

Y Bryn Wind Farm, Neath Port Talbot

Appendix 10.2

Client:



**Updated Preliminary Coal Mining
Risk Assessment**

**Report No 14923
December 2023
Version 5**



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1 INTRODUCTION

1.1 General

South West Geotechnical (SWG) was instructed by Coriolis Energy (The Client) to provide an updated preliminary coal mining risk assessment in relation to a revised layout of eighteen (18 No.) wind turbines, and their associated construction compounds, sub-stations, communications masts and associated access roads on forestry land to the north and south of the village of Y Bryn, Port Talbot, Wales.

SWG provided an initial coal mining risk assessment for twenty-six (26 No) proposed turbines in April 2021. In May 2022, a revised scheme was proposed, with twenty one (21 No) turbines.

The new proposed turbines are referenced T1 to T18, in line with references provided by Coriolis Energy. The construction compounds are referenced Penhydd Main, Penhydd Entrance, Bryn North and Bryn South. The communications masts are referenced Penhydd Mast and Bryn Mast. In addition, there is a sub-station and battery storage area. The aforementioned infrastructure are collectively referred to as the 'proposed development features' within this report and their locations are shown on the various Figures, presented in Appendix B.

The overall development has been separated into two areas: Penhydd, located to the north of the village of Y Bryn, and Margam, located to the south. The locations of these development areas are indicated on the Site Location Plan, presented in Appendix A of this report.

This report has been produced to provide an updated preliminary assessment of coal mining risks posed to the proposed development based on desk study information and walkover survey. This information should be used within initial development layout design and to inform further, feature specific, intrusive investigations.

This assessment is based on information obtained from the Coal Authority, namely three (3 No.) CON29M reports supplied by the Client, as well as other publically available sources of information.

1.2 Site Location and Description

The development site is located in the mountains surrounding the village of Y Bryn, Port Talbot, South Wales. The approximate National Grid Reference for the centre of the Penhydd development area is: 283200, 193400. The approximate National Grid Reference for the centre of the Margam development area is: 282100 189500. Both development areas are situated on mountainous land used for forestry, by the Forestry Commission.

The Penhydd development covers an area of approximately 1.9km by 1.9km and is typically situated across the topographic high of Mynydd Penhydd; with the site ranging from approximately 260m above sea level, up to approximately 360m. The majority of the area is covered in pine forests, of varying age, with gravel hardstanding access tracks present between plantations.

Access is gained via a forestry commission gateway to the south of the area, off of Neath Road (B4282), located at the approximate National Grid Reference: 283732, 191858.

The topographic high of Mynydd Penhydd trends in an approximate east-west orientation and is typically undulating, with steep valleys cut into the southern, eastern and northern sides. The valley trends approximately north-south, draining southward towards Ffrwd Wylt (river). Another valley feature, trending roughly east-west and draining west towards the River Avon, is present in the north of the area. Several smaller valley features, some of which are considered to be surface expressions of geological faulting, are present across the area.

The Margam development area covers an area of approximately 2.7km (north-south) by 2.3km (east-west) and is typically situated across the topographic highs of Mynydd Bach (in the north), Mynydd Margam (in the south) and Moel Gallt-y-cwm (in the west). The site ranges from approximately 150m above sea level, within valley features in the west, up to approximately 350m in the south. Similarly to the Penhydd development area, the Margam development area is predominantly covered by pine forests of varying ages with associated gravel hardstanding access tracks present between plantations.

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Access is gained via a forestry commission gateway to the north of the area, off of an unnamed public highway to the east of the village of Y Bryn, located at the approximate National Grid Reference: 281835, 191845.

The topographic highs of Mynydd Bach and Mynydd Margam are present in the east of the area, with elevations reducing to around 270m between them. These topographic highs are typically plateaued at their crest, sloping gently down towards the west before steepening in the far west. Deep valley features are present in the west of the site, generally trending approximately east-west, draining in a westerly direction towards Ffrwd Wyllt (river). Cwmwernderi Reservoir is present in the centre-west of the site, situated at an elevation of approximately 150m above sea level. A number of smaller valley features, some of which are also considered to be surface expressions of geological faulting, are present across the area.

1.3 Published Geology

1.3.1 General

A general overview of the published geology is provided below, before further discussion on the Margam and Penhydd development areas in the subsequent Sections. Observations made during the walkover survey are discussed in Section 4 and relevant photographs are presented in Appendix C. Further location specific information on each proposed development feature is provided on the Coal Mining Risk Register, presented in Appendix E of this report.

The British Geological Survey (BGS) map of the area (Sheet 248, Pontypridd) shows both development sites to be underlain by the Carboniferous Upper Coal Measures, the relevant sub-group of which was historically called the Lower Pennant Measures or the Pennant Group. This unit is typically shown to comprise sandstone within both development areas, with mudstones locally present, typically associated with coal outcrops.

Localised areas of hill peat are shown to be present, typically across the Margam development area. These deposits are anticipated to be over saturated, with moisture contents close to or exceeding 100%, and comprise very soft to soft organic clays and peat.



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The stratigraphic columns, taken from BGS Sheet 248, which show the general shallow bedrock geology at each development area, are presented in Figure 1.

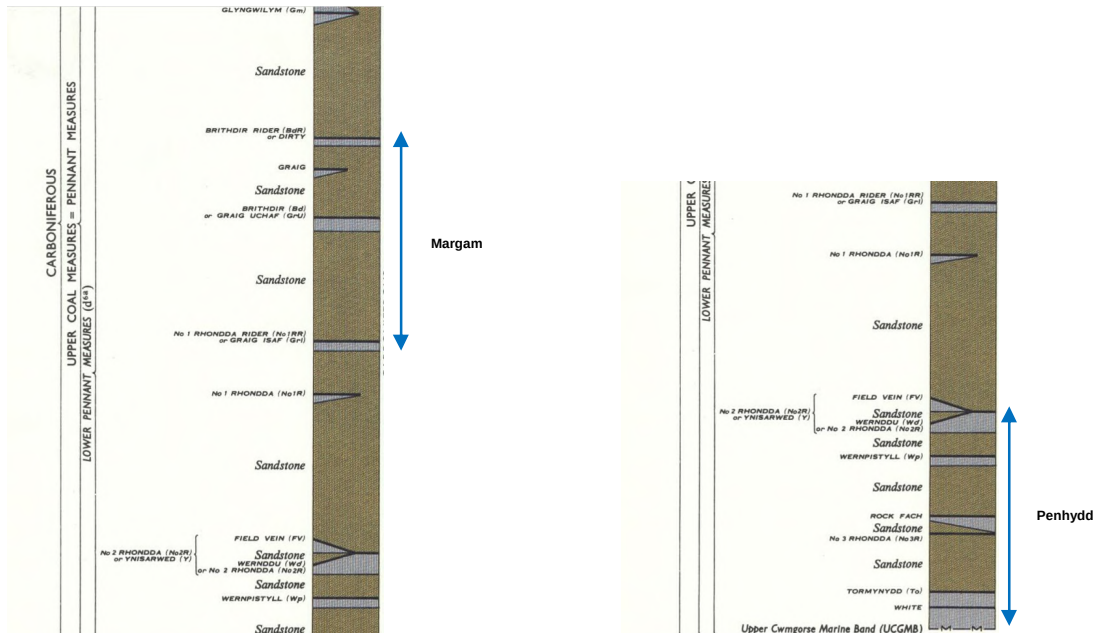


Figure 1: Geological Stratigraphic Column

Section 1, taken from BGS Sheet 248, which trends approximately northeast-southwest through both development sites, is presented in Figure 2, with the approximate extent of each development site indicated. The location of Section 1 is shown as a solid black line on Figures A and B, Appendix B.

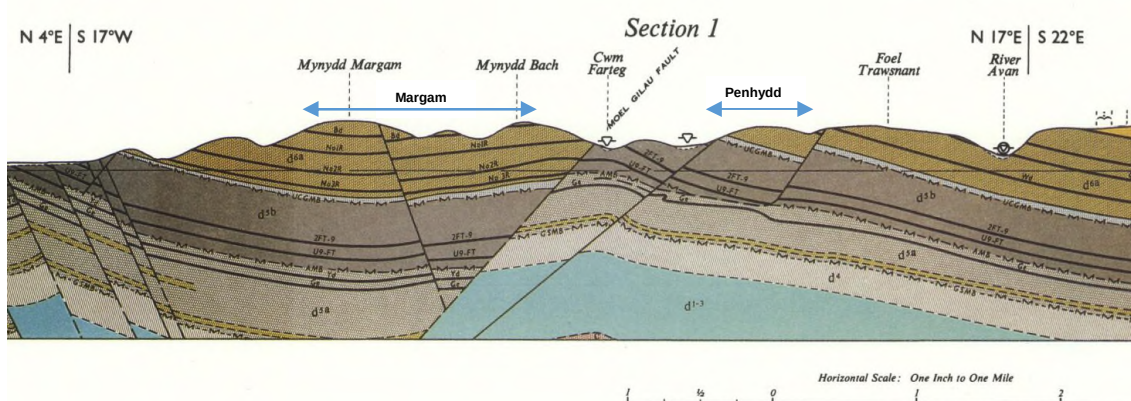


Figure 2: Geological Cross Section

1.3.2 Penhydd Development Area

The layout of the Penhydd development area is overlain on the BGS data and presented as Figure A, Appendix B.

In summary, the strata of the Upper Coal Measures typically dips in a generally northerly direction, with a maximum recorded dip of 15°. Observations made during the walkover survey, as discussed further in Section 4 of this report, recorded dips of between 10° and 22°, in a roughly northern direction. The locations of these recorded dips are presented in Figure G, Appendix B.

Coal seams, occasionally underlain by mudstone deposits, outcrop in a generally east-west orientation, cross-cut by a northwest-southeast trending fault in the centre and west of the site. The coal seams present beneath the site are discussed further in Sections 2 and 4.3.1 of this report.

1.3.3 Margam Development Area

The layout of the Margam development area is overlain on the BGS data and presented as Figure B, Appendix B. In addition, the access track leading to the Margam area from the south-west is shown on the geological map as Figure C.

In summary, the strata of the Upper Coal Measures is recorded to dip towards the north in the south of the area, and to the south in the north. This is further demonstrated on Figure 2, which indicates the dip to be less than approximately 20° in both instances. Recordings taken from outcrops observed during the site walkover, as discussed further in Section 4 of this report, indicate strata to dip at approximately 10° in a roughly southerly direction in the north of the area. No bedrock outcrops were observed in the south of the area and therefore no site-specific dip information was able to be obtained.

Coal seams, rarely underlain by mudstone strata, outcrop across the site, typically following topographic contours. These are discussed further in Sections 2 and 4.3.1 of this report.

1.4 Margam Access Track from M4 Motorway/ Brombil Farm

The access track from the M4 motorway / Brombil Farm, is shown to cross a mapped landslide where it appears to leave the east-bound side of the M4.

There are several mapped landslides in the vicinity of this area, and consideration will need to be given to the stability of the access track in relation to landslides in this area.

2 COAL AUTHORITY INFORMATION

2.1 General

Three Coal Authority CON29M (coal mining) reports have been provided to SWG by the Client and are presented in Appendix D. In addition, information obtained from the Coal Authority's website has also been reviewed as part of this assessment. The salient information from these data sources is summarised in the following sections.

It is noted that, given the significant change in topographic elevation across the site, the depths of workings beneath 'ground level' provided within the reports are considered likely to be potentially inaccurate. As a result, further detailed assessment should be undertaken on a feature specific basis as part of the scoping of future intrusive investigation works.

2.2 Penhydd Development Area

One report (ref: 51002190213002) was obtained to cover the Penhydd Development area.

This report covers T01 to T05 as well as the Penhydd Main construction compound and the Penhydd Mast. The Penhydd Entrance construction compound is not covered by this report.

