



Report No. 60455

MIDDLE FIELD ROAD, BARNSELEY

Preliminary Coal Mining Risk Assessment Report

January 2020



Christian Spencer Leisure Ltd
Elmhirst Lane
Dodwsworth
Barnsley
S75 4LD

Document Verification

Prepared For	Prepared by
Christian Spencer Leisure Ltd Elmhirst Lane Dodworth Barnsley S75 4LD	Ground and Project Consultants Ltd, Kennedy House First Floor. 31 Stamford Street Altrincham Greater Manchester, WA14 1ES

Signatures and Approvals				
Author	G Manning		Date	22/01/2020
Checker & Approver	J Smithson		Date	22/01/2020

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Appendix A: Coal Authority Consultants Coal Mining Report

1 Introduction

Ground and Project Consultants Ltd (GPCL) have been instructed by Christian Spencer Leisure Ltd to undertake a Preliminary Coal Mining Risk Assessment for a site on Middle Field Road, Dodworth, Barnsley. The proposals for the site comprise an office and conference facility.

The scope of this report and approach are as follows:

- A summary description of the site;
- A summary of the ground conditions at the site;
- A summary of the Coal Authority Consultants Coal Mining Report;
- Assessment of the coal mining risks on site based on the above information.

2 Site Information

2.1 Site Location

The site is located at Middle Field Road, Dodworth, Barnsley, S75 4LS. The National Grid Reference for the centre of the site is 430783 405661. The site is approximately 380m to the northwest of Dodworth Railway Station and 3.8km to the west of Barnsley city centre. The location of the site is indicated on Figure 1 below.

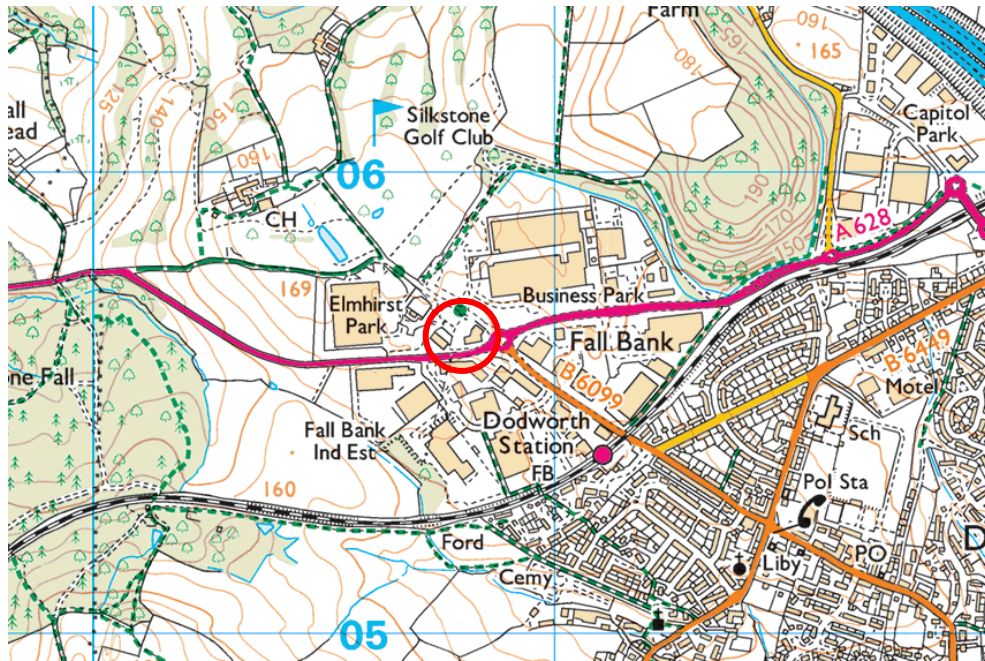


Figure 1: Site Location (Ordnance Survey Data © Crown copyright and database right 2020)

2.2 Proposals

The proposals for the site are understood to comprise a lightly loaded single storey office unit and conference facility in the northwest of the site. The proposal is for a single storey lightly loaded converted shipping container office building, a single storey lightly loaded converted shipping container which will be an outside bar and associated toilet block, and an entrance porch and external toilet block on the existing function suite building. These structures will exert relatively low ground pressures.

