Environmental
Geotechnical
Specialists

RGS

<ENVIRONMENTAL><GEOTECHNICAL>

COAL MINING

RISK ASSESSMENT

REPORT

job number	C4988/25/E/7589
date	19/02/25
site address	2a Darton Lane, Darton, Barnsley, S75 5AH.
written by	I. Sakoor
checked by	R. A. Palmer
issued by	I. Sakoor

Please consider the environment before printing this report.

Constructionline
A UK GOVERNMENT CERTIFICATION SERVICE

QMS ISO 9001 : 2015 REGISTERED Cert No. 14123657

QMS ISO 14001 : 2015 REGISTERED Cert No. 14127804

QMS ISO 45001 : 2018 REGISTERED Cert No. 14130281

CITATION APPROVED HEALTH & SAFETY SYSTEMS Registered Member

UKAS United Kingdom Accreditation Service

Contents

Appendices

#

Report on a Coal Mining Risk Assessment

Location:	2a Darton Lane, Darton, Barnsley, S75 5AH.
For:	AHJ Architects
Report No.	C4988/25/E/7589 Report date: February 2025

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

Imran Sakoor BEng FGS Geo-environmental Engineer	**Rob Palmer** MSc FGS ACIEH Senior Geo-environmental Engineer

1. Introduction

It is understood that as part of the planning application at the site, a Coal Mining Risk Assessment has been requested by the planning authority. Consequently, a desktop study was commissioned in order to assess the risk to the development from coal mining. This report presents the findings of the study.

2. Geological Desk Study

The geological desk study has been undertaken using the following sources of information.

- British Geological Survey (BGS) map sheet[1].
- British Geological Survey *Onshore Geoindex*[2].
- Coal Authority Consultants Coal Mining Report[3].
- British Geological Survey *Borehole Records*[4].

[1] Sources: British Geological Survey (NERC) 1: 50 0000 Map Sheet 87; Barnsley Solid and Drift Edition and 1: 10 000 Map Sheet SE30NW.
[2] Sources: British Geological Survey (NERC) Onshore Geoindex [*online resource from www.bgs.ac.uk*]
[3] Coal Authority Reference: 51003479217001 dated 12th February 2025.
[4] Sources: British Geological Survey (NERC) Borehole Records [*online resource from* http://www.bgs.ac.uk//]

2.1 British Geological Survey Maps and Viewer

The appropriate map sheet for the site and the geology viewer has been examined and the following table presents the indicated geology:

Table 1: Geological Data for the Site

Strata Type	Strata Name[5]	Parent Unit[6]	Description
Superficial Geology	None recorded	-	-
Solid Geology	Pennine Middle Coal Measures Formation	Middles Coal Measures Formation	Interbedded grey mudstone, siltstone, pale grey sandstone and commonly coal seams, with a bed of mudstone containing marine fossils at the base, and several such marine-fossil bearing mudstones in the upper half of the unit.
	Barnsley Rock	-	Flaggy sandstone of variable thickness and composition.

On the basis of the geological map, the majority of the site is indicated to be underlain by undifferentiated strata of the Pennine Middle Coal Measures Formation. However, the south-western corner of the development area is indicated to be underlain by the Barnsley Rock, which is a named sandstone unit present within the Pennine Middle Coal Measures Formation. A NW-SE trending fault is also shown (downthrow unknown), which separates the Barnsley Rock and undifferentiated Pennine Middle Coal Measures strata.

There are no nearby dip markers relevant to the site, however, considering the structure of the regional geology and outcrop patterns, it is anticipated that the solid geology dips at shallow angles toward the north east.

There are three coal seams that are shown to outcrop within the local area. These seams are summarised as follows:

Table 2: Summary of Coal Seams Within the Vicinity of the Site

Seam Name	Seam Thickness[5]*	Outcrop Distance from Site[5]*	Anticipated Depth below Site
Gawber Coal	0.72m	On Site	Shallow depth below northern corner of site.
Dunsil Coal	0.46m – 0.84m	60m NE	Not anticipated to be present below the site.
Barnsley Coal	2.29m – 3.10m	160m SW	Shallow depth below southern part of the site.

