

Huntley Wood Investments

**ARDAGH METAL PACKAGING,
ABERCANAID, MERTHYR TYDFIL**

Coal Mining Risk Assessment

11708/LW/16/CMRA

CLIENT: **Huntley Wood Investments**

PROJECT: **Ardagh Metal Packaging, Abercanaid, Merthyr Tydfil**

TITLE: **Coal Mining Risk Assessment**

JOB NO: **11708**

DOCUMENT REF: **11708/LW/16/CMRA**

Revision	Purpose Description	Originated	Reviewed	Authorised	Date
0	Final	LW	RB	PB	Feb 16

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1.0 INTRODUCTION

1.1 GENERAL

Huntley Wood Investments are proposing to redevelop a site at Ardagh Metal Packaging, Abercanaid, Methyr Tydfil for mixed residential and commercial end-use.

Intégral Géotechnique (Wales) Limited have been commissioned to carry out a Coal Mining Risk Assessment of the proposed development site, in order to provide a risk based approach to the development of the site.

The Coal Mining Risk Assessment:

- Presents the available data on the coal mining issues which are pertinent to the site;
- Assesses the risk to the site from any known coal mining issues;
- Sets out appropriate mitigation (ground stabilisation) measures for dealing with these mining issues, which can then be followed during the design and development of the site.

2.0 THE SITE

2.1 SITE LOCATION AND DESCRIPTION

The site is located in Abercarnaid, approximately 2.5km south of Merthyr Tydfil, at a National Grid Reference of 305460, 204240 see Figure 1.

The site is irregular in shape and occupies an area of approximately 8.13 hectares. The boundaries of the site are defined by the River Taff to the east, an unnamed road and factory to the south and west and a warehouse to the north. A site plan is presented in Figure 2.

The site is situated on ground which is generally level or slopes gently to the south east, with an approximate maximum elevation of 162m AOD in the west, and approximate minimum elevation of 157m AOD in the south east.

The site is situated on the floodplain of the River Taff. However, the site level has been raised in the past up to its existing site level.

The site currently consists of a concrete slab, which remains from the demolition of the previous buildings onsite, with stockpiles of brick rubble and demolition waste. The northern area of the site is covered by an area of soft finishing. A vacant building currently exists in the far south of the site, with an enclosed walkway that crosses the River Taff.

2.2 SITE HISTORY

The recent history of the site has been traced with the aid of available 1:2500, 1:10,560 and 1:10,000 scale Ordnance Survey maps of the area, dating from 1884. Relevant historical maps are included in Figure 3.

The earliest map in our possession, dated 1884, shows the site to be predominantly covered in colliery spoil heaps. An 'Old Coal Shaft' was noted in the centre of the site.

To the south of the site were residential properties. To the west and south west of the site was the Glamorganshire Canal and associated Towing Path, with wood land areas and open fields beyond including a number of old quarries and old air shafts. To the north and north west of the site were colliery spoil heaps. The River Taff was located along the eastern boundary, with the Taff Vale Railway beyond.

2.2 SITE HISTORY (CONTINUED)

A dock associated with the nearby canal intercepted the far western central area of the site and tramway lines crossed the site along the western area. To the south of the dock were Abercanaid Houses, which consisted of a number of residential properties and rear gardens.

The most southern area of the site was noted as the Upper Abercanaid Pit (Coal), with a shaft, an engine house and a boiler house all located on the south west boundary.

Numerous old airshafts were located to the south west of the site boundary.

A stream intercepted the site just south of the Abercanaid Houses and flowed south eastwards towards the south east corner of the site into the River Taff. A minor stream or run-off channel intercepted the northern area of the site from the west and flowed in a easterly direction into the River Taff. In areas the stream flowed below the spoil heaps.

By 1900, the majority of the stream that intercepted the north part of the site was indicated to flow below the spoil heaps. An Engine House was located in the north west of the site in the vicinity of the 'Old Shaft' which was noted on the 1884 maps. The spoil heaps in the north and central area of the site were fed by tramlines. Abercanaid Houses had been demolished and replaced with tramlines and spoil heaps. The majority of the south easterly flowing stream in the south of the site now lay below the spoil heaps and tramlines.

A map dated 1919, no longer shows the engine house and tramlines. The Upper Abercanaid Pit was noted as disused. The Glamorganshire Canal located to the west of the site was noted as disused. A Gas Works was located some 400m north of the site.

By 1964, the majority of the site remained covered with spoil heaps. Allotments were located in the far southern area of the site. The south easterly flowing stream which had been mostly culverted beneath the south part of the site is indicated to be the Nant Cannaid.

By 1972, the soil heaps were labelled as Tip (disused). A pipe line crossed the south of the site in an east to west trend. Three above ground electricity lines was shown to cross the site. A road entered the site from the north towards a factory that was located immediately to the north west of the site. An area of residential properties was located some 100m to the south west of the site. A factory was located adjacent to the Gas Works some 400m north of the site.

2.2 SITE HISTORY (CONTINUED)

A map dated 1979, shows that the site had been cleared of the colliery spoil heaps and the overhead electricity cables had been removed. A factory was located immediately to the north of the site.

By 1986, buildings covered much of the site and the layout resembled the most recent site layout. The site contained a large building, with a smaller building in the south and west of the site. An above ground tank was located in the north east and two tanks in the west of the site. Off- site, a further factory was located immediately to the west of the site.

A map dated 1988, shows the factory to the north of the site had expanded in size. No significant change had occurred on site.

By 2006, no significant change had occurred on site. Abercanaid Industrial Estate was located some 250m to the north of the site.

A map dated 2015, indicates that the large factory building and the smaller buildings and tanks in the north east of the site were no longer present. Buildings remained in the far south and west of the site.

2.3 GEOLOGY

The 1:10,560 scale geological map of the area (Sheet SO 00 SE) shows the site is underlain by rocks of the South Wales Middle Coal Measures of Carboniferous age. The rocks comprise of mudstone and siltstone with several productive coal seams. The map indicates that these strata dip in a southern direction in the area, with recorded dips of 10 degrees shown to the south of the site.

The map indicates the conjectural outcrops of five coal seams at or near the site. In the southern to central area of the site, outcrops of the Two Feet Nine, Four Feet, Upper Six Feet and Lower Six Feet are indicated to be present. The outcrops of the Nine Feet and Bute seams are indicated to be present in the vicinity of the site northern boundary.

The site is therefore likely to be underlain at shallow depths by all of the above named coal seams. The northernmost part of the site may also be underlain at shallow depths by the Yard and Seven Feet seams, which typically lie some 25 to 30m below the Nine Feet seam.

