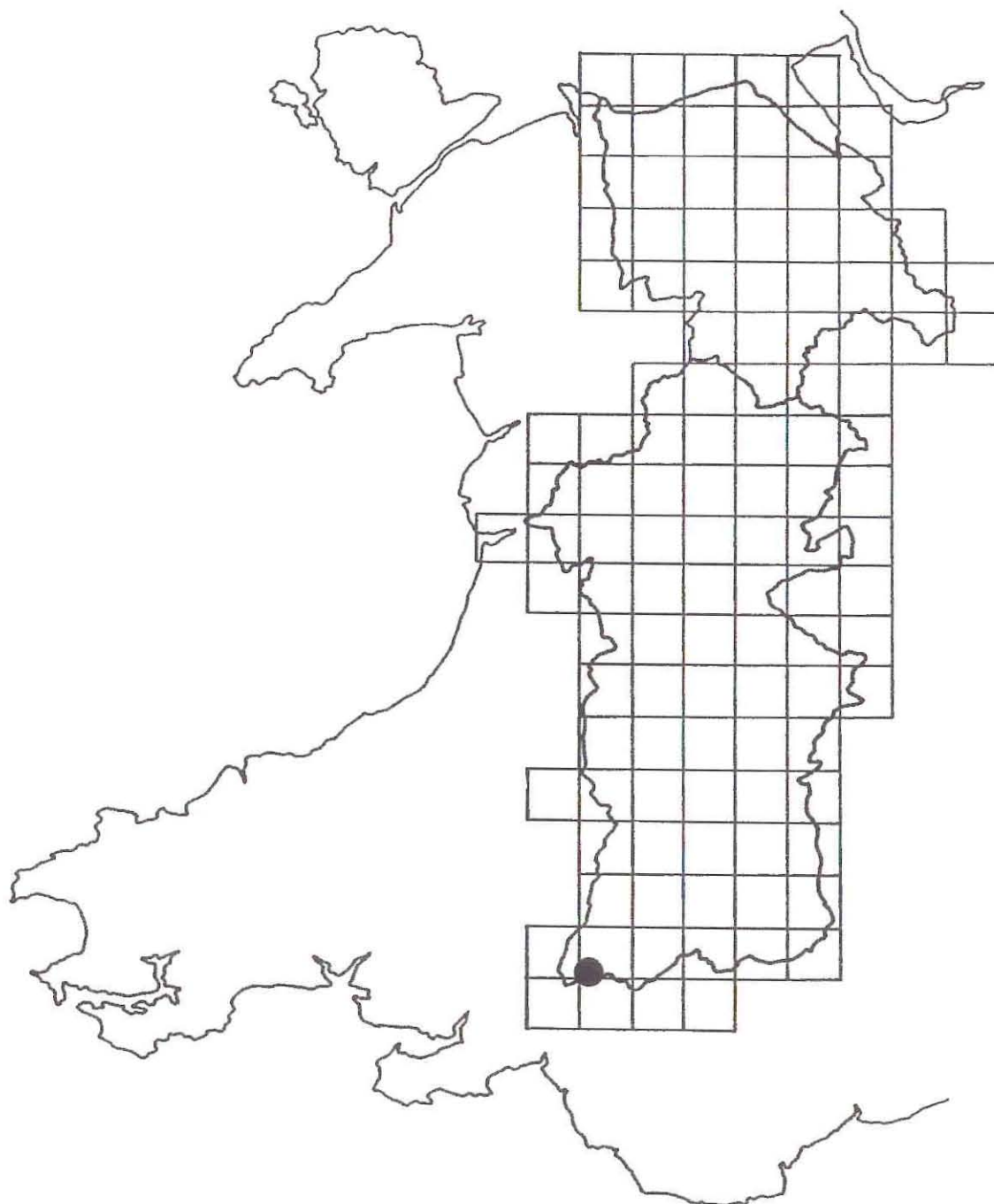


Proposed Nant Gyrlais Opencast, Powys
ARCHAEOLOGICAL ASSESSMENT



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Report prepared for Celtic Energy

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SUMMARY

The contracting section of the Clwyd-Powys Archaeological Trust was commissioned in March 1995 by Celtic Energy of Aberaman to undertake an archaeological assessment of the area of a proposed opencast site at Nant Gyrlais near Ystradgynlais in Powys.

