

Goodman's Fold Barn, Blackrod

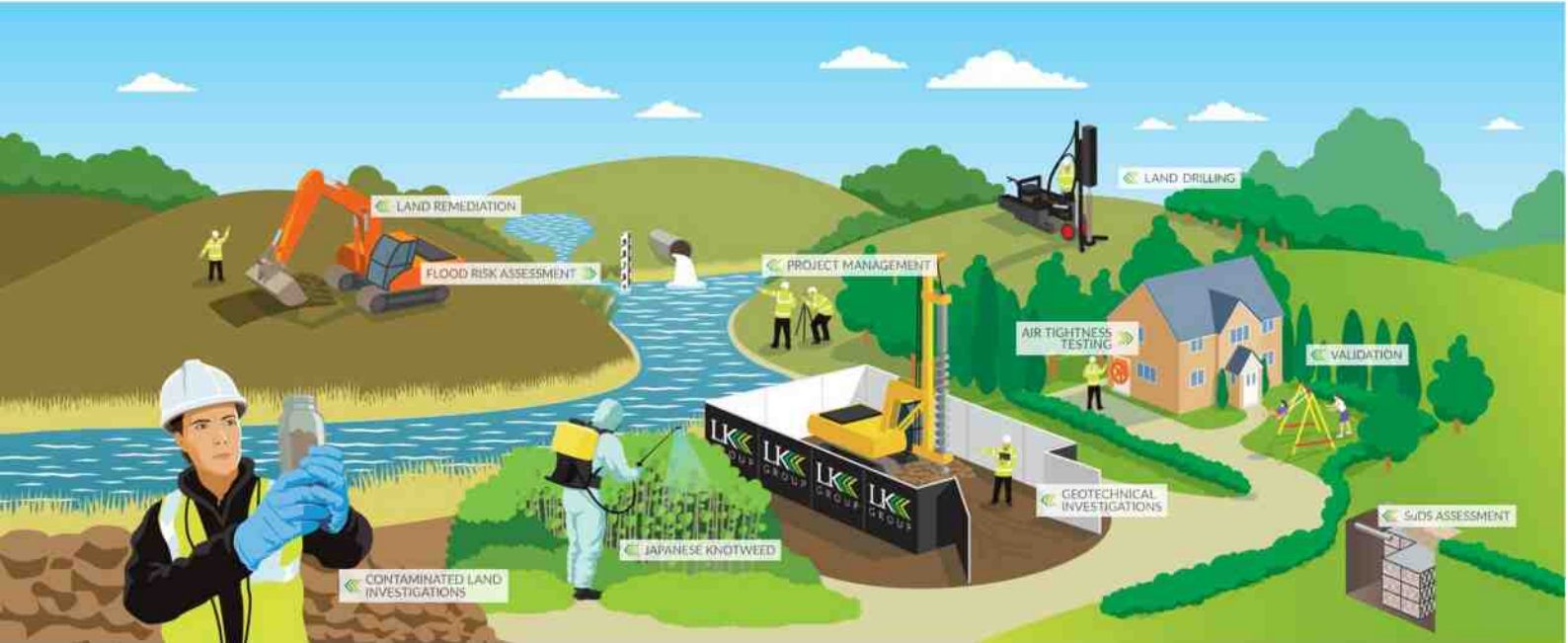
Desk Based Coal Mining Risk Assessment

Job Number: LKC 23 1733
Date: December 2023
Client: John James Dickinson



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Site Address	Goodman's Fold Barn, Chorley Road, Blackrod, Bolton, BL6 5LG
Report Title	Desk Based Coal Mining Risk Assessment
Job Number	LKC 23 1733
Client	John James Dickinson

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Written By	Alex Evans		
Approved By	Colin Crompton		

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Those using this information in subsequent assessments or evaluations do so at their own risk.

It should be noted this report pertains solely to potential ground stability issues relating to potential shallow mining within the proposed planning boundary only.

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Appendix B – Initial Coal Authority Consultants Report

Appendix C – Updated Coal Authority Consultants Report

Appendix D – Coal Authority Correspondence

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1. Introduction

LK Consult Ltd (LKC) has been commissioned to carry out a Desk Based Coal Mining Risk Assessment (CMRA) for a replacement barn building at Goodman’s Fold Barn, Blackrod.

A Coal Mining Risk Assessment Report is required for a planning application within a designated ‘Coal Mining Development High Risk Area’. ‘Coal Mining Development High Risk Areas’ are areas, based upon Coal Authority records, where the potential land instability and other safety risks associated with former coal mining activities are likely to be greatest. They include, for example, areas of known or suspected shallow coal mining, recorded mine entries and areas of former surface mining.

This assessment is based upon guidance provided by the Coal Authority¹ and comprises a review of available desk-based information.

The scope of this Coal Mining Risk Assessment (as per Coal Authority guidance) is to:

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

A summary of the site details is presented in Table 1-1. Figure 1 indicates the site location and boundary plan. Figure 2 indicates the proposed development.

Location	End of access route off the A6, to the south-west of Chorley Road, Blackrod. Centred at National Grid Reference 360400E 412150N.
Area	600m ² .
Topography	100 metres above ordnance datum (AOD). Site is approximately level with a very slight slope up to the south.
Current Site Use	Storage units.
Proposed Development	Replacement barn building.

Table 1-1: Summary of site details.

2. Review of Information

2.1. Information Sources

LKC have obtained and reviewed information from the following sources, which is summarised in Section 2:

- Review of Published BGS Geological Mapping including:
 - 1933 1:10560 sheet mapping (Sheet 85NE).
 - Sheet 84 Wigan Solid, Published 1977, Scale 1:50,000.
 - Digital Geology, dated 2011, Scale 1:10,000 (Appendix A).
- Geology of the Wigan district, a brief explanation of the geological map Sheet 84 Wigan.
- Coal Authority Interactive Map Viewer².
- Coal Authority Consultants Coal Mining Report (Appendix B and C).
- Coal Authority List of Combustible Coal Seams³.
- Publicly available historical mapping.

2.2. Geological Mapping

2.2.1. Artificial

No BGS recorded artificial deposits are recorded on site.

2.2.2. Superficial

The superficial geology is mapped as Devensian Till (Diamicton).

2.2.3. Bedrock

The bedrock is mapped as the Pennine Lower Coal Measures Formation. The strata in the general area dip to the south-east at 15° (from 1977 mapping).

A coal seam is shown to subcrop (at rockhead) approximately 280m north-west which is expected to dip below the site. This coal seam is labelled as the Yard seam (based on sheet mapping). Digital geology also suggests limited surface workings in this seam.

Assuming a dip of 15°, the seam could be expected at a depth of 75m below rockhead on site.

The next mapped coal seam in sequence (below the Yard coal seam) is the Bone coal seam shown to subcrop approximately 700m north-west of the site.

The Ravine (or Plodder) Mine seam is shown to subcrop c. 130m south of the site on sheet mapping. However, this seam is not indicted on digital mapping and is not expected to dip below the site.

