



RHONDDA  
GEOTECHNICAL  
SERVICES

COAL MINING RISK ASSESSMENT  
PLANNING APP. 17/5068/41  
LAND ADJACENT TO  
LLANTRISANT BUSINESS PARK  
LLANTRISANT  
R.C.T.

8/03/2018

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## COAL MINING RISK ASSESSMENT

### 1. INTRODUCTION

This Coal Mining Risk Assessment (henceforth C.M.R.A.) has been produced for Allied Welsh in support of a pre-planning application to Rhondda Cynon Taf L.P.A. (henceforth R.C.T.). The application is for an extensive development of two large industrial units and five smaller units on a greenfield site adjacent to Llantrisant Business Park. The planning application number is 17/5068/41. The full plans can be viewed on R.C.T.'s planning portal. Some representative drawings are included in Appendix 1 of this report. The site is classed as being partly within a Development High Risk Area. This fact has been communicated to the applicants recently by R.C.T.'s planning department. The reason for this classification is the presence of shallow coal seam(s) under the site. With such a classification the C.A. become statutory consultees for the application.

Richard Davies BSc.(Hons),MSc., F.G.S. of Rhondda Geotechnical Services has been commissioned as the competent person to prepare a C.M.R.A. of the proposed development site. The purpose of this 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. The purpose of this C.M.R.A. is to gather all the available information and then use it to identify any coal mining risks and any proposals to quantify them. It will then suggest any mitigation measures 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 on grid reference 304500, 185200 and is at an elevation of approximately 75m. A.O.D. The plot is a large pasture roughly rhomboid in shape, covering an area of approximately 4.9 acres. A surface watercourse (Nant Castellau) forms the northern boundary. The course of a disused railway bounds the site to the west. The southern boundary is the edge of the existing business park and the eastern boundary is an arbitrary line through the field. The site location and site boundary can be seen overleaf in Figures 1 and 2.

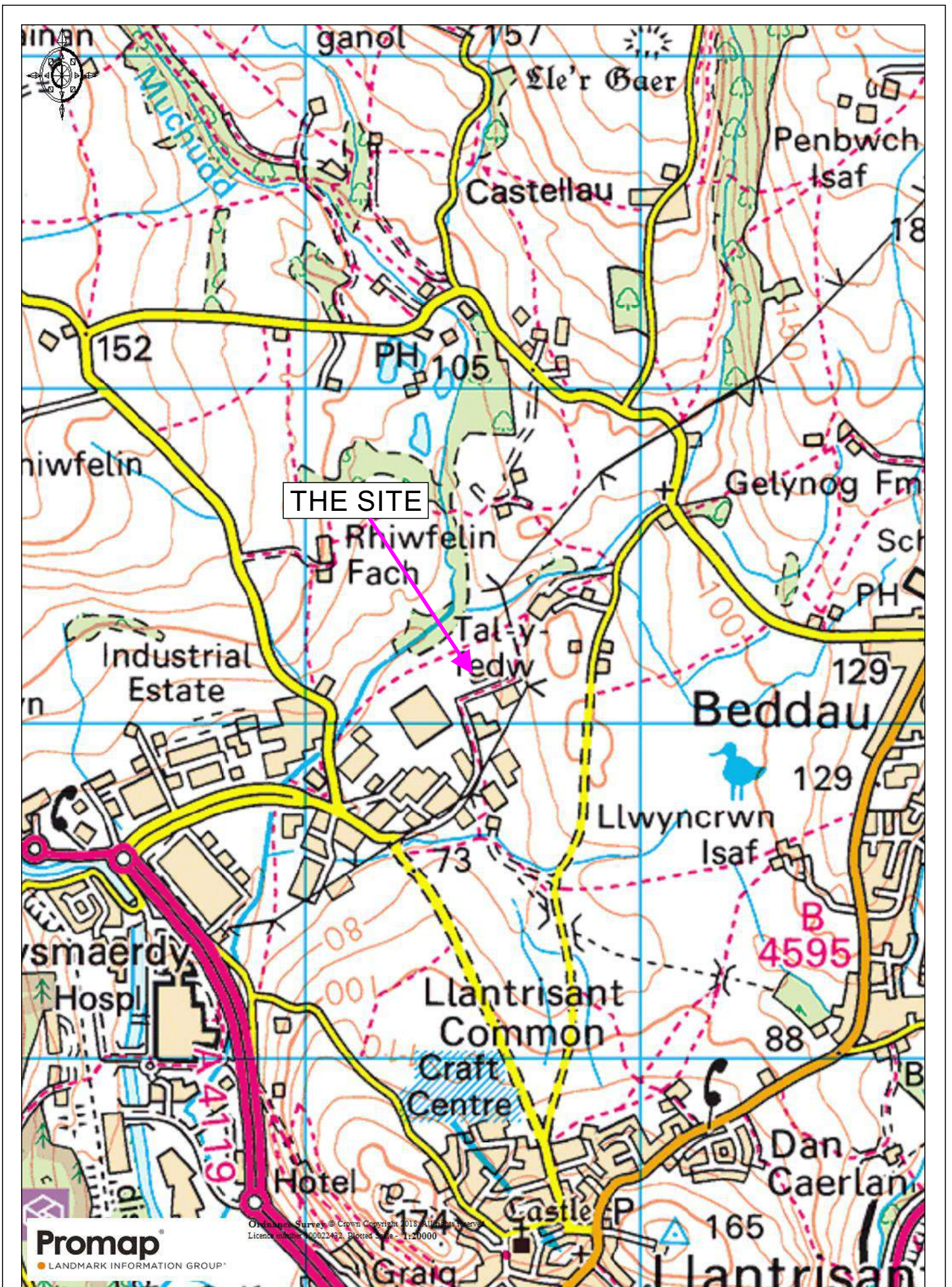
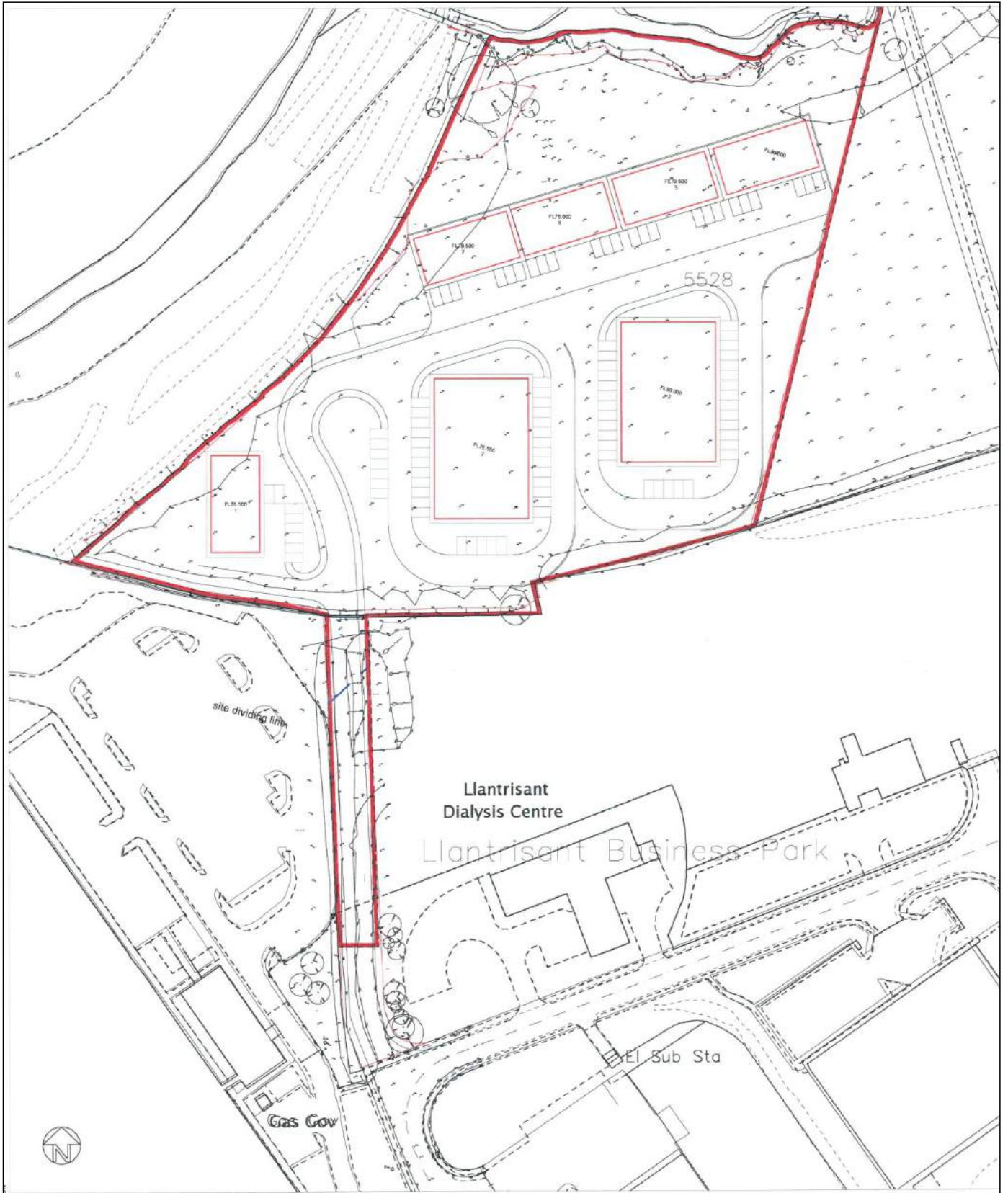


FIGURE 1  
SITE LOCATION



**FIGURE 2**  
**SITE BOUNDARY**

## 2. SOURCES OF INFORMATION

- a) Consultants Coal Mining Report ref MR-51001798421001
- b) The Coal Authority interactive map viewer.
- c) The 6" to the mile Geological Survey sheets 36NW and 36SW (1960 revision).
- d) The Memoirs of the Geological Survey of The South Wales Coalfield, part IV Pontypridd and Maesteg (first edition 1903 and third edition, 1963) and other mining archive sources.
- e) Groundsure combined report Enviroinsight, Geoinsight and Mapinsight ref.GS3483971/2/3/4 (includes data from B.G.S. Britpits)
- f) Historical Ordnance Survey maps, Old County Editions for Glamorgan, Sheet 36, 1879 with 1900, 1919, and 1990 revisions. Maps were viewed at both 1:10560 and 1:2500 scales.
- g) A walkover visit to the site and surrounding area.

