

**Mr D. Turner
3 Hall Farm Close
Whaley Bridge
Derbyshire
SK23 7GD**

**CAPE SITE SERVICES
COAL MINING & GEOTECHNICAL
CONSULTANCY**

Web: www.cape-site.co.uk
Email: cape-site@btconnect.com
Tel: 01226 725050

Date: 9th June 2022
Your ref: (SK23 7DG)
My Ref: SI 00289

FOR THE ATTENTION OF MR D TURNER

Dear Sir,

**COAL MINING RISK INTERPRETATION REPORT – FOLLOWING THE SITE
INVESTIGATION FOR PROPOSED RESIDENTIAL DEVELOPMENT AT 3 HALL FARM CLOSE,
WHALEY BRIDGE, DERBYSHIRE SK23 7GD**

I am pleased to supply the following report for the above named project and trust that this satisfies your requirements. Please do not hesitate to contact myself at any time for further clarification or advice.

Yours Sincerely,

M Lyons

M. Lyons
Consultant Mining Engineer
BSci CSci MIMMM

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**CAPE SITE SERVICES
COAL MINING & GEOTECHNICAL CONSULTANCY**

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1. Introduction

Planning permission is being considered for residential development at the above location subject to the mining legacy risks been fully realised and mitigated from on site, if necessary. Cape Site Services has now undertaken this work via an intrusive site investigation on the 26th May 2022 consisting of 3 boreholes, the location of which is outlined on plan no. 00289/B – as attached and illustrated in appendix 5.2.

2. Scope of the Report

The mining legacy risks to the development are as follows:

- Instability from shallow coal workings in the White Ash coal seam
- Uncharted mine entries
- Fugitive gas emissions

As such, these risks need to be properly determined to ensure sound stability for the development in line with the CMRA previously carried out for the project by Peak Environmental Solutions Ltd ref: 42172R1 dated September 2021. A borehole investigation consisting of 2 to 4 holes was deemed a reasonable level of investigation in the outset regarding potential void migration given the scale and nature of development combined with the available geological and mining information. A watching brief would also be implemented for any signs of mine entries.

It should be noted that this investigation is focused mainly on determining stability from potential shallow historic coal workings and will only provide limited information regarding the risks of uncharted mine entries. A good level of detail should be obtained to provide a more informed opinion as to fugitive gas risks.

Considering the geological/mining details and CMRA report, boreholes were decided to be taken to either the base of the White Ash coal seam/workings or to 30m if not encountered.

3. Site Investigation

3.1 Methodology

Prior to the intrusive site investigation, a search for utilities was undertaken both via online data providers and physically on site using a Cable Avoidance Tool (CAT). Boreholes were marked out with tape measure from boundary lines as illustrated on plan no. 00289/B outlined in appendix 5.2. As part of the mine entry watching brief, a pre survey was undertaken with no visible evidence of any uncharted mine entries. The process for the intrusive coal seam investigation is outlined via the system chart in appendix 5.4.

An investigation utilising a tracked Baretta Rotary Drill Rig equipped with 2m long 100mm diameter drill rods was deemed appropriate in this instance along with water flush technique to analyse returns and minimise any risks associated with mine gas emissions and spontaneous combustion. Gas monitoring equipment would be employed during works for risks associated with Methane, Carbon Monoxide, Oxygen and Carbon Dioxide. Any boreholes emitting a dangerous level of methane would be terminated and sealed immediately. All holes to be filled and sealed as soon as possible with bentonite upon termination. Prior agreement had been secured for these works from the Coal Authority -permit ref: 24960 – as attached for reference in appendix 5.5.

The works were to be supervised by the Drilling Engineers Mr. S. Fish and Mr I. Wiles, and overseen by the Principal Engineer Mr. M. Lyons.

3.2 Interpretation of Findings

All holes proved a similar section of strata with between 7.8m to 13m of boulder clay (beneath topsoil) which has a band of wet sand with traces of clay within it, ranging between 1.7m to 3m in thickness. Below the boulder clay is between 17m and 22.2m of firm dark grey mudstone; no coal seam encountered.

Water flush was maintained throughout drilling with no fugitive gases detected.

