

Report No. BC/MB/08.22.04.

**Coal Mining Risk Assessment:
Land at Cwmamman Road,
Glanamman, Ammanford.**

Prepared on behalf of:

Brecon Eco Homes Ltd.

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 off Cwmamman Road, Glanamman, Ammanford.

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List of Plans

Drawing No:		Scale:
<i>BC/MB/08.22.04.01.</i>	<i>General Location Plan.</i>	<i>1:50,000.</i>
<i>BC/MB/08.22.04.02.</i>	<i>Geology Plan.</i>	<i>1:10,560.</i>
<i>BC/MB/08.22.04.03.</i>	<i>Detailed Location Plan.</i>	<i>1:1,250.</i>

Appendix

Copy of The Coal Authority's Report, reference no. 00017270-10.

Mining Risk Assessment: Land off Cwmamman Road, Glanamman, Ammanford.

1 Introduction

This report has been prepared on behalf of our client:

*Brecon Eco Homes Ltd,
The Oaks,
Off Bryncethin Road,
Garnant,
Ammanford,
SA18 1YP.*

and relates to a parcel of land lying to the south of Cwmamman Road in Glanamman, near Ammanford, where a new residential development is proposed. 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 exploratory boreholes and, where necessary other appropriate site investigation such as geophysical surveys, to identify the precise location of a disused mine shaft and to examine in greater detail and, where appropriate, stabilise shallow mine workings that underlie the Site.

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. 00017270-10*
- iv) 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 plot of land that is the subject of this report, 'the Site' is located in the village of Glanamman, approximately 4.5 kilometres east of the centre of Ammanford. The Site is located close to the floor of the Amman Valley and at the south-eastern fringes of the settlement; it is irregular in outline and occupies an area of approximately 1.25 hectares (see *General Location Plan, drawing no. BC/MB/08.22.04.01*). The Site is located in a residential area comprised primarily with a combination of detached and semi-detached dwellings. Dwellings are present on the northern and eastern boundaries of the Site, otherwise the Site is bounded by agricultural enclosures.

3 Geology of the Site

The Site is situated near the north-western margin of the South Wales Coalfield and is underlain at shallow depths by strata assigned to the Middle Coal Measures, a sub-division of the Carboniferous Period. The most recently published geological sheet at 1:10,560 scale (SN 61 SE) shows the inferred positions of the outcrop of the Little Seam to be present approximately 600m north-west of the Site and the inferred position of the outcrop of the Red Seam approximately 400m south of the Site (see *Geology Plan, drawing no. BC/MB/08.22.04.02*). Other coal seams underlie the Site at increasing depths, the principal ones, in descending order, are the Stwrin, Rock, Little, Green, Ddugaled Rider, Ddugaled, Stanllyd and the Braslyd Seams (see *Part of the Stratigraphic Column*, below). The Site lies within an area where the dip of the strata varies considerably as a result of folding and overthrusting; on average the dip is south-easterly.

