

Report No. BC/MB/06.19.04.

**Mining Risk Assessment:
Land at 6 Criccieth Grove, Castle Park Estate,
Merthyr Tydfil.**

Prepared on behalf of:

Mrs Jeanette Griffiths.

By:



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THE ENTERPRISE CENTRE, MERTHYR INDUSTRIAL PARK,
PENTREBACH, MERTHYR TYDFIL, SOUTH WALES, CF48 4DR.
TEL: 01443 693353, FAX: 01443 693351
EMAIL: SALES@BLANDFORDCONSULTING.COM
WWW.BLANDFORDCONSULTING.COM

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Mining Risk Assessment: Land at 6 Criccieth Grove, Castle Park Estate, Merthyr Tydfil.

Contents.

	Page:
1. Introduction	1
2. Brief Description of the Site	2
3. Geology of the Site	2
4. Mining History	4
5. Mine Gases	4
6. Radon Gas	7
7. Risk Assessment: Discussion and Recommendations	7

List of Plans

Drawing No:		Scale:
<i>BC/MB/06.19.04.01.</i>	<i>General Location Plan.</i>	<i>1:50,000.</i>
<i>BC/MB/06.19.04.02.</i>	<i>Geology Plan.</i>	<i>1:10,560.</i>
<i>BC/MB/06.19.04.03.</i>	<i>Detailed Location Plan.</i>	<i>1:1,250.</i>

Appendix I

Copy of The Coal Authority's Report, reference no. 51002130648001.

Mining Risk Assessment: Land at 6 Criccieth Grove, Castle Park Estate, Merthyr Tydfil.

1 Introduction

This report has been prepared on behalf of our client:

*Mrs Jeanette Griffiths,
6 Criccieth Grove,
Castle Park Estate,
Merthyr Tydfil,
CF48 1JY*

and relates to land at 6 Criccieth Grove on Castle Park Estate, where it is proposed to erect a detached dwelling. This report discusses the geology and mining history of the Site and the immediately surrounding area as they may affect the construction of the proposed dwellings and thereby assesses the mining risk to the proposed development. Recommendations are made for site investigation to examine the risk from shallow mine workings in greater detail.

The following sources of data were used in the compilation of this report:

- i) Research of published geological records;*
- ii) Research of mining records held at The Coal Authority's archive in Mansfield;*
- iii) The findings of The Coal Authority's report, reference no. 51002130648001;*
- iv) Research of The Coal Authority's interactive map, accessed on the 13th June 2019;*
- v) Research of Public Health England's interactive Radon map and*
- vi) the archive records of Blandford Consulting.*

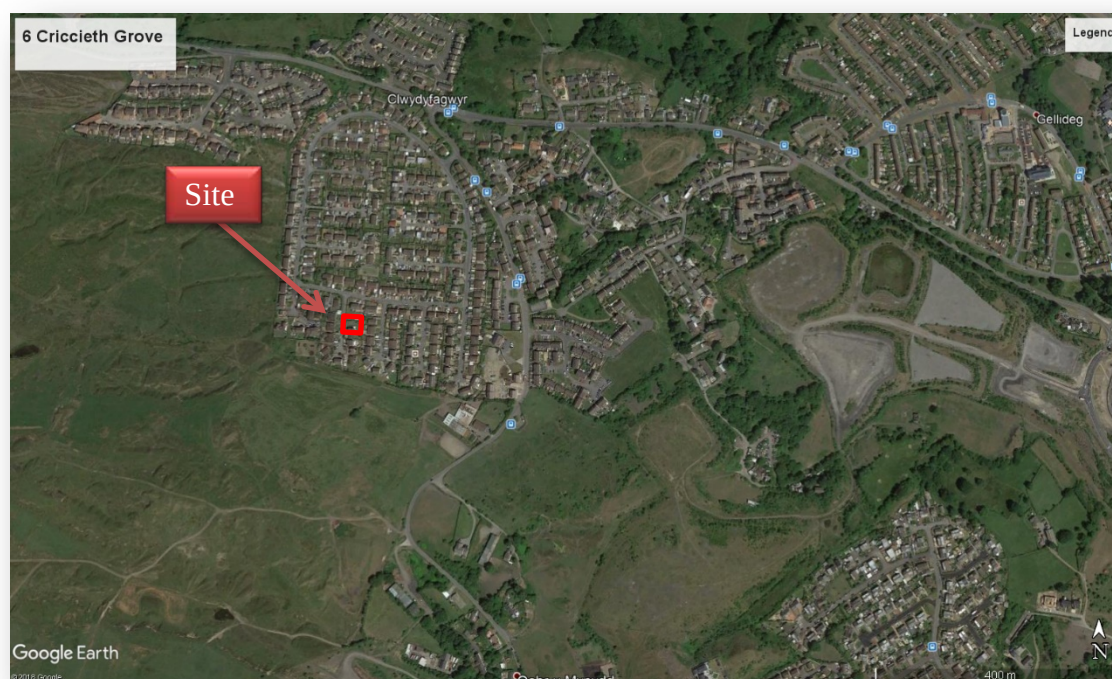
The findings of this report are necessarily based upon the data used in its compilation and may be amended in the future in the light of additional material information. The report must only be used in its entirety for its stated purpose.