2.3 Site Description and Topography

The site is irregular in shape and has dimensions of approximately 135m by 100m (0.99ha). The site currently comprises two commercial buildings with associated car park and landscaping. The building to the west is used as a conference centre and the building to the east is used as a hotel and public house.

The site is bounded by the A628 to the south and Elmhirst Lane to the northeast with commercial units beyond, a car park and commercial/industrial unit to the west and an electricity substation to the northwest.

2.4 Site History

From the first available map in 1855 the site was agricultural land. By the 1890s a colliery was located about 300m east with extending slag heap to the west of the colliery which was removed between 1983 and 1993. By 1931 a golf course is annotated to the north of the site which may have extended onto site. The site and surrounding area were developed between 1993 and 2002. By 2002 the conference centre to the west was built and by 2008 the hotel and public house to the east was developed.

2.5 Published Geology

The available geological maps indicate the site is underlain by Pennine Middle Coal Measures Formation, with no overlying drift deposits. An extract of the geological map is included below. Made Ground is shown to the east of the site, associated with the colliery slag heap. Worked Ground is indicated to the southwest of the site, adjacent to a coal seam. The geological map indicates that there is a fault towards the centre of the site running northwest – southeast, with a downthrow of 6m to the northeast.

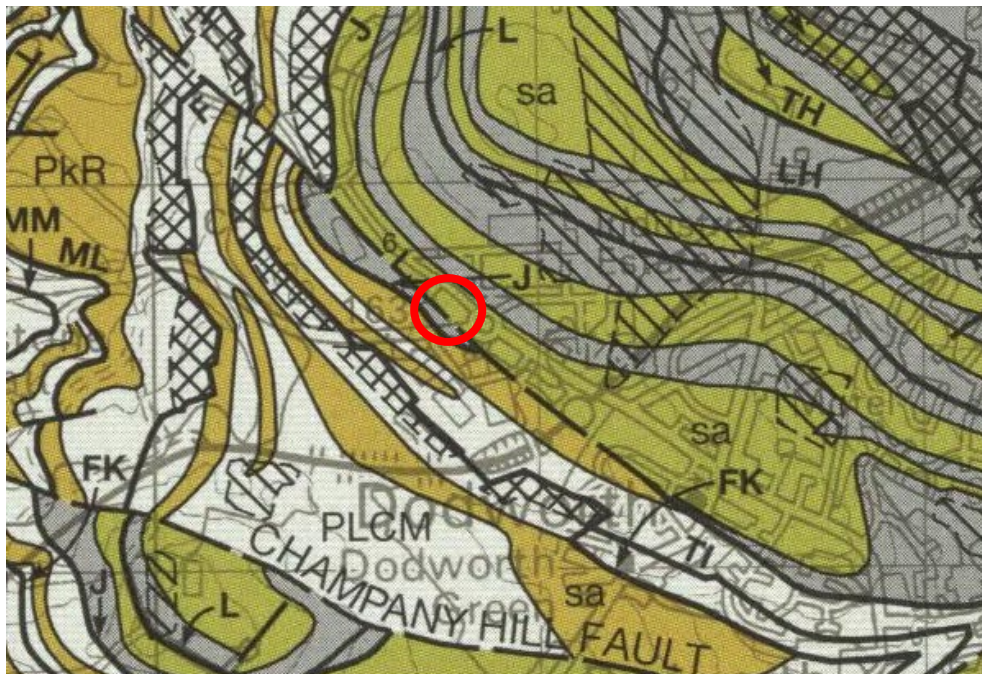


Figure 2: Bedrock and Superficial Geology (BGS copyright and database rights 2015)

The Pennine Middle Coal Measures Formation comprises sandstone (green) to the northeast of the fault and mudstone, siltstone and sandstone with coal seams in the southwest (grey).

