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Our Ref: P8027 - CMRA-1
Date: 12th July 2017

Mr David Raybould
David Raybould & Associates Ltd
23a West Street
Swadlincote
Derbys
DE11 9DG

Dear Mr Raybould,

RE: Proposed development of the land to the rear of 27 Ashby Road, Woodville.

We have as requested carried out a Coal Mining Risk Assessment in accordance with guidance provided by the Coal Authority and as required by the Local Authority as part of the planning process.

The result of our assessment is detailed below:-

1.0 Introduction

We have been informed that your Client proposes to develop two residential plots with associated infrastructure.

As far as we are aware the site has not been the subject of a Desk Study (Phase 1) or Intrusive Ground Investigation (Phase 2).

Recommendations will be made as to how the risks associated with coal mining can be mitigated.

A proposed Site Boundary plan is included in Appendix A. A site location plan is attached to the Coal Authority mining report included in Appendix B.

2.0 Sources of Information

The following sources of information have been used:-

- Coal Authority Mining Report
- Coal Authority Consultants Report
- BGS Geological Mapping at a scale of 1:10000.
- BGS Memoirs
- BGS Borehole Records

3.0 Identification and assessment of site specific risks

The Coal Authority (CA) mining report confirms that the site is in a surface area that could be affected by recorded workings in one seam of coal at 50m to 60m depth last worked in 1900. The Coal Authority confirms that any ground movement from the above mentioned seams should by now have stopped. Therefore the risk posed to the ground surface from recorded workings is assessed as **negligible**.

The coal mining report confirms that the site is in a surface area that could be affected by underground mining in one seam of fireclay at 50m to 60m depth, last worked in the 1900s. The CA does **not** state that ground movement due to mining activity should have ceased and accordingly, the site is at a **high** risk from fireclay workings.

The CA report confirms the likely presence of coal seams at or close to the ground surface that may have been worked at some time in the past. Accordingly the risk posed to the ground surface from any un-recorded workings in shallow coal seams is assessed as **high**.

The CA confirms that the site does not lie within 200m of the boundary of an opencast site from which coal is being removed by opencast methods. The CA confirms that the property does not lie within 800m of an opencast site for which a licence has been granted or is currently being determined. The CA confirms that the site is not within the boundary of an opencast from which coal has been removed by opencast methods. The risk from current, future or past opencast workings is therefore assessed as **negligible**.

The CA confirms that there are no known coal mining entries within, or within 20 metres of the boundary of the property. Therefore the risk to surface stability from recorded mine entries is assessed as **negligible**.

The Coal Authority also confirms that their records may be incomplete, consequently, there may exist in the local area mine entries of which the Coal Authority have no knowledge and if shallow un-recorded workings are present beneath the site, the risk of un-recorded mine entries should be increased to **moderate**.

Where coal measures strata lies close to the ground surface foundations could potentially penetrate or encounter coal seams within their excavation. There is therefore a potential for spontaneous combustion. The risk from spontaneous combustion from near surface coal seams is generally assessed as **low** but some form of precautionary mitigation might be required.

The site is underlain by the following geological formations:-

- Bromsgrove Sandstone Formation
- Pennine Lower Coal Measures Formation

4.0 Mitigation Strategy Proposed

The mitigation strategy proposed relates to the potential presence of shallow recorded workings in a fireclay seam, shallow un-recorded workings and un-recorded mine entries.

The 1:10000 scale geological mapping, geological memoirs and BGS borehole records suggest the following:-

- Below the site area, the Bromsgrove Sandstone Formation unconformably overlies the Pennine Lower Coal Measures Formation.
- The Coal Measures strata is indicated to comprise a series of mudstones, siltstone and sandstone with subordinate coal and fire clay seams.