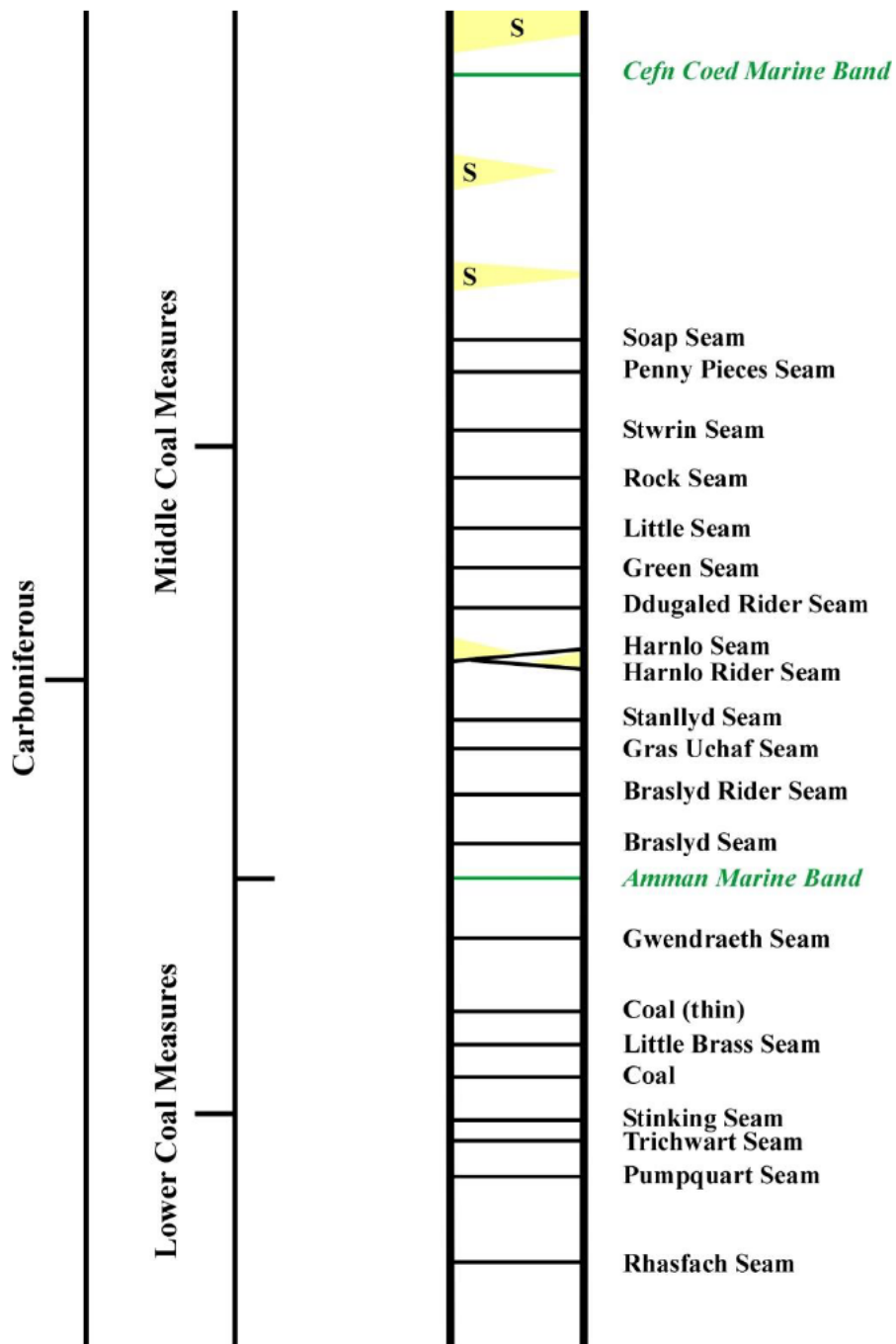
The coal measures of the South Wales Coalfield have been affected by large faults. In the Glanamman area these large faults have a slightly sinuous trace at the surface and an average trend towards the north-west. The published geological sheet indicates that the nearest such large fault to the Site is the Gardners Fault, which is represented in the area of the Site by two main fault planes. The Site is located between the two fault planes which are approximately 300m to the west of the Site and 100m east of it; both are beyond influencing distance in terms of the proposed development.

/Cont....

The published geological sheet also indicates that the coal measures locally are overlain with deposits of locally derived soils. Published geological records indicate that the Site is not affected by landslip.

Part of the Stratigraphic Column.

Scale: 1 inch to 200 feet.



4 Mining History

The area has been subject to extensive mining operations for coal dating back to the late nineteenth century. Coal seams were accessed by adits driven into the mining horizons near their outcrops and by shafts sunk into the deeper coal seams and there are a large number of disused shafts and adits in the locality. Air shafts were also sunk in order to provide ventilation to the underground mining operations. Our search of mining records found the Site to be underlain by old workings in a number of coal seams, some of which are at considerable depths beneath the Site.

The shallowest seams underlying the Site that are thick enough to have supported underground mining operations are the Ddugaled Rider and Ddugaled Seam. The outcrops of these seams are not shown on the published geological sheet, but they are present in the immediate vicinity of the Site so that the two seams underlie the Site at shallow depths. Beneath these seams the Stanlyd Seam is present in the geological sequence; the seam has been mined in the area and underlies the Site at a depth of approximately 35m. As well as recorded old workings, other workings may be present in these and other coal seams for which no record is held at The Coal Authority's archives.

