Contaminated Land Appraisals
Brownfield Remediation Solutions
Site Investigation Services
Earthworks Design and Control
Flood Risk Assessments

Matthew Vickers Piling Services Ltd
1a Badsworth Close
Wombwell
Barnsley
South Yorkshire
S73 0YR

18th February 2025

Ref C724/01/ATS

Dear Matthew,

Ref: Shallow Mining Investigation on land at 1 Bence Farm Court, Barnsley Road, Darton, Barnsley, S75 5NT

1. Introduction

On the instructions of Matthew Vickers Piling Services Ltd, Stratigraphy Ground Engineers Ltd, have undertaken an intrusive mining investigation on land at 1 Bence Farm Court, Barnsley Road, Darton, Barnsley, S75 5NT. The work was carried out in support of a planning application associated with the development of the site for residential purposes.

The investigation work was undertaken to provide information on the underlying ground conditions and assess the likelihood of historical shallow mine workings affecting the site. G&M was present on site during the fieldwork, and this report presents the findings of the investigation.

The site has been subject to a coal mining risk assessment (CMRA), Report Ref CMRA 00273, dated 13th October 2021, prepared by Lyons CMC, details of which are summarised in Section 2 of this report and a full copy is presented in Attachment A of this report.

The site is on the south eastern edge of the village of Darton, approximately 4.5 km south west of Barnsley town centre. The grid reference for the site is SE 312 093.

The site currently comprises an equestrian centre and stabling for horses.

The comments and opinions presented in this report are based on the findings of a review of available information and ground conditions encountered during the intrusive investigation work. There may be other conditions prevailing on the site which have not been disclosed by this investigation and which have not been taken into account by this report

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Responsibility cannot be accepted for conditions not revealed by the investigation. Any diagram or opinion of the possible configuration of ground conditions between exploratory holes is conjectural and given for guidance only and confirmation of intermediate ground conditions should be considered if deemed necessary.

2. CMRA

The CMRA should be read in conjunction with this report. A summary of the findings from the CMRA are as follows:

Records indicate the site to be located on shales, mudstones and the Haigh Moor Rock Sandstone of the Middle Coal Measure series from the Carboniferous formation. The Haigh Moor Rock lies directly above the 'Top Haigh Moor' coal seam as detailed below. An unknown thickness of superficial alluvial deposits (clay, silt, sand and gravel) are indicated throughout the majority of the site, associated with the nearby river Dearne. A summary of the surface geology is illustrated on the image below which is an extract from the BGS Onshore Interactive Viewer:

As outlined on the extract image above from the BGS Onshore Interactive Viewer, various coal seams are conjectured to 'sub-crop' (beneath the anticipated alluvial material) within the site which will dip steadily beneath the land to the east at around 1 in 12 (5°). The 'Swallow Wood' coal seam is conjectured in the southern tip of the site; records suggest a seam section of around 900mm for this coal, although this includes a dirt band of around 300mm. The 'Top Haigh Moor' coal seam is conjectured centrally through the site along with the 'Low Haigh Moor' coal seam along the north-western boundary as indicted. The former Barugh Colliery (some 900m away to the SSE) proved the seam thicknesses as: Top Haigh Moor 1.1m (including a 100mm dirt band) and Low Haigh Moor 1m (including a 70mm dirt band). The Low Haigh Moor seam would be anticipated some 10m or so below the Top Haigh Moor seam.

Although no specific records of any shallow underground workings of the Top or Low Haigh Moor coal seams are known beneath the site itself, such workings are known in both seams in the wider vicinity (namely from the former Barugh Colliery around 900m SSE). As such the likelihood of discovering uncharted historic workings within these seams should not be discounted. It should also be noted that, given the guidelines as set out in CIRIA C758D, any workings of the Low Haigh Moor seam may 'interact' with workings in the higher Top Haigh Moor seam (if present) – in terms of potential void migration.

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

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) **Much**
Intrusive Site Investigation of Coal Seam / Mines of Coal (given nature of proposals).	(Required / Recommended / Unnecessary)** **Required**
Advised critical depth beneath foundation level to investigate considering geology and nature of the shallow coal/s*	**30m**

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 Coal Mining** position, and nature of development (residential) an intrusive borehole site investigation would be recommended to check the depth and nature of the shallow coal seams – in the vicinity of proposed dwellings once realised. A suitably qualified consultant should determine how many holes would be required and where, depending on the number of proposed dwellings for instance. If coal is discovered in-tact then enough locations should be drilled (where the coal is within a 'critical depth') to decrease the likelihood of drilling through remaining coal pillars and 'missing' mining voids; thus, to inform a more competent opinion of stability. Any mining voids encountered may require further treatment works to stabilise the land, such as drilling and grouting, and/or suitably designed foundations. Boreholes can be terminated in firm strata beneath the Low Haigh Moor seam, as no coal seams are expected to be of effect below this horizon. If no coal is encountered then a certain number of holes should be extended to 30m to confirm the position. A guide to a recommended site investigation process is outlined in appendix 2; CIRIA C758D 'Abandoned Mine Working Manual' guidance should be followed. A permit from the Coal Authority should be secured to enable such an investigation. Water flush drilling methods would be required to mitigate from fugitive gas risks.

