

Appendix G – Coal Mining Risk Assessment

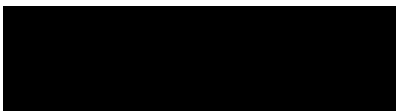
Report No	Date
24039/R2	August 2024
Project TOR CLAWDD, WIND TURBINES – COAL MINING RISK ASSESSMENT	
Client	CENIN

**Spectrum Geo Services
Foxglove Cottage,
Cwm Risca Lane,
Tondy,
BRIDGEND
CF32 0EH**

Report No:	Date:
24039/R2	August 2024

Project:
TOR CLAWDD, WIND TURBINES – COAL MINING RISK ASSESSMENT

Issue Number	Status	Description of Amendments
1	Draft	

Report prepared by:	
Signed 	August 2024

This report is provided for the benefit only of the party to whom it is addressed. Spectrum Geo Services do not extend responsibility to any third party for the whole or any part of the contents. Spectrum Geo Services owes no duty of care in relation to this report to any third party. The investigation and reportage has been undertaken with all reasonable skill, care and due diligence. Spectrum Geo Services disclaims any responsibility to the client or others in respect of any matter(s) outside this agreed scope of the above works.

CONTENTS

1.0 INTRODUCTION.....	4
1.1 Instruction	4
1.2 Introduction.....	4
1.3 Scope of Works	6
1.4 Limitations	7
2.0 SOURCES OF INFORMATION	8
3.0 SITE SPECIFIC COAL MINING RISKS.....	18
4.0 MITIGATION STRATEGY.....	19
5.0 CONCLUSIONS	19
APPENDIX 1.....	20
Coal Authority Consultants Coal Mining Report.....	20
Turbine Locations on 1:10000 BGS Maps	20
Proposed Development	20

All Ordnance Survey mapping used in this report has been purchased from Groundsure or Promap and remains Crown Copyright. The Geological Survey map is from the Author's own collection and is also Crown Copyright. Coal Authority documents are also copyright All plans are orientated north unless otherwise indicated.

This report is supplied in confidence to the client as a Coal Mining Risk Assessment. The author cannot be held responsible for its use for any other purpose or unauthorised use by third parties. The report remains the intellectual property of the author and unauthorised use will result in legal action.

1.0 INTRODUCTION

1.1 Instruction

Spectrum Geo Services (SGS) were requested by Cenin to undertake a Coal Mining Risk Assessment (CMRA) of a site at Tot Clawdd, at approximate post code SA5 7NP.

1.2 Introduction

This Coal Mining Risk Assessment (henceforth C.M.R.A.) has been produced for Cenin. Plans of the proposed development are attached to this report in Appendix 1. The site is classed as being within and without a Development High Risk Area. The reason for this classification will become clear during this assessment. With such a classification the C.A. become statutory consultees for the application and a C.M.R.A. will need to be produced to remove any objections to full planning being granted.

Robert Griffiths BSc. (Hons), MSc., F.G.S, C.Geol., has been commissioned as the competent person to prepare a C.M.R.A. of the proposed development site. The purpose of any C.M.R.A. is to provide the L.P.A. with information on possible coal mining and an assessment of its impact on the ground stability of the site in order to satisfy the L.P.A. that the site is or can be made safe and stable in line with national guidelines. This will be done in line with the template and recommendations of the C.A. document Guidance for Welsh L.P.A.s (version 4, 2017).

The site is centred at NGR 265000 205700 and is at a maximum elevation of approximately 280m. A.O.D. The site location is shown in Figure 1.

24039/R2
August 2024

1.3 Scope of Works

The requirements of a Coal Mining Risk Assessment are described within the Coal Authority document PLN65, as such:

The Coal Authority considers that a Coal Mining Risk Assessment Report should comprise three key stages:

Stage 1:

Obtain coal mining information for the development site

Stage 2:

Use the information to identify what risk coal mining poses to the development

Stage 3:

Identify how coal mining issues have influenced the proposed development and any other mitigation required.

STAGE 1: OBTAIN COAL MINING INFORMATION

The Coal Mining Risk Assessment Report must be based on up-to-date coal mining/geological information.

STAGE 2: IDENTIFY WHAT RISKS COAL MINING POSES TO THE PROPOSED DEVELOPMENT

The Coal Authority would expect an assessment of the site-specific coal mining information, and the identification of any risk to the proposed development, to include consideration of the **cumulative impact** of the following issues:

Are there **recorded coal mine entries** within the site or within 20 metres of the site boundary? Is the proposed development in the likely zone of influence of **past underground coal mining**? Is the proposed development in the likely zone of influence of any **present underground coal workings**?

Is the proposed development within the likely zone of influence of **underground coal workings at shallow depth** (depths of less than 30m)?/Is there a possibility of **unrecorded shallow mine workings and/or mine entries**?. Is there a record of **mine gas** emissions within the site boundary?

Is the proposed development in an area for which the Coal Authority is determining or has granted a **license to remove coal** by underground methods?. Are there known **faults or other lines of weakness** due to coal mining at the site?. Has the site been subject to remedial works by, or on behalf of, the Coal Authority under its **surface hazard** call out procedures?

Is the proposed development within the boundary of a **surface mining/ opencast site from which coal has been removed** by surface mining/ opencast methods?/Is the proposed development within 200 metres of a **surface mining/ opencast site from which coal is being removed**?

STAGE 3: IDENTIFY HOW COAL MINING ISSUES HAVE INFLUENCED THE PROPOSED DEVELOPMENT AND WHETHER ANY OTHER MITIGATION MEASURES ARE REQUIRED

The Coal Mining Risk Assessment Report should conclude by identifying how any coal mining issues have influenced the proposed development – for example through influencing the design and layout of the proposal by identifying areas where built development should not take place owing to the presence of coal mining features, such as mine entries.

The Coal Mining Risk Assessment Report should also identify any other mitigation/treatment/remediation measures that are necessary to ensure that the development is not subject to land instability or other public safety risks associated with former coal mining activities. This could include, for example, the need to incorporate gas proof membranes within buildings and/or the need to treat shallow coal mine workings to ensure stability of land prior to development.

NOTE

Any intrusive activities which intersect, disturb or enter any coal seams, coal mine workings or coal mine entries (shafts and adits) require the prior written permission of the Coal Authority.

The Coal Mining Risk Assessment Report should note whether Coal Authority permission has been obtained/will be required for any site investigation and/or mitigation works.

1.4 Limitations

This report is limited to a review of information contained within a Coal Authority Consultants Report, published geological data, and a search of information regarding historic boreholes in the vicinity.

