

Mohammed Nabeel
57 Abbott Street
Rochdale
OL11 3HJ

LYONS CMC
COAL MINING & GEOTECHNICAL
CONSULTANCY

Web: www.lyonscmc.co.uk
Email: mark@lyonscmc.co.uk
Mob: 07887555580

Date: 18th November 2025
Your ref: (OL11 5XE)
My Ref: SI 00427

FOR THE ATTENTION OF MOHAMMAD NABEEL

Dear Sir,

COAL MINING RISK INTERPRETATION REPORT – FOLLOWING THE SITE
INVESTIGATION FOR PROPOSED DEVELOPMENT AT 615 EDENFIELD ROAD, NORDEN,
ROCHDALE OL11 5XE

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
BSci CSci MIMMM

THIS 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 workings manual". 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.

Contents

Page No.

1. Introduction	3
2. Scope of the Report	3
3. Site Investigation	3
3.1 Methodology	3
3.2 Interpretation of Findings	4
4. Conclusions and Recommendations	4
5. Appendix	6
5.1 References	6
5.2 Borehole Location Plan	7
5.3 Drilling Log Sheets	8-9
5.4 Coal Authority Permit	10
5.5 Informative(s)	11

1. Introduction

Planning permission is being considered for the development of a new two storey building (comprising of two retail units and two flats above) 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. 00427/B – as attached and illustrated in appendix 5.2. The site is centred at OS NGR: 386311E / 414447N.

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. 00427/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: 30524 – as attached for reference in appendix 5.4.

Considering the detail; notably the ‘Martin Environmental Solutions Ltd’ Coal Mining Risk Assessment ref: 2683-1 dated March 2024; rather than one borehole to 30m it was felt more

robust (in line with current industry guidance – C758D Abandoned mine working manual), considering that the workable section of the ‘Sand Rock’ coal seam is in the region of up to 0.8m (as informed by MRA records), that three boreholes were taken to the base of this seam or to 15m deep (at least 10m below rock head) in order to establish any historic unrecorded mining void instability risks to the proposals. This would reduce the potential for drilling through coal pillars, should the seam be determined within a critical depth of effecting the surface, and therefore provide a more informed assessment of any associated risks.

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 (BH) proved around 0.5m of made ground (beneath surface tarmac/concrete) above light brown sandstone gravels to between 3.8m to 4.2m deep. Around 10m or more of competent mudstone was then encountered, initially ‘light brown’, turning to ‘grey shelly’, then with black mudstone bands within bottom section. A coal seam was encountered in-tact in all holes at: 14.0m to 14.5m in BH1; 14.2m to 14.5m in BH2; & 14.5m to 14.8m in BH3. Holes were terminated in firm grey mudstone beneath this coal seam.

Given the details, and considering that BGS information outlines ‘Rough Rock’ sandstone to overly the ‘Sand Rock’ coal seam, it is felt unlikely that the coal encountered in this investigation relates to that seam. Given the ‘shelly’ mudstone encountered it seems likely that this relates to the shallower ‘Subcrenatum Marine Band’ which lies just above the ‘Six-Inch’ coal with ‘PLCM’ (pennine lower coal measures) indicated above. If this is the case then the ‘Sand Rock’ coal seam will lie at greater depths – which is consistent with the aforementioned CMRA detail. 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. Given seam thicknesses it appears that enough competent strata exists above any potential mining voids for the given development to be stable from the void migration aspect.

4. CONCLUSIONS AND RECOMMENDATIONS

- 1) In line with current guidelines (CIRIA C758D Abandoned mine workings manual) no notable coal seam of a workable quality/thickness has been determined within a critical depth beneath this specific site to within 15m of the surface; and any coal seam below this depth is anticipated to be of a section that will not affect stability be it worked or otherwise. As such it is considered that 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 – in this instance made ground and sandstone gravels.

- 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/clay 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) No fugitive gases were encountered during this investigation; given the findings (overlying mudstones) the associated risks of such would be 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.