- BGS borehole data suggests sandstone rockhead to be present at depths of between circa 2.0m to 3.0m begl.
- There is a fault recorded 60m to the west of the site but is considered to be at a sufficient distance to not influence the site.
- From geological and topography maps, the sandstone strata is indicated to dip 3° towards the northwest.
- Nearest recorded strata dips in the Coal Measures strata are indicated to be 6° towards the southwest.
- There are potentially three coal seams within the coal measures strata which are inferred to outcrop below the unconformity between 50m to 170m to the east of the site and since the strata dips to the southwest, are likely to underlie the site.
- The map sections suggest the Woodfield coal (reported to be up to 2.0m thick) will underlie the proposed development at its shallowest point on the eastern boundary at a depth of at least 27.2m begl.
- The nearest BGS borehole log was taken from a shaft near a former Windmill. The borehole records a 0.9m thick coal overlying fireclay seam of circa 0.8m thick.
- A CA Consultants Report records the Eureka Coal and fireclay to underlie the site (at a disposition of 0.4m-0.5m) at depths of 50m to 52m with an extraction thickness of 0.91m and 0.76m respectively.

The site is not at risk from recorded workings in coal seams and the level of risk as a result of our assessment will remain as **negligible**.

The geological map indicates that the Woodfield Coal is the shallowest named coal beneath the site and is underlain by the Stockings Coal and Eureka Coal seams. The memoir suggests that the Eureka Coal was the deepest worked in the Woodville area to the east of the Boothorpe Fault. The Stockings Coal is described as being highly variable in thickness and is unlikely to have been worked.

The depths and separations of coal recorded at the Blackfordby Pit, some 250m to the south east of the site suggest the following sequence beneath the site:

Strata	Depth (m)	Thickness (m)	Separations (m)
Triassic unconformity over measures	3.0	24.2	9 8
Woodfield Coal	27.2	1.5 total	
Stockings Coal	40.5	1.5 total	
Eureka Coal	50.0	0.91 worked	
Fireclay	52.0	0.76 worked	

For unrecorded workings to not pose a risk to the ground surface will require a minimum of 10 times the worked seam thickness in competent rock cover. As rockhead is likely to be present within 3.0m of the ground surface then even if the Woodfield Seam has been worked by underground methods, there will be sufficient competent rock cover to guarantee surface stability.

Although there are two coal seams (and a fire clay seam) deeper than the Woodfield Coal and are highly likely to have been worked, they will not be within influencing distance of the surface, should they have been worked in the past.

Given the above it is considered appropriate to reduce the risk from un-recorded workings in both coal and fireclay to **negligible**.

The site is not at risk from current, future or past opencast workings and the level of risk as a result of our assessment will remain as **negligible**.

Since there is likely to be worked coal within circa 30m of the surface and the CA also states there may exist in the local area mine entries of which they have no knowledge, the risk from mine entries remains **moderate**. The risk can potentially be reduced by stripping the ground surface to natural ground and carrying out a visual inspection to ascertain if there are any anomalous features indicative of mine entries present.

Foundations will not penetrate or encounter coal seams within their excavation. Therefore the risk from spontaneous combustion is assessed as **negligible**.

5.0 Conclusion

The risks amended in line with 4.0 above can be summarised as follows:-

Recorded underground workings – **Negligible**.

Unrecorded shallow workings – **Negligible**.

Opencast workings – **Negligible**.

Recorded Mine Entries – **Negligible**.

Un-recorded Mine Entries – **Moderate** – may be reduced to negligible by complying with the mitigation recommendations made in 4.0 above.

Mine gas emissions – **Negligible**.

Spontaneous combustion – **Negligible**.

6.0 Relevant Appendices

Appendix A – Site Layout and Boundary Plan.

Appendix B – Coal Authority Mining Report.

Appendix C – Coal Authority Consultants Report.

We trust that the information provided is sufficient for your current requirements. if you require any additional information or clarification of the contents of this letter then do not hesitate to contact me.