2.0 SOURCES OF INFORMATION

- a) Coal Authority Consultants Report ref 51003441875001.
 - b) The C.A. interactive viewer.
 - c) The 1 to 10k Geological Survey sheet
 - d) The Memoirs of the Geological Survey of The South Wales Coalfield.
 - e) Historical O.S. mapping.
- 2a) The Consultants Report states that there are recorded underground mine workings of various coal seams beneath the area, the shallowest being within the No3 Swansea at a depth of 9m, dipping at 6 degrees to the south, and last mined in 1970 being 190mm thick.

The Coal Authority have numerous records of mine entries within the search area.

In Section 2 the report states there have been site investigations.

The C.A. have not received any damage notices or subsidence claims for any property within 50m since October 1994 (i.e. since the formation of the C.A. to take liability for legacy mining issues). There are no records of gas emissions requiring action within 500m.

Section 3 states there are no present underground workings or plans for any. There are no Section 46 notices or withdrawal of support notices.

All these facts will feed into the later quantitative risk assessment. In Section 4 the report states potential risks have been identified and should be investigated further as part of any risk assessment. The Consultants Report is attached in Appendix 2.

2b) The C.A. interactive viewer contains a vast amount of information from various sources, particularly on the mining data window. Much of this is not contained within a Consultants Report for reasons unknown. An extract from the planning window can be seen in Figure 4. The site lies within an area of Development High Risk, possibly indicating known shallow mining or unlicensed opencast.

In order to fully understand why sites have a high risk status it is informative to study the Coal Mining Data window. This window is far superior to the planning window as it is at a larger scale. There are multiple datasets which can be turned on and off. An extract from the Mining Data Window is reproduced as Figures 4 and 5 overleaf. For

clarity in Figure 5 - seam levels and outcrops are shown. The green lines are seam levels to Ordnance Datum.

Turbine Specific Comments

T1: This lies in a location to the south of the worked outcrop of the Graigola/ Swansea No.3 Seam.

T2: This lies in a location to the south of the worked outcrop of the Graigola/Swansea No.3 Seam.

T3: This lies in a location close to the Horizon of the Swansea 6 Feet.

T4: This lies in a location to the south of the worked outcrop of the Graigola/Swansea No.3 Seam

T5: This lies in a location to the south of the worked outcrop of the Graigola/Swansea No.3 Seam..

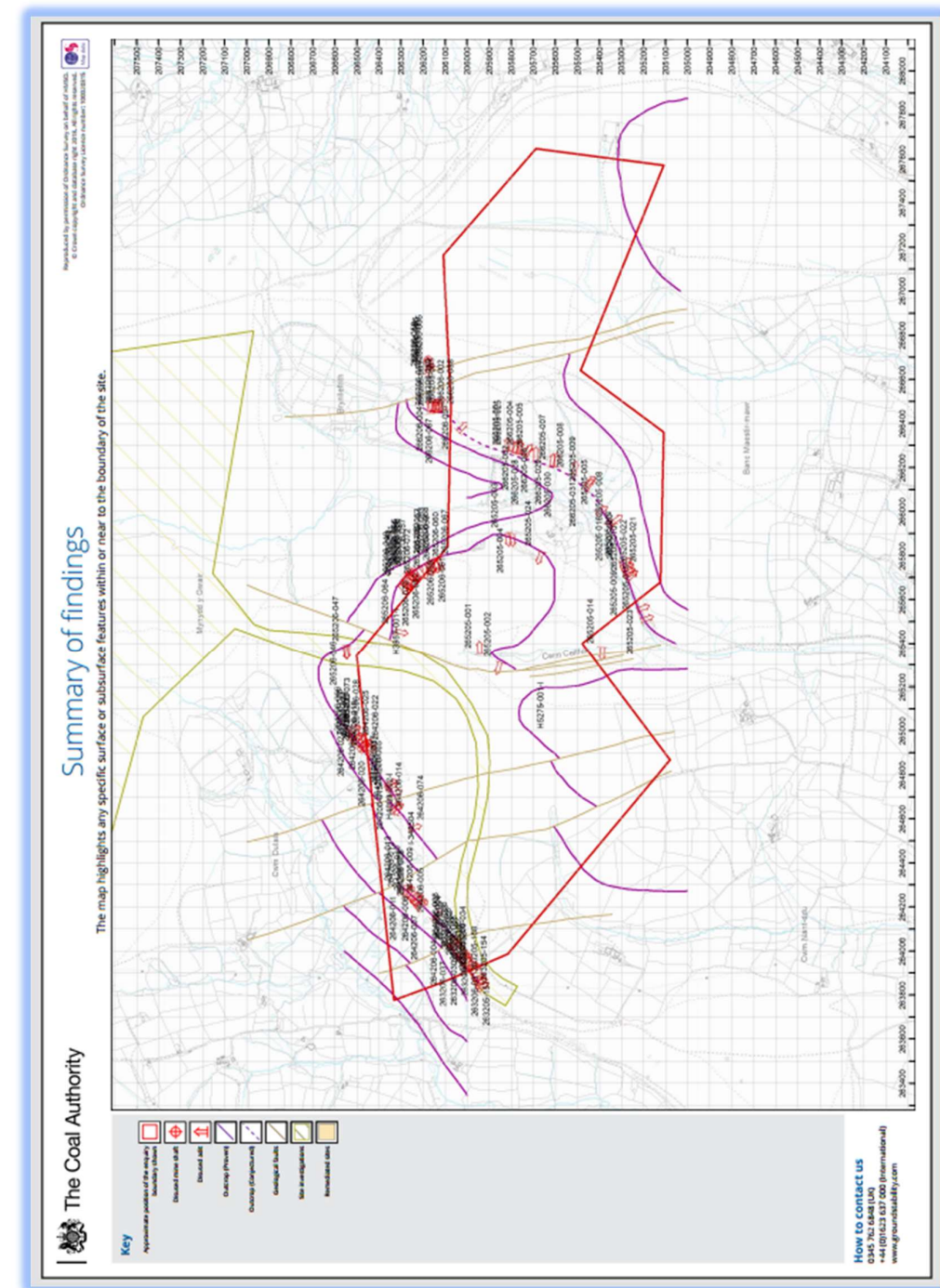
T6: This lies in a location to the south of the worked outcrop of the Graigola/ Swansea No.3 Seam.

T7 & T8: These lie in a location to the west of the worked outcrop of the Graigola/ Swansea No.3 Seam.

T9 & T10: These lie in a location close to the Horizon of the Swansea 6 Feet.

T11, 12, 13 and 14: These lie in locations to the south of the worked outcrop of the Graigola/Swansea No.3 Seam.

T15: This lies in a location close to the Horizon of the Swansea 6 Feet.



