

Low Head Pipeline Replacement Project, Dolgarrog,

Archaeological Survey and Recording Report



Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

Low Head Pipeline Replacement Project, Dolgarrog

Archaeological Survey and Recording Report

Project No. G2158

Report No. 1114

Prepared for: RWE Npower

March 2013

Written by: Dave McNicol

Illustration by: Dave McNicol

Cyhoeddwyd gan Ymddiriedolaeth Archaeolegol Gwynedd
Ymddiriedolaeth Archaeolegol Gwynedd
Craig Beuno, Ffordd y Garth,
Bangor, Gwynedd, LL57 2RT

Published by Gwynedd Archaeological Trust
Gwynedd Archaeological Trust
Craig Beuno, Garth Road,
Bangor, Gwynedd, LL57 2RT

Copyright of this report is retained by RWE Innogy,
permission for full usage has been granted to Gwynedd Archaeological Trust

Cadeiryddes/Chair - Yr Athro/Professor Nancy Edwards, B.A., PhD, F.S.A.
Prif Archaeolegydd/Chief Archaeologist - Andrew Davidson, B.A., M.I.F.A.

Mae Ymddiriedolaeth Archaeolegol Gwynedd yn Gwmni Cyfyngedig (Ref Cof. 1180515) ac yn Elusen (Rhif Cof. 508849)
Gwynedd Archaeological Trust is both a Limited Company (Reg No. 1180515) and a Charity (reg No. 508849)

Table of Contents

1	Introduction	5
2	Site Location.....	5
3	Archaeological Background.....	6
3.1	Previous Work.....	7
4	Aims and Objectives.....	7
5	Methodology.....	7
5.1	Topographic Survey	7
5.2	Detailed Recording.....	8
5.3	Basic Recording	8
6	Archaeological Results	8
7	Conclusions and recommendations	10
8	Acknowledgements	10
9	Bibliography	11
	Appendix I: Project Design.....	12
	Appendix II: Gazetteer of Sites Surveyed	30
10	Figures and Plates.....	41

LIST OF FIGURES:

FIGURE 01: SITE LOCATION

FIGURE 02: TOPOGRAPHIC SURVEY (WESTERN PART)

FIGURE 03: TOPOGRAPHIC SURVEY (CENTRAL PART)

FIGURE 04: TOPOGRAPHIC SURVEY (EASTERN PART)

FIGURE 05: TOPOGRAPHIC SURVEY: ARDDA TOWNSHIP AREA

FIGURE 06: PRN 31969, ROUNDHOUSE SITE

FIGURE 07: PRN 32154: ARDDA TOWNSHIP

LIST OF PLATES:

Plate 01: PRN 16321 - Marble Arch Pipe Junction, View From SW

Plate 02: PRN 16322 - Quarry Incline, View from WSW

Plate 03: PRN 31890 and 31907 - Llyn Coedty Valve House and Pipe, View From SW

Plate 04: PRN 31893 - Coed Sadwrn Track, View From NW

Plate 05: PRN 31894 - Llyn Coedty Leat, View From NE

Plate 06: PRN 31897 - Modern Bridge, View From SW

Plate 07: PRN 31898 - Field Boundary, View From West

Plate 08: PRN 31900 - Field Boundary, View From SW

Plate 09: PRN 31902 - Field Boundary, View From NW

Plate 10: PRN 31905 - Field Boundary, View From SW

Plate 11: PRN 31908 - Field Boundary, View From SE

Plate 12: PRN 31909 - Field Boundary, View From SE

Plate 13: PRN 31910 - Field Boundary, View from N

Plate 14: PRN 31913 - Field Boundary, View From NW

Plate 15: PRN 31916 - Field Boundary, View From NW

Plate 16: PRN 31918 - Remains of Long Hut, View From NW

Plate 17: PRN 31919 - Entrance into Enclosure PRN 31929, View From NE

Plate 18: PRN 31925 - Trackway, View From SE

Plate 19: PRN 31927 - Field Boundary, View From SSE

Plate 20: PRN 31929 - Sub-oval Enclosure, View From North

Plate 21: PRN 31929 - Sub-oval Enclosure, View From NW

Plate 22: PRN 31931 - Tramway to Cwm Eigiau, View From NE

Plate 23: PRN 31933 - Drain From Leat, View From NW

Plate 24: PRN 31934 - Incline and Water Pipe, View From SW

Plate 25: PRN 31943 - Field Boundary, View From SE

Plate 26: PRN 31944 - Possible Field Boundary, View From North

Plate 27: PRN 31948 - Small Structure by Track to Coed Sadwrn, View From North

Plate 28: PRN 31949 - Gateway on Track to Coed Sadwrn, View From SW

Plate 29: PRN 31950 - Field Boundary, View From SE

Plate 30: PRN 31951 - Trackway, View From North

Plate 31: PRN 31952 - Former Locomotive Shed, View From NNW

Plate 32: PRN 31954 - Field Boundary, View From SE

Plate 33: PRN 31956 - Possible Field Boundary, View From NE

Plate 34: PRN 31957 - Field Boundary, View From WNW

Plate 35: PRN 31958 - Trackway, View From East

Plate 36: PRN 31959 - Field Boundary, View From NW

Plate 37: PRN 31962 - Access Track, View From South

Plate 38: PRN 31965 - Drainage Channels, View From South

Plate 39: PRN 31969 - Small Farmstead, View From NE

Plate 40: PRN 31969 - Small Farmstead, View From SE

Plate 41: PRN 31969 - Small Farmstead, Possible Roundhouse, View From NE

Plate 42: PRN 31971 - Field Boundary, View From SE

Plate 43: PRN 31972 - Possible Field Boundary, View From North

Plate 44: PRN 31974 - Channel for Stream Passing Under Leat, View From SE

Plate 45: PRN 32146 - Possible Cairn, View From SE

Plate 46: PRN 32148 - Gallt y Rhiw Stone (Rock Cannon), View From East

Plate 47: PRN 32151 - Possible Building Platform, View From SSW

Plate 48: PRN 32152 - Ardda Enclosure II, View From SE

Plate 49: PRN 32154 - Tai-isaf-Ardda Enclosure, View From NW

Plate 50: PRN 32154 - Tai-isaf-Ardda Enclosure, View From SE

Plate 51: PRN 36094 - Possible Roundhouse, Excavated 2012, View From NW

Plate 52: PRN 36377 - Possible Cairn, View From NE

Plate 53: PRN 36379 - Field Boundary, View From East

Plate 54: PRN 36380 - Possible Field Boundary, View From West

Plate 55: PRN 36381 - Possible Field Boundary, View From West

Plate 56: PRN 36382 - Field Boundary, View From WNW

Plate 57: PRN 36383 - Field Boundary, View From South

Plate 58: PRN 36384 - Terraces, View From SW

Plate 59: PRN 36385 - Field Boundary, View From West

Plate 60: PRN 36386 - Concrete Platform, View From NW

Plate 61: PRN 36387 - Possible Structure, View From NE

SUMMARY

This report sets out the results of a programme of archaeological survey and recording undertaken by Gwynedd Archaeological Trust (GAT) in advance of the proposed replacement of the Low Head pipe running from Coedty Reservoir feeding the Dolgarrog hydro-electric power station, Dolgarrog (from SH 7558 6673 to SH 7656 6718) and on behalf of RWE Npower.

The archaeological survey of the area revealed a rich landscape of settlement activity dating from the Roman period up until the 20th century in the form of numerous field boundaries, buildings, and trackways. There was also some evidence for possible Prehistoric activity in the area, in the shape of possible field boundaries and cairns, although their exact date is uncertain.

1 INTRODUCTION

This report was commissioned by RWE Npower and forms the report for the archaeological survey and recording carried out prior to the proposed replacement of the Low Head pipe from Coedty Reservoir feeding the Dolgarrog hydro-electric power station, Dolgarrog (from SH 7558 6673 to SH 7656 6718) (hereafter referred to as 'the site'). See Figure 1.

A Project Design was prepared (Appendix I) which sets out the legislation framework and planning background in detail. The work was carried out as part of a staged programme of archaeological works which included an archaeological assessment (GAT 2011a) and archaeological evaluation (GAT 2012) of the site, undertaken by GAT in 2011 and 2012 respectively.

This report has been prepared in accordance with the *Standards and guidance for the collection, documentation, conservation, and research of archaeological materials* specified by the Institute of Field Archaeologists (IFA 2001), as well as the *standard and guidance for Archaeological Field Evaluation* specified by the Institute for Archaeologists (IfA 2008).

2 SITE LOCATION

The pipe route runs through part of the valley of the Afon Porthllywd, from the Coedty Reservoir to the valve house known as 'Marble Arch', located at the top of Coed Dolgarrog and the steep escarpment forming the main valley side (from SH 7558 6673 to SH 7656 6718). The geology of the area is dominated by Ordovician slates, with contemporary and intrusive igneous formations (Roberts 1979). The

steep escarpment of the Conwy valley is caused by an igneous formation with boulder clay, containing pockets of peat, lining the hanging valleys. Peat also covers much of the uplands, whilst the floor of the valley is covered with alluvial deposits (Geological Survey of England and Wales, sheets 9 and 10). The soils reflect the geological and climatic conditions and are badly drained and acidic (Smith and George 1961).

The current land use, outside the industrial activities associated with the pipe route, is a mixture of pasture and meadow in the flood plain, with rough grazing for sheep on the uplands, and woodland on the escarpment.

3 ARCHAEOLOGICAL BACKGROUND

The archaeological background has been discussed in full in the previous Archaeological Assessment (GAT 2011a), and the reader is referred to that document. However a brief summary is presented here.

An Early Neolithic chambered tomb on the valley floor at Porthllwyd was badly damaged in the Dolgarrog dam disaster in 1925 (PRN 1544), and its site is now under the hydro-electric works. A worked flint flake (PRN 4615) was found close to this tomb, and a polished stone axe (PRN 4573) was found on the valley side adjacent to Afon Ddu. The assessment identified a cairn (PRN 32146) along with fragments of field systems (PRN 31954 and 31956) which may also be of a Prehistoric date.

The Iron Age hillfort of Pen y Gaer (PRN 663, Scheduled Ancient Monument number CN023) is about 2km northwest of the site. A large roundhouse settlement (PRN 705) on the northwestern slopes of Moel Elio, possibly originated in the Iron Age, and is thought to have continued in use until the 3rd century AD. A number of isolated round huts on the upland pasture (PRN 3775 and 5622 in Cwm Eigiau; PRN 3766 on Bwlch Cowlyd) may have formed part of a transhumance system, which is also suggested by their presence close to later *hafotai*.

The site encompasses a complex and well preserved landscape in which a significant amount of evidence survives in the form of farmsteads, structures and associated field systems. The earlier field systems consisted of irregular enclosures, probably dating from the 15th to 18th centuries, located generally around or close to the homesteads on mid- slope terraces. As a result of 19th century enclosure which extended into the more upland areas, a more regular field pattern was created. Some of the settlement pattern identified may have had its origins in the Late Middle Age, but no definitely medieval features were recognised during the assessment.

The construction of a hydro-electricity power station and associated aluminium works in the early years of the 20th century led to significant changes within the upland

landscape. This involved the construction of a series of dams and leats to provide a water catchment system for the new works, as well as new roads and tramways built to service the construction. The different phases of leats, the pipelines, and the dam now form 'a remarkable industrial landscape' (Gwyn 2006, 126). The developments at Dolgarrog were part of the first phase of global innovation in hydro-electric power and as such 'the physical remains are a nationally, and possibly internationally, important survival' (Gwyn and Nevell 2006, 14).

3.1 PREVIOUS WORK

The excavation of geotechnical test pits and boreholes was archaeologically monitored by GAT in 2011 (GAT 2011b). No archaeological features were uncovered during the works.

In 2012 GAT (GAT 2012) undertook a six trench evaluation on the site which uncovered the remains of two field boundaries dating to the 18th and 19th century (PRN 31943 and 31957), a possible structure of unknown date (PRN 31954) (Figure 2), and a possible Roman period roundhouse (PRN 36094) (Figure 3).

4 AIMS AND OBJECTIVES

As specified in the Project Design (Appendix I) the principal objective of the archaeological survey and recording was to record features likely to be impacted by the works before any impact occurs.

The specific objective was to record the extent, date, character, condition, significance and quality of the features.

5 METHODOLOGY

All works were carried out in accordance with the Project Design for the works (Appendix I) and the GAT standard operating procedures as set out in the GAT fieldwork Manual (*in prep*). The digital survey was carried out using a Trimble TSC2 controlled GPS receiver (Trimble R6 Unit) and a Leica TRS805 Total Station (EDM), with the results tied into the National Grid. The relevant unit was used depending on operational conditions (e.g. GPS signal availability).