3) Any coal exposed at the surface beneath surface soils/alluvium will require appropriate considerations for removal and blinding off to help prevent chemical attack on foundations and reduce the risk of spontaneous combustion risks.

3. Fieldwork

The fieldwork was carried out on the 4th February and 5th February 2025 and comprised the drilling of four rotary open-holes, referenced BH01 to BH04 inclusive, which were drilled to depths of between 10 m and 30 m below ground level (bgl), to allow logging of the soils and solid strata through examination of flush returns and rate of penetration of the drill bit. Drilling was initially progressed using 150mm diameter augers through the superficial soils, and a casing set into the underlying bedrock, to aid flush returns.

The drilling works were undertaken by Stratigraphy Ground Engineers Ltd, using a Comacchio 305 tracked rotary drilling rig and carried out under the Terms and Conditions of the Coal Authority Permission No 29376, a copy of which is presented in Attachment B of this report.

Drilling was undertaken using water flush and the boreholes were backfilled on completion.

The locations of the exploratory holes are shown below.

4. Ground Conditions

The driller records 'Made ground' to depths of between 0.3 m and 0.8 m bgl, beneath which is a 'clay' to depths of between 2.4 m and 2.6 m bgl, in BH01 to BH03. In BH4, 'clay' is recorded from surface to 1.0 m bgl. The superficial soils are underlain by Coal Measures bedrock, comprising a sandstone, to depths of between 3.3 m and 5.4 m bgl, below which the driller records a sequence of predominantly mudstone to the base of each of the boreholes.

Within the depth of the boreholes, the following seams of coal were recorded, as detailed below;

BH No	Depth (m bgl)	Depth to top of Coal (m bgl)	Thickness (mm)	Likely Seam
01	30.0	4.3	600	Top Haigh Moor
		12.4	300	Low Haigh Moor
02	30.0	3.3	900	Top Haigh Moor
		11.3	200	Low Haigh Moor
		25.5	200	-
03	10.0	4.6	-	Driller records 'possible workings'
04	10.0	6.7	600	Top Haigh Moor

A thin 200mm coal was recorded by the driller in BH02 at 25.5 m bgl, but not in BH01 (both of which were drilled to 30 m bgl). Due to the thin nature and apparent lateral impersistence, this seam is not discussed further or considered to be a developmental issue.

Based on the CMRA, it is considered that the shallower seam of intact coal encountered is likely to be the Top Haigh Moor coal (shown on the stratigraphic column to be overlain by the Haigh Moor Rock Sandstone). The next seam, encountered approximately 8 m below, is considered to represent the Low Haigh Moor coal. The stratigraphic column indicates a vertical separation between the two seams, of approximately 10 m.

Within BH03, the depth at which the Top Haigh Moor coal, should have been anticipated, the driller records 'possible workings', between 4.6 m and 5.6 mgl, with no coal present.

The exploratory hole records are presented in Attachment C of this report.

During the drilling, monitoring of methane, carbon monoxide, hydrogen sulphide and oxygen was undertaken at the borehole surface. No significant concentrations of methane, carbon monoxide or hydrogen sulphide were recorded, as detailed on the attached logs no gases were noted during drilling.

5. Conclusions/Recommendations

On the instructions of Matthew Vickers Piling Services Ltd, Stratigraphy Ground Engineers Ltd, have undertaken an intrusive mining investigation on land at 1 Bence Farm Court, Barnsley Road, Darton, Barnsley, S75 5NT. The work was carried out in support of a planning application associated with the development of the site for residential purposes.

The drilling works were carried out in accordance with the CA permission 29376

It is considered that the Top Haigh Moor coal was encountered intact, between 600mm and 900mm in thickness and between 3.3 m and 6.7 m bgl, in BH01, BH02 and BH04. The depth at which this seam should have been anticipated in BH03, the driller records 'possible workings', between 4.6 m and 5.6 mgl.

The next seam of coal beneath the Top Haigh Moor coal, was encountered in BH01 and BH02, at a depth of between 12.4 m and 11.3 m bgl, respectively. The thickness of this coal was recorded between 200mm and 300mm. As a general rule of thumb used to assess the risk from pillar and stall mining, the rule is 10x seam thickness for competent rock cover. A 300 mm thick seam would need to have 3 m or less of competent rock cover for workings to affect the surface. In this instance, the vertical separation between the two seams is well in excess of this, such that if any workings were present within the deeper seam, they would not 'interact' with the shallower seam, in terms of void migration.

Based on the above, it is therefore considered that there is insufficient rock cover above the likely worked seam and that therefore remedial action is warranted prior to any development works being undertaken. The recommendation of this report is that these potential shallow workings are stabilised by means of drilling and grouting, within the area of proposed development. Based on the findings of the investigation work, it may be that these workings are limited in extent and that the further work should determine the extent of worked ground. It is recommended that as part of any drilling and grouting works, that further investigation is undertaken within the deeper coal seam (likely the Low Haigh Moor coal), to further confirm the thickness across the area of proposed development.

It is recommended that discussions are held with an experienced drill and grouting contractor to ascertain their views and budget estimate to carry out the works. Further work will require the preparation and implementation of a specification of works, in agreement with the Coal Authority.

As a precautionary measure it is recommended that the properties benefit from gas protection measures.