The salient information provided within this report is summarised below:

- Twenty (20 No.) workable coal seams are recorded beneath the site at 'shallow' depth to 730m below 'ground level'.
- Two (2 No.) recorded mine entrances are present within the site boundary:
 - o Adit: 282193-015, approximate National Grid Reference: 282690, 193120.
 - o Adit: 283193-012, approximate National Grid Reference: 283690, 193130.
- Further, unrecorded, mine entrances may exist.
- No applications for future coal mining have been received by the Coal Authority; however, reserves of coal exist which could be worked in the future.

- No recorded property subsidence has been reported to the Coal Authority for the site.

It is noted that two (2 No.) additional recorded mine entries are shown to be present within 100m of the location of Penhydd Entrance construction compound, on information obtained from the Coal Authority's website as well as on historical mapping. These comprise a 'slant' (an adit driven into comparatively level ground on an incline, typically to allow access and/ or removal of material from underground workings) and a shaft. These entries were identified during the site walkover, see Section 4.2.4 of this report, and further information is provided on the Coal Mining Risk Register.

Figure D, Appendix B, shows the proposed development features overlain over the Coal Authority's 'high risk development' areas, the implications for which are summarised on the Coal Mining Risk Register. It is understood that these areas are produced based on a combination of known shallow workings and known coal outcrops.

2.3 Margam Development Area

Two reports were obtained to cover the Margam Development area, one for the north and one for the south.

The northern report (ref: 51002190185001) covers T07 and the southern report (ref: 51002190213001) covers T8 to T17, the Bryn North and Bryn South construction compounds, the sub-station/BESS area and the Bryn Mast.

The salient information provided within these reports is summarised below:

- The north of the development area is not within a surface area which could be affected by any past recorded underground coal mining. – it is noted, however, that high risk development areas, as defined by the Coal Authority and presented on Figure E, are present within this area.
- Two (2 No.) workable coal seams are recorded beneath the south of the development area at depths of 200m to 290m below 'ground level'.
- There are no recorded mine entries within the north of the development area.
- There is one recorded mine entry within the south of the development area:

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- o Adit: 282189-001, approximate National Grid Reference: 282290, 189870.
- No applications for future coal mining have been received by the Coal Authority across the Margam development area as a whole; however, reserves of coal exist which could be worked in the future.
- No recorded property subsidence has been reported to the Coal Authority for the Margam development area as a whole.

Figure E, Appendix B, shows the proposed development features overlain over the Coal Authority's 'high risk development' areas, the implications for which are summarised on the Coal Mining Risk Register. It is understood that these areas are produced based on a combination of known shallow workings and known coal outcrops with an additional buffer zone applied to account for uncertainties.

3 HISTORICAL MAPPING

A series of publically available historical maps were reviewed as part of this assessment to determine the history of the site area and whether any documented evidence of relevant mining activity exists at any of the proposed development feature locations.

In summary, although evidence of a number of coal levels and quarries was noted throughout the development area, no evidence of significant historical surface features was observed on available mapping for the majority of the proposed development feature locations.

One exception being the Penhydd Entrance compound, which is just to the north of Ton-Hir Colliery. A review of information provided on the internet indicates that this colliery was active between the mid-1890s until 1964, with two seams being worked; the Yard seam, worked at a depth of approximately 380 yards (347 meters below ground level) from a shaft present in the north of the Colliery, and the Two-Feet-Nine seam, worked from a 700 yard long slant (inclined mine entrance). No information has been obtained as to the depth below ground level of the Two-Feet-Nine seam.

The other exception being located within approximately 160m of the south west of T08. Although specific mining related features are not labelled on historical mapping, a number of buildings are shown to be present close to the location of the adit (ref: 282189-001), recorded in information obtained from the Coal Authority. These buildings are considered to potentially comprise storage/ processing buildings associated with the adit. The remains of these buildings were identified during the walkover survey (Plate 22).

4 SITE WALKOVER

4.1 General

A walkover survey of the site was undertaken on 01 and 02 March 2021.

A series of plates showing aspects of the site and surroundings as well as a map showing the approximate location of where the plates were taken are shown on Figures G and H.

Plates associated with each development feature are numbered on the Coal Mining Risk Register.

Observations salient to the proposed development are discussed by proposed development feature location below. Where a proposed development feature is not included, either no significant surface mining related feature was identified or access was not possible to the location. Any additional observations are discussed separately in Section 4.3.

Turbine locations that were not accessed as they were not at those positions at the time or were inaccessible due to dense forestation were: T02, T03, T04, T05, T06, T09, T10, T12, T13, T14, T15 and T17.

4.2 Proposed Development Features

4.2.1 Turbine T07

A slight break in slope (Plate 18) was observed to the north of T07, which may be a surface expression of an outcrop of the Brithdir coal seam, which is mapped to be present at this location.

In addition, a potential historical access track (Plate 19) was observed to the north of T07. This feature may have been associated with historical surface workings of the abovementioned Brithdir coal seam.

Possible crop workings (Plate 20), potentially associated with an outcrop of the Brithdir coal seam, were observed to be present to the south of T07. This feature appeared at the surface as a large depression (approximately 10m x 30m and up to approximately 3m

in depth). No evidence of recent significant ground movement occurring, such as fresh ground, bowed trees, etc, was noted. This feature may have been infilled following abandonment and further, currently unidentified, features may be locally present, especially along the mapped outcrop, which within 100m of T07.

4.2.2 Turbine T08

An adit (Coal Authority ref: 282189-001) is recorded to be present to the south west of the proposed location of T08, close to the mapped location of an outcrop of the Brithdir coal seam.

Observations identified a significant break in slope (Plate 21) to be present, which is considered to potentially be associated with the abovenamed outcrop.

In addition, historical buildings (Plate 22) were noted to be present at the base of this break in slope and are considered likely to comprise the surface infrastructure associated with the recorded adit. The location of the adit entrance was not identified.

Based on the mapped geology, as well as the local topography, it is considered that this adit is likely to be driven to the east, towards from the location of T08.

4.2.3 Penhydd Main Construction Compound

A break in slope (Plate 12) was observed to be present trending approximately east-west across the location of the Penhydd Main construction compound. This break in slope is considered to potentially be a surface expression of an outcrop of 'Thin Coal' mapped to be present at this location. Although not observed, small scale, localised crop workings associated with the abovementioned outcrop may be present at the location of the compound.

It is noted that an adit (Coal Authority ref: 283193-012) is recorded to be present to the west of the compound. No evidence of this feature as observed during the walkover survey, although the Light Detection and Ranging (LiDAR) data indicates there is a slight depression approximately 120m west of the compound. This could be indicative of the adit.

4.2.4 Penhydd Entrance Construction Compound

Publically available historical mapping, as discussed in Section 3, shows the proposed site of this compound to be in the vicinity of Ton-Hir Colliery. Significant features of which comprise a shaft approximately 20m west of the location of the compound, a slant (included mine entrance) in the centre-west, and spoil heaps in the south. These features are shown on Plates 14, 15, 16 and 17, respectively.

The shaft was noted to have been secured by a wooden post and rail fence with stone boulders present across the entrance.

Based on the surface direction of the slant, it is considered likely it is driven underground approximately northwards. Access was not possible to the opening of the slant due to dense vegetation growth therefore the extent of any remediation could not be assessed.

The spoil heaps extend from the location of the slant southwards and are typically up to approximately 3m in height.

4.2.5 Bryn South Construction Compound

Historical mapping shows a coal level to be present to the south of the Bryn South construction compound, with two drifts (horizontal coal workings) present, likely to be associated with an outcrop of the Brithdir coal seam, which is mapped to be present at that location.

These drifts (Plate 26) are estimated to have been driven on azimuths of approximately 290° and 340°, which are towards the compound.

4.3 Further Observations

Other salient findings of the walkover survey are presented in Figures G and H, Appendix B. Coal outcrops are presented as black diamonds, possible workings as orange arrows and dip of bedrock as grey arrows. A key showing the names of the abbreviated coal outcrops is presented beneath the Coal Mining Risk Register.

4.3.1 Coal Seam Outcrops and Associated Workings

An outcrop of the Wernddu coal seam (Plate 2) was identified within a cutting to the north of T02. Historical mapping shows a trial level (Plate 5) to be present at this location and broken ground (Plate 3), considered to potentially be representative of historical workings (adits/ drifts/ crop workings), was identified in this area.

The Wernddu coal seam is mapped to terminate against a fault line close to the location of the above described outcrop. This fault line is considered likely to be expressed at surface by a valley feature to the southeast of the possible workings (Plate 4).

An outcrop of the Field Vein coal seam (Plate 7) was observed within a cutting to the west south of T01. The seam was approximately 0.90m in thickness at outcrop and comprised two major coal beds separated by seatearth. The apparent dip of the outcrop was recorded as 18° down to 198° (approximately south).

Depressions in the ground surface (Plate 8), potentially indicative of historical crop workings associated with the abovementioned Field Vein were observed to the southwest of T01. In addition, a large break in slope (Plate 6), trending roughly east-west, parallel to the Field Vein outcrop, was noted to be present south west of T01. Although no significant evidence of recent movement was observed, this break in slope may be indicative of historical collapse of shallow mining associated with the Field Vein, or collapse of deeper workings associated with a number of veins which underlie the Field Vein.

Historical mapping and Coal Authority data shows a coal level (Plate 10) and air shaft to be present to the east of T03. This level is considered likely to be associated with an outcrop of the Tormynydd coal seam, which is mapped to be present at this location. Although not identified, it is considered likely that workings from this level extend northwards.

An outcrop of the Tormynydd coal seam was also observed within a quarry (Plate 13) to the east of T05. Access was not possible to the seam.

4.3.2 Bedrock Exposures

A number of historical quarries are present within the proposed development areas. Anecdotal information from a local resident suggests that these quarries were excavated, often by the Forestry Commission, to produce aggregate for the construction of haulage roads and access tracks. However, historical mapping indicates that a number of these quarries date back to the late-19th century and are therefore considered likely to be present as a result of quarrying for local building stone long before the presence of the Forestry Commission on site.

The dip direction of the exposed bedding in each quarry location is presented on Figures G and H and an example photograph of the quarry features is shown on Plates 13. The exposed bedrock typically comprised sandstone, which ranged from medium strong to strong and was typically thinly to thickly bedded and closely to widely fractured.

5 CONCLUSIONS AND FURTHER WORKS RECOMMENDATIONS

The risk posed to each proposed development feature from historical coal mining is presented on the Coal Mining Risk Register, and the following section provides a brief discussion.

In summary, information provided within the Coal Authority reports suggest that all features are/ have the potential to be underlain by historical workings although, only five of the features, Penhydd Mast, T01, Penhydd Entrance construction compound, T06 and T15 are within areas defined by the Coal Authority as high risk (i.e. shallow coal workings potentially present). Nine other features, Penhydd Main construction compound, T03, T05, T07, T08, T09, T10, T12 and Bryn South construction compound are located close to such areas.

Observations made during the walkover survey have confirmed that a number of surface features (mine entries and possible collapse features) are present across the area and although most of these do not pose a direct risk to the proposed feature locations, it is considered that there is the potential for historical coal mining to have a significant impact on the proposed features.

In most cases these effects can be mitigated through micro-siting, the treatment of workings and/ or the deepening of foundations beneath zones of workings/ collapse.

The access track from the M4 motorway / Brombil Farm, is shown to cross a mapped landslide where it appears to leave the east-bound side of the M4. There are several mapped landslides in the vicinity of this area, and consideration will need to be given to the stability of the access track in relation to landslides in this area.

Further investigation works, comprising location specific intrusive ground investigation and coal mining risk assessment will be required at each of the proposed development feature locations, once formalised, to confirm the presence/ absence of historical workings and associated risks posed.

The scope of this further investigation will vary depending on the location and type of the proposed feature; however, it is likely to comprise a number of combined rotary/ open hole boreholes with supplementary trail pitting/ trenching if shallow mining features are

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anticipated. Ground conditions at each feature location should be carefully assessed to ensure that the depth to, and nature of, all potential workings are identified. This approach could also promote the use of 'spot coring', where depths/ features of interest are targeted, to enable potential cost and program savings through the reduction of unnecessary sampling. It is noted that this approach should only be undertaken following detailed assessment and may not be appropriate at each location.