5.1 TOPOGRAPHIC SURVEY

- A digital topographic survey was completed of the landscape and features.
- A written record of all identified features was completed via GAT pro-forma sheets.

- All features were recorded photographically using a Nikon digital SLR set to maximum resolution.

5.2 DETAILED RECORDING

- A digital survey was completed on all areas most likely to be impacted upon by the works, but with extended survey in areas where it was necessary to make full sense of the features.
- A written record of all identified features was completed via GAT pro-forma sheets.
- All features were recorded photographically using a Nikon digital SLR set to maximum resolution.

5.3 BASIC RECORDING

- A written record of all identified features was completed via GAT pro-forma sheets.
- All features were recorded photographically using a Nikon digital SLR set to maximum resolution.

6 ARCHAEOLOGICAL RESULTS

A total of 61 sites or features were recorded during the archaeological survey with detailed descriptions located in Appendix II.

Two possible cairns (PRN 32146 and 36377) were recorded during the survey (Figures 3 and 4). Both are roughly circular in shape and measure 3m and 5.5m in diameter, with a height of 0.3m and 0.2m respectively. They may represent clearance cairns, however their exact function and date are uncertain.

A small settlement (PRN 31969 and 36094) tentatively dated to the Roman period by partial excavation of the area by GAT in 2012 was also recorded (Figure 6). The settlement consists of two possible roundhouses and building platforms, with a possibly later or re-used set of boundary walls running through and around them. The possible roundhouses measure approximately 6m and 8m in diameter, and a modern trackway for the pipeline runs in-between them. The platforms are roughly rectangular and measure 10m by 3m and 5m by 2m, and are located at the base of a low rocky escarpment. Evaluation of the eastern roundhouse showed that the boundary wall was constructed on top of it, suggesting that the walls are of a later date and contemporary with the system of field boundary walls in the area.

Over half of the features recorded (38) can be categorised as being associated with the landscape of dispersed farms and fields that are seen throughout the area. The majority of these date from the medieval period onwards, with only a couple hinting at a possible prehistoric date (PRN 31944, 31954, and 31956). The medieval activity appears to be concentrated within the Ardda Township Area (Figure 5) where a number of buildings (PRN 12937, 32152, and 32154), and their associated terraces (PRN 36384) survive in a fairly ruinous state. The remains of a possible platform for a fourth structure (PRN 32151) were also recorded during the survey in this area, although whether this is contemporary with the medieval structures nearby is uncertain.

The majority of the remaining features are associated with the Late medieval/ Early Post-medieval landscape of farmsteads and fields in the area, and largely consist of drystone walls in a fairly ruinous state, with an on average of two courses remaining. These walls also make use of outcrops of natural stone where available. A couple of trackways (PRN 31893 and 31913) alongside, and entrances through (PRN 31919 and 31949) these walls were also recorded. Most of these features were shown on the 1889 1st Edition OS Map, with the exception of three small structures (PRN 31918, 31948, and 36387), five possible field boundaries (PRN 31944, 31954, 31956, 36380 and 36381), and a continuation of the enclosure walls PRN 31929. The three structures (Figures 2 and 3) were most likely too small or insignificant to be drawn on the maps, and their locations adjoining or close by marked field boundaries suggest they were contemporary with these. The possible field boundaries (Figures 2 and 5) may represent Prehistoric or medieval boundary walls which have been so heavily denuded that they were not recorded on the OS maps. The continuation of the enclosure walls PRN 31929 to the north and northwest (Figure 3) suggest a more complex division of land in the area prior to the area being given over to woodland, and that these walls were mostly obscured and/ or destroyed by this woodland by the time of the 1889 1st Edition OS map.

A small rock cannon (PRN 32148) located at the edge of a modern trackway (Figure 5) and measuring 1m by 0.8m was also recorded. Dating from the Post-medieval period, it contained numerous drilled holes which would have been filled with gunpowder and ignited so as to create explosive sounds during celebrations. This stone has been previously identified by the Royal Commission on Ancient and Historical Monuments in Wales (NPRN 276535), but was not identified by them as a rock cannon. However, the number of holes and the location of the stone strongly support this interpretation.

Nearly a third of the features (18) recorded during the survey were associated with the 19th and 20th century industrial development of the land. Firstly with the slate quarries and the construction of a tramway between 1861 and 1866 (PRN 16322 and 31931), and then later with the construction of the dams and the hydro-electric power station from the late 19th century onwards. These features range from simple access tracks (PRN 31925, 31951, 31958, and 31962) to the main water pipe (PRN 31907) taking water from the dams to the hydro-electric power station. These

features are fairly well persevered, the majority of which are still in use today, with the only exceptions being the tramway (PRN 16322 and 31931), and the concrete platform (PRN 36386) associated with the Llyn Eigiau railway.

7 CONCLUSIONS AND RECOMMENDATIONS

The archaeological survey of the area revealed a rich landscape of settlement activity dating from the Roman period up until the 20th century in the form of numerous field boundaries, buildings, and trackways. There was also some evidence for possible Prehistoric activity in the area, in the shape of possible field boundaries and cairns, although their exact date is uncertain. Evaluation of these possible field boundaries (PRN 31944, 31954, 31956, 36380 and 36381) may help to establish their date and function. Only one of the cairns (PRN 36377) will be affected by the works and therefore it is recommended that it should be evaluated so as to determine its exact nature and date.

The Roman roundhouse settlement (PRN 31969 and 36094) will be heavily disturbed by the expansion of the trackway and the large amount of construction traffic running through it. It is therefore suggested that this area is excavated and recorded prior to these works, or that the area is avoided so as to preserve the remains *in-situ*.

A large number of field boundaries throughout the site will be at least partially disturbed by the works. A watching brief during these works is recommended so that they can be recorded in full.

The majority of the features associated with the current pipeline will be removed, replaced, or modified during the works. However these have been fully recorded and no further work is recommended on these features.

8 ACKNOWLEDGEMENTS

The author would like to thank RWE Npower for commissioning the work. Thank you also to Louise Shaw, the Site Liaison Manager for RWE Npower for all her help and co-operation on site. The work on site was carried out by Dave McNicol and Jess Davidson.

