

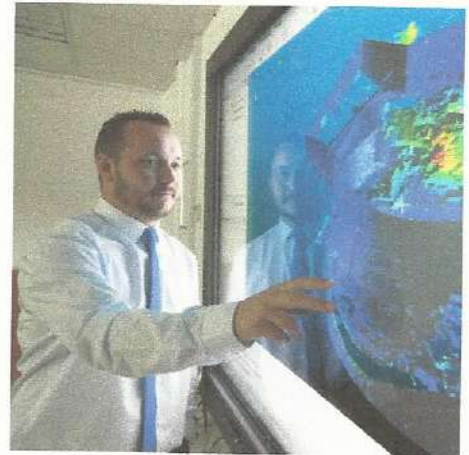


The Coal
Authority

Resolving the **impacts** of mining

Coal Mining Risk Assessment

Brownieside
Plains
Airdrie
North Lanarkshire



October 2015
OP15-050

APPENDIX 4/1

Limit of liability

Any conclusions or recommendations made are those based on information obtained for the report and our current knowledge and practices. Data used within the report; either obtained by the Coal Authority or 3rd Party data has been cited within the report. Any limitations of the data are identified within the report.

The Coal Authority does not accept liability for the accuracy of any 3rd party data. Should new data or information become available these results, conclusions and recommendations may require amending. The report should only be used in the stated context.

The Coal Authority Permit

A Coal Authority Permit is required for ALL intrusive activities that will disturb or enter any coal seams, coal mine workings or coal mine entries.

Please follow this link for further information on the Coal Authority's permitting process: <https://www.gov.uk/get-a-permit-to-deal-with-a-coal-mine-on-your-property>

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VERSION	ORIGINATED	CHECKED	APPROVED	DATE
Final	DP	DM	DM	1/10/2015

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1. Introduction

1.1. Applicant details

- Network Rail Projects – Scotland of 4th Floor Buchanan House, 58 Port Dundas Road, Glasgow G4 0LQ has submitted a planning application for the proposed development at Brownieside, Plains, Airdrie, North Lanarkshire.
- The Coal Authority has been commissioned to prepare a Coal Mining Risk Assessment Report for the proposed development site, in order to provide the Local Planning Authority with information on coal mining and an assessment of its impact on land stability.

1.2. Description and layout of proposed development

- The site has been vacant for some time following the demolition of former residential properties.
- The applicant is planning to re-use the site for residential development.
- The location of the site is given in Appendix A.

1.3. Scope of the Coal Mining Risk Assessment (CMRA)

The purpose of this Coal Mining Risk Assessment Report is to:

- *Present a desk-based review of all available information on the coal mining issues which are relevant to the application site;*
- *Use that information to identify and assess the risks to the proposed development from coal mining legacy, including the cumulative impact of issues;*
- *Set out appropriate mitigation measures to address the coal mining legacy issues affecting the site, including any necessary remedial works and/or demonstrate how coal mining issues have influenced the proposed development; and*
- *Demonstrate to the Local Planning Authority that the application site is, or can be made, safe and stable to meet the requirements of national planning policy with regard to development on unstable land.*

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2. Sources of information used to inform the report

The Appendices contain copies of the original information used in the production of this report.

Sources Reviewed	Yes	No	Comment
Coal mining report	X		Non-residential Coal Authority mining report (see Appendix B)
Other mining records		X	
Historic OS plans		X	
Geological plans	X		OS 1/10,000 scale geological sheet NS76NE (see Section 2.1 and Appendix C) Lanarkshire 1/10560 scale geological sheet 8NE (see Section 2.1 and Appendix D)
BGS Boreholes	X		NS76NE231 Moffat View Plains (see Section 2.2 and Appendix E)
Other		X	

2.1 Geological plans

The 1/10000 scale geological sheet NS76NE shows the bedrock geology of the site and its surrounding area (see Appendix C). The Airdrie Virtuewell Coal, of thickness 0.6m to 1.0m, is shown to outcrop approximately 60m to the south of the site and is shown to dip in a north-northwest direction. The seam interval between the Virtuewell Coal and the overlying Airdrie Blackband Ironstone and Coatbridge Musselband Coal is recorded on the 1/10560 scale geological sheet Lanarkshire 8NE at E 279025, N 667175 (see Appendix D).