Once planning has been obtained for the project, a more detailed desk study should be undertaken to include;

- Geo-environmental incidents or potential of pollution related to mining legacy – a Landmark Envirocheck report or similar will be required, probably on a feature by feature basis to obtain appropriate geo-environmental data to allow a geo-environmental conceptual model to be developed.
- The Coal Authority should be contacted so that further, location specific information such as mine abandonment plans, can be obtained at the investigation planning stage. The type and geometry of mining should be assessed where possible to provide indication as to the stability and potential for collapse or migration of voids in the sub-surface.
- Large scale indicative cross sections should be produced for each feature, with respect to depth of expected coal seams and faulting. Due to the size of the project, it is likely that the use of 3D modelling of LiDar DTM data coupled with coal seam wireframes created from known outcrop points will be the most useful way to display the geology beneath the site. This can then be used to design the structure specific investigation works.
- Consideration should be given to potential of mine water issues or groundwater being impacted by the development although, assuming the turbines only require large gravity bases, the development should not affect the groundwater regime. If grouting of mine workings is required, further assessment of the effects of grouting on groundwater flow will need to be considered.
- There is potential for hazardous ground gases being present in the ground due to the coal. Any ground investigation and subsequent construction will need to use appropriate drilling techniques and monitoring equipment to ensure gas issues are mitigated.

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- The preliminary risk register should be updated to a full geotechnical risk register for each structure to ensure that geotechnical risks are highlighted and mitigation measures implemented during construction. The Geotechnical Risk Register should be developed in general accordance with the guidance presented in ICE/DETR Document 'Managing Geotechnical Risk' (2001) and the HA document HD22/02 to quantify current and residual risks to the development. A summary risk map is produced to convey the changing levels of risk across the development.

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Director

6 REFERENCES AND BIBLIOGRAPHY

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Welsh Coal Mines: <http://www.welshcoalmines.co.uk/GlamWest/BrynNavigation.htm>

7 LIMITATIONS

This report has been prepared by SWG solely for the benefit of Coriolis Energy. It shall not be relied upon or transferred to any third party without the prior written authorisation of SWG.

All information given in this report is based on the ground conditions identified and observations made during the walkover survey, as well as on information provided by the Coal Authority. However, there may be conditions at the site which have not been identified and therefore not taken into account, such as unpredictable soil strata, contaminant concentrations, and water conditions.

Access was not possible to a number of proposed development feature locations. Where this is the case, no observations of the ground/ ground conditions were able to be made.

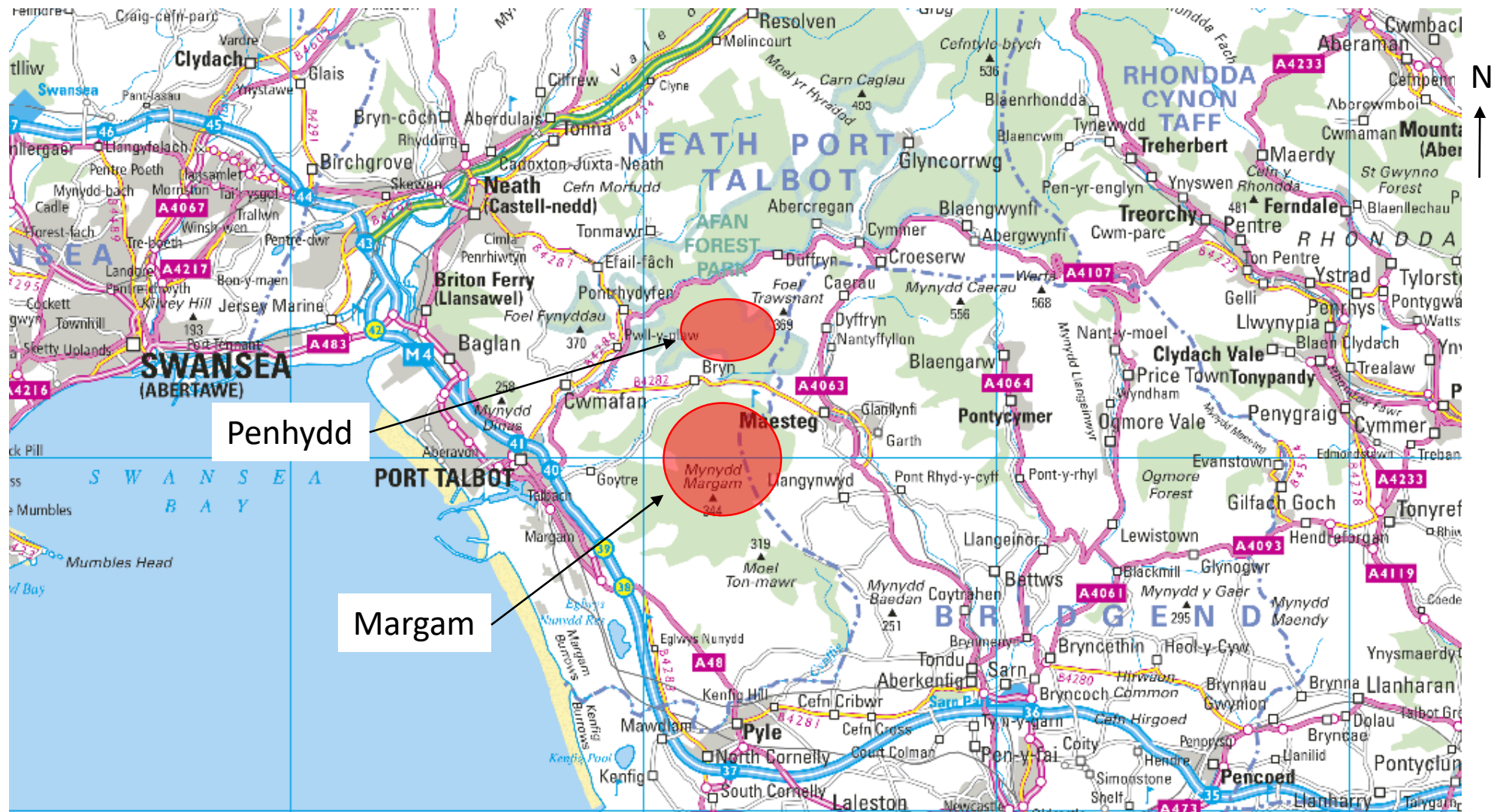
Given the significant change in topographic elevation across the site, the depths of workings beneath 'ground level' provided within the Coal Authority reports are considered likely to be potentially inaccurate.

The proposed feature locations assessed within this report are based on those correct at the time of site works and reporting. Should these locations change significantly, additional preliminary assessment should be undertaken.



Appendix A

Site Location Plan



NOT TO SCALE

Y Bryn Wind Farm, Neath Port Talbot

Job No. 12028

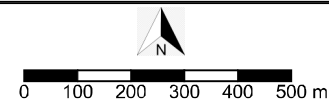
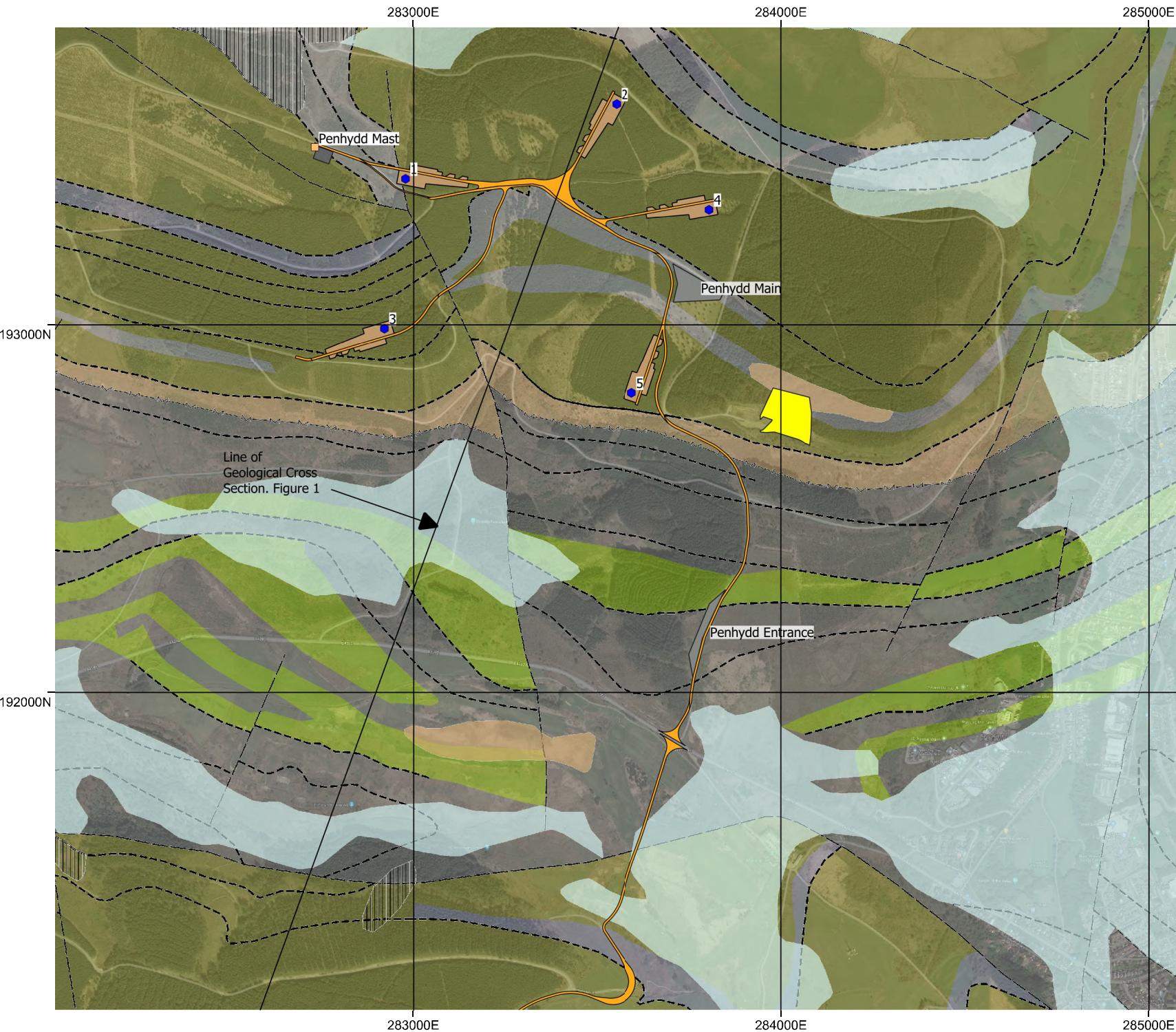
Site
Location Plan





Appendix B

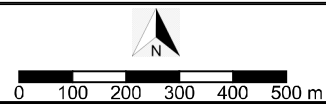
Figures



- Plan Legend:**
- Wind Turbine Generators
 - Met Masts
 - Substation & BESS
 - Construction Compounds
 - Access Roads
 - Borrow Pits
 - Crane Hardstandings
 - Met Mast Hardstandings
- BGS 1:50k Mass Movements Legend:**
- Deposits
 - Superficial Deposits
- Deposits Legend:**
- = Devensian Till
 - = Peat

- BGS 1:50k Linear Features Legend:**
- = Coal Seam - Inferred
 - = Coal Seam - Observed
 - = Marine Band
 - = Fault - Inferred
- BGS 1:50k Linear Features Legend:**
- = Upper Coal Measures - Sandstone
 - = Upper Coal Measures - Mudst, Siltst, Sandst
 - = Middle Coal Measures - Mudst, Siltst, Sandst
 - = Middle Coal Measures - Sandstone
 - = Mudstone, Siltstone, Sandstone
 - = Mudstone, Siltstone, Sandstone

Y Bryn Wind Farm - 2023 Layout			
BGS 1:50k Geology Map of the Penhydd Area			
SIZE: A3	JOB NO: 14923	DWG NO: Fig No. A	REV: 1
SCALE: 1:10,000	15/03/2023	SHEET 1 OF 1	