The generalised vertical section of the geological map shows that all these coal seams have potentially workable seam thickness, as follows:

2.3 GEOLOGY (CONTINUED)

<u>Coal Seam</u>	<u>Typical Seam Thickness (m)</u>
Two Feet Nine	0.75
Four Feet	1.80
Upper Six Feet	0.90
Lower Six Feet	1.20
Nine Feet	3.65
Bute	1.20
Yard	0.75
Seven Feet	1.20

Most of these seams are known to have been mined in the area and each of these seams is likely to underlie part of the site at shallow depths.

The geological map indicates that Alluvium superficial deposits overlie the rock strata in the north and east of the site, while Glacial Till deposits overlie the rock strata in the west of the site.

Made ground is likely to be present over most/all of the site, due to its past industrial development and ground raising.

Previous site investigations undertaken by Intégral Géotechnique near the northern end of the site identified groundwater under sub-artesian pressure within the underlying rock strata of the South Wales Middle Coal Measures.

2.4 MINING

A Coal Mining Report for the site has been obtained from the Coal Authority and a copy is included in Appendix A. The report states the following:

- The site is in the likely zone of influence from workings in 3 seams of coal at shallow to 140m depth, and last worked in 1950.
- The site is not in the likely zone of influence of any present underground coal workings.
- The Coal Authority states that within, or within 20m of the boundary of the site, there are seven mine entries. The following information was provided:
305204-038. This shaft was filled grouted and capped in 1975.
305204-030. Information provided to the Coal Authority by British Coal indicated this shaft is filled.
305204-069. No treatment details.
305204-036. This shaft was filled grouted and capped in 1975.

2.4 MINING (CONTINUED)

305204-031. This shaft was grouted and capped in 1977.

305204-060. Uncovered during road improvements, we understand this adit was treated by K Wardell and Partners Consultant Mining Engineers.

305204-037. This shaft was filled grouted and capped in 1975.

- The Authority is not aware of any evidence of damage arising due to geological faults or other lines of weakness that have been affected by coal mining.
- The site is not within the boundary of an opencast site from which coal has been removed by opencast methods.
- The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres, since 31st October 1994.
- There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The recorded workings at shallow to 140m depth are thought to be within the Seven Feet, Nine Feet and Four Feet coal seams.

As discussed earlier, the geological map of the area indicates that several coal seams, each with potentially workable seam thickness are likely to underlie the site at shallow depths, and there is a possibility of unrecorded as well as recorded shallow workings being present in many of these seams.

Wherever old workings underlie the site at shallow depths and are still uncollapsed, or only partially collapsed, there may be an associated risk of ground subsidence occurring and affecting the site surface.

Boreholes would need to be drilled across the site to locate and investigate the thicknesses and depths of the various underlying seams, in order to assess the potential associated risks of mining related ground subsidence.

The level of any associated potential ground subsidence risk will depend on the thickness and extent of any remnant voids and also whether there is sufficient overlying rock cover to prevent any associated remnant uncollapsed voids migrating up to the site's surface.

Abandonment plans obtained from the Coal Authority, indicate recorded workings in the Four Feet seam in the south of the site, the Nine Feet seam in the centre and southern areas and workings of the Seven Feet seam in the southern and central areas of the site. Extracts from these abandonment plans are presented in Figure 4, 5 and 6 respectively.

3.0 RISK OF PAST COAL MINING TO PROPOSED DEVELOPMENT

There are recorded workings in the Four Feet, Seven Feet and Nine Feet seams beneath the central and southern areas of the site at depth ranging from shallow to deep. The shallow workings are thought to be in the Four Feet seam and these present a risk of potential mining subsidence to the site.

However, the geological map indicates that there are numerous potentially workable seams beneath the site, as listed earlier in Section 2.3, each of which could underlie parts of the site at shallow depths. It is possible that unrecorded workings may be present in any one of these underlying shallow coal seams.

Wherever old workings underlie the site at shallow depths and are still uncollapsed, or only partially collapsed, there may be an associated risk of ground subsidence occurring and affecting the site surface.

Where old workings underlie the site, then the level of any associated potential ground subsidence will depend on the height and extent of any remnant voids and also whether there is sufficient overlying rock cover to prevent any associated remnant uncollapsed voids migrating up and affecting the site's surface.

4.0 SITE INVESTIGATION TO ASSESS RISKS FROM PAST COAL MINING

4.1 COAL AUTHORITY PERMISSION

Prior to carrying out any investigation works, it will be necessary to obtain permission from the Coal Authority for any works that intersect coal seams or associated workings. Appropriate risk assessments will need to be carried out as part of the permission application.

4.2 SHALLOW MINE WORKINGS

Borehole investigations will be required in those parts of the site where the geological map indicates that there is potential risk of shallow coal seams or associated workings.

Sufficient boreholes will need to be drilled to enable the depth of the various coal seams and the overlying rock cover to be understood and assessed. The boreholes should be drilled down to depths of typically 20 to 40m, this being greater than 10 times the seam thickness, which is a general rule for shallow mine workings.

The seam depth and rock cover thickness data derived from the borehole investigations will enable the potential mining risk from shallow underlying recorded or unrecorded workings to be assessed and appropriate mitigation measures to be decided.

As discussed above, a risk assessment should be carried out as part of the application for permission to drill, in order to consider and minimise any risks from a rotary drilling investigation, such as potential displacement of mine gases from workings underneath neighbouring properties and houses. The likely volatility of the coal seam and the potential for spontaneous combustion should also be considered.

Air flush drilling techniques could be used, provided that they are located sufficiently far enough away from any neighbouring houses, that they do not present a significant risk. If any boreholes need to be drilled within 50m of existing properties, then water mist/flush should be used to reduce the potential risks.

On completion of the drilling investigation, the boreholes will need to be backfilled and sealed with a cement based material, in order to prevent ingress of air workings.

4.3 MINE ENTRIES

The Coal Authority states that within, or within 20m of the boundary of the site, there are seven mine entries. The following information was provided. The following information was provided:

- 305204-038. This shaft was filled grouted and capped in 1975.
- 305204-030. Information provided to the Coal Authority by British Coal indicated this shaft is filled.
- 305204-069. No treatment details.
- 305204-036. This shaft was filled grouted and capped in 1975.
- 305204-031. This shaft was grouted and capped in 1977.
- 305204-060. Uncovered during road improvements, we understand this adit was treated by K Wardell and Partners Consultant Mining Engineers.
- 305204-037. This shaft was filled grouted and capped in 1975.