9 BIBLIOGRAPHY

GAT 2011a *Dolgarrog Hydro-Electric Works, Dolgarrog Conwy: Archaeological Assessment*, GAT unpub report 928

GAT 2011b *Dolgarrog Hydro-Electric Works, Dolgarrog Conwy: Report on an Archaeological Watching Brief*, GAT unpub report 978

GAT 2012 *Low Head Hydro-Electric Pipeline Replacement, Dolgarrog, Conwy: Archaeological Evaluation Trenching*, GAT unpub report 1089

GAT in prep *Archaeological Site Manual*

Gwyn, D 2006 *Gwynedd: Inheriting a Revolution: The Archaeology of Industrialisation in North-West Wales*, Phillimore, Chichester.

Gwyn, D and Nevell, M 2006 *Dolgarrog, Conwy, North Wales: An Archaeological Assessment and Survey of an Early 20th Century Hydro-electric Water Catchment System*, unpublished report by Govannon Consultancy and University of Manchester Archaeological Unit.

Institute of Field Archaeologists (IFA), supplement 2001, *By-Laws, Standards and Policy Statements of the Institute of Field Archaeologists: Standards and guidance for the collection, documentation conservation and research of archaeological materials*

Institute for Archaeologists (IfA) 2008, *Standard and Guidance for Archaeological Field Evaluation*

Roberts, B 1979 *The Geology of Snowdonia and Llyn: An Outline and Fieldguide*, Institute of Physics Publishing

Smith, B and George, TN 1961 *British Regional Geology, North Wales*. Her Majesty's Stationary Office, London.

APPENDIX I: PROJECT DESIGN

**LOW HEAD PIPELINE PROJECT, DOLGARROG
POWER STATION**

**PROJECT DESIGN FOR
ARCHAEOLOGICAL EVALUATION
AND MITIGATION**

Prepared for

RWE Npower Renewables Limited

August 2012

**Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust**

LOW HEAD PIPELINE PROJECT, DOLGARROG POWER STATION

PROJECT DESIGN FOR ARCHAEOLOGICAL EVALUATION AND MITIGATION (G2158)

Prepared for RWE Npower Renewables Limited, August 2012

1. INTRODUCTION.....	14
1.1 Monitoring and Guidelines	14
2. BACKGROUND	14
3. SCHEME SPECIFIC RECOMMENDATIONS	15
4. METHOD STATEMENT.....	15
4.1 Topographic Survey	15
4.2 Basic Recording.....	17
4.3 Detailed Recording	19
4.4 Targeted evaluation by trial trenching	21
4.5 Excavation	23
4.6 Watching brief	24
4.7 Avoidance	25
5. POST-EXCAVATION PHASE	27
5.1 Introduction	27
5.2 Post-excavation assessment	27
5.3 Analysis and report preparation	28
5.4 Production of site archive	28
6. HEALTH AND SAFETY.....	28
7. INSURANCE	28
8. SOURCES CONSULTED	29

1 INTRODUCTION

Gwynedd Archaeological Trust (GAT) has been asked by RWE Npower Renewables Limited to provide a project design (specification) for completing an archaeological evaluation and mitigation strategy in advance of and during the main construction phase of the Low Head Pipeline Project, Dolgarrog Power Station. It is proposed to replace the upper part of the present over ground pipeline which feeds Dolgarrog Hydro Electric Power Station with a new underground pipe along the same route (centred on NGR **SH76556718**).

GAT has completed an archaeological assessment for the scheme (GAT Reports **900** & **928**), which was incorporated into an Environmental Statement (ES), completed by *Capita Symonds* in January 2012 (*Capita Symonds 2012 Coedty Replacement Pipeline Project, Dolgarrog. Environmental Statement*; Chapter 6 - reproduced as Appendix III). A total of 96 archaeological receptors were identified with the scheme zone: these are listed in Appendix I and located in the reproduced ES Chapter 6 figures 6.3 and 6.5 (Appendix IV).

The archaeological evaluation and mitigation programme incorporates all archaeological receptors impacted by the scheme or requiring avoidance; watching brief mitigation is also to be deployed along the working corridor during main works. Receptor specific evaluation/mitigation is discussed in [para. 3.0](#).

1.1 Monitoring and Guidelines

Curatorial responsibility for this project lies in part with the Snowdonia National Park Authority and in part with the Conwy County Borough Council. The archaeological curators for both organisations should be consulted prior to the start of the project.

This design will also conform to the guidelines specified in *Standard and Guidance for Archaeological Evaluation*, *Standard and Guidance for Archaeological Watching Brief* and *Standard and Guidance for Archaeological Excavation* (Institute for Archaeologists, 1994, rev. 2001 & 2008).

2 BACKGROUND

The archaeological assessment of the scheme zone (Appendix II) was completed by GAT between 2010 and 2011: an initial scoping assessment was carried out in October and November 2010 covering the general area of the development (Evans 2010, GAT Report **900**). In February and March 2011, once a pipeline route had been proposed and sites suggested for compounds, a more detailed assessment was carried out concentrating on these areas (Kenney 2011a, GAT Report **928**). Proposed routes allowing access to the pipeline works were later defined and an assessment on these routes was carried out in September 2011 (Kenney 2011b, GAT Report **975**). This information was supplemented by information gained from the archaeological monitoring of geological test pits dug in April 2011 (Kenney 2011c, GAT Report **978**). This information was subsequently synthesised into archaeology chapter of the Environmental Statement completed by *Capita Symonds* in January 2012 (reproduced as Appendix III).

3 SCHEME SPECIFIC RECOMMENDATIONS

Scheme specific recommendations for all identified archaeological receptors were included in Chapter 6 (Archaeology) Capita Symonds 2012 *Coedty Replacement Pipeline Project, Dolgarrog. Environmental Statement* (reproduced as Appendix III).

The object of the present phase of work is to mitigate the impact of scheme on the archaeological receptors. This is to be achieved by undertaking a phased programme of works to include:

- Topographic Survey
- Basic Recording
- Detailed Recording
- Targeted evaluation by trial trenching within defined areas or on specific features
- Excavation of any sites previously discovered that cannot be avoided by the scheme
- Watching brief
- Avoidance

The work will be undertaken as a staged process so that each phase of the project can build on the results of earlier phases.

Most archaeological receptors include several forms of mitigation, completed prior to and during works.

A full list of the archaeological receptors located within the scheme zone can be found in Appendix I; the location of individual receptors can be found in Appendix II. For a description of respective methodologies, cf. [para 4](#).