/Cont....

2 Brief Description of the Site

The parcel of land that is the subject of this report ('the Site') is located at the north-western margins of Merthyr Tydfil and is approximately 5.5 km north-west of the centre of the town (see Figure 1 and *General Location Plan, drawing no. BC/MB/06.19.04.01*). The Site is located on north-easterly facing slopes and is at an approximate elevation of 321m aod: it is rectangular in outline with approximate maximum dimensions of 25m and 12m (see *Detailed Location Plan, drawing no. BC/MB/06.19.04.03*). The Site lies within a mixed residential area where houses and bungalows are a mixture of terraced, semi-detached and detached. There are sports fields to the west and north-west of the Site.

Figure 1
Aerial View of Site



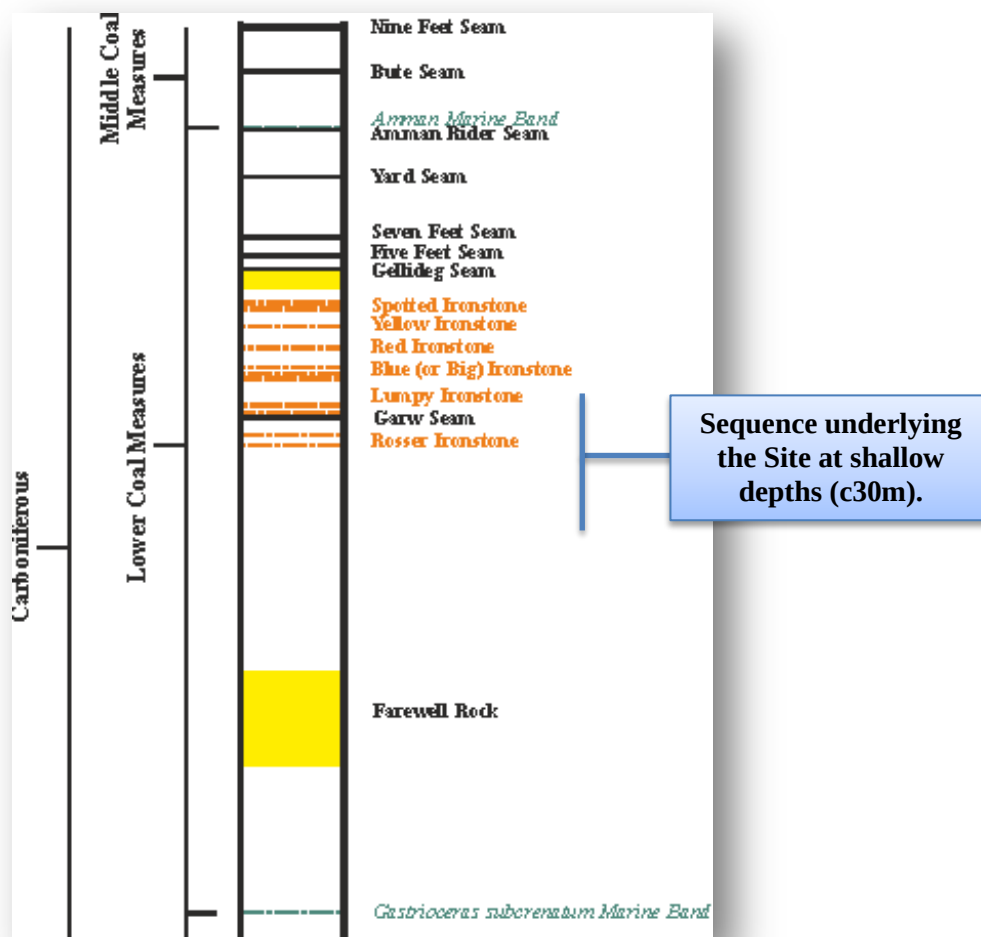
3 Geology of the Site

The Site is situated at the northern margin of the South Wales Coalfield and is underlain at shallow depths with strata assigned to the Lower Coal Measures, a sub-division of the Upper Carboniferous Period. The published geological sheet for the area at a 1:10,560 scale, SO 00

/Cont....

NE, shows the inferred position of the outcrop of the Garw Seam to be present approximately 50m south-west of the Site (see *Geology Plan, drawing no. BC/MB/06.19.04.02*). The Rosser Ironstone Veins are present below the Garw Seam in the geological sequence (see Figure 2, Part of the Stratigraphic Column). There are no coal seams below the Garw Seam that are thick enough to have supported underground mining operations. The regional dip of the coal measures in this area is 1 in 12 towards the south-west such that the Rosser Vein Ironstones underlie the Site at shallow depths.

Figure 1
Part of the Stratigraphic Column.



