Cadair Hydro-Power Scheme

Archaeological Assessment *G1570*



Prepared for Shawater Ltd.

by

Ymddiriedolaeth Archaeolegol Gwynedd Gwynedd Archaeological Trust

Report No. 340

quent PRN: 44829

CADAIR HYDRO-POWER SCHEME

ARCHAEOLOGICAL ASSESSMENT (G1570)

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Frontcover: Water wheel at Gwastadfryn

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CADAIR HYDRO-POWER SCHEME

ARCHAEOLOGICAL ASSESSMENT

1 INTRODUCTION

The proposed hydro-power scheme will extract water from the Afon Cadair at SH 6805 1117 and at SH 6823 1075 and convey the water to a proposed powerhouse and outfall at SH 6770 0985. Gwynedd Archaeological Trust (Contracts Section) has been asked by Shawater Ltd to carry out an archaeological assessment of the proposed scheme route.

2 ASSESSMENT BRIEF

An initial report was requested from Gwynedd Archaeological Trust, assessing the likely archaeological impact of the scheme and suggesting mitigatory measures.

The basic requirement was for a desk-top survey and field search of the proposed area in order to assess the impact of the proposals on the archaeological and heritage features within the area concerned. The importance and condition of known archaeological remains were to be assessed and areas of archaeological potential and new sites to be identified. Measures to mitigate the effects of the proposed scheme on the archaeological resource were to be suggested.

Gwynedd Archaeological Trust's proposals for fulfilling these requirements were, briefly, as follows:

- to identify and record the cultural heritage of the area to be affected by the proposals;
- to evaluate the importance of what was identified (both as a cultural landscape and as the individual items which make up that landscape); and
- to recommend ways in which damage to the cultural heritage can be avoided or minimised.

3 METHODS AND TECHNIQUES

3.1 Desk-top Study

This involved consultation of maps, computer records, written records and reference works, which make up the Sites and Monuments Record (SMR) located at Gwynedd Archaeological Trust. Records (including early Ordnance Survey maps, tithe maps, schedules, and reference works - see bibliography) were consulted in the Gwynedd Archives, Dolgellau.

3.2 Field Search

This was undertaken on the 30th of September, 1999 when the whole of the proposed route of the pipeline was walked. Conditions were overcast and wet but fair for fieldwork. Areas of dense, chest-high bracken, especially along the eastern side of the proposed route, made identification of archaeological features extremely difficult.

Sites identified were marked on copies of 1:10,000 OS maps as accurate as possible without surveying. Each site was described and assessed. Detail notes, sketch plans and photographs were made of the more important features.

3.3 Report

All available information was collated, and transferred onto a map at a scale 1:10,000. The sites were then assessed and allocated to the categories listed below. These are intended to give an idea of the importance of the site and the level of response likely to be required; descriptions of the sites and specific recommendations for further assessment or mitigatory measures, as appropriate, are given in the relevant sections of this report.

The criteria used for allocating sites to categories are based on those used by the Secretary of State when considering ancient monuments for scheduling; these are set out in Annex 3 to Planning Policy Guidance 16 (Wales): Archaeology and Planning.

3.4 Categories

The following categories were used to define the importance of the archaeological resource.

Category A - Sites of national importance.

Scheduled Ancient Monuments, Listed Buildings and sites of schedulable or listable quality, *i.e.* those which would meet the requirements for scheduling (ancient monuments) or listing (buildings) or both.

Sites which are scheduled or listed have legal protection, and it is recommended that all Category A sites remain preserved and protected in situ.

Category B - Sites of regional or county importance.

Sites which would no fulfil the criteria for scheduling or listing, but which are nevertheless of particular importance within the region.

Preservation in situ is the preferred option for Category B sites, but if damage or destruction cannot be avoided, appropriate detailed recording might be an acceptable alternative.

Category C - Sites of district or local importance.

Sites which are not of sufficient importance to justify a recommendation for preservation if threatened.

Category C sites nevertheless merit adequate recording in advance of damage or destruction.

Category D - Minor and damaged sites.

Sites which are of minor importance or so badly damaged that too little remains to justify their inclusion in a higher category.

For Category D sites, rapid recording, either in advance of or during destruction, should be sufficient.

Category E - Sites needing further investigation.

Sites whose importance is as yet undetermined and which will require further work before they can be allocated to categories A - D are temporarily placed in this category, with specific recommendations for further assessment. By the end of the assessment there should be no sites remaining in this category.

