



GRM Development Solutions Ltd
Laurus House
First Avenue
Centrum 100
Burton upon Trent
Staffordshire
DE14 2WH

Tel: 01283 551 249
Web: www.grm-uk.com
e-mail: clive.kirby@grm-uk.com
Our Ref: P7016 - CMRA-1
Date: 22nd May 2015

Mr David Breakwell
Sammons Architectural Ltd
10 Cawdry Buildings
Fountain Street
Leek
Staffordshire
ST13 6JP

Dear Mr Breakwell

RE: Land at The Birches, Cheadle, Staffordshire.

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 Sammons Architectural Ltd propose to develop the site with residential properties.

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 plan indicating the scope of the proposed works are included in Appendix A. A site location and boundary 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
- BGS Geological Mapping at a scale of 1:10,560.
- 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 not in the likely zone of influence from recorded workings. Therefore the risk posed to the ground surface from recorded workings is assessed as **negligible** and mitigation is considered not to be necessary.

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 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**.

The CA states there is no record of mine gas emissions requiring action by the CA within the boundary of the property. It seems reasonable to conclude that the risk to the proposed development from mine gas emissions is **negligible**. However, this does not preclude a risk from ground gases from other sources.

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:-

- Till (Boulder Clay)
- Coal Measures

4.0 Mitigation Strategy Proposed

The mitigation strategy proposed relates to the potential presence of shallow un-recorded workings and un-recorded mine entries.

The 1:10,560 scale geological mapping, geological memoirs and BGS borehole records suggest the following:-

- A BGS borehole 450m to the northeast suggests superficial sand and gravelly clay are likely to underlie the site to a depth of approximately 1.5m. No superficial deposits are recorded in the south western corner of the site.
- Below the sand and clay, Coal Measures Strata will be encountered.
- The 1:10,560 geological map shows a north-south trending fault 100m to the east of the site, the downthrow is recorded to be circa 27m to the west.
- The map also records the Dilhorne coal to outcrop approximately 150m to the west-southwest; however, as the local strata are recorded to dip 6° to the west-south-west, this seam does not underlie the site. Stratigraphically below the Dilhorne coal is the Alecs coal, with the Parkhall Sweet coal and two recorded thin coals variably present between.
- A BGS Borehole at Birches Colliery, circa 200m west-south-west of the site, suggests the presence of the Dilhorne seam at shallow depth, and a vertical separation of 60.4m to the underlying Alecs coal. The recorded thickness of the Alecs coal is 1.83m.
- The depth to the Alecs coal is calculated as 33m and 47m begl, beneath the easternmost and westernmost areas of the site respectively.
- The geological memoir for the area suggests that the Alecs coal was reached in a nearby shaft, approximately 210m to the west-south-west of the site, and was deemed too deep to work.

The Alecs coal is likely to underlie the site at depths of between circa 33 and 47m begl, with a thickness of circa 1.83m. It is unlikely that this coal has been worked, due to the depth beneath the site; however, it is considered there will be sufficient competent rock cover that even if worked, this seam will not pose a risk to the proposed development.

There are no other seams below the Alecs coal that have the potential to affect the ground surface even if worked. The risk to the development from unrecorded workings can therefore be assessed as **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**.

The risk from mine entries has been assessed as moderate based on the Coal Authority records (Section 3.0). As the Coal Authority state there can never be a 100% guarantee that no shafts are present. However, the CA hold the only definitive record and they have no record of any mine entries. As the seams that underlie the property at shallow depth are generally considered to be unworked, the risk of mine entries being present below the property is assessed as **negligible**.

It is unlikely that any significant coals will be encountered at or close to founding levels; therefore the risk to structures due to the potential for spontaneous combustion is assessed as **negligible**. However, a precautionary approach should be adopted and the following advice has been provided:-

- A cover of mudstone / clay of 0.5m thickness be maintained between the shallow coals and the base of the foundations. A thickness of at least 0.5m of clay should also be maintained above coals out cropping in garden areas.
- Poor quality or thin coals < 0.5m in thickness are not considered to be a risk.
- Foundations that are likely to have less than 0.5m of cover will have to be deepened through the coal.

