

Mr J Kilner
C/O:
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LYONS CMC
COAL MINING & GEOTECHNICAL
CONSULTANCY

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Date: 31st October 2024
Your ref: (S71)
My Ref: SI 00380

FOR THE ATTENTION OF MR J KILNER

Dear Sir/Madam,

COAL MINING RISK INTERPRETATION REPORT – FOLLOWING THE SITE
INVESTIGATION FOR A PROPOSED BUNGALOW AT LAND ADJACENT 95 CUMBERLAND
DRIVE, BARNSELY S71 5DF.

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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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 the site investigation consisting of 5 boreholes, the location of which is outlined on plan no. 00380/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 unknown thickness of opencast backfill
- Differential settlement over any quarry high walls
- Fugitive ground gas risks associated with opencast coal backfill
- Instability from geological faulting

As such, these risks need to be properly determined to ensure sound stability for the development. A borehole investigation consisting of 6 boreholes was deemed a reasonable level of investigation in the outset regarding 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 opencast coal workings and will only provide limited information regarding the risks of uncharted mine entries.

3. Site Investigation

3.1 Methodology

Prior to the intrusive site investigation, a search for utilities was undertaken by the client and hole positions marked out prior to the investigation. Boreholes were marked out with tape measure from boundary lines as illustrated on plan no. 00380/B outlined in appendix 5.2.

An investigation utilising a tracked Beretta Rotary Drill Rig equipped with 1.5m long 200mm diameter auger rods was deemed appropriate in this instance. Gas monitoring equipment would be employed during works for risks associated with Methane, Carbon Monoxide, Oxygen, Carbon Dioxide and Hydrogen Sulphide.

Considering our previous CMRA ref: CMRA 00227 dated 19th March 2020, boreholes were to be terminated as soon as firm natural ground was confidently determined along with the thickness of any overlying fill.

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

3.2 Interpretation of Findings

All boreholes proved a similar and relatively thin layer of made ground at the surface from 0.8m to 1.1m in thickness. Below this made ground appeared to be a section of natural and relative soft grey clay to between 1.3m deep to 1.7m deep before firm but weathered natural grey mudstone bedrock. Holes were terminated as this natural bedrock became solid at 2.9m deep in BH1; 3m deep in BH2; 1.9m deep in BH3; 2.7m deep in BH4 & 2.9m deep in BH5.

No fugitive gases were detected at any point during the drilling operations.

The logs appear to match well across the area investigated which would infer no signs of any geological faulting between the borehole locations.

4. CONCLUSIONS AND RECOMMENDATIONS

- 1) The relatively thin layer of made ground at the surface does not constitute an area of former opencast coal operation, it is considered that the actual quarried area lies away to the north of this land. As such there will not be any differential settlement issues to affect the proposals and usual foundations can be considered on the natural firm underlying strata to the approval of the appointed building control officer/department at the time of construction.
- 2) No signs of any mine entries were observed during the investigation, however slight risks are always present within the exposed coalfield for discovering such features. Watching briefs would be prudent during future ground works for any associated signs - grey circular areas of fill material within natural bedrock would be an indication of an old mine shaft for example. The Coal Authority should be notified where any such feature is encountered or suspected.
- 3) No fugitive ground/mine gases were encountered during this investigation and given the findings the risks of such are considered low.

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

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 C758D - "Abandoned Mine Working Manual." 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.