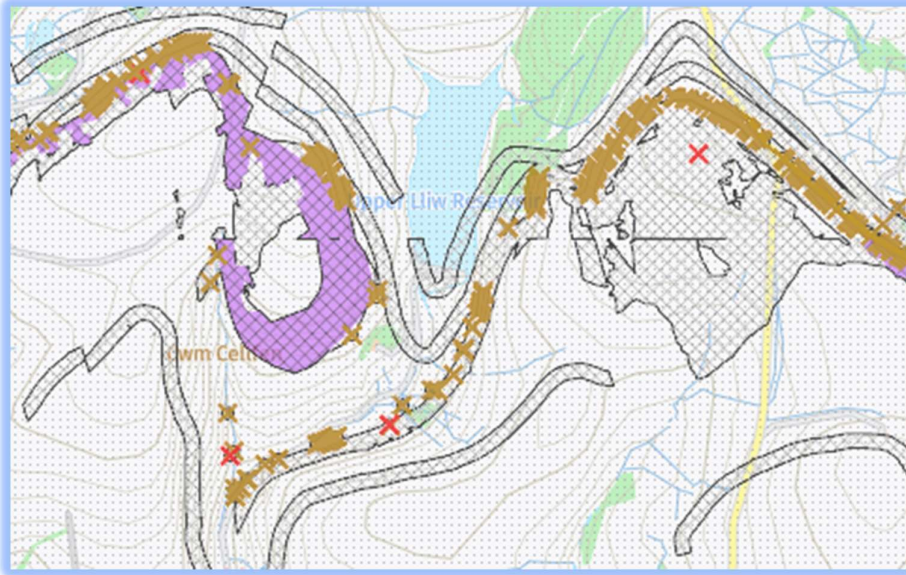


Figure 4: Coal Authority Interactive Viewer, Planning Window Hatched areas are High Development Risk. Purple probable shallow workings.

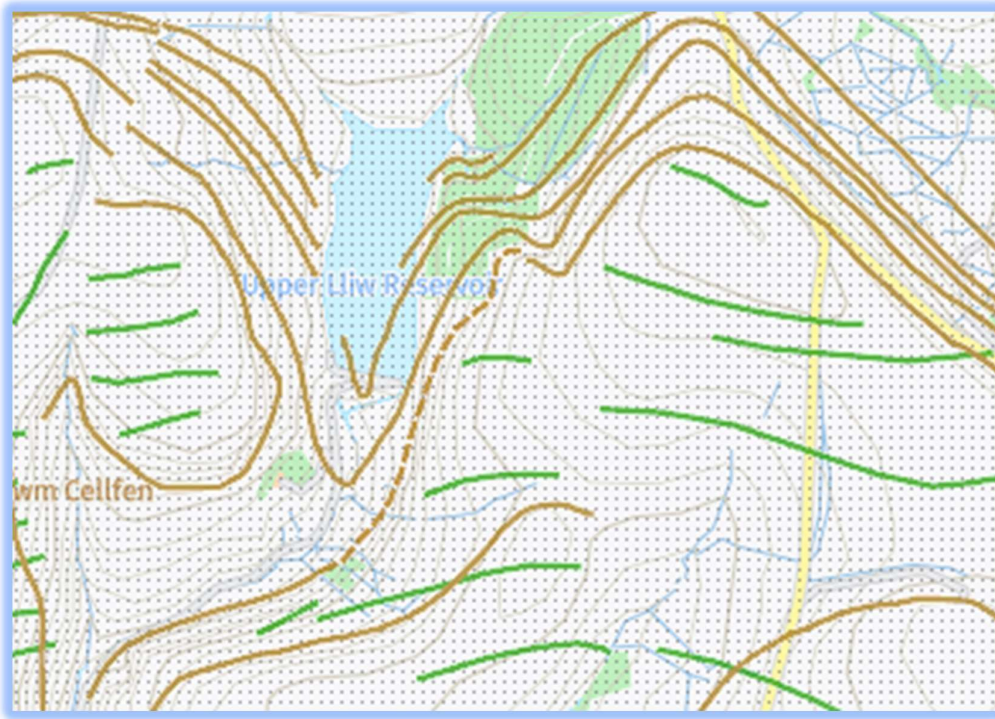


Figure 5: Seam Levels and Contours

2c and d) An extract of the 1 to 10k geological maps of the area have been reproduced as Figures 6, 7 and 8.