2.2 BGS boreholes

The nearest available borehole data is from the Moffat View Plains Borehole No.1 (see Appendix E) which is located some 370m to the northwest of the site at E 279430, N 667040. The borehole log shows superficial deposits of circa 12m thick.

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3. Identification of the site specific risks

Issues found against records	Yes	No	Risk assessment (details below)
Underground coal mining (recorded at shallow depths)		X	Shallowest seam worked at depth of 70m
Underground coal mining (probable at shallow depths)	X		See Section 4.1
Mine entries (shafts and adits)	X		See Section 4.2
Coal mining geology (fissures)		X	None recorded in locality
Record of past mine gas emissions or potential		X	None recorded in locality
Recorded coal mining surface hazard	X		See Section 4.2
Surface mining (opencast workings)		X	Nearest surface mining 450m to north west

4. Assessment and mitigation strategy proposed

4.1 Underground coal mining (probable at shallow depths)

The Airdrie Virtuewell Coal is shown to outcrop approximately 60m to the south of the site and is shown to dip in a north-northwest direction. However the rate of dip is not shown in the local area. The Coatbridge Musselband Coal is shown to outcrop to the northwest of the site some 620m from the outcrop of the Virtuewell Coal on a line struck through the site. The seam interval between the Coatbridge Musselband and the Virtuewell is given as 7 fathoms (12.8m). By interpolation the rate of dip of the strata is approximately 1 in 48. Therefore, potential worked depths of the Virtuewell Coal across the site would be very shallow. These parameters should be regarded as estimates and viewed with caution given the assumptions involved in their calculation.

The next seam below the Virtuewell in the geological sequence is the Ladygrange Coal which is estimated as being some 12m below the Virtuewell. Given that the thickness of the Ladygrange Coal is 0.5m or less then it is considered that this seam is of no risk to potential development of the site.

The nearest available borehole data (see Section 2.2) gives the depth of superficial deposits as some 12m (see Appendix E). However, given that the shaft cap referred to in Section 4.2 below is founded at a depth of 3.5m, it is probable that the thickness of superficial deposits at the site is considerably less than 12m. Notwithstanding, the thickness of superficial deposits in the area of the site should be regarded as uncertain.

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Site investigation boreholes should be drilled at the site and should be assessed by a suitably qualified person to establish whether the Virtuewell Coal has been worked beneath the site. Should the seam be proven to be intact there would be no risk to the potential development.

Should workings in the Virtuewell Coal be proven, a comprehensive programme of drilling should be undertaken across the site on a 6m square grid pattern to prove the extent and orientation of the workings, which may inform the development footprint. After further consideration by a suitably qualified person, ground stabilisation techniques using grout injection in compliance with CIRIA SP32 'Construction over Abandoned Mineworkings' should be employed across the 6m grid pattern and, where required, on an intermediate 3m square grid pattern.

It is expected, as part of normal practice, that gas monitoring will be undertaken during these works in accordance with the Coal Authority, HSE and BDA guidance document 'Guidance on managing the risk of hazardous gases when drilling or piling near coal'.

4.2 Mine entries (shafts and adits)

The Coal Authority mining report (see Appendix A) refers to a shaft that is located approximately 5m outside the south western boundary of the site. The shaft was discovered following a collapse of ground that was the subject of a surface hazard and was found to be loosely filled. The shaft was covered by a reinforced concrete cap of 6m square and 0.55m thick at a depth of 3.5m in 2003.

Given the treatment afforded to the shaft it is not considered as a risk to potential development.

5 Conclusion

A desk-based review of coal mining legacy issues in relation to the site has been undertaken. Risks identified are:

- The presence of probable unrecorded shallow workings.
- The presence of a mine entry within reporting distance of the site boundary.

In relation to the probable unrecorded shallow workings, site investigation is required to assess the risk to the potential development and possibly inform the development footprint. Further mitigation measures, in the form of ground stabilisation works, may be required.