2a) The mining report states that the site has no recorded coal mining beneath it at any depth. This is a highly unusual situation in South Wales, workings from Cwm/Coedely Collieries must be fairly close but evidently do not underlie the site. It does however state that two coal seams outcrop within the site boundary. It names these as the Darren Ddu and Westernmoor and says that both are of workable thickness. In actual fact the site boundary was wrongly drawn. The site access was omitted and two further seams cross this on the interactive viewer. They are labelled Swansea No.3 and an unnamed seam. The report then goes on to say that there are no mine entries on or within 100m. of the site. The report states there are no present underground workings, or plans for any in the future. There are no records of gas emissions requiring action. There are no recorded surface hazards that have required remedial action and 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). The C.A. is not aware of any geological faults or other weaknesses that have been affected by coal mining. All these facts will be fed into the later quantitative risk assessment. The report is attached as Appendix 2.

The most relevant fact in the report in relation to this risk assessment is the presence of these coal seams, and the question of if they have ever been

worked. The evidence will be examined in greater detail later in this assessment. The report suggests the developer seeks appropriate technical advice prior to any works being undertaken. In the comments section the Coal Authority goes on to explain the problems, liabilities and responsibilities of a potential developer with regards to developments on potentially unstable ground and the need for good engineering practise.

2b) The C.A. interactive viewer contains a vast amount of information from various sources. Figure 3A overleaf is a screenshot of the planning window with the site highlighted. The site can be seen to straddle two areas of Development High Risk. The surrounding area has several shafts marked, although as stated in the report, none are within 100m. (One is just outside this limit and the relevance of this will be discussed later). The mining data window is far superior to the planning window as it is possible to zoom in to a greater magnification. However the seam outcrops shown seem totally alien to the outcrop pattern shown on other sources of information. Figure 3B shows the relevant section with the C.A. seam codes added and explained below the map. The author is in correspondence with the C.A. about this, but the matter is unlikely to be resolved prior to this risk assessment being submitted.

2c, d and e) The six inch to the mile Geological Survey sheets 36NW and 36SW cover the area around the site. Unfortunately the site straddles the boundary of the two sheets. Extracts of the two maps have been put together and reproduced as Figure 4 overleaf. A section of the stratigraphic column from the map is shown in Figure 5 with the level of the site marked. A geological map from the Groundsure report, derived from the B.G.S. Geindex, is also included as Figure 6. It is very useful to study the maps in conjunction with the Memoirs. Used together, the six inch survey sheets and the Memoirs are an invaluable source of much detailed geological information on the area. Much of this has been obtained from mining records. Due to the very high economic importance of the area extensive government funded geological surveys have been carried out in the past. These were completed in 1845, 1899 and 1954 respectively. Very little information on historical coal mining in the area is missing. The memoirs state that the bedrock beneath the site is of Upper Carboniferous (Coal Measure) age. More specifically it is underlain by the Hughes Beds which are a subdivision of the Upper Coal Measures (Pennant measures locally). In this part of the coalfield the Hughes Beds contain two workable coal seams, The Daren-Ddu and below it, marking the base of the Hughes Beds is the Cefn Glas. Both seams have been worked in the surrounding area. The Cefn Glas does not

outcrop on the section of the survey sheet reproduced, but underlies all the map section at varying depth, dependant on the structure of the syncline. The strata above the site level is also important to this risk assessment because of the discrepancy between the seams shown on interactive viewer and the seams shown on the Geological Survey sheets. The Hughes Beds contain no workable coal above the Daren-Ddu. At the northern boundary of the site, following the course of the Nant Mychydd the outcrop of the Daren-Ddu is marked. Several hundred metres south of the site the outcrop of the Llantwit No.3 can be seen. This is the basal member of the Grovesend Beds which lie unconformably on the Hughes Beds. The Memoirs record 150' (45.5m.) of mainly sandstone between the Daren-Ddu and the Llantwit No.3 in the area south of Cwm Colliery, approximately 1km. away. The Swansea Beds are entirely absent from this part of the coalfield. It is widely thought that they were removed by erosion following localised uplift of the area prior to the deposition of the Grovesend Beds (Figure 5). The Llantwit No.3 is a thick (by South Wales standards) good quality coal which has been extensively worked in the surrounding area. The Memoirs state that "the outcrops of these beds within the Llantwit Syncline are extensively covered by glacial drift and knowledge of the sequence is derived almost entirely from mining activity which was, to a large extent, completed before the original six inch survey". Since this was in 1896, with the memoirs published in 1903 it is impossible to understand where the Coal Authority's information comes from. It differs totally from any other published source both in structure and stratigraphy. The Llantwit Syncline is a well recorded structural feature and the closure of it on Llantrisant Common can be clearly seen on both the original survey sheet and the Groundsure map which is derived from it. It is completely different to the structure shown on the consultants report and interactive viewer with the two being virtually impossible to reconcile.

Besides the outcrop and bedrock data, the survey sheets are extensively annotated with information from outcrops and mineshafts. Northeast of the site a dip of 10° south is recorded in an outcrop of sandstone. Close by is a coal shaft which is recorded as reaching the Cefn Glas seam at 210' (63.6m.). There are seven shafts recorded south of the site on the map extract. Some of the annotations have been cut off. As they are highly relevant they are reproduced below:-

A. Llwynau Shaft- 210' (63.6m.) to Cefn Glas Seam.



B and C- Shafts to No.3 Llantwit Seam at 105' (31.8m.). Note also the fault marked immediately west of the shafts, with a 35' (10.6m.) throw, evidently measured underground.

D. Trial shaft collapsed in gravel at 75' (22.7m.)

E. No information given on map. Memoirs record it as part of a series of trial pits. Probably abandoned in superfcials.

F. Trial shaft reaching the base of the gravel at 65' (19.7m.). Daren-Ddu seam at 136' (41.2m.).

G. Trial shaft reaching the base of the gravel at 55<sup>1/2</sup>' (16.8m.). Daren-Ddu at 72' (21.8m.). Using the shaft positions relative to strike and the recorded seam depths, a dip of 15° can be extrapolated for the seam.

H. Ty-Clwydau Pit. Marked as "old coal pit" on the earliest O.S. map, it is in all likelihood an old trial shaft sunk in search of the No.3 which it evidently didn't strike. There is no evidence of it reaching the Daren Ddu. In fact the opposite is true. There is no spoil heap, or tramline across the treacherous boggy ground in contrast to other productive small mines on the O.S. maps. A quick calculation of distance from outcrop with a 10° dip would give a depth of approximately 65m. to the seam. This would be quite a depth for the technology of the day in such thick superficial deposits.

The memoirs record the Daren-Ddu seam being worked from hillside outcrops at Tonyrefail, four kilometres to the north. Here it was known as the Dirty Seam on account of both its high sulphur content and the seam section being split by several partings. It did however, have 38" (1.0m.) of coal. In contrast, the trial shaft G in figure 4 is recorded in the Memoirs as having a section:-

Coal	8"
Clod	7"
Coal	7"
Clod and Fireclay	50"
Coal	18" (Total coal 0.85m. in 2.31m. of extraction)

This could be described as poor considering it needed to be won under far more arduous circumstances than the hillside levels in Tonyrefail.

Finally the Geinsight report was used to provide as much information as possible about mining features shown on the interactive viewer, the Survey map and the historical O.S. maps. It utilises information from the B.G.S. BritPits database, although since most of the mining predates the 1874 map it added little to what was already known, although it was useful for getting precise grid co-ordinates for the shafts.