There are records of disused colliery entries, both shafts and adits, within the confines of the Site and the immediately surrounding area (see *Geology Plan, drawing no. BC/MB/08.22.04.02*). A pair of disused adits and a disused air shaft are present approximately 50m west of the north-western corner of the Site, immediately to the north of the A 474; two further disused adits are also present in the same area. This cluster of disused mine entries indicate that a significant mining operation was once present, probably exploiting either the Ddugaled Rider or Ddugaled Seam. Workings associated with this mining operation would extend beneath the Site at relatively shallow depths.

A disused air shaft is also present within the confines of the Site (see *Geology Plan, drawing no. BC/MB/08.22.04.02 and The Coal authority's report in the appendix*).

/Cont....

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

5 Mine Gases

Mine gasses can accumulate in abandoned old workings and may vent to the atmosphere over time. We are not aware of any detailed information relating to mine gases that might be present within the old workings underlying the Site and it is unlikely that such detailed information exists.

6 Risk Assessment: Discussion and Recommendations

6.1 Solid Geology

There are no features associated with the solid geology of the Site that would require any particular measures to be included in the design and construction of the foundations for the proposed dwellings. It is recommended that no further action is required in this respect.

6.2 Mining History

6.2.1 Shallow Mine Workings

The area has been subject to extensive underground mining operations since the late nineteenth century. The Ddugaled Rider and/or Ddugaled Seam are those that underlie the Site at the shallowest depths and that are thick enough to have supported underground mining operations. The group of disused adits and an air shaft present immediately to the west of the north-western corner of the Site indicate the presence of shallow mining operations, including in these seams, beneath the Site. The Stanllyd Seam, which has also been mined in the locality,

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underlies the Site at a depth of approximately 35m. In the absence of information relating to the thickness of superficial deposits on the Site it is not possible to rule out the possibility that workings in the Stanllyd Seam are shallow enough to pose a risk of surface subsidence, although it is likely that the Seam is at or close to the limit of those depths where mining voids would be capable of collapsing to the surface.

Thus, there is a risk of surface subsidence on the Site as a result of shallow old workings underlying the Site in at least one, and perhaps two or three, coal seams. This subsidence poses a risk of inducing structural distress to the proposed dwellings and hard constructions. Old workings in coal seams beneath the Stanllyd Seam in the geological sequence would be too deep to induce surface subsidence likely to affect the structural integrity of the proposed dwellings.

6.2.2 *Mine Entries*

Mining records indicate the presence of a disused air shaft within the confines of the Site. The Coal Authority has no record that the shaft has been stopped up to an acceptable engineering standard and it must be presumed, until proven to the contrary, that it poses a risk to any surface development there.

To militate against any interaction in the event of the shaft collapsing, no hard development should take place within an exclusion zone to be determined until the risk of interaction has been fully assessed and appropriate protection measures included. The exclusion zone should be based on the findings of an examination of ground conditions in the immediate vicinity of the shaft.

6.2.3 *Mine Gases*

No detailed information is available regarding mine gases that may be present in the shallow mine workings. The local coal seams are of anthracite rank and tend to have a relatively low methane content, suggesting that the risk from mine gases is of a low order. However, the risk should not be ignored and any exploratory

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drilling should monitor mine gases at the site of each borehole and at the position of the air shaft.

6.3 Risk Assessment

There is a risk of surface subsidence across most of the Site as a result of shallow mine workings in at least one coal seam. There is also a risk of surface subsidence/collapse near the disused air shaft within the confines of the Site. The risk from mine gases is unknown but thought to be low.

6.4 Recommendations

The risk resulting from the mining heritage at the Site should be further explored with a combination of exploratory boreholes and, if appropriate, geophysical techniques. These are standard and common place techniques used to examine shallow mine workings and disused mine entries across mining areas such as South Wales. It would be prudent to include in any future exploration programme monitoring to assess the presence or otherwise of mine gases.