The logs appear to match well at a similar elevation which would infer no signs of any geological faulting between the borehole locations.

Given the findings of the three boreholes no further holes were deemed necessary.

4. CONCLUSIONS AND RECOMMENDATIONS

- 1) Given the findings it is considered that White Ash coal seam is either not present beneath the site (eroded and replaced by the boulder clay) or that it is in excess of 30m deep. As such, no risks are apparent from a void migration aspect and no further works or considerations regarding shallow coal and/or coal mining workings will be necessary for the development.
- 2) No mine gases were encountered during the investigation and given the geology the risks of such are considered very low. Nevertheless, a period of gas monitoring will remain an option if so desired.
- 3) Considerations will be required for a suitable foundation design with the appointed building control officer/department which takes into account the boulder clay and interbedded sand deposit.

- 4) No signs of any mine entries were observed during the investigation. Watching briefs are always prudent however during future ground works for any associated signs of either an old mine shaft or adit. The Coal Authority should be notified where any such feature is suspected.

This report and future development proposals should be submitted to the regulators for their approval prior to any works taking place.

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 SITE INVESTIGATION INTERPRETATIVE REPORT 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 Special Publication 32 - "Construction Over Abandoned Mine Workings." The opinion may be overruled by Government Authorities based on other information not in my record. Further site investigations may be undertaken which would supersede the factual findings of this investigation. Copyright in this report 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.