It is unclear how many exist on site. Two mine entries are recorded within the site, with the remaining mine entries clustered along the south west site boundary. The mine shaft entries within the site require locating and inspection.

The possibility that there may be old unrecorded mine entries cannot be ruled out, as was demonstrated by the discovery of the level/adit 305204-060. The earliest Ordnance Survey map dated 1884, shows that mining spoil already covered much of the site and it is feasible that earlier unrecorded mine entries may have become covered over as a result.

If an unrecorded mine entry or a recorded untreated mine entry should be located, it would need to be investigated, in order to establish the nature of any fill/and or past treatment and the requirements for any treatment and/or building exclusion zone.

In the case of an unrecorded shaft, boreholes should be drilled down the shaft, where practical, in order to establish the depth of the base of the shaft and the state of any backfill. Safety stagework will need to be established across the shaft prior to any drilling works. A borehole would also need to be drilled outside the shaft in order to confirm the rock head level around the shaft.

If an old uncharted level should be found, the orientation of the entry should be established and boreholes may be required to establish the line of any cross measure drivages connecting the level entrances to the deeper coal seam workings.

5.0 REMEDIAL STABILISATION WORKS

If remedial works are required, their scale will depend on the level of mining risk that is assessed from the initial borehole investigations.

5.1 COAL AUTHORITY PERMISSION

As with the initial exploratory boreholes, it will be necessary to obtain the relevant permission from the Coal Authority prior to carrying out any proof drilling or drilling and grouting works, if these should become required.

5.2 SHALLOW MINE WORKINGS

Once the general site geology has been established and the level of risk from shallow mine workings has been assessed, it may be considered that some parts of the site are at risk from shallow mining and, therefore, that these areas may require remedial works or appropriate precautions.

Whenever a coal seam and possible/proven associated workings are found to be present within potential influencing depths of the site surface, remedial works may be required in order to develop the site safely.

Prior to finalising any foundation design, proof drilling and grouting measures may be required wherever a coal seam and/or associated proven/potential working are found to underlie the site within potential influencing shallow depths.

The level of the required foundation reinforcement could range from light reinforcement where the risk of shallow mining related subsidence is thought to be low, to raft foundations capable of spanning 3m voids with 1.5m cantilever effects at the edges, where the shallow mining risk is thought to be high.

Proof drilling works may confirm that the seam/workings are not present within shallow potentially influencing depths, or that there is sufficient overlying rock cover above any old workings to prevent any remnant uncollapsed voids migrating up to the site's surface from proven or potential underlying shallow workings, thereby causing surface subsidence.

Proof drilling may also establish that the workings, although shallow, are already collapsed or mostly collapsed. Therefore, the incorporation of appropriate reinforcement within the foundations may be considered sufficient protection against possible remnant mining subsidence risk.

5.2 SHALLOW MINE WORKINGS (CONTINUED)

Where a coal seam and/or workings are considered to be shallow enough, consideration could alternatively be given to carrying out bulk coal recovery excavations if this is practical and acceptable. This would effectively remove any risk from shallow mining, but would require closely supervised replacement of the excavated overburden soils and rocks to an appropriately engineered standard that would be suitable for developing housing and commercial properties on.

5.3 MINE ENTRIES

Mine entries are recorded within or near to the site and the possibility that unrecorded mine entries might also be present cannot be ruled out.

The recorded mine entries within the site should be located and inspected, and may need to be investigated in order to establish the nature of any fill and/past treatment and the requirements for any treatment and/or building exclusion zone. Any encountered unrecorded mine entries should be suitably investigated and assessed for any associated treatment / building exclusion zones.

In the case of an unrecorded shaft, boreholes should be drilled down the shaft in order to establish the depth of the base of the shaft and the state of any backfill. Safety stagework will need to be established across the shaft prior to any drilling works. A borehole would also need to be drilled outside the shaft in order to confirm the rock head level around the shaft.

Subject to the depth of the surrounding rockhead, the cap can be constructed ideally on the rockhead or, alternatively, (if the rocks are considered to be too deep) at shallower depths within suitably competent overlying soils.

The design and construction of the cap will need to comply with Coal Authority specifications and will need to be agreed with the Coal Authority. A building exclusion zone should be established around the shaft, and its size will be dependent on the depth to the rockhead around the shaft.

5.3 MINE ENTRIES (CONTINUED)

If an old uncharted level should be found, the entrance should be investigated and, if necessary, treated in order to ensure that the ground has been fully collapsed and that the infill has been appropriately engineered to allow developments at the surface. The orientation of the entry should be established and boreholes may be required to establish the line of any cross measures drivages connecting the level entrances to the coal seam workings. Bulk excavations may be required in order to appropriately remediate any encountered level entrances.

Wherever feasible, it would be preferable to design the site layout such that the proposed houses are located away from the locations of the former level entrances.

6.0 CONCLUSION

Based upon the findings of this Coal Mining Risk Assessment, we are of the opinion that the site can be suitably and safely developed, subject to carrying out a mining site investigation and then carrying out the mitigation measures detailed in Section 5, if they should be considered necessary.

APPENDIX A

COAL AUTHORITY REPORT



Issued by:

The Coal Authority, Property Search Services, 200 Lichfield Lane, Berry Hill, Mansfield, Nottinghamshire, NG18 4RG
Website: www.groundstability.com Phone: 0345 762 6848 DX 716176 MANSFIELD 5

**LANDMARK INFORMATION GROUP
LIMITED
SOWTON INDUSTRIAL ESTATE
ABBAY COURT
UNIT 5/7 EAGLE WAY
EXETER
DEVON
EX2 7HY**

Our reference: **51001062015001**
Your reference: **78000054_2|**
Date of your enquiry: **12 January 2016**
Date we received your enquiry: **12 January 2016**
Date of issue: **12 January 2016**

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

Non-Residential Coal Authority Mining Report

UNIT A, ABERCAN Aid, DRAGON PARC MERTHYR TYDFIL,

This report is based on and limited to the records held by, the Coal Authority, and the Cheshire Brine Subsidence Compensation Board's records, at the time we answer the search.

Coal mining	See comments below
Brine Compensation District	No

Information from the Coal Authority

Underground coal mining

Past

The property is in the likely zone of influence from workings in 3 seams of coal at shallow to 140m depth, and last worked in 1950.

Present

The property is not in the likely zone of influence of any present underground coal workings.

Future

The property is not in an area for which the Coal Authority is determining whether to grant a licence to remove coal using underground methods.