- Plan Legend:**
2023 Updated Layout
- Wind Turbine Generators
 - Met Masts
 - Substation & BESS
 - Construction Compounds
 - Access Roads
 - Borrow Pits
 - Crane Hardstandings
 - Met Mast Hardstandings
- BGS 1:50k Mass Movements Legend:**
- Landslide
 - Deposits
 - Superficial
- Deposits Legend:**
- = Devensian Till
 - = Peat

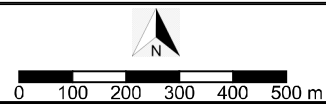
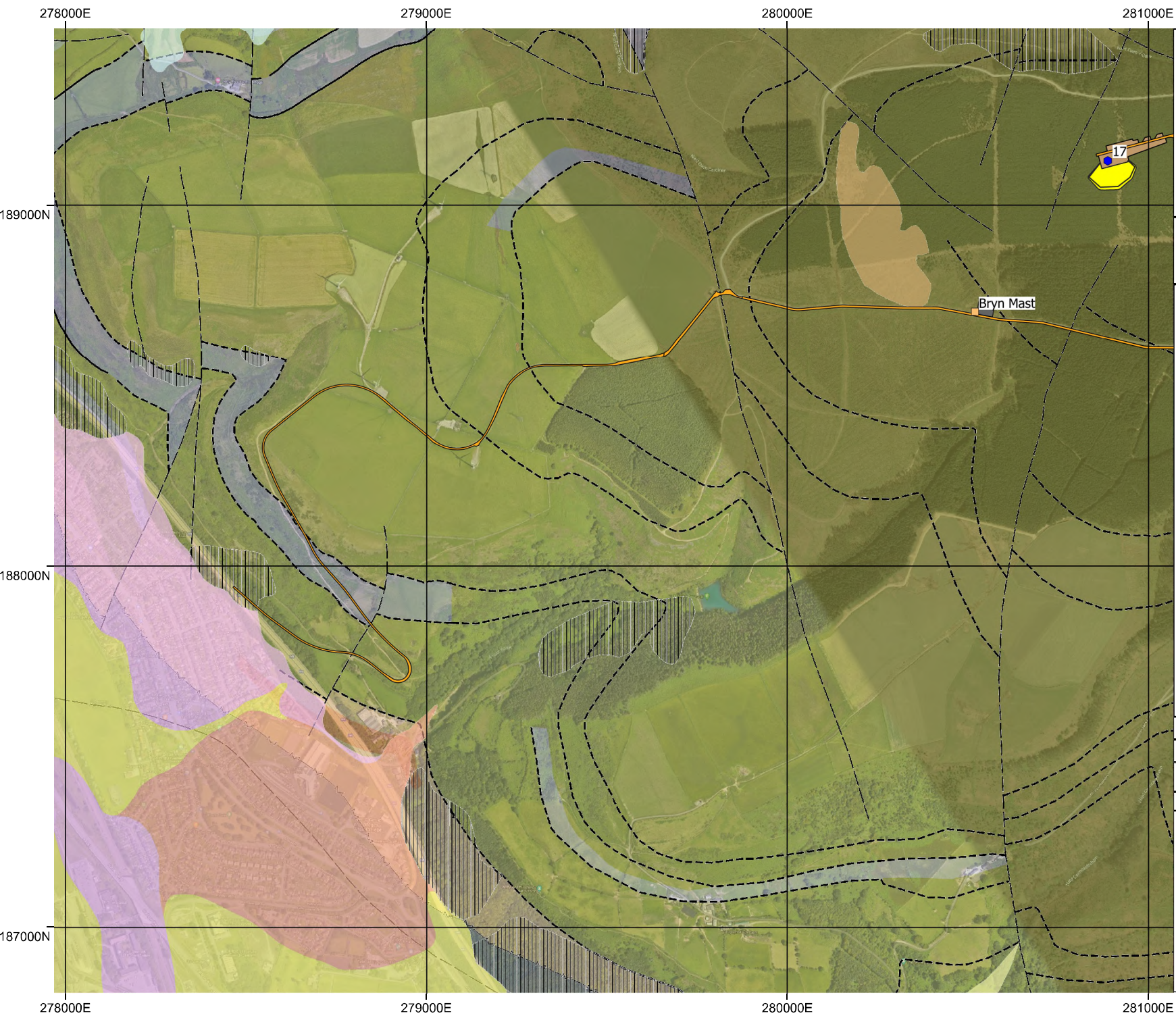
- BGS 1:50k Linear Features Legend:**
- - - = Coal Seam - Inferred
 - - - = Coal Seam - Observed
 - ~ = Marine Band
 - / - = Fault - Inferred
- BGS 1:50k Linear Features Legend:**
- = Upper Coal Measures - Sandstone
 - = Upper Coal Measures - Mudst, Siltst, Sandst
 - = Middle Coal Measures - Mudst, Siltst, Sandst
 - = Middle Coal Measures - Sandstone
 - = Mudstone, Siltstone, Sandstone
 - = Mudstone, Siltstone, Sandstone

Y Bryn Wind Farm - 2023 Layout			
BGS 1:50k Geology Map of the Margam Area			
SIZE: A3	JOB NO: 14923	DWG NO: Fig No. B	REV: 1
SCALE: 1:10,000	15/03/2023	SHEET 1 OF 1	



SOUTH WEST GEOTECHNICAL

South West Geotechnical Ltd,
Unit 3 Brooklands, Howden Road,
Tiverton, Devon.
EX16 5HW
01884 252 444



- Plan Legend:**
2023 Updated Layout
- Wind Turbine Generators
 - Met Masts
 - Substation & BESS
 - Construction Compounds
 - Access Roads
 - Borrow Pits
 - Crane Hardstandings
 - Met Mast Hardstandings
- BGS 1:50k Mass Movements Legend:**
- Deposits
 - Superficial Deposits
- Deposits Legend:**
- = Devensian Till
 - = Peat

- BGS 1:50k Linear Features Legend:**
- = Coal Seam - Inferred
 - = Coal Seam - Observed
 - = Marine Band
 - = Fault - Inferred
- BGS 1:50k Linear Features Legend:**
- = Upper Coal Measures - Sandstone
 - = Upper Coal Measures - Mudst, Siltst, Sandst
 - = Middle Coal Measures - Mudst, Siltst, Sandst
 - = Middle Coal Measures - Sandstone
 - = Mudstone, Siltstone, Sandstone
 - = Mudstone, Siltstone, Sandstone

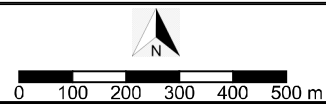
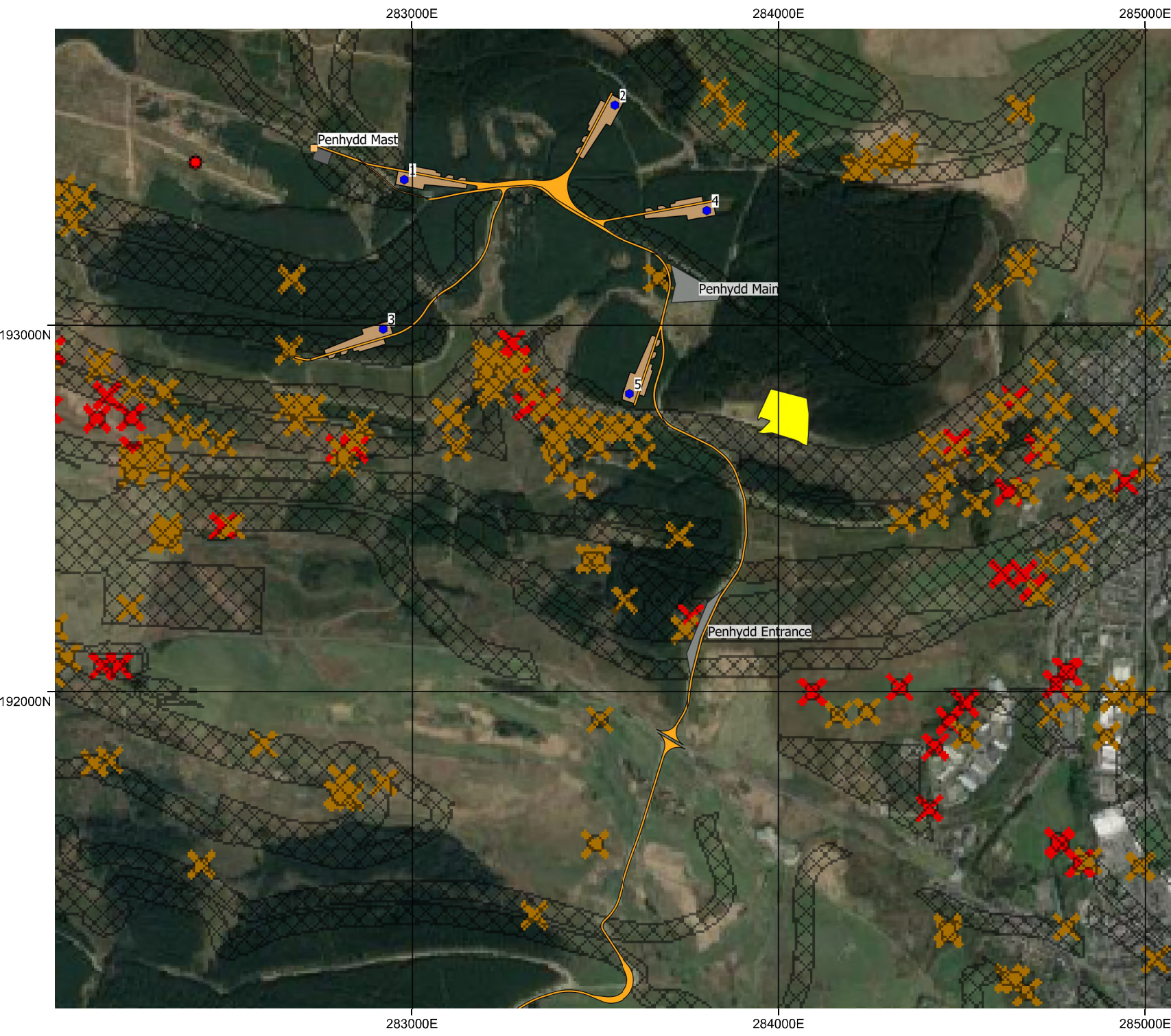
Y Bryn Wind Farm - 2023 Layout

BGS 1:50K Geology Map of the SW Access to the Margam Area

SIZE: A3	JOB NO: 14923	DWG NO: Fig No. C	REV: 1
SCALE: 1:10,000	15/03/2023	SHEET 1 OF 1	

SOUTH WEST GEOTECHNICAL

South West Geotechnical Ltd,
Unit 3 Brooklands, Howden Road,
Tiverton, Devon.
EX16 5HW
01884 252 444



Plan Legend:
2023 Updated Layout

- Wind Turbine Generators
- Met Masts
- Substation & BESS
- Construction Compounds
- Access Roads
- Borrow Pits
- Crane Hardstandings
- Met Mast Hardstandings