Yours faithfully,



Sonia Singh BSc FGS
Assistant Geo-environmental Engineer



Clive Kirby FGS C.Geol.
Principal Engineering Geologist



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multi-disciplinary consultancy services, UK-wide:**

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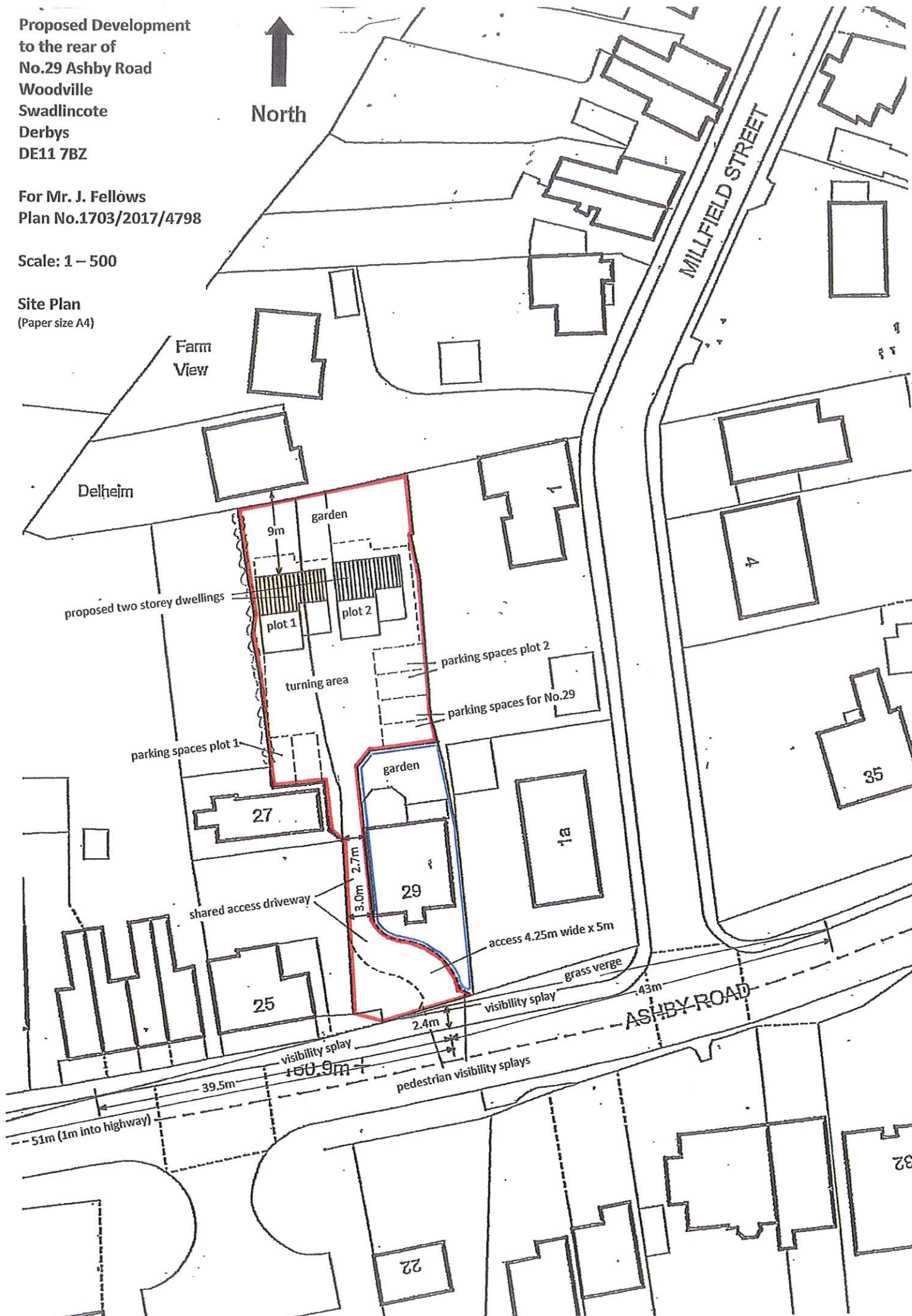
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North

Scale: 1 – 500

Site Plan
(Paper size A4)