The measures of the South Wales Coalfield have been affected by large normal faults, frequently referred to as 'cross faults'. In the Castle Park area these faults have a sinuous trace at the surface and an average trend towards the north-west. Published geological information shows that no such large fault affects the Site.

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The published geological sheet shows the Site to be covered with glacial deposits of Boulder Clay; we have no details of the thickness or engineering properties of the Boulder Clay on the Site. The published geological sheet also shows that the Site is not affected by landslip conditions.

4 Mining History

The general area has experienced extensive underground mining operations for coal and for ironstone dating back at least to the very earliest part of the nineteenth century. The workings were prosecuted from a number of adits driven into the valley sides at or near the outcrops of coal seams and ironstone veins and were supplemented with many shafts, principally to act as a source of air. Our searches identified that the Site may be affected by shallow mine workings in one coal seam, the Garw Seam. The mining information would suggest that the outcrop of the Garw Seam is a further north that is shown on the published geological sheet. There are a number of disused mine entries (adits) in the area north of the Site; their locations suggest that they are ironstone levels that mined the Rosser Ironstones. The adits suggest that the Rosser Ironstones have been mined in the immediate area; the Rosser Ironstones are present within a few metres of the base of the Garw Seam such that any old workings in the Ironstone would be at shallow depths beneath the Site.