Risk associated with the mine entry does not require mitigation.

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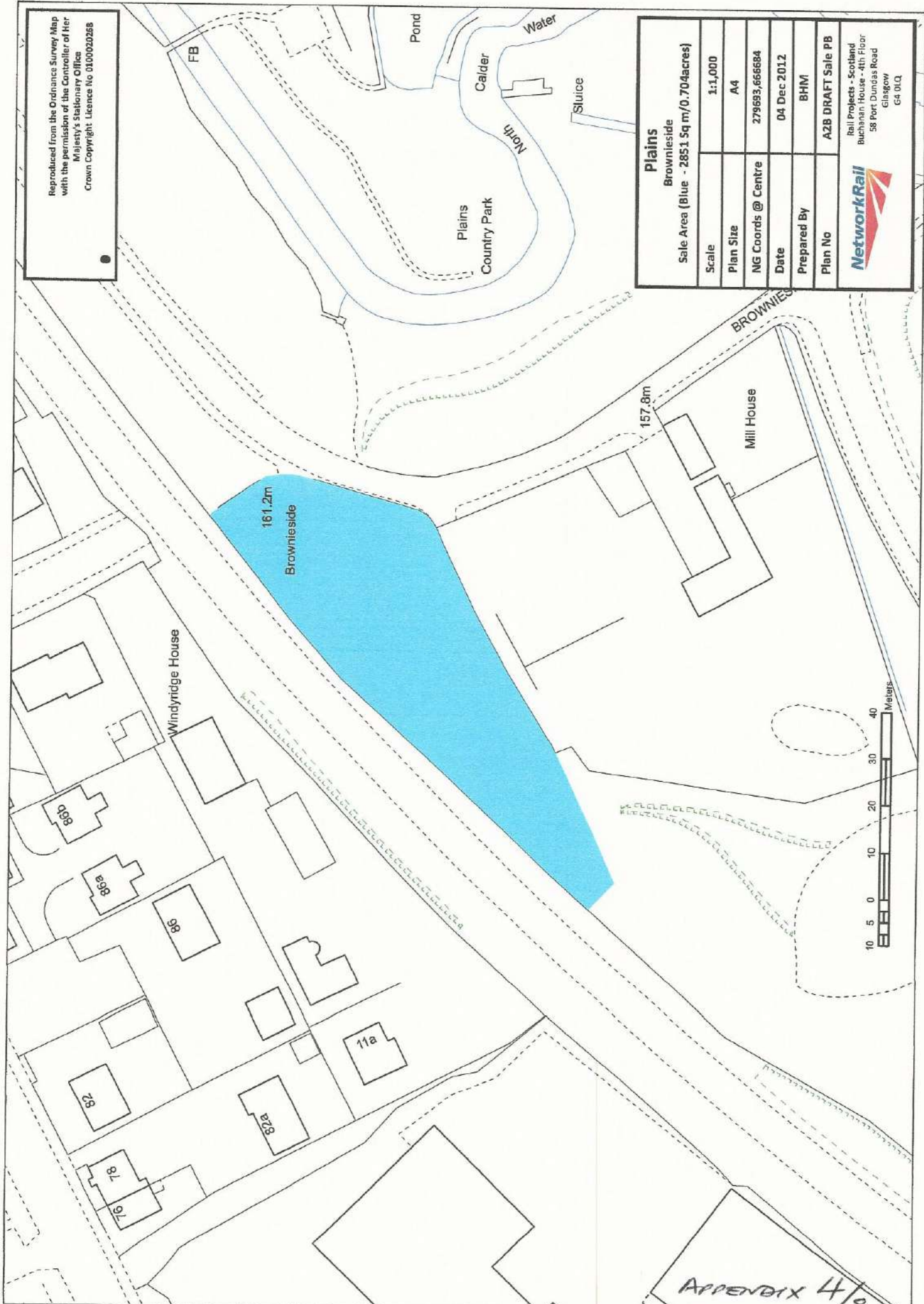
6 Appendices