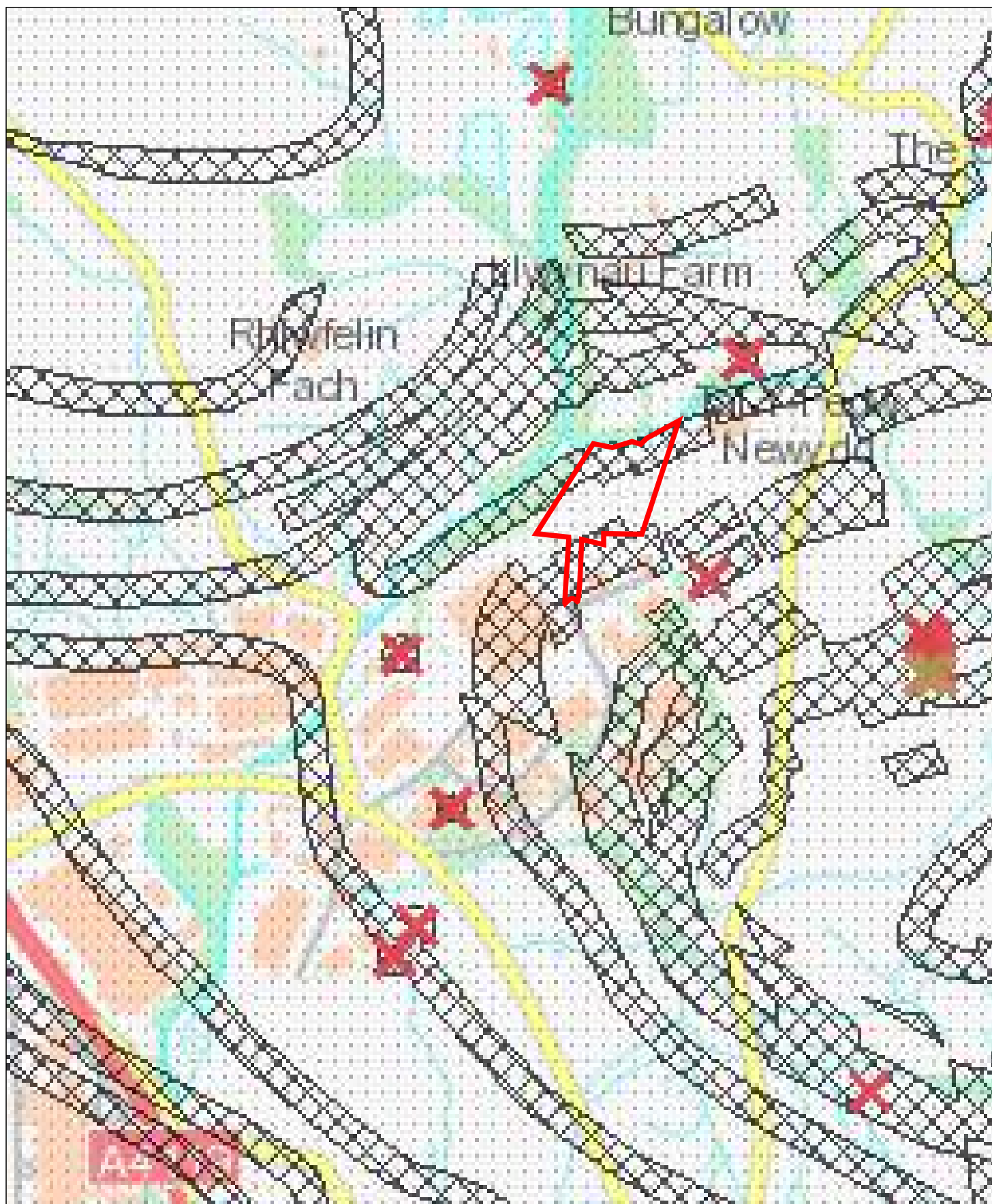
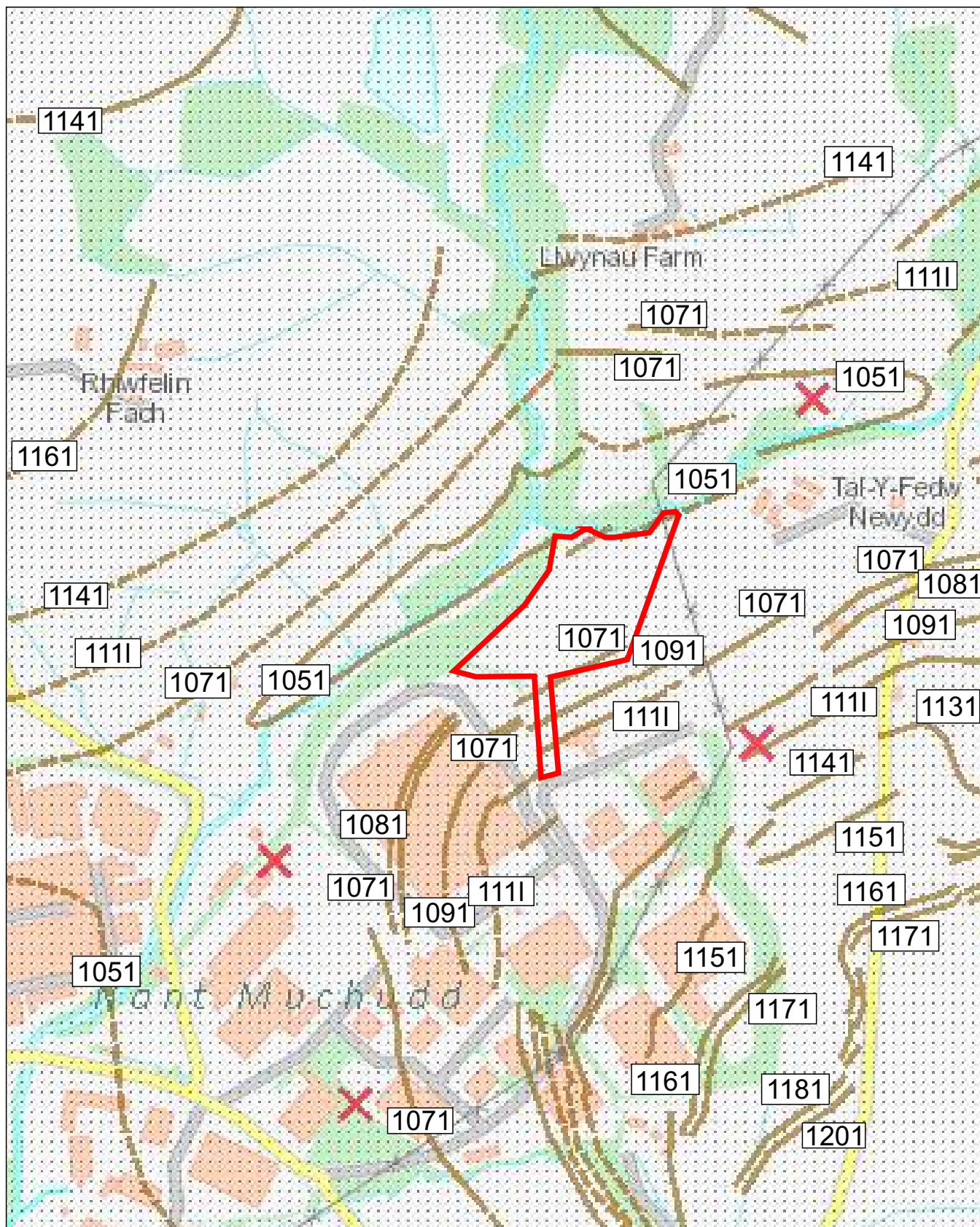


FIGURE 3A

SCREENSHOT FROM THE C.A. INTERACTIVE VIEWER SHOWING THE APPROXIMATE SITE BOUNDARY WITH DEVELOPMENT HIGH RISK AREAS HATCHED AND MINE ENTRIES MARKED (SHAFTS IN RED, ADITS IN BROWN)



**FIGURE 3B**

**SITE ON COAL MINING DATA VIEWER WITH SEAM CODES**

- |                   |                              |
|-------------------|------------------------------|
| 1051 DAREN DDU    | 1141 Mynyddislwyn Lower Leaf |
| 1071 WESTERNMOOR  | 1151 Mynyddislwyn Top Leaf   |
| 1081 UNNAMED      | 1161 UNNAMED                 |
| 1091 SWANSEA No.3 | 1171 UNNAMED                 |
| 1111 UNNAMED      | 1181 UNNAMED                 |
| 1131 UNNAMED      | 1201 Mynyddislwyn Big Rider  |