We trust this report and the attachments meet with your approval and are sufficient for your present needs. You should submit this document to the local authority for their comment/approval, prior to commencing any development work on site

Yours sincerely

Andrew Swinbourne
For and on behalf of **G&M Consulting Ltd**
Attachments

ATTACHMENT A – CMRA

LYONS CMC
COAL MINING & GEOTECHNICAL CONSULTANCY
Web: www.lyonscmc.co.uk
Email: mark@lyonscmc.co.uk
Mob: 07887555580

Geo2 Remediation Ltd
Coniston House
Louisa Street
Bradford
BD10 8NE

Date: 13th October 2021
Your ref: (S75 5NT).
My Ref: CMRA 00273

FOR THE ATTENTION OF MR STEVEN JACKSON

Dear Sir,

COAL MINING RISK ASSESSMENT (CMRA)
FOR PROPOSED RESIDENTIAL DEVELOPMENT AT 1 BENCE FARM COURT, BARNSLEY ROAD, DARTON, BARNSLEY S75 5NT

Introduction

Planning permission is being sought for residential development at the above named site, the location of which can be seen on the attached plan No. 00273/A in Appendix 1. Only part of this land will be considered for such development which is yet to be fully realised/decided upon. The site is centred around national grid reference E: 431397 / N: 409373. 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.

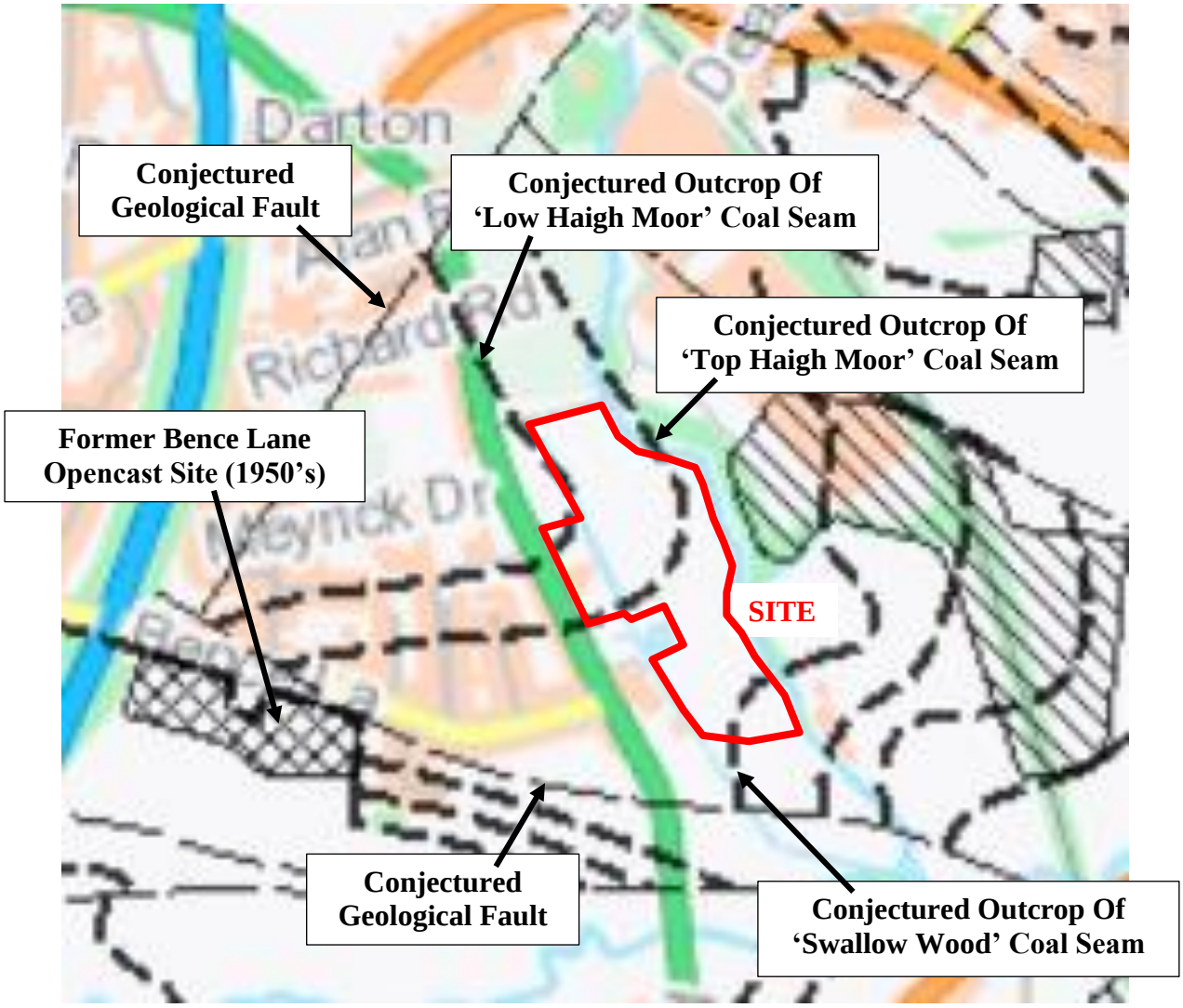
Scope of the Coal Mining Risk Assessment

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.