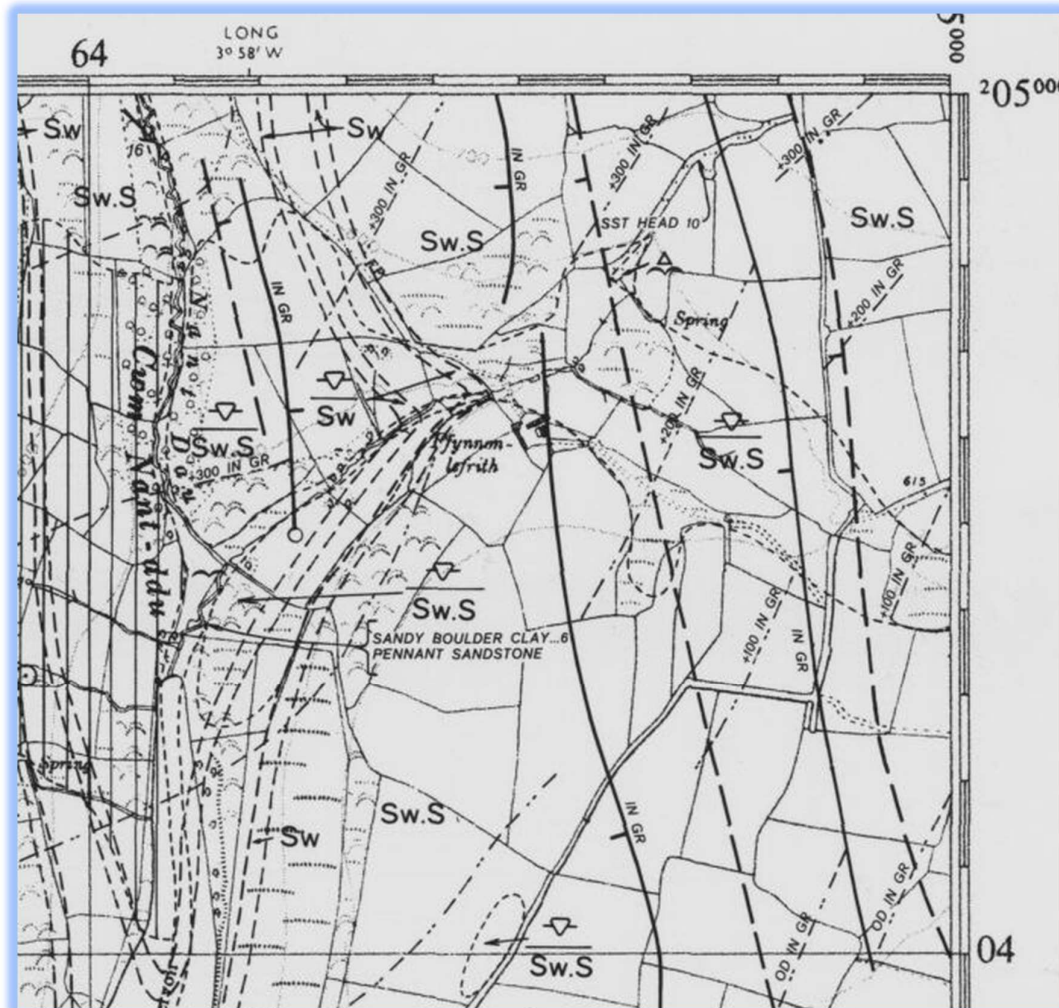


Figure 6: 1 to 10k Geological Survey Map South West

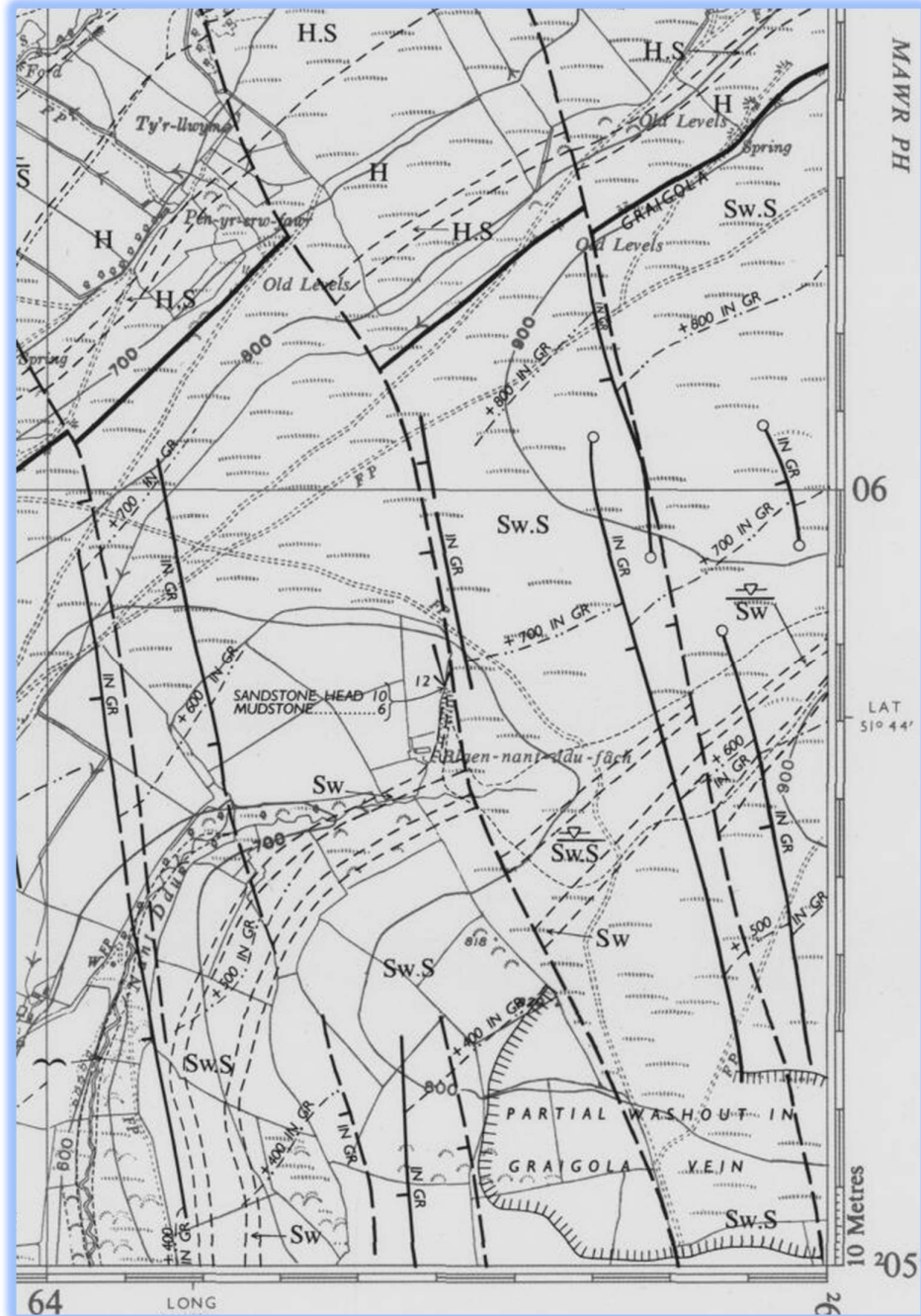


Figure 7: 1 to 10k Geological Survey Map West

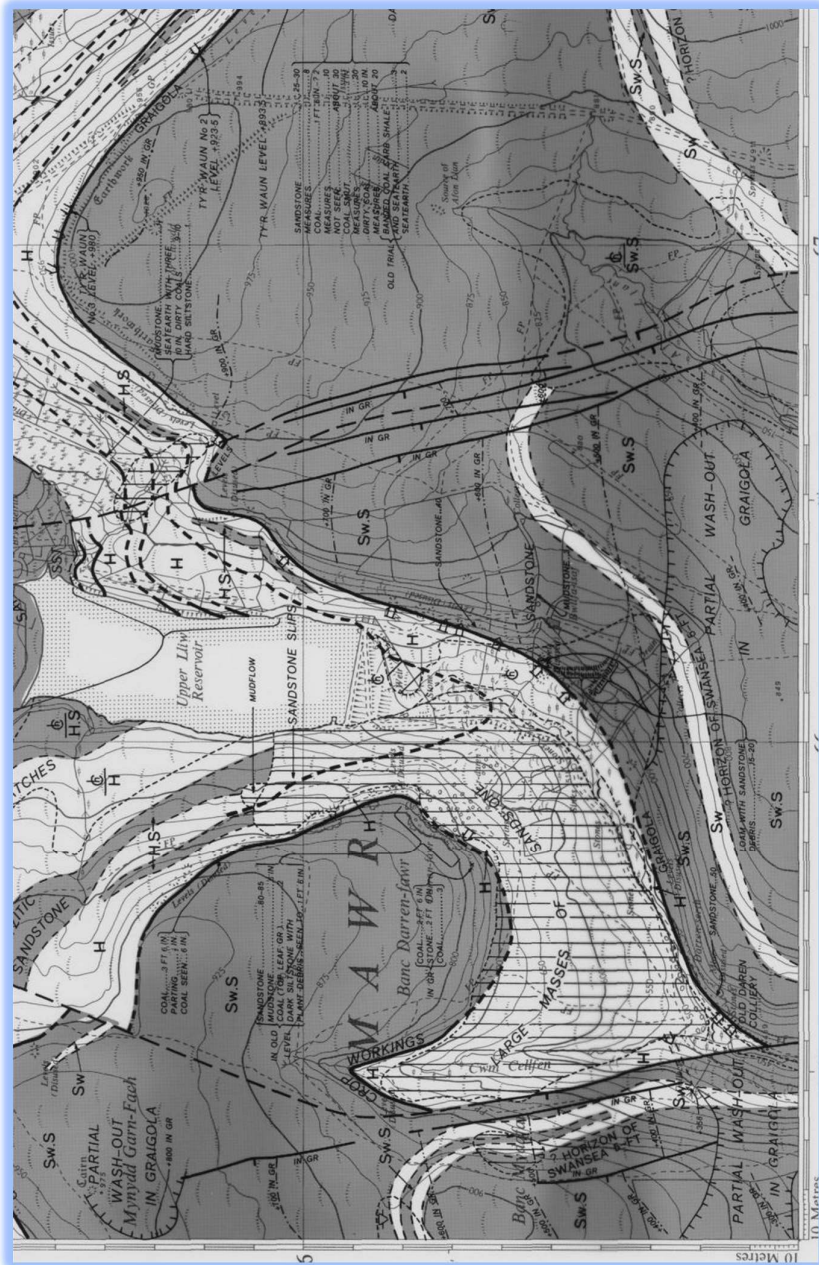


Figure 8: 1 to 10k Geological Survey Map East

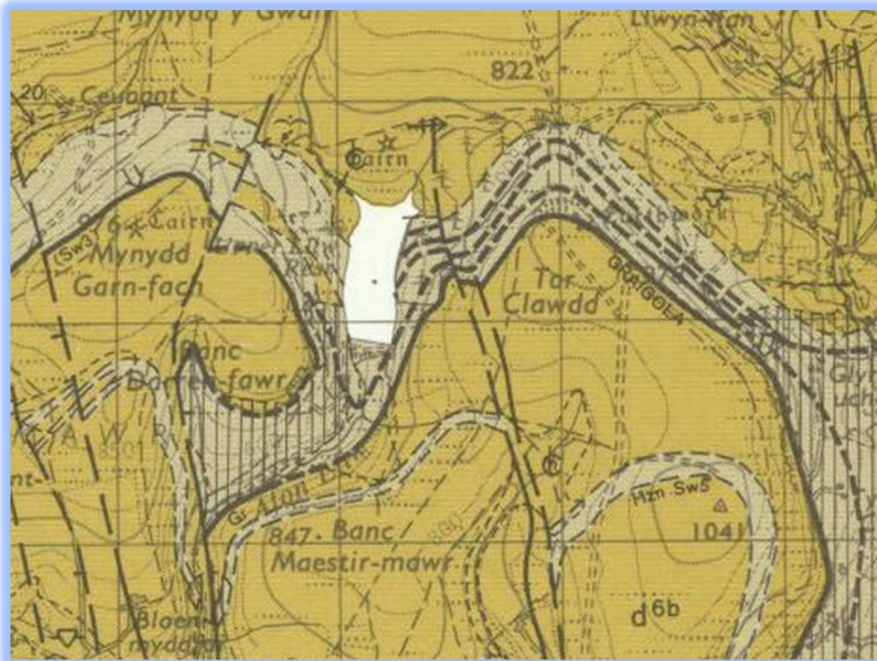


Figure 9: 1 to 50k Geological Survey Map

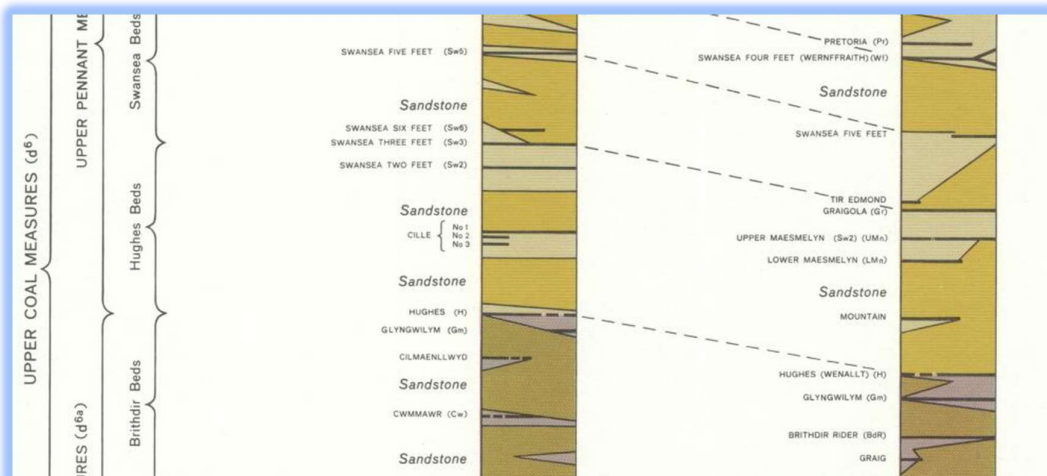


Figure 10: Section of The Stratigraphic Column

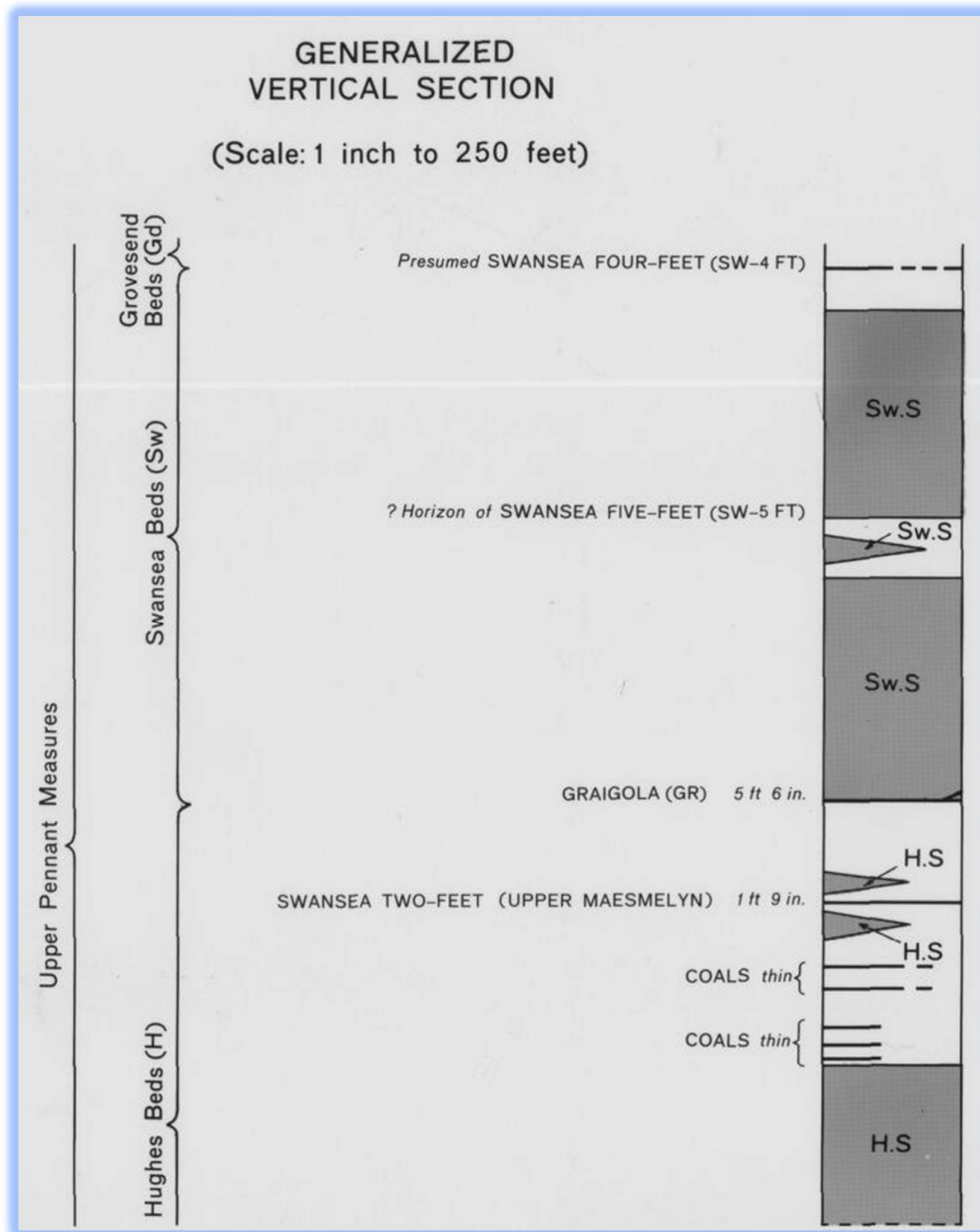


Figure 11: Section of The 1:10000 Stratigraphic Column

2g) The data contained within the Consultants Coal Mining Report, is confirmed within the BGS data, in that economic Coals are at depths which may impact selected Turbine locations and access routes.

3.0 SITE SPECIFIC COAL MINING RISKS

Coal Mining Issue	Yes	No	Risk Assess
Shallow Recorded Workings	Possible		X
Shallow Unrecorded Workings	Possible		X
Opencast		X	
Mine Entries	Possible		X
Fissures		X	
Gas Emissions		X	
Surface Hazards		X	
Future Mining License		X	