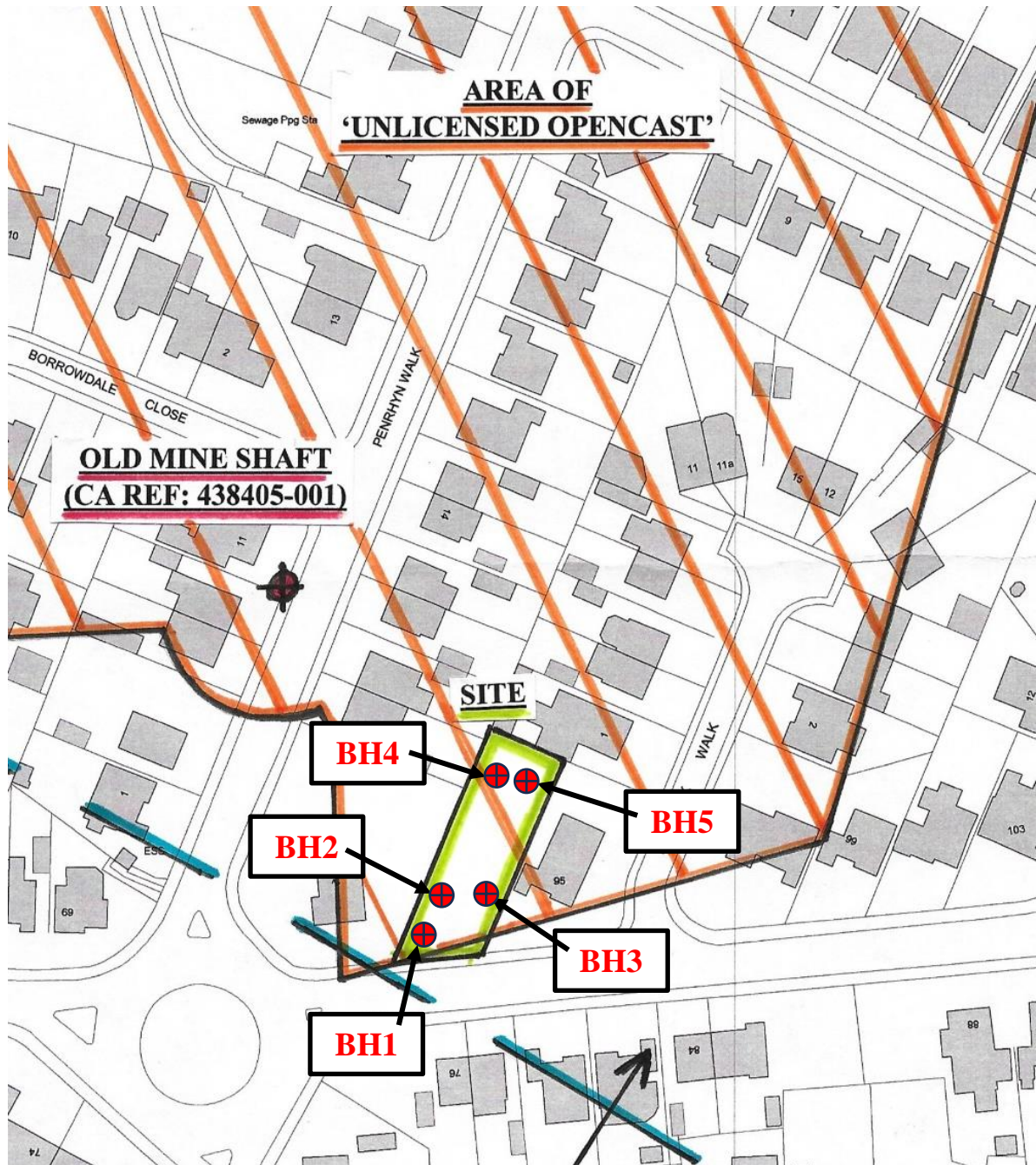
5 Appendix

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. 00380/B

**LAND ADJACENT 95 CUMBERLAND
DRIVE, BARNSELY S71 5DF**
Site Investigation
Borehole Location Plan
(NTS)



5.3 Drilling Logs

Client: Lyons CMC	Site: 93 Cumberland Avenue, Ardley, Barnsley. S71 5DF.		Cape Site Services unit 2, rear of Castle Buildings Carlton Road, Barnsley, S71 3HX	
Date: 22/10/2024	Method: Rotary auger	Permit No: -		
Driller: Ian Wiles			Driller Assistant: Simon Fish, Jonathon Doughty	
			Page No: 1	

Measurements In Meters

BH No:	FROM	TO	THICKNESS	DESCRIPTION
1				
	0	0.8	0.8	Made ground
	0.8	1.3	0.5	Clay grey yellow brown
	1.3	2.9	1.6	Mudstone grey weathered
	2.9	2.9	0	Sandstone brown solid
2				
	0	0.8	0.8	Made ground
	0.8	1.5	0.7	Clay grey yellow brown
	1.5	3	1.5	Mudstone grey weathered
	3	3	0	solid
3				
	0	1	1	Made ground
	1	1.5	0.5	Clay grey
	1.5	1.9	0.4	Mudstone grey brown weathered
	1.9	1.9	0	soild
4				
	0	1	1	Made ground
	1	1.5	0.5	Clay grey also dark grey bands
	1.5	1.9	0.4	Mudstone grey brown weathered
	1.9	2.7	0.8	Mudstone grey
	2.7	2.7	0	Solid
5				
	0	1.1	1.1	Made ground
	1.1	1.7	0.6	Clay grey also dark grey bands
	1.7	2.1	0.4	Mudstone grey brown weathered
	2.1	2.9	0.8	Mudstone grey
	2.9	2.9	0	Solid