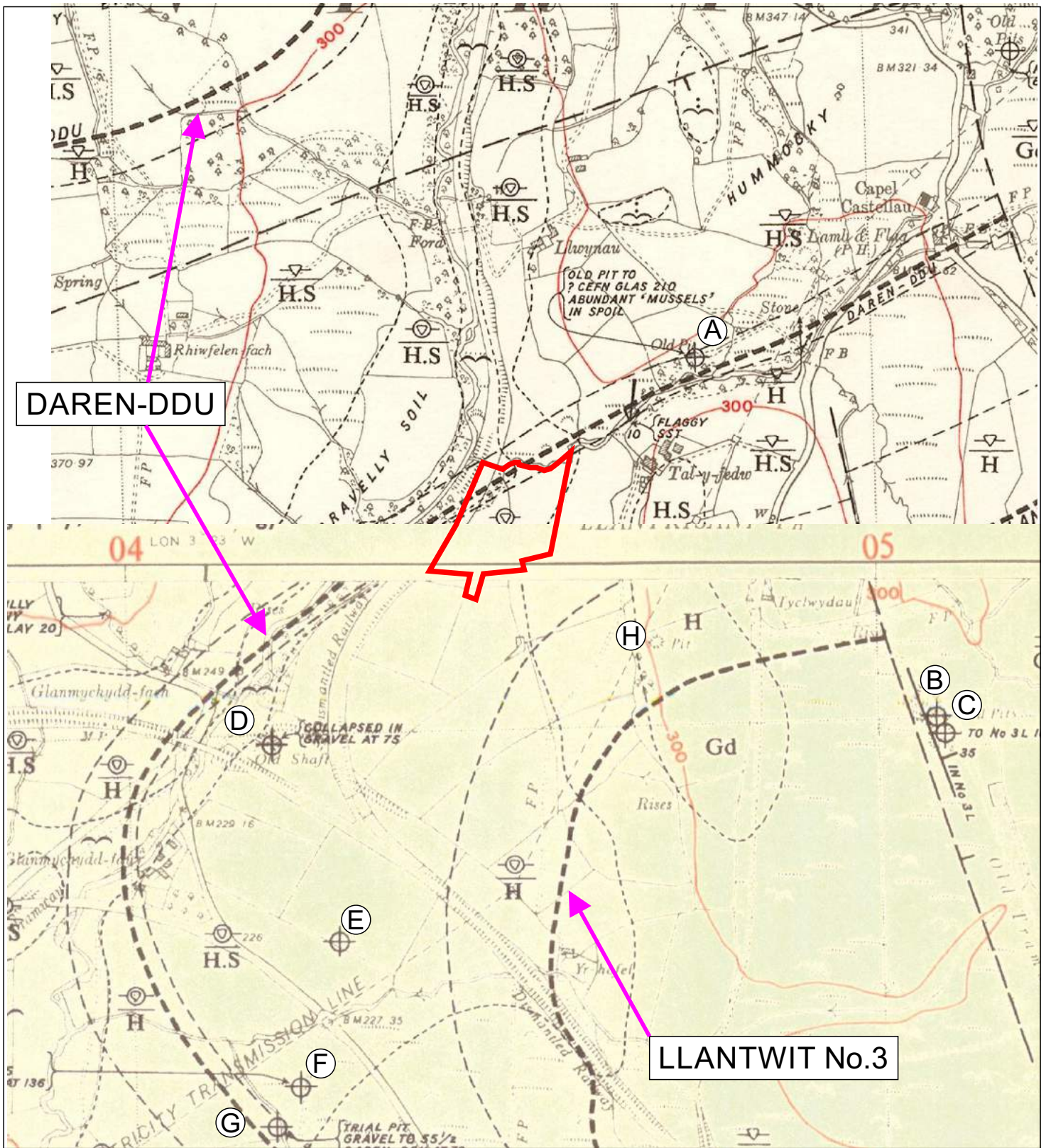


FIGURE 4  
 EXTRACTS OF SURVEY SHEETS 36NW AND 36SW  
 WITH SITE HIGHLIGHTED

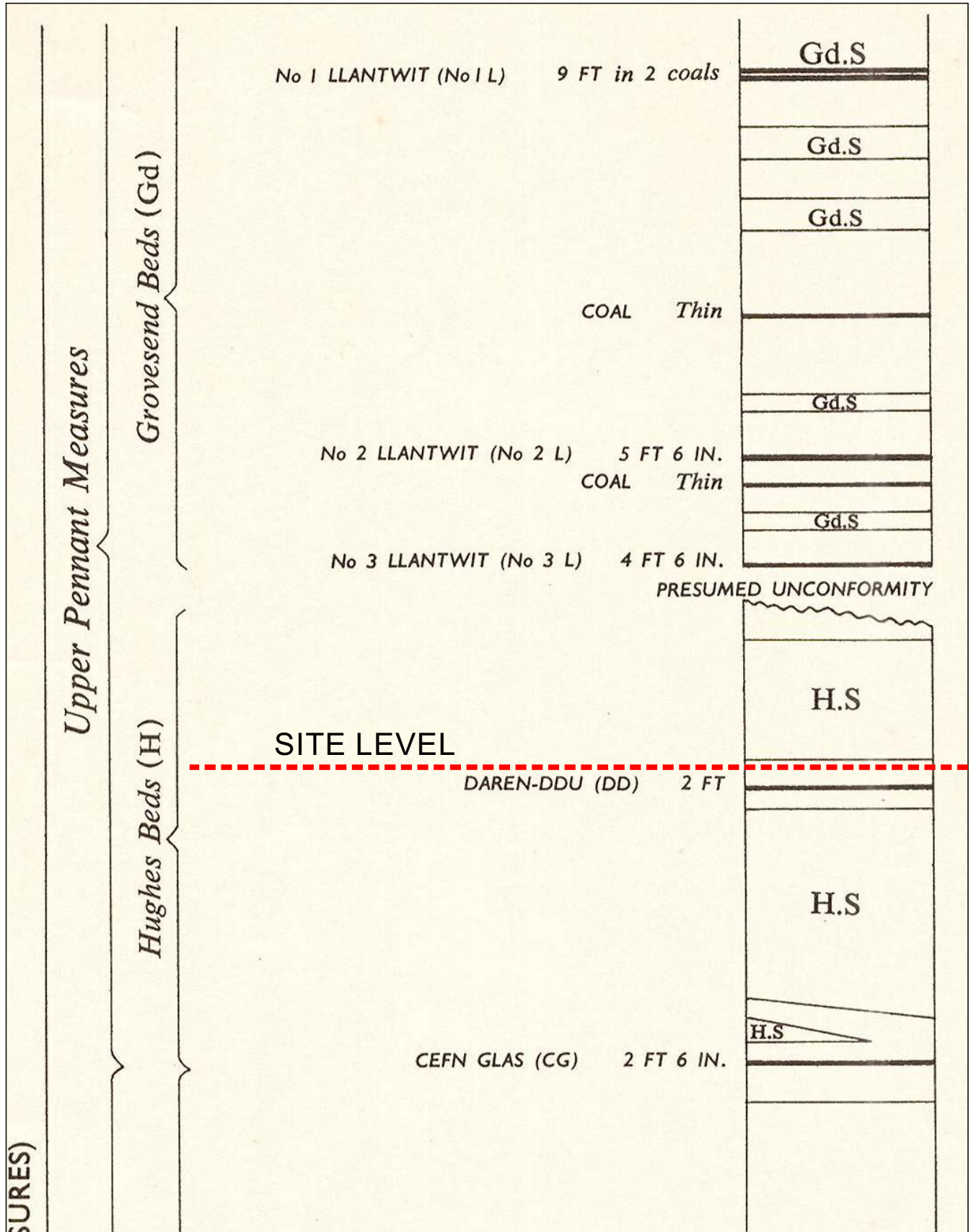


FIGURE 5  
SECTION OF STRATIGRAPHIC COLUMN FROM SHEET 36 NW

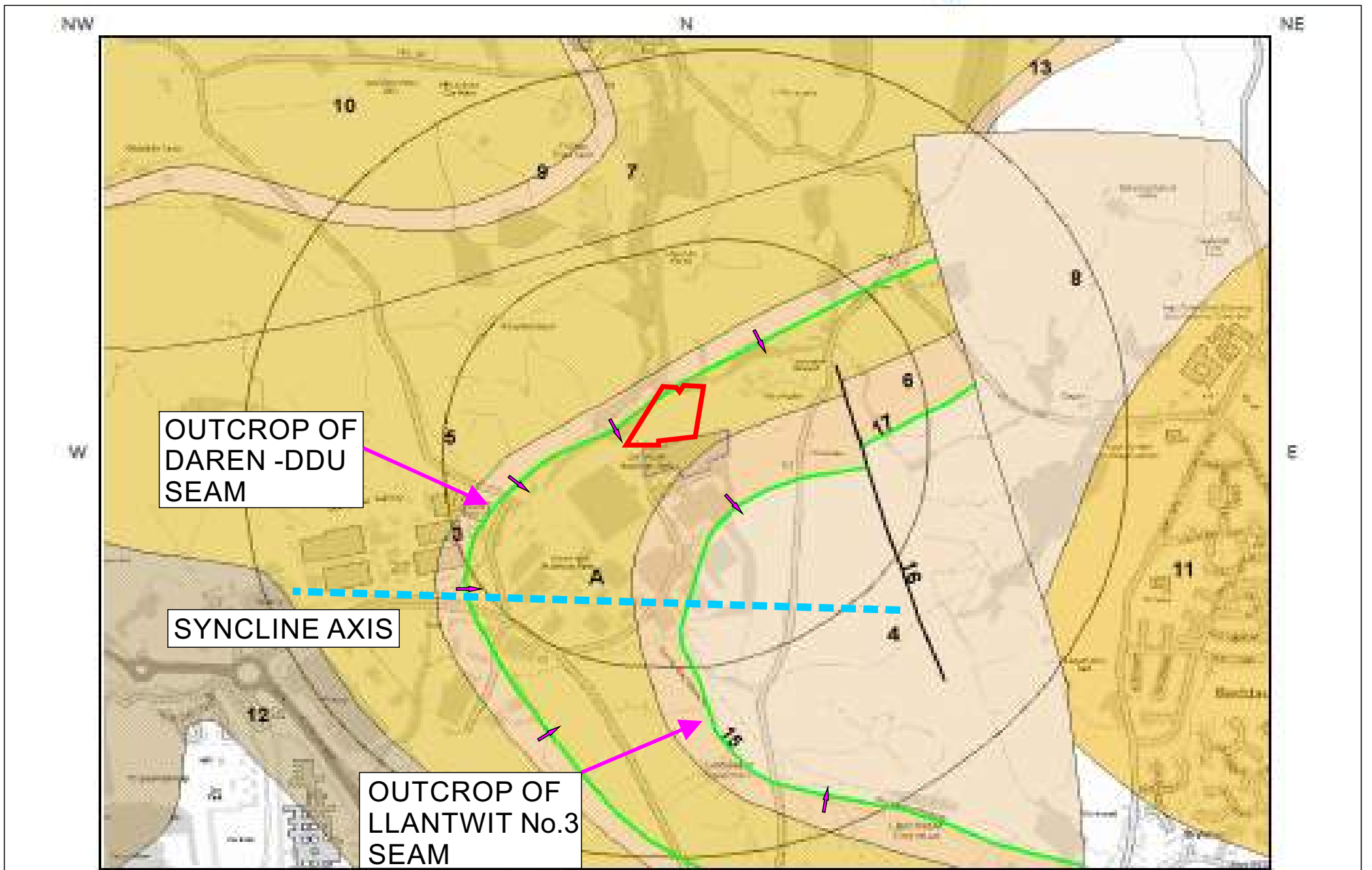


FIGURE 6

EXTRACT OF GROUNDSURE SOLID GEOLOGY MAP WITH SITE HIGHLIGHTED. SYNCLINAL AXIS AND GENERALISED DIP DIRECTIONS ADDED TO ILLUSTRATE GEOLOGICAL STRUCTURE

2f) A complete series of large (1:2500) and small scale (1:10,560) maps were purchased from Groundsure. Initially the small scale maps were used to try and trace the mining features in the surrounding areas and relate them to the previous sources of information. The most useful maps for this were the 1875 and 1898 editions. Even at this early stage most of the coal mining features were labelled as “old”. Several of the trial pits shown on the Geological Survey sheets can be identified and also tied in with the BritPits data using the grid references. These are much easier to use on the O.S. maps than on the survey sheets. There are several working small mines shown on the map some distance from the site. These can be seen to have spoil heaps and to be served by tramlines. By 1914 even the largest of these, Gelynog Colliery, 900m. east of the site is marked as disused.

After this the large scale maps were examined. A selection are reproduced overleaf as Figures 7, 8 and 9. These date from 1879, 1900 and 1990 respectively. The oldest (Figure 7) shows the site as a completely rural environment of fields and woodland. Tal-y-Fedw farm and a smallholding near the maps eastern margin are the only habitations. The “old shaft” 170m. south east of the site can be seen. Llwynau shaft is just visible in the north east corner, linked to an old limekiln, suggesting that is what the coal was being used for. There is no evidence on the small scale maps of it having any links to the emerging tramroad infrastructure in the area.

Moving on to Figure 8, which is the 1900 map the obvious difference is the development of the Treferig branch of the Taff Vale Railway which forms the western boundary of the site. This served the Glyn Colliery and several smaller levels several kilometres north of the site in Tonyrefail. Aside from that the site remains completely rural in aspect. The “old shaft” is still visible.

All other available 1:2500 maps were examined but none are reproduced here until the 1990 revision (Figure 9). The reason for this being there is absolutely no change in the site and surrounding areas. The only exception to this is the closure of the railway sometime between the 1919 and 1940 revisions. Even the field boundaries are unchanged. In Figure 9 Llantrisant Business Park has been developed nearly up as far as the site since its inception in 1969. To complete things almost up to the present day a 2014 aerial photograph is included as Figure 10. The common feature between all these maps is that there is absolutely no trace, over a period of nearly 140 years, of any activity near the



outcrop of the Daren-Ddu. Field boundaries remain intact, no spoil or annotated mining features are shown, in marked contrast to the surrounding area.