*All distances are given as approximations only. It should be noted that coal seam thicknesses vary over relatively short distances

Considering the generalised vertical section (GVS) on the geological map, the Barnsley Coal is located below the Barnsley Rock, therefore, this seam is anticipated to be present below the

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

southern part of the site. A thin unnamed coal seam is indicated to be present around 15m below the Barnsley Coal, with the Gawber Coal seam a further 30m below.

Notwithstanding this, it should be appreciated that the Gawber Coal outcrops below the northern corner of the site, with the outcrop of the Dunsil Coal being around 60m from the site. Therefore, as per the GVS, the central part of the site will be located stratigraphically below both of the seams. The next seam below the Gawber Coal is the Swallow Wood Coal, which is a further 40m below. On this basis, it is anticipated that this seam will be present at shallow depth within the northern part of the development area.

2.2 Coal Authority Mines Report

As part of this study a Coal Authority Consultants Coal Mining Report has been obtained. The report is presented as Appendix 2 and for the purposes of discussion has been summarised below:

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

Mining Feature	Comments
Underground Coal Mining	Barnsley Coal, 17m depth, beneath site, extraction thickness: 2.37m, last worked 1887.
Probable Unrecorded Shallow Workings	Yes
Spine Roadways at Shallow Depth	No spine roadway recorded at shallow depth.
Mine Entries	None recorded within 100m of the enquiry boundary.
Abandoned mine plans	Plans of abandoned mine workings below the site are suggested to be available by the Coal Authority.
Outcrops	One outcrop recorded on Coal Authority plan – correlates with the Gawber coal outcrop indicated on geology map.
Geological Faults	A NW-SE trending fault is shown to bisect the site.
Opencast Mines	A number of areas subject to historical open-cast mining are present within 500m. However, none are on, or in close vicinity to the site.
Coal Authority Managed Tips	None recorded within 500 metres of the enquiry boundary.
Site Investigations	Three site investigations are indicated to have been completed within 50m of the site (including two within 20m).
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 31st October 1994. There is no current Stop Notice delaying the start of remedial works or repairs to the property. The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.
Mine Gas	None recorded within 500 metres of the enquiry boundary.
Mine Water Treatment Schemes	None recorded within 500 metres of the enquiry boundary.
Future underground mining	For further information please see section 3 of the Consultant's Coal Mining Report.
Coal mining licensing	
Court orders	
Section 46 notices	
Withdrawal of support notices	The property is in area where a notice to withdraw support was given in 1946.
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.

2.3 Geological Survey Borehole Records

The BGS (NERC) keeps borehole records from across Britain which are available for public viewing through their website[7]. As part of this study, the records in the area around the site have been reviewed in order to assist in establishing the geological conditions.

It should be appreciated that there was limited borehole data within the immediate vicinity of the site that was available for public viewing. It should be noted that a set of 14 No. boreholes are shown around the perimeter of a school building west of the site (within the same geology as the southern part of the development site). Whilst these boreholes are denoted as confidential, it is possible that they form part of a grouting exercise.

Other borehole scans were available at a greater distance from the site (within other fault blocks), however, these were felt to be of limited value to the study as they are not anticipated to present comparable ground conditions to those below the surface of the site.

3. Risk Assessment

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

Low - The possibility of instability is unlikely therefore no further action is necessary.

Moderate - The possibility of instability is likely and further investigation or remedial action may be required.

High - The possibility of instability is highly likely and further investigation or remedial action will be necessary.

Table 4: Development Specific Risk Assessment

Item	Risk attributed to	Feature(s) Considered	Risk Rating
3.1	Shallow coal workings	Barnsley Coal (B) - southern part of site	High
		Gawber Coal (G) - northern part of site	Moderate
3.2	Coal workings at depth	Swallow Wood (SW) northern and central part of site, thin coal and Gawber coal – southern part of site only.	Low
3.3	Mine gas	Shallow coal workings	Moderate
3.4	Mine Entries	None indicated by Consultants Mining Report	N/A

3.1 Risks Posed by Shallow Coal Workings

On the basis of all of the information provided above, two coal seams are anticipated to be present within 30m of the surface below the northern and southern parts of the site. Given the potential thickness of the seams, the possibility of these seams being worked below the site cannot be ruled out. Historic coal mining activity is evident in the nearby area, and therefore it is considered that if coal was known to be close to ground level it could have been removed illicitly via shallow mining methods with relative ease.