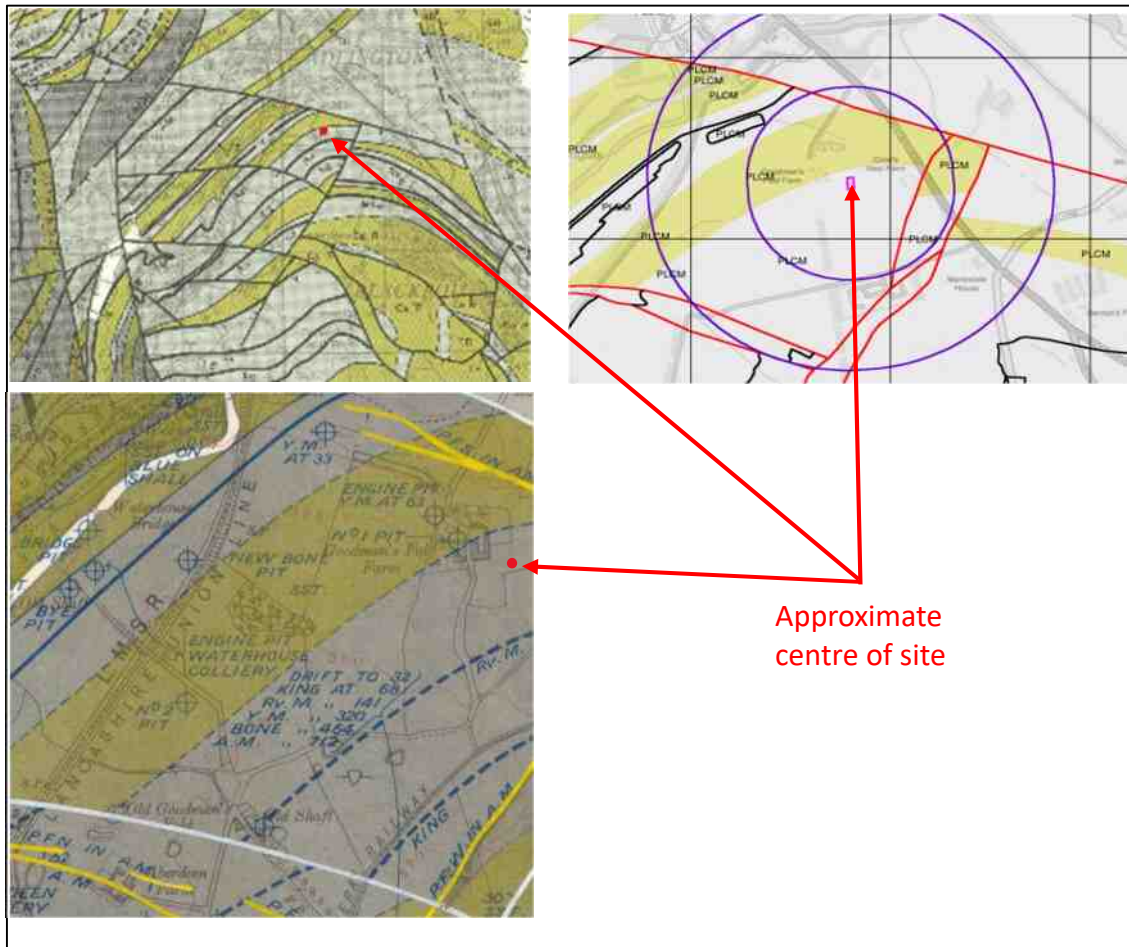


Plate 2-1: Extracts from geological mapping. Top left: 1977 1:50,000 sheet mapping (Sheet 84), Top right: 2011 1:10,000 sheet and Bottom left: 1933 1:10560 sheet mapping (Sheet 85NE). Not to scale.

Plate 2-2 shows an extract of the generalized vertical section from Sheet 85NE showing the section of bedrock strata expected below the site.

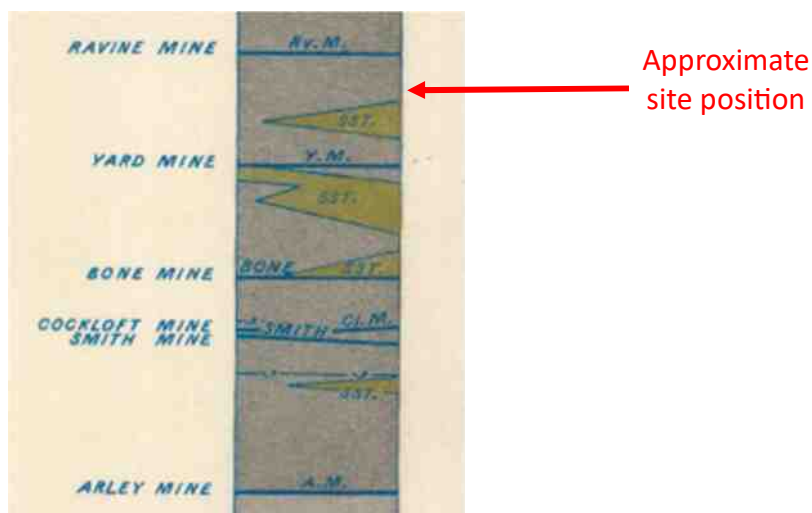


Plate 2-2: Extract of the generalised vertical section from Sheet 85NW (dated 1933). Not to scale.

Given the Yard coal seam subcrops 280m north-west of site and strata dips to the south-east then, based on the vertical section, it is possible that this seam is the shallowest

below the site, followed by (with increasing depth) the Bone, Cockloft, Smith and Arley seams.

2.3. Coal Authority Interactive Mapping

Plate 2-3 shows an extract of the development high risk area at the time of writing this report.



Plate 2-3: Development High Risk Area.

The majority of the site is indicated to be within a Development High Risk Area. This is shown as 'Coal outcrops' and 'Probable shallow Coal Mine workings'.

Shaft ref. 360412-007 is indicated c. 60m north-west of the site and the interactive viewer notes the following:

Ref: 360412-007

Treated: FALSE

Assumed shaft diameter: 2.5m

Departure: 8m

No information on shaft depth or drift thickness is available.

2.4. Coal Authority Consultants Coal Mining Report

LKC obtained an initial Consultants coal mining report from the Coal Authority and this indicated the presence of a coal outcrop (proven) through the site. The coal seam is named as the Plodder seam. An extract is provided in Plate 2-4.



Plate 2-4: Extracts from Initial Consultants Report (dated 28th November 2023).

The position of this outcrop is the same as the outcrop position shown on Plate 2-3, with “probable” shallow workings shown down dip (to the south-east) of the outcrop.

The Plodder seam (also known as the Ravine Mine) is shown on sheet mapping c. 130m south of the site (Plate 2-1).

Given the discrepancy between geological mapping and the Consultants report outcrop data, LKC contacted the Coal Authority who duly confirmed that after a review of their source data that position of the Plodder outcrop was incorrect and that there was indeed no records of outcrops or shallow seams below the site. An updated Consultants report was issued and LKC note the Coal Authority will update their dataset on outcrops and the associated Development High Risk Area in due course. The initial and updated Consultants report are provided in Appendix B and C respectively. Email correspondence with the Coal Authority is provided in Appendix D.

A summary of the updated Consultants report (dated 11th December 2023) is provided in Table 2-1.

Mining Activity and Geology	
Past underground mining	Yes: See Plate 2-5.
Probable unrecorded shallow workings	No.
Spine roadways at shallow depth	No spine roadway recorded at shallow depth.
Mine entries (within 100m)	Yes: See Plate 2-6. 1 shaft within 100m of site (offsite).
Outcrops	No outcrops recorded.
Geological faults, fissures and breaklines	No faults, fissures or breaklines recorded.
Opencast mines	Unlicensed opencast sites c. 125m south and 175m northeast.
Coal Authority managed tips	None recorded within 500m of the enquiry boundary.
Investigative or Remedial Activity	
Site investigations	None recorded within 50m of the enquiry boundary.
Remediated sites	None recorded within 50m of the enquiry boundary.
Coal mining subsidence	Not received a damage notice or claim for the subject property, or any property within 50m, since 1994. No current Stop Notice delaying remedial works or repairs to property. Not aware of any request made to carry out preventative works before coal is worked.
Mine gas	None recorded within 500m of the enquiry boundary.
Mine water treatment schemes	None recorded within 500m of the enquiry boundary.
Licensing and Future Mining Activity	
Future underground mining	None recorded.
Coal mining licensing	None recorded within 200m of the enquiry boundary.
Court Orders	None recorded.
Section 46 notices	No notices have been given, stating that the land is at risk of subsidence.
Licensing and Future Mining Activity	
Withdrawal of support notices	Not in an area where a notice to withdraw support has been given or where a notice has been given cancelling the entitlement to withdraw support.
Payments to owners of former copyhold land	Not in an area where a relevant notice has been published.
Further Information	
The following further information is provided: Future Development. Mine Gas. Development Advice.	

Table 2-1: Summary of Updated Coal Authority Consultants Coal Mining Report.

Plate 2-5 shows the past underground mining. This is defined by the Coal Authority as *'details of all recorded underground mining relative to the enquiry boundary. Only 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'*.

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
unnamed	ARLEY	Coal	36WX	143	Beneath Property	1.0	South-East	120	1861
unnamed	ARLEY	Coal	3YCV	151	East	4.2	South-East	120	1880

Plate 2-5: Extract from Coal Authority Report showing past underground mining.

Probable unrecorded shallow workings are defined as ‘*areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30m deep)*’. As the “outcrop” has now been removed by the Coal Authority from their dataset then the associated “probable” workings comment in the Consultants report has been set to “none”. LKC note that the Coal Authority’s interactive mapping and WMS layers will not be updated until their next update cycle.

Plate 2-6 shows the mine entries within 100m of the site boundary.

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	360412-007	360329 412188		Coal	

Plate 2-6: Extract from Coal Authority Report showing mine entries within 100m.

Shaft reference 360412-007 is located within 100m from the site boundary (offsite).

Plate 2-7 shows an extract of the plan provided with the updated Coal Authority Consultants Coal Mining Report.