All reference numbers used refer to Primary Reference Numbers (PRNs).

4 METHOD STATEMENT

4.1 Topographic Survey

The topographic survey will be completed using a *Trimble TSC2* controlled GPS receiver (*Trimble R6* Unit) and/or a *Leica TRS805* Total Station (EDM). The relevant unit will be used depending on operational conditions (e.g. GPS signal availability).

The receptors to be surveyed are:

- **PRN 676: Ardda Medieval Township** – the survey will target the area immediately adjacent to the southern access route where it runs through the area of the medieval township shown in ES Chapter 6 Figure 6.5 (reproduced in Appendix IV), designated as area TS2.
- **PRN 12957: Cottage and associated enclosure** – the survey will not include the cottage but will target the terraces running north east from the cottage
- **PRN 16322 (NGR SH7650167162): Railway Incline** - the incline was initially built for slate quarry tramway in the early 1860s and was in operation by 1864 (GAT Report 928: 28); it is first shown on the 1889 map. It was reused in 1907 to construct a railway for building the Llyn Eigiau dam and in 1917 to build the Llyn Cowlyd dam (*ibid*), and continued to be used in the early 20th century to take equipment up and

down the escarpment. There was a winch and a ropeway on the incline in the 1950s. Much of the upper part of the incline is still well preserved with some sections in cuttings and some on stone embankments. These earthwork features will be targeted by the topographic survey.

- **PRN 31929 (NGR SH75976721): Sub-oval enclosure** - small rather irregular sub-oval enclosure defined by low denuded walls. There is a gap in the NE side that may be an entrance to match the one on the SW side (feature 37). These features will be targeted by the topographic survey..
- **PRN 31934 (NGR SH76476704): incline and water pipe** - Part of water catchment system for hydro-power station built for the aluminium works between 1907 and 1911, an incline taking water in a pipe from the upper leat to the power station. The incline is shown on 1913 map, although it does not indicate the pipe. The pipe was made redundant when the pipeline from Llyn Cowlyd was constructed in 1936 and 1937 (*ibid.*: 40), but is still used as part of the surge protection for the Coedty system. This pipe is to be entirely removed and replaced, and will possibly be mounded over and partially buried. The impacted area indicated on ES Chapter 6 Figure 6.3 (reproduced in Appendix IV), will be surveyed; a detailed record will also be completed.
- **PRN 31969 (NGR SH76446723): small farmstead** - one definite and one probable building platform lie between a tumbled wall and the base of a low rocky escarpment (GAT Report 928: plate 8). Some of the wall survives to a height of 0.5m but the traces of the buildings are very slight. The best defined platform is rectangular, measures about 10m x 3m and lies parallel to the slope. To its east is a less well defined platform about 5m long that may be part of a yard rather than for a building. To the north is a sub-circular enclosure c.6m in diameter, very over grown with bracken. This may have an entrance in the SW side. A track giving access to the pipe cuts through this area and on the E side of the track is a low boundary wall with a possible building platform adjacent to it. This platform has been disturbed by the track but is 3m wide and at least 3m long. A long stone slab built into the wall may indicate that one wall of the building was incorporated into the field wall. There is no hint of this farmstead on the 1788 map so presumably it went out of use before the late 18th century. The main building platforms and sub-circular enclosure lie just beyond the proposed works and can be avoided but the platform by the track and associated wall are likely to be affected by the works. A topographic survey of the enclosure/platform by the track and associated wall will be completed along with an archaeological excavation of the surveyed area (located on ES Chapter 6 Figure 6.3; reproduced in Appendix IV).
- **PRN 31971 (NGR SH76496718 C): field wall** - late medieval/early post medieval field wall that becomes a terrace as it descends the slope. Most of its corner has been cut away by the recent track but it continues on the other side of the incline. It generally appears as a low tumbled wall but becomes a terrace 1m high near the corner. Large oaks and coppiced hazel grow along the boundary. This is shown on the 1788 map as the north-eastern boundary of 'Bryn Kelin'. Where the end of this boundary has to be removed it will be mitigated via detailed recording and topographic survey and a watching brief during works including the recording of a section of the boundary.
- **PRN 32151: possible building platform** –possible medieval feature located on ES Chapter 6 Figure 6.5. Not directly impacted; the survey will incorporate the visible earthwork.
- **PRN 32152: Ardda enclosure II** - possible post-medieval feature located on ES Chapter 6 Figure 6.5. Not directly impacted; the survey will incorporate the visible earthwork.

- **PRN 32154: Tai-isaf-Ardda enclosure** - possible medieval feature located on ES Chapter 6 Figure 6.5. The survey will incorporate the visible earthwork and will be supplemented by a watching brief during main works
- **PRN 31943: Early 19th century tumbled field wall** – to be surveyed as part of area FA1 located on ES Chapter 6 Figure 6.3 (reproduced as Appendix IV).
- **PRN 31954: Possible prehistoric wall** - to be surveyed as part of area FA1 located on ES Chapter 6 Figure 6.3 (reproduced as Appendix IV); survey to precede evaluation trenches.
- **PRN 31955: Natural boulders or structure** - to be surveyed as part of area FA1 located on ES Chapter 6 Figure 6.3 (reproduced as Appendix IV); survey to precede evaluation trenches.
- **PRN 31956: Possible prehistoric field boundary** - to be surveyed as part of area FA1 located on ES Chapter 6 Figure 6.3 (reproduced as Appendix IV); survey to precede evaluation trenches.
- **PRN 31957: 18th century or earlier field wall** - to be surveyed as part of area FA1 located on ES Chapter 6 Figure 6.3 (reproduced as Appendix IV); survey to precede evaluation trenches.

The topographic survey will be mainly undertaken in **January 2013** when vegetation cover is most limited. Note: the exceptions to this are PRNs 31943, 31954, 31955, 31956 and 31957, which are being undertaken prior to trial trenching scheduled for October 2012. *An interim report has been requested by RWE Npower Renewables Limited within two weeks of completion of the survey work: as the survey is being completed in two stages (October 2012 and January 2013), respective copies will be submitted at the appropriate time. RWE Npower Renewables Limited has stated that GAT must provide two colour paper copies and two electronic copies of the main report.*

The digital survey archive will be held by GAT under an appropriate project number (G2158).

An appropriate level of staffing would be two archaeologists.