The property is not in an area for which a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area that is likely to be affected at the surface from any planned future workings.

However, reserves of coal exist in the local area which could be worked at some time in the future.

No notice of the risk of the land being affected by subsidence has been given under section 46 of the Coal Mining Subsidence Act 1991.

Mine entries

Within, or within 20 metres of, the boundary of the property there are 7 mine entries, the approximate positions of which are shown on the attached plan.

Our records disclose the following information:

305204-038. This shaft was filled grouted and capped in 1975..

305204-030. Information provided to the Coal Authority by British Coal indicates th is shaft is filled.

305204-069. No treatment details.

305204-036. This shaft was filled grouted and capped in 1975..

305204-031. This shaft was grouted and capped in 1977..

305204-060. Uncovered during road improvements we understand this adit was treated by K Wardell and Partners Consultant Mining Engineers..

305204-037. This shaft was filled grouted and capped in 1975..

Records may be incomplete. Consequently, there may exist in the local area mine entries of which the Coal Authority has no knowledge.

For an additional fee, the Coal Authority will provide a supplementary Mine Entry Interpretive Report. The report will provide a separate assessment for the mine entry (entries) referred to in this report. It will give details based on information in the Coal Authority's possession, together with an opinion on the likelihood of mining subsidence damage arising from ground movement as a consequence of the existence of the mine entry/entries. It will also give 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 visit www.groundstability.com or telephone 0345 7626 848.

Coal mining geology

The Authority is not aware of any evidence of damage arising due to geological faults or other lines of weakness that have been affected by coal mining.

Opencast coal mining

Past

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

Present

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

Future

The property is not within 800 metres of the boundary of an opencast site for which the Coal Authority is determining whether to grant a licence to remove coal by opencast methods.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres, since 31st October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas

There is no record of a mine gas emission requiring action by the Coal Authority within the boundary of the property.

Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

Withdrawal of support

The property is not in an area for which a notice of entitlement to withdraw support has been published.

The property is not in an area for which a notice has been given under section 41 of the Coal Industry Act 1994, revoking the entitlement to withdraw support.

Working facilities orders

The property is not in an area for which an Order has been made under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

Payments to owners of former copyhold land

The property is not in an area for which a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Comments on Coal Authority information

The attached plan shows the approximate location of the disused mine entry/entries referred to in this report. For reasons of clarity, mine entry symbols may not be drawn to the same scale as the plan.

Property owners have the benefit of statutory protection (under the Coal Mining Subsidence act 1991*). This contains provision for the making good, to the reasonable satisfaction of the owner, of physical damage from disused coal mine workings including disused coal mine entries. A leaflet setting out the rights and the obligations of either the Coal Authority or other responsible persons under the 1991 Act can be obtained by telephoning 0345 762 6848.

If you wish to discuss the relevance of any of the information contained in this report you should seek the advice of a qualified mining engineer or surveyor. If you or your adviser wish to examine the source plans from which the information has been taken these are normally available at our Mansfield office, free of charge, by prior appointment, telephone 01623 637225. Should you or your adviser wish to carry out any physical investigations that may enter, disturb or interfere with any disused mine entry the prior permission of the owner must be sought. For coal mine entries the owner will normally be the Coal Authority.

The Coal Authority, regardless of responsibility and in conjunction with other public bodies, provide an emergency call out facility in coalfield areas to assess the public safety implications of mining features (including disused mine entries). Our emergency telephone number at all times is 01623 646333.

*Note, this Act does not apply where coal was worked or gotten by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester.

In view of the mining circumstances a prudent developer would seek appropriate technical advice before any works are undertaken.

Therefore if development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply good engineering practice developed for mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or mines of coal without the permission of the Coal Authority. Developers should be aware that the investigation of coal seams/former mines of coal may have the potential to

generate and/or displace underground gases and these risks both under and adjacent to the development should be fully considered in developing any proposals. The need for effective measures to prevent gases entering into public properties either during investigation or after development also needs to be assessed and properly addressed. This is necessary due to the public safety implications of any development in these circumstances.

Information from the Cheshire Brine Subsidence Compensation Board

The property lies outside the Cheshire Brine Compensation District.

Additional Remarks

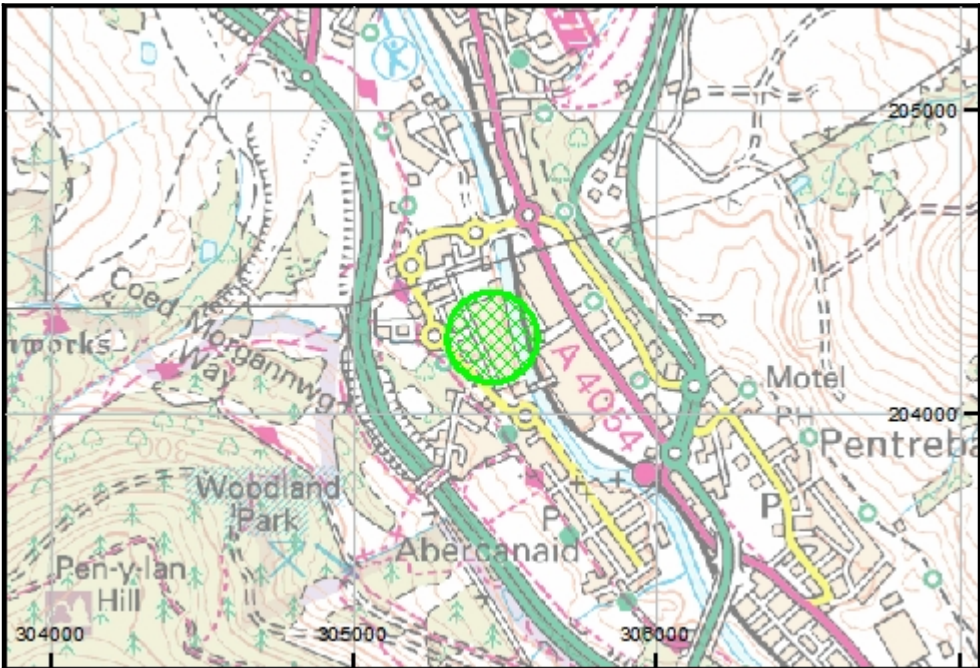
Information provided by the Coal Authority in this report is compiled in response to the Law Society's Con29M Coal Mining and Brine Subsidence Claim enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL. Please note that Brine Subsidence Claim enquiries are only relevant for England and Wales. This report is prepared in accordance with the Law Society's Guidance Notes 2006, the User Guide 2006 and the Coal Authority and Cheshire Brine Board's Terms and Conditions applicable at the time the report was produced.