Surface Geology (inc. any superficial deposits)

Records indicate the site to be located on shales, mudstones and the Haigh Moor Rock Sandstone of the Middle Coal Measure series from the Carboniferous formation. The Haigh Moor Rock lies directly above the 'Top Haigh Moor' coal seam as detailed below. An unknown thickness of superficial alluvial deposits (clay, silt, sand and gravel) are indicated throughout the majority of the site, associated with the nearby river Dearne. A summary of the surface geology is illustrated on the image below which is an extract from the BGS Onshore Interactive Viewer:



Fault Planes or Fissures

No geological faulting is known or conjectured within 50m of the site – the closest is illustrated on the above image to the south and north-west. Although no fissuring of bedrock is known in the vicinity, the likelihood of natural fissures in the Haigh Moor Rock (beneath alluvial deposits) that could have been opened out by the past deep coal mining in the area should not be precluded.

Coal Seam Outcrops

As outlined on the extract image above from the BGS Onshore Interactive Viewer, various coal seams are conjectured to 'sub-crop' (beneath the anticipated alluvial material) within the site which will dip steadily beneath the land to the east at around 1 in 12 (5°). The 'Swallow Wood' coal seam is conjectured in the southern tip of the site; records suggest a seam section of around 900mm for this coal, although this includes a dirt band of around 300mm. The 'Top Haigh Moor' coal seam is conjectured centrally through the site along with the 'Low Haigh Moor' coal seam along the north-western boundary as indicted. The former Barugh Colliery (some 900m away to the SSE) proved the seam thicknesses as: Top Haigh Moor 1.1m (including a 100mm dirt band) and Low Haigh Moor 1m (including a 70mm dirt band). The Low Haigh Moor seam would be anticipated some 10m or so below the Top Haigh Moor seam.

Made Ground

No made ground is indicated beneath the site. There will be a slight potential for discovering an element of made/infilled ground associated with historic 'digging out' of shallow coal.

Opencast Coal Workings.

No opencast coal operations are known within the site itself. The former Bence Lane opencast is located some 290m away to the WSW, as illustrated on the above image, which worked both the Top & Low Haigh Moor coal seams in the late 1940's early 1950's.

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

Although no specific records of any shallow underground workings of the Top or Low Haigh Moor coal seams are known beneath the site itself, such workings are known in both seams in the wider vicinity (namely from the former Barugh Colliery around 900m SSE). As such the likelihood of discovering uncharted historic workings within these seams should not be discounted. It should also be noted that, given the guidelines as set out in CIRIA C758D, any workings of the Low Haigh Moor seam may 'interact' with workings in the higher Top Haigh Moor seam (if present) – in terms of potential void migration.

A similar risk will be present for uncharted historic underground workings of the Swallow Wood coal seam in the southern tip of the site – although this is considered to be of a lesser degree given

the poor quality of the seam with a large dirt band along with fewer known similar workings of this coal in the wider area.

It is also likely that shallow underground working methods, historically speaking, would have been deemed unfeasible in this specific area from the risks of flooding – considering that the site is largely on a flood plain from the nearby river Dearne, along with the presence of potentially water bearing alluvium.

Mine Entries

No mine entries are known either inside the site itself or to within 20m of its boundary. Some potential will exist however for other mine entries being encountered which there are no records considering the shallow workable coal seams. These may be either vertical shafts or 'adit' mines which consist of a 'portal' tunnel entrance which follows the coal seam as it dips beneath the land – in this case steadily eastwards.

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 risk for associated gases in relation to the shallow workable coal. These risks will be greater should any shallow workings be proved and far greater should any unrecorded mine entries be discovered.

Historical Records

According to the historical records, no nearby indications of any mining or quarrying activities are noted within the site itself.

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

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) **Much**
Intrusive Site Investigation of Coal Seam / Mines of Coal (given nature of proposals).	(Required / Recommended / Unnecessary)** **Required**
Advised critical depth beneath foundation level to investigate considering geology and nature of the shallow coal/s*	**30m**

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	*Intrusive Site Investigation **required** of the shallow coal/s and/or mine entries to determine any necessary stabilisation works for the given development.*
Recommended	*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.*
Unnecessary	*Intrusive Site Investigation deemed **unnecessary** – given geological/mining information.*

Coal Authority

A Coal Authority Consultants Report (ref: 51002675313001 dated 16th September 2021) has been supplied and reviewed which both informs and supports the findings of this risk assessment.

Prior written permission from The Coal 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 Coal Authority's permissions process can be found at:
www.coal.gov.uk/services/permissions/index.cfm

Information sources:

- *British Geological Survey Map Sheet SE 30 NW 1980 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 Coal Mining** position, and nature of development (residential) an intrusive borehole site investigation would be recommended to check the depth and nature of the shallow coal seams – in the vicinity of proposed dwellings once realised. A suitably qualified consultant should determine how many holes would be required and where, depending on the number of proposed dwellings for instance. If coal is discovered in-tact then enough locations should be drilled (where the coal is within a 'critical depth') to decrease the likelihood of drilling through remaining coal pillars and 'missing' mining voids; thus, to inform a more competent opinion of stability. Any mining voids encountered may require further treatment works to stabilise the land, such as drilling and grouting, and/or suitably designed foundations. Boreholes can be terminated in firm strata beneath the Low Haigh Moor seam, as no coal seams are expected to be of effect below this horizon. If no coal is encountered then a certain number of holes should be extended to 30m to confirm the position. A guide to a recommended site investigation process is outlined in appendix 2; CIRIA C758D 'Abandoned Mine Working Manual' guidance should be followed. A permit from the Coal Authority should be secured to enable such an investigation. Water flush drilling methods would be required to mitigate from fugitive gas risks.

