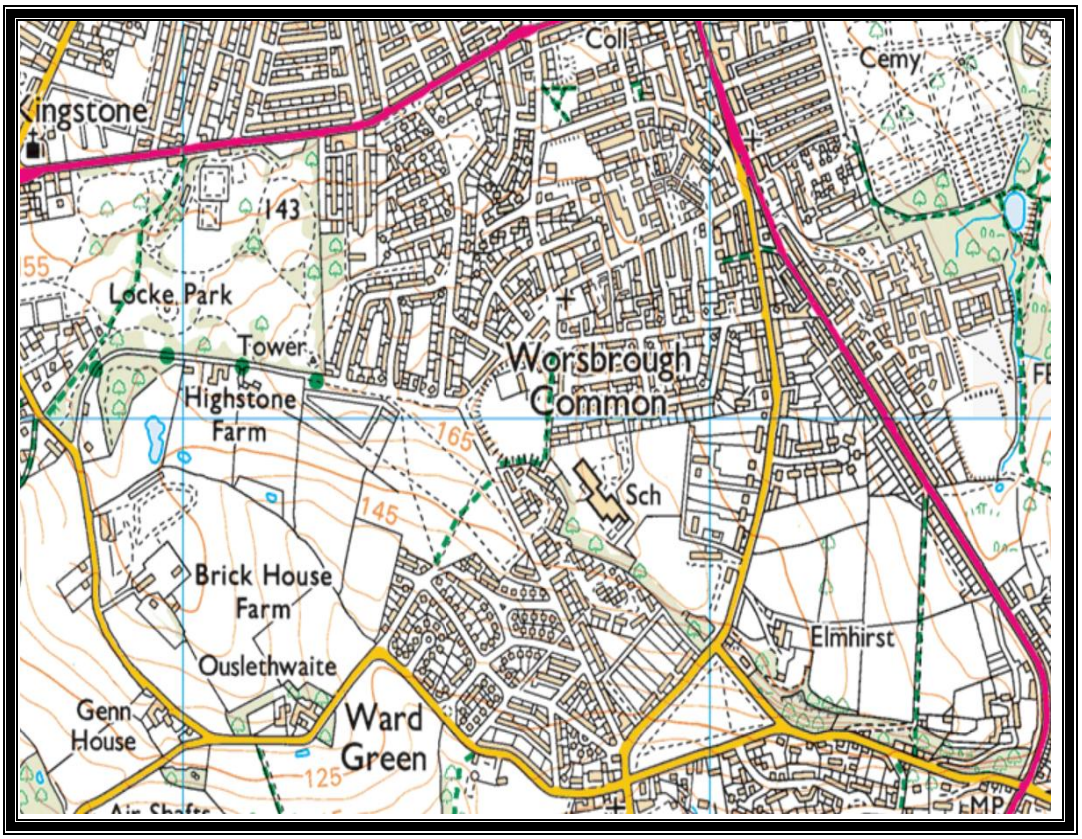
Report No: C632
Date: February 2025

COAL MINING RISK ASSESSMENT
For land at
BISMARCK STREET, WORSBROUGH COMMON, BARNSLEY, SOUTH YORKSHIRE, S70 4NA



Prepared for

Mr Michael Miller

Prepared by
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REPORT NUMBER:	C632	**REPORT STATUS:**	Final
REPORT TYPE:	Coal Mining Risk Assessment		
REPORT DATE:	February 2024		
SITE:	Land at Bismarck Street, Worsbrough Common, Barnsley, South Yorkshire S70 4NA		
PREPARED FOR:	Mr Michael Miller		
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Introduction

Retrospective planning permission is being sought for the development of two detached dwellings on land at Bismarck Street, Worsbrough Common, Barnsley, S70 4NA. The assessment is intended to be included as a supporting document to an existing planning application to Barnsley Council ref: 2024/0999; and should be read in conjunction with past reports for this land: G&M Consulting ref: C632/01/ATS dated 20th April 2024; Rogers Geotechnical Ltd ref: J3943/17/E dated June 2017; along with the Coal Authority Response dated 21st January 2025.

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 the local authority.

Site Location and Description

The site is located off Bismarck Street in Worsbrough Common, approximately 1.5 km south east of Barnsley town centre. The grid reference for the site is SE 347 053.