A P P E N D I X B

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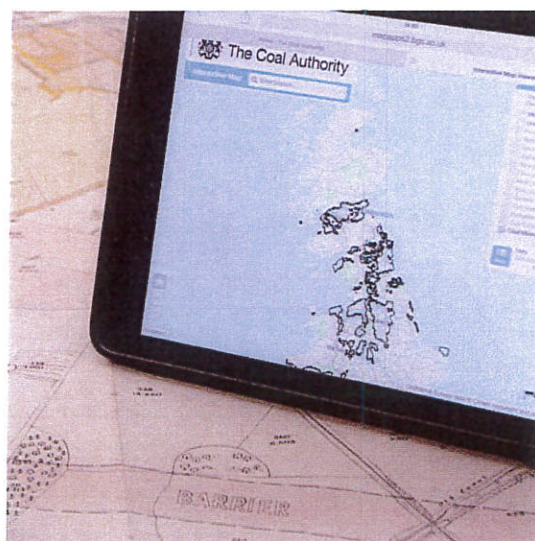
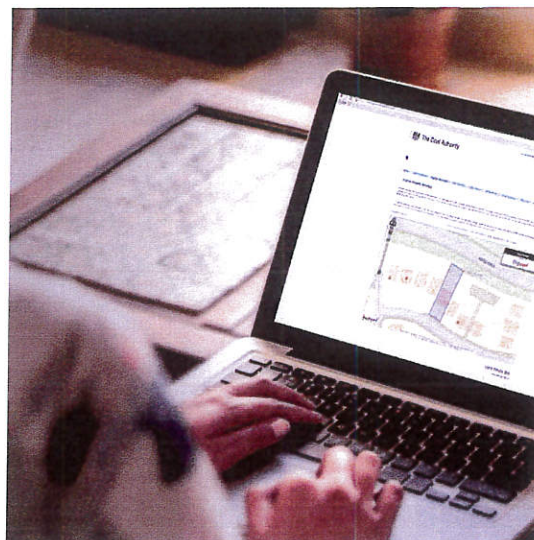
Resolving the **impacts** of mining

CON29M Non-Residential Mining Report

29 ASHBY ROAD
WOODVILLE
SWADLINCOTE
DERBYSHIRE
DE11 7BZ

Date of enquiry: 27 June 2017
Date enquiry received: 27 June 2017
Issue date: 27 June 2017

Our reference: 51001494187001
Your reference: P8027



CON29M Non-Residential Mining Report

This report is based on, and limited to, the records held by the Coal Authority and the Cheshire Brine Subsidence Compensation Board's records, at the time we answer the search.

Client name

GRM DEVELOPMENT SOLUTIONS LIMITED

Enquiry address

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DERBYSHIRE, DE11 7BZ

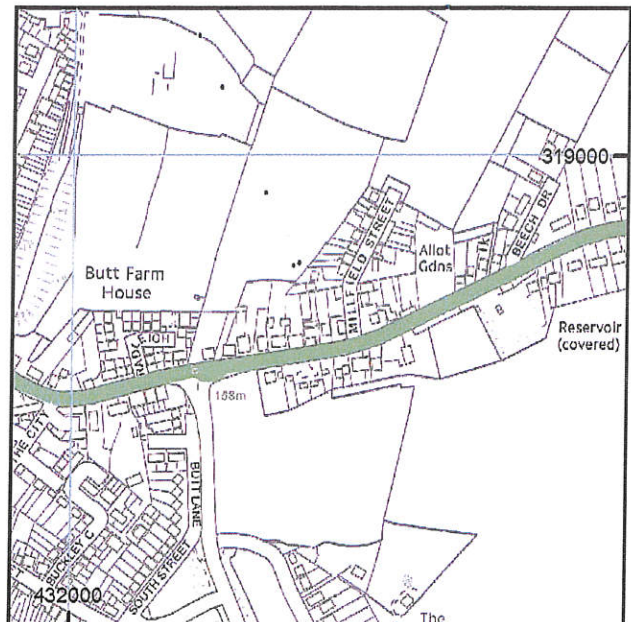
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Approximate position of property



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Summary

Has the search report highlighted evidence or potential of			
1	Past underground coal mining		Yes
2	Present underground coal mining		No
3	Future underground coal mining		Yes
4	Mine entries		Yes
5	Coal mining geology		No
6	Past opencast coal mining		No
7	Present opencast coal mining		No
8	Future opencast coal mining		No
9	Coal mining subsidence		No
10	Mine gas		No
11	Hazards related to coal mining		No
12	Withdrawal of support		No
13	Working facilities order		No
14	Payments to owners of former copyhold land		No
15	Information from the Cheshire Brine Subsidence Compensation Board		No

For detailed findings, please go to page 4.