3) Any coal exposed at the surface beneath surface soils/alluvium will require appropriate considerations for removal and blinding off to help prevent chemical attack on foundations and reduce the risk of spontaneous combustion risks.

4) In terms of the fugitive mine gas risks from the potential shallow coal, the only way to prove whether protection measures are or aren't required would be for a period of gas monitoring via boreholes and stand pipes, usually undertaken over a period of 3 to 6 months. Without this investigation it may be a more pragmatic solution to include gas protection measures (such as a methane membrane and/or positive ventilation layers) within future foundation designs in any case. All usual safety precautions should be employed regarding possible fugitive gases in any deep excavation work taking place.

5) A watching brief should be employed during future grounds 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 of a mine shaft; old brickwork archways (portals) would be an indication of a mine adit. If suspected the Coal Authority (as owners) should be notified immediately for appropriate deliberations.

6) A similar watching brief should be employed during future grounds works for any signs of made ground that may be associated with small scale 'digging' out of shallow coal, or indeed any opened out fissures of sandstone bedrock. Appropriate foundation design considerations may be required.

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.

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,

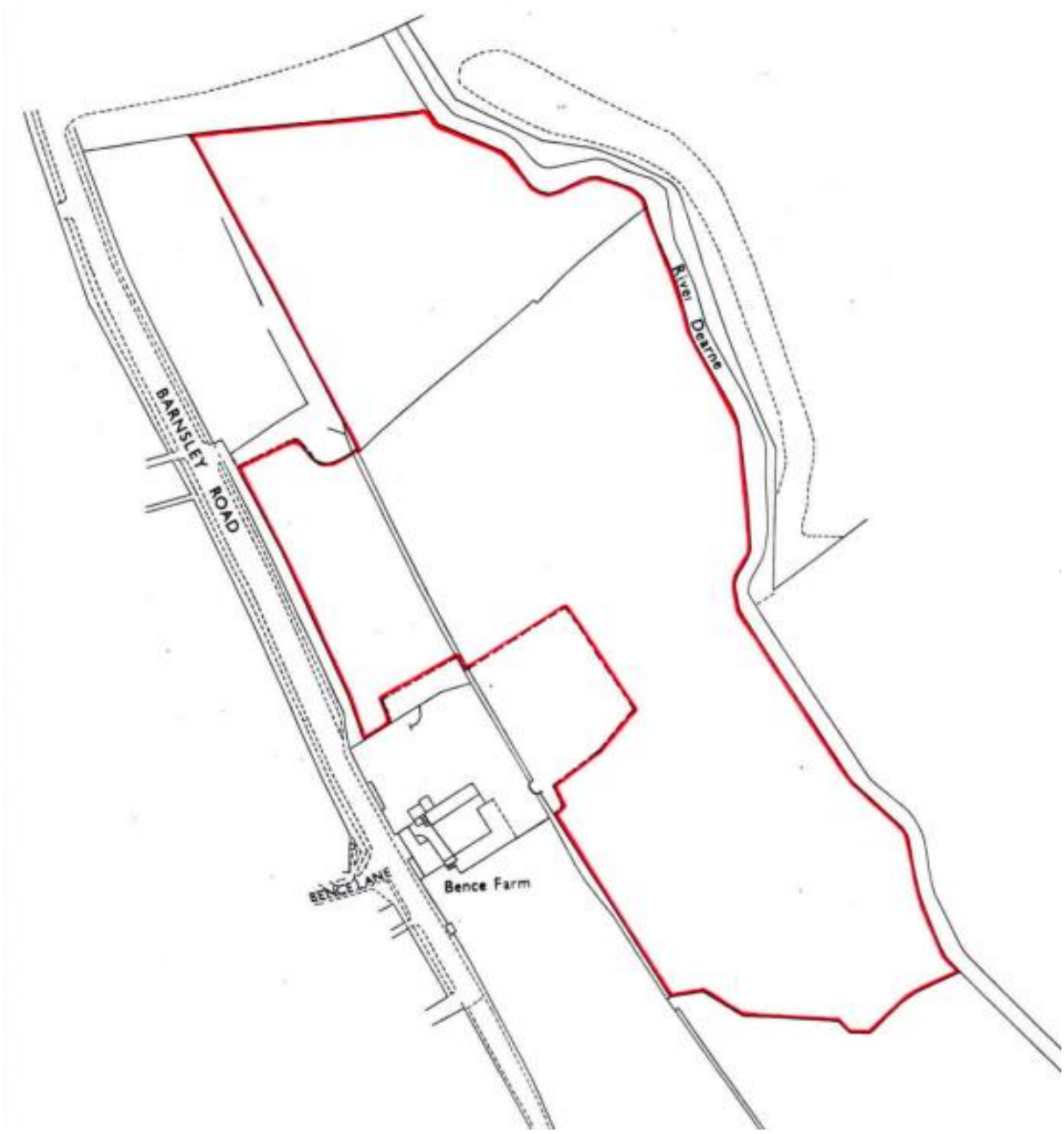
M Lyons

M. Lyons
Consultant Mining Engineer
BSc CSci MIMMM

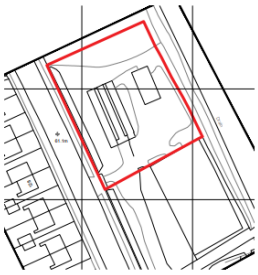
Enc.