The site currently comprises rough vegetated amenity land.

The site location is shown below.

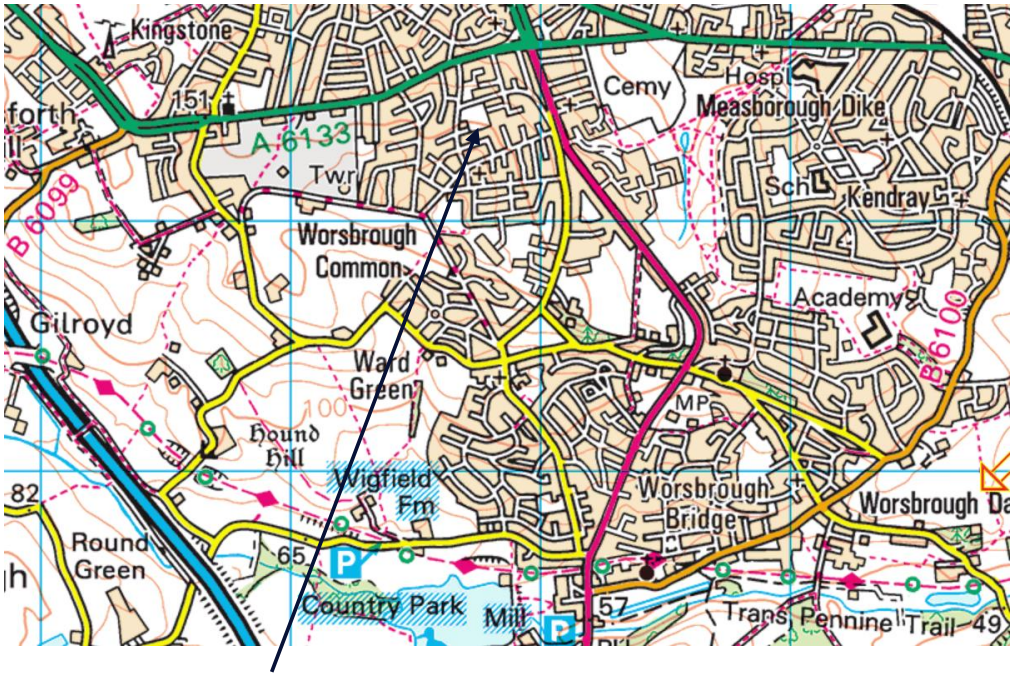


Figure 1

Scope of the Coal Mining Risk Assessment

This coal mining risk assessment is compiled in accordance with the guidance given in the Coal Authority publication *Risk Based Approach to Development Management Guidance for Developers Version 4 2017 (updated 2021)*.

This publication sets out the scope for a CMRA as follows:

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

Sources of Information

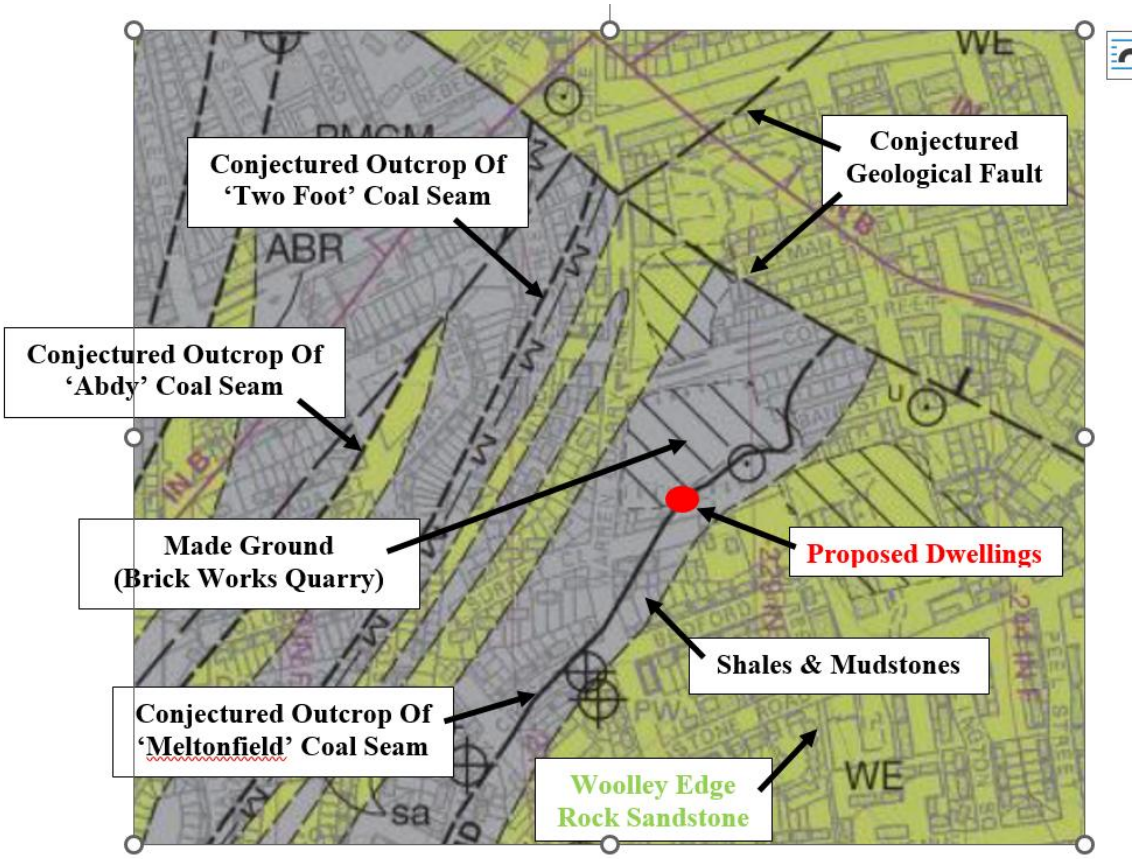
In compiling the CMRA information has been obtain from various sources, including the British Geological Survey (BGS):

- British Geological Survey Map Sheet SE 30 NW 2005 Edition
- British Geological Survey – Geology Of Britain Viewer
- Coal Authority Interactive Viewer and Mine Abandonment Plans
- Historical Mapping – old-maps.co.uk

Published Geology

Surface Geology (inc. any superficial deposits)

Records indicate the site to be located on shales, mudstones and possibly the base of the 'Woolley Edge Rock Sandstone' of the Middle Coal Measure series from the Carboniferous formation (although note the potential for made ground as detailed below). No superficial deposits are indicated in the vicinity of the site itself. Strata is shown to dip towards the SE (south-east) at around 7° (1 in 8) in this vicinity. A summary of the surface geology is illustrated on the image below which is an extract from the BGS SE30NW 2005 Edition:



Fault Planes or Fissures

A geological fault is conjectured to pass clear of the site by over 70m away to the north-east as indicated above, which throws the strata down to the north-east. No fissuring of bedrock is known in the vicinity and considering the information the likelihood of such features being present is considered low.

Coal Seam Outcrops

As outlined above, the 'Meltonfield' coal seam, of around 0.9m workable thickness in these parts, is conjectured to outcrop just to the north as shown. Given the information it is likely to be the case that the outcrop follows the base of the old brickworks quarry detailed below, or they were within the associated high-wall. This would make for the seam being at shallow depth beneath the dwelling (within 5m or so) rather than at the surface; unless historically removed via the quarrying.

The Two Foot seam, of around 0.8m workable thickness, is shown to outcrop some 170m away to the north-west as indicated. This coal is known locally to lie beneath the Meltonfield seam by around 15m or so.

The Abdy (or 'Winter') coal seam, of around 0.9m thickness) will lie beneath the Two Foot seam by a further 15m or so.

