

David Haigh  
21A Jagger Lane  
Emley Moor  
Huddersfield  
HD8 9SY

**LYONS CMC**  
**COAL MINING & GEOTECHNICAL**  
**CONSULTANCY**

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Date: 12<sup>th</sup> August 2025

Your ref: (HD8 9SY)

My Ref: SI 00386

**FOR THE ATTENTION OF DAVID HAIGH & TONY STEAD**

Dear Sir,

**COAL MINING RISK INTERPRETATION REPORT – FOLLOWING THE SITE**  
**INVESTIGATION FOR PROPOSED RESIDENTIAL DEVELOPMENT AT 21A, JAGGER LANE,**  
**EMLEY, HUDDERSFIELD HD8 9SY**

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  
Consultant Mining Engineer  
BSc CSci MIMMM

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## **1. Introduction**

Planning permission has been granted for a new residential dwelling 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 of 3 boreholes, the location of which is outlined on plan no. 00386/B – as attached and illustrated in appendix 5.2. The site is centred at OS NGR: 423009E / 413149N, as outlined on plan no. 00386B – 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 underground coal workings
- Uncharted Mine Entries

As such, these risks need to be properly determined to ensure sound stability for the development. A borehole investigation consisting of 3 boreholes 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.

## **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. 00386/B outlined in appendix 5.2.

An investigation utilising a tracked Beretta Rotary Drill Rig equipped with 2m long 75mm diameter drill rods was deemed appropriate in this instance along with water flush techniques 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, Carbon Dioxide and Hydrogen Sulphide. Prior agreement had been secured for these works from the Coal Authority -permit ref: 30095 – as attached for reference in appendix 5.4.

Considering the detail (our CMRA ref: 00386 dated 24<sup>th</sup> January 2025) boreholes were decided to be taken to the base of either the '2<sup>nd</sup> Brown Metal' or 'Flockton Thick' coal seam/workings horizon.

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 made ground to between 0.4m to 0.8m deep; followed by superficial grey/brown sandy clay to 2.5m deep in all holes, before a grey/brown sandy mudstone bedrock. Silty mudstones (along with a 1m band of sandstone in BH2) were then encountered to depth, with a 0.7m thickness in-tact coal seam proved in all holes @: BH1 12.0m to 12.7m; BH2 12.9m to 13.6m; & BH3 12.4m to 13.1m. The coal was described as 'dirty' by the driller, indicating a relatively poor-quality seam.

No signs of underground shallow workings or unstable ground were encountered at any of the three borehole locations and no fugitive gases were detected at any point during the drilling operations. Water flush was maintained throughout drilling operations.

The logs appear to match well given anticipated strata dip rates/directions, which would infer no signs of any geological faulting between the borehole locations.

## **4. CONCLUSIONS AND RECOMMENDATIONS**

- 1) The geology appears consistent with that conjectured on BGS records in that what is believed to be the '2<sup>nd</sup> Brown Metal' coal seam has been encountered 'in-tact' with an overall section of 0.7m at 12m or more. Therefore, with over 7m of overlying competent strata it is considered that the proposed development will be stable from this seam be it worked or otherwise. No other workable seam is anticipated below the 2<sup>nd</sup> Brown Metal seam within an influencing depth of the surface (with regard to historic mining void migration), therefore the site will be stable from the shallow mining aspect and no further associated considerations are necessary. As such usual foundations can be considered, suitably designed for the given structure and nature of near surface strata (made ground/clay).
- 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 Mining Remediation Authority should be notified where any such feature is encountered or suspected.

- 3) A similar watching brief would be recommended for any signs of broken ground/bedrock which could relate to geological faulting which is conjectured on the BGS records for this area (although not specifically noticed in this investigation); if encountered it would be recommended that foundations are strengthened to span any such features.
- 4) No fugitive gases were encountered during this investigation; given the findings (overlying clays and mudstones) the associated risks of such would be considered low. However, it may be prudent, in the absence of any further gas monitoring (*note informative no. 3 in appendix 2*), to include gas protection measures (such as a methane membrane for example) within future foundation designs; which could also protect from radon issues if required. 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 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.*