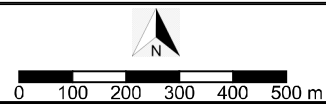
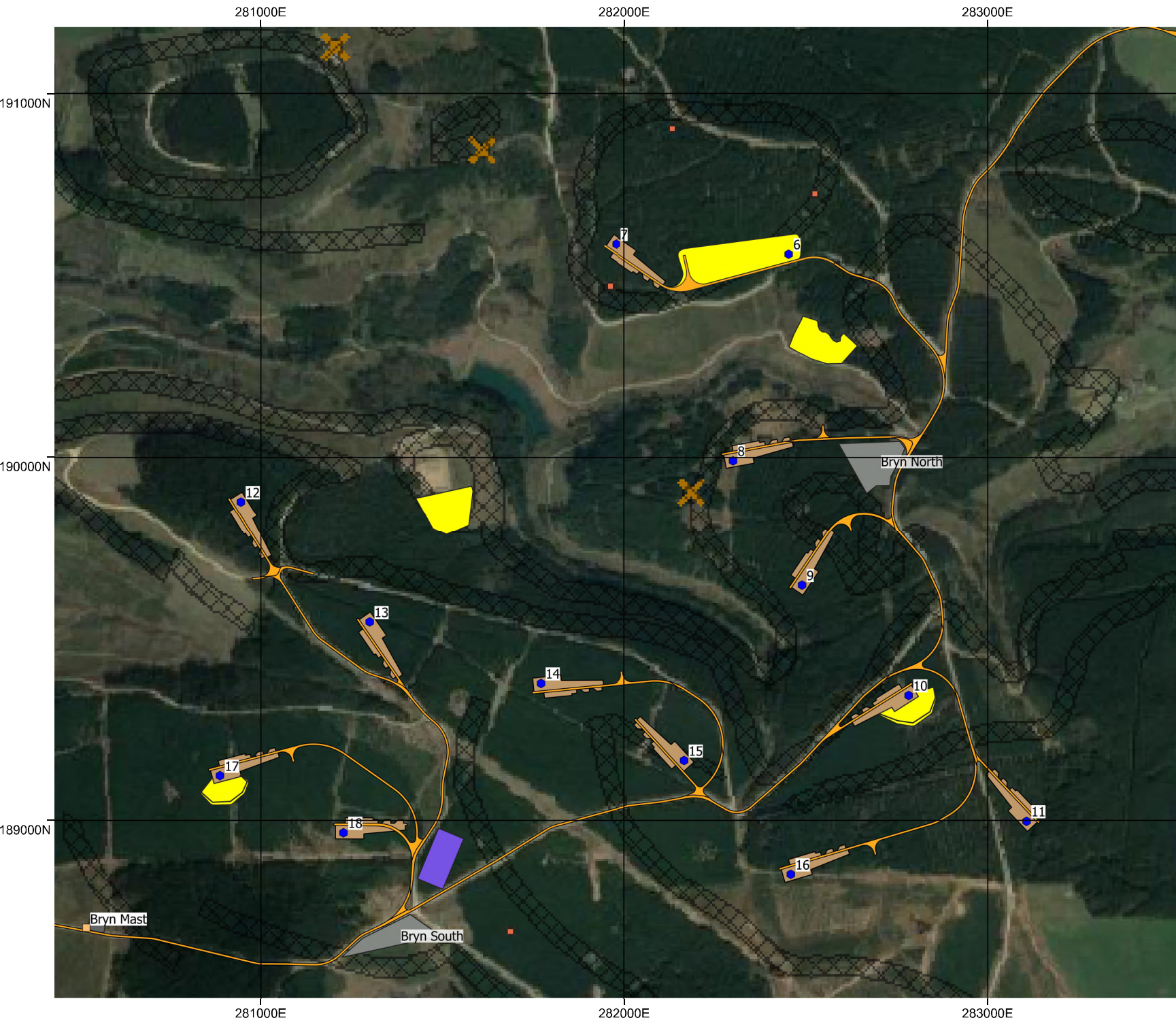
Coal Authority Information Legend:

- = High Risk Development Area
- = Mine Entry - Adit
- = Mine Entry - Shaft

Y Bryn Wind Farm - 2023 Layout			
Coal Authority Risk Map of the Penhydd Area			
SIZE: A3	JOB NO: 14923	DWG NO: Fig No. D	REV: 1
SCALE: 1:10,000	15/03/2023	SHEET 1 OF 1	

SOUTH WEST GEOTECHNICAL

South West Geotechnical Ltd,
Unit 3 Brooklands, Howden Road,
Tiverton, Devon.
EX16 5HW
01884 252 444



Plan Legend:
2023 Updated Layout

- Wind Turbine Generators
- Met Masts
- Substation & BESS
- Construction Compounds
- Access Roads
- Borrow Pits
- Crane Hardstandings
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Coal Authority Information Legend:

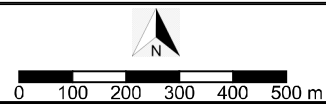
- = High Risk Development Area
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- = Mine Entry - Shaft

Y Bryn Wind Farm - 2023 Layout			
Coal Authority Risk Map of the Margam Area			
SIZE: A3	JOB NO: 14923	DWG NO: Fig No. E	REV: 1
SCALE: 1:10,000	15/03/2023	SHEET 1 OF 1	



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Tiverton, Devon.
EX16 5HW
01884 252 444



Plan Legend:
2023 Updated Layout

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- Met Masts
- Substation & BESS
- Construction Compounds
- Access Roads
- Borrow Pits
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- Met Mast Hardstandings

Coal Authority Information Legend:

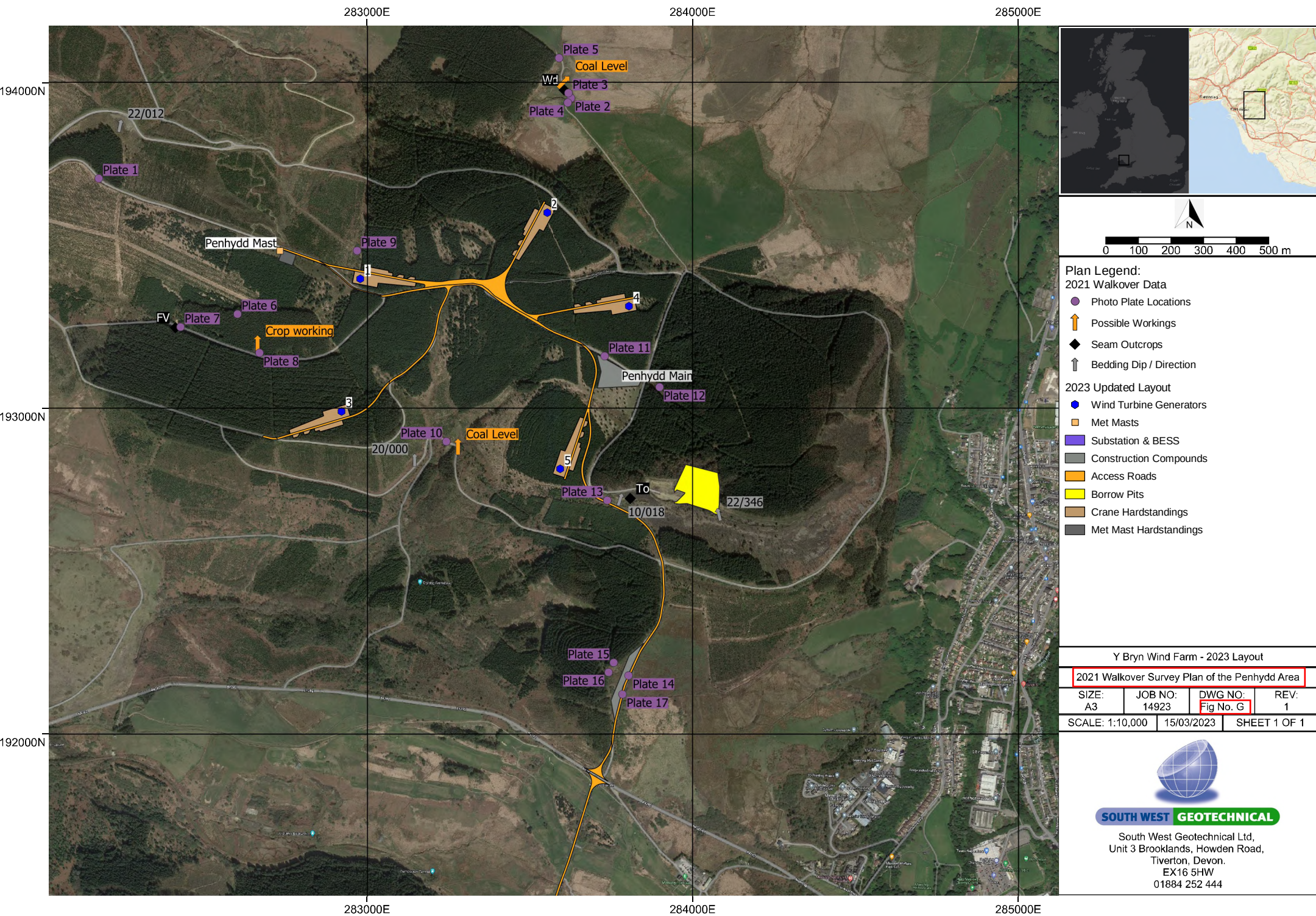
- = High Risk Development Area
- = Mine Entry - Adit
- = Mine Entry - Shaft

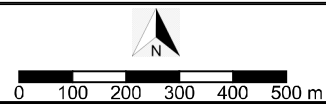
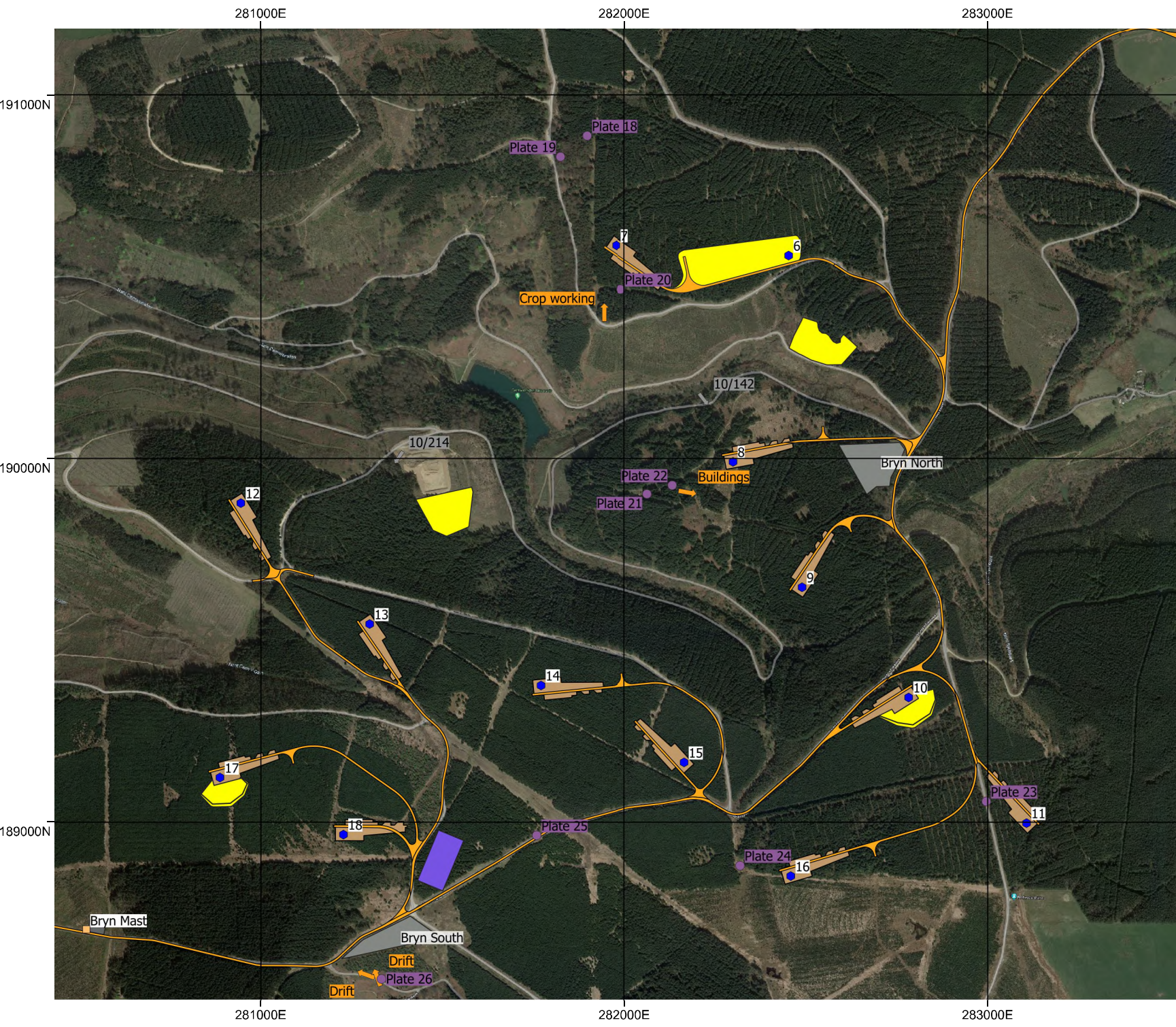
Y Bryn Wind Farm - 2023 Layout			
Coal Authority Risk Map of the SVW Access to the Margam Area			
SIZE: A3	JOB NO: 14923	DWG NO: Fig No. F	REV: 1
SCALE: 1:10,000	15/03/2023	SHEET 1 OF 1	