From the table above it can be seen that three issues requires a risk assessment for this site. There is a possibility of unrecorded shallow workings under the site. To first briefly deal with the issues marked NO on the table:-

- a) The C.A. report states there are no fissures, surface hazards or lines of geological weakness affected by underground mining under the site. The site has not been subject to remedial works carried out by the C.A.
- b) There has been no damage notices/ subsidence claim within 50 metres of the site.
- c) There are no future mining licenses in existence or pending.

There have been no mine gas emissions recorded within 500m of the site but the risk will need to be properly assessed when the presence or absence of shallow workings is established beyond doubt (see below)

4.0 MITIGATION STRATEGY.

The information suggests that there are recorded workings beneath the site, at depths which may result in instability migrating to surface.

The CA and BGS data indicate the presence of shallow coals which may have resulted in shallow, unrecorded extraction. Thus, this cannot be ruled out, particularly as there is a potential for unlicensed opencast over much of the site.

5.0 CONCLUSIONS

This risk assessment has presented evidence from comprehensive research regarding the risk from mining beneath the site. It concludes that ground investigation operations will be required at the turbine locations, preceded by purchase and assessment of abandonment plans for the area.

APPENDIX 1

Coal Authority Consultants Coal Mining Report

Turbine Locations on 1:10000 BGS Maps

Proposed Development



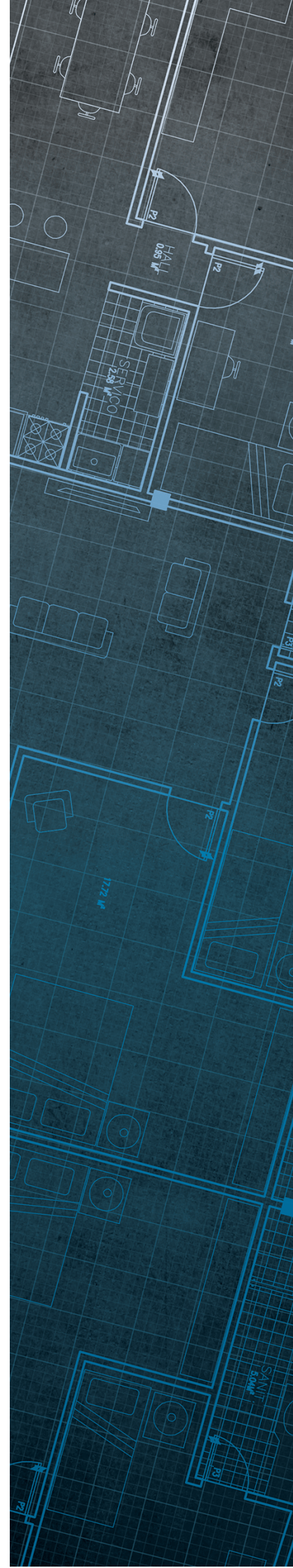
The Coal
Authority

Consultants Coal Mining Report

Dwr Cymru Welsh Water
Water Treatment Works
Heol Penfidy
Felindre
Swansea
Swansea
SA5 7NP

Date of enquiry:	5 August 2024
Date enquiry received:	5 August 2024
Issue date:	5 August 2024

Our reference:	51003441875001
Your reference:	24039



Consultants

Coal Mining Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

Spectrum Geo Services

Enquiry address

Dwr Cymru Welsh Water
Water Treatment Works
Heol Penfidy
Felindre
Swansea
Swansea
SA5 7NP