Made Ground

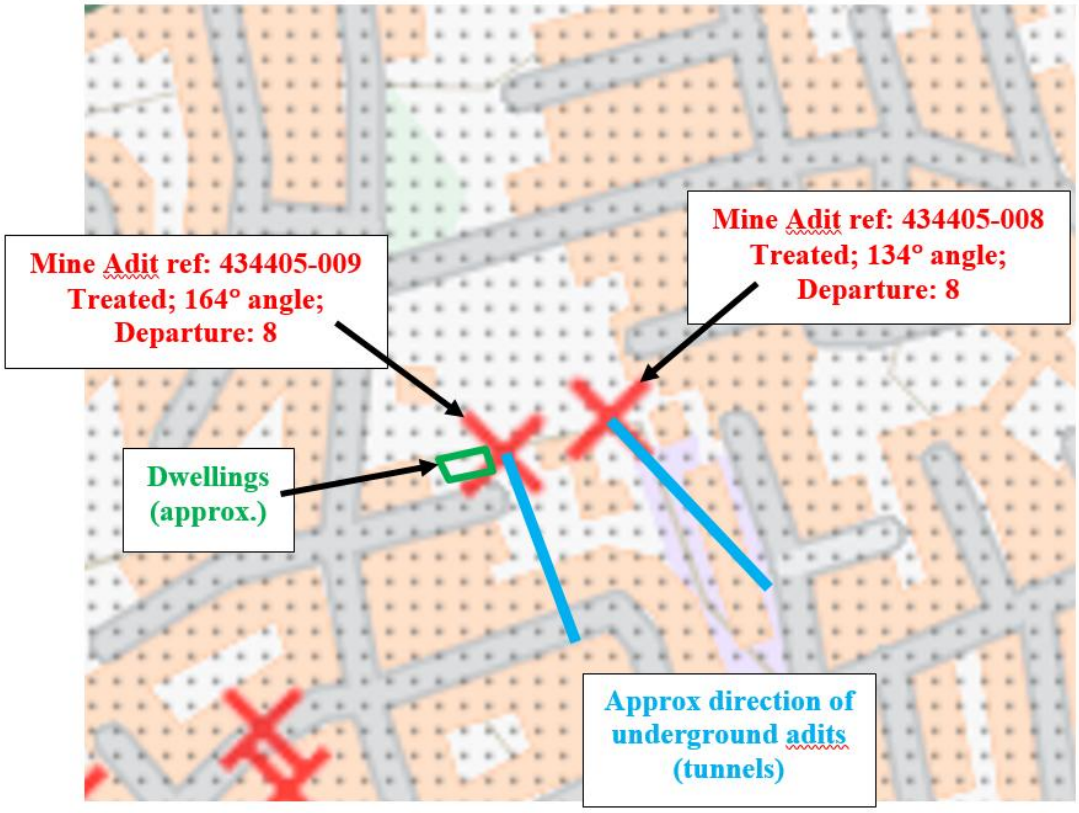
An area of made ground is indicated just to the north of the dwelling which appears to be related to an old 'brick works' quarry according to old historic mapping. Given the historic nature of these operations it is likely that associated made ground may extend to beneath the site of the proposed dwellings.

Opencast Coal Workings.
No opencast coal operations are known within 250m of the site; however, the historic 'brick works' are shown to have 'removed the shallow coal' to the extent as shown on the attached abandonment plan in Attachment A of this report. Due to the historic nature and origin of these records, the precise location of quarry sides/high walls will be difficult to predict; and subsequent works, of little or no record, may have change the actual position considerably.

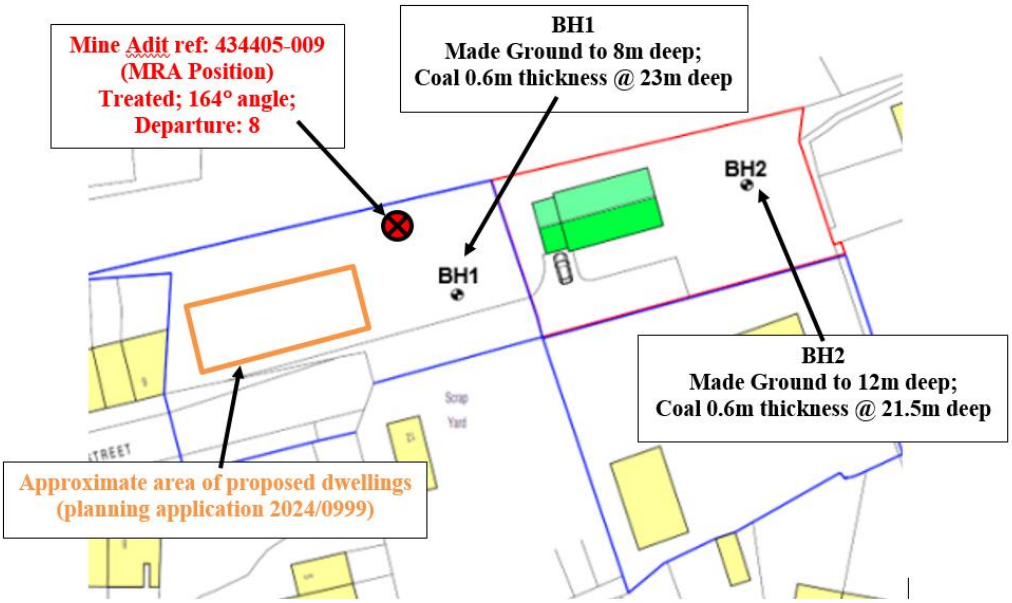
Underground Coal Workings - Deep
Deep coal mining (over 50m deep) has taken place beneath the site in various coal seams, all settlement from which will be long complete. As no coalfields now exist, the site should remain stable from the deep coal mining perspective for the foreseeable future.