3.5 Definition of Impact

The impact has been defined as none, slight, likely, considerable or unknown as follows:

None:

There is no construction impact on this particular site. Sites identified as of particular importance are, where possible, avoided by the improvement proposals. Such sites have been identified in the tables.

Slight:

This has generally been used where the impact is marginal and would not by the nature of the site cause irreversible damage to the remainder of the feature, e.g. a track or field boundary.

Likely:

In some instances the site in question would not fall within the direct line of the proposed development but could be affected by construction works and therefore may, subject to its nature be removed or damaged.

Considerable:

The total removal of a feature or its partial removal which would effectively destroy the remainder of the site.

Unknown:

This is used when the location of the site is unknown, but thought to be in the vicinity of the proposed development.

3.6 Definition of Mitigatory Recommendations

None:

No impact so no requirement for mitigatory measures.

Detailed recording:

Requiring a photographic record, surveying and the production of a measure drawing prior to commencement of works.

Archaeological excavation may also be required depending on the particular feature and the extent and effect of the impact.

Basic recording:

Requiring a photographic record and full description prior to commencement of works.

Watching brief:

Requiring observation of particular identified features or areas during works in their vicinity. This may be supplemented by detailed or basic recording of exposed layers, structures or sections.

Avoidance:

Features which may be affected directly by the scheme, or during the construction of the scheme, should be avoided. Occasionally a minor change to the proposed route of the pipeline is recommended, but more usually it refers to the need for care to be taken during construction of the pipeline to avoid accidental damage to a site. This is often best achieved by clearly marking sites prior to the start of work.

Reinstatement:

The feature should be re-instated with archaeological advice and supervision.

4 ARCHAEOLOGICAL FINDINGS AND RECOMMENDATIONS

41. Preliminary Topographic Assessment

The valley formed by the Afon Cadair cuts through geology of Ordovician shales and mudstones of the Bala (Ashgill, Caradoc), Llandeilo and Arenig series. The extreme northern end of the proposed route lays in rough, wet and unimproved land consisting of reeds and hummocky grass. To the south of this the western side of the route was extremely steep and heavily wooded, opening out onto a river terrace which was densely covered in chest-high bracken. On the eastern side most of the route is unimproved, rough, boulder strewn slope, again covered in chest-high bracken. Approximately half way down the route on the western side the area becomes less steep and the land improved. The Nant Pencoed which joins the Afon Cadair along its route is a steep sided valley, covered in a dense growth of bracken and trees.

4.2 Archaeological and Historical Background

The area of the survey lies within the native Welsh medieval administrative unit, or cantref, known as Meirionnydd, and within the smaller unit or commote of Tal Y Bont. At this time the Welsh landscape was made up of a number of dispersed, non-nucleated townships within the commotes. This area would have fallen within the township of Pennant. Today it is found within the civil parish of Llanfihangel y Pennant.

To the south of the area of the pipeline in the Dysaynni valley, lies the remains of Castell y Bere. This castle was built by Llywelyn ap lorwerth (*The Great*) in the thirteenth century, to guard the southern border of the kingdom of Gwynedd. At the end of the thirteenth century it was besieged and captured by Edward I, who, it is thought, intended to found an English borough around the castle, but nothing came of this and it was abandoned shortly after.

The church, St. Michael's, in Llanfihangel y Pennant dates from the twelfth to thirteenth century (GAT Report 288), but was refurbished in the nineteenth century. It contains a twelfth century font, similar to that in the neighbouring church of Llanegryn.

The Tithe map from 1838 shows the Afon Cadair and the Nant Pencoed. The only other features recorded on the map near the proposed pipeline route are the two farms of Gwastadfryn and Pencoed. The route passes through two numbered areas, associated with these farms.

Tithe Map Schedule (1838):

No. on map	Owner	Tenant	Field name	Land-use
31	Griffith Edward Humphery	David Williams	Gwastadvryn	arable/pasture
32	Tilly? Prichard	David Roberts	Pencoed	arable/pasture

Place name evidence from higher up the valley indicates the farming practices in the area involved that of transhumance, where stock was taken up onto the higher, exposed ground in the summer months to take advantage of the upland grazing and to allow the lowland pastures to regenerate. It is known that this practice continued to take place in some isolated areas of the Welsh uplands into the twentieth century, but its origins are in the early medieval period. The structure recorded on the OS maps known as Hafotty Gwastadfryn in Nant Hafotty towards Tyrrau Mawr, probably represent the location of such a summer house, associated with the farm of Gwastadfryn.