SOUTH WEST GEOTECHNICAL

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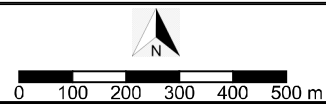
- Plan Legend:**
- 2021 Walkover Data**
- Photo Plate Locations
 - ↑ Possible Workings
 - ◆ Seam Outcrops
 - ↑ Bedding Dip / Direction
- 2023 Updated Layout**
- Wind Turbine Generators
 - ▭ Met Masts
 - ▭ Substation & BESS
 - ▭ Construction Compounds
 - ▭ Access Roads
 - ▭ Borrow Pits
 - ▭ Crane Hardstandings
 - ▭ Met Mast Hardstandings

Y Bryn Wind Farm - 2023 Layout			
2021 Walkover Survey Plan of the Margam Area			
SIZE: A3	JOB NO: 14923	DWG NO: Fig No. H	REV: 1
SCALE: 1:10,000	15/03/2023	SHEET 1 OF 1	



SOUTH WEST GEOTECHNICAL

South West Geotechnical Ltd,
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Tiverton, Devon.
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01884 252 444



- Plan Legend:**
- 2021 Walkover Data**
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- 2023 Updated Layout**
- Wind Turbine Generators
 - Met Masts
 - Substation & BESS
 - Construction Compounds
 - Access Roads
 - Borrow Pits
 - Crane Hardstandings
 - Met Mast Hardstandings

Y Bryn Wind Farm - 2023 Layout			
2021 Walkover Survey Plan of the SW Access to the Margam Area			
SIZE: A3	JOB NO: 14923	DWG NO: Fig No. 1	REV: 1
SCALE: 1:10,000		15/03/2023	SHEET 1 OF 1

SOUTH WEST GEOTECHNICAL

South West Geotechnical Ltd,
Unit 3 Brooklands, Howden Road,
Tiverton, Devon.
EX16 5HW
01884 252 444



Appendix C

Walkover Survey Plates

Plates – Penhydd Area



Plate 1: General view to west of T01



Plate 2: Outcrop of Wernddu (Wd) within cutting to north of T02.



Plate 3: Possible crop workings to east of Wd outcrop (Plate 2), viewed from the south.



Plate 4: Fault valley to north of T02, viewed from the west.



Plate 5: Area of historical coal level, to the north of T02, viewed from the northwest.



Plate 6: Change in topography to southwest of T01, possible collapse feature, viewed from the north.



Plate 7: Outcrop of Field Vein, to south west of T01, viewed from the south.



Plate 8: Example of possible crop working, to south west of T01, viewed from the northeast.



Plate 9: General location of T01, situated within larger trees in background, viewed from the southwest.



Plate 10: Area of old coal level, to east of T03, viewed from southwest.



Plate 11: General area of Penhydd Main construction compound, viewed from southeast.



Plate 12: Change in elevation associated with Thin Coal outcrop to east of Penhydd Main construction compound, viewed from west.



Plate 13: Bedrock exposure within historical quarry to east of T5, with outcrop of Tormynydd seam (To) visible towards crest, viewed from southwest.



Plate 14: General location of Penhydd Entrance construction compound, viewed from northeast.



Plate 15: Shaft in north of proposed Penhydd Entrance construction compound location, showing fencing and stone covering, viewed from north.



Plate 16: Overgrown slant in location proposed Penhydd Entrance construction compound, water logged ground in right of frame showing base of cutting with sapling sleeves in left of frame showing surrounding ground level, viewed from north.



Plate 17: Overgrown spoil heaps associated with nearby slant and shaft in south of proposed Penhydd Entrance construction compound location, viewed from northeast.



Plates – Margam Area



Plate 18: Slight change in ground level (left of frame) possibly associated with Brithdir (Bd) outcrop to north of T07, viewed from the north.



Plate 19: Possible access track to west of Brithdir (Bd) outcrop to north of T07, possibly associated with historical workings, viewed from the north.



Plate 20: Possible crop working associated with Brithdir (Bd) immediately south of T07, viewed from the southeast.



Plate 21: Change of topography (centre distance) to west of proposed T08 location, possibly associated with Brithdir (Bd) outcrop, viewed from the west.



Plate 22: Historical buildings possibly associated with crop workings of Brithdir (Bd) to west of T08 location, change in elevation in east of frame, viewed from the southwest.



Plate 23: General location of T11, viewed from the west.



Plate 24: General location of T16, viewed from the west.



Plate 25: General location of Bryn South construction compound, viewed from the northeast.



Plate 26: Possible historical coal levels (drifts/ adits) to the south of Bryn South construction compound, viewed from the south.



Appendix D

Coal Authority Reports



The Coal
Authority

CON29M

coal mining report

DEVELOPMENT SITE 2 AT Y BRYN, MARGAM, PORT TALBOT, NEATH PORT
TALBOT, SA13 2RQ



Known or potential coal mining risks

Past underground coal mining	Page 4
Future underground coal mining	Page 4
Mine entries	Page 5
Withdrawal of support	Page 6



Further action

These additional reports can give further detail on the risks identified:

- Mine entry interpretive report
- Mine entry plan and data sheets

For more information please see our **Further action reports** on page 10



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: **Y Bryn WFLtd**
Our reference: **51002190213001**
Date: **19 November 2019**

Client name:
Susan Jones

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



The Law
Society

Enquiry boundary

The map image is too large for this page and will be sent in a separate document

We can confirm that the location is
on the coalfield

This report is prepared in accordance with the latest Law Society's Guidance Notes 2018, the User Guide 2018 and the Coal Authority's Terms and Conditions applicable at the time the report was produced.



Accessibility

If you would like this information in an alternative format, please contact our communications team on 0345 762 6848 or email communications@coal.gov.uk.

Professional opinion



Mine entries

The enquiry boundary shows the approximate location of the disused mine entry/entries referred to in this report. 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 caused by disused coal mine workings including disused coal mine entries. A leaflet setting out the rights and obligations of either the Coal Authority or other responsible persons under the 1991 Act can be obtained by visiting www.coal.gov.uk. Please note this Act is not valid where coal was worked or extracted 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.

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 advisor wishes to examine the source plans from which the information has been taken, these are available to view, at our Coal Authority head office in Mansfield. To book an appointment please call **01623 637 225**. Should you or your advisor wish to carry out a physical investigation that may enter, disturb or interfere with any disused mine entry, prior permission must be sought from the owner. 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, 24 hour call out facility in coalfield areas to assess the public safety implications of mining features (including disused mine entries). To report an emergency you can call **01623 646 333**.



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

Information provided by the Coal Authority in this report is compiled in response to the Law Society's CON29M Coal Mining enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL.

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

1 Past underground coal mining

The property is in a surface area that could be affected by underground mining in 2 seams of coal at 200m to 690m depth, and last worked in 1959.

Any movement in the ground due to coal mining activity associated with these workings should have stopped by now.

In addition the property is in an area where the Coal Authority believes 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, particularly prior to any site works or future development activity, as ground movement could still be a risk. Your attention is drawn to the Professional opinion sections of the report.

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

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 enquiry boundary plot. For reasons of clarity, mine entry symbols may not be drawn to the same scale as the plan.

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

For an additional fee, the Coal Authority can provide a Mine Entry Interpretive Report. The report will provide a separate assessment for the mine entry/entries referred to in this report. It gives an opinion on the likelihood of mining subsidence damage caused from ground movement as a consequence of the mine entry/entries. It also gives 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 please visit www.groundstability.com.

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.

12 Withdrawal of support

The property is in an area where a notice to withdraw support was given in 1946.

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.

13 Working facilities order

The property is not in an area where 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.

14 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.

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.

If you believe your land or property is suffering from coal mining subsidence damage and you need more information on what to do next, please use the following link to our website which sets out what your rights are and what you need to consider before making a claim.

www.gov.uk/government/publications/coal-mining-subsidence-damage-notice-form



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.

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



Further action reports

Mine entry interpretive report - assesses the risk of ground movement from mine entries in, or within 20 metres of, the property boundary. To order this report, use the same boundary as the CON29M report, then draw the building on the additional map screen.

For more information and to order this report please visit:

<https://www2.groundstability.com/interpretive-report>

Mine entry plan and data sheets - give additional information on mine entries recorded on a piece of land. To order this report use the same boundary as the CON29M report and a member of our team will contact you to confirm the mine entries to include in this bespoke report.

For more information and to order this report please visit:

<https://www2.groundstability.com/plan-and-data-sheets>

Enquiry boundary

Key

Approximate position of enquiry boundary shown

Disused adit

How to contact us

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

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

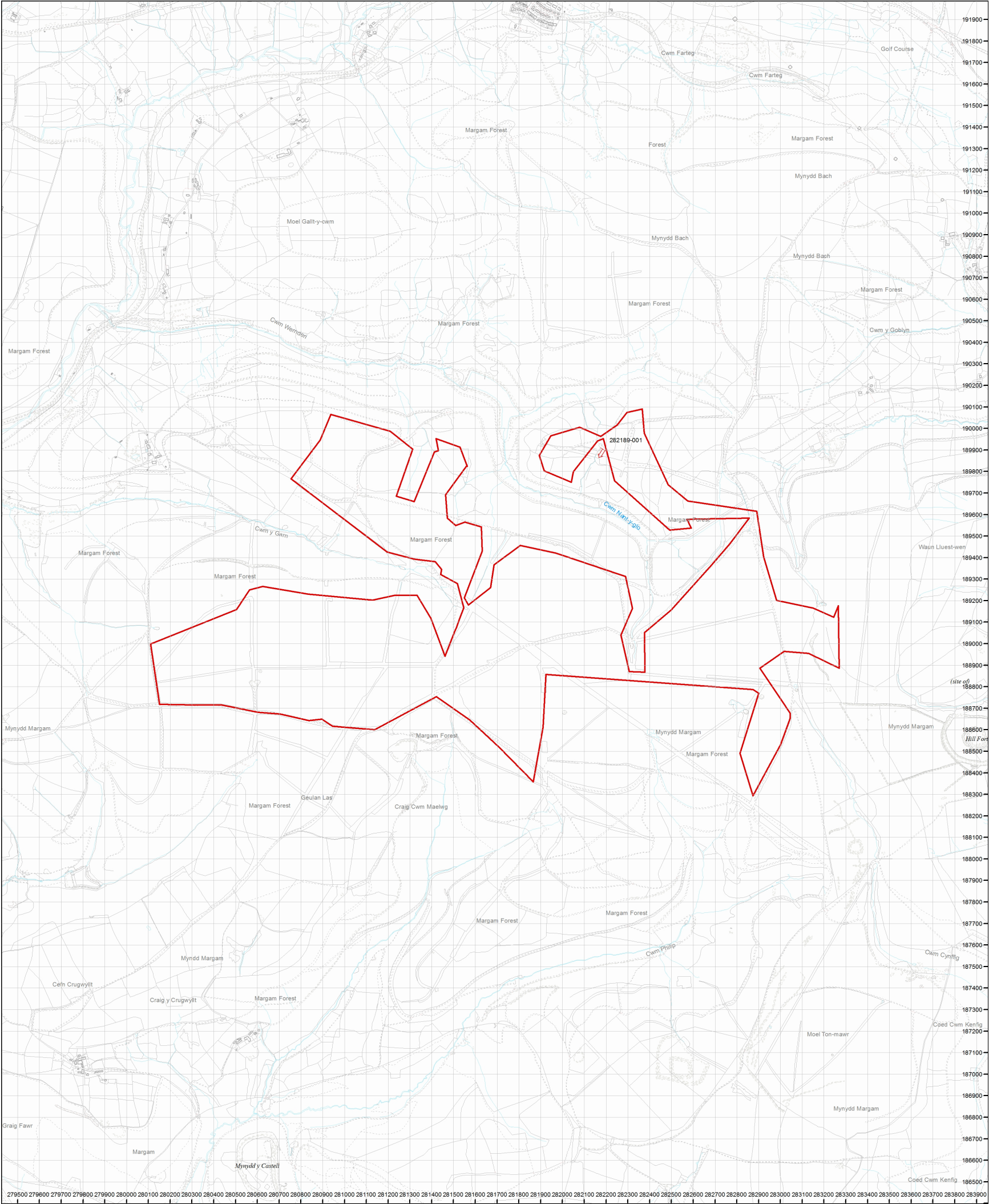
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[/company/the-coal-authority](#)
[/thecoalauthority](#)
[/thecoalauthority](#)

Map data

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The Coal
Authority

CON29M

coal mining report

DEVELOPMENT SITE AT PENHYDD, MARGAM, PORT TALBOT, NEATH PORT
TALBOT, SA13 2RQ



Known or potential coal mining risks

Past underground coal mining	Page 4
Future underground coal mining	Page 4
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Withdrawal of support	Page 6



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Your reference: **Y Bryn WFLtd**
Our reference: **51002190213002**
Date: **19 November 2019**

Client name:
Susan Jones

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



The Law
Society

Enquiry boundary

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We can confirm that the location is
on the coalfield

This report is prepared in accordance with the latest Law Society's Guidance Notes 2018, the User Guide 2018 and the Coal Authority's Terms and Conditions applicable at the time the report was produced.