The risk from the mining relics should variously be reduced by means of commonly used techniques including, as appropriate, drilling and grouting of shallow mine workings and capping of the shaft. Any drilling and grouting operations found to be necessary will need to be designed around the detailed layout for the development.

The exploratory works and any drilling and grouting operation found to be necessary should be carried out by a Chartered Geologist or other competent person and will require a permit from The Coal Authority.

Dr Malcolm Blandford,
Chartered Geologist.
(Originally Published 2004)

Blandford Consulting,
Consultant Geologists and Geotechnical Engineers,
The Enterprise Centre, Merthyr Industrial Park, Pentrebach, Merthyr Tydfil, CF48 4DR.
Tel. No. [REDACTED]. Fax. No. [REDACTED]

PLANS



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MERTHYR INDUSTRIAL PARK,
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CF48 4DR.

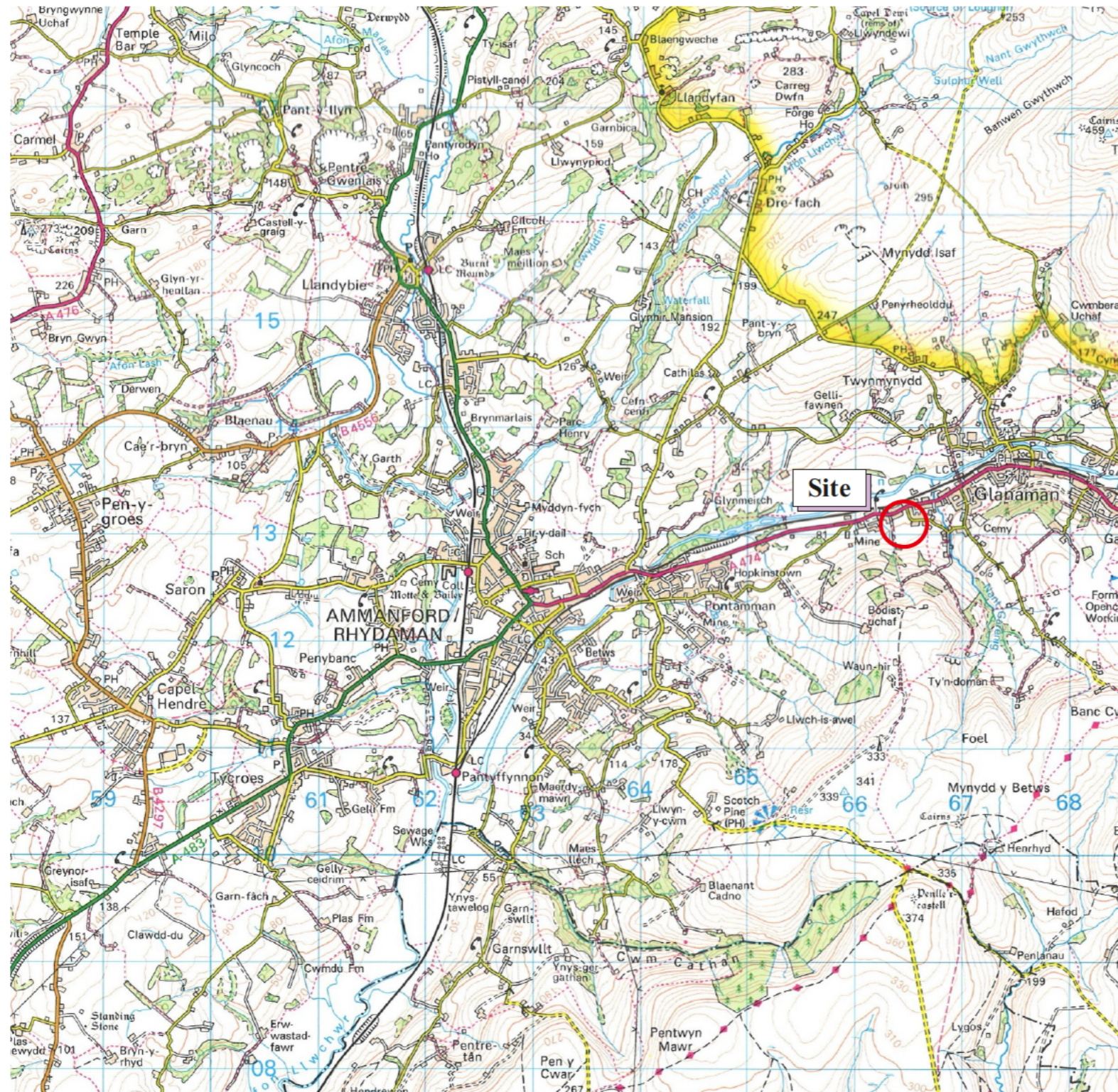
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Geologists Working With The Environment...