Detailed findings

1. Past underground coal mining

The property is in a surface area that could be affected by underground mining in 1 seam of coal at 50m to 60m depth, and last worked in 1900.

Any movement in the ground due to coal mining activity should have stopped.

In addition the property is in an area where the Coal Authority believe there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered prior to any site works or future development activity. Your attention is drawn to the Comments on the Coal Authority information section of the report.

The property is in a surface area that could be affected by underground mining in 1 seam of fireclay at 50m to 60m depth, and last worked in 1900.

2. Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

3. Future underground coal mining

The property is not in an area where the Coal Authority has plans to grant a licence to remove coal using underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

4. Mine entries

There are no known coal mine entries within, or within 20 metres of, the boundary of the property.

There may however be mine entries/additional mine entries in the local area which the Coal Authority has no knowledge of.

5. Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

6. Past opencast coal mining

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

7. Present opencast coal mining

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8. Future opencast coal mining

There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

9. Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

10. Mine gas

The Coal Authority has no record of a mine gas emission requiring action.

11. Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

12. Withdrawal of support

The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

13. Working facilities order

The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

14. Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

15. Information from the Cheshire Brine Subsidence Compensation Board

The property lies outside the Cheshire Brine Compensation District.

Comments on the Coal Authority information

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In view of the mining circumstances a prudent developer would seek appropriate technical advice before any works are undertaken.

Therefore if development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply good engineering practice developed for mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or mines of coal without the permission of the Coal Authority. Developers should be aware that the investigation of coal seams/former mines of coal may have the potential to generate and/or displace underground gases and these risks both under and adjacent to the development should be fully considered in developing any proposals. The need for effective measures to prevent gases entering into public properties either during investigation or after development also needs to be assessed and properly addressed. This is necessary due to the public safety implications of any development in these circumstances.

Additional remarks

Information provided by the Coal Authority in this report is compiled in response to the Law Society's Con29M Coal Mining and Brine Subsidence Claim enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL. Please note that Brine Subsidence Claim enquiries are only relevant for England and Wales. This report is prepared in accordance with the Law Society's Guidance Notes 2006, the User Guide 2006 and the Coal Authority and Cheshire Brine Board's Terms and Conditions applicable at the time the report was produced.

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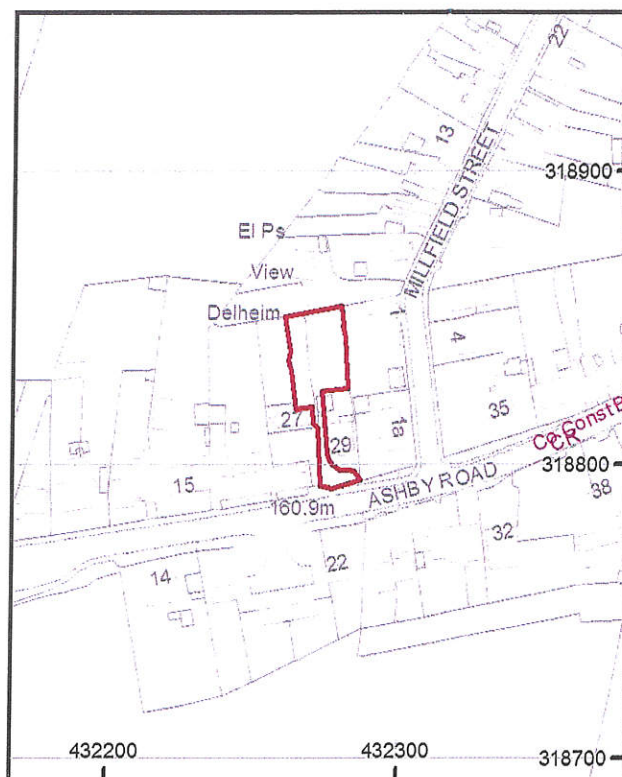
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Enquiry boundary

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Approximate position of enquiry boundary shown



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Resolving the **impacts** of mining