The Joan Coal Seam (J, 0m to 1.4m thick) is indicated adjacent to the southwest of the site and the Flockton Thick Coal (FK, 0m to 3.7m thick) is indicated beyond to the southwest of the site. The Tankersley (Musselband) Ironstone (TI) is indicated between these coal seams. The Joan Coal Seam along with the Vanderbecki (Clay Cross) Marine Band marks the top of the Pennine Lower Coal Measures. There are no dip angles indicated on the BGS map, however, it can be inferred that the rocks dip gently down to the northeast. This implies that the Joan Coal and underlying Flockton Seam are likely to occur beneath the site. The geological map is included below.

There are two BGS boreholes on site, however, these are confidential.

3 Preliminary Coal Mining Risk Assessment

3.1 Coal Mining

The Coal Authority Interactive map indicates that the site is in a Development High Risk Area. The Joan Coal Seam and underlying Flockton Thick Coal Seam have been worked in the vicinity of the site.

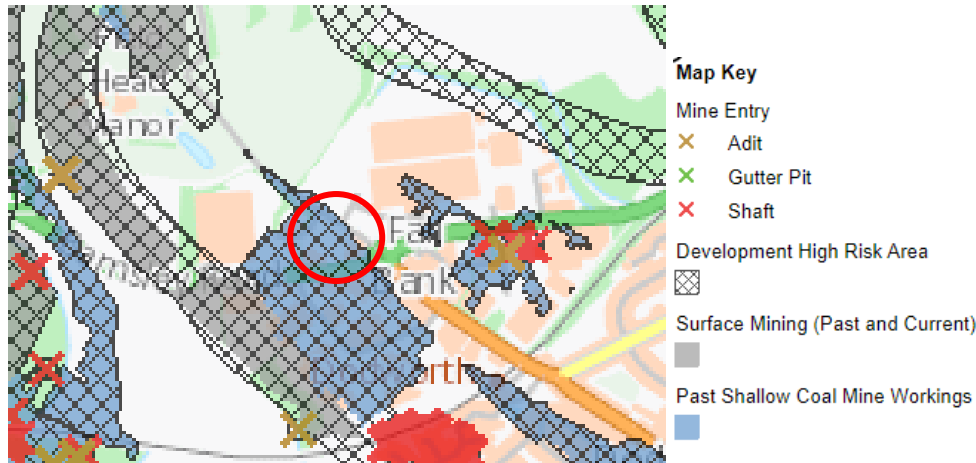


Figure 3: Past Shallow Coal Mine Workings and Coal Outcrops
(The Coal Authority © Crown copyright and database right 2019)

A Consultants Coal Mining Report was obtained for the site, which is included in the Appendices. The findings highlight an unlicensed opencast site approximately 100m to the southwest and a mine gas remedial works site located 400m to the east. A fault is also indicated across the site as detailed in Section 2.5.

Past underground mining beneath the site includes the Flockton Thick Coal Seam which was recorded at 16m bgl, dipping at 4.3 degrees to the northeast. The extraction thickness is recorded as 61cm. Beneath the Flockton Thick Coal Seam there are five other coal seams including the Top Fenton, Parkgate, Wheatley Lime, Silkstone and Whinmoor Coal Seams which have been worked from 63m bgl to 232m bgl. It is not known whether the workings have been treated.

The report suggests that there are no mine entries, spine roadways at shallow depth or probable unrecorded shallow workings in the vicinity of the site. In addition, no coal mining subsidence or remediated sites are recorded within 50m of the site.

3.2 Risk Assessment

The risk of fault related subsidence is considered low to medium as any movement is likely to have stopped and no fault related damage has been recorded. However, it is recommended that any significant sized buildings avoid development over the fault where possible to minimise the risk differential settlement. It is unlikely that the portacabin structures will be particularly

sensitive to the fault. It is noted that existing structures are built over the fault apparently with no issues.

