064_21_E_3181_PO-2228
Report Ref: GS-8882838
Grid Ref: 301096, 515511

Map Name: Provisional

Map date: 1956-1957

Scale: 1:10,560

Printed at: 1:10,560



Surveyed N/A
Revised 1956
Edition 1957
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Surveyed N/A
Revised 1956
Edition N/A
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Revised 1956
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Copyright 1956
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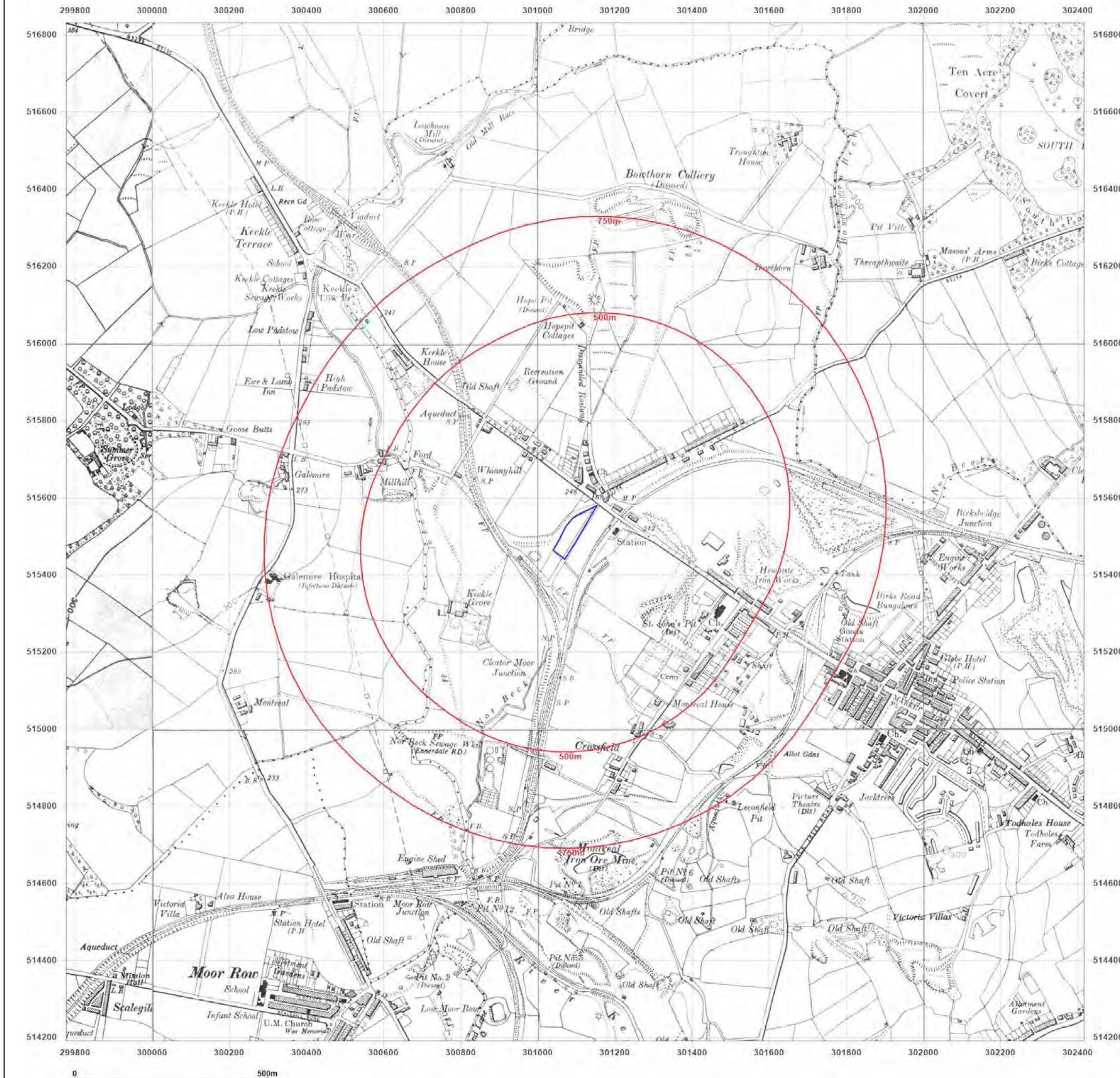


