

**Mrs V. Brown
204 Spark Lane
Mapplewell
Barnsley
S75 6AF**

**LYONS CMC
COAL MINING & GEOTECHNICAL
CONSULTANCY**

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Date: 25th August 2026
Your ref: (S75 6AF).
My Ref: CMRA 00477

FOR THE ATTENTION OF MRS V. BROWN

Dear Mrs Brown,

**COAL MINING RISK ASSESSMENT (CMRA)- FOR PROPOSED RESIDENTIAL
DEVELOPMENT AT 204 SPARK LANE, MAPPLEWELL, BARNSELEY S75 6AF**

Introduction

Planning permission is being considered for the conversion and extension of an annex into a dwelling along with a new detached garage at the above site, the location and details of which can be seen on the attached plan No. 00477/A in Appendix 1. The site is centred around national grid reference 432654E / 409654N. A Coal Mining Risk Assessment is required for the proposals in order to competently address the mining legacy for the site and determine what impact this may have had upon the land. The assessment is intended to be included as a supporting document to a future planning application to Barnsley MBC.

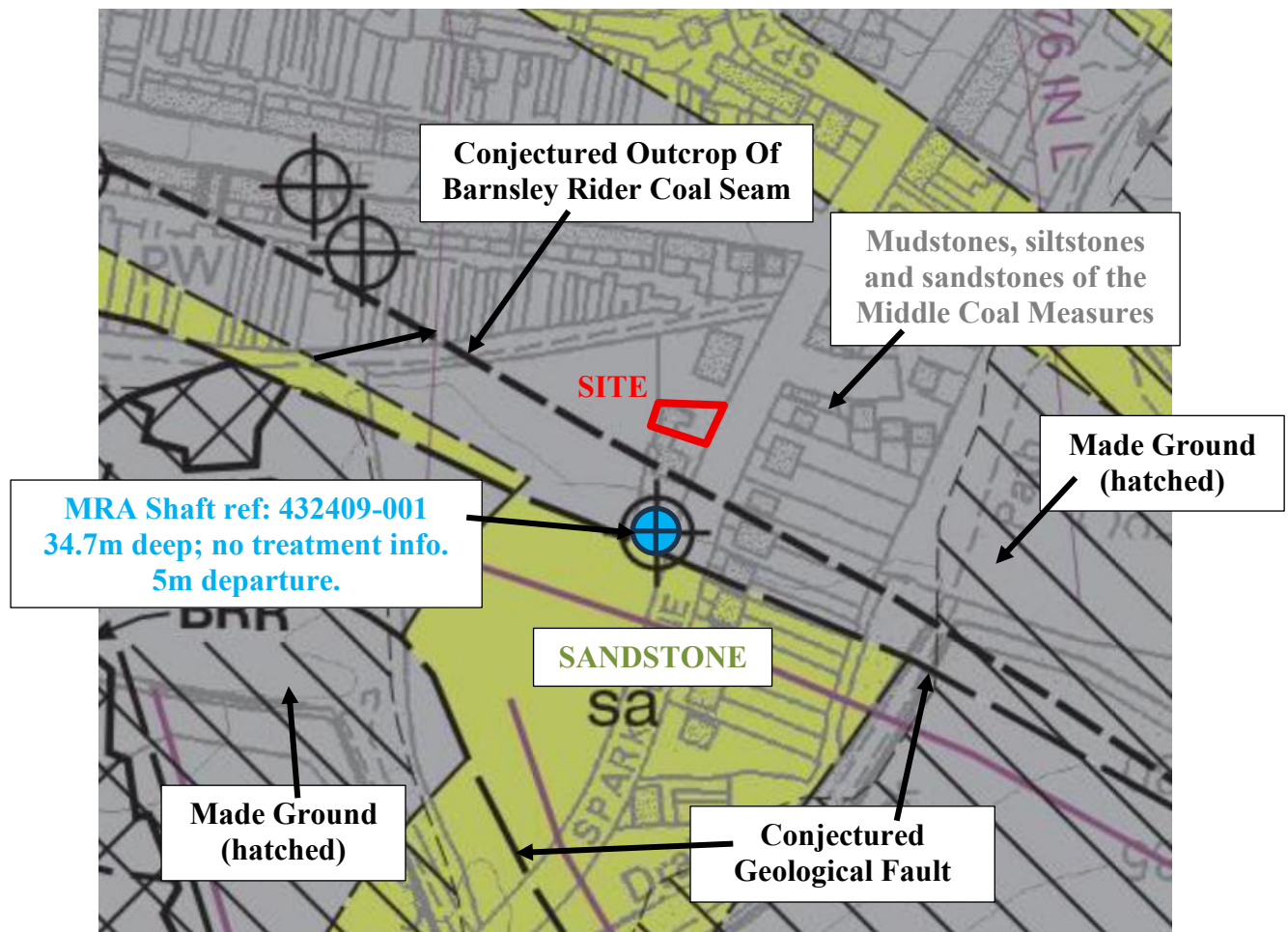
Scope of the Coal Mining Risk Assessment