5.0 Conclusion

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

Recorded Workings – **Negligible**

Mine entries – **Negligible**

Un-recorded shallow workings – **Negligible**

Mine gas emissions – **Negligible**

Opencast workings – **Negligible**

Spontaneous combustion – **Negligible**

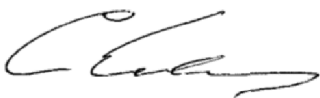
6.0 Relevant Appendices

Appendix A – Proposed Development Plan

Appendix B - Coal Authority Mining Report which includes a site location plan.

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,



Clive Kirby BSc MSc CGeol



A P P E N D I X A

**GRM Development Solutions provides
multi-disciplinary consultancy services, UK-wide:**

- Geotechnical and Geo-environmental Services
- Civil and Infrastructure Services
- Structural Engineering Services
- Construction Management
- Site Services

Tel: 01283 551249

info@grm-uk.com

Fax: 01283 211968

www.grm-uk.com





A P P E N D I X B

**GRM Development Solutions provides
multi-disciplinary consultancy services, UK-wide:**

- Geotechnical and Geo-environmental Services
- Civil and Infrastructure Services
- Structural Engineering Services
- Construction Management
- Site Services

Tel: 01283 551249

info@grm-uk.com

Fax: 01283 211968

www.grm-uk.com



Issued by:

The Coal Authority, Property Search Services, 200 Lichfield Lane, Berry Hill, Mansfield, Nottinghamshire, NG18 4RG
Website: www.groundstability.com Phone: 0345 762 6848 DX 716176 MANSFIELD 5

**GRM DEVELOPMENT SOLUTIONS
LIMITED
LAURUS HOUSE
FIRST AVENUE
BURTON-ON-TRENT
STAFFORDSHIRE
DE14 2WH**

Our reference: **51000885351001**
Your reference: **P7016**
Date of your enquiry: **15 May 2015**
Date we received your enquiry: **15 May 2015**
Date of issue: **15 May 2015**

This report is for the property described in the address below and the attached plan.

Non-Residential Coal Authority Mining Report

LAND OFF THE BIRCHES, THE BIRCHES, CHEADLE, STAFFORDSHIRE, ST10 1EH

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.

Coal mining	See comments below
Brine Compensation District	No

Information from the Coal Authority

Underground coal mining

Past

According to the records in our possession, the property is not within the zone of likely physical influence on the surface from past underground workings.

However 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 Coal Authority Information section of the report.

Present

The property is not in the likely zone of influence of any present underground coal workings.

Future

The property is not in an area for which the Coal Authority is determining whether to grant a licence to remove coal using underground methods.

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

The property is not in an area that is likely to be affected at the surface from any planned future workings.

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

No notice of the risk of the land being affected by subsidence has been given under section 46 of the Coal Mining Subsidence Act 1991.

Mine entries

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

Records may be incomplete. Consequently, there may exist in the local area mine entries of which the Coal Authority has no knowledge.

Coal mining geology

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

Opencast coal mining

Past

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

Present

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

Future

The property is not within 800 metres of the boundary of an opencast site for which the Coal Authority is determining whether to grant a licence to remove coal by opencast methods.

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.

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 31st October 1994.

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

The 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.

Mine gas

There is no record of a mine gas emission requiring action by the Coal Authority within the boundary of the property.

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.

Withdrawal of support

The property is in an area for which notices of entitlement to withdraw support were published in 1943.

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

Working facilities orders

The property is not in an area for which 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.

Payments to owners of former copyhold land

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

Comments on Coal Authority information

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.

Information from the Cheshire Brine Subsidence Compensation Board

The property lies outside the Cheshire Brine Compensation District.

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.

The Coal Authority owns the copyright in this report. The information we have used to write this report is protected by our database right. All rights are reserved and unauthorised use is prohibited. If we provide a report for you, this does not mean that copyright and any other rights will pass to you. However, you can use the report for your own purposes.

Location map



Approximate position of property



Enquiry boundary

Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right 2015. All rights reserved. Ordnance Survey Licence number: 100020315

Key

Approximate position of enquiry boundary shown