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Production date: 06 July 2022

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Site Details:

ST BEGAS CHAPEL SITE,
CROSSINGS CLOSE, CLEATOR
MOOR, CA25 5QH

Client Ref: C2064_21_E_3181_PO-2228
Report Ref: GS-8882838
Grid Ref: 301096, 515511

Map Name: Provisional

Map date: 1967-1969

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1969
Edition N/A
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Surveyed 1967
Revised 1967
Edition N/A
Copyright N/A
Levelled N/A

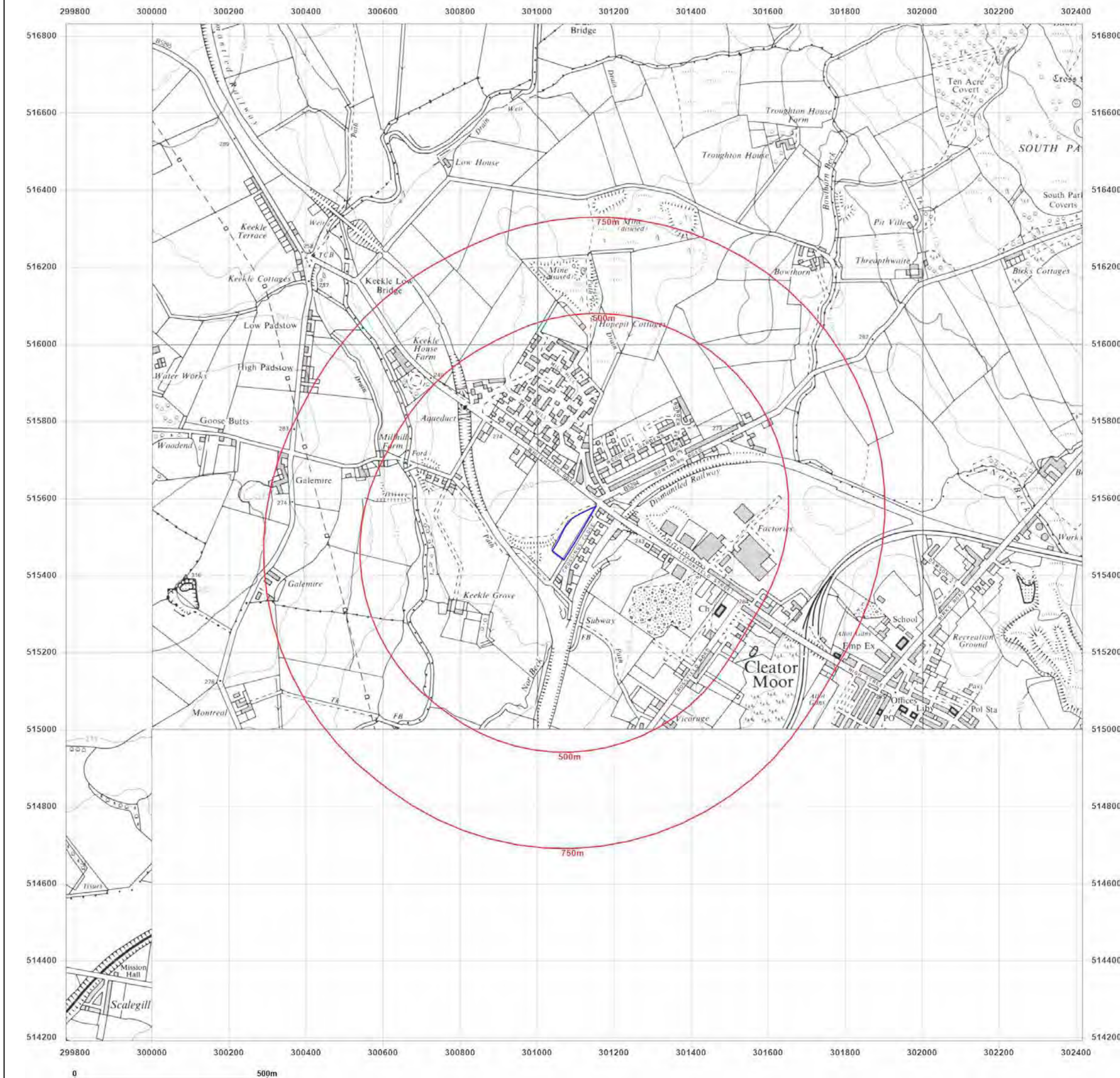


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Site Details:

ST BEGAS CHAPEL SITE,
CROSSINGS CLOSE, CLEATOR
MOOR, CA25 5QH

Client Ref: C2064_21_E_3181_PO-2228
Report Ref: GS-8882838
Grid Ref: 301096, 515511

Map Name: National Grid

Map date: 1988-1993

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1992
Revised 1993
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Surveyed 1961
Revised 1988
Edition N/A
Copyright N/A
Levelled N/A