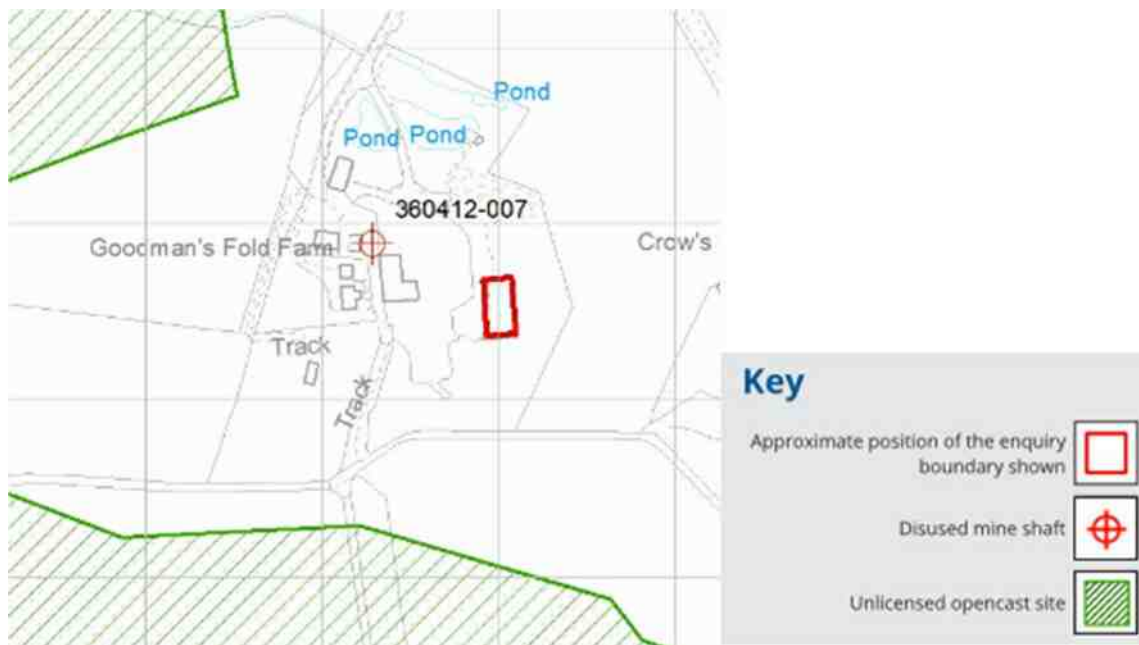


Plate 2-7: Extract from the Updated Coal Authority Consultants Coal Mining Report.

2.5. Combustible Coal Seams

Some coal seams have been known to suffer from occurrences of spontaneous combustion and are consequently regarded as at ‘high risk’ of succumbing to

spontaneous combustion when being entered, worked, or disturbed. The Coal Authority have produced a list of seams for different areas of the UK.

None of the coal seams listed are expected at shallow depth below the site. However, if roof coal has been left, this could also pose a risk.

2.6. Historical BGS Logs

No nearby historical boreholes of significance are available.

2.7. Historical Mapping

A review of available historical mapping identified the presence of farm buildings around the site with the previous building on the site appearing between 1983 and 1999 mapping.

Opencast Working is labelled to the south of the site on 1966 mapping.

3. Coal Mining Risk Assessment

Table 3-1 below summarises the potential risks associated with coal mining legacy for the proposed development site.

Coal Mining Issue	Potential Risk	Risk Assessment
Underground coal mining (recorded at shallow depths)	X	Known underground shallow workings recorded by the Coal Authority. Workings within the (Arley) coal seam. At depths between 143 and 161 metres each 120cm thick between 1861 and 1880 mapping. Given the depth to these seams it is unlikely there is a risk of ground instability at the site surface associated with these workings.
Underground coal mining (probable at shallow depths)	X	No evidence of shallow coal seams below the site.
Mine entries (shafts / adits)	?	Nearest known mineshaft is c. 60m northwest of the site. Shallow bedrock is anticipated (opencast workings have occurred) and therefore the shaft is not considered a significant instability risk to the site. However, other unrecorded mine entries may be present in the site vicinity.
Coal mining geology (geological faults, fissures and breaklines)	X	No faults, fissures or breaklines recorded.
Record of past mine gas emissions	X	Not recorded on Coal Authority data. No evidence of shallow potentially worked coal seams below the site.
Recorded coal mining surface hazard	X	No recorded coal mining surface hazard.
Surface mining (opencast workings)	X	No recorded surface mining (opencast workings).

Table 3-1: Potential Coal Mining Risks.

Notes:

✓ = Risk identified, X = No risk identified, ? = Possible risk identified.

4. Conclusions and Recommendations

4.1. Summary

Based upon the available information, LKC have identified potential shallow coal mining risks which are summarised in Table 4-1.

Coal Mining Issue	Potential Risk
Underground coal mining (recorded at shallow depths)	X
Underground coal mining (probable at shallow depths)	X
Mine entries (shafts / adits)	?
Coal mining geology (fissures)	X
Record of past mine gas emissions	X
Recorded coal mining surface hazard	X
Surface mining (opencast workings)	X

Table 4-1: Summary of coal mining potential risks.

4.2. Site Investigation

Considering the available information and guidance given in CIRIA C758⁴, LKC consider that intrusive investigation work is not required with regards to potential coal mining instability. However, a watching brief is recommended (see Section 4.3).

4.3. Watching Brief

A watching brief is recommended in all coal mining areas. This could be undertaken by experienced site staff on low-risk sites or by a suitably qualified coal mining engineer or consultant on high-risk sites. This site is considered to be low risk, given the absence of any evidence of shallow mining below the site, but the presence of mineshafts within the wider site area.

The watching brief should cover the period in which any earthworks, reduce level dig or foundation excavation works are being undertaken. Particular care should be taken to identify any potential features which may indicate the presence of shallow coal mining hazards.

Such hazards may include, but not limited to, features such as unexplained depressions or voids, outcropping coal seams, localised areas of deep made ground (which could represent backfilled areas of coal mining related ground subsidence, crown holes or mine entries), or unexpected man-made items at depth (e.g., brickwork, concrete, timber, or steelwork).

Mine entries may manifest during excavation works as circular, square, or rectangular areas of deep Made Ground (typically several metres in size) set against the natural strata (e.g., Glacial Till or weathered rock). Mine shafts may also be covered with a large, thick concrete cap.

If any of the above features are identified during the course of the development works, then work should be stopped to allow the mining engineer / consultant to assess them and if necessary, design further or additional investigation and / or remediation works.

4.4. Conclusions and Safe Development

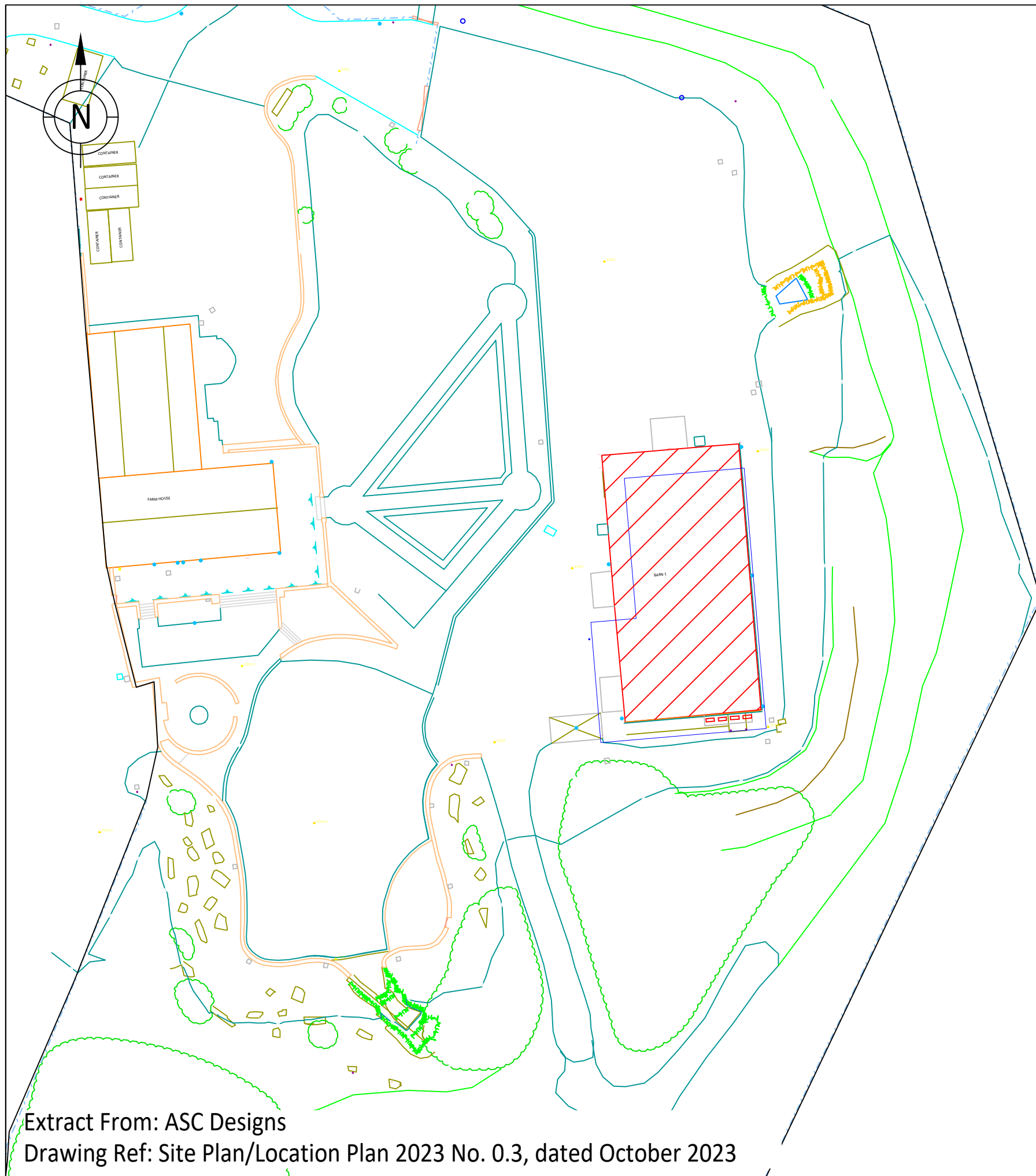
At this stage there is no requirement to carry out intrusive site investigation works with regards to potential shallow mining instability; however a watching brief should be maintained during groundworks for any evidence of mine entries.