4.2 Basic Recording

Receptors will be recorded by photographic record (with visible ranging poles and photographic identification boards), using a digital SLR camera set to maximum resolution and a written description on GAT pro-forma sheets. Basic recording is to be completed prior to main works.

- **PRN 16321 (NGR SH7655167184): Dolgarrog Hydro-electric plant**
- **PRN 31890 (NGR SH75586672): Llyn Coedty valve house:** A small corrugated iron structure located at the foot of Llyn Coedty dam, with the pipe entering it. Valve house for water exiting the dam into the pipe.
- **PRN 31894 (NGR SH75576673 to SH75686789; SH75666709 C): Llyn Coedty Leat:** The leat, associated with the hydro-electric works, is orientated NE-SW running into Llyn Coedty reservoir from Rowlyn Isaf, in a concrete channel about 8m wide. It cuts through the former field systems of Bont Newydd and Ffrith Ddu. A short section of this leat was built with the dam but most was constructed in 1955-58 (Jones and Gwyn 1989, 185). The trackway by the leat was in part the route of a tramway for the construction of the leat. The route of the leat and working spaces for its construction are marked on a map in the Sidney Colwyn Foulkes Collection (GAT Report 928

Figure 8) and the route of the leat was designed by Colwyn Foulkes to minimise the impact on the landscape. The trackway running next to the leat is to be upgraded to provide access for the current works.

- **PRN 31897 (NGR SH75766733): Modern bridge** - A modern concrete bridge faced with stone crossing the leat (feature 10). It must date from the construction of the leat in the 1950s, but is built on the line of a road that may have medieval or post-medieval origins, leading from the valley to the farms of Pont Newydd, Ffrith Ddu and Coed Ty Mawr.
- **PRN 31907 (NGR SH75526674 to SH76566718): Pipe** - A riveted and welded 6 foot pipe running from Coedty Reservoir to its junction with other pipes at Marble Arch, and thence down to the power station at the aluminium works (plate 1). It was built on concrete piers and a plinth, and completed 1924, but there were problems with it and it failed under test and caused flooding in the village (GAT Report 928: 32). The pipe was damaged in the flood of November 1925 and rebuilt by March 1927 (*ibid*).
- **PRN 31925 (NGR SH75956702 C): Trackway** - Track running beside Low Level Leat and built to service the leat presumably in 1925. Reuses part of the Llyn Eigiau railway trackbed and for most of its length follows the Llyn Cowlyd tramway.
- **PRN 31931 (NGR SH76056706 C): Tramway to Cwm Eigiau** - Slate quarry tramway built to service two "small and unpromising" quarries exploited between 1825 and 1873 (GAT Report 928: 39). The tramway was constructed in the early 1860s and was in operation by 1864 (*ibid*). The tramway was reused in 1907 to construct a railway for building the Llyn Eigiau dam (*ibid*). Work on the dam completed Nov 1910 and in 1911 all plant removed apart from track on the incline through the woods. Again reused in 1917 as start of tramway to build Cowlyd dam.
- **PRN 31933 (NGR SH76086691 C): Leat and related drains** - Upper leat built as part of the water catchment system for hydro-power station built for the aluminium works. The leat was constructed between 1907 and 1911 (GAT Report 928: 39) and is shown on the 1913 map. The upper leats ran from the Afon Ddu and the Afon Porth-llwyd to a pipe that took the water down to the power station. There are two drains running down from the Afon Porth-llwyd branch of the leat, allowing overflow water to flow back into the river.
- **PRN 31951 (NGR SH76086721): Original access track to pipe** - SW end of NE-SW aligned trackway, which curves to the north and then joins line of pipe. At this point the trackway passes through a gap in the rock outcrops. The gap may have been a natural one that was improved but much clearance of stone, if not actual quarrying of rock must have been done. No obvious traces of quarrying on rock face but this is heavily overgrown with lichen and moss. The track currently leads to a gate in a modern fence but extent of grass and moss growth and the lack of obvious tool marks on the rock face make it appear to be of some antiquity. However it is not shown on the old maps and does lead to the pipe. In places it can be seen that the surface of the track is covered with hard core. There is a short section of track running from the main track to the W and curving to the top of a small rock outcrop overlooking the pipe. The relationship to the pipe, the presence of hard core and the absence from the old maps suggests that this track was used for access while building the pipe and dates from the 1920s.
- **PRN 31952 (NGR SH76406706): Former locomotive shed** - Corrugated iron shed identified by Jones and Gwyn (1989, 180, reference in GAT Report 928: 43) as a locomotive shed on siding on Llyn Cowlyd tramway.
- **PRN 31962 (NGR SH76246722 C): Early 20th century access track to pipe** - One of several tracks that were probably built for the construction of the pipeline and are still used for access for maintenance.
- **PRN 31965 (SH76326726): Drainage channels for upper leat drain and surge pipe** - Later C20th century neatly revetted channels running from the base of a

boulder filled ravine. A broad catchment area divides into two channels. Built in mortared field stone, with the base of the channels also lined with stone. The channels are part of the overflow drain from the upper leat. Nearby is a reinforced concrete pipe running down the slope to the main pipe. This used to be attached to the main pipe as a surge pipe, releasing water pressure in case of flooding. This would have carried excess water up to the Low Level Leat.

- **PRN 31974 (NGR SH75726722): Channel for stream passing under leat** – 20th century channel roughly lined with boulders where the stream that has been channelled under the leat exits. Although this looks ancient it was presumably constructed when the leat was built, although some of the stream may have been canalised previously.

The basic recording will be mainly undertaken in **January 2013** when vegetation cover is most limited. This information will be incorporated into the main mitigation report: *RWE Npower Renewables Limited has stated that GAT must provide two colour paper copies and two electronic copies of the main report.*

The archive will be held by GAT under an appropriate project number (G2158).

An appropriate level of staffing would be two archaeologists.

4.3 Detailed Recording

Detailed recording requires a photographic record, surveying and the production of a measured drawing prior to the commencement of the works on site.