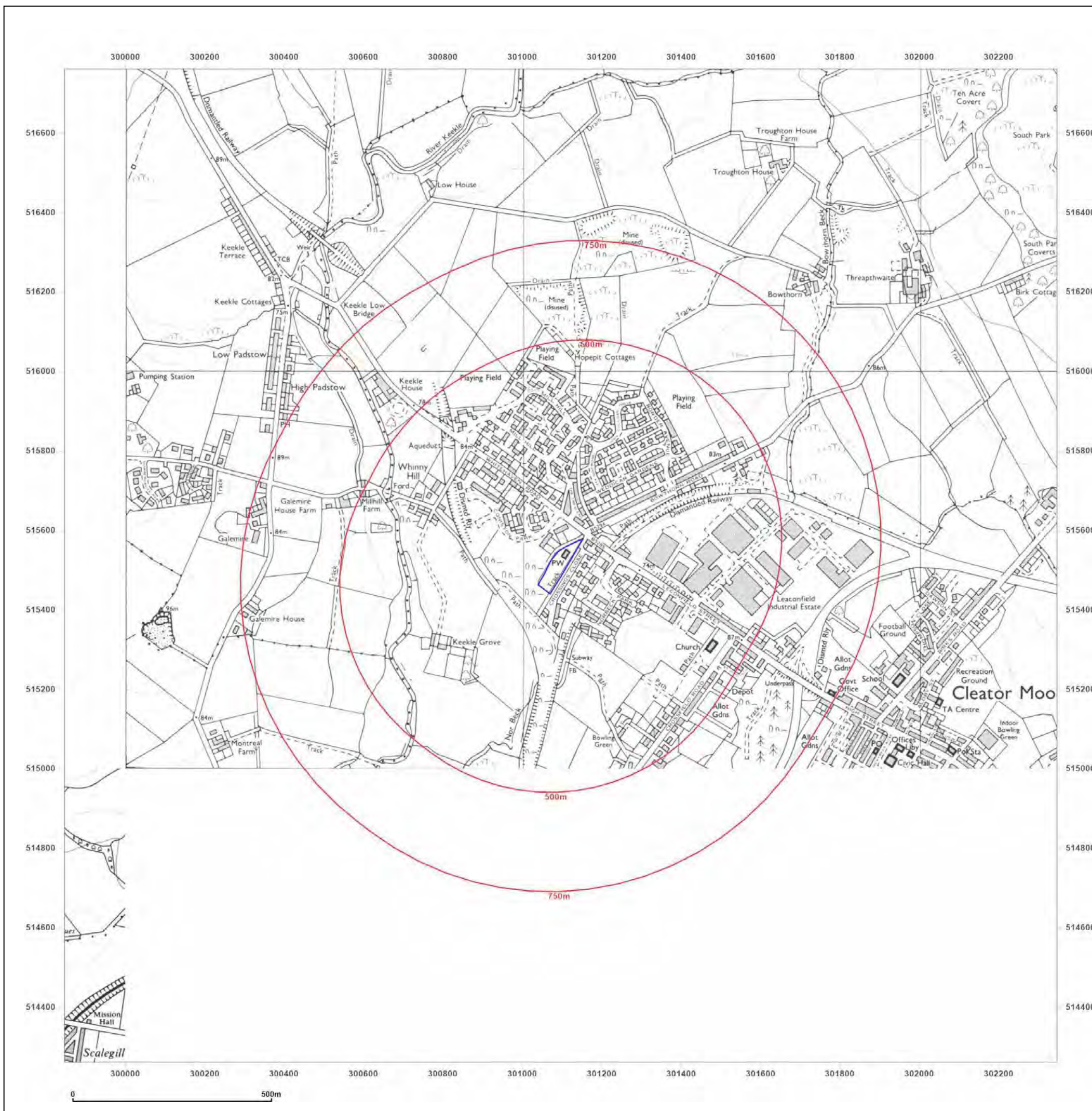


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Site Details:

ST BEGAS CHAPEL SITE,
CROSSINGS CLOSE, CLEATOR
MOOR, CA25 5QH

Client Ref: C2064_21_E_3181_PO-2228
Report Ref: GS-8882838
Grid Ref: 301096, 515511

