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Coal Mining Risk Assessment Report For A Proposed Residential Development On Land Adjacent To Ash Lea, Barnfields Lane Kingsley

Date: February 2023
Report No. 359-R-01
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Appendix 1: Coal Authority Coal Mining Consultants Report

1.0 INTRODUCTION

This report presents the findings of a Coal Mining Risk Assessment undertaken on behalf of the Stubbrook Developments Limited on the site of a proposed residential development on land adjacent to Ash Lea, Barnfields Lane, Kingsley ST10 2DG.

The site is currently part of a larger undeveloped pasture on the north west side of Barnfields Lane.

The proposed development comprises four detached bungalows and separated garages, with associated access road, parking areas/driveways and gardens.

The site is located within a Coal Authority defined 'Development High Risk Area', hence a coal mining risk assessment is required under the planning regulations.

A Coal Authority Coal Mining Consultants Report has been obtained for the site, and this is presented in Appendix 1.

This report is based upon archival research including the analysis of historical maps, geological and hydrological data and other relevant Third Party environmental information that GeoInvestigations Ltd have taken to be correct, and no liability can be accepted for any inaccuracies contained within the Third Party information referenced.

This report has been produced on behalf of the Client, and no responsibility is accepted to any Third Party for all or any part. This report should not be relied upon or transferred to any other parties without the express written authorisation of GeoInvestigations Ltd. If any unauthorised Third Party comes into possession of this report, they rely on it at their own risk and the authors owe them no duty of care or skill.

2.0 SITE LOCATION AND DESCRIPTION

The Coal Authority Coal Mining Consultants Report in Appendix 1 includes a site location plan.

The site comprises a narrow rectangular plot of land fronting Barnfields Lane, measuring around 75m long by 30m wide, located within a larger field extending to the north west.

The Ordnance Survey 1:25,000 scale mapping shows the 200 metre AOD contour crossing the centre of the site.

Ground levels fall to the north east along Barnfields Lane, and rise to the south west.

Beyond the site boundary, further north, ground levels fall towards a small brook flowing south west to north east towards Kingsley.

3.0 MINING AND GEOLOGICAL DATA

The Coal Authority Coal Mining Consultants Report identifies that the Coal Authority has no records of mining beneath the site, but there are probable unrecorded workings at shallow depth.

There are no recorded mine entries, or worked out open cast workings.

A fault is recorded on or close to the site.

In the absence of workings beneath the site or associated abandonment plans, the British Geological Survey (BGS) 1:10,560 scale map coverage for the site was obtained and reviewed (Sheet SK 04 NW).

The key features from the BGS mapping are summarised on the plan presented over-page. This shows the site to be located within a fault bounded block of Carboniferous 'Westphalian A' (Coal Measures) strata, which includes coal seams and thick sandstone units.

The nearest coal seam outcrop to the site within the fault bounded block is the Woodhead seam, recorded as being 0.8m to 0.9m thick, and locally with a thin seam beneath, named the Ouster coal. The Woodhead seam outcrops to the north of the site and dips at a shallow angle south-south east towards the site. A dip measurement on the 'Rider' coal seam within the fault bounded block to the west of the site shows a dip of 8 degrees to the south-south-east.