Notwithstanding the above, LKC consider that the site may be safely developed with regards to shallow mining.



Figures



Client: John James Dickinson				Title: Site Location & Boundary Plan					
Site: Goodman's Fold Barn, Blackrod				Scale (see scale bar): 1:25,000 & 1:1250 @ A4				Figure: 1	
Job No.: LKC 23 1733		Drawn By: CC	Checked By: CB	Drawn: Dec 2023				Revision:	



KEY

-  Extent of Previous Building
-  Site / Replacement Building Boundary

Sampling Locations and features annotated by LK Consult Ltd are approximate and are based upon observed measurements unless otherwise stated. Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Where this drawing includes information provided to LK Consult Ltd by others, LK Consult Ltd gives no warranty, representation or assurance as to the accuracy of such information.



Client: **John James Dickinson**

Site: **Goodman's Fold Barn, Blackrod**

Title: **Proposed Development Plan**





Job No.: LKC 23 1733	Scale: 1:500 @ A3	Figure: 2	Revision:
Drawn By: CC	Checked By: CB	Drawn: Dec 2023	

Extract From: ASC Designs
Drawing Ref: Site Plan/Location Plan 2023 No. 0.3, dated October 2023






Appendix A – Geological Mapping

Geology 1:10,000 Maps Legends









Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	WMGR	Infilled Ground	Artificial Deposit	Holocene - Holocene
	MGR	Made Ground (Undivided)	Artificial Deposit	Holocene - Holocene
	WGR	Worked Ground (Undivided)	Void	Holocene - Holocene
	LSGR	Landscaped Ground (Undivided)	Unknown/Unclassified Entry	Holocene - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Flandrian - Pleistocene
	TILLD	Till, Devensian	CLAY, SANDY, GRAVELLY, SILTY [UNLITHIFIED DEPOSITS CODING SCHEME]	Devensian - Ipswichian
	GFSDD	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND, GRAVEL AND SILT	Devensian - Ipswichian
	GFDUD	Glaciofluvial Deposits, Devensian	SAND, GRAVEL AND SILT	Devensian - Ipswichian
	GFICD	Glaciofluvial Ice Contact Deposits, Devensian	Gravel, Sand and Silt	Devensian - Ipswichian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	PMCM	Pennine Middle Coal Measures Formation	Mudstone, Siltstone and Sandstone	Bolsoviaian - Duckmantian
	PLCM	Pennine Lower Coal Measures Formation	Mudstone, Siltstone and Sandstone	Langsettian - Langsettian
	PLCM	Pennine Lower Coal Measures Formation	Sandstone	Langsettian - Langsettian
	OL	Old Lawrence Rock	Sandstone	Langsettian - Langsettian
	CAR	Cannel Rock (South Lancashire)	Sandstone	Langsettian - Langsettian
	GAS	Great Arc Sandstone	Sandstone	Langsettian - Langsettian
	Fault			
	Rock			



Geology 1:10,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:10,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around a site. This mapping may be more up to date than previously published paper maps.

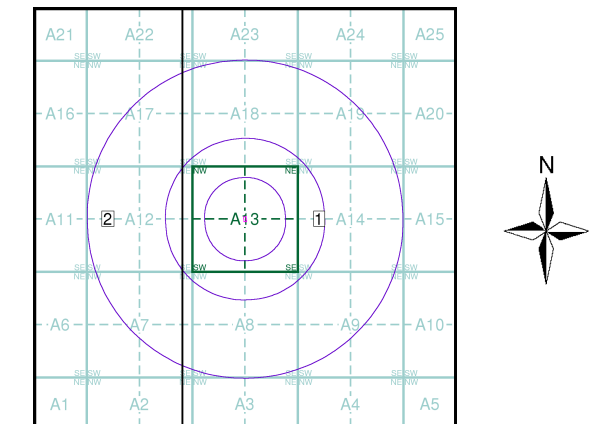
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page.

Please Note: Not all of the layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:10,000 Maps Coverage

Map ID:	2	Map ID:	1
Map Name:	SD51SE	Map Name:	SD61SW
Map Date:	2007	Map Date:	2011
Bedrock Geology:	Available	Bedrock Geology:	Available
Superficial Geology:	Available	Superficial Geology:	Available
Artificial Geology:	Available	Artificial Geology:	Available
Faults:	Not Supplied	Faults:	Not Supplied
Landslip:	Available	Landslip:	Available
Rock Segments:	Not Supplied	Rock Segments:	Not Supplied

Geology 1:10,000 Maps - Slice A



Order Details

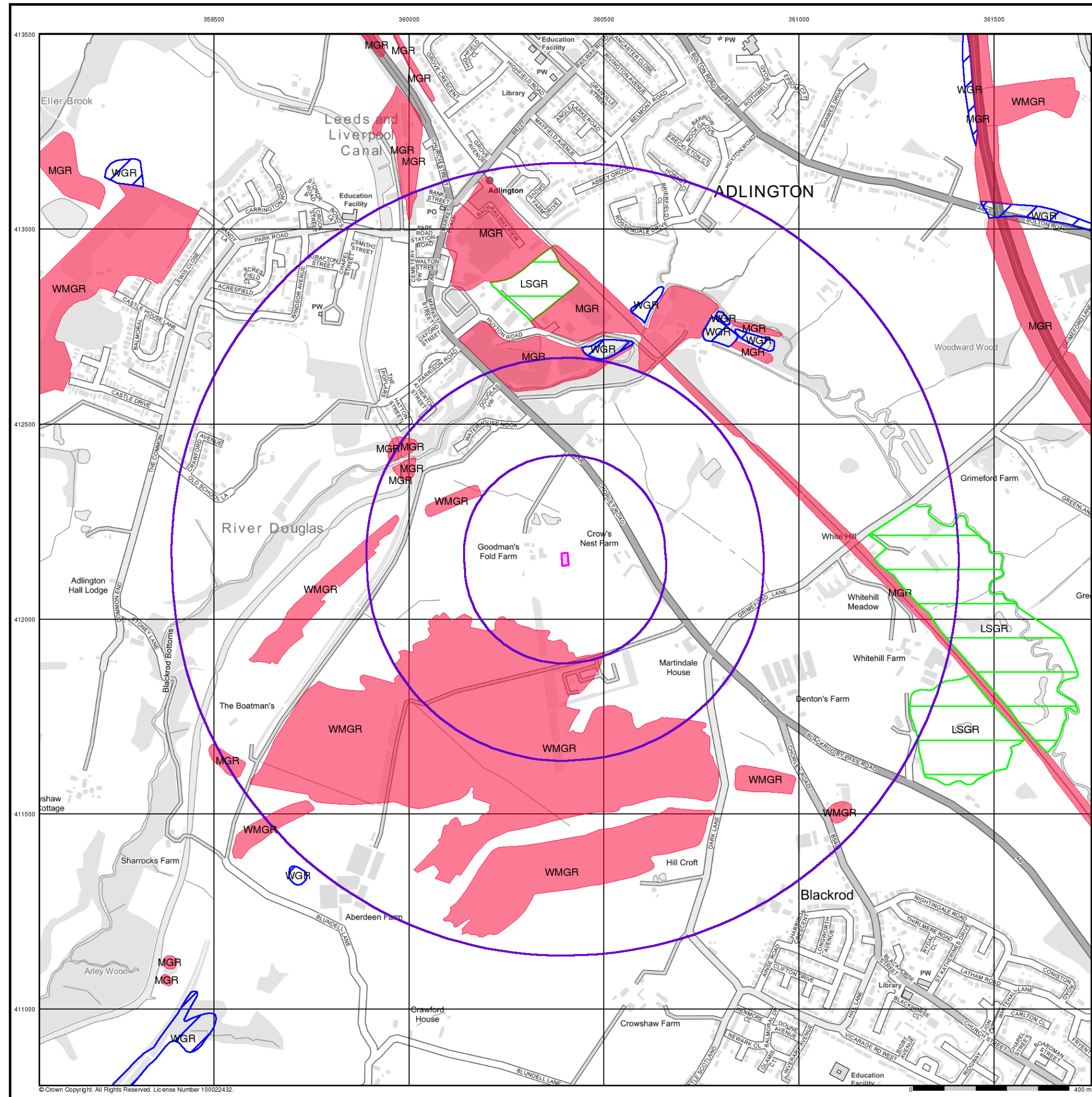
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National Grid Reference:	360400, 412150
Slice:	A
Site Area (Ha):	0.06
Search Buffer (m):	1000