The assessment has revealed two sites of archaeological interest in the upland part of the area, but overall there appears to be little of archaeological significance.

The assessment has also shown that sites relating to the industrial heritage of the area are likely to have existed on the north and north-west facing slopes of Mynydd y Drum but that surface traces of these have been totally removed during reclamation work preceeding forestry planting.

1. INTRODUCTION

- 1.1** The contracting section of the Clwyd-Powys Archaeological Trust (hereafter CPAT) was commissioned in March 1995 by Celtic Energy of Aberaman, Mid Glamorgan, to carry out an archaeological assessment of the site of a proposed opencast coal mine at Nant Gyrlais, near Ystradgynlais, on the border of the counties of Powys and West Glamorgan (centered on SN 81151125). The assessment is required as part of Celtic Energy's environmental statement accompanying their forthcoming planning application to Powys County Council and West Glamorgan County Council for the proposed work.
- 1.2** A brief for the archaeological assessment was prepared by the curatorial section of CPAT in consultation with Celtic Energy, which recognised the archaeological potential of the area and recommended that work should consist of both desk top study and field assessment (CPAT ASB 137). A specification and quotation for the work was subsequently prepared by the contracting section of CPAT which was accepted by Celtic Energy in April 1995. A copy of the specification is included in this report as Appendix 1. Work on the desk top assessment commenced immediately, and the field assessment was undertaken between the 26th and 28th April 1995. This report was prepared immediately afterwards.
- 1.3** The desk-top study included consultation of the County SMR and aerial photographic archive held at the CPAT offices in Welshpool, the map and documentary archive held at the National Library of Wales in Aberystwyth, the National Monument Record and aerial photographic archive held at the Royal Commission on Ancient and Historical Monuments in Wales (RCAHMW) also in Aberystwyth, and archives held at the Powys County Archives Office in Llandrindod Wells and the West Glamorgan County Archives Office in Swansea. The library in Ystradgynlais was also visited to study local historical material. Telephone enquiries about the nature of the archive material held at the former British Coal Offices in Bretby,

the South Wales Miners Library in Swansea, the Welsh Industrial and Maritime Museum in Cardiff and the Ironbridge Institute indicated that the records at these locations were either irrelevant to the assessment area or duplicated in other archives.

- 1.4 Access for the field assessment was arranged with landowners and commoners by Celtic Energy. The survey area was walked in transects with a 30m wide spacing and any features briefly noted and assessed. In some areas this was not possible due to wet ground or forestry. These areas were considered unlikely to contain surviving archaeological remains, but were investigated where access was possible.

2 LOCATION, TOPOGRAPHY AND GEOLOGY

- 2.1 The proposed Nant Gyrlais opencast site covers an area of approximately 326 ha. 2 km east of of Ystradgynlais, partly on an upland area known as Mynydd y Drum. The small settlement of Cae Hopkin lies to the north, and open moorland lies to the south. The present workings of the Nant Helen opencast site lie to the east.
- 2.2 Much of the site is flat and open moorland at a height of approximately 270m OD, but the ground falls away to the north and north-west towards the River Tawe. The sloping ground is largely reclaimed industrial land now covered by forestry. Two small streams, Nant Gyrlais and Nant Penrhos, drain the moorland and flow north-west, cutting stream valleys in the forested areas. Smaller water channels drain the upland and flow northwards.
- 2.3 The soil on the upland part of the survey area is an acidic peat, which overlies a clayey subsoil. On the forested slopes of Mynydd y Drum it is stony with large amounts of coal and ironstone debris which was probably spread over the site during reclamation work preceeding the forestry planting and is likely to have derived from industrial tips.

Important deposits of anthracite and ironstone form part of the underlying geology and both have been the subject of intense extraction work for a considerable period of time.

3. ARCHAEOLOGICAL BACKGROUND

3.1 Introduction

- 3.1.1** There are no known sites listed in the county Sites and Monuments records relating to the site of the proposed opencast, but the area has not previously been the subject of a systematic archaeological survey. More is known of the area immediately to the east, as the site of the neighbouring Nant Helen opencast site was the subject of an archaeological assessment carried out in 1983. This revealed a number of sites, some of which were excavated in 1987 in advance of the extraction work (Dorling & Chambers 1990). Environmental samples from a peat bog were also recovered in 1987 which has enabled an environmental history of Mynydd y Drum to be constructed.