Map Name: National Grid

Map date: 2001

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Printed at: 1:10,000

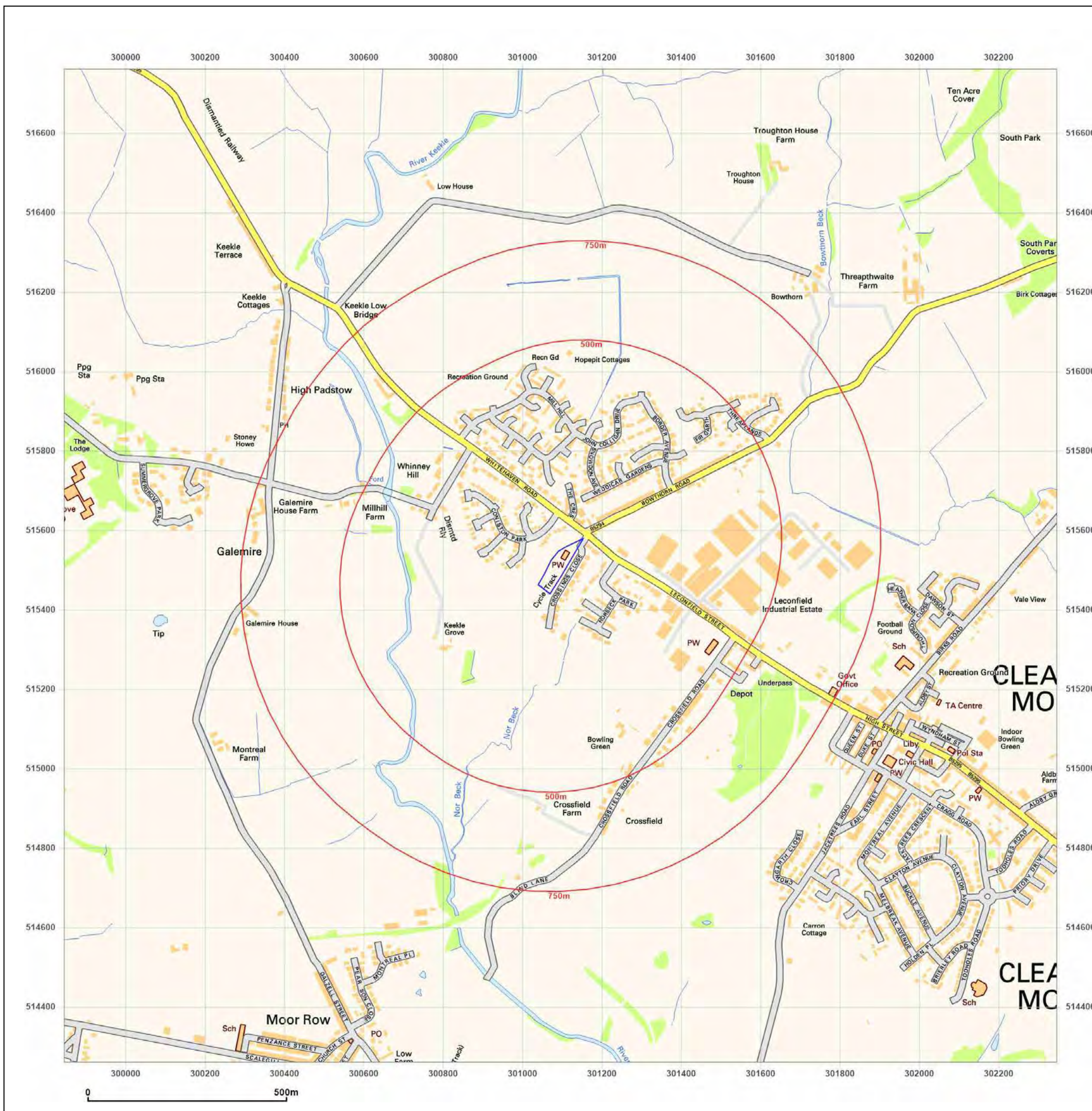


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Production date: 06 July 2022

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Site Details:

ST BEGAS CHAPEL SITE,
CROSSINGS CLOSE, CLEATOR
MOOR, CA25 5QH

Client Ref: C2064_21_E_3181_PO-2228
Report Ref: GS-8882838
Grid Ref: 301096, 515511