4.3 The Existing Archaeological Record

The are no known archaeological remains directly on the proposed pipeline route. However, near it there are a number of features of archaeological interest.

Prehistoric activity in the area is represented by a possible standing stone, PRN 4935, on the lower slopes of Mynydd Tyn y Fach, near a path leading to Waun Rhiw'rogof (its actual location is unknown). Standing stones are often found beside ancient trackways (Bowen, 57), as are stone cairns. One cairn is located near the pipeline routs, PRN 10177, on the northern side of Nant Pencoed.

A variety of agricultural features, some of medieval date, have been identified during past field surveys on the western and eastern slopes of the Dysynni valley. These include a roughly built stone enclosure (PRN 10167) on the steep, north facing slope of Craig Ysgiog, above Nant Pencoed, and a trackway running towards Nant Pencoed, which is thought to have been used for transporting peat from an area of turbary (peat cutting) on Waun Rhiw'r Ogof. Small-scale industrial activity is also present near the proposed route, with the location of a small stone quarry (PRN 20423) south-east of Gwastadfryn.

The house at Gwastadfryn (PRN 4950) is a good example of the regional type of house of c. 17th century date, with an end chimney, fireplace stairs and a post and panel partition forming a cross-passage.

Place name evidence, indicates areas of woodland, for example Pencoed, Coed Pennant and Mynnydd Pencoed (coed = wood). The name Mynnydd Tyn y Fach indicates an area of upland grazing associated with the farm of that name lower down the valley. Other names, such as Nant Pencoed (nant = stream) and Gwastadfryn, (gwastad = plain, bryn = hill) reflect topographical features and locations.

Known sites on the Sites and Monuments Record

PRN 4950 - House, Gwastadfryn
PRN 20423 - Quarry, Gwastadfryn
PRN 4935 - Standing Stone - unlocated
PRN 10168 - Trackway NW Craig Ysgiog
PRN 10167 - Enclosure N slope Craig Ysgiog
PRN 10170 - Field walls SE of Pencoed
PRN 10178 - Structures SW of Pencoed
PRN 10177 - Possible cairn SSW of Pencoed
PRN 10175 - Agricultural Building S of Pencoed
PRN 10176 - Four Houses at Pencoed
PRN 4240 - Sheepfold - non antiquity
PRN 4239 - 'U' Enclosure - probably drainage ditch

4.4 The Archaeological Survey

This includes the pipeline route and its immediate borders, within c. 50m on each side. All features of human activity are recorded except those deriving only from current land-use. Features are numbered in sequence from the northern end of the route southwards. The location of all the features is shown on the accompanying map.

1 Stone walling SH 6807 1119C

Category D Impact: Considerable

A length (c. 20m long) of roughly placed boulders, along the eastern river bank at the location of a small river terrace.

Recommendations for further assessment: None

Recommendations for mitigatory measures: Basic recording

Stone wall SH 6807 1118C

PRN 62200

Category E Impact: Considerable

A low, curving and partially grassed over wall, 1m wide and c.20m long. It is located on the same river terrace as site 1, it may be an enclosure but needs further investigation.

Recommendations for further assessment: None

Recommendations for mitigatory measures: Brief recording & watching brief

Deserted Rural Settlement? SH 6802 1119C PRO 632 10

Category C Impact: None

The remains of a rectangular building constructed on an artificial platform, with its long axis at forty-five degrees to the natural slope. The walls are faced but partially grassed over. A short stretch of denuded walling runs from the north-eastern corner of the structure down slope and other denuded, associated walls are nearby. This site, along with the denuded field walls and enclosures found on the eastern side of the valley (PRN's 10167 & 10170), indicate an expansion of medieval settlement and farming into the higher reaches of the valley in climatic and social favourable conditions, before their desertion, probably some time in the late medieval period.

Recommendations for further assessment: None Recommendations for mitigatory measures: Avoidance

Stone wall SH 6812 1091C

PRN 62711

Category D Impact: Unlikely

A low, denuded field wall, partially grassed over. Approximately, 20m long and 1m wide, running in a north-east - south-west direction from the ruined barns near Pencoed and following a natural gully.

Recommendations for further assessment: None Recommendations for mitigatory measures: Basic recording

Trackway SH 6811 1072C PR 62717

Category C Impact: Likely

A trackway, terraced into the slope, 3m wide and overgrown in places. This trackway is shown on both the 1901 OS map (1:2500) and the 1901 OS map (1:10560) and leads upslope to Pencoed.