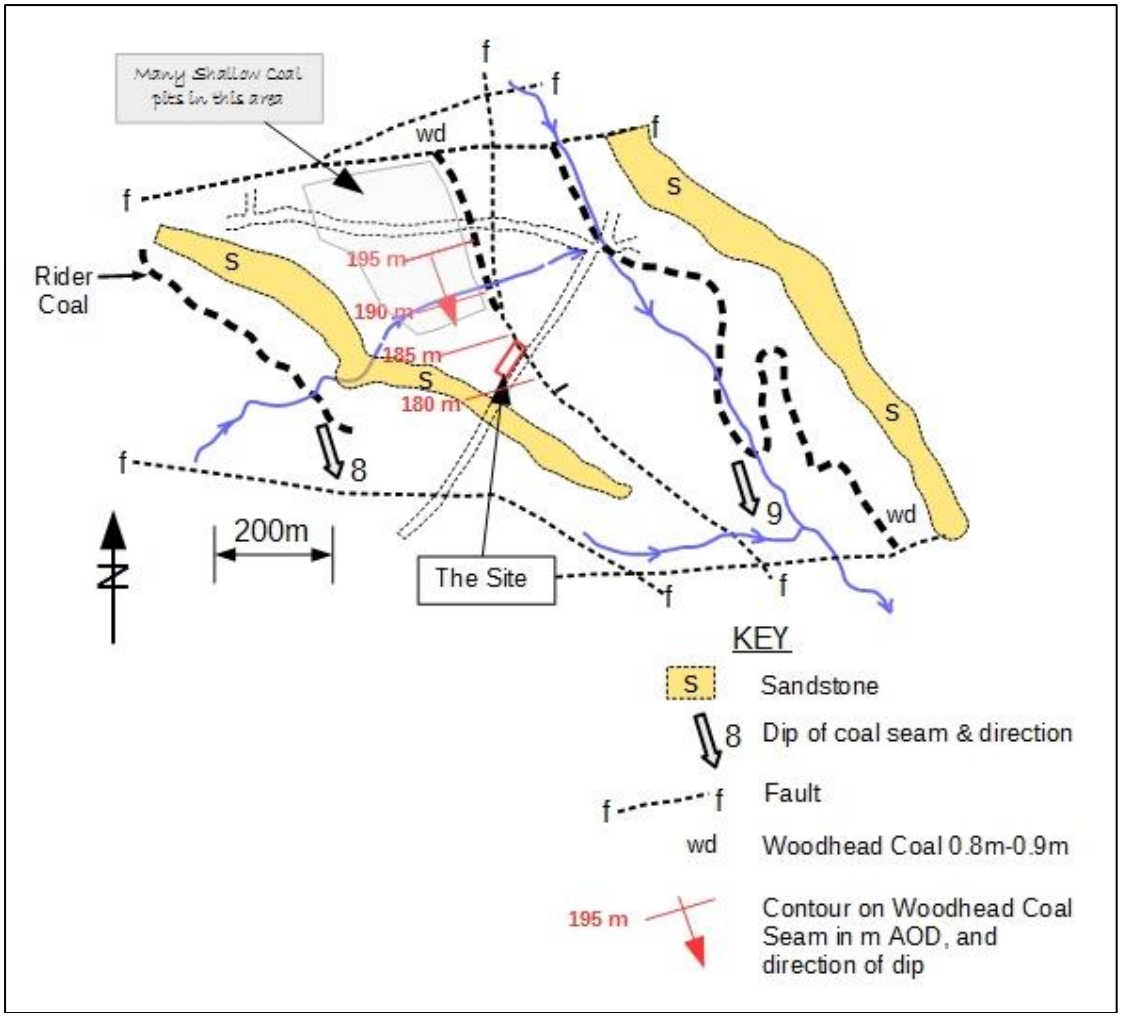


Figure 1:Summary Extract from BGS Sheet SK 04 NW 1:10,560

The inferred outcrop of the Woodhead seam to the north of the site intersects the 195m contour, and, at the point the coal seam crosses the stream, the 190m contour is intersected.

These two points of known elevation on the seam confirm that the seam dips in a southerly direction, which concurs with the dip shown on the geological map.

However, based on the intersection of the seam with the ground contours, a shallow dip of around 3 ½ degrees is calculated.

Strike lines on the coal seam (shown in red on Figure 1), when extended to the south, show that the seam would lie at around 185m AOD at the north eastern end of the site, which is approximately 15m below the ground surface at that point, deepening across the site.

For a seam of 0.8m to 0.9m worked thickness, a competent bedrock cover above the seam of 10 metres minimum is desirable to prevent voids from the collapse of workings from reaching the underside of shallow foundations, hence the bedrock cover may be sufficient in this respect.

However, the true dip of the coal seam is likely to vary between the outcrop to the north-north west and the site, and the precise location of the seam to the north is not proven, hence boreholes are recommended to confirm the geological sequence beneath the site, and to demonstrate that there is adequate competent rock cover above the coal seam.

The BGS geological map shows an area of 'many shallow coal pits' to the north west of the site, to the immediate west of the coal seam outcrop (as shown on Figure 1). This area is not shown to extend to the site, which indicates that the seam became too deep to work from shallow 'bell pits', and 'adits' driven into the seam from outcrop.

There is a fault shown clipping the north eastern corner of the site, and it is recommended that the proposed foundation excavations are inspected to ensure that faulted and/or broken ground does not extend beneath proposed building foundations. Foundations should avoid spanning across faults or fault zones, in order to avoid subsidence issues associated with poor ground associated with rock faulting, or movement of the fault line.