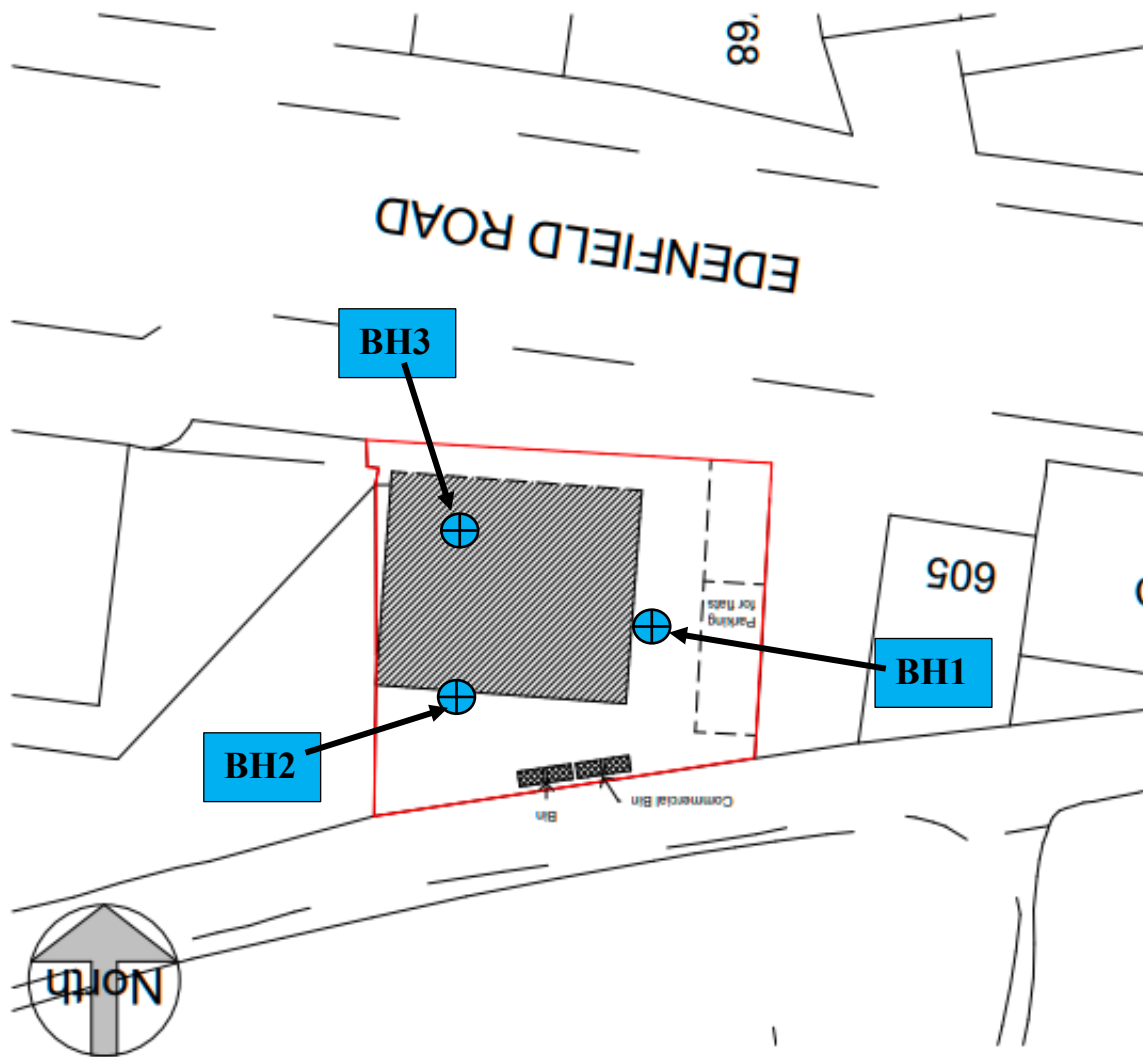
5 Appendix

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. 00427/B

615 EDENFIELD ROAD, NORDEN,
ROCHDALE OL11 5XE
Site Investigation
Borehole Location Plan
(NTS)



5.3 Drilling log sheets

Client: Building Design Services	Site: 615 Edenfield Road, Norden, Rochdale, OL11 5XE		Cape Site Services unit 2, rear of Castle Buildings Carlton Road, Barnsley, S71 3HX	
Date: 14/11/25	Method: water flush	Permit No: 30524		
Driller: Ian Wiles			Driller Assistant: Richard Hawkins, Simon Fish	
Drillers Signature:			Page No: 1 of 1	

Measurements In Meters

BH No:	FROM	TO	THICKNESS	DESCRIPTION
1				
	0	0.1	0.1	concrete
	0.1	0.5	0.4	made ground
	0.5	4	3.5	sandstone gravels light brown
	4	5.2	1.2	mudstone light brown
	5.2	10.1	4.9	mudstone grey shelly
	10.1	14	3.9	mudstone grey with black mudstone bands shelly
	14	14.5	0.5	coal
	14.5	15	0.5	mudstone grey
2				
	0	0.1	0.1	concrete
	0.1	0.4	0.3	made ground
	0.4	3.8	3.4	sandstone gravels light brown
	3.8	5.3	1.5	mudstone light brown
	5.3	10.5	5.2	mudstone grey shelly
	10.5	14.2	3.7	mudstone grey with black mudstone bands shelly
	14.2	14.5	0.3	coal
	14.5	15	0.5	mudstone grey
3				
	0	0.1	0.1	concrete
	0.1	0.5	0.4	made ground
	0.5	4.2	3.7	sandstone gravels light brown
	4.2	5.5	1.3	mudstone light brown
	5.5	10.8	5.3	mudstone grey shelly
	10.8	14.5	3.7	mudstone grey with black mudstone bands shelly
	14.5	14.8	0.3	coal
	14.8	16	1.2	mudstone grey

5.4 Coal Authority Permit



Permit to Enter or Disturb Mining Remediation Authority Interests

Permit 30524

Name and Address of Permit Holder:

*Mohammed Nabeel
57 Abbott Street
Rochdale
OL11 3HJ*

Site Location:

*Land at
615 Edenfield Road
Norden
Rochdale
OL11 5XE*

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, 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: Helen Day Granted Date: 6 October 2025

For and on behalf of the Mining Remediation Authority

*Nominated Representative: Helen Day, Permitting Manager;
Mining Remediation Authority, Permitting Office, 200 Lichfield Lane, Mansfield, Notts, NG18 4RG
Tel: 01623 637450; E-Mail: 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. CO₂, CH₄) 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.