Site Details

Goodmans Fold Barn, Chorley Road, Blackrod, Bolton, BL6 5LG



Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Artificial Ground and Landslip

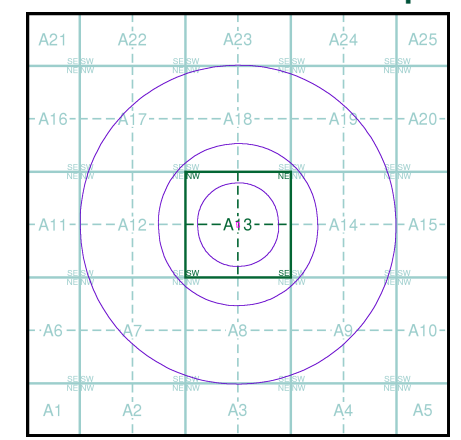
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes founded strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



Order Details

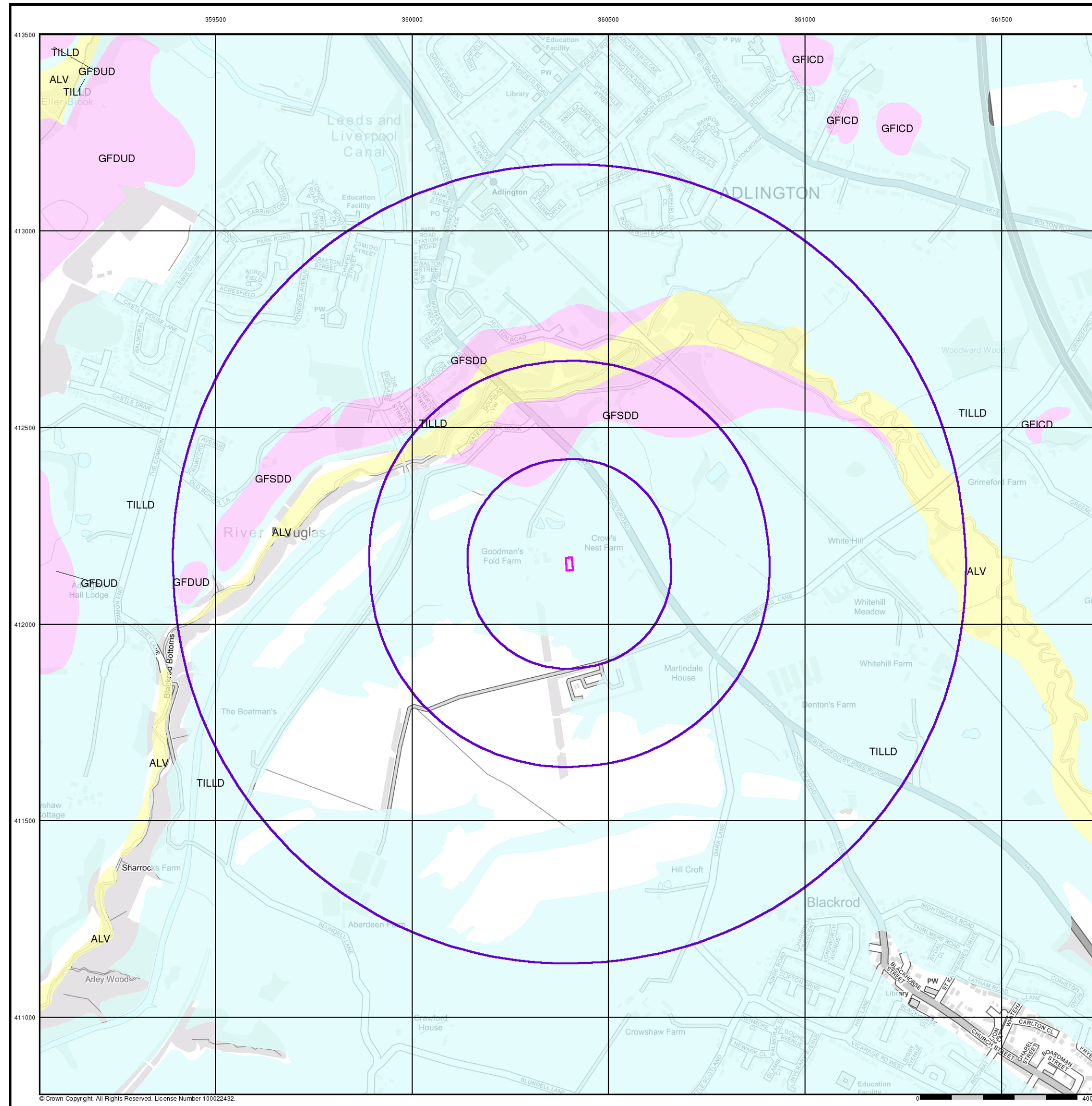
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 Customer Ref: LKC 23 1733
 National Grid Reference: 360400, 412150
 Slice: A
 Site Area (Ha): 0.06
 Search Buffer (m): 1000

Site Details

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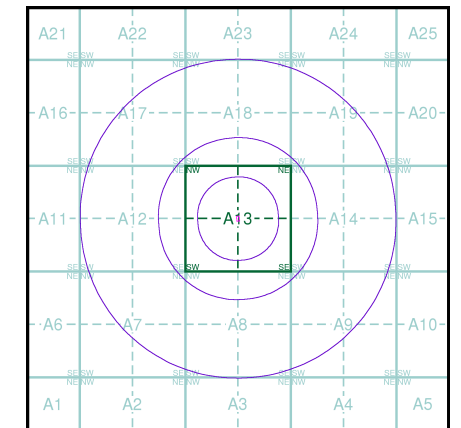
Superficial Geology