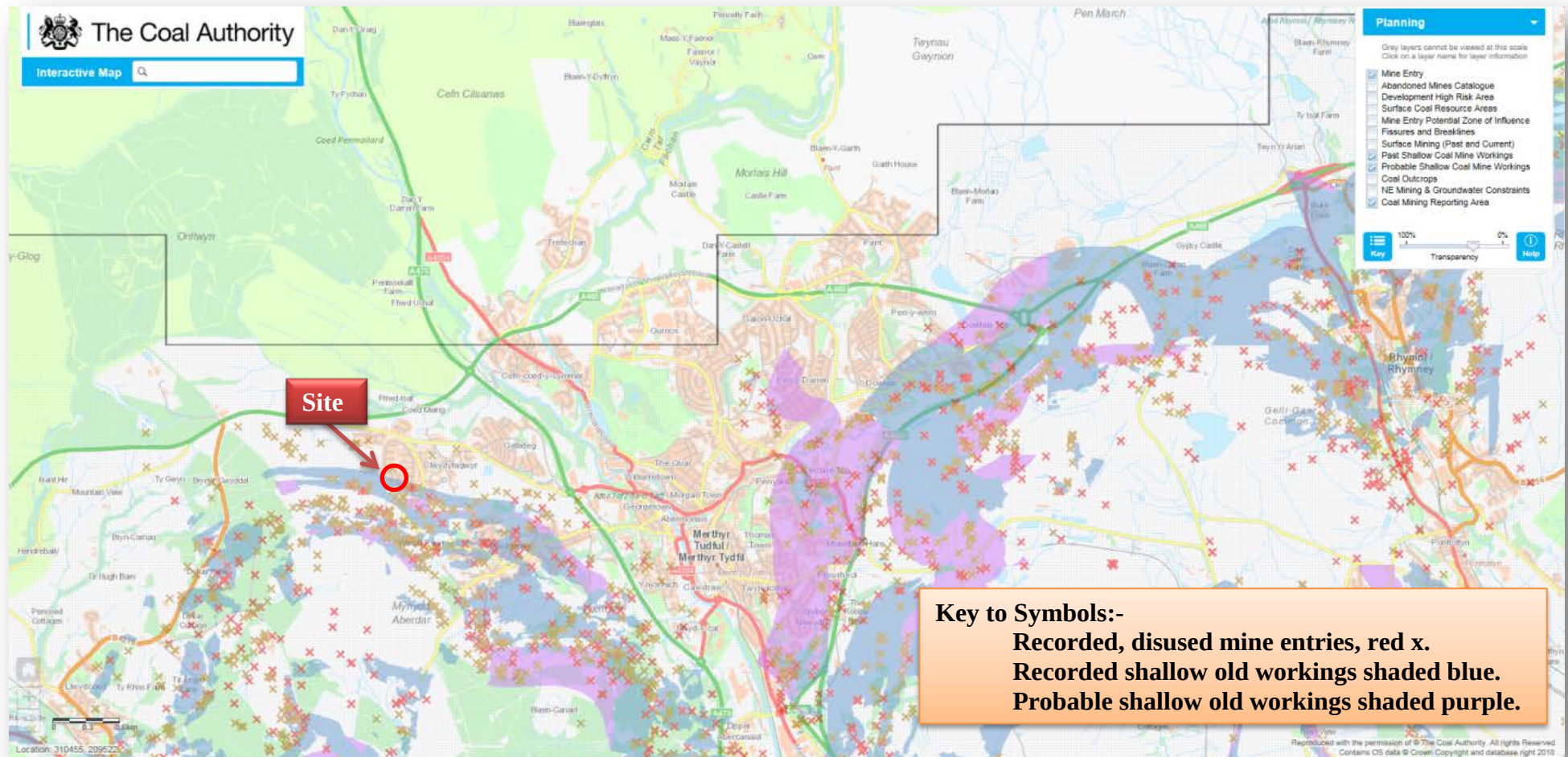
Our searches found no record of a disused shaft or adit within the confines of the Site, a situation confirmed by The Coal Authority *report no. 51002130648001*. The risk of an unrecorded mine entry being present cannot be entirely discounted, but it is unlikely. The Site has not been part of an opencast coal site, and there have been no opencast mining operations close enough to the Site to affect the structural integrity of the proposed development. There are no operating collieries within influencing distance of the Site.