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Location map



Approximate position of property



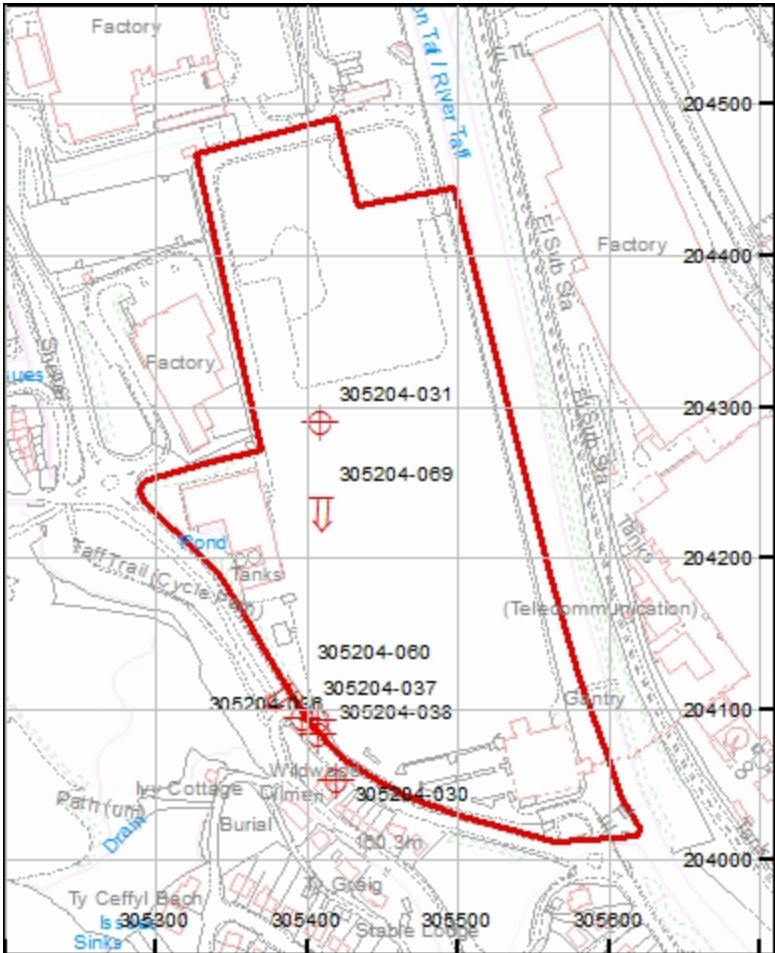
Enquiry boundary

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Key

Approximate position of enquiry boundary shown

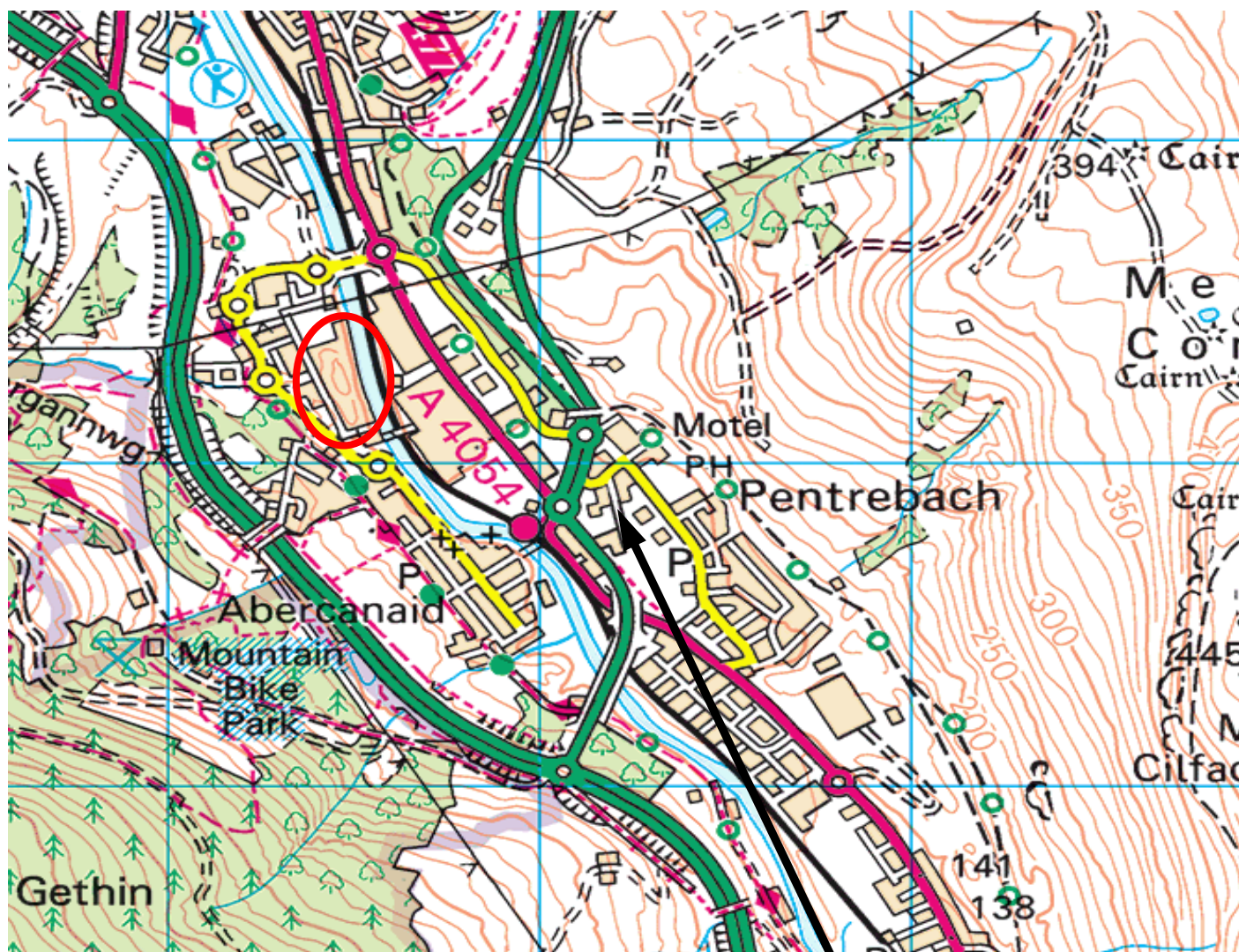