Study on Land off Cwmmamman Road,
Glanamman, Ammanford.

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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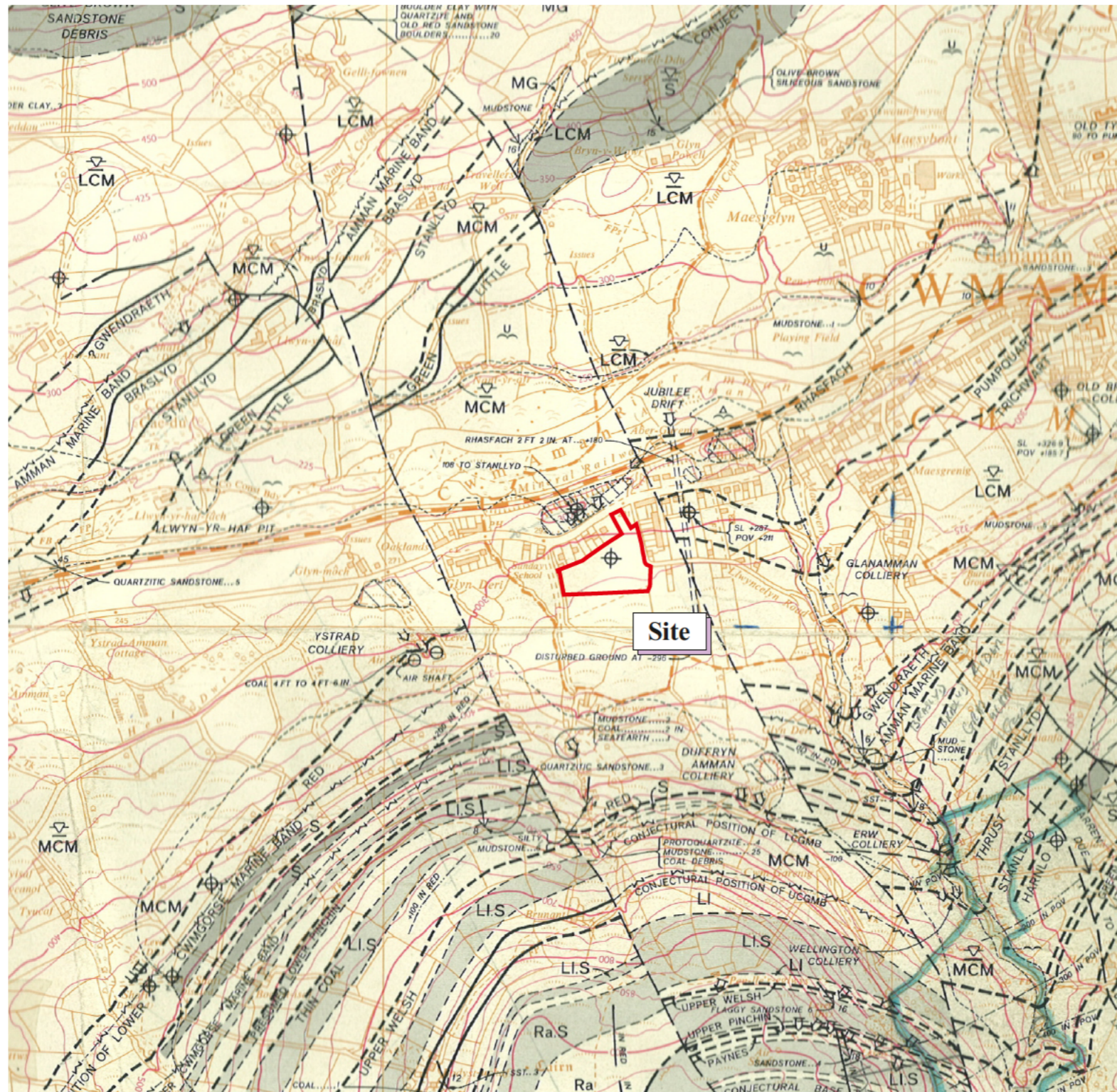
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Drawing No: BC/MB/08.22.04.01.