5 Mine Gases

When coal seams are disturbed during mining operations methane can be released and can collect with other mine gases in the mining voids left by the operations. In certain

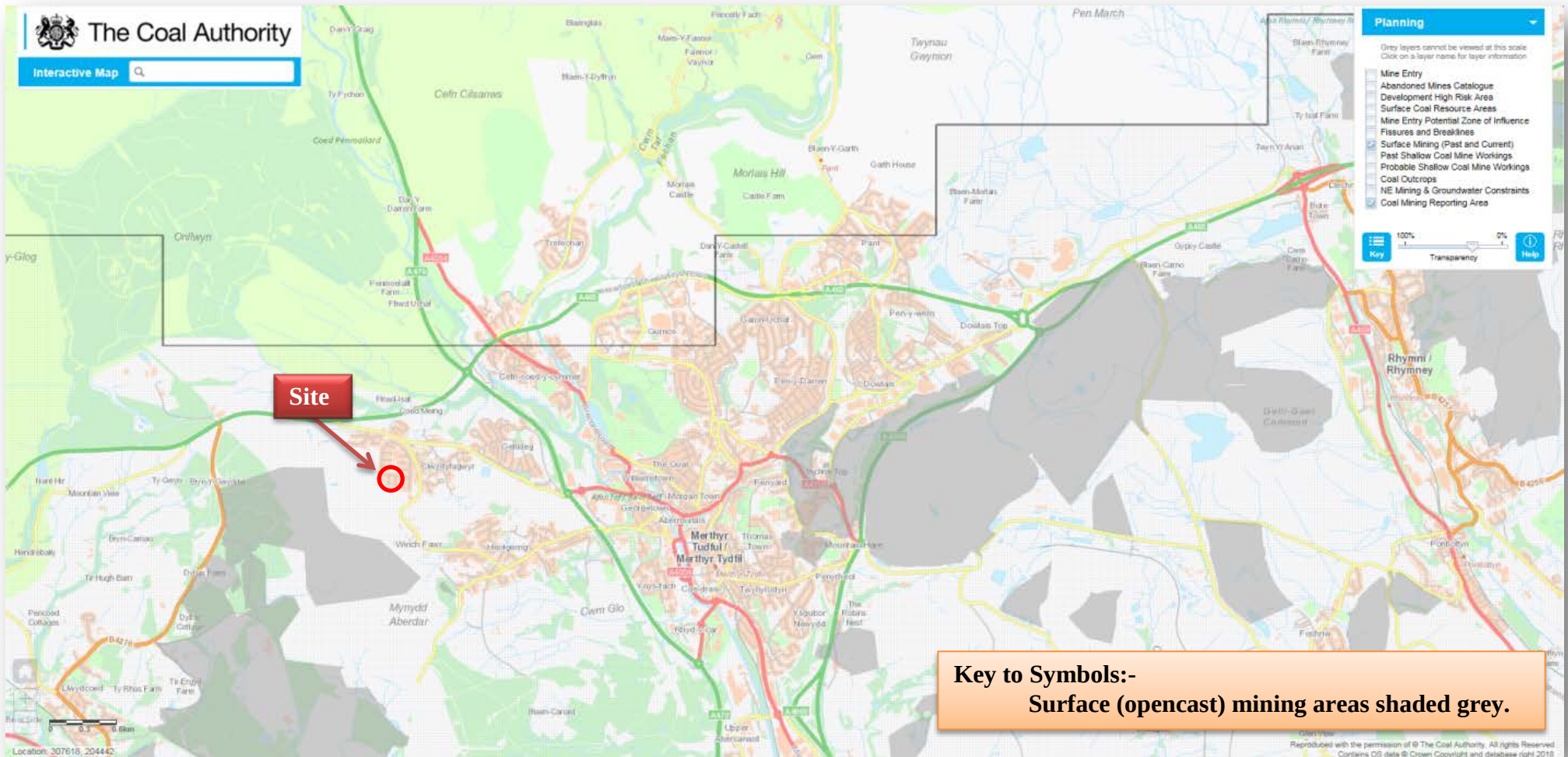
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Figure 3
Print-out of The Coal Authority's Interactive Map
 (Accessed 13th June 2019)



/Cont....