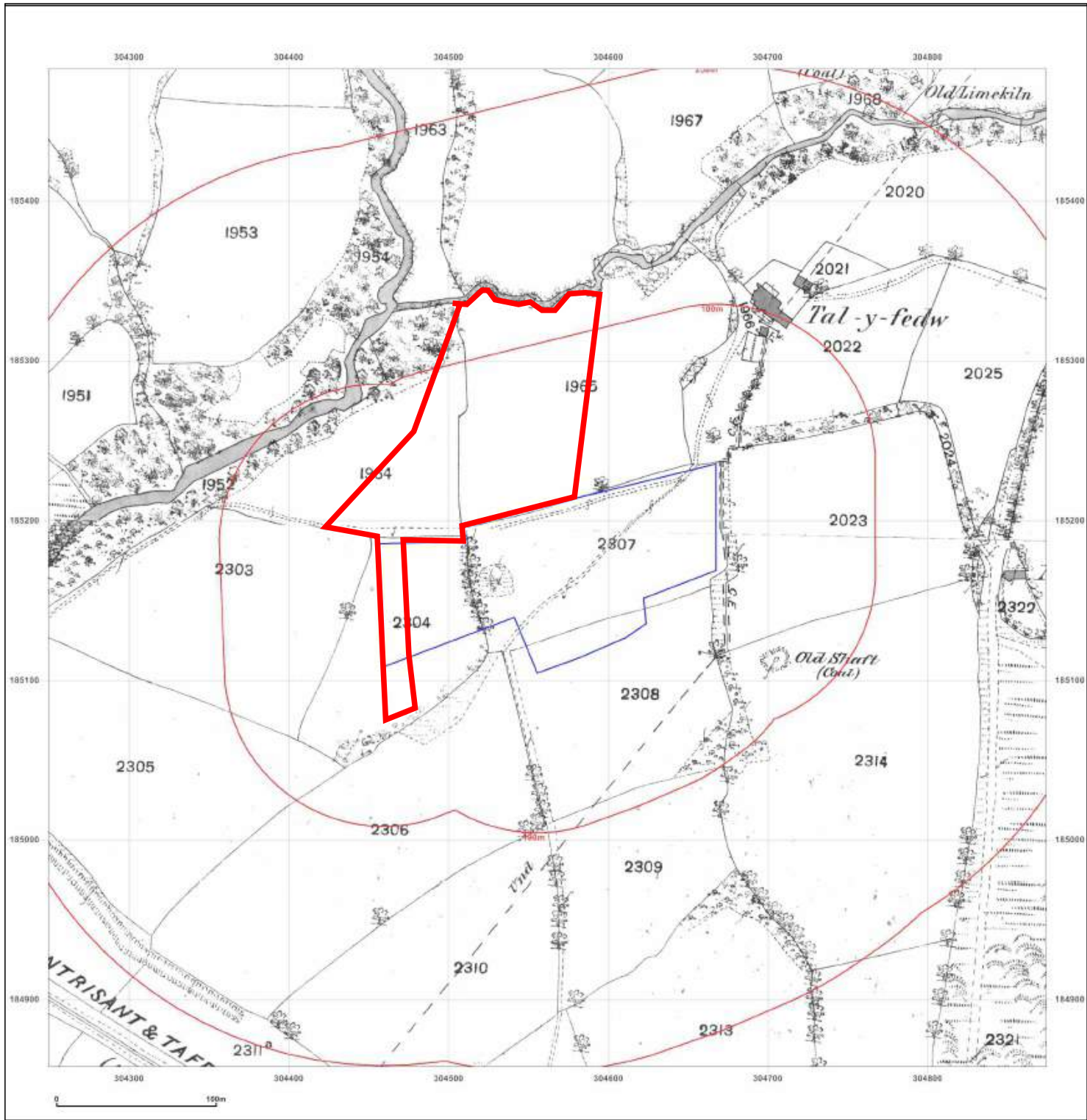


FIGURE 7  
THE SITE IN 1879

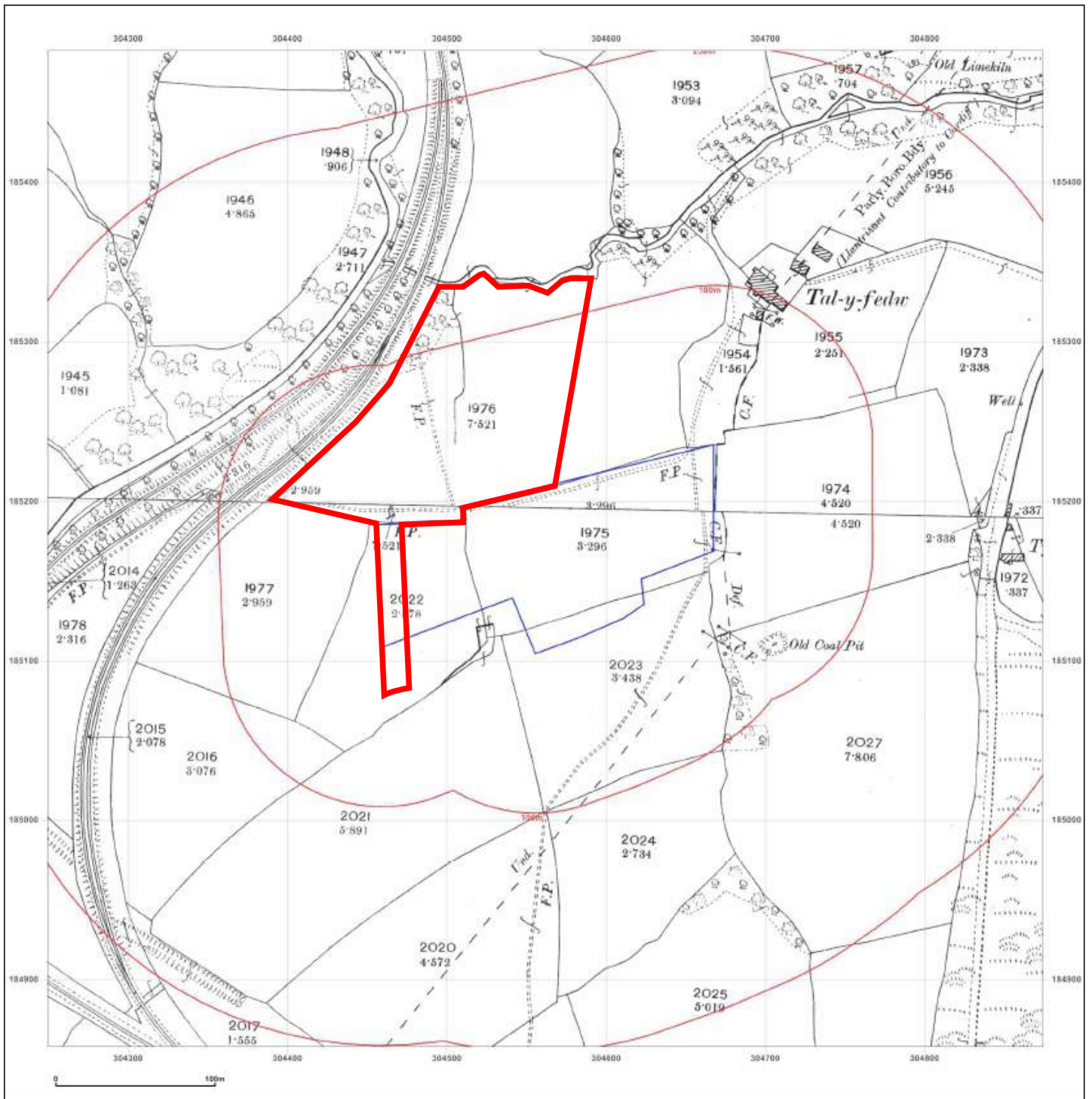


FIGURE 8  
THE SITE IN 1900

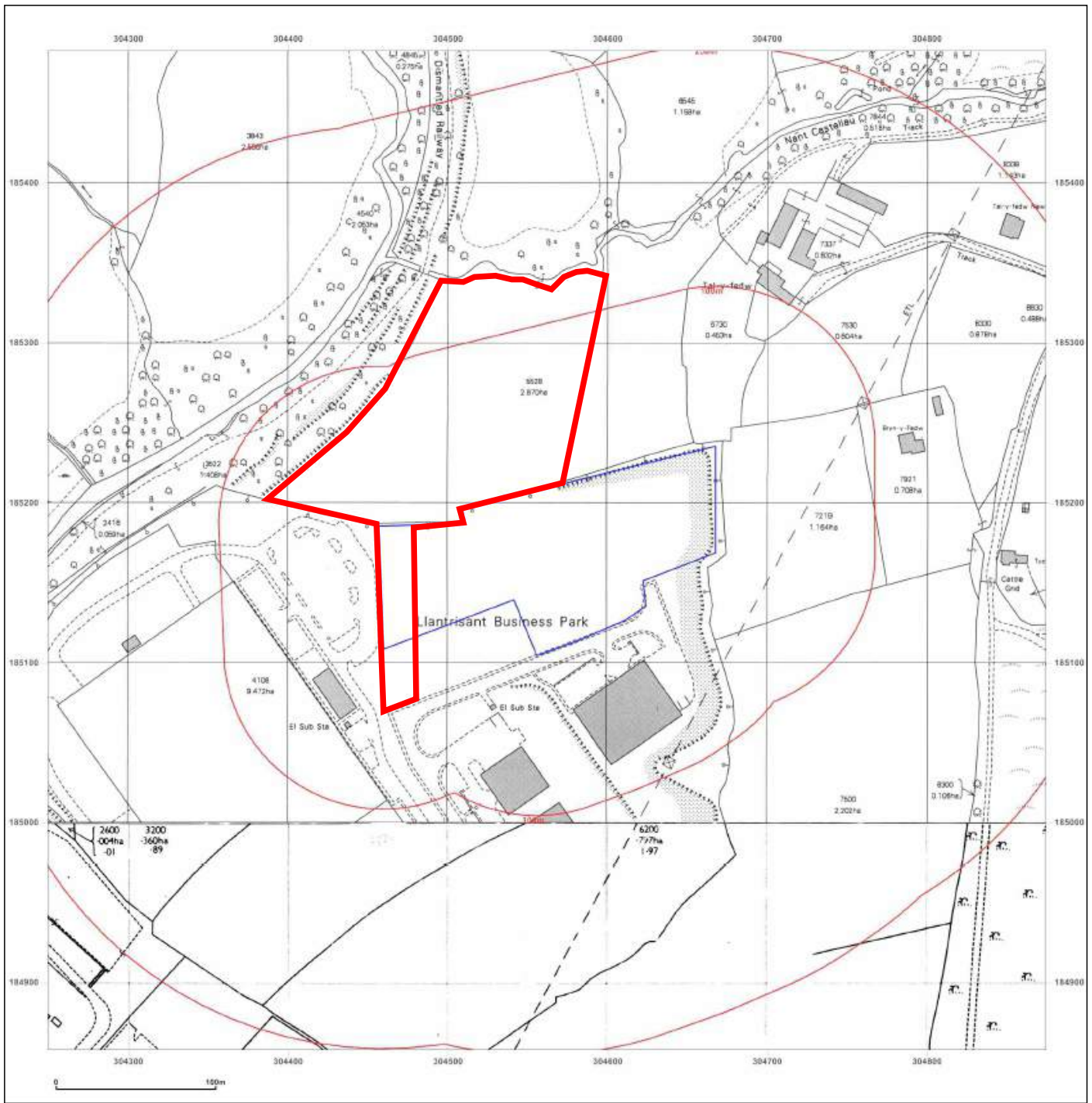


FIGURE 9  
THE SITE IN 1990

NW

N

NE

W

E

SW

S

SE



Aerial Photograph Capture date: 23-Jul-2014

**FIGURE 10**  
**AERIAL PHOTOGRAPH OF THE SITE (IN YELLOW) IN 2014**

2g) The C.A. template calls for the risk assessment to be desk based, but it is the author's opinion that a walkover survey of the site and surrounding area can often provide valuable additional information that simply cannot be picked up off maps and archive material. This is particularly true of sites with little development, where the ground levels are relevant, as in this case. The site was visited on 7/03/2018 with the intention of trying to resolve a couple of points. These were the nature of the superficial deposits and the discrepancy between the large thicknesses of gravel/glacial recorded south of the site compared to a sandstone outcrop being recorded north of the site. Secondly, it was intended to look for physical evidence of mining in the area of the outcrop.

The site is adjacent to another that has been modified by a cut and fill operation. This enabled an exposure of the superficial material to be examined and photographed. Figures 11 and 12 show the cut and a close up of the material. This is a strong Glacial Till (formerly Boulder Clay). This forms a raised plateau on the site roughly five metres higher than the course of the Nant Mychydd. Figure 13 is a view of the site from the extreme north east corner of the boundary showing this plateau. It should be noted that this would be the ideal location to drive a level into the seam from a position above the river. The entire embankment was examined and there was absolutely no trace of it ever having been disturbed. Any level would have been easy to spot to the trained eye, on what was clearly virgin ground.

The author then travelled up the course of the small river to locate the exposed sandstone. This is presumably the sandstone that lies above the Daren-Ddu seam in the mining records. Since the dip is indeed 10°-15° to the south (Figures 14 and 15), this places the subcrop exactly where the Geological Survey have it. This is north of the site boundary, not on site as in the Coal Authority data. Nonetheless, unless it has been gouged out by glacial erosion, the seam will still underlie the site at shallow depth. Since topographic levels do not vary much from the site to the mining records to the south, rockhead must deepen southwards. The direction of dip coincides with the direction of local ice travel. This means the bedding and jointing of the sandstone would have facilitated deep erosion by the ice, but the bedrock profile under the site is unknown as there are no records of intrusive works in the area. Before leaving, the Llwynau shaft was located and photographed (Figure 16, C.A. ref 304185-011). As can be seen in the photograph the C.A. have recently remediated the shaft. It has been infilled with limestone cobbles and boulders. The standard C.A. stockproof fence has been upgraded by the farmer since the author's last visit.



FIGURE 11 (TOP)  
CUT IN GLACIAL TILL IMMEDIATELY SOUTH EAST OF THE SITE  
FIGURE 12 (BELOW)  
CLOSE UP OF MATERIAL SHOWING LARGE, ANGULAR  
PENNANT SANDSTONE COBBLES AND BOULDERS



FIGURE 13

VIEW OF THE NORTHERN BOUNDARY OF THE SITE, LOOKING WEST FROM THE NORTH EAST CORNER OF THE BOUNDARY SHOWING PLATEAU OF GLACIAL TILL





**FIGURES 14 AND 15**  
**OUTCROPS OF THE SANDSTONE ABOVE THE DAREN-DDU SEAM**  
**IN THE BED OF THE NANT MYCHYDD NORTH EAST OF THE SITE**



FIGURE 16  
TREATED LLWYNAU MINESHAFT (C.A. 304185-011) LOOKING SOUTH WEST.  
TAL-Y-FEDW FARM VISIBLE ACROSS THE VALLEY OF THE NANT MYCHYDD

COAL MINING ISSUE	YES	NO	R.A.
SHALLOW RECORDED WORKINGS		X	
SHALLOW UNRECORDED WORKINGS	X		X
MINE ENTRIES		X	
FISSURES		X	
GAS EMISSIONS		X	
SURFACE HAZARDS		X	
SURFACE MINING		X	

### 3. SITE SPECIFIC COAL MINING RISKS

From the table above it can be seen that only unrecorded shallow workings require a risk assessment for this site. To first briefly deal with the issues marked NO on the table:-

- a) There are no recorded shallow workings under the site. Archive material including abandonment plans and the Memoirs have been searched thoroughly to reach this conclusion.
- b) There are no recorded mine entries close to the site.
- c) The C.A. report states there are no fissures, surface hazards or lines of geological weakness affected by underground mining under the site. Neither have there been any damage notices nor subsidence claims within 50 metres of the site.
- d) The C.A. report states there have been no recorded gas emissions within the area surrounding the site.
- e) There has never been any surface (opencast) mining on, or near the site.

This leaves one risk that require assessment, namely unrecorded shallow workings under the site. This risk is largely hypothetical and is based entirely on the position of the outcrop (more correctly subcrop) of the Daren-Ddu seam. For the purposes of this risk assessment the Geological Survey version of where this is will be used, together with accepted seam nomenclature for the area rather than the Coal Authority data. The C.A. map shows the Daren-Ddu seam as an elliptical outcrop which can only be interpreted as a tight anticline given the topography and the claim that younger seams outcrop to the south. The outcrops to the north can only be described as nonsensical, with an apparently completely random succession of seams unrelated to stratigraphical order.