Map Name: National Grid

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Scale: 1:10,000

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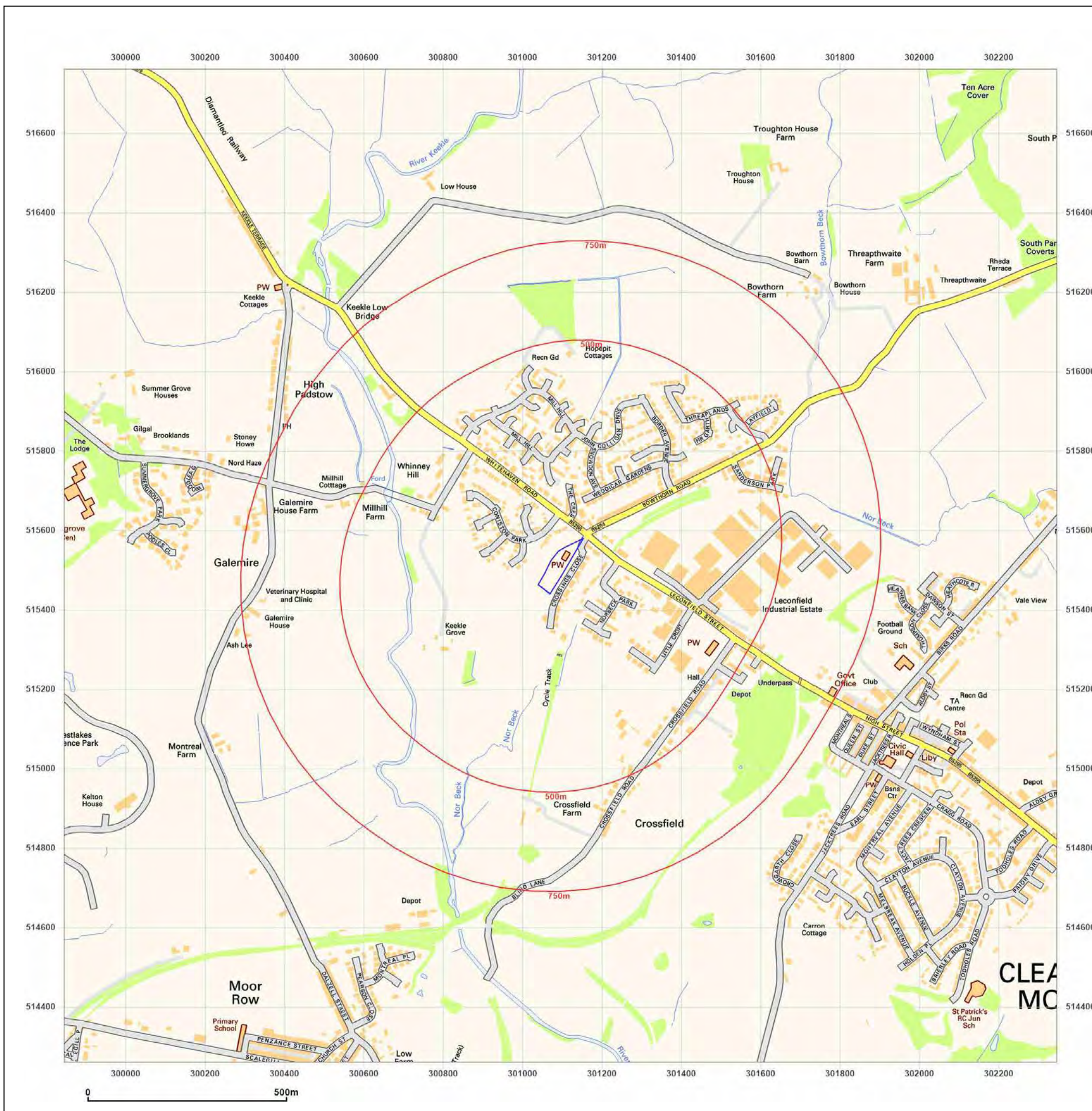


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Site Details:

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CROSSINGS CLOSE, CLEATOR
MOOR, CA25 5QH