Recommendations for further assessment: None

Recommendations for mitigatory measures: Basic recording

Enclosure? SH 6810 1069 PKN 62213

Category D Impact: Likely

A possible enclosure, roughly built with large boulders, 1.5m high in places. It seems to enclose an area 10m by 6m but is very overgrown and difficult to interpret. Some cleared (from the modern trackway?) boulders are also present to the west of the enclosure.

Recommendations for further assessment: Revisit when bracken has died back Recommendations for mitigatory measures: Basic recording & watching brief

Walling? SH 6805 1068 PAM 62714

Category E Impact: Likely

A possible, boulder defined enclosure, head high bracken prohibited further investigation.

Recommendations for further assessment: Revisit when bracken has died back Recommendations for mitigatory measures: Basic recording & watching brief

Platforms? SH 6810 1066

Category D Impact: None

Two possible platforms cut into the slope identified on aerial photographs (Line 47 - 10892, Print 226). On inspection are natural gaps in the bracken.

Recommendations for further assessment: None Recommendations for mitigatory measures: None

Remains of a rectangular structure SH 6769 1021

Category D Impact: None

The low remains of a rectangular structure, whose walls are 1m high in places. It has been used as a stone dump, in recent times, when some of the surrounding field walls have been removed. Probably a field barn, it is recorded on the 1901 OS map (1:2500) as a structure with a yard or enclosure at one end. Clearance cairns are also dotted around this structure.

Recommendations for further assessment: None Recommendations for mitigatory measures: Avoidance

Stone wall SH 6784 1004C

PK11 67216

Category D Impact: Likely A low, denuded stone wall, 1.5m wide and 0.4m high. It follows the course of a small stream.

Recommendations for further assessment: None

Recommendations for mitigatory measures: Basic recording

Trackway SH 6773 0986C

PIZES 677 13

Category D Impact: Likely

A trackway (still used), approximately 4m wide, running in a south-north direction.

Recommendations for further assessment: None

Recommendations for mitigatory measures: Basic recording

Barn SH 6768 0989 12

Category C Impact: Likely

PRN 62218

A roofless barn of two phases, the southern end is the earliest phase and contains animal stalls and has wind eyes in the long walls and an entrance in the southern gable wall. The northern end is an addition and also has wind eyes in the long walls and is probably a hay barn. Part of Gwastadfryn farm complex. The proposed location of the powerhouse for the scheme is nearby, but should not encroach on this structure.

Recommendations for further assessment: None Recommendations for mitigatory measures: Avoidance

Barn SH 6766 0992

PRH 62279

Category C Impact: Slight

A large stone and mortar barn, with a combined roof of corrugated iron and slate. Part of Gwastadfryn farm complex. The structure is marked on the 1901 1:10560 OS map.

Recommendations for further assessment: None Recommendations for mitigatory measures: Avoidance

Gwastadfryn Farm House & water wheel SH 6768 0997 PR 57770

Category C Impact: None

Two storey house with an end chimney, fireplace stairs and a post and panel partition forming a cross-passage. It has an extension on the rear of the house which still retains an undershot water wheel (iron?), located on the river side of the farmhouse.

Recommendations for further assessment: None

Recommendations for mitigatory measures: Avoidance

Quarry SH 6772 1008

PKN 62221

Category D Impact: None

A stone quarry, quite recent, cut into the valley side.

Recommendations for further assessment: None

Recommendations for mitigatory measures: Basic recording

Remains of rectangular structure SH 6766 0991

+ RH 62 231

Category E Impact: None

A small, 6m by 5m, three sided (in present condition) stone and mortar roofless building, with a dry-stone wall running off from it at the south-east corner. Part of the Gwastadfryn farm complex. A building is recorded in this location on the 1901 1:10560 OS map.

Recommendations for further assessment: None

Recommendations for mitigatory measures: Basic recording

Ford SH 6770 0990

PRN 67228

Category D Impact: Considerable

A ford across the Afon Cadair, accessing Gwastadfryn farm from the east. It is not marked on the 1901 OS maps (1:2500 & 1:10560).