3.2 The Prehistoric Period

- 3.2.1** The earliest indication of human activity on Mynydd y Drum comes from the pollen profile recovered in 1987 which suggests that hunter gatherer communities in the Mesolithic period were deliberately burning patches of woodland to create clearings to aid hunting (Ibid, 239). The recovery of a possible mesolithic punch struck flake during excavations in 1987 could support this hypothesis (Ibid, 230).
- 3.2.2** The pollen profile indicates continued human activity on Mynydd y Drum during the Neolithic period and suggests that by the end of the period the upland had been substantially deforested (Ibid, 243). No Neolithic monuments have been recognised in the area however and there are few finds.

3.2.3 Bronze Age activity is indicated by a number of funerary monuments, two of which were excavated during 1987 in advance of the extraction work at the Nant Helen opencast site. One of these, a cairn known as Garn Coch (PRN 681; SN 81771078), produced Bronze Age pottery and flintwork while the second, a ring cairn first identified during the field survey in 1983 (PRN 6186; SN 81891074), produced flintwork and undiagnostic sherds of prehistoric pottery (Ibid, 229). Four other cairns survive on the open ground to the south of the Nant Gyrlais site, and a ring cairn lies close to the site boundary (at SN 81531034). The pollen evidence suggests that the excavated cairns were constructed within an open heath or hazel dominated landscape (Ibid, 244). A similar landscape remained throughout the Iron Age, but there is no indication of occupation during this period.

3.3 Roman and Medieval Periods

3.3.1 The pollen profiles show that the environment of Mynydd y Drum remained moorland throughout the historical period, but there is no direct evidence of occupation in the assessment area in the Roman or medieval periods. During the Roman period a fort was established at Coelbren (SN 858107) and a road, the Sarn Helen, constructed across the moor from Coelbren towards Neath approximately 3km to the east of the assessment area.

3.3.2 During the medieval period the exploitation of the coal and ironstone deposits may have begun, but there is no direct evidence. The landscape probably remained relatively stable until the advent of the industrial period, which produced dramatic changes around Ystradgynlais and on the north and north-west facing slopes of Mynydd y Drum.

3.4 Industrial activity

3.4.1 The industrial activity on the north and north-west facing slopes of Mynydd y Drum was

predominantly related to coal and ironstone mining. The period during which this extractive industry commenced cannot be conclusively ascertained, but a late medieval date is possible. The earliest documentary sources come from the early seventeenth century, although the main impetus to the industrial development in the area was provided by the establishment of ironworks in Ystradgynlais and the construction of the canal from Swansea to Abercrave in the late eighteenth century.

- 3.4.2 The earliest phase of mineral extraction for industrial purposes was the exploitation of ironstone deposits. This industry seems to have its origins in the early seventeenth century, suggested by a piece of iron with a date of 1612 discovered in 1695, and a documentary reference to a Mr Brunton of London who constructed a furnace at Ynyscedwyn in 1628 (Ley 1984, 13). The establishment of the Ynyscedwyn ironworks in the late eighteenth century provided a major impetus to the extraction of ironstone, and the construction of the canal from Abercrave to Swansea linked the industry to large markets.
- 3.4.3 Although no remains of early ironstone workings on the slopes of Mynydd y Drum survive, the desk top study provided evidence of its likely existence. Possible bell pits, which have been identified elsewhere in the area and date from the early seventeenth to the eighteenth centuries (Lowe & Lawler 1980), are visible on aerial photographs following a vein in the north of the proposed opencast area (at approximately SN 82001150). Evidence of hushing, a process used to scour areas of bedrock to expose mineral veins, is found on a map of 1838 (WGRO D/D Yc 1176) which shows an area marked as a 'patch' (at SN 80531103). The 1st and 2nd editions of the Ordnance Survey 25" series, surveyed in 1876 and 1904 respectively, show a number of 'old ironstone workings' covering the area.
- 3.4.4 The intensive extraction of ironstone for the furnaces in Ystradgynlais would have continued until the closing of the Ynyscedwyn ironworks

in the late nineteenth century, and although ironstone extraction may have continued after this date, the major activity from then on was the exploitation of coal deposits.