The risk of settlement cause by the coal seams from 16m or more below the site is considered low as ground movement should have stopped. For heavier structures it would be advised to assess the condition of the workings by intrusive means. For portacabin type structures the imposed load is low and these types of structures can be re-levelled if required. The sensitivity of the structure is therefore considered to be low. However any add-on entrance ways with glass walls etc, are likely to sensitive to settlement. There may therefore be some risks of damage should mine- or fault related settlement occur. Rigid raft type foundations will assist in reducing this risk.

The risk from mine gases is considered medium due to the presence of elevated readings being recorded to the west of the site. In addition, the fault may provide a preferential pathway for mine gases. It is not known at this stage if the proposed structures will be in direct contact with the ground.

Table 1: Coal Mining Risk Assessment Table

Hazard	Probability	Consequences	Risk Rating
Fault movement	Unlikely	Moderate – Damage to property likely to be minor but may be major	Low to Medium
Settlement from shallow mine workings	Possible	Moderate – Damage to property likely to be major	Medium
Mine gas	Unlikely	Significant – Serious health hazard to end users and explosive risk	Medium

	Insignificant	Minor	Moderate	Significant
Unlikely	Negligible	Low	Low	Medium
Possible	Low	Low	Medium	High
Likely	Low	Medium	High	High
Certain	Medium	High	High	Very High

In order to better understand the risks from past mining the following initial actions are recommended:

- The historical BGS boreholes should be obtained to assist the background information.
- A Coal Authority Mine Gas Emission Report is recommended to be obtained to include more information about the hazard to the east of the site.

4 Conclusions and Recommendations

The findings of the preliminary coal mining risk assessment suggest there is a medium risk to the site from past shallow underground coal mining and mine gas risk.

It is recommended that a Coal Authority Mine Gas Emission Report and the BGS confidential borehole records are obtained for the site.

Depending upon the findings from these further data a ground investigation may be required to determine the presence of the workings and whether they have been treated. In addition, ground gas monitoring may be required. As part of the ground investigation it may be prudent to undertake a geophysical survey to delineate the fault.

5 References

- BGS Sheet 1:50000 scale Sheet 87 Barnsley.
- Ordnance Survey mapping. <<https://www.bing.com/maps>>
- The Coal Authority interactive map.
<<http://mapapps2.bgs.ac.uk/coalauthority/home.html>>
- Coal Authority Report. Ref. 51002224929001. Dated 17 January 2020.

Appendix A

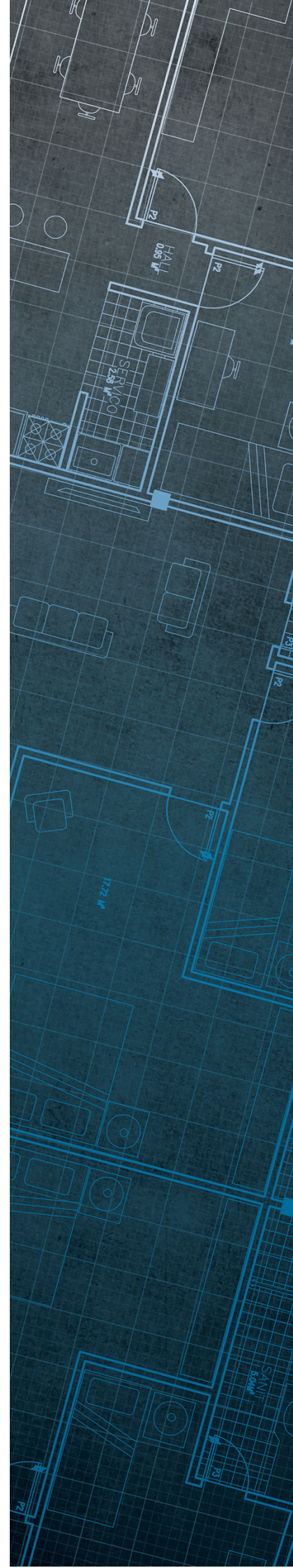


The Coal
Authority

Consultants Coal Mining Report

Middle Field Road, Dodworth,
Barnsley, S75 4ls
South Yorkshire

Date of enquiry:	17 January 2020
Date enquiry received:	17 January 2020
Issue date:	17 January 2020
Our reference:	51002224929001
Your reference:	GS-6559746