The purpose of this Coal Mining Risk Assessment Report is to:

- Present a desk-based review of all available information on the coal mining issues which are relevant to the application site;
- Use that 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 further works that may be necessary; and
- 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 with regard to development on unstable land.
- The report will not consider other geotechnical or geo-environmental issues.

Surface Geology (inc. any superficial deposits)

Records indicate the site to be located on mudstones, siltstones and sandstones of the Middle Coal Measure series from the Carboniferous formation. No superficial deposits are indicated in the vicinity of the site itself. The strata is known generally to dip to the north-east in this vicinity at a rate of around 1 in 12 (5°). A summary of the surface geology is illustrated on the image below which is an extract from the BGS Sheet SE30NW 2005 Edition:



Fault Planes or Fissures

Geological faulting is conjectured to pass clear of the site by 40m away to the south as indicated above, which throws the strata down to the south. Although no fissuring of sandstone bedrock is known in this vicinity, there will be some potential for such natural features of which there are no records that may have been 'opened out' to some degree by the past deep coal mining in the area.

Coal Seam Outcrops

As outlined on the extract image above, the 'Barnsley Rider' coal seam is conjectured to outcrop some 15m away to the south, which will therefore dip beneath the site to the north-east. Local mining information indicates this coal seam as around 0.45m section. Local mining details show the Barnsley Rider coal seam as being around 23m above the Barnsley coal seam. Given the mining records of the Barnsley seam (at circa 31m deep some 45m south of the site), this would put the Barnsley Rider seam at around 9m deep beneath the proposed development (given strata dip and the lay of the land).

Made Ground

BGS records show no made ground beneath the site; areas of such are known over 70m away to the east and south-west as illustrated above.

Opencast Coal Workings.

No past opencast coal operations are known within 200m of the site.

Underground Coal Workings - Deep

Deep coal mining (over 30m deep) has taken place in various coal seams beneath this site, all settlement from which will be long complete. As no coalfields now exist, the site should remain stable from the deep coal mining perspective for the foreseeable future.

Underground Coal Workings - Shallow

Relatively shallow workings in the Barnsley coal seam have taken place beneath the site in the late 1800's from the former North Gawber Colliery. According to the Darton Colliery abandonment plan no. 5692, the mine shaft close to the south of the site (as detailed below) is recorded as an 'air shaft' some 38yd deep (34.7m) to the Barnsley seam workings. This plan also shows a seam section of the Barnsley coal as 9ft 6in (2.9m). Considering that this coal will dip to the north-east, it will therefore be at slightly greater depths beneath the site under consideration. Best practice from CIRIA C758D 'Abandoned mine working manual' (*note: informative(s) nos. 1 & 2 in appendix 2*) suggests that there should be 10 times competent rock cover above any shallow workings for a site to be considered stable from shallow mining void migration aspects. In this instance this would equate to 29m. Given the details, it is considered that this will be achieved for the development under consideration - providing that depths to bedrock are not excessive (3m or more). This concurs with the fact that the site is not shown to be in an area of either 'probable shallow workings' or 'past shallow coal workings' according to the Mining Remediation Authorities (MRA) interactive viewer information.

Mine Entries

As can be seen in the above image, an old air shaft is located some 45m away from the proposed development. According to the MRA Interactive viewer information this shaft is detailed as ref: 432409-001; 34.7m deep with no treatment information known and a 5m departure (contingency factor for it being out of position by from plotting errors given nature of old plans for instance). It should also be noted that some potential will exist for other mine entries being encountered which there are no records; grey circular areas of fill material within natural ground would be an example of a mine shaft for example.