Disused Adit or Mineshaft



FIGURES



NORTH



1000m

**SITE
LOCATION**

FIGURE 1 - SITE LOCATION

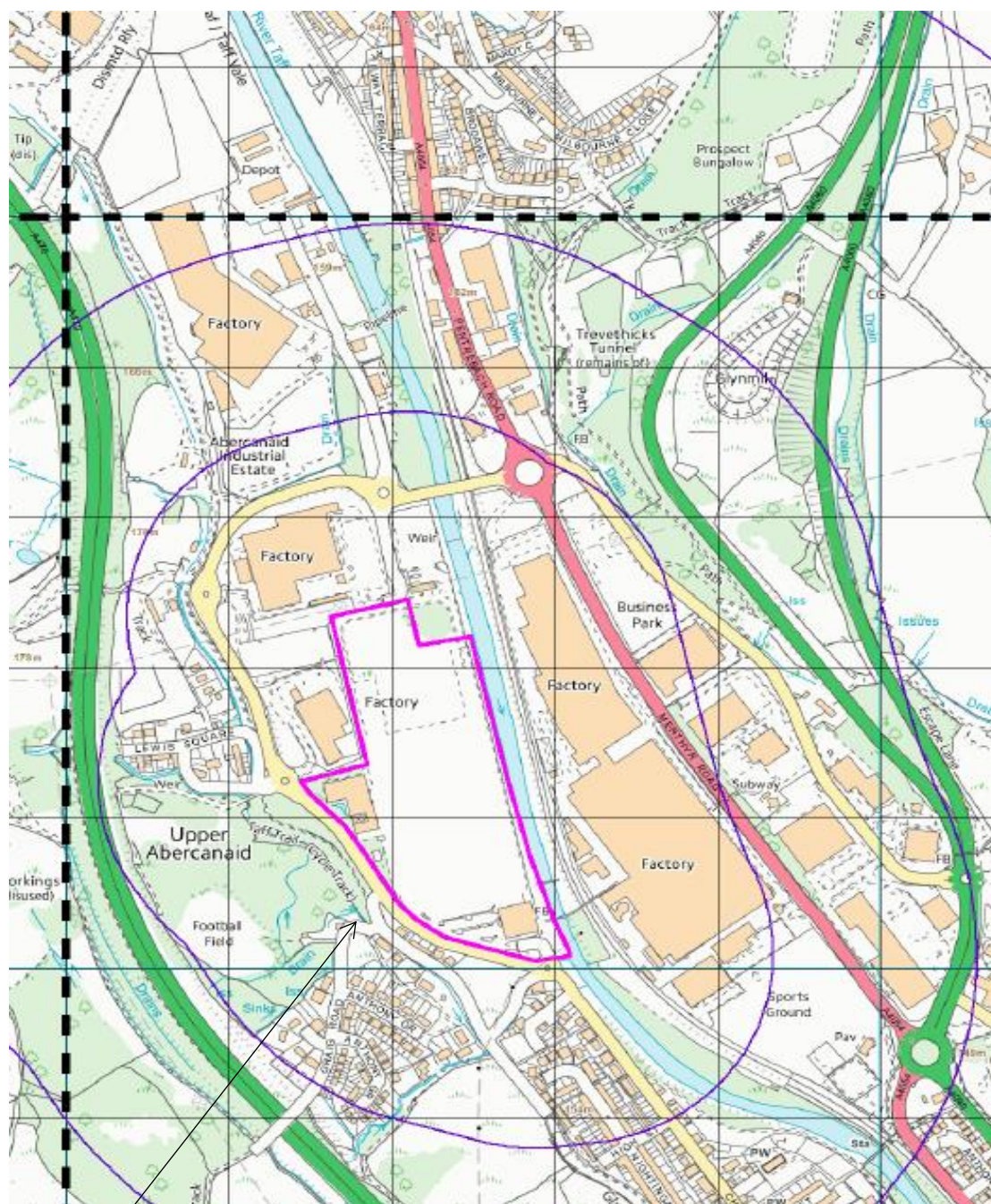
Ardagh Metal Packaging, Abercnaid, Methyr

Intégral
Géotechnique

Intégral House
7 Beddau Way
Castlegate Business Park
Caerphilly
CF83 2AX
Tel: 029 2080 7991
Fax: 029 2086 2176