Recommendations for further assessment: None

Recommendations for mitigatory measures: Basic recording

Remains of a rectangular building SH 6790 1001 PRIS 6272 \$

Category D Impact: None

The remains of a two compartment rectangular, dry-stone structure. Now very ruinous but with a small annex partly built onto a natural boulder and roofed with turf. The annex appears to have been an animal pen as it also has an animal creep/entrance on the southern side. the site is located next to a stream in modern forestry. The site is marked on the 1901 OS map (1:2500) and the western compartment appears to be a yard or enclosure and not roofed.

Recommendations for further assessment: None Recommendations for mitigatory measures: Avoidance

Enclosure SH 6787 1004C

Category D Impact: Slight

PRN 67225.

A dry-stone enclosure with an internal division, probably associated with gathering and sorting sheep from mountain grazing. Located in chest-high bracken.

Recommendations for further assessment: Revisit when the bracken has died back Recommendations for mitigatory measures: Basic recording & watching brief

SUMMARY OF RECOMMENDATIONS FOR MITIGATORY MEASURES

This lists the sits according to their perceived archaeological value.

Category A - National importance

Nil

Category B - Regional Importance

Nil

Category C - Local Importance

3, 12, 13 & 14

Avoidance

5

Basic recording

Category D/E - Minor or damaged sites

1, 4, 10, 11, 15, 16 & 17

Basic recording

6,7 & 19

Watching brief

9 & 18

Avoidance

8

None

6 GENERAL RECOMMENDATIONS

6.1 The Construction Requirements

For the greatest part of the pipeline trench could lie entirely within the confines of the existing farm track which, because it is constructed on a slope and has been cut into the hillslope and revetted on the downslope side, hence destroying or covering any archaeology found there. When the proposed route leaves the farm track it travels through an area of improved land, with all surface remains of archaeological features having been removed and into a small, wet valley, which again has been recently disturbed by field clearance.

6.2 Archaeological Recommendations

A total of 19 features were noted within the general area of the proposed pipeline route (c. 50m either side). Only one site (no. 3) a probable medieval, deserted rural settlement, of note was identified and this lay on the western side of the river and is therefore unlikely to be involved in the construction of the pipeline. The intake weir is located near a short length of curving (no. 2) whose precise nature is as yet unclear, but may represent the remains of an enclosure, possibly associated with sheep washing.

The complex of farm buildings at Gwastadfryn appear to be post-medieval in date, the barn in particular are nineteenth century at the earliest. The water wheel built on the extension of the farm house is the most notable feature.

6.2.1 Before construction

- A There should be an archaeologist present during the marking out and fencing of the easement to advise on the exact route. This would seek to minimise the easement width at the points where its adjoins significant features.
- B Archaeological advice should be sought before and during the creation of any temporary topsoil dumping areas.

6.2.2 During construction

A There should be a watching brief to allow close monitoring of works near to features specified in order to avoid damage but there is no requirement for a general watching brief along the majority of the route.

6.2.3 After construction

A Reinstatement of ground levels should be monitored.

B There should be allowance for production of a proper level of archiving and production of a report and drawings with a summary for publication, if the resulting information is suitable.

7 Bibliography

7.1 Unpublished Sources

Gwynedd Sites and Monuments Record, Bangor Gwynedd County Council, Dolgellau Archives University of Wales, Bangor, Archives Countryside Council for Wales

7.2 Maps

Ordnance Survey maps:

1:10,000 SH 61SE (1981) & SH 60 NE (1982) 1:10560 2nd Edition 1901 Merionethshire Sheet XVIII NE 1:2500 2nd Edition 1901 Merionethshire Sheet XL11.1 1 inch circa 1837?

Other maps:

Llanfihangel-y-Pennant Tithe Map 1838
John Saxton Map of Montgomeri and Merionidh, 1578

7.3 Published Sources

Bowen, E.G. & Gresham, C.A., 1967. History of Merioneth Vol. 1

Cadw: Welsh Historic Monuments, List of Scheduled Ancient Monuments

Cadw: Welsh Historic Monuments, Lists of Buildings of Special Architectural of Historic Interest

GAT Report 288., 1996. Wesh Historic Churches Project - Gwynedd Gazetteer - Part 4 - Meirionnydd

Lynch, F., 1995. A Guide to Ancient and Historic Wales - Gwynedd

RCAHM (W), 1921. Inventory of Ancient Monuments of Merioneth.