- 3.4.5 The impetus for coal mining around Ystradgynlais was provided by the invention of the hot blast process for smelting iron using anthracite fuel, first used in the Ynyscedwyn ironworks in 1837. Hitherto, the extraction of coal would have been on a small scale for domestic purposes. There are documentary references to coal mining on Mynydd y Drum in 1659 and 1670 (NLW 124/240), but it is likely that extraction has its origins in the medieval period.
- 3.4.6 There is little surviving evidence of early coal mining on Mynydd y Drum. Two small scoops close to the southern boundary of the proposed opencast site (at SN 81401035 and SN 81561029) suggest small scale exploitation of outcrops of coal and the bell pits and hushing evidence mentioned in association with the ironstone mining could also relate to coal mining.
- 3.4.7 The later history of coal mining is relatively well documented. By the late eighteenth century the industry is well established, as documented in many land leases of the time. Cartographic evidence shows a coal pit close to the later Abercrave Colliery at SN 82431204 in c. 1814 ((WGRO D/D Gw S/5), and at SN 80251118 in 1838 (WGRO D/D Yc 1176). The Tithe apportionment of 1839 describes a field at SN 80721138 as coal workings, although the Tithe map as a whole shows very little evidence of industrial activity. This is perhaps surprising since a lease had been granted for extraction at Gwaunclawdd in 1801 and the area around the later Abercrave colliery is thought to have been exploited by Daniel Harpur as early as 1805 (Ley 1984, 77).
- 3.4.8 Cartographic evidence indicates that the intense exploitation of coal commenced during the period between the Tithe Apportionment of 1839 and the 1st edition of the Ordnance Survey 25" series surveyed in 1876. The latter

shows numerous old coal and ironstone levels, and that deep mining had already been established at Abercrave Colliery (SN 82401206) and Gwaunclawdd Colliery (SN 81011192). The 2nd edition of the series, surveyed in 1904, shows an expansion of deep mining. The pits at Abercrave and Gwaunclawdd are still operating, although the location of the Gwaunclawdd pit had moved to SN 81511203. In addition, a mine known as the International Anthracite Colliery was opened in the 1890s close to the site of the Abercrave Colliery and the International Purification Works. The opening of the Brecon to Neath railway in 1863 was undoubtedly a stimulus to this industry, which lasted into the 1960s when Abercrave Colliery closed down.

- 3.4.9 No visible traces of this industry remain at ground level as the reclamation work associated with the forestry has completely removed any buildings, structures or workings in the area of the proposed opencast, and in the area immediately to the south and south-east of the Brecon to Neath railway.

4. RESULTS OF THE ASSESSMENT

4.1 Introduction

- 4.1.1 As mentioned in the background much of the area of the proposed opencast was landscaped during the reclamation work preceeding the planting of the forestry. This has removed all surface features of archaeological interest on the north and north-west facing slopes of Mynydd y Drum, including a number of industrial sites referred to above which were identified during the desk top assessment. These sites have not been included in the list of sites included below. It is possible however that sub-surface features associated with these sites, in particular the drift and deep mining activity, still survive. The position of these cannot be determined from the assessment of readily available sources.
- 4.1.2 Much of the undisturbed ground above the forestry is lowlying and wet moorland. This

has been the case since the start of the Bronze Age according to the pollen evidence from the 1987 excavations. The 1983 survey suggested that human activity was situated predominantly on local dry ground slightly above the level of the wetter land. The only obvious piece of local high ground visited as part of the current assessment lies just beyond the southern boundary of the proposed opencast site and has a Bronze Age ring cairn (PRN 682; SN81531034) and two small extraction scoops sited on it. The moorland within the assessment area is largely wet and accordingly the assessment area has significantly less archaeology than the neighbouring Nant Helen site.

- 4.1.3 One new site was recognised during the field assessment, and the extension of another feature first noted in 1983 was identified. The boundary now separating the moorland from the forestry is also included as it has been an established feature of the landscape for a considerable amount of time. The sites are listed below with an assessment of their archaeological significance according to categories which refer to the archaeological significance of the site and its implications on schemes which may affect it. Figure 1 shows the position of these sites. All these categories are defined below, although not all are relevant to the present assessment.