Study on Land off Cwmmamman Road,
Glanamman, Ammanford.

Geology Plan.

Plan Scale: 1:10,560.

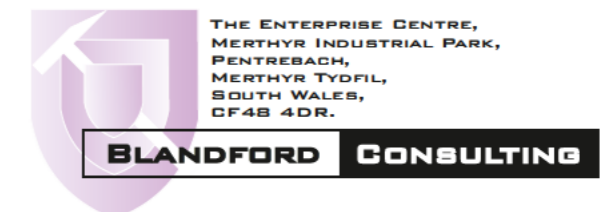


Key to Symbols:

 Approximate Site Boundary.

Note:
North is at top of plan.

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Drawing No: BC/MB/08.22.04.02.

Study on Land off Cwmamman Road,
Glanamman, Ammanford.

Detailed Location Plan.

Plan Scale: 1:1,250.

Key to Symbols:

 Approximate Site Boundary.

Note:

North is at top of plan.

Drawing extracted from
documents provided by client.

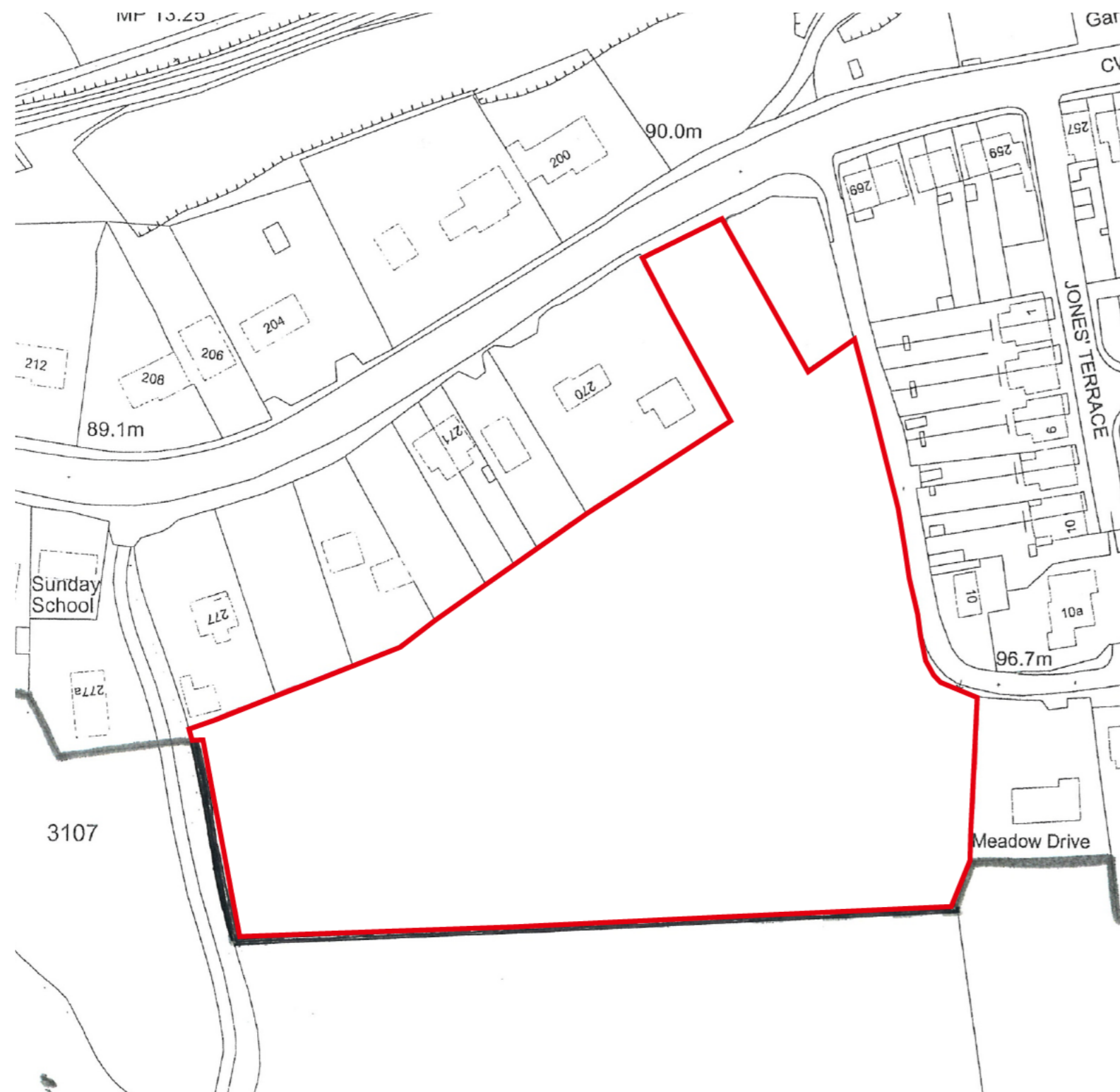
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Drawing No: BC/MB/08.22.04.03.