Accessibility

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Professional opinion



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The Coal Authority, regardless of responsibility and in conjunction with other public bodies, provide an emergency, 24 hour call out facility in coalfield areas to assess the public safety implications of mining features (including disused mine entries). To report an emergency you can call **01623 646 333**.



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

Information provided by the Coal Authority in this report is compiled in response to the Law Society's CON29M Coal Mining enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL.

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

1 Past underground coal mining

The property is in a surface area that could be affected by underground mining in 20 seams of coal at shallow to 730m depth, and last worked in 1980.

The property is in a surface area that could be affected by underground mining in 1 seam of fireclay at shallow to 280m depth, and last worked in 1911.

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 in an area where a licence to remove or work coal, using underground methods, was granted in October 1996. This licence is conditional on the applicant securing other permissions (including planning permission).

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

Within, or within 20 metres of, the boundary of the property there are 2 mine entries, the approximate positions of which are shown on the enquiry boundary plot. For reasons of clarity, mine entry symbols may not be drawn to the same scale as the plan.

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

This information is based on the information that the Coal Authority has at the time of this enquiry.

Based on the Coal Authority's knowledge of the mining circumstances at the time of this enquiry, there may be unrecorded mine entries in the local area that do not appear on Coal Authority records.

For an additional fee, the Coal Authority can provide a Mine Entry Interpretive Report. The report will provide a separate assessment for the mine entry/entries referred to in this report. It gives an opinion on the likelihood of mining subsidence damage caused from ground movement as a consequence of the mine entry/entries. It also gives 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 please visit www.groundstability.com.

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.

12 Withdrawal of support

The property is in an area where notices to withdraw support were given in 1946, 1948, 1951, 1975 and 1977.

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.

13 Working facilities order

The property is not in an area where 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.

14 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.

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.

If you believe your land or property is suffering from coal mining subsidence damage and you need more information on what to do next, please use the following link to our website which sets out what your rights are and what you need to consider before making a claim.

www.gov.uk/government/publications/coal-mining-subsidence-damage-notice-form



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.

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



Further action reports

Mine entry interpretive report - assesses the risk of ground movement from mine entries in, or within 20 metres of, the property boundary. To order this report, use the same boundary as the CON29M report, then draw the building on the additional map screen.

For more information and to order this report please visit:

<https://www2.groundstability.com/interpretive-report>

Mine entry plan and data sheets - give additional information on mine entries recorded on a piece of land. To order this report use the same boundary as the CON29M report and a member of our team will contact you to confirm the mine entries to include in this bespoke report.

For more information and to order this report please visit:

<https://www2.groundstability.com/plan-and-data-sheets>

Enquiry boundary

Key

Approximate position of enquiry boundary shown

Disused adit

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](#)

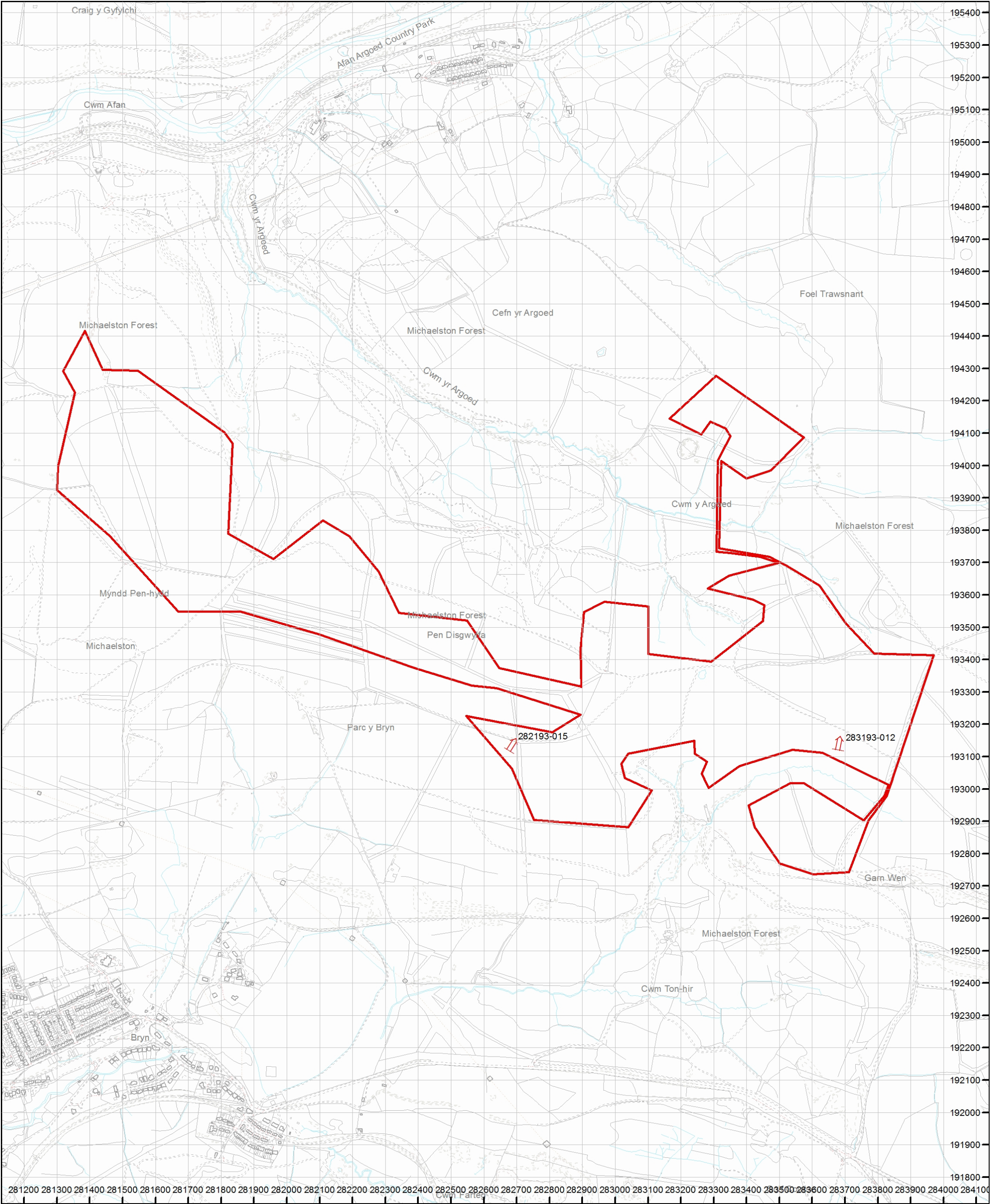
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The Coal
Authority

CON29M

coal mining report

DEVELOPMENT SITE AT Y BRYN, MARGAM, PORT TALBOT, NEATH PORT
TALBOT, SA13 2RQ



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: **Y Bryn WFLtd**
Our reference: **51002190185001**
Date: **19 November 2019**

Client name:
Susan Jones

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



The Law
Society

Enquiry boundary

The map image is too large for this page and will be sent in a separate document

We can confirm that the location is
on the coalfield

This report is prepared in accordance with the latest Law Society's Guidance Notes 2018, the User Guide 2018 and the Coal Authority's Terms and Conditions applicable at the time the report was produced.



Accessibility

If you would like this information in an alternative format, please contact our communications team on 0345 762 6848 or email communications@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.

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1 Past underground coal mining

The property is not within a surface area that could be affected by any past recorded underground coal mining.

However the property is in an area where the Coal Authority believes 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, particularly prior to any site works or future development activity, as ground movement could still be a risk. Your attention is drawn to the Professional opinion sections of the report.

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.

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9 Coal mining subsidence

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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.

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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.

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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.

Glossary



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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

Enquiry boundary

Key

Approximate position of enquiry boundary shown



How to contact us

0345 762 6848 (UK)
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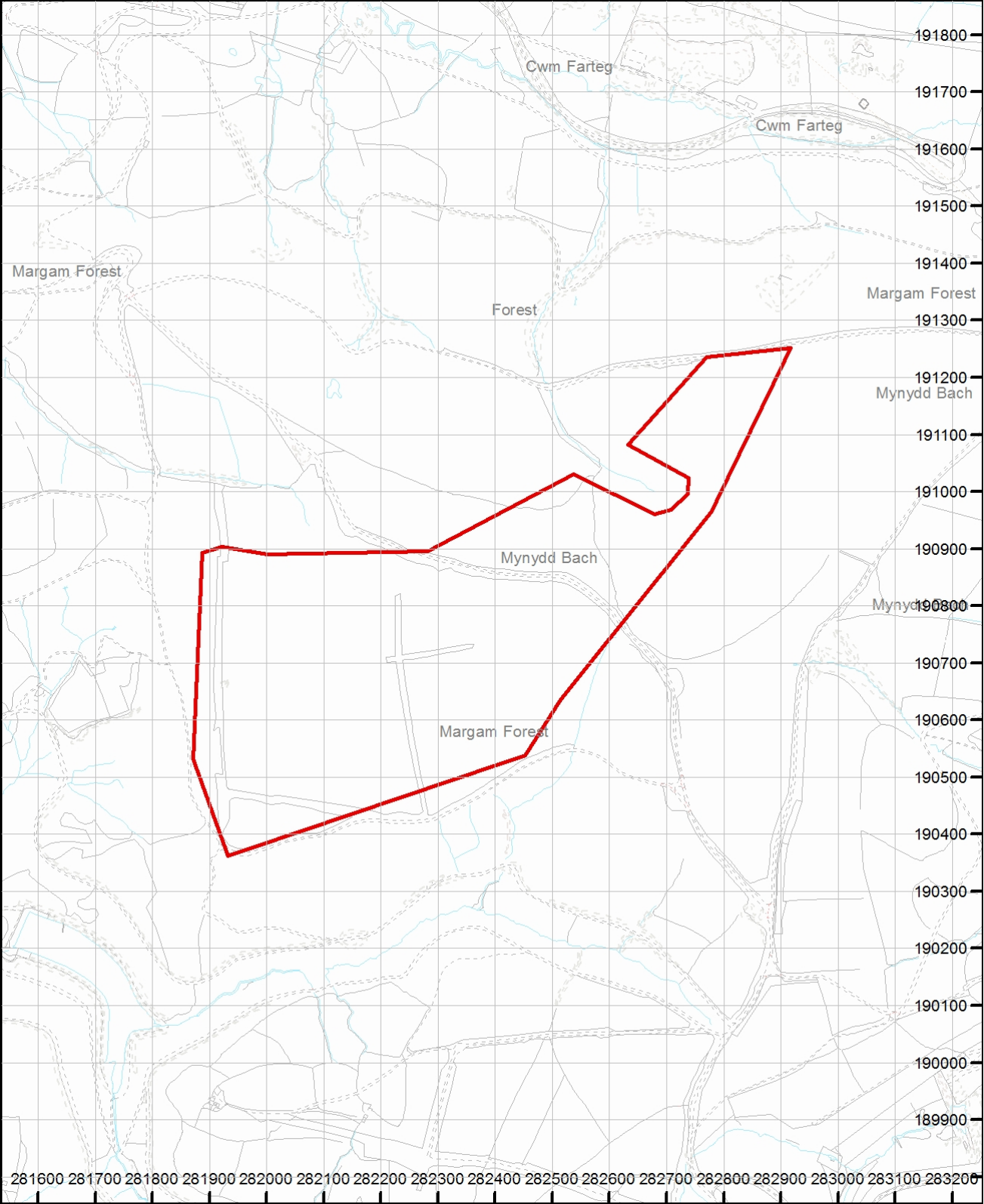
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Appendix E