[7] Sources: British Geological Survey (NERC) Onshore Geoindex [*online resource from https://mapapps2.bgs.ac.uk/geoindex/home.html*]

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

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

Table 5: Required Thickness of Competent Overburden

Seam Name	Seam Thickness	Anticipated Depth Below Site	Required Thickness of Competent Overburden
Gawber Coal (G)	0.72m	Within 10m	7.90m
Barnsley Coal (B)	2.29m – 3.10m	15m to 20m	34.1m

Based on the above information, it is considered that there may not be a sufficient thickness of competent overburden above the shallowest seam (Gawber Coal) in order to prevent the risk of instability posed by the presence of any illicit workings. Therefore, a moderate risk rating has been assigned to this seam. A high risk rating has been assigned to the Barnsley Coal as this is recorded as being worked beneath part of the site with a particularly extensive working thickness. As such further investigation is recommended to prove or disprove the presence of mining activity.

3.2 Risks Posed by Coal Workings at Depth

In regard to deeper mining which could affect the site, it is considered that sufficient competent cover will be available in order to mitigate the risk of collapse to surface structures.

3.3 Risks Posed by Mine Gas

This assessment has identified that there is potential for shallow mine workings to be present beneath the proposed development. Whilst the Consultants Coal Mining Report has not reported any incidents of mine gas within the vicinity of the development, shallow mining activity represents a credible source of ground gas. As such, a moderate risk rating has been assigned, and further assessment may be required.

Should evidence of workings be proven via further intrusive works, it is strongly recommended that a detailed gas risk assessment is undertaken in accordance with relevant guidance. The risk assessment should take into consideration the current site conditions, and should be subject to reassessment after the formulation and/or completion of any remedial measures and proposed foundation solution. These documents should be prepared by a suitably experienced and qualified specialist.

3.4 Risks Posed by Mine Entries

In this instance, no mine entries are recorded by the Consultants Mining Report. As such, a negligible risk rating has been assigned.

4. Conclusions

In light of the potential risks of instability at the site from the working of shallow coal, it cannot be recommended that development takes place without further investigation to conclusively determine the presence of such workings. This work should include physical drilling methods to explore the ground conditions.