Appendix A Site location plan

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Reproduced from the Ordnance Survey Map
with the permission of the Controller of Her
Majesty's Stationary Office
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Plains	
Brownieside	
Sale Area (Blue - 2851 Sq m/0.704acres)	
Scale	1:1,000
Plan Size	A4
NG Coords @ Centre	279693,666684
Date	04 Dec 2012
Prepared By	BHM
Plan No	A2B DRAFT Sale PB
	
Rail Projects - Scotland Buchanan House - 4th Floor 58 Port Dundas Road Glasgow G4 0LQ	



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Appendix B Coal mining report

APPENDIX 4/19

THE COAL AUTHORITY
200 LICHFIELD LANE
MANSFIELD
NOTTINGHAMSHIRE
NG18 4RG

Our reference: 71001070869003
Your reference:
Date of your enquiry: 29 September 2015
Date we received your enquiry: 29 September 2015
Date of issue: 29 September 2015

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

Non-Residential Coal Authority Mining Report

BROWNIESIDE , PLAINS,

This report is based on and limited to the records held by the Coal Authority, at the time we answer the search.

Coal mining

See comments below

Information from the Coal Authority

Underground coal mining

Past

The property is in the likely zone of influence from workings in 2 seams of coal at 70m to 100m depth, and last worked in 1902.

Any ground movement from these coal workings should have stopped by now.

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 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

Within, or within 20 metres of, the boundary of the property there is 1 mine entry, the approximate position of which is shown on the attached plan.

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Our records disclose the following information:

279666-001. Following a ground collapse the shaft was investigated and found to be loosely filled. The existing voids were filled with hardcore and the shaft covered with a reinforced concrete cap 6 metres square and 0.55 metres thick. The cap was sited 3.5 metres below ground level. These works were completed in May 2003 by International Mining Consultants acting on behalf of the Coal Authority..

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

For an additional fee, the Coal Authority will provide a supplementary Mine Entry Interpretive Report. The report will provide a separate assessment for the mine entry (entries) referred to in this report. It will give details based on information in the Coal Authority's possession, together with an opinion on the likelihood of mining subsidence damage arising from ground movement as a consequence of the existence of the mine entry/entries. It will also give details of the remedies available for subsidence damage where the mine entry was sunk in connection with coal mining. Please note that it may not be possible to produce a report if the main building to the property cannot be identified from Coal Authority plans (ie. for development sites and new build).

For further advice on how to order this additional information visit www.groundstability.com or telephone 0345 7626 848.

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 not in an area for which a notice of entitlement to withdraw support has been published.

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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

The attached plan shows the approximate location of the disused mine entry/entries referred to in this report. For reasons of clarity, mine entry symbols may not be drawn to the same scale as the plan.

Property owners have the benefit of statutory protection (under the Coal Mining Subsidence act 1991*). This contains provision for the making good, to the reasonable satisfaction of the owner, of physical damage from disused coal mine workings including disused coal mine entries. A leaflet setting out the rights and the obligations of either the Coal Authority or other responsible persons under the 1991 Act can be obtained by telephoning 0345 762 6848.

If you wish to discuss the relevance of any of the information contained in this report you should seek the advice of a qualified mining engineer or surveyor. If you or your adviser wish to examine the source plans from which the information has been taken these are normally available at our Mansfield office, free of charge, by prior appointment, telephone 01623 637225. Should you or your adviser wish to carry out any physical investigations that may enter, disturb or interfere with any disused mine entry the prior permission of the owner must be sought. For coal mine entries the owner will normally be the Coal Authority.

The Coal Authority, regardless of responsibility and in conjunction with other public bodies, provide an emergency call out facility in coalfield areas to assess the public safety implications of mining features (including disused mine entries). Our emergency telephone number at all times is 01623 646333.

*Note, this Act does not apply where coal was worked or gotten by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester.

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.