Coal Mining Risk Register

Previous Feature id	Proposed Development Feature	Geology				High Risk Development Area? ⁽⁴⁾	Possible Shallow/crop Workings? [<25mBGL] (Seam name)	Possible Deep Workings? [>25mBGL] (Seam name)	Mine Entries	Significant Surface Features	Relevant Plate Numbers	CON29M Mining Report Workings Information ⁽⁵⁾
		Unit	Dip	Faults	Coal Outcrops							
T02	T01	UCM	Dip 15° to north west. ⁽²⁾	Fault approximately 10m to west.	Thin Coal outcrop approximately 180m to south east.	Yes (west of fault)	Possible, depending on accuracy of fault mapping	Possible (Werndu/Thin Coal)	None recorded within 100m.	None observed within 100m.	9	Recorded workings of 20 seams from shallow to 730m depth.
T03	T02	UCM	Dip 15° to north west. ⁽²⁾	None within 100m.	Wp, Wd & FV outcrop down gradient approximately 130m to northeast. Thin Coal outcrop approximately 290m to southwest.	No	Unlikely	Possible (Thin Coal)	None recorded within 100m.	None observed within 100m.	N/A	Recorded workings of 20 seams from shallow to 730m depth.
T04	T03	UCM	Unknown, assumed approximately north. ⁽¹⁾	None within 100m.	Thin Coal outcrop approximately 90m to south.	No	Possible (Thin Coal)	Possible (Thin Coal & To)	None recorded within 100m.	None observed within 100m.	N/A	Recorded workings of 20 seams from shallow to 730m depth.
T05	T04	UCM	Unknown, assumed approximately north. ⁽¹⁾	None within 100m.	Thin Coal outcrop in hillside approximately 155m to southwest.	No	Unlikely	Possible (Thin Coal)	None recorded within 100m.	None observed within 100m.	13	Recorded workings of 20 seams from shallow to 730m depth.
T06	T05	UCM	Unknown, assumed approximately north. ⁽¹⁾	None within 100m.	To outcrop approximately 44m to south.	No	Possible To	Possible To	Several within 100m south.	None observed within 100m.	N/A	Recorded workings of 20 seams from shallow to 730m depth.
T08	T06	UCM	Unknown, assumed approximately south. ⁽¹⁾	None within 100m.	Bd outcrop approximately 45m to east.	Close to western edge of high risk area	Possible (Bd at outcrop)	Possible (No 1 RR)	None recorded within 100m.	None observed within 100m.	N/A	No recorded Workings.
T09	T07	UCM	Unknown, assumed approximately south. ⁽¹⁾	None within 100m.	Bd outcrop approximately 60m to south.	Yes	Possible (Bd)	Possible (No 1 RR)	Possible crop workings to southwest.	Possible crop workings to southwest.	20	No recorded Workings.
T10	T08	UCM	Dip 10° to south east. ⁽²⁾	None within 100m.	Bd approximately 75m to north west.	Close to eastern edge of high risk area	Possible (Bd)	Possible (No 1 RR)	None recorded within 100m.	Historical buildings possible associated with workings approximately 170m to south west.	21, 22	2 recorded workings @ 200mBGL and 690mBGL.

Previous Feature id	Proposed Development Feature	Geology				High Risk Development Area? ⁽⁴⁾	Possible Shallow/crop Workings? [<25mBGL] (Seam name)	Possible Deep Workings? [>25mBGL] (Seam name)	Mine Entries	Significant Surface Features	Relevant Plate Numbers	CON29M Mining Report Workings Information ⁽⁵⁾
		Unit	Dip	Faults	Coal Outcrops							
T11	T09	UCM. Peat mapped 20m east	Dip 15° to south east. ⁽²⁾	None within 100m.	DbR approximately 75m to northeast (up gradient). Bd approximately 175m to southwest.	No	Possible (Bd)	Possible (Bd & No 1 RR)	None recorded within 100m.	None observed within 100m.	N/A	2 recorded workings @ 200mBGL and 690mBGL.
T12	T10	UCM	Dip 3° to north east. ⁽²⁾	None within 100m.	BdR outcrop approximately 150m northwest.	No	Possible (BdR)	Possible (Bd)	None recorded within 100m.	None observed within 100m.	N/A	2 recorded workings @ 200mBGL and 690mBGL.
T13	T11	UCM	Dip 3° to north east. ⁽²⁾	None within 100m.	BdR outcrop approximately 350m to north.	No	Unlikely	Possible (BdR & Bd)	None recorded within 100m.	None observed within 100m.	N/A	2 recorded workings @ 200mBGL and 690mBGL.
T14	T12	UCM	Unknown, assumed approximately south. ⁽¹⁾	None within 100m.	BdR outcrop approximately 130m to north and east. Bd approximately 200m to north.	No	Possible (BdR)	Possible (Bd)	None recorded within 100m.	None observed within 100m.	N/A	2 recorded workings @ 200mBGL and 690mBGL.
T15	T13	UCM Hill Peat 210m south east at start of crane pad.	Unknown, assumed approximately south. ⁽¹⁾	None within 100m.	BdR approximately 150m to north east	No	Unlikely	Possible (Bd)	None recorded within 100m.	None observed within 100m.	N/A	2 recorded workings @ 200mBGL and 690mBGL.
T16	T14	UCM	Unknown, assumed approximately south. ⁽¹⁾	Fault approximately 75m to south, near side downthrown.	BdR approximately 230m to north. Bd approximately 280m to north.	No	Possible (BdR)	Possible (Bd & No 1 RR)	None recorded within 100m.	None observed within 100m.	24	2 recorded workings @ 200mBGL and 690mBGL.
T17	T15	UCM	Unknown, assumed approximately north. ⁽¹⁾	Fault approximately 25m to north.	BdR approximately 600m to southwest.	No	Unlikely	Possible (BdR & Bd)	None recorded within 100m.	None observed within 100m.	N/A	2 recorded workings @ 200mBGL and 690mBGL.
T18	T16	UCM	Unknown, assumed approximately north. ⁽¹⁾	None within 100m.	BdR outcrop approximately 550m to southwest. BdR outcrop approximately 300m to north, beyond fault.	No	Unlikely	Possible (BdR & Bd)	None recorded within 100m.	None observed within 100m.	N/A	2 recorded workings @ 200mBGL and 690mBGL.

Previous Feature id	Proposed Development Feature	Geology				High Risk Development Area? ⁽⁴⁾	Possible Shallow/crop Workings? [$<25\text{mBGL}$] (Seam name)	Possible Deep Workings? [$>25\text{mBGL}$] (Seam name)	Mine Entries	Significant Surface Features	Relevant Plate Numbers	CON29M Mining Report Workings Information ⁽⁵⁾
		Unit	Dip	Faults	Coal Outcrops							
T19	T17	UCM	Unknown, assumed approximately north. ⁽¹⁾	Fault approximately 100m west, trending roughly north-south	Bd 500m south west	No	Unlikely	Possible (Bd)	None recorded within 100m.	None observed within 100m.	N/A	2 recorded workings @ 200mBGL and 690mBGL.
T20	T18	UCM	Unknown, assumed approximately north. ⁽¹⁾	None within 100m.	Bd outcrop approximately 400m to south.	No	Unlikely	Possible (Bd & No 1 RR)	None recorded within 100m.	None observed within 100m.	N/A	2 recorded workings @ 200mBGL and 690mBGL.
CC1	Penhydd Main construction compound	UCM	Unknown, assumed approximately north. ⁽¹⁾	None within 100m.	Cd outcrop approximately 20m to south. UYd outcrop approximately 100m to north (dipping away). V outcrop approximately 250m to north (dipping away).	Yes	Possible (UYd)	Possible (UYd & V)	Slant and shaft to west of area	Spoil Heaps to west of area.	11,12	Outside scope of mining reports.
CC2	Penhydd Entrance construction compound	UCM	Unknown, assumed approximately north. ⁽¹⁾	None within 100m.	Bd outcrop approximately 70m to north. BdR approximately 20m to southwest.	Yes, south western boundary of CC3	Unlikely	Possible (No Bd)	None recorded within 100m.	None observed within 100m.	14, 15, 16, 17	Outside scope of mining reports.
CC3	Bryn North construction compound	UCM	Unknown, assumed $<10^\circ$ to approximately north. ⁽¹⁾	None within 100m.	BdR outcrop approximately 185m to northeast. Bd outcrop approximately 100m to south.	Yes, south western boundary of CC4	Possible (BdR)	Possible (Bd & No 1 RR)	None recorded within 100m.	None observed within 100m.	N/A	No recorded Workings.
CC4	Bryn South construction compound	UCM	Unknown, assumed approximately 10° to approximately north. ⁽¹⁾	None within 100m.	Bd outcrop on north eastern corner of BS1	No depending on accuracy of Bd outcrop mapping	Possible (Bd)	Possible (No 1 RR & No 1 R)	None within 100m	None observed within 100m.	26	Outside scope of mining reports.

Previous Feature id	Proposed Development Feature	Geology				High Risk Development Area? ⁽⁴⁾	Possible Shallow/crop Workings? [<25mBGL] (Seam name)	Possible Deep Workings? [>25mBGL] (Seam name)	Mine Entries	Significant Surface Features	Relevant Plate Numbers	CON29M Mining Report Workings Information ⁽⁵⁾
		Unit	Dip	Faults	Coal Outcrops							
BS1	BESS	UCM	Unknown, assumed approximately north. ⁽¹⁾	Fault approximately 130m to north east, near side downthrown.	FV outcrop in valley side approximately 150m to south with Wd, Wp and 2 other outcrops beyond.	No	Unlikely	Possible (FV, Wd, Wp etc - Possible combining)	None recorded within 100m.	None observed within 100m.	N/A	Recorded workings of 20 seams from shallow to 730m depth.
Mast 1 (N)	Penhydd Mast	UCM	Unknown, assumed approximately north. ⁽¹⁾	Fault located 87m south west	FV outcrops beneath mast	Yes	Possible (FV)	Possible (FV)	None recorded within 100m	Unknown	N/A	2 recorded workings @ 200mBGL and 690mBGL.
Mast 2 (S)	Bryn Mast	UCM	Unknown, assumed approximately north. ⁽¹⁾	None	BD located 60m north east	No	Unlikely	Unlikely	None recorded within 100m	Unknown	N/A	No recorded Workings.

Notes:

- (1) Assumed from cross section provided on BGS Map Sheet 248.
(2) Assumed from dip information provided on BGS Map Sheet 248.
(3) Assumed from near-by outcrop measurements taken from field work.
(4) As designated by the Coal Authority.
(5) Depths provided are considered likely to be inaccurate. See main report for further discussion.

Abbreviations:

UCM	Upper Coal Measures
Cd	Caedavid
UYd	Upper Yard
To	Tormynydd
Bd	Brithdir
FV	Field Vein
No2R	Number 2 Rhondda
Wd	Wernddu
Y	Ynisarwed