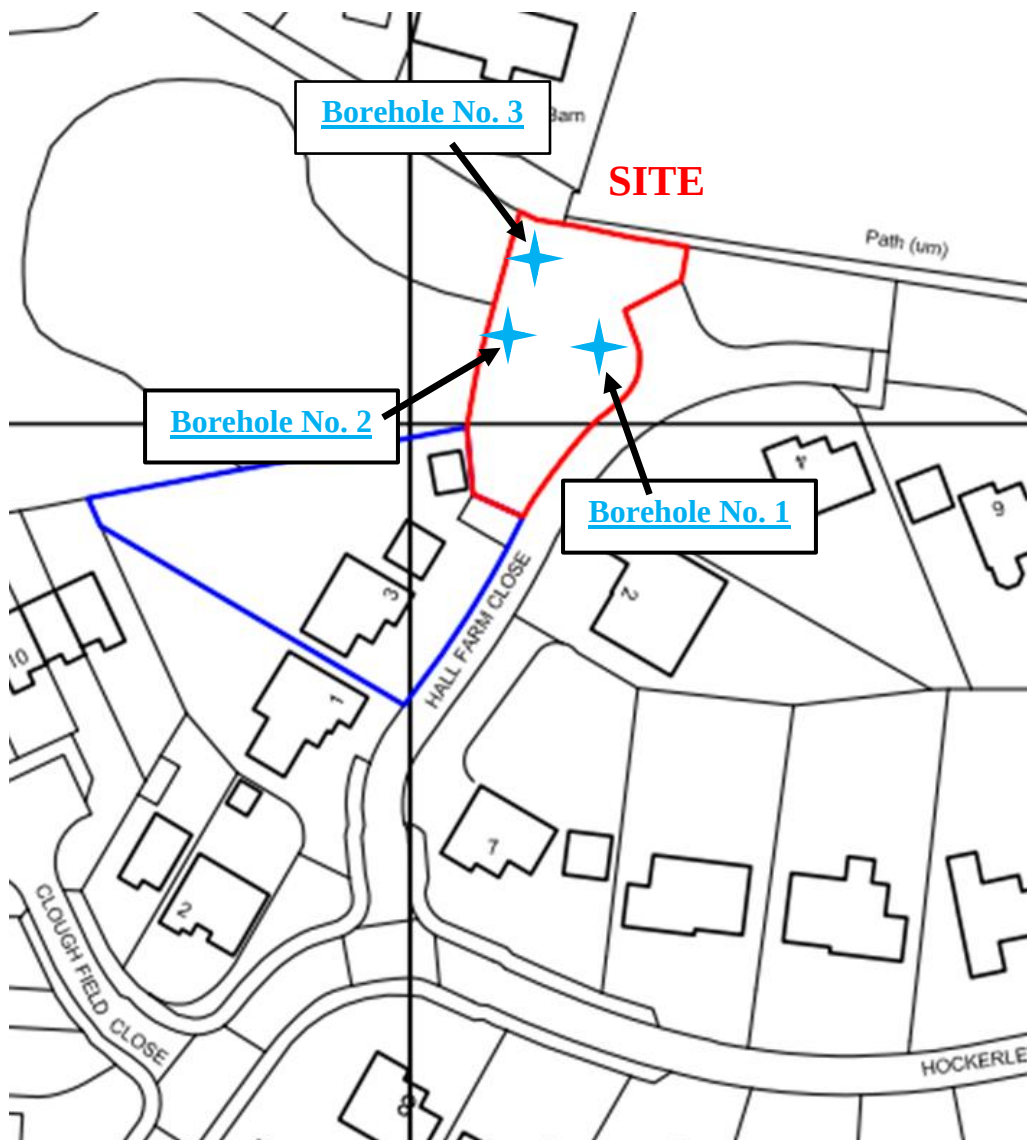
5 Appendix

5.1 References

- 5.1.1 CIRIA C758D ‘Abandoned mine workings manual’.
- 5.1.2 British Standards Institution: BS 5930:2015 ‘Code of practice for ground investigations’ BSI 2015.
- 5.1.3 British Standards Institution: BS EN ISO 14688-1: 2002 + A1 2013 ‘Geotechnical Investigation and Testing - Identification and Classification of Soil - Part 1 - Identification and Description. BSI 2013.
- 5.1.4 British Standards Institution: BS EN ISO 14689-1: 2003 ‘Geotechnical Investigation and Testing – Identification and Classification of Rock – Part 1 – Identification and Description. BSI 2003. Incorporating Corrigendum No. 1 February 2007.
- 5.1.5 British Standards Institution: BS 10175 ‘The Investigation of Potentially Contaminated Sites. Codes of Practice’. BSI 2011+A1 2013.
- 5.1.6 British Standards Institution: BS EN ISO 22476-3: 2005 + A1 2011 ‘Geological Investigating and Testing. Field Testing. Standard Penetration Test’.
- 5.1.7 British Standard 1377:1990 Parts 1-9 ‘Methods of Test for Soils for Civil Engineering Purposes’.