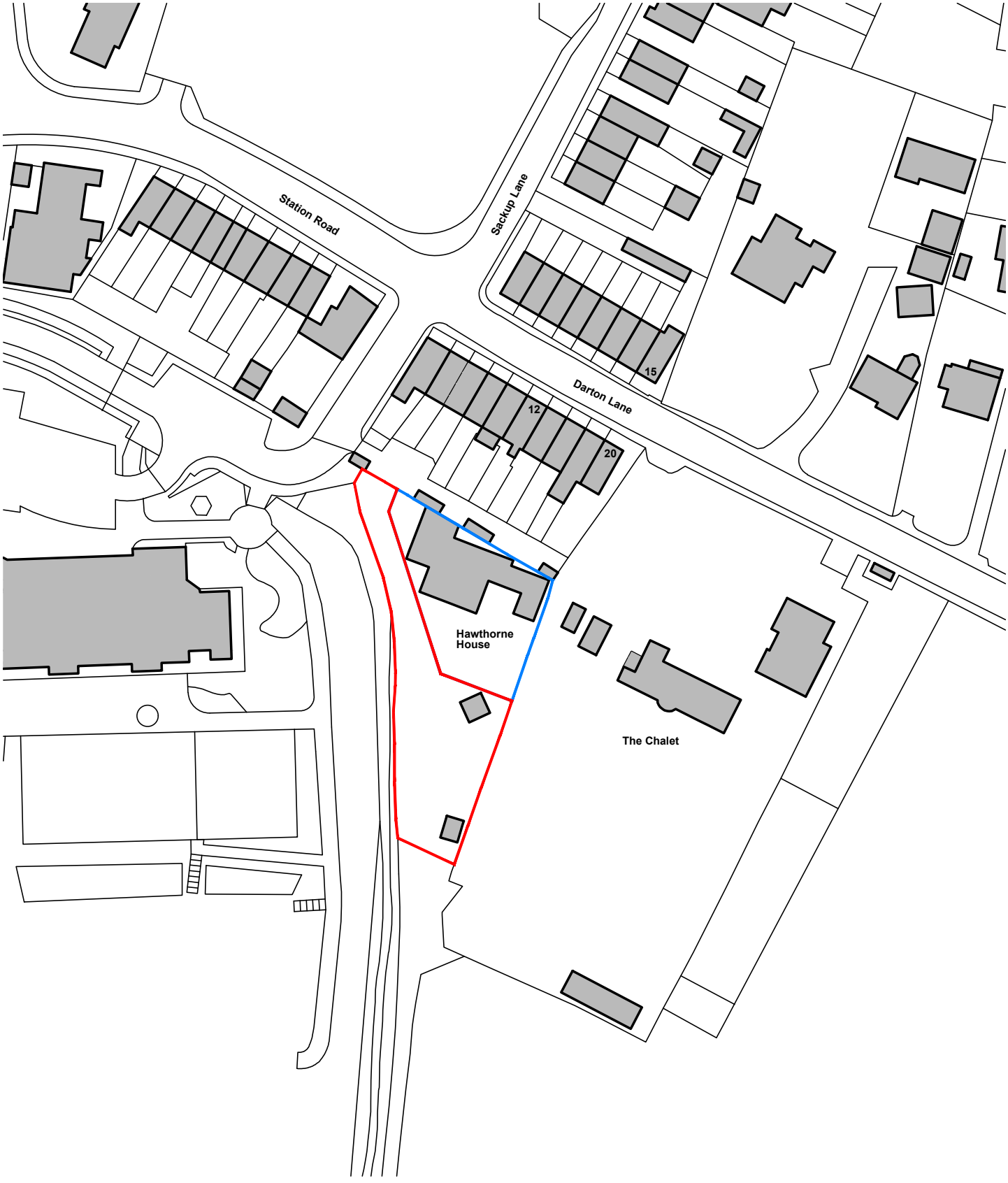
General practice is to undertake rotary openhole boreholes at three locations across the site to mitigate against the potential for drilling through intact columns associated with pillar and stall workings. Furthermore, it is normal to investigate the ground to 30m below ground level; any workings below this depth are unlikely to result in significant instability. However, in this case, a fault is indicated to bisect the site, therefore it is recommended that a minimum of four boreholes are undertaken; two on each side of the fault.

It should be noted that the risk of instability is due to shallow workings, therefore, drilling to 30m may not be necessary and the objective should be to ensure that the shallow seams are un-worked or have sufficient competent cover. It may therefore be possible, in the first instance, to undertake one borehole to 30m below the top of the rockhead on either side of the fault, with the remaining boreholes proving the depth and continuity of the coal seam(s). In any event, it is considered that approval should be sought with the Local Authority as to the efficacy of this approach.

It is of note that Rogers Geotechnical Services would be happy to assist in any further intrusive investigation that may be required.

Appendix 1

Site Plan



Drawn Scale 1:1000

00m 10m 25m 50m

Darton

N

Issue Purpose: PLANNING APPLICATION

AHJ architects

The Courtyard
12a Commercial Road
Skelmanthorpe
Huddersfield
HD8 9AA

t | 07968944840
e | info@ahjarchitects.co.uk

www.ahjarchitects.co.uk

AHJ architects

Client	Phil Joyce
Project	2540 : 2a Darton Lane : Outline Planning New Dwelling
Title	Location Plan
-	
Drawing Number	Revision
2540 – D – 20 – 001	–

Issued From

Date	December 2024
Scale	1:1000 @ A4
Drawn	BH
Auth	BH

Do not scale from this drawing. Work to figured dimensions, and any discrepancy to be reported to the Architect.

Refer to larger scale drawings where available.