Category A

Sites of national importance sufficient to merit avoidance by any proposed development, including Scheduled Ancient Monuments, Listed Buildings and Registered Historic Parks, or those that meet the criteria for scheduling or listing.

Category B

Sites of regional importance which do not merit scheduling or listing but for which preservation in-situ is preferred.

Category C

Sites of local importance which merit adequate recording if their destruction is necessary.

Category D

Sites of minor importance for which rapid recording would be sufficient, usually as part of a Watching Brief.

Category E

Sites for which Stage 1 of the assessment was not sufficient to assess their significance. Further work would be needed if they were to be directly affected by the proposals.

Category F

Those sites which have previously been noted as possible sites, but which are now thought to have little or no archaeological significance. Also those sites which have been noted but for which there is no precise location.

4.2 Site 1 (SN 81691036)
Category C

- 4.2.1 A square structure measuring 3 x 3m and standing c. 0.2m high was identified on dry ground close to a boggy patch, and is likely to be a small sheep shelter. It is of minor archaeological significance.

4.3 Site 2 (From SN 81631051 to SN 81681061)
Category C

- 4.3.1 Site 2 is a linear feature which emerges from beneath the existing Nant Helen overburden mound and runs towards the south-west for a distance of some 120m beyond which it is lost. It is a slightly raised grass covered bank c. 2m wide with intermittent edging stones and

appears to be the same as the site recorded in 1983 as PRN 6190 and excavated in 1987. The excavations showed that it was a narrow trackway probably associated with post-medieval mining and the recovery of a horseshoe and horseshoe fragments suggests that it was used by packhorses (Dorling & Chambers 1990, 227). The origin and destination of the track is unclear, although it is running in the general direction of the extraction scoop at SN 81561029. It is of some archaeological interest, especially as it could be associated with early mining activity, surviving evidence of which is scarce in this area.

4.4 Site 3 Unclassified

- 4.4.1 The line of the boundary now separating the moorland and forestry is included as a feature of archaeological interest because cartographic sources show that it has been a consistent feature of the landscape for at least two hundred years, although the present fabric of the boundary may be relatively recent. The intense industrial activity on the north and north-west facing slopes of Mynydd y Drum which changed the landscape so dramatically, always respected this feature as it formed the boundary between the lowland agricultural ground and Mynydd y Drum common. It has not been classified in the same way as the sites above, as it would require no further work in advance of opencasting because it is only its line which is of significance and this is well recorded on existing maps.

5. CONCLUSIONS

- 5.1 Mynydd y Drum has seen human activity as far back as the Mesolithic period, as indicated by the pollen profiles from the excavation work at the neighbouring Nant Helen opencast site but there is little evidence of this activity in the assessment area. This is largely

because of the wet and lowlying ground which lies within the moorland part survey area and which would have been unsuitable for human activity.

- 5.2 Surface evidence of industrial development, which was identified during the desk top study on the north and north-west facing slopes of Mynydd y Drum, has almost totally been lost due to reclamation work preceeding the forestry. Evidence of sub-surface features associated with this activity is likely to survive, but its precise position cannot be determined within the limits of this assessment.
- 5.3 A Bronze Age ring cairn lies just beyond the southern boundary of the site (PRN 682; SN81521034). This is a significant archaeological site, and every effort should be made not to disturb it. Two coal extraction hollows lie close to the site of the cairn (at SN 81401035 and SN 81651034). The latter has a small structure (PRN 6188) built within it and both are of some archaeological significance, and should be avoided by the proposed development.
- 5.4 The two sites listed as category C are of some archaeological significance and should be recorded as part of further work. Excavations have already been carried out on two locations on the trackway (Site 2), but the length identified during this assessment has not previously been recognised. The shelter (Site 1) requires only brief recording.
- 5.5 The boundary line between the forestry and the common land is of historical significance. As the present fabric of the boundary is of relatively recent date it is not suggested that any further work be conducted prior to opencasting, but it could be re-instated as part of landscaping work following the completion of the project.

6. ACKNOWLEDGEMENTS

CPAT wishes to acknowledge the assistance of Celtic Energy during the assessment, and in particular Mr Wayne Williams for his arrangement of access to the site and Mr Ceri Morgan for his supply of aerial photographic material. The staff of the National Library of Wales, the Royal Commission on Ancient and Historic Monuments in Wales, the West Glamorgan Record Office and Ystradgynlais library assisted during the desk top study.