- **PRN 31893 (NGR SH75946706): Coed Sadwrn Track** - A trackway leading towards Coed Sadwrn. This is well defined on E side of gateway seen as a clear hollow-way with walls on either side for part of its route. The walls are tumbled and the whole is overgrown. The low level leat has destroyed part of it but it continues on the other side. To the W of the gateway one branch of the track is quite clear as a hollow but the other branch is not visible. Shown in detail on 1889 map but track also marked on 1816-1824 map, and shown running from gateway 74 on the 1788 map (cf. GAT Report 928). The main works cut through the NW end of the track. This area requires detailed recording including survey and a watching brief during the works including recording of a section of the track. The rest of the track should be fenced off to avoid damage. Tree planting is proposed in this area. Archaeological advice required to avoid planting on or damaging archaeological features.
- **PRN 31898 (NGR SH75726718 C): Drystone wall field boundary** - Late medieval/early post medieval wandering drystone wall, up to two rough courses wide and high. It probably forms the boundary to Pont Newydd Cottage fields or paddocks and to be of 18th century or earlier in date (Withers 1995 quoted in GAT Report 928: 31). Large plant access requires removal of wall. Detailed recording prior to this event followed by an archaeological watching brief during breaching.
- **PRN 31900 (NGR SH75696709): Drystone wall** – 19th Century well-built drystone wall, surviving up to six courses high, of loose rounded boulders. The wall is up to 1m high in places. Its character appears to be of 19th century date, and built on a regular straight alignment. It probably forms a later sub division of some of the wandering wall systems. Large plant access requires removal of wall. Detailed recording prior to this event followed by an archaeological watching brief during breaching.
- **PRN 31902 (NGR SH75656699): Drystone wall** - Late medieval/early post medieval wandering drystone wall, up to two rough courses wide and a single course high surviving. It probably forms part of the early fields and paddocks associated with

Ffrith Ddu farmhouse and may be of 18th century or earlier in date. Large plant access requires removal of wall. Detailed recording prior to this event followed by an archaeological watching brief during breaching.

- **PRN 31905 (NGR SH75576690C): Drystone wall** - Late medieval/early post medieval wall Probably rebuilt and straightened at NW end but probably part of the older field system. A well-built drystone wall of loose rounded boulders. The wall is up to 1m high in places. Its character appears to be of 19th century date, but its south-eastern end was far from straight as shown on the 1889 map. It is probable that the wall has been rebuilt and straightened but was originally part of the wandering wall system around Ffrith-Ddu. The south-eastern end of this wall may have to be removed. . Detailed recording prior to this event followed by an archaeological watching brief during breaching.
- **PRN 31908 (NGR SH75606678 C): Drystone wall** - Late medieval/early post medieval well-built drystone wall of loose rounded boulders, although now very collapsed. The wall is up to 0.5m high in places. Trees grow along its length. Detailed on the 1889 map as a line of trees, so the wall must have been out of use by then. Detailed recording prior to groundworks followed by an archaeological watching brief during breaching.
- **PRN 31909 (NGR SH75646690): Drystone walls south of Ffrith Ddu House** - Late medieval/early post medieval well-built drystone wall of loose rounded boulders. The wall is up to 1m high in places. Associated with other less well preserved walls forming small rectangular fields. These walls wander slightly and are probably of pre-19th century date. Detailed recording including survey. Watching brief including recording of section.
- **PRN 31910 (NGR SH75726697): Drystone wall with possible inscribed stone** - Late medieval/early post medieval much collapsed drystone wall, probably associated with Ffrith Ddu farmhouse. It included a rough boulder, about 1.3m high and 0.4m wide, inscribed with a possible Latin Cross orientated slightly north-north-west to south-south-east. The stone is broken along its western side. The SE end of this wall may have to be removed. Detailed recording, watching brief
- **PRN 31916 (NGR SH75906709): Field boundary** - Regular straight boundary shown on 1889 map. A 19th century drystone wall, up to two rough courses wide and high. This wall forms the boundary to Coed Sadwrn farm and is of 19th century date, but it roughly followed and regularised the line of an early boundary along the western side of 'Erw' {A3} and 'Tir Newydd' {A4}, shown on the 1788 map. Detailed recording prior to groundworks followed by an archaeological watching brief during breaching.
- **PRN 31919 (NGR SH75986719): Entrance into enclosure** - Late medieval/early post medieval - The SW side of a small enclosure is formed by a wandering drystone wall, up to two rough courses wide and generally not more than a single course high. There is a 2m wide gap in the wall bounded on the NW side by a line of boulders. Against the inside of the wall to the SE of the gap is a heap of stones. This could be the remains of a small structure but the stones seem to be quite haphazardly dumped rather than laid. A track runs through the gap into the enclosure. The gap faces the long hut (feature 36). It is possible that the gap was created for later access to the enclosure but it is neatly formed and the track is well defined so it is likely that this gap was the original entrance to the enclosure and demonstrates the close association of the long hut and the enclosure. Detailed recording prior to groundworks followed by an archaeological watching brief during breaching.
- **PRN 31927 (NGR SH76146713): Field boundary wall** - Late medieval/early post medieval denuded field wall with stones forming a rough line. Some of the stones are large boulders up to 1m tall but no coursing survives. This wall is shown on the 1889 map as quite straight but looks slightly wandering on the ground. It is shown on the

1788 map. The field to the E was called 'Cae Fynnon' {A8} and was arable in 1788. The field to the W was 'Erw' {A2} and was under pasture in 1788 despite the name, which suggests that it was originally enclosed for arable. Detailed recording prior to groundworks followed by an archaeological watching brief during breaching.

- **PRN 31929 (NGR SH75976721): Sub-oval enclosure** - Late medieval/early post medieval small rather irregular sub-oval enclosure defined by low denuded walls. There is a gap in the NE side that may be an entrance to match the one on the SW side. This route seems to have been used for access recently but the gap in the NE side is not as clear and convincing as an original entrance as that in the SW side, and may have been made more recently to allow access through the enclosure. The difficulty of terrain to the NE of the enclosure and the lack of a clear track here suggests that there was not an original route through the enclosure. However the area was covered in dense dead bracken so earthworks were difficult to detect. This enclosure is named as Erw Bach {31} on the 1896 map. On the 1788 map it is shown as a distinct enclosure but labelled as part of 'Erw' {A2}, with 'Cae Bach' applied to a field much further west {A5}. The 'erw' name indicates a possible arable field, although on the 1788 map all of A2 is shown as under pasture. Detailed recording prior to groundworks followed by an archaeological watching brief during breaching.
- **PRN 31958 (NGR SH75896713): Track leading to footpath** – 19th century track, c2m wide running at an angle up the slope from near the bridge. Stones cleared from the route are dumped along the track edge but there is not real wall or revetment. The track breaks through the field boundary at the top of the slope, with much of the stone from the wall still visible in the surface of the track. The track is shown on the 1889 map and joins with a footpath running across the field to Coed Sadwrn. No earthwork remains of this footpath could be seen. Track is to be improved. Detailed recording including measured survey. Watching brief including recording of section.
- **PRN 31959 (SH75926716 C): Field wall/revetment** - Late medieval/early post medieval field boundary wall running along top of natural escarpment. Revetment of rounded boulders c1m high facing NW. The ground to SE is level with the top of the wall. A line of hazel and ash grows along the wall indicating a former hedge. Many of the hazel are old coppices and some trunks are bent showing where they were once laid. Wall is fairly close to the existing pipeline so care must be taken that the wall is not damaged when the pipe is dismantled.
- **PRN 32145 (boundaries to road): 19th/20th century roadside boundary walls** - any roadside boundary walls affected by alteration works to existing road network to accommodate construction traffic to be recorded and supplemented with a watching brief.