Appendix 2

Consultants Mining Report

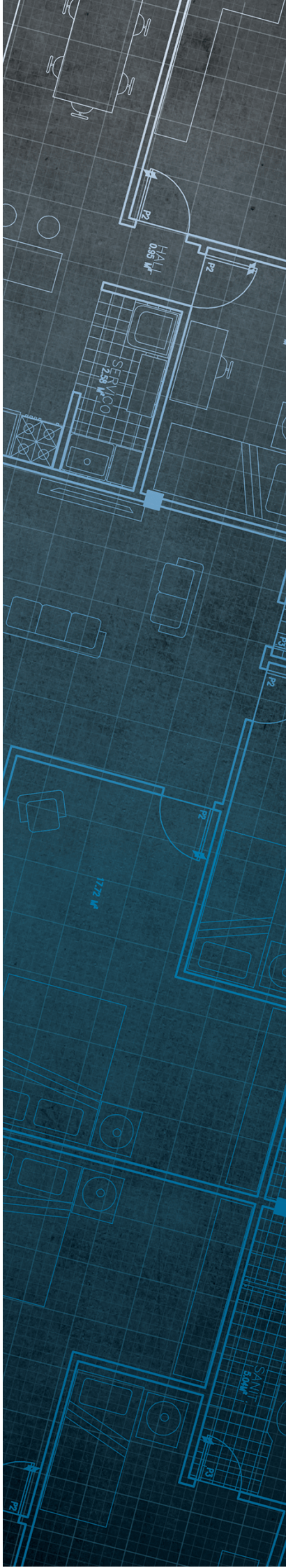
The Coal Authority

Consultants

Coal Mining Report

2A Darton Lane
Darton
Barnsley
Barnsley
S75 5AH

Date of enquiry:	**12 February 2025**
Date enquiry received:	**12 February 2025**
Issue date:	**12 February 2025**
Our reference:	**51003479217001**
Your reference:	**C/4988/25/E/7589**



Consultants
Coal Mining Report

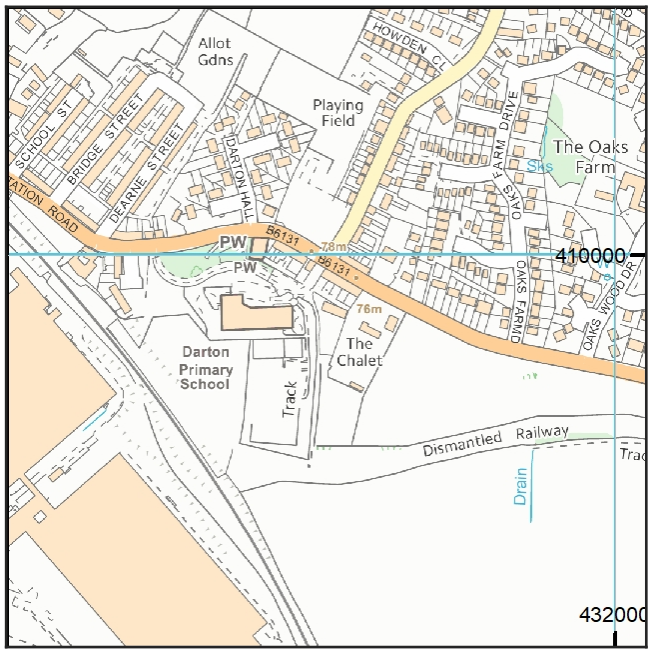
This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

ROGERS GEOTECHNICAL SERVICES LTD

Enquiry address

2A Darton Lane
Darton
Barnsley
Barnsley
S75 5AH



Approximate position of property

How to contact us

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

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

@coalauthority
/company/the-coal-authority
/thecoalauthority
/thecoalauthority

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	BARNSLEY	Coal	6OAR	17	Beneath Property	4.1	North-East	237	1887

Probable unrecorded shallow workings

Yes.

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:

NE868	NE816	12079
NE784	NE158	PO0
NE695	NE978	NE996

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

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
UNNAMED	Coal	Yes	Within	N/A	291

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

Distance to site investigation (m)	Direction
21.3	West
48.6	North
16.7	South

See Section 4 for further information.

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 in an area where a notice to withdraw support was given in 1946.

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.

Site investigations

The site is within an area of previous interest. It is close to where the Coal Authority has received information relating to past site investigations.

The site requires further investigation and may influence how you approach your risk assessment.

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.