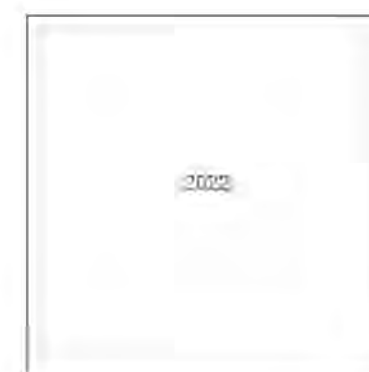
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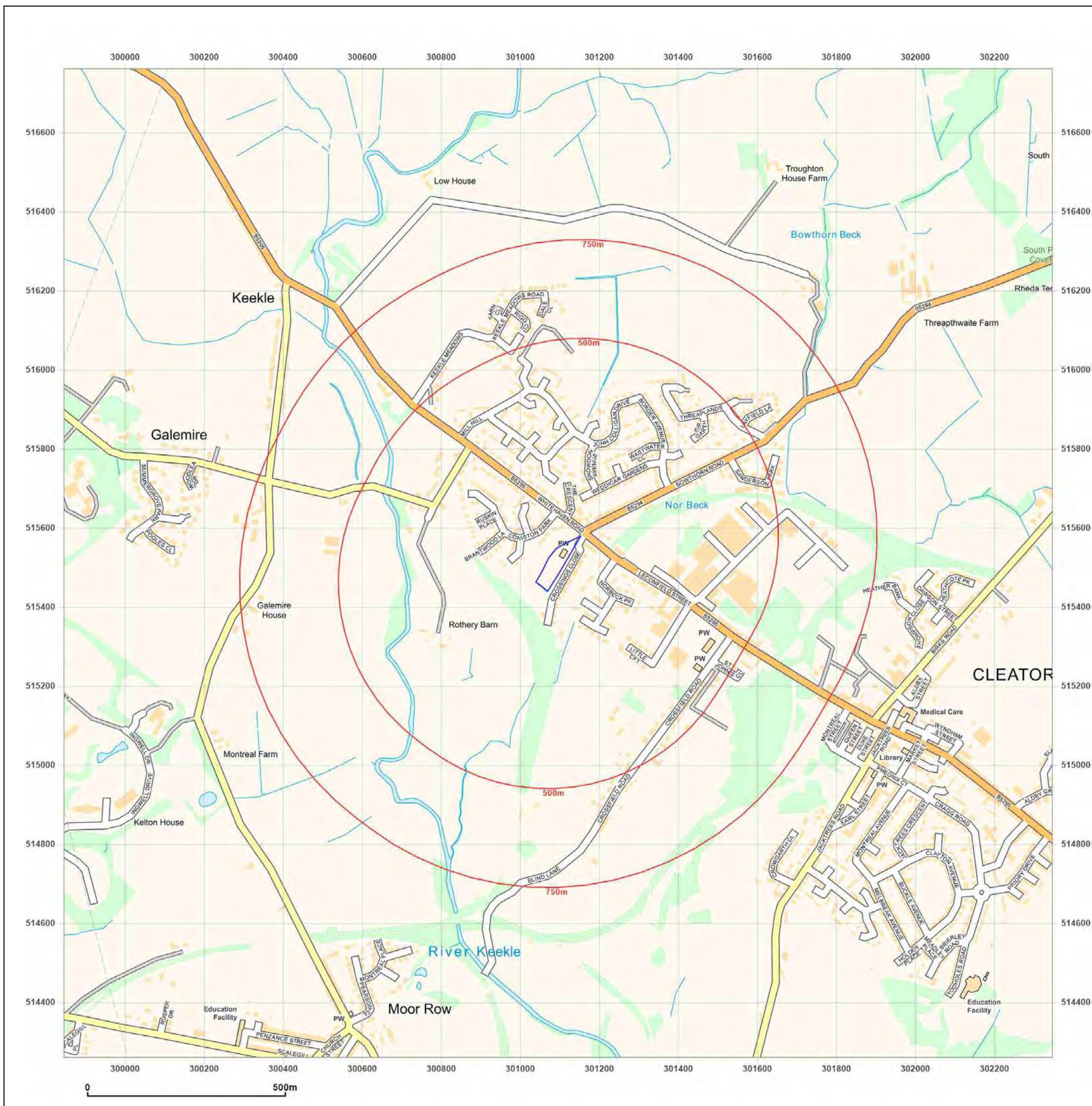


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Production date: 06 July 2022

Map legend available at:
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Appendix 3

Site Plans



SOUTH NORTH GROUP

SNG Architecture Ltd.

South North Group
Greengate Business Centre,
OLDHAM, OL4 1FN.

Tel. 03308220011
Email. info@SNGarchitecture.com

This drawing is the property of SNG Architecture Ltd.
No dimensions are to be taken from this drawing
All dimensions shall be as per the site plan
All site works are the responsibility of the Contractor
SNG Architecture Ltd. to be notified of any changes
prior to any work being implemented

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Proposed Site Plan rev22A

1:500 @ A3

St Bega's Chapel Site, Crossings Close, Cleator Moor, CA25 5QH
Drw: SNG-SBOP-PSP22A



Site Boundary is indicative refer to Deeds



Appendix 4

Photographs



















Appendix 5

Consultants Coal Mining Report



The Coal
Authority

Consultants Coal Mining Report

St Begas Chapel Site
Crossings Close
Cleator Moor
Cumbria
CA25 5QH

Date of enquiry:	6 July 2022
Date enquiry received:	6 July 2022
Issue date:	6 July 2022