BGS 1:10,000 Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



Order Details

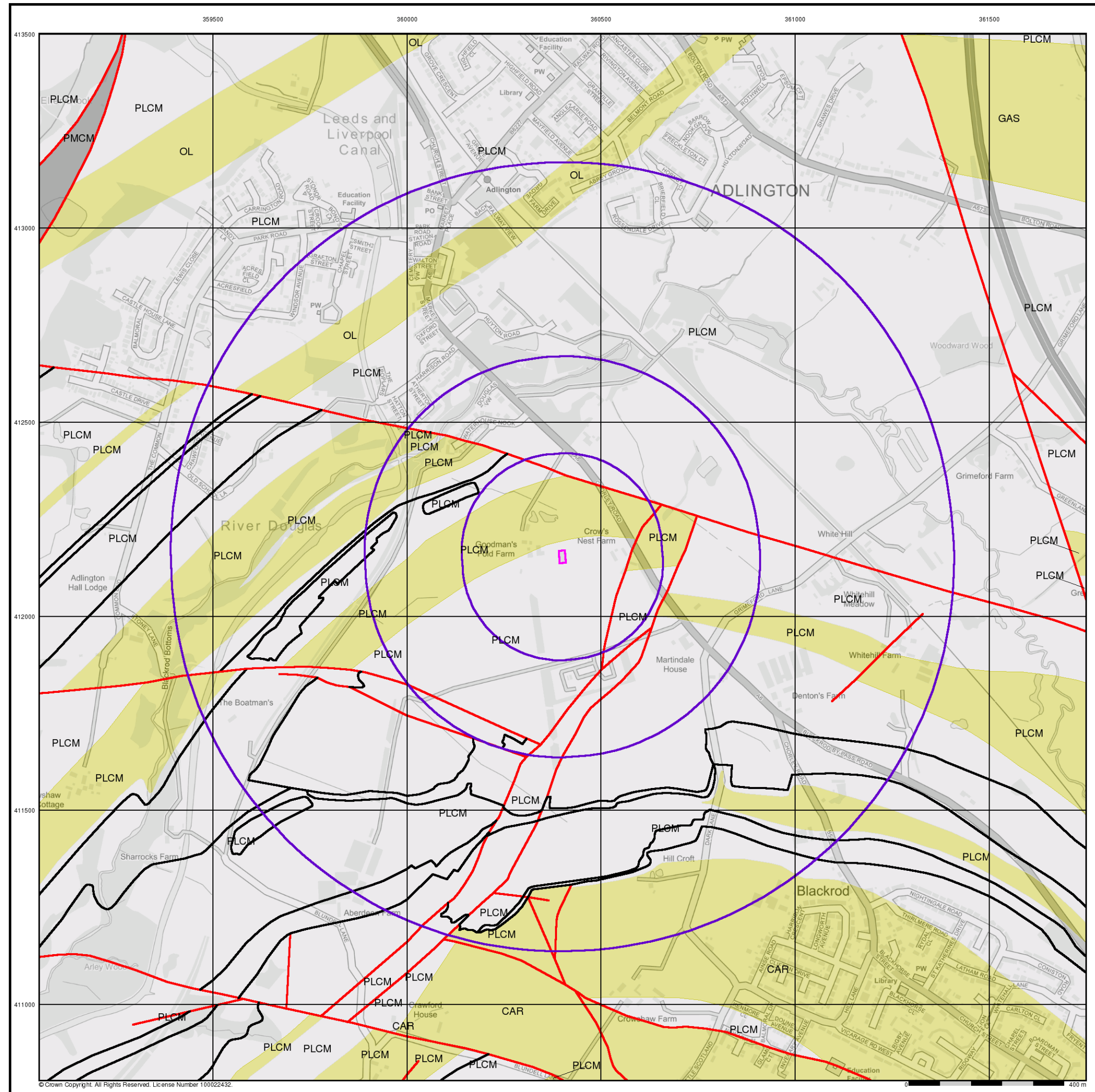
Order Number: 326567656_1_1
 Customer Ref: LKC 23 1733
 National Grid Reference: 360400, 412150
 Slice: A
 Site Area (Ha): 0.06
 Search Buffer (m): 1000

Site Details

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Bedrock and Faults

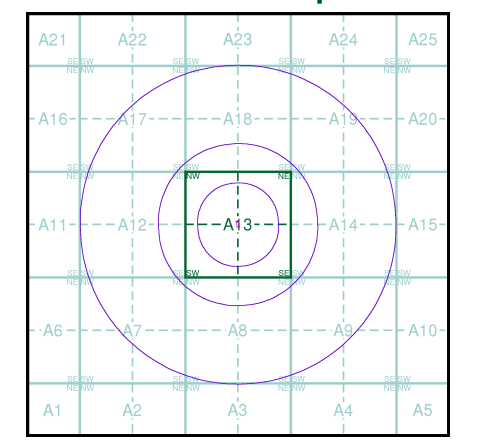
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults and thin beds mapped as lines such as coal seams and mineral veins. These are not restricted by age and could relate to features of any of the 1:10,000 geology datasets.

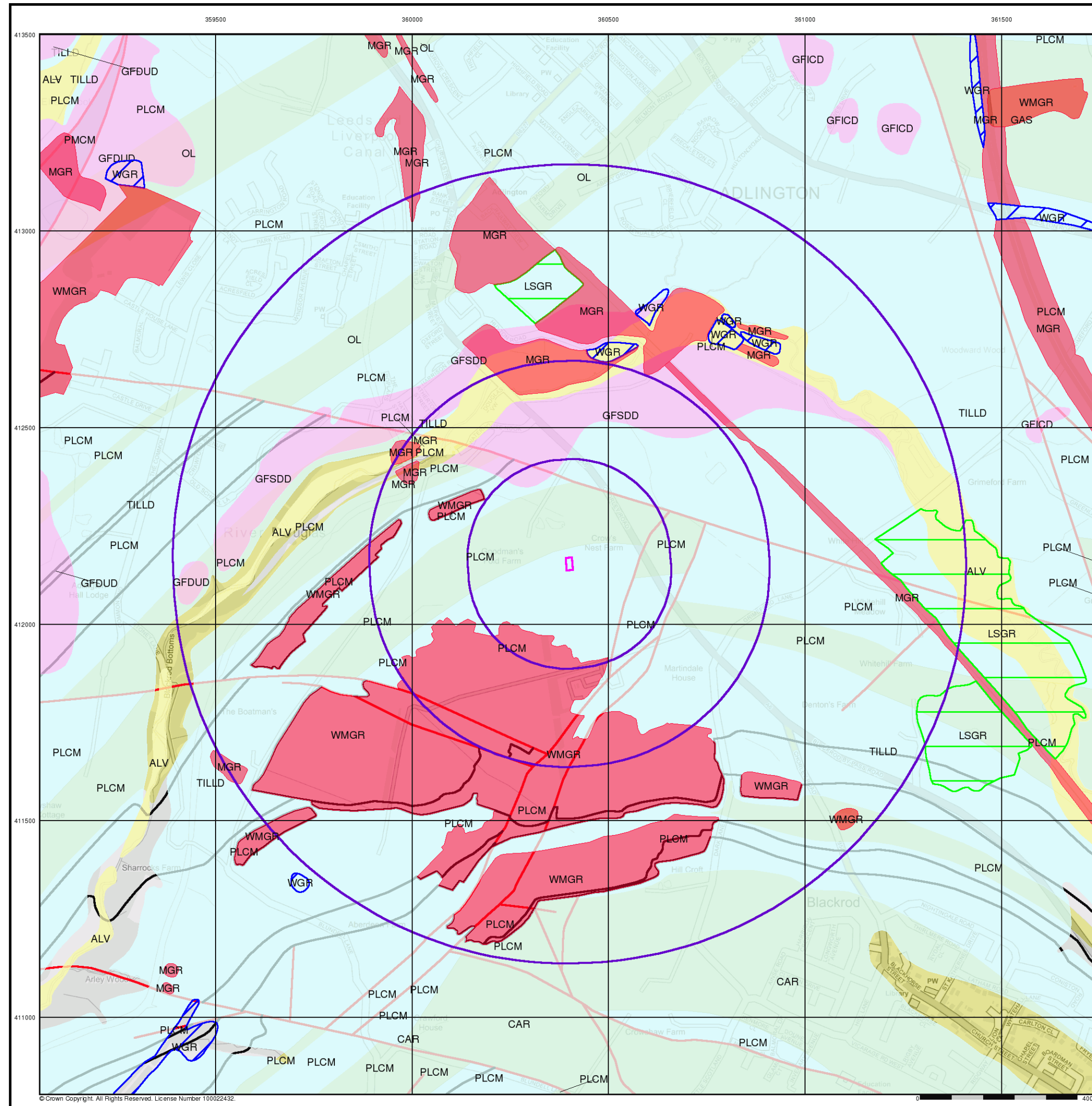
Bedrock and Faults Map - Slice A



Order Details

Order Number:	326567656_1_1
Customer Ref:	LKC 23 1733
National Grid Reference:	360400, 412150
Slice:	A
Site Area (Ha):	0.06
Search Buffer (m):	1000

Site Details
 Goodmans Fold Barn, Chorley Road, Blackrod, Bolton, BL6 5LG



Combined Surface Geology

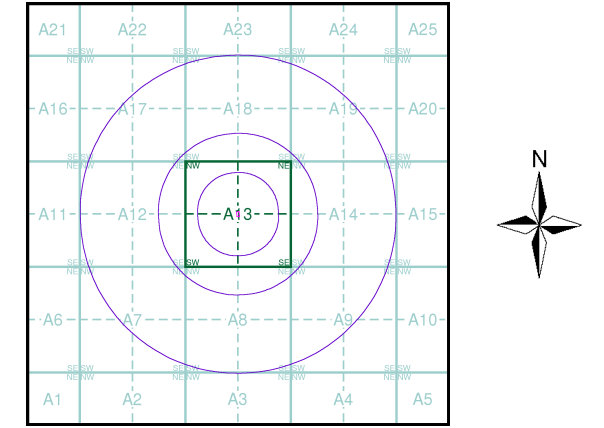
The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