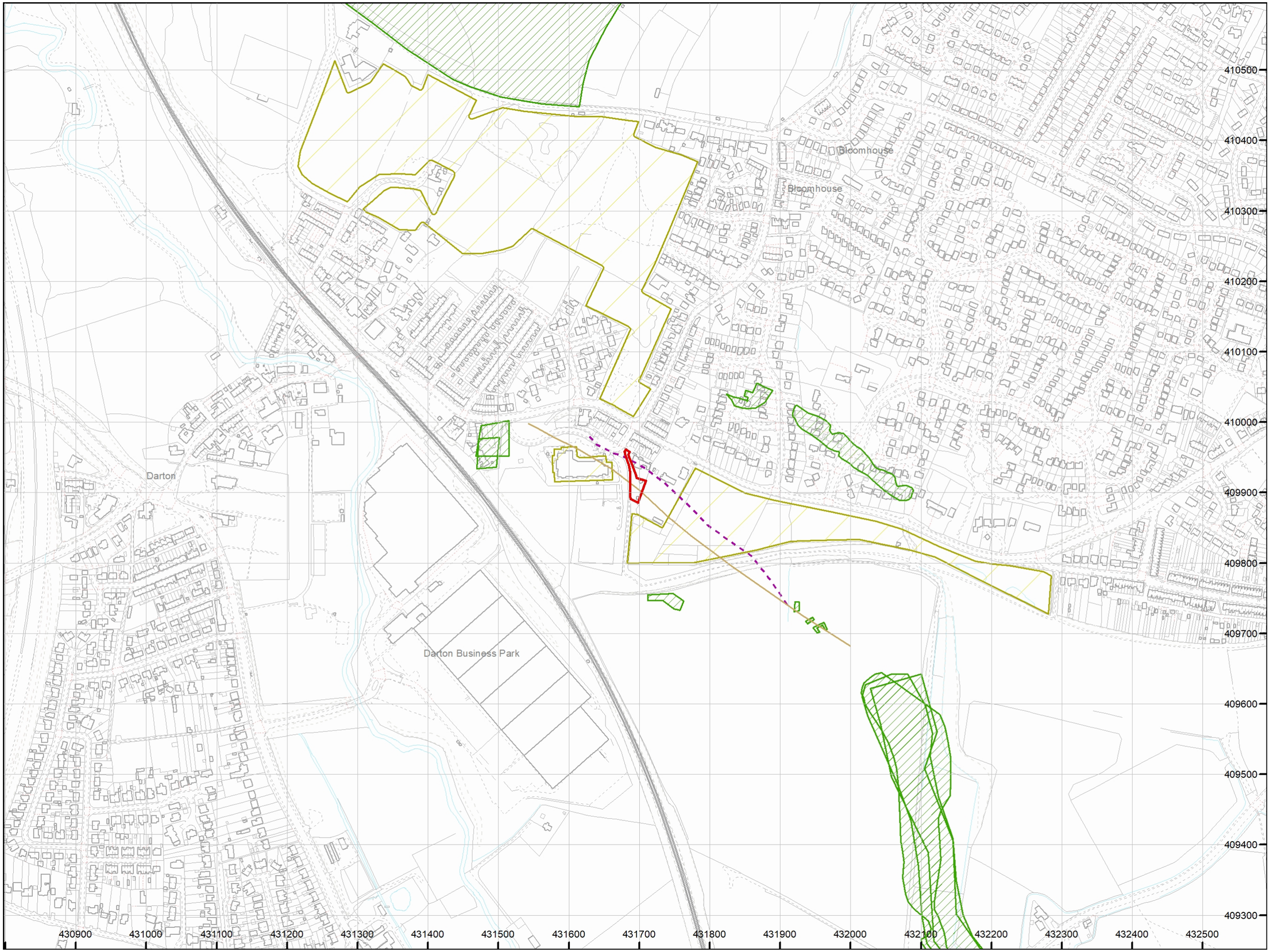
The Coal Authority

Summary of findings

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
- Outcrop (Conjectured)
- Geological faults
- Unlicensed opencast site
- Site investigations



How to contact us
0345 762 6848 (UK)
+44 (0)1623 637 000 (International)
www.groundstability.com