7.4 Aerial Photographs (from CCW)

Colour verticals (1:10,000) 1992:

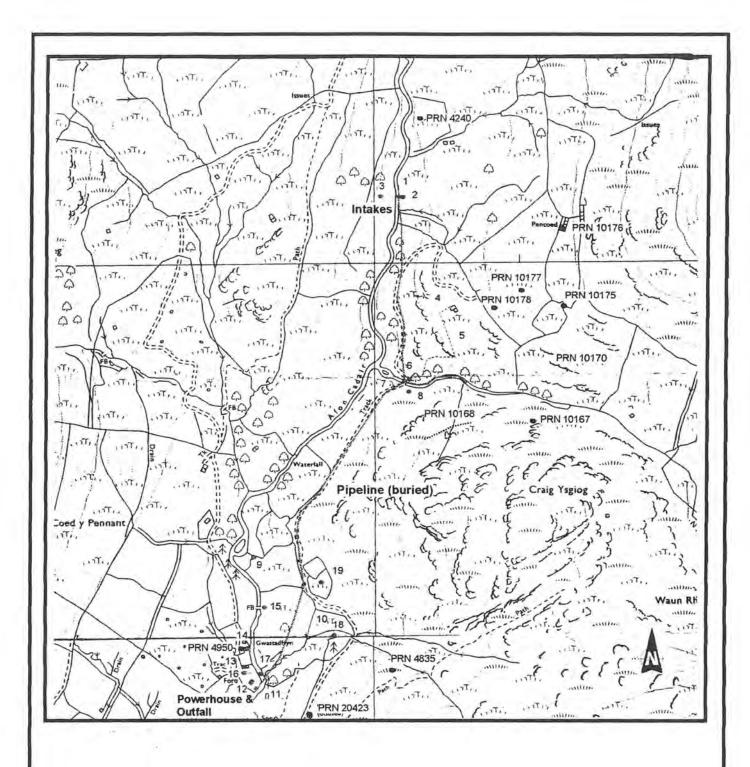
Line 48 - 10892, Print 200 Line 47 - 10892, Print 226

8 NON-TECHNICAL SUMMARY

An archaeological assessment was carried out of the route of the proposed pipeline. This work involved a desktop study of existing records followed by a field walkover. The desktop study included examination of records which make up Gwynedd Sites and Monuments Record held at Gwynedd Archaeological Trust and searches of other records and maps held in archives at Dolgellau as well as early OS maps and printed literature. The fieldwork involved walking all of the c. 1.4km of the route with observation of an area c. 50m on either side and brief recording and assessment of every feature except those which were clearly recent.

A total of 19 features were noted within the corridor of the route. The single most significant was a probable deserted rural settlement from the medieval period, located on the western side of the Afon Cadair and unlikely to be disturbed by the pipeline construction. This site confirms the presence of medieval settlement higher up the valley than presently seen, hinted at by the known existence of denuded field walls and enclosure, to the east at Craig Ysgiog. The remaining sites consisted of post-medieval structures associated with post-medieval farming practices, including the farm of Gwastadfryn.

The pipeline follows mainly along an existing farm track and most of the features recorded can simply be avoided.





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Prepared for Shawater Ltd.