APPENDIX I

**COPY OF THE COAL
AUTHORITY'S MINING
REPORT, REFERENCE NO.
00017270-10.**



THE ENTERPRISE CENTRE,
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PENTREBACH,
MERTHYR TYDFIL,
SOUTH WALES,
CF48 4DR.

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Geologists Working With The Environment...

Issued by:

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TIM BLANDFORD,
BLANDFORD CONSULTING,
VENTURE WALES,
MERTHYR TYDFIL INDUSTRIAL PARK,
PENTREBACH,
MERTHYR TYDFIL,
CF48 4DR

Person dealing with this matter: **Louise Tipper**
Our reference: **00017270-10**
Your reference: BC/MB/04.10.04
Electronic Ref: EME_00013657910001_005
RRUID: 005.00013657910001
Date of your enquiry: **21 April 2010**
Date we received your enquiry: **21 April 2010**
Date of issue: **23 April 2010**

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

Coal and Brine Report

Land Off, Cwmamman Road, Glanamman, Ammanford, Carmarthenshire

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	Yes
Brine Compensation District	No

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 shallow to 70m depth, and last worked in 1927.

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 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.

There is no record of what steps, if any, have been taken to treat the mine entry.

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 property since 1 January 1984. 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 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.

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.

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 0845 762 6848 or online at www.coal.gov.uk/services/subsidence. 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 637233. 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.

Information from the Cheshire Brine Subsidence Compensation Board

The property lies outside the Cheshire Brine Compensation District.

Additional remarks

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 2006. The report is compliant with Home Information Pack requirements.