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Additional Remarks

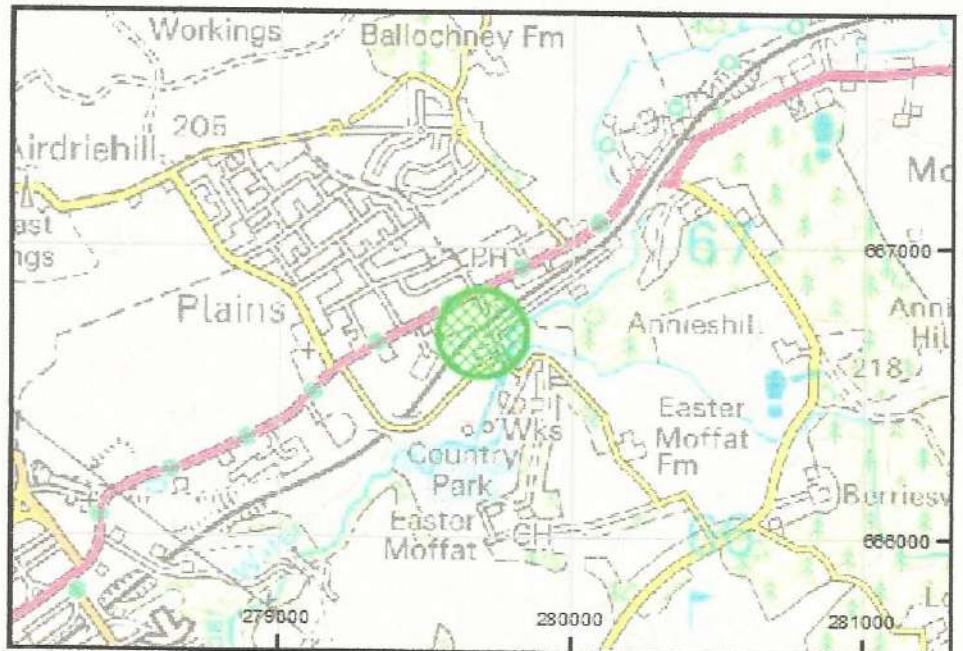
Information provided by the Coal Authority in this report is compiled in response to the Law Society's Con29M Coal Mining and Brine Subsidence Claim enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL. Please note that Brine Subsidence 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's Terms and Conditions applicable at the time the report was produced.

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Location map



Approximate position of property



Enquiry boundary

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Key

Approximate position of enquiry boundary shown



Disused Adit or Mineshaft



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Appendix C Extract from OS geological sheet

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DOL 16

Appendix D Extract from County geological sheet

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Plains

APPENDIX 4
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B.C.I.
d⁴

B.C.I.
d³

Water Mill
Farm

PUBLIC
PARK

Springbank
College

Appendix E Extract from BGS borehole log

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British Geological Survey

NATURAL ENVIRONMENT RESEARCH COUNCIL

BGS ID: 922202 : BGS Reference: NS76NE231

British National Grid (27700) : 279430,667040

Report an issue with this borehole

<< < Prev Page 1 of 2 [v] Next > >>

SECTION OF MOFFAT VIEW PLAINS BOREHOLE NO. 1 231

..... Surface Level..... O.D.

Communicated..... by.....

Date of boring or sinking..... Borer.....

One-inch Map..... Six-inch Map..... NS. 76. NE

	Thickness		Depth from Surface	
	Metres	Metres	Metres	Metres
Made ground	1	09	1	09
Peat			2	33
Till, cored at base from 12.93 m	10	60	13	67
Blackband	0	17	13	84
COAL, bright banded, broken	0	18	14	00
Seatrock, silt and clay grade, grey	0	05	14	05
COAL, bright	0	05	14	10
Sandstone, fine grained, siltstone ribs, rooky grey			15	12
Siltstone with mudstone bands			15	70
COAL, bright banded; 3 cm seen	0	10	15	80
Seatrock, sandy	0	23	16	03
Sandstone, fine to medium grained, pale grey, silty laminae in upper part, sharp base	5	64	21	67
Mudstone, silty grey, many silty ribs in upper part, occasional sandy ribs, <u>NALADITES</u>			26	65
Mudstone, dark grey, mainly crushed, <u>LINGULA</u> (Queenlie Marine Band)			28	66

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A silhouette illustration of a group of people standing on a hill. The figures are in various poses, some holding papers or equipment, suggesting a professional or construction-related gathering. The background is a light, hazy sky.

The Coal Authority

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Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

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