Fugitive Gases

As far as we are aware, no evidence of coal mining related fugitive gas emissions are known within 250m of the site. Given the anticipated geology (siltstones, mudstones & sandstones) the likelihood of such ground gases would be considered low. However, this position would change should any significant made ground be encountered and even more-so if an unrecorded mine entry is discovered, which would create potential pathways for gases to migrate – *note informative no. 3 in appendix 2.*

Coal Mining Risk Assessment (based on the above).

Coal Seam / Coal Mining Issue	Risk Assessment (VeryHigh/High/Moderate/Low/VeryLow)
Underground coal mining (at shallow depths)	Low
Mine entries (shafts and adits)	Low
Geological faulting	Low
Geological fissures	Low to Moderate
Fugitive gas emissions	Low
Surface mining (opencast workings)	Low
Aggressive ground	Low to Moderate
Coal exposed / near foundation level	Low to Moderate

Defined Risk Assessment
(Where 'Underground Coal Mining' above = Very High to Moderate)

Extent of known underground mining in this/these shallow coal seam/s in the wider vicinity	(Extensive / Much / Occasional / None Known) N/A
Intrusive Site Investigation of Coal Seam / Mines of Coal (given nature of proposals).	(Required / Recommended / Unnecessary)** N/A
Advised critical depth beneath foundation/rock-head level to investigate considering geology and nature of the shallow coal/s*	N/A

Key:

* The critical depth is calculated according to Ciria C758D guidance which details that for the land to be regarded as stable from any voided mineworkings, then a suitable section of competent rock cover above the workings should be proved that is equal or greater than ten times the 'in-tact' coal seam thickness. The advised critical depth to investigate to in this report takes into account the available geological information, any nearby mining records and may include a contingency for the seam to be of a slightly greater thickness than anticipated. Due care and diligence should be employed on-site to ensure that sound information is gathered of the in-tact seam thickness, particularly if concluding that old workings are outside the critical depth of affecting stability for the proposed development.

** Where :

Required	<i>Intrusive Site Investigation required of the shallow coal/s and/or mine entries to determine any necessary stabilisation works for the given development.</i>
Recommended	<i>Intrusive Site investigation recommended – given a lower level of risk in relation to the nature of proposed development some proposals may reduce the risk to an acceptable level via suitable design considerations.</i>
Unnecessary	<i>Intrusive Site Investigation deemed unnecessary – given geological/mining information.</i>

Mining Remediation Authority

Prior written permission from The Mining Remediation Authority is required for intrusive activities which will disturb or enter any coal seams, coal mine workings or coal mine entries (shafts and adits). Further information on The Mining Remediation Authority's permissions process can be found at: www.coal.gov.uk/services/permissions/index.cfm

Information sources:

- *British Geological Survey Map Sheet SE31SE 2005 Edition*
- *British Geological Survey – Geology Of Britain Viewer*
- *Coal Authority Interactive Viewer and Mine Abandonment Plans*
- *Historical Mapping – old-maps.co.uk*

CONCLUSIONS

- 1) The site can be regarded as stable from the **Deep Coal Mining** perspective, and as no coal fields now remain this position should continue for the foreseeable future.
- 2) Given the **Shallow Mining** position, providing depths to competent natural ground/bedrock are not in excess of 3m or so then no further works regarding shallow coal mining (in relation to void migration) would be required. *Note informative(s) 1 & 2 in Appendix 2*. Should any significant made ground be encountered however then this position should be considered further by a suitably qualified geotechnical/mining engineer.
- 3) A watching brief should be employed during future ground/foundation works for any signs of unrecorded mine entries. A site scrape to natural ground is the most effective procedure to check for such features, circular areas of grey fill within bedrock would be an indication. If suspected the Coal Authority (as owners) should be notified immediately for appropriate deliberations.
- 4) A watching brief should be employed during future ground/foundation works for any signs of any opened-out fissures within sandstone bedrock. If encountered then foundations may need to be strengthened/redesigned as necessary and prior ground remediation/treatment may be required in sever instances. Similarly, although considered a low probability, any exposed coal in relation to the Barnsley Rider coal seam should be removed and blinded off using a suitable sulphur resistant grade concrete to prevent chemical attack and help reduce risks of spontaneous combustion within the coal seam.