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

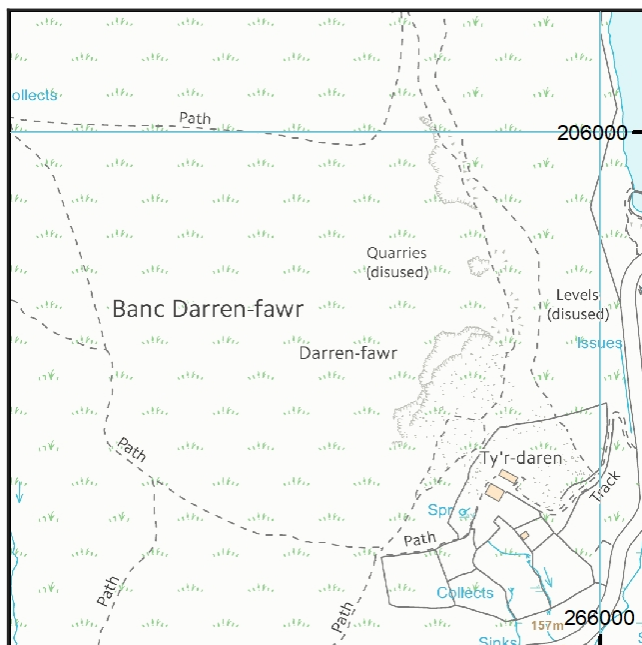
www.groundstability.com

 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



Approximate position of property



Reproduced by permission of
Ordnance Survey on behalf of
HMSO. © Crown copyright and
database right 2018. All rights
reserved.

Ordnance Survey Licence number: 100020315

Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	SWANSEA NO.3	Coal	4A2N	9	Beneath Property	6.0	South	190	1970
unnamed	UNNAMED	Coal	488J	10	Beneath Property	3.6	South	200	1948
unnamed	SWANSEA NO.3	Coal	4A2F	21	Beneath Property	5.7	South	190	1968
TYN - Y - WAUN & DARREN	UNNAMED	Coal	488I	21	Beneath Property	0.0	East	200	1945
unnamed	UNNAMED	Coal	488H	22	Beneath Property	4.4	South	200	1962
unnamed	SWANSEA NO.3	Coal	4A2Q	24	Beneath Property	5.2	South-East	190	1970
unnamed	SWANSEA NO.3	Coal	4A20	28	Beneath Property	6.3	South-East	190	1969
unnamed	SWANSEA NO.3	Coal	4A2P	28	Beneath Property	6.8	South-East	190	1962
unnamed	SWANSEA NO.3	Coal	4A2T	32	Beneath Property	5.2	South-East	190	1960
unnamed	SWANSEA NO.3	Coal	4A2G	34	Beneath Property	6.8	South	190	1968
unnamed	SWANSEA NO.3	Coal	4A2J	35	Beneath Property	12.6	South-East	190	1967
unnamed	UNNAMED	Coal	49TK	42	Beneath Property	7.9	South	200	1930
unnamed	SWANSEA NO.3	Coal	47BZ	46	Beneath Property	5.2	South-East	190	1971
unnamed	SWANSEA NO.3	Coal	4A2S	46	Beneath Property	5.2	South-East	190	1960
unnamed	SWANSEA NO.3	Coal	4A2K	47	Beneath Property	6.8	South-East	190	1968
unnamed	SWANSEA NO.3	Coal	4A2M	54	Beneath Property	6.0	South	190	1966
unnamed	SWANSEA NO.3	Coal	4A2R	55	Beneath Property	5.2	South-East	190	1962
unnamed	UNNAMED	Coal	49TJ	97	Beneath Property	8.1	South	200	1954
unnamed	SWANSEA NO.3	Coal	4A2I	105	Beneath Property	7.7	South-East	190	1968
unnamed	SWANSEA NO.3	Coal	4A2H	115	Beneath Property	7.7	South	190	1970
unnamed	SWANSEA NO.3	Coal	4A2B	137	South-East	8.3	South-East	190	1969

Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

Distance to spine roadway (m)	Direction to spine roadway
Within	N/A
Within	N/A
Within	N/A
Within	N/A

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Adit	263205-154	263827 205948		Coal	
Adit	263205-155	263837 205955		Coal	
Adit	263205-156	263849 205962		Coal	
Adit	263205-157	263860 205965		Coal	
Adit	263205-158	263872 205969		Coal	
Adit	263205-159	263887 205974		Coal	
Adit	263205-160	263899 205978		Coal	
Adit	263205-161	263912 205994		Coal	
Adit	263206-030	263928 206004		Coal	
Adit	263206-031	263936 206017		Coal	
Adit	263206-032	263943 206022		Coal	
Adit	263206-033	263953 206029		Coal	
Adit	263206-034	263962 206035		Coal	
Adit	263206-035	263969 206044		Coal	
Adit	263206-036	263983 206050		Coal	
Adit	263206-037	263993 206058		Coal	
Adit	263206-038	263918 206003		Coal	
Adit	264206-001	264010 206071		Coal	
Adit	264206-002	264013 206078		Coal	
Adit	264206-003	264023 206085		Coal	
Adit	264206-004	264029 206092		Coal	
Adit	264206-005	264137 206150		Coal	
Adit	264206-006	264197 206223		Coal	
Adit	264206-007	264204 206231		Coal	
Adit	264206-008	264220 206243		Coal	
Adit	264206-009	264229 206253		Coal	

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Adit	264206-010	264237 206260		Coal	
Adit	264206-011	264248 206275		Coal	
Adit	264206-012	264255 206284		Coal	
Adit	264206-013	264281 206305		Coal	
Adit	264206-014	264621 206323		Coal	
Adit	264206-015	264638 206338		Coal	
Adit	264206-016	264650 206348		Coal	
Adit	264206-017	264739 206369		Coal	
Adit	264206-018	264753 206368		Coal	
Adit	264206-019	264894 206452		Coal	
Adit	264206-020	264900 206458		Coal	
Adit	264206-021	264905 206466		Coal	
Adit	264206-022	264920 206475		Coal	
Adit	264206-023	264930 206487		Coal	
Adit	264206-024	264938 206498		Coal	
Adit	264206-025	264946 206509		Coal	
Adit	264206-026	264947 206520		Coal	
Adit	264206-027	264968 206520		Coal	
Adit	264206-028	264991 206536		Coal	
Adit	264206-065	264715 206349	Adit excavated and filled with 32t of stone. Teram placed over site before reprofiling to surroundings	Coal	
Adit	264206-069	264961 206527		Coal	
Adit	264206-071	264913 206490		Coal	
Adit	264206-073	264212 206243		Coal	
Adit	264206-074	264558 206260	The mouth of the adit and an inbye crown hole collapse into the associated drift were excavated and subsequently back-filled with imported clean stone, covered with terram and landscaped by the Coal Authority in 2016	Coal	
Adit	265205-001	265354 205940		Coal	