Figure 4
Print-out of The Coal Authority's Interactive Map
(Accessed 13th June 2019)



/Cont....

circumstances mine gases can accumulate within buildings and cause fire or explosion or can result in asphyxiation. A number of studies of the old workings across South Wales and dating back to the mid to late twentieth century have shown that there is little risk from mine gases. This may be as a result of the nature of the coal seams or because the shallow old workings have vented most of the mine gases to atmosphere or is as a result of the combination of the two. The risk from mine gases is considered to be low and The Coal Authority has no record of an emission of mine gas at the Site that has required action.

6 Radon Gas

An assessment of the risk from Radon gas has been carried out by accessing Public Health England's interactive Radon map. The map identifies that the Site lies within an area that is not affected by Radon gas.

7 Risk Assessment: Discussion and Recommendations

7.1 Solid Geology

There are no issues relating to the solid geology of the Site that would affect the structural integrity of the proposed residential development and no further action is required in this respect.

7.2 Mining History

7.2.1 *Shallow Mine Workings*

The locality has experienced extensive mining operations for both coal and ironstone. The Site may be within influencing distance of old workings in one coal seam, the Garw, and old workings in the Rosser Ironstone Veins. It is recommended that a programme of exploration boreholes is drilled on the Site with a view to determining the depth and nature of any shallow mine workings that may be present.

/Cont....

Otherwise, there are no active mines in the locality, deep mines or opencast mines, that would affect the structural integrity of the proposed development and the Site has not been part of an opencast coal site.

7.2.2 Mine Entries

Our searches found no record of disused mine entries within the bounds of the Site or within 20m of its boundary. The potential for an unrecorded air shaft or adit to be present cannot be entirely dismissed as a result of the mining history of the area. If anything unusual is observed during construction works then the work should be stopped immediately and advice should be sought from a suitably experienced Chartered Geologist or from The Coal Authority.

7.2.3 Mine Gases

The risk to the development from mine gases is low but it would be prudent to monitor the recommended boreholes for the presence of mine gases.

7.3 Radon Gas

Public Health England's interactive Radon map identifies that the Site lies within an area that is not affected by Radon gas and the appropriate response for building control purposes is NONE.

7.4 Summary of Risk Assessment

There is no risk to a residential development from the solid geology of the locality. There is a risk of shallow, unrecorded mine workings being present beneath the Site. The presence of a disused mine entry is considered to be very low. There is no risk from Radon gas.

/Cont....

7.5 Summary of Recommendations

A programme of exploration boreholes should be drilled on the Site in order to examine in greater detail the risk from shallow, unrecorded mine workings; the boreholes should be monitored for the presence of mine gases. The boreholes should be designed and supervised by a Chartered Geologist and will require a permit from The Coal Authority.

If any unusual feature that might indicate the presence of a disused mine entry is encountered during excavation works on the Site the work must be stopped immediately and advice sought from a suitable experienced Chartered Geologist or from The Coal Authority.

7.6 Foundation Options

In so far as the solid geology of the Site is concerned no particular measures need be included in the design and construction of the foundations.

The findings of the recommended borehole investigation and ground investigation will be needed to inform the appropriate choice of foundation options.



Dr Malcolm Blandford,
Chartered Geologist.

Report Date: 13th June 2019.

Blandford Consulting,
Consultant Geologists and Geotechnical Engineers,
The Enterprise Centre, Merthyr Industrial Park, Pentrebach, Merthyr Tydfil, CF48 4DR.
Tel. No. (01443) 693353. Fax. No. (01443) 693351.

PLANS



THE ENTERPRISE CENTRE,
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CF48 4DR.

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Geologists Working With The Environment....

Study on Land at 6 Criccieth Grove, Castle Park,
Merthyr Tydfil.

General Location Plan.

Plan Scale: 1:50,000.

Key to Symbols:



Approximate Position of Site.

Note:
North is at top of plan.

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Drawing No: BC/MB/06.19.04.01.



Study on Land at 6 Criccieth Grove, Castle Park,
Merthyr Tydfil.

Geology Plan.

Plan Scale: 1:10,560.

Key to Symbols:

 Approximate Position of Site.