Underground Coal Workings - Shallow
According to Coal Authority details the site lies in an area of 'past shallow coal workings' which appears to relate to the 'Two Foot' coal seam; although given the geological position it should be considered that the workings may indeed relate to the 'Meltonfield' seam that is likely to have been encountered in the base/wall of the historic brick works quarry. The location of the mine adits, as detailed below, supports this possible scenario.

Mine Entries
An old mine adit (tunnel entrance) is shown to be present within 20m of the eastern dwelling as indicated on the following image which forms an extract of the Mining Remediation Authorities interactive viewer information.



As can be seen, the mine adit ref: 434405-009 is known to be treated and have an '8m departure' - which is a contingency factor for the feature being out of the recorded plan position by. It should be noted however that the historic abandonment plan shows the two adits encountered, and illustrates that 434405-009 may indeed be just to the north of the proposed dwellings (in which case it could travel beneath the eastern plot). It is also possible that the historic quarrying activity has totally removed the features to beneath land further southwards – as was considered the case for the neighbouring development - boreholes 1 and 2 as detailed in G&M Consulting report ref: C632/01/ATS dated 20th April 2024 and illustrated in the extract image below:



Fugitive Gases

As far as we are aware, no evidence of coal mining related fugitive gas emissions are known within 250m of the site. However, there will be some associated risk in relation to the made ground, potential shallow coal/coal workings and mine adit.

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)	**High**
Mine entries (shafts and adits)	**High**
Geological faulting	**Low**
Geological fissures	**Low**
Fugitive gas emissions	**Moderate**
Surface mining (opencast workings)	**High**
Aggressive ground	**Moderate**
Coal exposed / near foundation level	**Low**

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

CONCLUSIONS

1) The site can be regarded as stable from both the **Deep & Shallow Coal Mining** perspective, and as no coal fields now remain this position should continue for the foreseeable future.

2) Given the shallow coal mining position and location of mine adit ref: 434405-009, it would seem a balanced approach to undertake 4 rotary boreholes to 25m deep just outside of the corners of the dwellings to the east and west in the first instance, plus a further 2 between the properties if necessary to determine the quarry high wall and presence, or otherwise, of mine adit (as mentioned below). The suggested boreholes are outlined on the location plan presented in Attachment B of this report. Water flush methods should be utilised to reduce gas and spontaneous combustion risks and a permit from the Mining Remediation Authority should first be obtained prior to an investigation of their interests. The boreholes should determine the depth of any made ground associated with the adjacent historic quarry and whether any coal seam/workings are beneath the property at a critical depth from a stability aspect. It is felt unlikely in this instance that there will be any 'interaction' between the different coal seams from a void migration aspect. As such, boreholes could be terminated within the firm ground beneath the first coal seam/workings encountered. If no coal seams or associated workings are noted (beneath any made ground for instance) then holes should be extended to 25m deep to confirm the position. It should be noted that further holes may be necessary should it be difficult to ultimately prove the geological/mining position and/or location of the mine adit itself which will need similar considerations to shallow mining voids if encountered. Should made ground be proved in the vicinity of the mine adit (mainly the eastern plot) in excess of 5m then it would seem reasonable to assume that the feature has been historically removed.
3) Given the made ground and shallow coal/coal workings, all usual safety precautions should be employed regarding the potential for associated fugitive gases in any deep excavation or foundation work taking place. It would be prudent to include protection measures (such as a methane membrane and/or positive ventilation layers) within future foundation designs (which would also protect from radon issues too should that be of concern) unless a period of gas monitoring proves that this is not required