The geological model to be used in this risk assessment has the Daren-Ddu seam on the northern limb of the Llantwit Syncline. This would mean the seam dipping southwards under the site at 10°-15°. Using the dip and outcrop position in combination with the topography, this would mean that the seam would be present at depths varying from 10m. on the crest of the plateau (land profiles are not being altered significantly, and the low area adjacent to the river will always remain undeveloped as a high flood risk area) to 57m. on the southern boundary of the main land parcel. At the northernmost line of the development the depth would be 20m. This is shown in the conceptual section in Figure 17, with the line of section shown on the site plan in Figure 18. The levels used are from a topographical survey of the site. It is entirely possible the shallowest part of the Daren-Ddu seam has been removed by glacial erosion since depth to rockhead is unknown. For the purposes of this risk assessment however, we shall assume it is still there. If this is the case, then it can definitely be considered “shallow” under a considerable area of the site. This is particularly true considering it is unknown how much of the cover is rock, and how much is Glacial Till.

There are no other coal seams above the Daren-Ddu outcropping on the site. The next seam above it in the succession is the Llantwit No.3. This outcrops approximately 220m. south of the sites southern boundary. It is dipping south, therefore it has no influence on the site as it doesn't underlie it. As mentioned earlier, this is totally at odds with the C.A. version of the bedrock geology, which has the Westernmoor seam outcropping near the southern margin of the site and the Swansea No.3 and an unnamed seam outcropping on the narrow strip of land which forms the site access. This is impossible as the two named seams do not exist within 20 miles of the site. Since they do not exist, they can have no influence on site stability. This has been adequately discussed in section 2.

The main thrust of this risk assessment is not focussed on the presence, absence or depth of the Daren-Ddu seam. Instead it is concentrated on the fact that there is absolutely no evidence of it being mined. Although the site has remained completely untouched since the mid nineteenth century, no mining is recorded on any map, or in any archive. In addition a physical examination of the site shows not the slightest trace of any spoil or ground disturbance of any kind. The trial shafts described in sections 2c, d and e were in all likelihood sunk in search of the Llantwit No.3. This was a very rich seam, extensively mined to the east of the site, particularly during the late nineteenth century. Because of the closure of the Llantwit Syncline it is not present underground beneath the

trial shaft positions, although it was undoubtedly the intended target. Because of the thick drift cover this fact would not have been apparent until the Daren-Ddu was reached by the trial shafts. This was a common occurrence at the time where gaps in the geological knowledge, combined with estate boundary/mineral rights issues meant many sinkings were hit or miss enterprises with many failures. The Daren Ddu seam has a distinctive section, and it is informative to note the shafts went no further. The sinkers would have realised they were beneath the horizon of the No.3 and abandoned the shaft. The Memoirs clearly state that they are *trial shafts* and they record no attempt to exploit the seam, although the depth and seam section are accurately described. The reason for this would be the poor quality of the seam. Not only was the coal highly sulphurous, giving it a low price, but it was also thinner than elsewhere on the coalfield. These facts, combined with the large dirt partings, meant that mining the seam was not a commercial proposition. It is safe to conclude that the seam was never worked under the site from the south “on the rise” i.e. up the dip to allow gravity drainage to the shaft. Neither was it worked from close to outcrop, down dip (“to the deep”). Any adit type entries would have to be on the sharp break of slope up from the river. To attempt to reach it from the other side, driving under the river at very shallow depth would not make engineering sense and would be fraught with practical difficulties. Not least of these would be the inrush of surface water and drowning. This was far from unheard of close to the southern crop of the coalfield. It also seems probable that the river formed the boundary between two separate estates, ruling out accessing mineral reserves under one estate from another. Indeed the main function of mining surveyors at the time was to prevent this happening. The probability that the river was an estate boundary is indicated by the position of the Llwynau shaft. As mentioned in an earlier section, it is known that it was sunk to the Cefn Glas seam. Its position close to the estate boundary meant it could exploit the seam working up dip, allowing gravity drainage back to the shaft.