The geological records show that beneath the Woodhead coal seam, there is a significant sandstone unit, (Kingsley Sandstone) with no named coal seams between the Woodhead coal and Kingsley Sandstone. There are no recorded deeper workings beneath the Kingsley Sandstone.

4.0 CONCLUSIONS AND RECOMMENDATIONS

There is one coal seam, the Woodhead coal seam which is recorded as being 0.8m to 0.9m thick and may extend beneath the site at shallow depth.

Based on the available geological data, it is estimated that the seam may be approximately 15 metres below the ground level beneath the site, and provided there is 10 metres or more of competent rock above the seam, then the risk of subsidence is considered to be within acceptable levels.

However, it is recommended that three rotary open hole boreholes are drilled across the site to confirm the geology and demonstrate that there is sufficient cover of rock above any coal seams of workable thickness. As a precaution, the boreholes should be extended to 20m to 25m below rockhead to be sure that there are no thicker seams within that depth range, although this is considered unlikely.

A license will be required from the Coal Authority prior to undertaking any rotary drilling works that may intersect coal seams. A risk assessment for the works will also be required by the Coal Authority.

Based on the findings of the rotary drilling works, a report should be prepared confirming whether any further investigation or potential treatment of any workings or broken/voided ground is necessary.

The foundation excavations are not considered likely to impinge on the line of the fault as shown on the geological mapping. However, it is recommended that foundation excavations are inspected to confirm the absence of broken or faulted ground. Alternatively, trial pits may be undertaken ahead of the construction works to demonstrate the absence of such features within the vicinity of the proposed building foundations.

The foundation inspection is also recommended to ensure that there are no unrecorded shallow workings, such as 'bell pits' or shafts.

APPENDIX 1
Coal Authority
Coal Mining Consultants Report

The Coal Authority

Issued by:
The Coal Authority, Property Search Services, 200 Lichfield Lane, Berry Hill, Mansfield, Nottinghamshire, NG18 4RG
Website: www.groundstability.com Phone: 0345 762 6848

GEOINVESTIGATIONS LIMITED
138 MILL LANE
BENTLEY HEATH
SOLIHULL
B93 8NZ

Our reference:	**51001228093001**
Your reference:	**BH-359**
Date of your enquiry:	**10 February 2023**
Date we received your enquiry:	**10 February 2023**
Date of issue:	**10 February 2023**
Grid Reference	**400616 346777**

Type your text

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This report is for the property described in the address below and the attached plan.

Non-Residential Coal Mining Consultants Report

LAND ADJ ASH LEA, BARNFIELDS LANE, KINGSLEY, ST10 2DG

Type your text

This report is based on and limited to the records held by the Coal Authority, at the time we answer the search.

Past underground mining

No past mining recorded.

Probable unrecorded shallow workings

Probable unrecorded coal workings at shallow depth.

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Outcrops

No outcrops recorded.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Future underground mining

No future mining recorded.

Licence details (AOR)

No AOR recorded.

Section 46 notices

No current notification.

Geology

Fault under or close to the property recorded.

Mine entries

No mine entries recorded.

Court orders

No court orders recorded.

Worked out opencast sites

No worked out opencast site recorded.

Coal mining related hazards

No coal mining related hazard recorded.

Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres, since 31st October 1994.
There is no current Stop Notice delaying the start of remedial works or repairs to the property.