4) Considerations for appropriately designed foundations may also be required from a differential settlement aspect should either of the dwellings be located over the high-wall of the historic quarry. The borehole

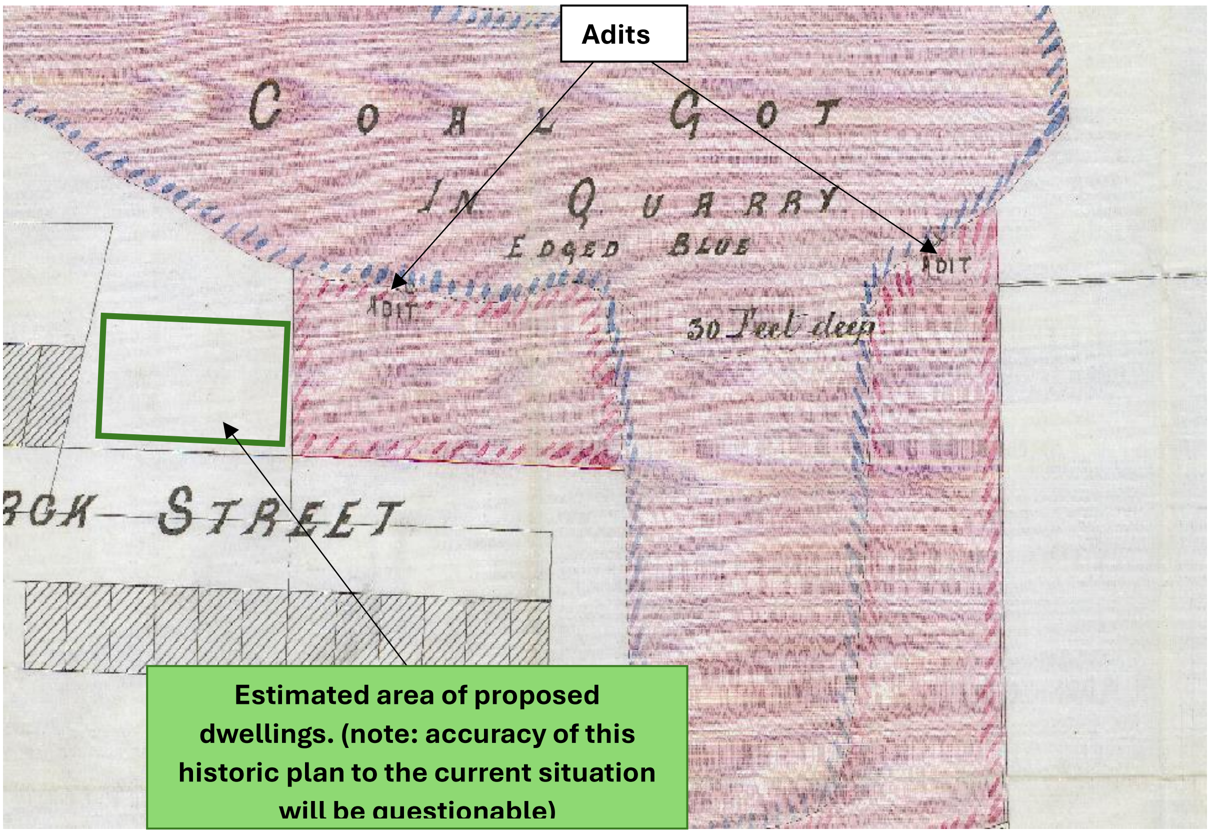
investigation as recommended for above should determine any associated risks in this regard.

5) Although a low risk, a watching brief should be employed during any future grounds works for any signs of the mine adits or other unrecorded mine entries. If suspected the Mining Remediation Authority (as owners) should be notified immediately for appropriate deliberations.