All these facts pointing to the absence of mining in the Daren-Ddu seam are borne out by the evidence from the historical maps as detailed in section 2f. Particularly with regard to the lack of spoil and transport infrastructure, which should be readily visible given the lack of development of the area surrounding the site.

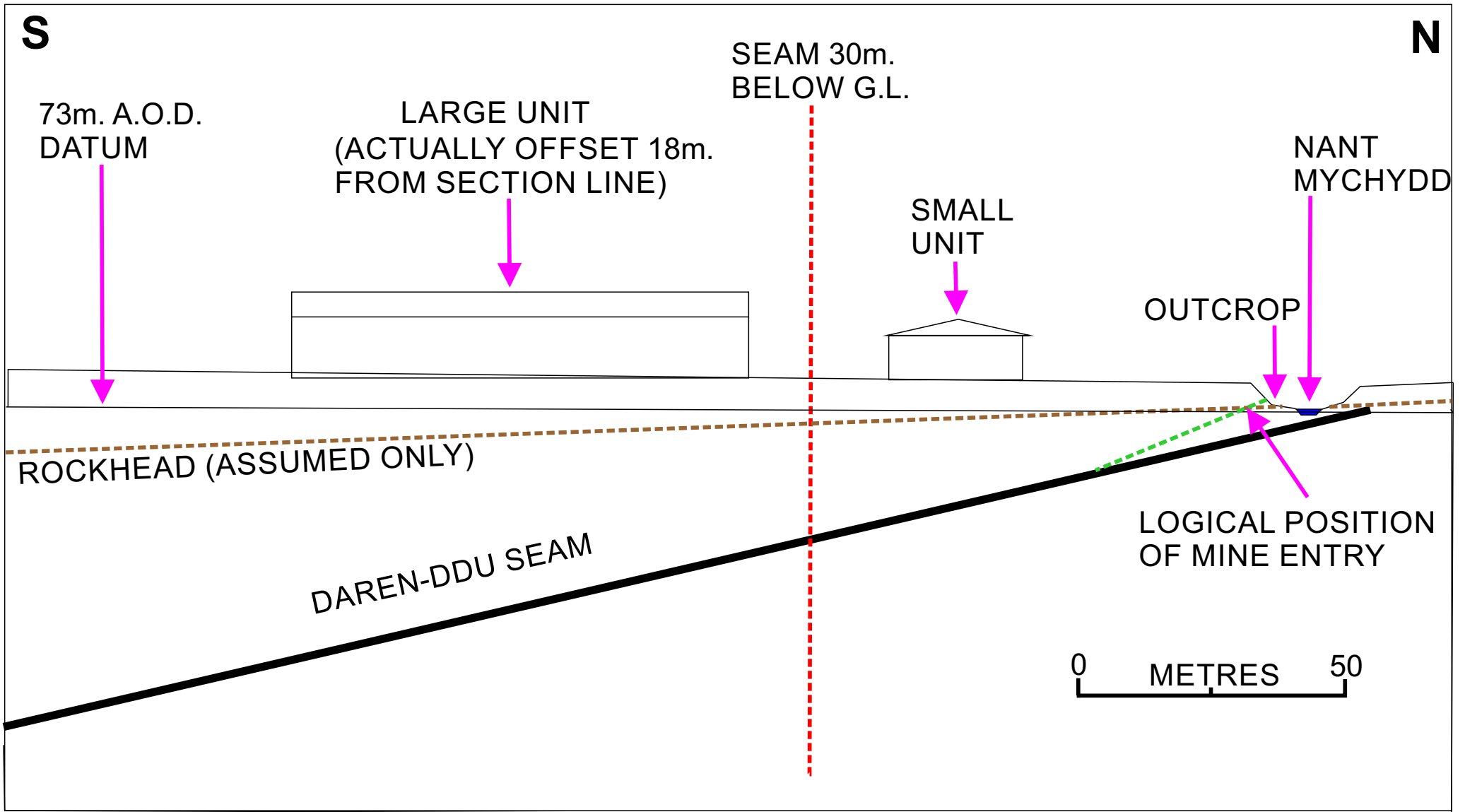
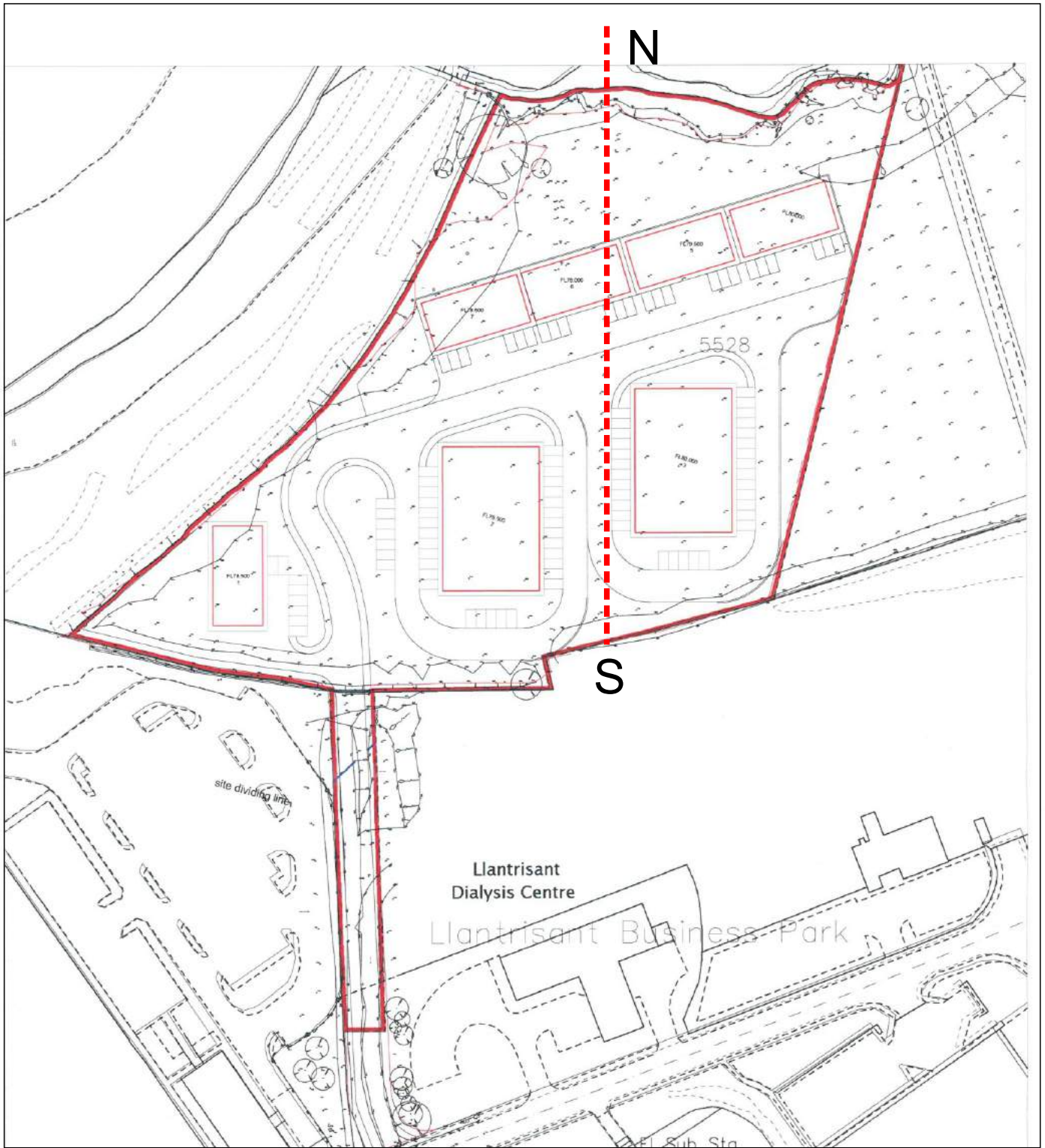


FIGURE 17  
 N-S CONCEPTUAL SECTION OF LLANTRISANT SITE  
 VERTICAL AND HORIZONTAL DIMENSIONS TO SCALE  
 (LINE OF SECTION SHOWN IN FIGURE 18)



**FIGURE 18**  
**LINE OF CONCEPTUAL SECTION IN FIGURE 17**

#### 4. MITIGATION STRATEGY

It is not proposed to offer any engineering or building location mitigation strategy. The two large units and the unit in the south west corner fall outside the development high risk zone. This can be seen in Figure 3A and is also apparent on the conceptual section (Figure 17). The row of smaller units would be partly situated in the C.A. high development risk zone. Again the cross section shows that the Daren-Ddu seam is indeed present at a shallow depth under these units. On the eastern ends of the units this may be as little as 15m. However the risk assessment will conclude that as there is no risk to ground stability a mitigation strategy is not required. Site layout and foundation design will be dependent on other factors.

#### 5. CONCLUSION

This risk assessment has presented abundant evidence from comprehensive research that there is no risk to ground stability posed by coal mining legacy issues at the site. The reason for this being that the seam under the site is a thin poor quality coal that has never been mined (in this location). Therefore there is no need for the site to be classified as Development High Risk, and no reason for the Coal Authority to object to planning permission being granted for the proposed development.