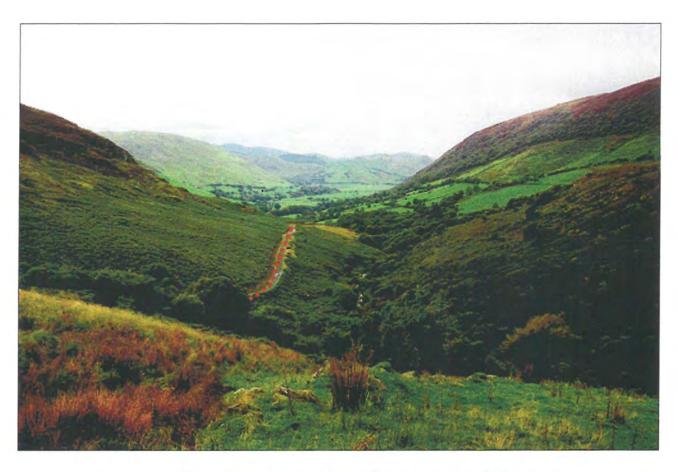


Figure 1: Showing the proposed route of the pipeline emerging from Nant Pencoed

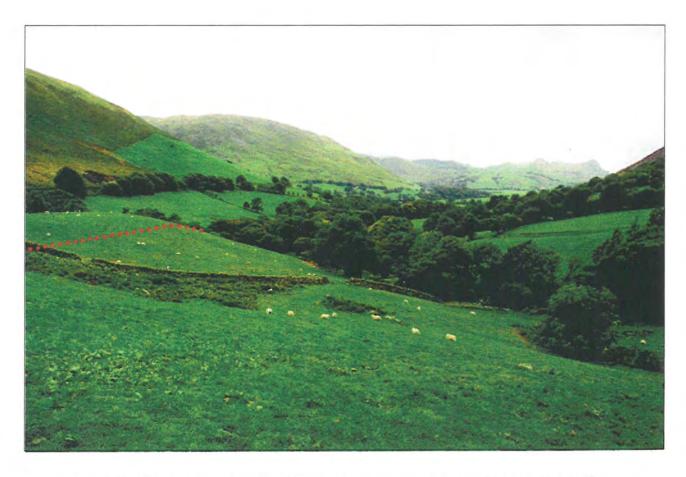


Figure 2: Showing the proposed route of the pipeline through improved land towards Gwastadfryn