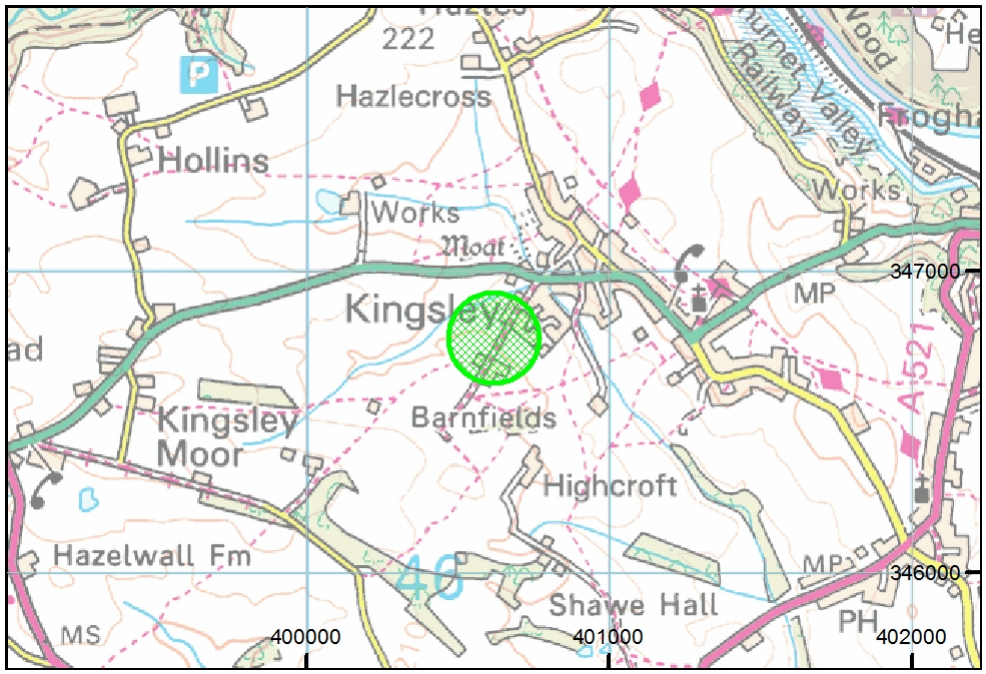
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The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Issued by:	The Coal Authority, 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG
Tax Point Date:	10 February 2023
Issued to:	GEOINVESTIGATIONS LIMITED 138 MILL LANE BENTLEY HEATH SOLIHULL B93 8NZ
Property Search for:	LAND ADJ ASH LEA, BARNFIELDS LANE, KINGSLEY, ST10 2DG
Reference Number:	51001228093001
Date of Issue:	10 February 2023
Cost:	£100.00
VAT @ 20%:	£20.00
Total Received:	£120.00
VAT Registration	598 5850 68

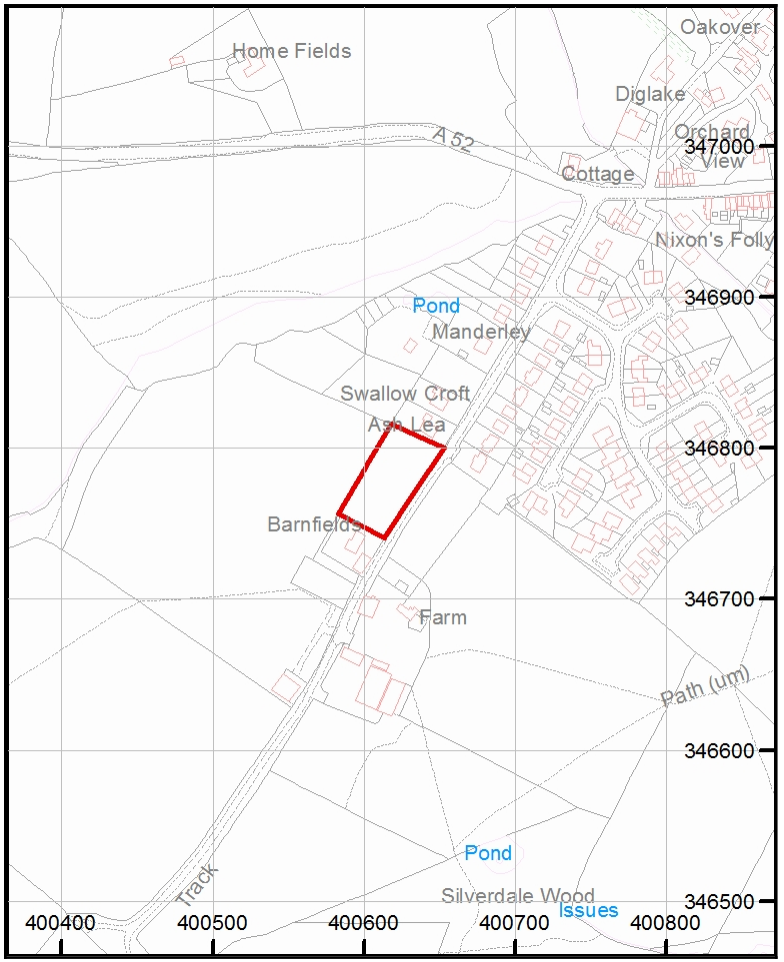
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Location map



Approximate position of property

Enquiry boundary



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Approximate position of enquiry boundary shown

Mapping sourced from Ordnance Survey