NORTH



Site Boundary

NOT TO SCALE

FIGURE 2 - SITE PLAN

Ardagh Metal Packaging, Abercnaid, Methyr

Intégral
Géotechnique

Intégral House
7 Beddau Way
Castlegate Business Park
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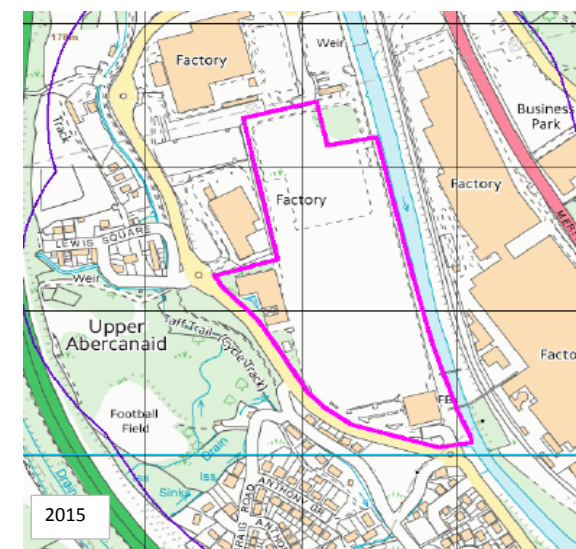
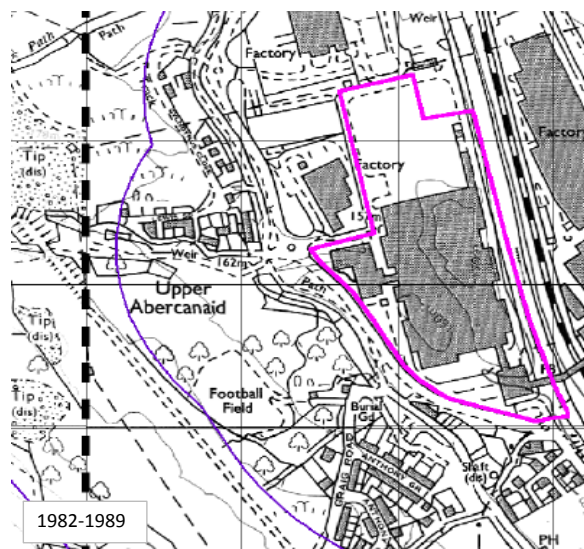
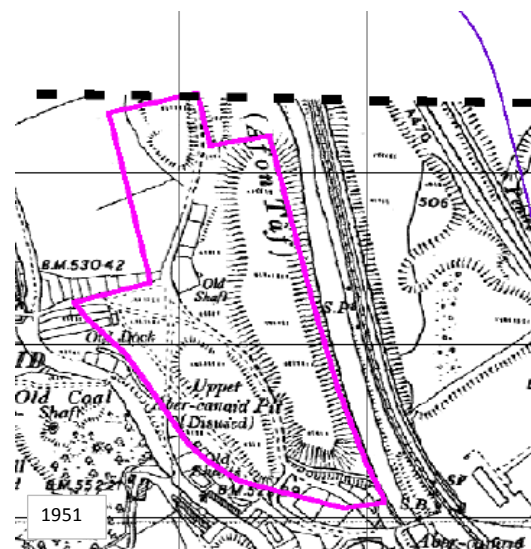
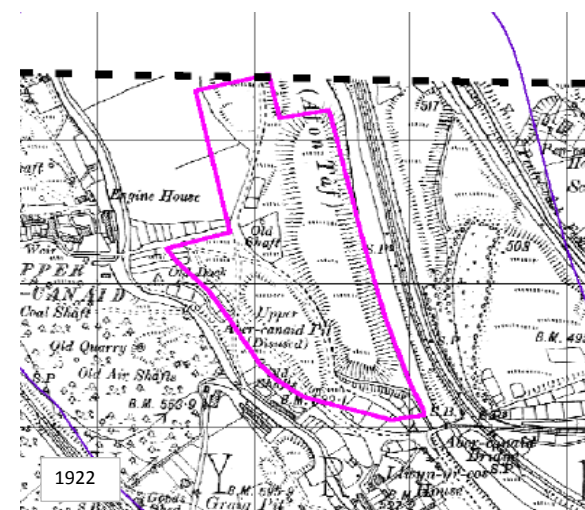
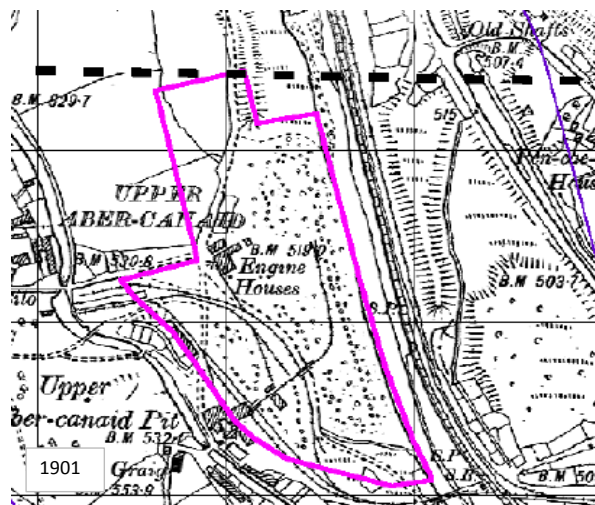
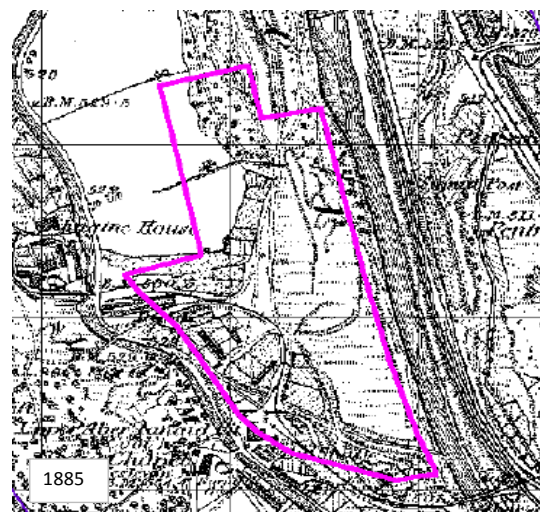


FIGURE 3: SITE HISTORY (Based on 1:10,560/10,00 scale maps)

Ardagh Metal Packaging, Abercanaid, Merthyr Tydfil

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Figure 4: Abandonment Plan - Four Feet Seam

Project: Ardagh Metal Packaging, Abercanaid, Merthyr Tydfil	Job No.: 11708	Intégral Géotechnique	Integral House, 7 Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX. Tel: 029 2080 7991
Client: Huntley Wood Investments Limited	Scale: 1:2,000 at A3		