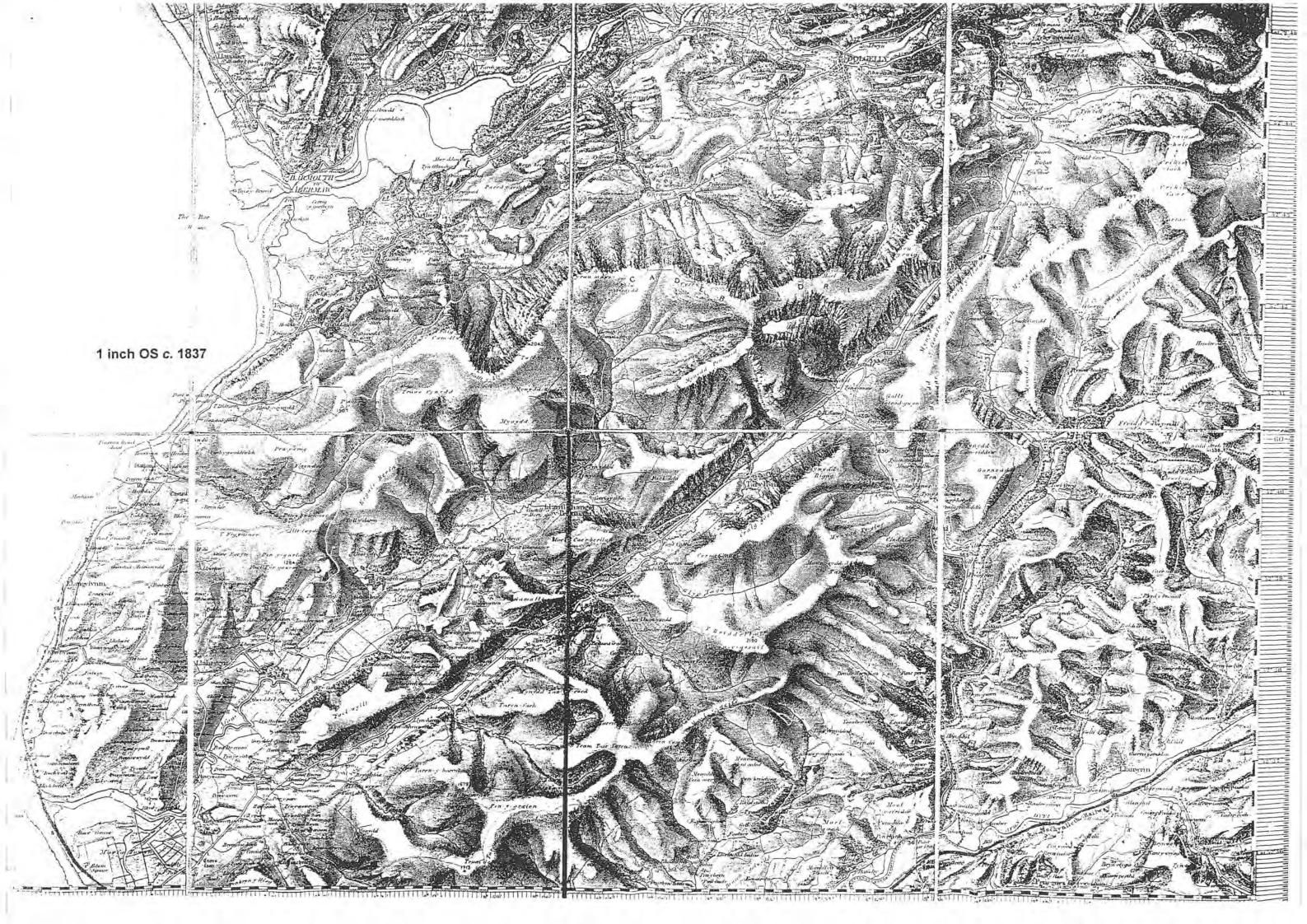


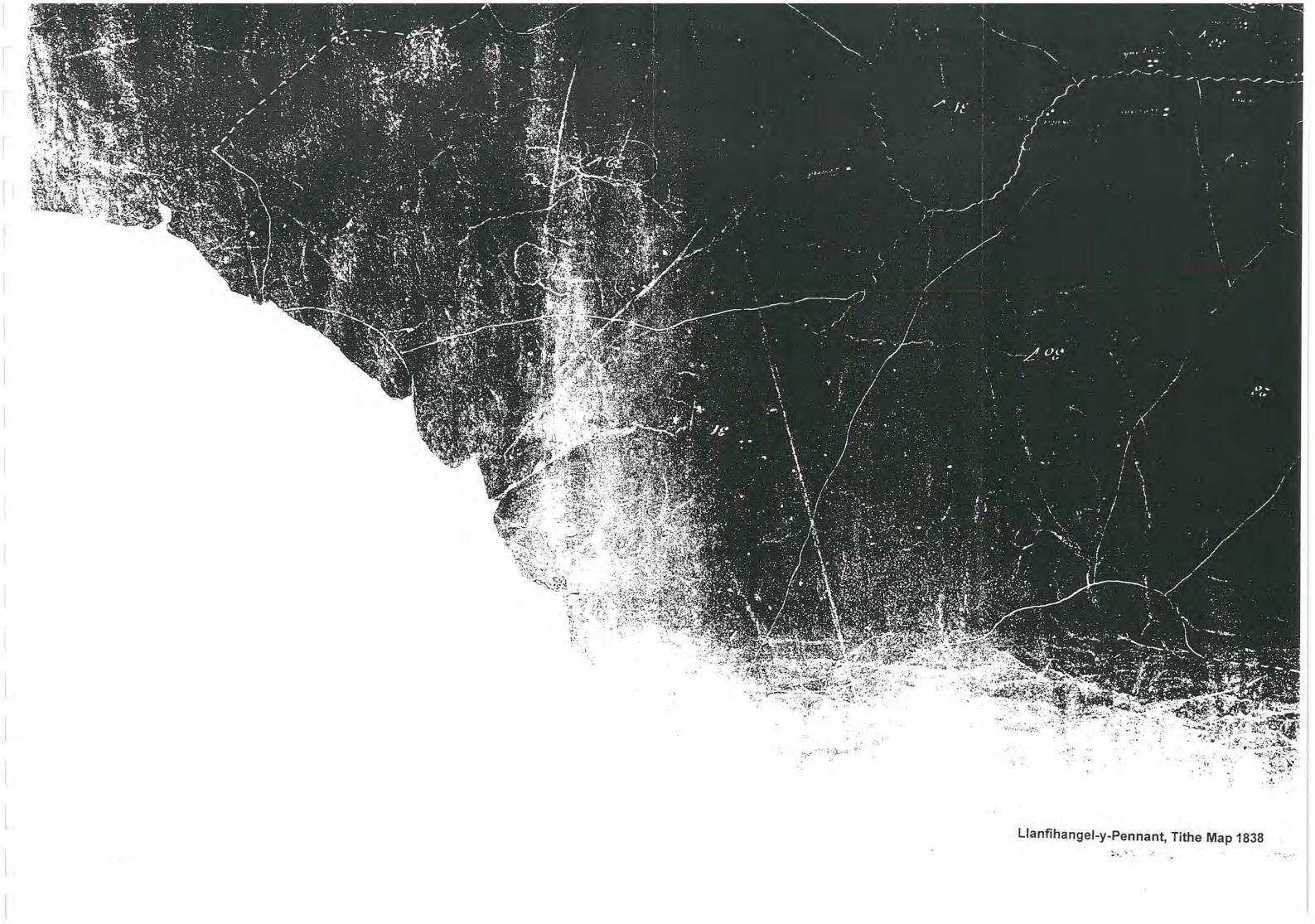
Figure 3: Showing the proposed route of the pipeline down to Gwastadfryn Farm



Figure 4: Gwastadfryn Farm







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