Note:
North is at top of plan.

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Drawing No: BC/MB/06.19.04.02.



Study on Land at 6 Criccieth Grove, Castle Park,
Merthyr Tydfil.

Detailed Location Plan.

Plan Scale: 1:1,250.

Key to Symbols:

- Approximate Site Boundary.
- Other Land in Client's Ownership.

Notes:

- North is at top of plan.
- Drawing prepared from plan supplied by client.

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Drawing No: BC/MB/06.19.04.03.

Geologists Working With The Environment...



APPENDIX

**THE COAL AUTHORITY'S
MINING REPORT, REFERENCE
NO. 51002130648001**



THE ENTERPRISE CENTRE,
MERTHYR INDUSTRIAL PARK,
PENTREBACH,
MERTHYR TYDFIL,
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Geologists Working With The Environment....



The Coal
Authority

CON29M

coal mining report

6 CRICCIETH GROVE, SWANSEA ROAD, MERTHYR TYDFIL, CF48 1JY



Known or potential coal mining risks

Past underground coal mining	Page 4
Future underground coal mining	Page 4



Further action

No further reports from the Coal Authority are required. Further information on any next steps can be found in our Professional opinion.

For more information on our reports please visit
www.groundstability.com



Professional opinion

According to the official mining information records held by the Coal Authority at the time of this search, evidence of, or the potential for, coal mining related features have been identified. In view of the coal mining circumstances we would recommend that any planned or future development should follow detailed technical advice before beginning work on site. Please see **page 3** for further details on **Future development**.

Your reference: **BC/MB/06.19.04**
Our reference: **51002130648001**
Date: **13 June 2019**

Client name:
BLANDFORD CONSULTING

If you require any further assistance please
contact our experts on:
0345 762 6848
groundstability@coal.gov.uk

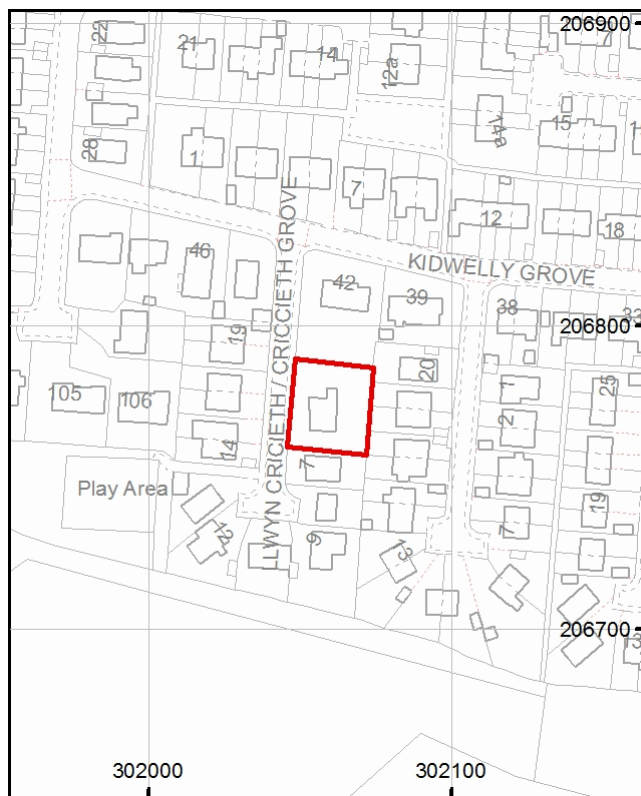


The Law
Society

Enquiry boundary

Key

Approximate position of enquiry boundary shown



We can confirm that the location is
on the coalfield



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Your reference: **BC/MB/06.19.04**
Our reference: **51002130648001**
Date: **13 June 2019**

Client name:
BLANDFORD CONSULTING

If you require any further assistance please
contact our experts on:
0345 762 6848
groundstability@coal.gov.uk

Professional opinion



Future development

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 specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed.