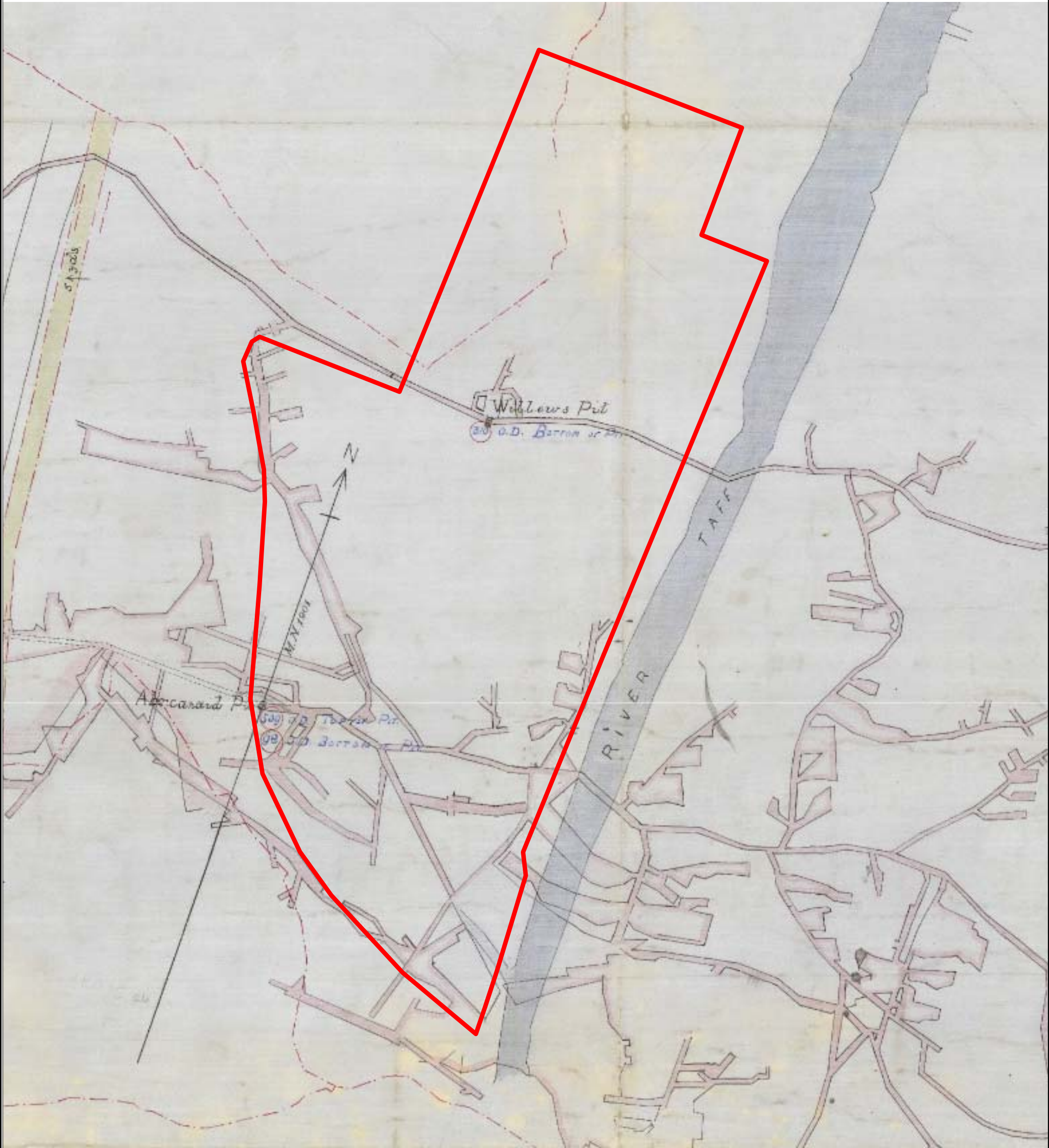


Figure 5: Abandonment Plan - Nine Feet Seam

Project: Ardagh Metal Packaging, Abercanaid, Merthyr Tydfil	Job No.: 11708	Intégral Géotechnique	Integral House, 7 Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX. Tel: 029 2080 7991
Client: Huntley Wood Investments Limited	Scale: 1:2,000 at A3		

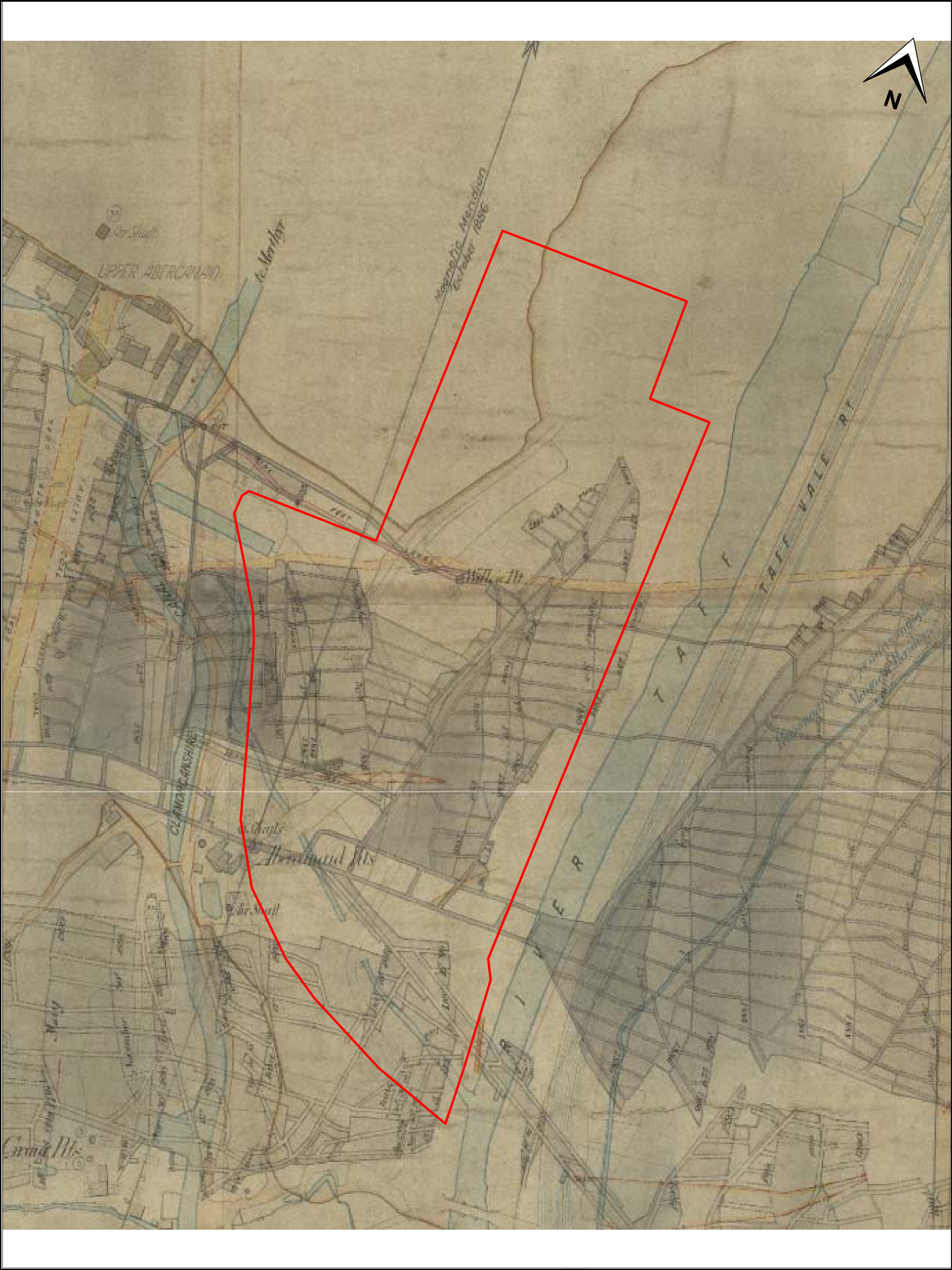


Figure 6: Abandonment Plan - Seven Feet Seam

Project: Ardagh Metal Packaging, Abercanaid, Merthyr Tydfil	Job No.: 11708	Intégral Géotechnique	Integral House, 7 Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX. Tel: 029 2080 7991
Client: Huntley Wood Investments Limited	Scale: 1:2000 at A3		