Additional Information
 More information on 1:10,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact
 British Geological Survey
 Kingsley Dunham Centre
 Keyworth
 Nottingham
 NG12 5GG
 Telephone: 0115 936 3143
 Fax: 0115 936 3276
 email: enquiries@bgs.ac.uk
 website: www.bgs.ac.uk

Combined Geology Map - Slice A



Order Details
 Order Number: 326567656_1_1
 Customer Ref: LKC 23 1733
 National Grid Reference: 360400, 412150
 Slice: A
 Site Area (Ha): 0.06
 Search Buffer (m): 1000

Site Details
 Goodmans Fold Barn, Chorley Road, Blackrod, Bolton, BL6 5LG

Landmark
 INFORMATION GROUP
 Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk

Appendix B – Initial Coal Authority Consultants Report



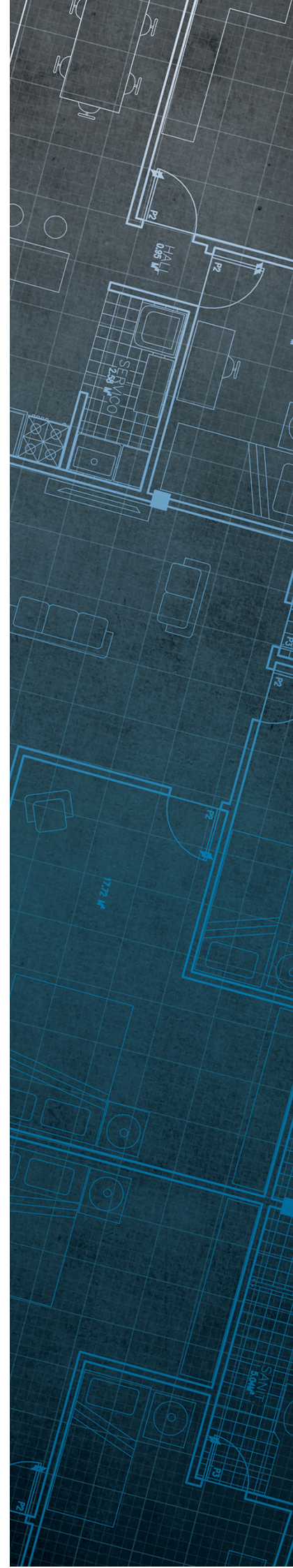
The Coal
Authority

Consultants Coal Mining Report

Goodman Fold Farm
Chorley Road
Blackrod
Bolton
Bolton
BL6 5LG

Date of enquiry: 28 November 2023
Date enquiry received: 28 November 2023
Issue date: 28 November 2023

Our reference: 51003392020001
Your reference: LKC 23 1733



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

The LK Group

Enquiry address

Goodman Fold Farm
Chorley Road
Blackrod
Bolton
Bolton
BL6 5LG

How to contact us

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

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

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 @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
unnamed	ARLEY	Coal	36WX	143	Beneath Property	1.0	South-East	120	1861
unnamed	ARLEY	Coal	3YCV	161	East	4.2	South-East	120	1880

Probable unrecorded shallow workings

Yes.

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	360412-007	360329 412188		Coal	

Abandoned mine plan catalogue numbers

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

NW941	NW926	NW936
PO0	14604	NW660

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

Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
PLODDER	Coal	Yes	Within	N/A	249

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

Please refer to the "Summary of findings" map (on separate sheet) for details of any opencast areas 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.

Future development

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

MINE GAS: Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

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. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

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.

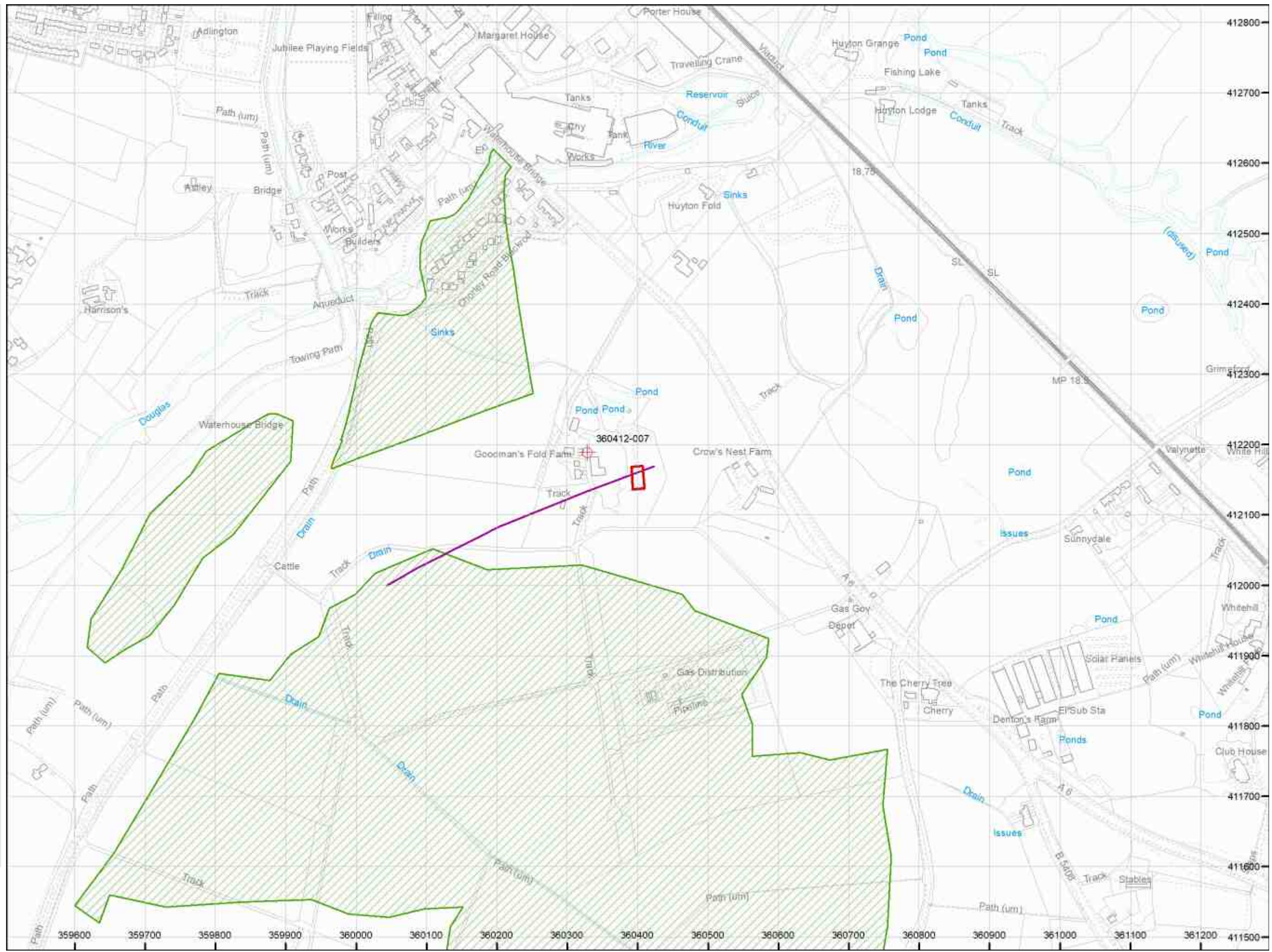
Payment to owners of former copyhold land

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.