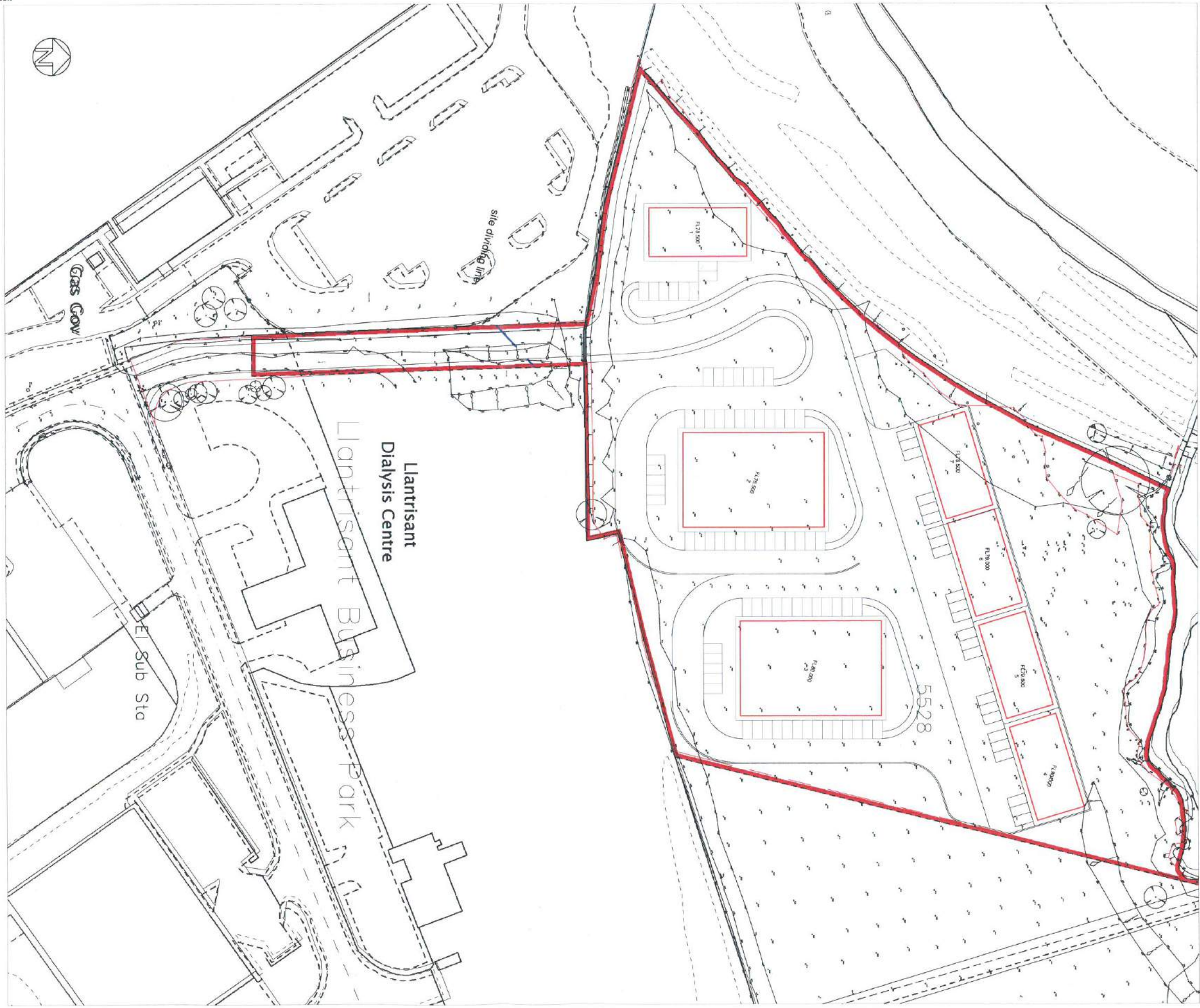
Richard Davies BSc. (Hons), MSc., F.G.S.

8/03/2018



# **APPENDIX 1**

## **SITE PLANS**



NOTE  
LR layout cannot be scaled accurately  
due to the format provided

Rev	Scale	Date	By	Check	Description
E	1:500	20.05.17	MJ	MJ	Under field revised topo and LR layout
D			MJ	MJ	Moved road to unit T4 kerb edge as per LR layout - (subject to topo check)
C			MJ	MJ	Reduce the site size - with the full access road shown
B			MJ	MJ	Reduce the site size
A			MJ	MJ	Added site dividing line

Under field revised topo and LR layout  
18.11.16  
MJ

Moved road to unit T4 kerb edge as per LR layout - (subject to topo check)  
14.12.17  
MJ

Reduce the site size - with the full access road shown  
12.12.17  
MJ

Reduce the site size  
17.12.17  
MJ

Added site dividing line  
20.05.17  
MJ

Client: Allied Welsh & Ty Carreg Group  
Project: Llantrisant Business Park  
Title: Site Plan option 2  
Date: 20.05.17  
Scale: 1:500  
Drawn: MJ  
Checked: MJ  
Approved: MJ  
Contract: 6343 - 103  
Site: CON  
Notes: E

Handwritten dimensions:  
304  
300  
185  
200  
185

- All dimensions are in millimetres unless noted otherwise.
- All levels are shown in metres unless noted otherwise.
- Do not scale from the drawing. Use figured dimensions only.
- Any discrepancies to be reported immediately to the engineer.
- This drawing to be read in conjunction with all relevant Architects, engineers, subcontractors and specialists drawings and specifications.

## **APPENDIX 2**

### **COAL AUTHORITY MINING REPORT**



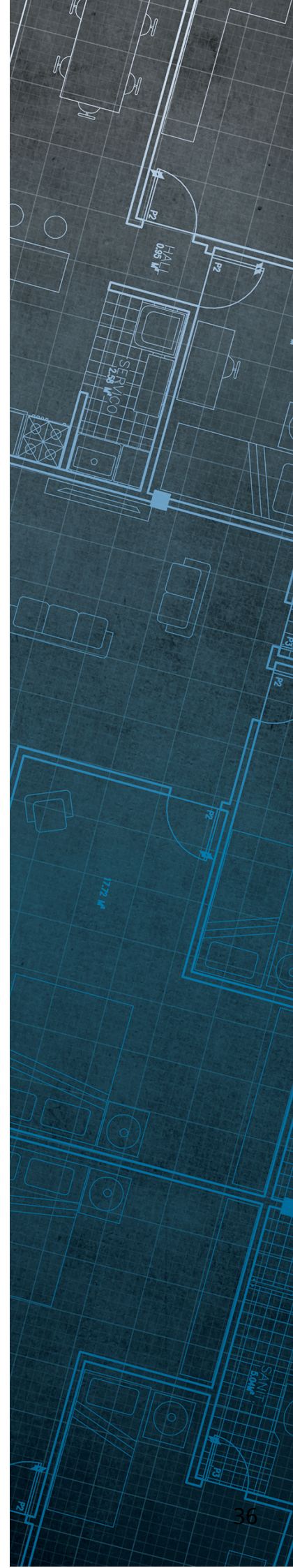
The Coal  
Authority

# Consultants Coal Mining Report

Tal-y Fedw Farm  
Llantrisant  
Rhondda Cynon Taff  
CF72 8LP

Date of enquiry:	27 February 2018
Date enquiry received:	27 February 2018
Issue date:	27 February 2018

Our reference:	51001798421001
Your reference:	RGS



# 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

Richard Davies

## Enquiry address

Tal-y Fedw Farm  
Llantrisant  
Rhondda Cynon Taff  
CF72 8LP

## How to contact us

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

200 Lichfield Lane  
Mansfield  
Nottinghamshire  
NG18 4RG

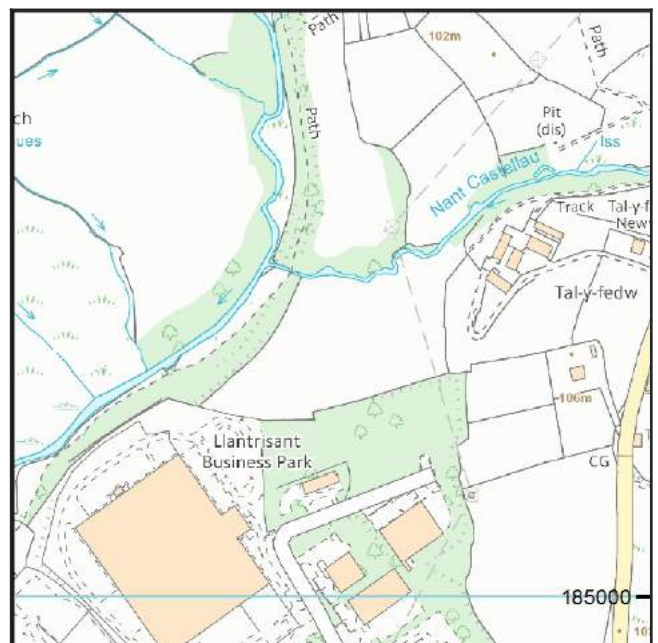
[www.groundstability.com](http://www.groundstability.com)

 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



Approximate position of property



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# Section 1 – Mining activity and geology

## Past underground mining

No past mining recorded.

## Probable unrecorded shallow workings

None.

## Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

## Mine entries

None recorded within 100 metres of the enquiry boundary.

## Abandoned mine plan catalogue numbers

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

PO0		
-----	--	--

**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
DARREN DDU	Coal	Yes	Within	N/A	57
DARREN DDU	Coal	Yes	Within	N/A	61
DARREN DDU	Coal	Yes	Within	N/A	67
WESTERNMOOR	Coal	Yes	Within	N/A	61

## 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

None recorded within 50 metres of the enquiry boundary.

### Remediated sites

None recorded within 50 metres of the enquiry boundary.

### 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 31st 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 1977, 1979 and 1981.

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

Based on the responses in this report, no further information has been highlighted.

## 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](mailto: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.

### **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.




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## VAT receipt

<b>Issued by</b>	The Coal Authority 200 Lichfield Lane Mansfield Nottinghamshire NG18 4RG
<b>Tax point date</b>	27 February 2018
<b>Issued to</b>	RICHARD DAVIES 56 MEYLER STREET THOMASTOWN TONYREFAIL RHONDDA CYNON TAFF CF39 8EA
<b>Property search for</b>	TAL-Y FEDW FARM LLANTRISANT RHONDDA CYNON TAFF CF72 8LP
<b>Reference number</b>	51001798421001
<b>Date of issue</b>	27 February 2018
<b>Cost</b>	£101.70
<b>VAT @ 20%</b>	£20.34
<b>Total received</b>	£122.04
<b>VAT registration</b>	598 5850 68

The map highlights any specific surface or subsurface features within or near to the boundary of the site.

**Key**

- Approximate position of the enquiry boundary shown 
- Outcrop (Proven) 
- Outcrop (Conjectured) 
- Geological faults 