5.2 Borehole Location Plan No. 00289/B

**LAND AT 3 HALL FARM CLOSE, WHALEY
BRIDGE, DERBYSHIRE SK23 7DG**

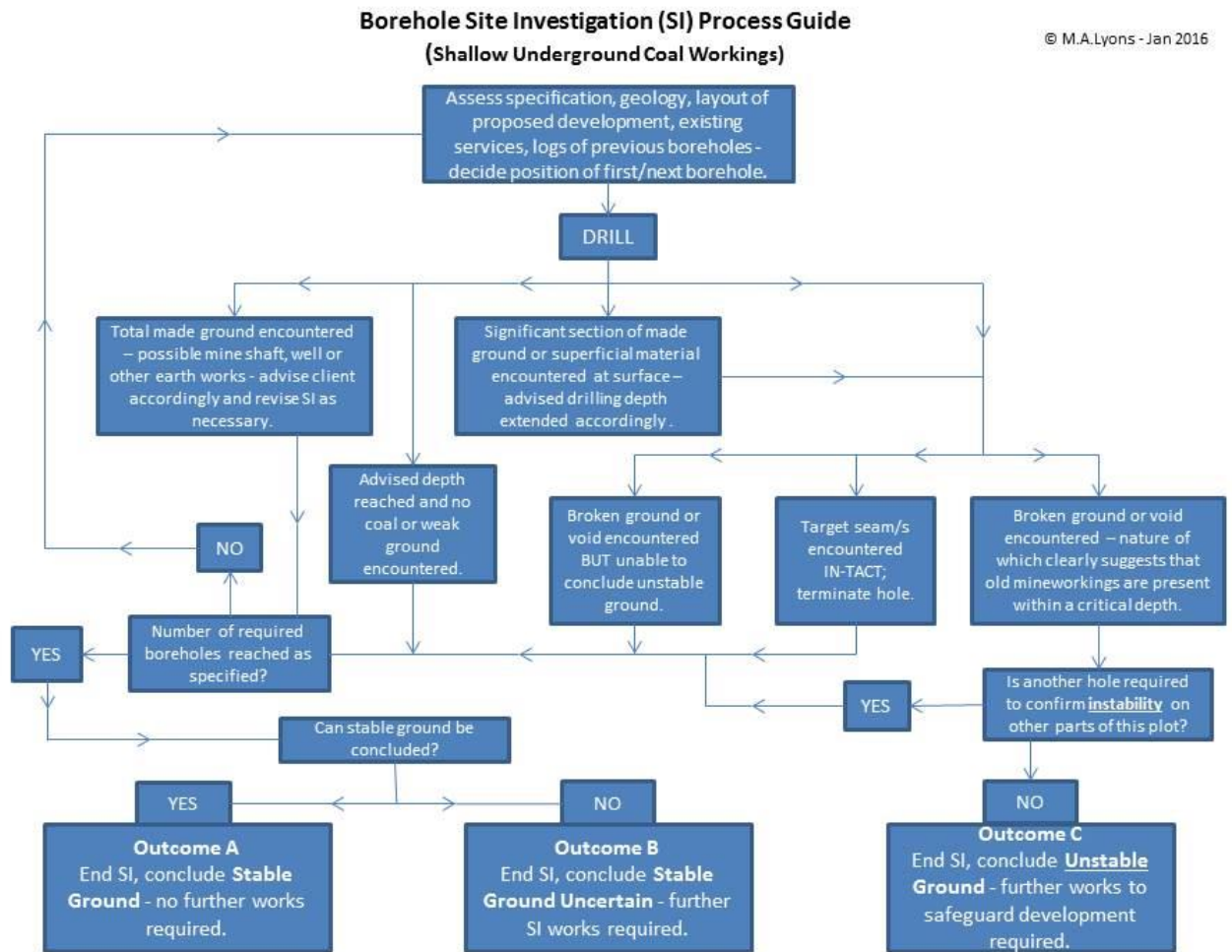


5.3 Drilling log sheets

Client: Lyons CMC	Site: Land at 3 Hall Farm Close, Whaley Bridge, SK23 7GD		Cape Site Services unit 2, rear of Castle Buildings Carlton Road, Barnsley, S71 3HX	
Date: 26/05/22	Method: water flush	Permit No: 24960		
Driller: Ian Wiles			Driller Assistant: richard hawkins, Simon Fish	
Drillers Signature:			Page No:	

Measurements In Meters				
BH No:	FROM	TO	THICKNESS	DESCRIPTION
1				
	0	0.5	0.5	Top Soil
	0.5	2.5	2	Boulder clay brown
	2.5	4.7	2.2	Sand wet traces of clay
	4.7	11	6.3	Boulder clay brown / grey
	11	30	19	Mudstone dark grey
2				
	0	0.5	0.5	Top Soil
	0.5	2.5	2	Boulder clay brown
	2.5	5.5	3	Sand wet traces of clay
	5.5	7.8	2.3	Boulder clay brown
	7.8	30	22.2	Mudstone dark grey
3				
	0	6.3	6.3	Boulder clay brown
	6.3	8	1.7	Sand wet traces of clay
	8	13	5	Boulder clay brown / grey
	13	30	17	Mudstone dark grey

5.4 Site Investigation Process



5.5 Coal Authority Permit



Permit to Enter or Disturb Coal Authority Interests

Permit 24960

Name and Address of Permit Holder:

Jane Turner
3 Hall Farm Close
Whaley Bridge
Derbyshire
SK23 7GD

Site Location:

Land At
3 Hall Farm Close
Whaley Bridge
SK23 7GD

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

Ground investigation by four boreholes to 30m to determine the depth and nature of shallow coal seams

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, CH₄, CO₂, O₂, H₂S 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: Paul Hobson Granted Date: 06 May 2022

For and on behalf of The Coal Authority

Nominated Representative: Paul Hobson, Permitting Manager;

The Coal Authority, Permitting Office, 200 Lichfield Lane, Mansfield, Notts, NG18 4RG

Tel: 01623 637450; E-Mail: permissions@coal.gov.uk