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.

Appendix 1 – Location Plan No. 00273/A
(Not To Scale)
Site centred at O.S. 431397 / 409373

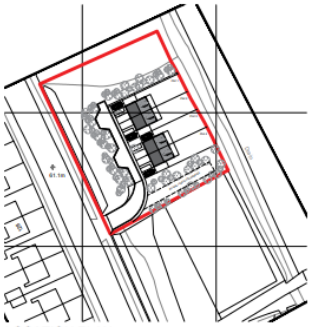


Existing and Proposed Development Plan

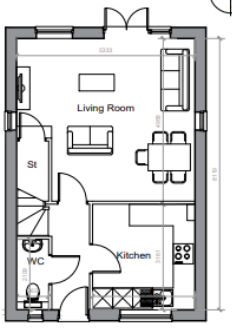


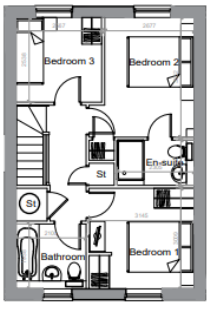
LOCATION PLAN
1:1250@A3

SITE PLAN
1:500@A3



LOCATION PLAN
1:1250@A3

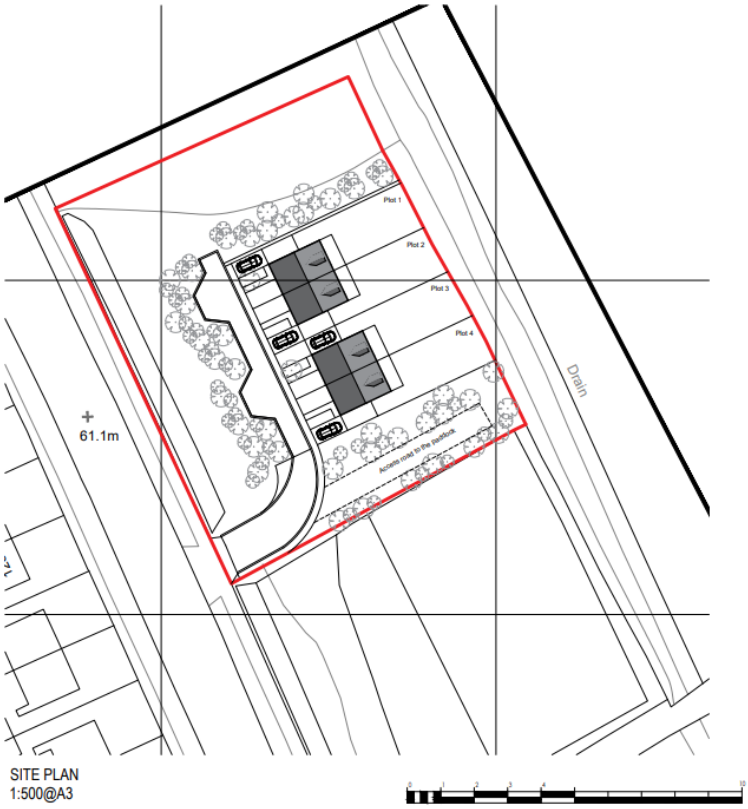




GROUND FLOOR
ILLUSTRATIVE FLOOR PLANS
1:100@A3

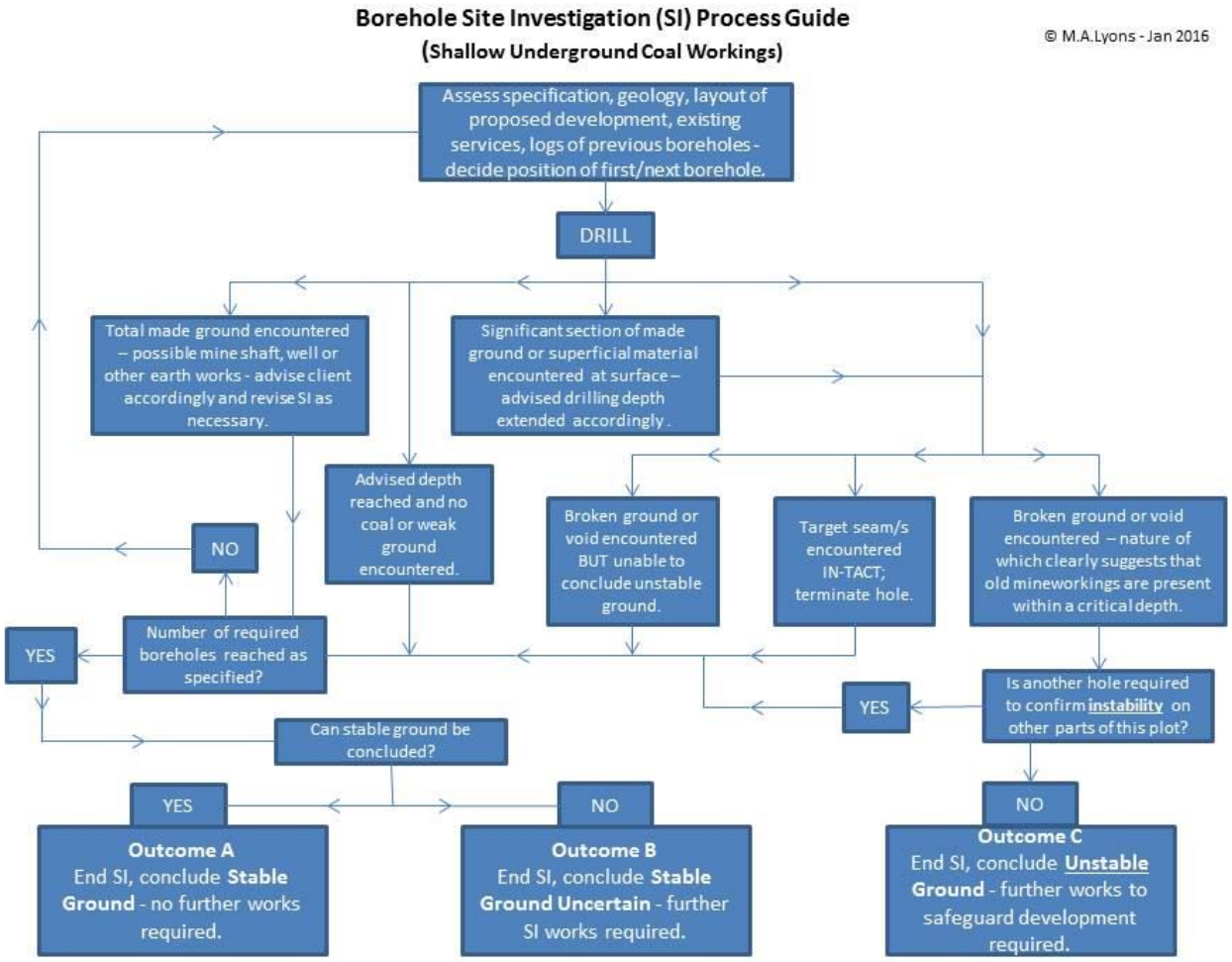
FIRST FLOOR

Area: 93.00m²
1001 ft²



SITE PLAN
1:500@A3

Appendix 2


Borehole Site Investigation (SI) Process Guide
(Shallow Underground Coal Workings)
© M.A.Lyons - Jan 2016
Assess specification, geology, layout of proposed development, existing services, logs of previous boreholes - decide position of first/next borehole.
DRILL
Total made ground encountered – possible mine shaft, well or other earth works - advise client accordingly and revise SI as necessary.
Significant section of made ground or superficial material encountered at surface – advised drilling depth extended accordingly.
Advised depth reached and no coal or weak ground encountered.
Broken ground or void encountered BUT unable to conclude unstable ground.
Target seam/s encountered IN-TACT; terminate hole.
Broken ground or void encountered – nature of which clearly suggests that old mineworkings are present within a critical depth.
NO
YES
Number of required boreholes reached as specified?
YES
Is another hole required to confirm instability on other parts of this plot?
Can stable ground be concluded?
YES
NO
NO
Outcome A
End SI, conclude Stable Ground - no further works required.
Outcome B