Key

- Approximate position of the enquiry boundary shown 
- Disused mine shaft 
- Outcrop (Proven) 
- Unlicensed opencast site 



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Appendix C – Updated Coal Authority Consultants Report



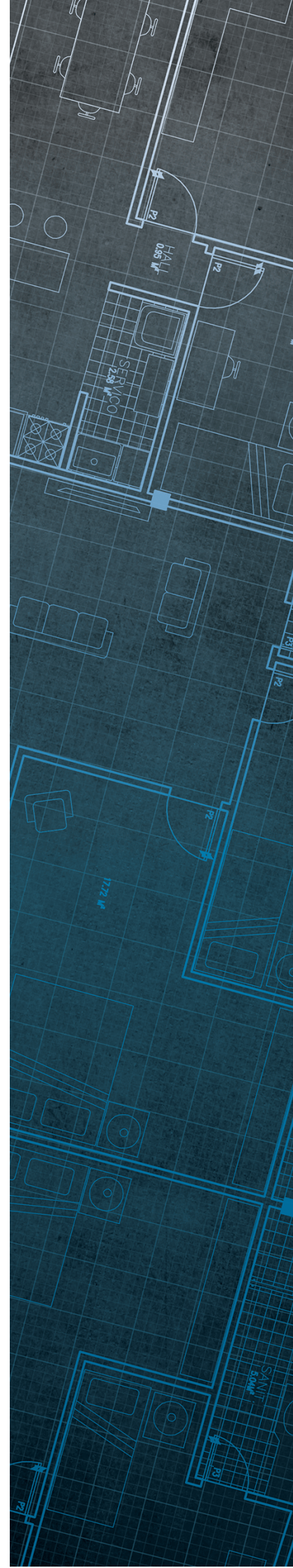
The Coal
Authority

Consultants Coal Mining Report

Goodman Fold Farm
Chorley Road
Blackrod
Bolton
Bolton
BL6 5LG

Date of enquiry: 11 December 2023
Date enquiry received: 11 December 2023
Issue date: 11 December 2023

Our reference: 71009792074001
Your reference: LKC 23 1733



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

The LK Group

Enquiry address

Goodman Fold Farm
Chorley Road
Blackrod
Bolton
Bolton
BL6 5LG

How to contact us

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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
unnamed	ARLEY	Coal	36WX	143	Beneath Property	1.0	South-East	120	1861
unnamed	ARLEY	Coal	3YCV	161	East	4.2	South-East	120	1880

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	360412-007	360329 412188		Coal	

Abandoned mine plan catalogue numbers

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

NW941	NW926	NW936
PO0	14604	NW660

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

No faults, fissures or breaklines recorded.

Opencast mines

Please refer to the “Summary of findings” map (on separate sheet) for details of any opencast areas 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.

Future development

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

MINE GAS: Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

Development advice

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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.

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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.

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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.

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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. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

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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.

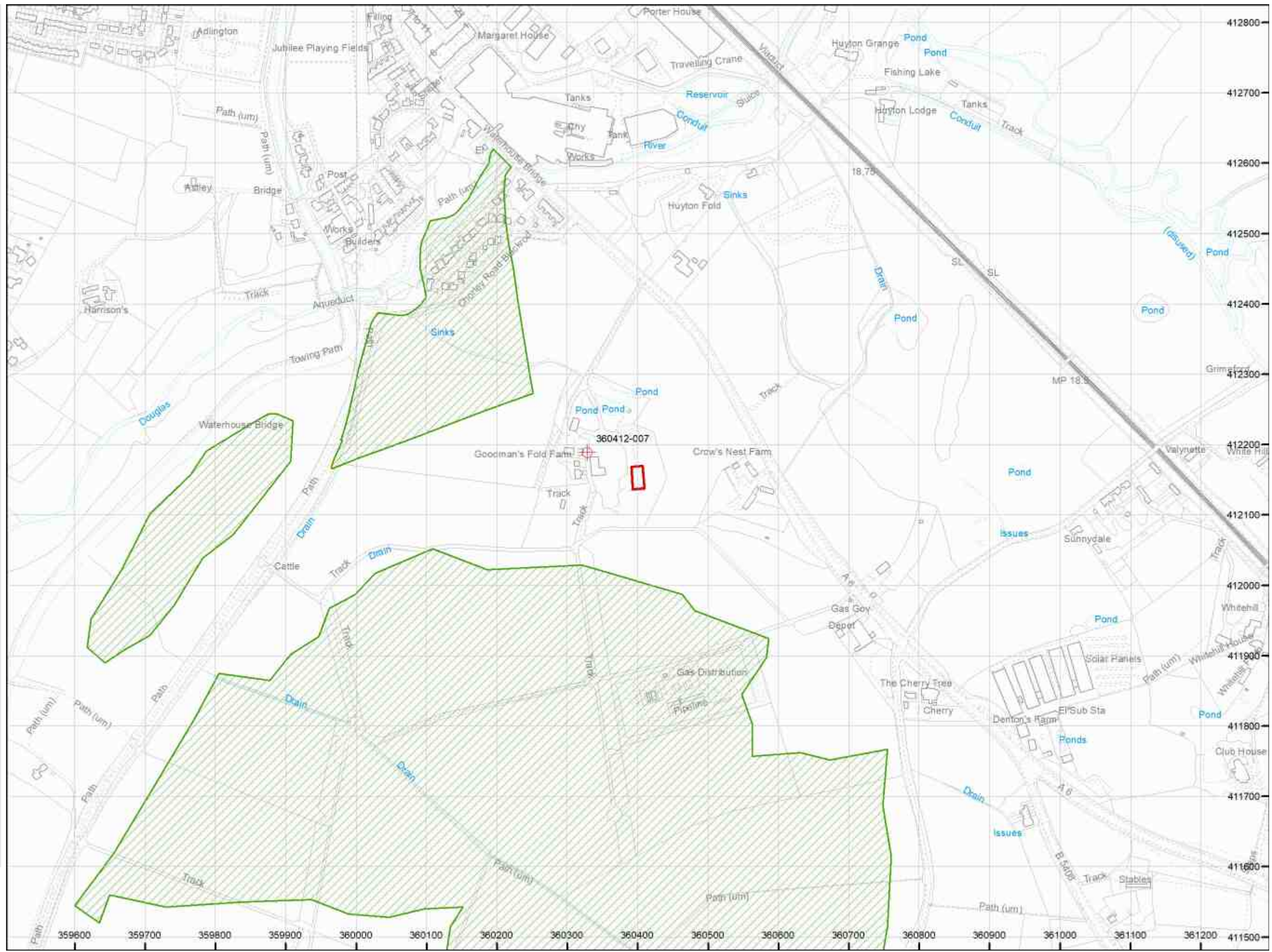
Payment to owners of former copyhold land

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.

Key

- Approximate position of the enquiry boundary shown 
- Disused mine shaft 
- Unlicensed opencast site 



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

Appendix D – Coal Authority Correspondence

Colin Crompton

From: Diane Paradise <DianeParadise@coal.gov.uk>
Sent: 04 December 2023 11:32
To: Colin Crompton
Cc: reports
Subject: RE: [External] Mining Report 51003392020001 Query

Good morning Colin,

Thank you for your enquire detailed below.

I have reviewed the source for the data in and can confirm that the outcrop detailed in your report has been incorrectly added. This will be deleted today and I will arrange for a replacement report to be sent to you shortly.

If you require any further assistance, please do not hesitate to contact me.

Kind Regards

Diane

 The Coal Authority
Diane Paradise
CSci BSc (Hons) FIMMM ACSM
Mining Consultant and Mining Information Manager
T : (01623) 637 337
E : DianeParadise@coal.gov.uk
W : <https://gov.uk/the-coal-authority>

Hi

Please could you assist with clarifying the data source for the outcrop indicated below our study site?

The Consultants report we obtained shows the Plodder (or Ravine) mine as a “proven” but curtailed outcrop below our study site – extracts from the report and plot below:

Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)
PLODDER	Coal	Yes	Within



Reviewing all the geological maps I can find (10560 1st edition, 10560 from 1933, 6inch and 50000 scale up to current and 10000 BGS digital) I cannot find a plan showing the Plodder (or Ravine) seam in the location shown on the large plot.

Its generally mapped as inferred c. 120m to the south of the site. There does appear to have been some unlicensed open cast c. 130m due south which is probably post the available 10560 paper mapping (1933) and unhelpfully the seams in the area shown on paper mapping are not shown on BGS digital mapping (2011).

Please could you let me know what the source data or the position of the outcrop of our site is?

Many thanks

Regards

Colin



Colin Crompton
Director
07970 190 265 | 0161 763 7200
Manchester | London | Swindon | Liverpool | Glasgow
www.thelkgroup.com

I N C R E A S I N G L A N D V A L U E



Introducing our new Swindon Office

39 Bowman House Business Centre, Bowman Court, Whitehill Lane, Royal Wootton Bassett, Swindon, SN4 7DB

t: 01793 987 390, e: info@thelkgroup.com

Appendix E - References

- ¹ The Coal Authority, 2017, "Risk based approach to development management. Guidance for developers.", Version 4.
- ² The Coal Authority, 2023, Interactive Map Viewer, <https://mapapps2.bgs.ac.uk/coalauthority/home.html>.
- ³ The Coal Authority, March 2015, "Coal seams with a history of spontaneous combustion", <https://www.gov.uk/government/publications/coal-seams-with-a-history-of-spontaneous-combustion>.
- ⁴ CIRIA, September 2019, "Abandoned Mine Workings Manual", C758D.

Based across the UK with offices in
Manchester, Liverpool, Swindon and Glasgow.

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