Our reference:	51003263753001
Your reference:	C/2064/21/E/3181

Consultants Coal Mining Report

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

Client name

ROGERS GEOTECHNICAL SERVICES LTD

Enquiry address

St Begas Chapel Site
Crossings Close
Cleator Moor
Cumbria
CA25 5QH

How to contact us

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

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

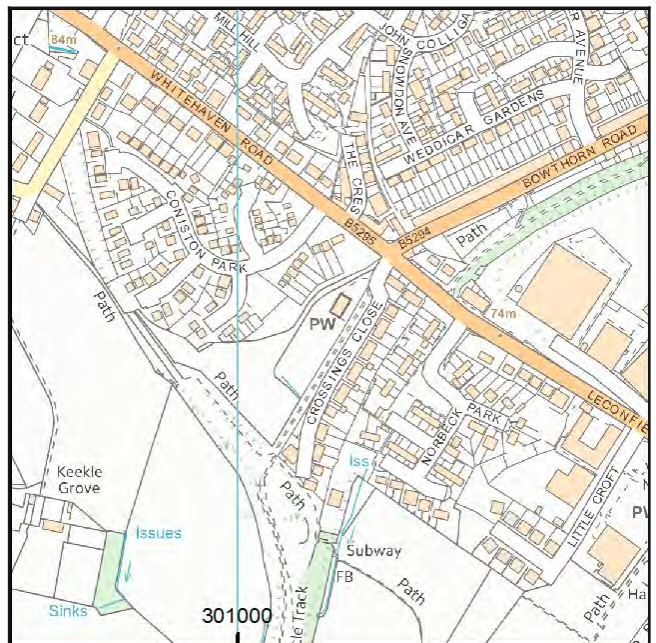
www.groundstability.com

 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
RISE	BRICK (BANNOCK)	Coal	00AO	38	Beneath Property	18.4	South	180	1894
WHINNEY HILL	MAIN	Coal	00AF	41	Beneath Property	29.7	South-West	270	1870
unnamed	UPPER TEN QUARTERS	Coal	00AK	85	East	16.0	South-West	140	1890
unnamed	UPPER TEN QUARTERS	Coal	009X	100	North-West	16.9	South-West	144	1894
WHINNEYHALL	MAIN	Coal	00AE	113	Beneath Property	25.5	South-West	270	1870
WHINNEYHALL	SIX QUARTERS	Coal	A04C	161	North-West			100	1900

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	301515-001	301022 515447		Coal	
Shaft	301515-002	301056 515458		Coal	

Abandoned mine plan catalogue numbers

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

NW1348	17356	17413
NC176	NW1390	0
NW1298	OM14375	OM15142

Our records show we have more plans than those shown above which could affect the enquiry boundary.

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

Outcrops

No outcrops recorded.

Geological faults, fissures and breaklines

Please refer to the 'Summary of findings' map (on separate sheet) for details of any geological faults, fissures or breaklines either within or intersecting the enquiry boundary.

Faults under or close to the property recorded.

Opencast mines

None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

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

Site investigations

None recorded within 50 metres of the enquiry boundary.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

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

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

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

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

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

Withdrawal of support notices

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

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

Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Section 4 – Further information

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

Development advice

The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.

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

Section 5 – Data definitions

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

Past underground coal mining

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

Probable unrecorded shallow workings

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

Spine roadways at shallow depth

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

Mine entries

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

Abandoned mine plan catalogue numbers

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

Outcrops

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

Geological faults, fissures and breaklines

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

Opencast mines

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

Coal Authority managed tips

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

Site investigations

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

Remediated sites

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

Coal mining subsidence

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

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

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

Mine gas

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

Mine water treatment schemes

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

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

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

Future underground mining

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

Coal mining licensing

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

Court orders

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

Section 46 notices

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

Withdrawal of support notices

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

Payment to owners of former copyhold land

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

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