If you are looking to develop, or undertake works, within a coal mining development high risk area your Local Authority planning department may require a Coal Mining Risk Assessment to be undertaken by a qualified mining geologist or engineer. Should you require any additional information then please contact the Coal Authority on **0345 762 6848** or email **cmra@coal.gov.uk**.

Detailed findings

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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 shallow depth, and last worked in 1870.

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 received an application for, and is currently considering whether to grant a licence to remove or work coal by 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 recorded coal mine entries known to the Coal Authority within, or within 20 metres, of the boundary of the property.

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 of the enquiry boundary, 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 Coal Authority, under its Emergency Surface Hazard Call Out procedures.

Statutory cover



Coal mining subsidence

In the unlikely event of any coal mining related subsidence damage, the Coal Authority or the mine operator has a duty to take remedial action in respect of subsidence caused by the withdrawal of support from land or property in connection with lawful coal mining operations.

When the works are the responsibility of the Coal Authority, our dedicated public safety and subsidence team will manage the claim. The house or land owner ("the owner") is covered for these works under the terms of the Coal Mining Subsidence Act 1991 (as amended by the Coal Industry Act 1994). Please 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.

The owner therefore shouldn't incur cost or liability from repairs caused by the withdrawal of support from land and/or property in connection with lawful coal mining operations. Usually these actions will not need to involve your insurance company or mortgage lender.



Coal mining hazards

Our public safety and subsidence team provide a 24 hour a day, 7 days a week hazard reporting service, to help protect the public from hazards caused by past coal workings, such as a mine shaft or shallow working collapse. To report any hazards please call **01623 646 333**. Further information can be found on our website: www.gov.uk/coalauthority.



On behalf of the insurer

Coal Mining Report Insurance Policy Schedule

Policy number: 25839222

The insurer: Liberty Legal Indemnities – underwritten by Liberty Mutual Insurance Europe SE

Binding Authority contract number: RNMFP1903841

Property: 6 CRICCIETH GROVE, SWANSEA ROAD, MERTHYR TYDFIL, CF48 1JY

Report reference number: 51002130648001

Limit of cover: £50,000.00

Dated: 13 June 2019

This policy and schedule shall be read together and any word or expression to which a specific meaning has been attached in either shall bear such meaning wherever it may appear.

Where a Coal Mining Report has been obtained in connection with a sale of the property, cover is provided for the benefit of a purchaser and their lender; in the case of a re-mortgage or where the existing owner chooses to obtain a Coal Mining Report, cover is provided for the benefit of the owner and their lender.

The policy offers protection against loss sustained by the owner of the property if any new problems or adverse entries are revealed in a subsequent Coal Mining Report which were not revealed by the original report to which the policy was attached.

The insured shall at all times comply with the requirements of the Conditions of this Policy.

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Glossary



Key terms

adit - horizontal or sloped entrance to a mine

coal mining subsidence - ground movement caused by the removal of coal by underground mining

Coal Mining Subsidence Act 1991 - the Act setting out the duties of the Coal Authority to repair damage caused by coal mining subsidence

coal mining subsidence damage - damage to land, buildings or structures caused by the removal of coal by underground mining

coal seams - bed of coal of varying thickness

future opencast coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal from the surface

future underground coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal underground. Although it is unlikely, remaining coal reserves could create a possibility for future mining, which would be licensed by the Coal Authority

mine entries - collective name for shafts and adits

payments to owners of former copyhold land - historically, copyhold land gave rights to coal to the copyholder. Legislation was set up to allow others to work this coal, but they had to issue a notice and pay compensation if a copyholder came forward

shaft - vertical entry into a mine

site investigation - investigations of coal mining risks carried out with the Coal Authority's permission

stop notice - a delay to repairs because further coal mining subsidence damage may occur and it would be unwise to carry out permanent repairs

subsidence claim - a formal notice of subsidence damage to the Coal Authority since it was established on 31 October 1994

withdrawal of support - a historic notice informing landowners that the coal beneath their property was going to be worked

working facilities orders - a court order which gave permission, restricted or prevented coal mine workings