Consultants

Coal Mining Report

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

Client name

GROUNDSURE LIMITED

Enquiry address

Middle Field Road, Dodworth, Barnsley, S75 4ls
South Yorkshire

How to contact us

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

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

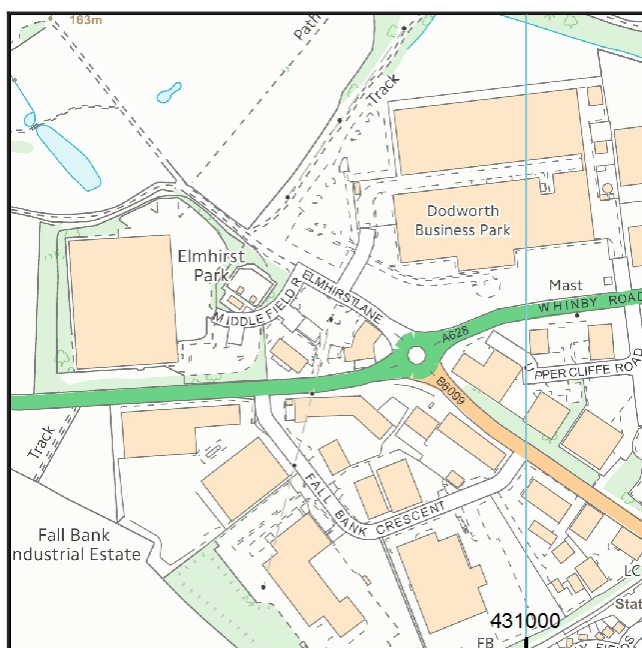
www.groundstability.com

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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	FLOCKTON THICK	Coal	6I4M	16	Beneath Property	4.3	North-East	61	1920
unnamed	TOP FENTON	Coal	A050	63	South	3.8	North-East	71	1908
unnamed	TOP FENTON	Coal	6I4Y	64	Beneath Property	4.3	North-East	91	1915
unnamed	TOP FENTON	Coal	A0RZ	77	Beneath Property	3.8	North-East	71	1908
DODWORTH	PARKGATE	Coal	6I4Y	83	Beneath Property	3.4	North-East	157	1915
DODWORTH	PARKGATE	Coal	6I4W	102	North-East	3.6	North-East	157	1903
DODWORTH	WHEATLEY LIME	Coal	6I51	122	Beneath Property	3.6	East	84	1928
DODWORTH	WHEATLEY LIME	Coal	6I50	138	North-East	1.3	North-East	79	1933
unnamed	SILKSTONE	Coal	6I53	163	Beneath Property	3.7	North-East	147	1884
unnamed	WHINMOOR	Coal	6I55	208	Beneath Property	3.6	North-East	116	1958
unnamed	WHINMOOR	Coal	6I56	232	North-East	3.4	North-East	121	1961

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers

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

9115	NE565	OC182
NE584	NE1034	6855
NE330	CT71	NEST39

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.

Fault under or close to the property 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

Distance to gas incident/remediation (m)	Direction
403.9	East

See Section 4 for further information.

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.

Mine gas remedial works

The site is within an area of previous interest. It is close to where the Coal Authority has investigated and subsequently remediated the effects of mine or ground gas emissions following specific reported hazards.

The site requires further investigation and may influence your risk assessment. We recommend that you order the **Coal Authority Mine Gas Emission Report**, which will include more information about the hazard.

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.