My own thanks go to Richard Hankinson for his assistance during the assessment and in particular for his understanding of the early industrial history.

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APPENDIX 1

NANT GYRLAIS OPENCAST COAL SITE

SPECIFICATION FOR AN ARCHAEOLOGICAL FIELD EVALUATION BY CLWYD-POWYS ARCHAEOLOGICAL TRUST

1 Introduction

1.1 The proposed development of a block of land of some 322Ha centering on NGR squares SN8111 and SN 8211. The proposed development involves the total stripping of topsoil and underlying geological deposits from the majority of the proposed area and will subsequently destroy any archaeological monuments which may be present.

1.2 This area lies adjacent to the former opencast site of Nant Helen where important archaeological sites, principally of Bronze Age date, were identified and subsequently excavated. Traces of earlier mining - coal and ironstone - are also anticipated in the area.

1.3 The Curatorial Section of the Clwyd-Powys Archaeological Trust in their capacity as archaeological curators for the county have determined that a field evaluation is necessary to assess the implications of the proposed development on the archaeological resource. Accordingly a brief (No ASB137 dated 13th March 1995) has been prepared by CPAT Curatorial Section which describes the scheme of archaeological works required.

2 Objectives

2.1 The objectives of the evaluation are:

2.1.1 to reveal by means of a combination of desk-based assessment and field survey, the nature, condition, significance and, where possible, the chronology of the archaeology within the area of the proposed development in so far as these aims are possible;

2.1.2 to record any archaeology revealed in the field survey;

2.1.3 to prepare a report outlining the results of the field evaluation and incorporating sufficient information on and a ranking of the archaeological resource for a reasonable planning decision to be taken regarding the archaeological provision for the area affected by the proposed development;

3 Methods

3.1 Stage one of the evaluation will involve the examination of all the readily available primary and secondary records relating to this area, including documentary and cartographic sources and aerial photographs. Archives and repositories will include the County Sites and Monuments Record, the County Record Office, The National Library of Wales, The National Monuments Record, The South Wales Miners Library, the former British Coal offices at Bretby and Cannock, The Welsh Industrial and Maritime Museum, and the Ironbridge Institute.

3.2 Stage two will take the form of detailed fieldwalking at transect intervals of no greater than 30m over the entire area of the proposed development. Any sites identified will be described and located approximately on the 1:5000 maps supplied by Celtic Energy.

3.3 Following the on-site work an illustrated and bound report will be prepared according to the principles laid out in the Assessment Evaluation Brief (p4). This will be in A4 format and contain conventional sections on: Site location, Topography and Geology; Historic Background; fieldwalking results; Conclusions and Recommendations and References, together with appropriate appendices on archives and finds.

3.4 The site archive will be prepared to specifications laid out in Appendix 3 in the Management of Archaeological Projects (English Heritage, 1991).

4 Resources and Programming

4.1 The evaluation will be undertaken by a small team of three skilled archaeologists under the direct supervision of an experienced field archaeologist, who will also be responsible for undertaking the desk-based assessment. Overall supervision will be by Dr A Gibson, a senior member of CPAT's staff who is also a member of the Institute of Field Archaeologists.