End SI, conclude Stable Ground Uncertain - further SI works required.
Outcome C
End SI, conclude Unstable Ground - further works to safeguard development required.

ATTACHMENT B

COAL AUTHORITY DRILLING PERMIT

Mining Remediation Authority

Permit to Enter or Disturb Mining Remediation Authority Interests

Permit 29376

Name and Address of Permit Holder:

Matthew Vickers Piling Services Ltd
1a Badsworth Close
Wombwell
Barnsley
South Yorkshire
S73 0YR

Site Location:

1 Bunce Farm Court
Barnsley Road
Darton
Barnsley
S75 5NT

This certificate hereby grants the above named Permit Holder a Permit to carry out:-

Ground investigation by four boreholes to 30m to determine presence of shallow mine workings

within the Authority's interests at the identified site location above as shown on the Grant Permit Boundary (overleaf) for the period of **12 months** from the granted date shown below. *The granting of this Permit does not constitute advice given by the Authority in relation to the proposed operations. It is the Permit Holder's responsibility to obtain appropriate health, safety, environmental, technical and legal advice.*

Conditions:

- *Manned entry (i.e.) into mine entries/workings) is strictly prohibited.*
- *Water flush*
- *Gas Monitoring CO, CH_4, CO_2, O_2, H_2S at borehole and rig*
- *Operators undertaking the work must be in possession of this certificate and the Permit boundary plan at the time of works*
- *Appropriate borehole sealing without delay and to withstand site level changes*

Signed: Amy McKenna Granted Date: ***20th January 2025***

For and on behalf of the Mining Remediation Authority

Nominated Representative: Amy McKenna, Permitting Manager;