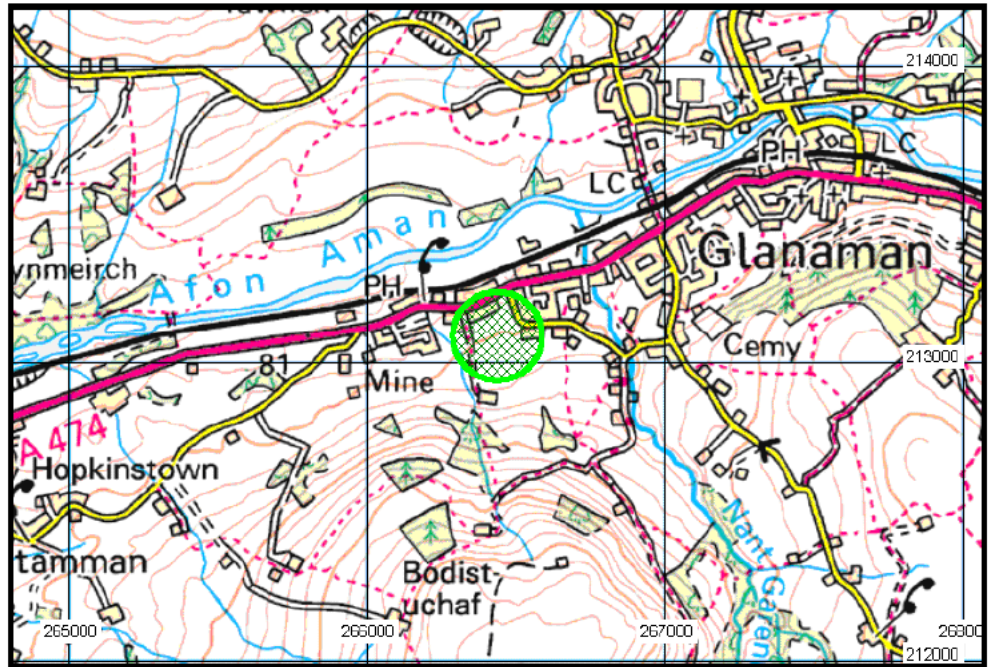
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Date:	23 Apr 2010
Coal and Brine Report at:	Land Off, Cwmamman Road, Glanamman, Ammanford, Carmarthenshire
Reference number:	00017270-10
Cost:	£64.00
Plus VAT:	£11.20
Total received:	£75.20
VAT registration number:	598 5850 68

Location map



Approximate position of property



Enquiry boundary

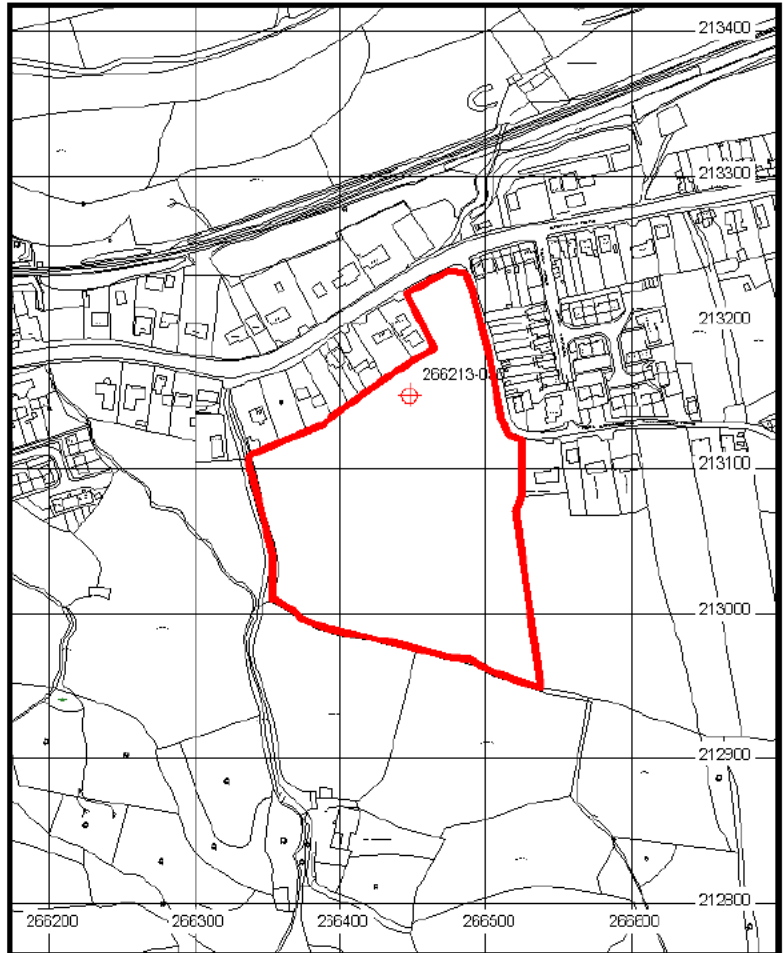
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Key

Approximate position of enquiry boundary shown



Disused Adit or Mineshaft



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THE ENTERPRISE CENTRE, MERTHYR INDUSTRIAL PARK, PENTREBACH, MERTHYR TYDFIL, SOUTH WALES, CF48 4DR. TEL: 01443 693353.