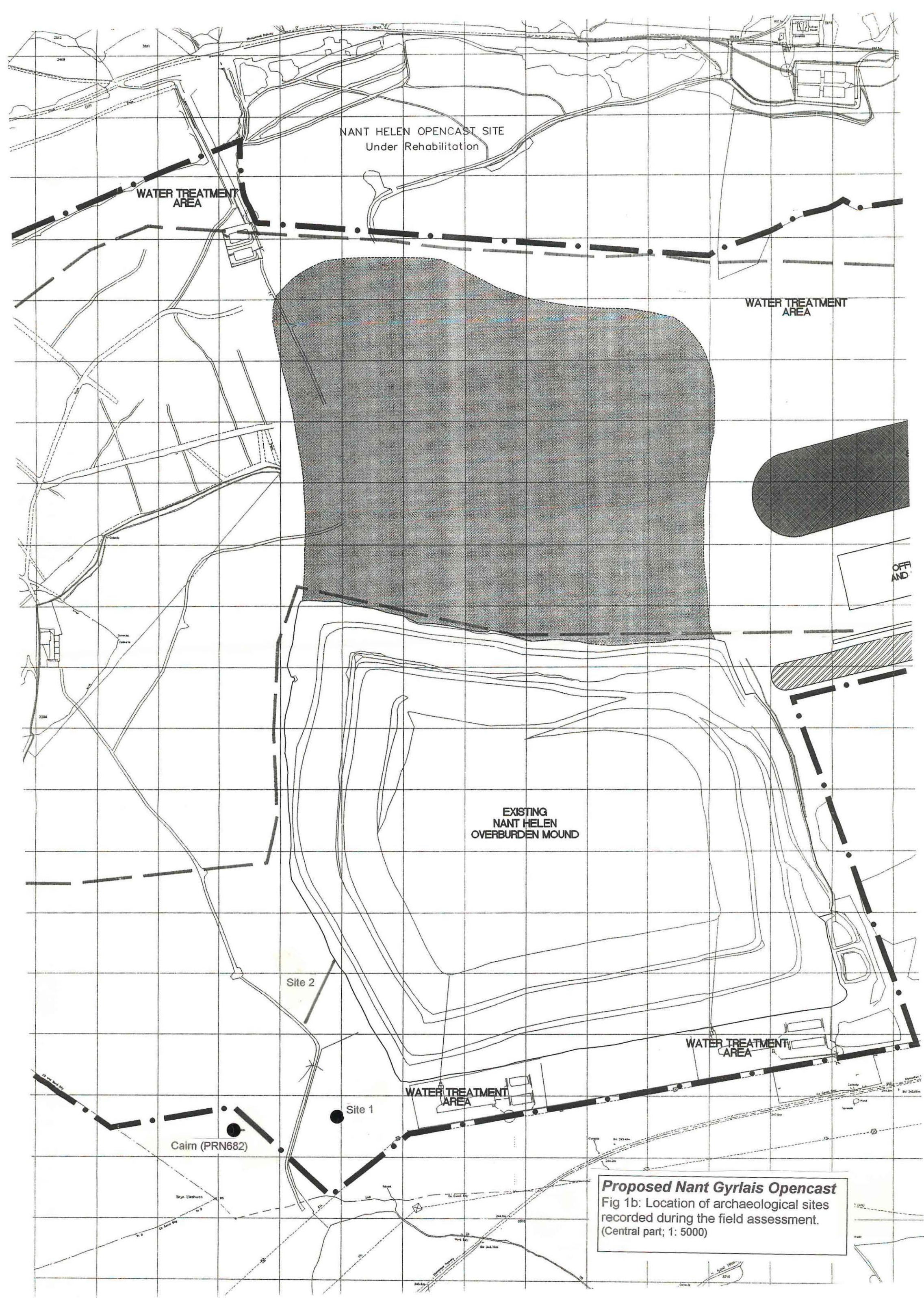
4.2 All report preparation will be completed by the same field archaeologist who conducted the evaluation.

4.3 It is anticipated that the assessment and evaluation will take no more than 15 (fifteen) days in all and that the subsequent report would be prepared immediately thereafter, dependent on the client's instructions and the arrangement of a suitable timetable. The date of commencement, at the time of writing, has yet to be agreed with the client, and will be dependent on the state of the site. The archaeological curator will be informed of the detailed timetable and staffing levels when agreement has been reached with the client.

4.4 Requirements relating to Health and Safety regulations will be adhered to by CPAT and its staff.

4.5 CPAT is covered by appropriate Public and Employer's Liability insurance.

A.M. Gibson
23rd March 1995



NANT HELEN OPENCAST SITE
Under Rehabilitation

WATER TREATMENT
AREA

WATER TREATMENT
AREA

EXISTING
NANT HELEN
OVERBURDEN MOUND

Site 2

Site 1

Caim (PRN682)

WATER TREATMENT
AREA

WATER TREATMENT
AREA

Proposed Nant Gylais Opencast
Fig 1b: Location of archaeological sites
recorded during the field assessment.
(Central part; 1: 5000)



Proposed Nant Gyrlais Opencast
Fig 1a: Location of archaeological sites recorded during the field assessment. (Western End; 1: 5000).