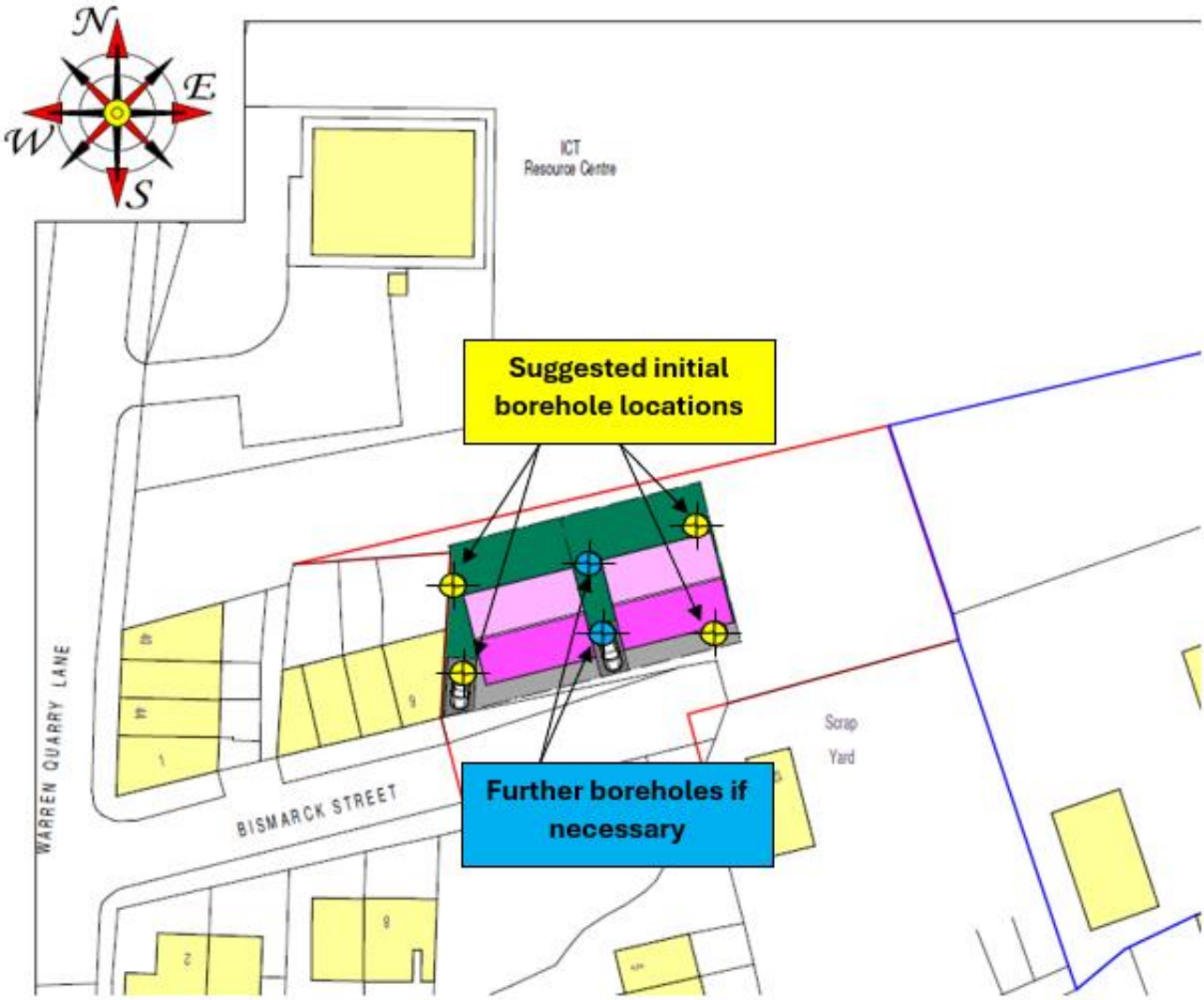
Notes: should there be any uncertainty of actual conditions during future ground works, G&M Consulting or indeed the Coal Authority themselves can be further consulted for on site assessment if necessary. This assessment is base upon the current proposals – further assessments would be required should it change. This assessment does not consider other geo-environmental aspects such as contamination.

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 Coal Authority via their permitting procedure.

ATTACHMENT A


Adits
COAL GOT
IN QUARRY
EDGED BLUE
ADIT
ADIT
30 Feet deep
STREET
Estimated area of proposed dwellings. (note: accuracy of this historic plan to the current situation will be questionable)

ATTACHMENT B


N
E
W
S
ICT
Resource Centre
Suggested initial
borehole locations
Further boreholes if
necessary
WARREN QUARRY LANE
BISMARCK STREET
Scrap
Yard