Non-Residential Coal Mining Consultants Report



29 ASHBY ROAD, WOODVILLE, SWADLINCOTE, DERBYSHIRE,
DE11 7BZ

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Our reference:	51001497976001
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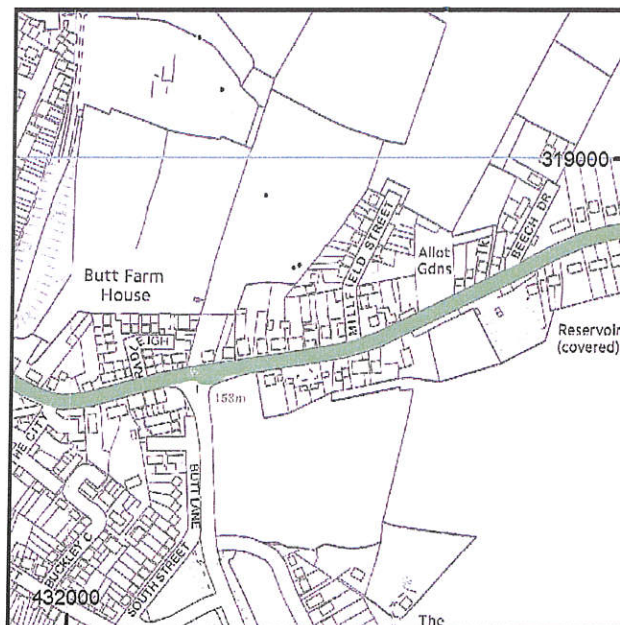
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Detailed findings

Past underground coal mining

Colliery	Seam	Mineral	Panel	Depth (m)	Direction to working	Disposition	Extraction thickness (cm)	Year
unnamed	EUREKA	Coal	4K3M	50	NW	0.5	91	1900
BLACKFORDBY	FIRECLAY	Fireclay	4RVT	52	NW	0.4	76	1900

Probable unrecorded shallow workings

Yes.

Outcrops

None recorded.

Spine roadways at shallow depth

None recorded.

Future underground mining

None recorded.

Licence details (AOR)

None recorded.

Section 46 notices

None recorded.

Geology

No faults, fissures or breaklines recorded.

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyance details
Shaft	432318-008	432305 318775		Coal	

Court orders

None recorded.

Worked out opencast sites

None recorded.

Coal mining related hazards

None recorded.

Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres, since 31 October 1994.

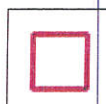
There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

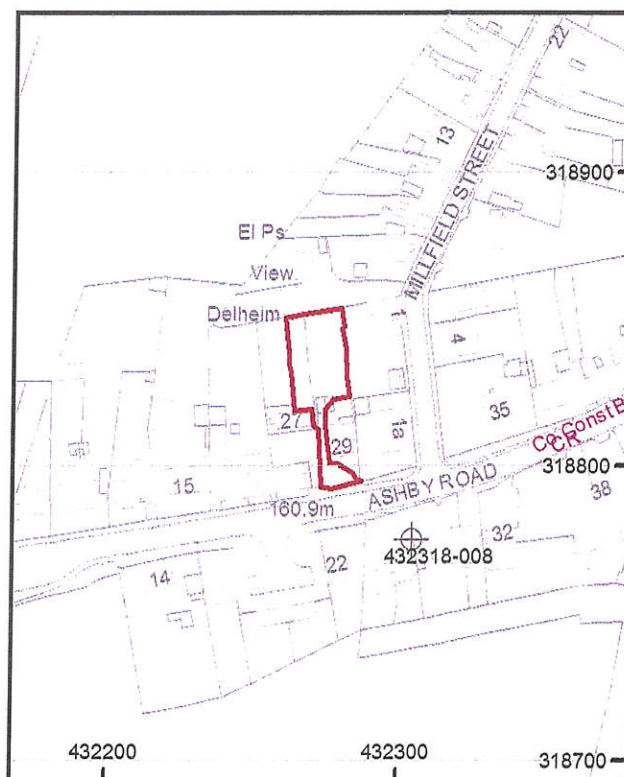
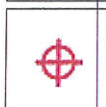
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Disused mineshaft



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