- 5) In terms of the fugitive mine gas risks providing future excavation prove natural clays/siltstones and/or mudstones close to the surface then no further associated considerations would be deemed necessary. However, if any significant made ground, fissured sandstone and more-so if any unrecorded mine entries are discovered then further considerations will be required (*note informative no. 3 in appendix 2*). All usual safety precautions should be employed regarding possible fugitive gases in any deep excavation work taking place.

Note: should there be any uncertainty of actual conditions during future ground works Lyons CMC or indeed the Mining Remediation Authority themselves can be further consulted for on site assessment if necessary.

A suitably qualified and competent professional should be employed to use this report to determine the conditions on site, and ultimately advise on what action, if any, is necessary to safeguard the development. It should be noted that any future works to investigate any coal seam, mines of coal or associated mine entries will need the prior consent of the Mining Remediation Authority via their permitting procedure.

I trust that this satisfies your requirements, however please do not hesitate to contact myself at any time for further clarification or advice.

Yours Sincerely,

M Lyons

M. Lyons
Consultant Mining Engineer
BSc CSci MIMMM

Enc.

THIS COAL MINING RISK ASSESSMENT IS BASED ON AND LIMITED TO THE INFORMATION IN MY RECORD AT THE TIME THE ENQUIRY IS ANSWERED. It is based on my professional opinion in line with the guidelines set out in CIRIA C758D "Abandoned mine workings manual." The opinion may be overruled by Government Authorities decisions based on other information not in my record. If a site investigation is recommended then this risk assessment will be superseded by the factual findings of that investigation. All site investigation work should be carried out by a competent professional from which independent conclusions and recommendations for safe development should be provided. It should be noted that: no operation should be undertaken that intersects, disturbs or interferes with any coal or mines of coal without the permission of the Coal Authority. The investigation of coal seams/former mines of coal may have the potential to generate and/or displace underground gases; these risks both under and adjacent the site should be fully considered in any proposals both for personnel and public safety. Copyright in this CMRA belongs to M.A.Lyons. All rights are reserved and unauthorised use is prohibited. Copyright is not transferred to external parties by possession of this report, however, those for whom the report is compiled have the right to use it. If any unauthorised third party comes into possession of this report, they rely upon it entirely at their own risk and the author does not owe them any Duty of Care or Skill.

Site centred at NGR: 432654E / 409654N



Proposed development plan



Appendix 2 – Informative(s)

- 1) The relatively recently revised CIRIA document titled ‘Abandoned Mine Workings Manual’, which replaced Special Publication 32 (1984), indicates that the use of empirical or ‘rule of thumb’ guides, as the design basis for treatment depth, has been successfully observed for many years for a wide range of abandoned mine workings and overlying rock/soil strata scenarios. As such, the guidance indicates that further design/ground stabilisation considerations will be required if there is less than 10 times the aggregate measured height of mine workings as competent rock cover above the workings.
- 2) For information, should the grouting of any mine workings be required, a 10:1 PFA/cement mix or similar would need to be injected into the workings and any other disturbed strata above it under pressure on an OS coordinated treatment grid approved by the Coal Authority (and Building Control/third-party Warranty provider as required). Specific proposals to treat any mine workings would need to be submitted in the form of a standalone ‘Specification’, with a separate permit to treat being obtained from the Coal Authority. The method of consolidation is dependent on the nature of the bedrock strata and the underground mining conditions encountered, although fissile strata, such as shales and mudstone deposits, do permit mining voids to migrate upwards to quite high levels. All grouting works would need to be supervised by a competent engineer, with a final validation report being produced to confirm what works were undertaken and whether they were successful or not.
- 3) Ground gas monitoring can be undertaken to confirm or discount the presence of an elevated gassing regime within the underlying soils. Elevated concentrations of mine gases (e.g. CO₂, CH₄) may be present within the coal seams, voids in or above any shallow mine workings, areas of made ground/opencast backfill, and in any permeable bedrock strata (and any organic rich surficial soils). Mine entries and/or geological fault lines/fissured bedrock will also provide pathways for gas to migrate. The period of monitoring to be undertaken should be broadly completed in accordance with current guidance [BS8485]. Piezometers would need to be installed (during drilling works for example) to facilitate this.