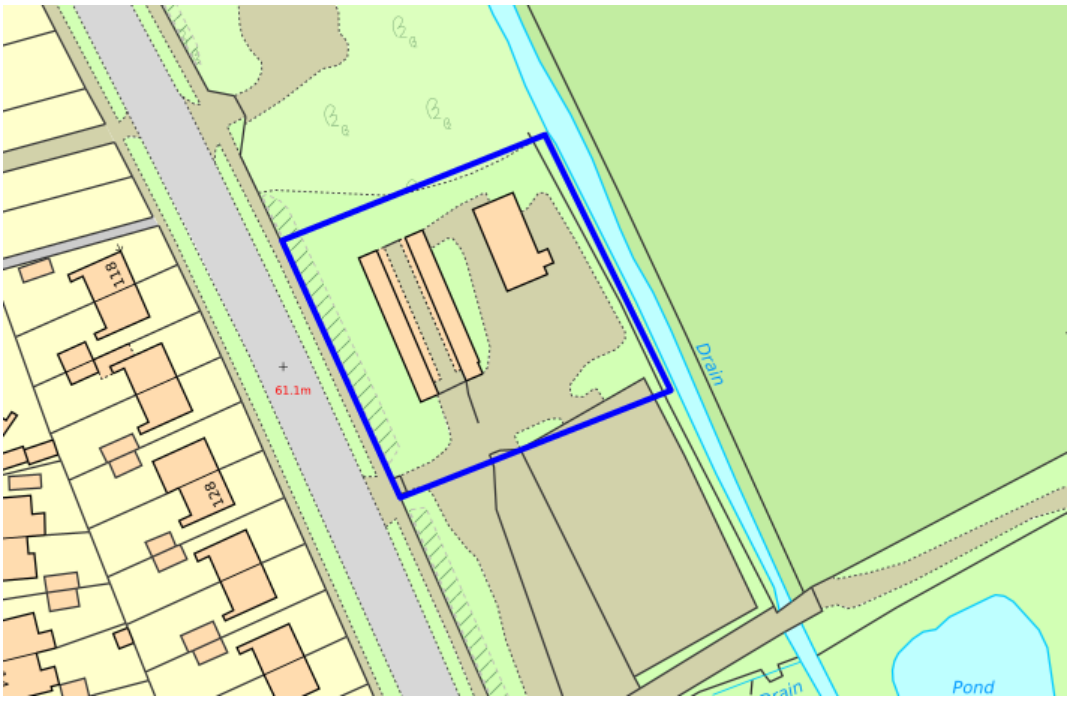
Mining Remediation Authority, Permitting Office, 200 Lichfield Lane, Mansfield, Notts, NG18 4RG
Tel: 01623 637450; E-Mail: permissions@coal.gov.uk

Mining Remediation Authority

Granted Permit Boundary

Permit Ref: 29376

Permit Boundary:



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The Mining Remediation Authority is the trading name of the Coal Authority ('TCA') established pursuant to Section 1 of the Coal Industry Act 1994, of 200 Lichfield Lane, Berry Hill, Mansfield, Nottinghamshire, NG18 4RG. The Coal Authority remains the legal name of the Authority

ATTACHMENT C

DRILLER'S RECORDS

STRATIGRAPHY GROUND ENGINEERS

DAILY DRILLING LOG

Site BUNCE FARM DARTON	Date: 4.2.25
Driller D. ROBINSON	Flush WATER

bh	depth	description	bh	depth	description
1	0.00 – 0.50	MADE GROUND			
	0.50 – 2.50	CLAY			
	2.50 – 4.30	SANDSTONE			
	4.30 – 4.90	COAL			
	4.90 – 12.40	MUDSTONE			
	12.40 – 12.70	COAL			
	12.70 – 30.00	MUDSTONE SILTSTONE			

GAS READINGS				REMARKS
O_2	20. %	CO	0 %	
CO_2	0 %	H_2S	0 %	
CH_4	0 %			

TODAYS TOTAL 30 PREVIOUS TOTAL

TOTAL TO DATE TOTAL CASING 3.00

STRATIGRAPHY GROUND ENGINEERS

DAILY DRILLING LOG

Site BUNCE FARM DARTON	Date: 5.2.25
Driller D ROBINSON	Flush WATER

bh	depth	description	bh	depth	description
2	0.00-0.30	MADE GROUND.			
	0.30-2.40	CLAY			
	2.40-3.30	SANDSTONE			
	3.30-4.20	COAL			
	4.20-11.30	MUDSTONE			
	11.30-11.50	COAL			
	11.50-25.50	MUDSTONE SILTSTONE			
	25.50-25.70	COAL			
	25.70-30.00	MUDSTONE SILTSTONE			
3	0.00-0.80	MADE GROUND			
	0.80-2.60	CLAY			
	2.60-4.60	SANDSTONE			
	4.60-5.60	POSSIBLE WORKINGS			
	5.60-10.00	MUDSTONE			
4.	0.00-1.00	CLAY			
	1.00-5.40	WEAK SANDSTONE			
	5.40-6.70	SANDSTONE			
	6.70-7.30	COAL			
	7.30-10.00	MUDSTONE			

GAS READINGS						REMARKS
O_2	20	%	CO	0	%	
CO_2	0	%	H_2S	0	%	
CH_4	0	%				

TODAYS TOTAL 50 PREVIOUS TOTAL 30

TOTAL TO DATE 80 TOTAL CASING 7.5 = 10.50