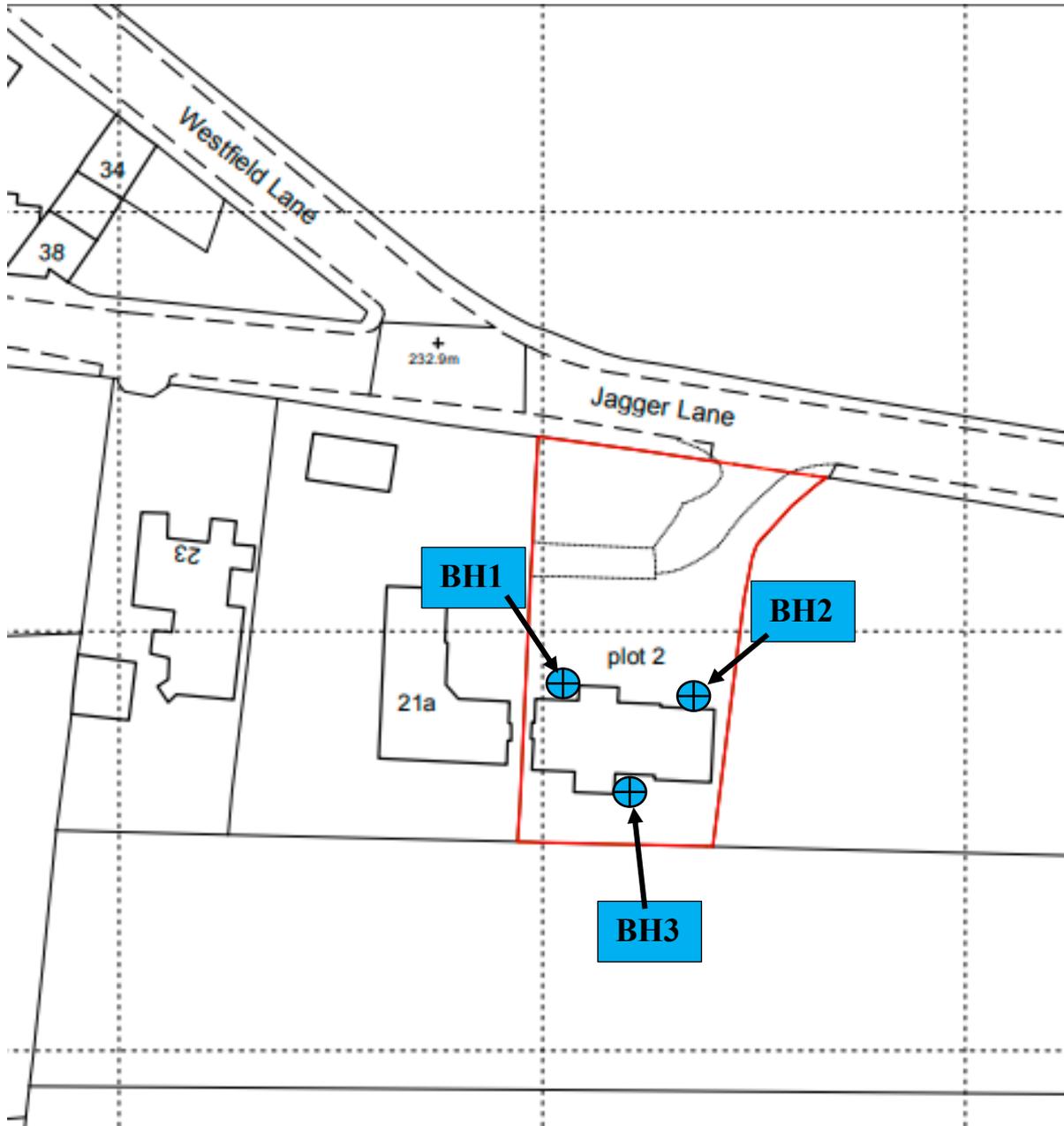
## 5 Appendix

### 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. 00386/B

**21A, JAGGER LANE, EMLEY,  
HUDDERSFIELD HD8 9SY**  
**Site Investigation**  
**Borehole Location Plan**  
**(NTS)**



### 5.3 Drilling log sheet

<b>Client:</b> Lyons CMC	<b>Site:</b> Land at 21a Jagger Lane, Emley Huddersfield. HD 8 9SY		<b>Cape Site Services</b> unit 2, rear of Castle Buildings Carlton Road, Barnsley, S71 3HX	
<b>Date:</b> 21/07/2025	<b>Method:</b> water flush	<b>Permit No:</b> 30095		
<b>Driller:</b> Ian Wiles		<b>Driller Assistant:</b> Richard Hawkins, Simon Fish		
		<b>Page No: 1</b>		

#### Measurements In Meters

BH No:	FROM	TO	THICKNESS	DESCRIPTION
1				
	0	0.4	0.4	Made ground
	0.4	2.5	2.1	Clay grey brown sandy
	2.5	3.5	1	Mudstone grey brown sandy soft bands
	3.5	12	8.5	Mudstone grey silty
	12	12.7	0.7	Coal dirty
	12.7	15	2.3	Mudstone grey silty
2				
	0	0.8	0.8	Made ground
	0.8	2.5	1.7	Clay grey brown sandy
	2.5	3.5	1	Mudstone grey brown sandy soft bands
	3.5	4.5	1	Sandstone grey brown
	4.5	12.9	8.4	Mudstone grey silty
	12.9	13.6	0.7	Coal dirty
	13.6	15	1.4	Mudstone grey silty
3				
	0	0.4	0.4	Made ground
	0.4	2.5	2.1	Clay grey brown sandy
	2.5	3.9	1.4	Mudstone grey brown sandy soft bands
	3.9	12.4	8.5	Mudstone grey silty
	12.4	13.1	0.7	Coal dirty
	13.1	15	1.9	Mudstone grey silty

## 5.4 Coal Authority Permit



Mining  
Remediation  
Authority

# Permit to Enter or Disturb Mining Remediation Authority Interests

## Permit 30095

### Name and Address of Permit Holder:

David Haigh  
21A Jagger Lane  
Emley  
Huddersfield  
HD8 9SA

### Site Location:

Land at 21a Jagger Lane  
Emley  
Huddersfield

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

**Ground investigation by three boreholes to 15m 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<sub>4</sub>, CO<sub>2</sub>, O<sub>2</sub>, H<sub>2</sub>S 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: Jake Morris Granted Date: 14/07/2025

For and on behalf of the Mining Remediation Authority

*Nominated Representative: Jake Morris, Permitting Manager;*

*Mining Remediation Authority, Permitting Office, 200 Lichfield Lane, Mansfield, Notts, NG18 4RG*

*Tel: 01623 637450; E-Mail: [permissions@coal.gov.uk](mailto:permissions@coal.gov.uk)*

## Appendix 5.5 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. CO<sub>2</sub>, CH<sub>4</sub>) 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). 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.