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Adit	265205-002	265308 205849		Coal	
Adit	265205-003	265898 205818		Coal	
Adit	265205-004	265897 205795		Coal	
Adit	265205-005	265994 205410		Coal	
Shaft	265205-008	265947 205347		Coal	
Adit	265205-009	265708 205279		Coal	
Adit	265205-010	265694 205274		Coal	
Adit	265205-014	265377 205387		Coal	
Adit	265205-015	265556 205224		Coal	
Adit	265205-016	265950 205341		Coal	
Adit	265205-019	265761 205304		Coal	
Adit	265205-020	265747 205299		Coal	
Adit	265205-021	265734 205293		Coal	
Adit	265205-022	265722 205287		Coal	
Adit	265205-023	265507 205206		Coal	
Adit	265205-024	265814 205663		Coal	
Adit	265206-046	265381 206551		Coal	
Adit	265206-047	265389 206544		Coal	
Adit	265206-048	265668 206306		Coal	
Adit	265206-049	265675 206298		Coal	
Adit	265206-050	265687 206291		Coal	
Adit	265206-051	265694 206288		Coal	
Adit	265206-052	265707 206278		Coal	
Adit	265206-053	265713 206275		Coal	
Adit	265206-054	265718 206269		Coal	
Adit	265206-055	265727 206268		Coal	
Adit	265206-056	265726 206259		Coal	

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Adit	265206-057	265734 206237		Coal	
Adit	265206-058	265742 206227		Coal	
Adit	265206-059	265751 206194		Coal	
Adit	265206-060	265760 206178		Coal	
Adit	265206-061	265769 206173		Coal	
Adit	265206-062	265775 206167		Coal	
Adit	265206-063	265780 206150		Coal	
Adit	265206-064	265455 206321	The mouth of the adit was machine excavated and about 80 tonnes of clean stone was pushed into the adit to make a solid seal. Geotextile was placed across the front of the stone and backfilled with the excavated material. The surface area was then restored and reprofiled.	Coal	
Adit	265206-067	265778 206141		Coal	
Adit	265206-068	265785 206130		Coal	
Adit	265206-070	265724 206249		Coal	
Adit	265206-072	265680 206296		Coal	
Adit	265206-073	265000 206540		Coal	
Adit	266205-001	266281 205816		Coal	
Adit	266205-002	266270 205770		Coal	
Adit	266205-004	266263 205744		Coal	
Adit	266205-005	266266 205761		Coal	
Adit	266205-006	266238 205687		Coal	
Adit	266205-007	266210 205601		Coal	
Adit	266205-008	266172 205519		Coal	
Adit	266205-009	266100 205460		Coal	
Adit	266205-025	266275 205805		Coal	
Adit	266205-028	266269 205784		Coal	
Adit	266205-029	266255 205737		Coal	
Adit	266205-030	266206 205615		Coal	

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Adit	266205-031	266119 205461		Coal	
Adit	266206-001	266466 206106		Coal	
Adit	266206-002	266456 206144		Coal	
Adit	266206-003	266454 206153		Coal	
Adit	266206-004	266453 206160		Coal	
Adit	266206-005	266655 206158		Coal	
Adit	266206-006	266649 206178		Coal	
Adit	266206-059	266624 206181		Coal	
Adit	266206-080	266647 206168		Coal	
Adit	266206-086	266459 206167		Coal	
Adit	266206-087	266453 206135		Coal	
Adit	266206-088	266458 206128		Coal	
Adit	266206-089	266460 206119		Coal	
Adit	266206-097	266365 206039		Coal	

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

SWR2924	SW3847	SWR608
SW4101	SWR666	SWR2651
PO0	SWR2760	SWR2710

Our records show we have more plans than those shown above which could affect the enquiry boundary.

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
CILLE NO.2	Coal	No	Within	N/A	48
SWANSEA NO.3	Coal	Yes	Within	N/A	40
SWANSEA NO.3	Coal	Yes	Within	N/A	49
SWANSEA NO.3	Coal	Yes	Within	N/A	55
SWANSEA NO.3	Coal	Yes	Within	N/A	84
SWANSEA NO.3	Coal	Yes	50.8	North-East	133
SWANSEA NO.3	Coal	Yes	Within	N/A	229
SWANSEA NO.3	Coal	Yes	Within	N/A	348
UNNAMED	Coal	Yes	Within	N/A	24
UNNAMED	Coal	Yes	Within	N/A	27
UNNAMED	Coal	Yes	Within	N/A	34
UNNAMED	Coal	Yes	Within	N/A	40
UNNAMED	Coal	Yes	Within	N/A	43
UNNAMED	Coal	Yes	Within	N/A	50
UNNAMED	Coal	Yes	Within	N/A	51
UNNAMED	Coal	Yes	Within	N/A	55
UNNAMED	Coal	Yes	Within	N/A	60
UNNAMED	Coal	Yes	Within	N/A	66
UNNAMED	Coal	Yes	Within	N/A	68
UNNAMED	Coal	Yes	Within	N/A	111
UNNAMED	Coal	Yes	Within	N/A	149
UNNAMED	Coal	Yes	Within	N/A	152
UNNAMED	Coal	Yes	Within	N/A	160
UNNAMED	Coal	Yes	Within	N/A	248
UNNAMED	Coal	Yes	Within	N/A	272
WESTERNMOOR	Coal	Yes	Within	N/A	15

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
WESTERNMOOR	Coal	Yes	Within	N/A	28
WESTERNMOOR	Coal	Yes	Within	N/A	34
WESTERNMOOR	Coal	Yes	27.9	North	42
WESTERNMOOR	Coal	Yes	Within	N/A	58

Geological faults, fissures and breaklines

Please refer to the 'Summary of findings' map (on separate sheet) for details of any geological faults, fissures or breaklines either within or intersecting the enquiry boundary.

Faults under or close to the property recorded.

Opencast mines

None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations

Distance to site investigation (m)	Direction
Within	N/A

See Section 4 for further information.

Remediated sites

Distance to site remediation (m)	Direction
Within	N/A
Within	N/A
Within	N/A
Within	N/A
Within	N/A

See Section 4 for further information.

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.

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

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

Withdrawal of support notices

The property is in an area where notices to withdraw support were given in 1955 and 1956.

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.

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.

Section 4 – Further information

The following potential risks have been identified and as part of your risk assessment should be investigated further.

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.

MINE GAS: Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. 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. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

Development advice

The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.

Site investigations

The site is within an area of previous interest. It is close to where the Coal Authority has received information relating to past site investigations.

The site requires further investigation and may influence how you approach your risk assessment.

Remediated sites

The site is within an area of previous interest. It is close to where the Coal Authority has investigated and where necessary remediated mine entries and/or shallow coal mine workings following specific reported hazards.

The site requires further investigation and may influence your risk assessment. We recommend that you order the Coal Authority **Surface Hazards Incident Report**, which will include more information about the hazard.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please call us on 0345 762 6848 or email us at groundstability@coal.gov.uk.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk**.

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines

Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips

Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations

Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites

Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence

Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

Mine water treatment schemes

Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining

Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing

Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders

Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices

Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices

Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land

Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