The detailed recording will be mainly undertaken in **January 2013** when vegetation cover is most limited. This information will be incorporated into the main mitigation report: *RWE Npower Renewables Limited has stated that GAT must provide two colour paper copies and two electronic copies of the main report.*

The archive will be held by GAT under an appropriate project number (G2158).

An appropriate level of staffing would be two archaeologists.

4.4 Targeted evaluation by trial trenching

Topsoil and unwanted material overlying the archaeological remains would be removed by machine.

Once archaeology is encountered remains will be excavated by hand. Excavation of features will be sufficient to identify the importance and nature of the remains. All features, fills and layers would be allocated context numbers, and context records will be compiled throughout the course of the evaluation.

- **PRN 31943 (NGR SH75776692 C): Tumbled field wall** - early 19th century low tumbled wall running SE-NW downhill. SE end is quite well defined but becomes rather vague to NW, although still visible as a slight scarp. Not completely straight, wanders slightly. About 1m wide and up to 0.6m high in best preserved sections. This field was under arable in the late 18th century and this boundary is not shown on the 1788 map. It therefore seems to have been a sub-division added in the 19th century as it is shown on the 1889 map. A targeted trench measuring 20m by 2m will be located across the receptor, within the pipe easement; the results may lead to further mitigation that will be discussed in a future project design.
- **PRN 31954 (NGR SH75826696): Possible ancient wall** – A rough line of stones running c. NW-SE uphill, including one stone set on edge (plate 3). The alignment continues for about 22m with a large natural boulder forming part of it. Some of the stones in the line look possibly laid and others look natural. The field is very stony and this could be a chance alignment but it is quite coherent and may be a much denuded field wall. If it is the latter its condition suggests that it might be older than the other boundaries in this area and could be prehistoric. This field may have suffered severely from erosion as it is shown on the 1788 map as being under arable, which currently seems unlikely with the quantity of stones. However if it was of much better quality in the past its use as a prehistoric field seems more likely. A targeted trench measuring 10m by 2m will be located across the receptor; the results may lead to further mitigation that will be discussed in a future project design.
- **PRN 31955 (NGR SH75816699): Natural boulders/structure** - A group of stones around low bedrock outcrops. There is a gap on the uphill side that might be an entrance but the stones that are not obviously natural look dumped rather than laid. A targeted trench measuring 10m by 2m will be located across the receptor; the results may lead to further mitigation that will be discussed in a future project design.
- **PRN 31956 (NGR SH75776694): Possible field boundary** - An 8m long scarp running SW-NE along the slope, with a rock projecting from it at SW end. The scarp is up to 0.7m high and 1.5m wide. It may be natural but could be the remains of an early field boundary. This is not shown as a boundary on any of the early maps but may be on the same alignment as the ridges shown on the 1788 map and could have been enhanced by ploughing. A targeted trench measuring 10m by 2m will be located across the receptor; the results may lead to further mitigation that will be discussed in a future project design.
- **PRN 31957 (NGR SH75846699): Field wall** - Denuded field wall running alongside track. Generally largely collapsed, occasionally surviving to 0.5m high. This formed the eastern boundary of a field called 'Cae Bach' {A5} on the 1788 map. This is shown as being under arable and belonging to Coed Sadwrn rather than Coedy Mawr, but seems to be a later enclosure than the fields clustered around Coed Sadwrn. A targeted trench measuring 10m by 2m will be located across the receptor, within the pipe easement; the results may lead to further mitigation that will be discussed in a future project design.

The trial trenching will be undertaken in **October 2012**. GAT will supply plant and welfare. *An interim report has been requested by RWE Npower Renewables Limited within two weeks of completion of the work. RWE Npower Renewables Limited has stated that GAT must provide two colour paper copies and two electronic copies of the main report.*

- Site plans and sections would be at a minimum scale of 1:20. All features will be photographed.
- A photographic record will be maintained throughout, using a digital SLR.
- Any subsurface remains will be recorded photographically, with detailed notations and a measured survey.
- A Leica TRS805 Total Station may also be used if extensive subsurface remains are identified.
- The archive will then be held by GAT under an appropriate project number.

The archive will be held by GAT under an appropriate project number (G2158).

An appropriate level of staffing would be two archaeologists.

4.5 Excavation

Area excavations would be stripped of topsoil and other overburden mechanically using an appropriate machine. This would normally be a 360° tracked excavator with a 1.50m or 1.80m wide toothless bucket. In other cases a JCB 3CX excavator would be employed. All machining will be undertaken under direct archaeological supervision. No machinery would be allowed to cross stripped areas.

All undifferentiated topsoil or overburden of recent origin would be removed down to the first significant archaeological horizon or natural subsoil, whichever is encountered first. When necessary, the resulting surface will be cleaned by hand using appropriate hand tools, normally shovels, hoes or trowels.

PRN 31969 (NGR SH76446723):

Late medieval/early post medieval small farmstead. One definite and one probable building platform lie between a tumbled wall and the base of a low rocky Escarpment (GAT Report 928; plate 8). Some of the wall survives to a height of 0.5m but the traces of the buildings are very slight. The best defined platform is rectangular, measures about 10m x 3m and lies parallel to the slope. To its east is a less well defined platform about 5m long that may be part of a yard rather than for a building. To the north is a sub-circular enclosure c.6m in diameter, very over grown with bracken. This may have an entrance in the SW side. A track giving access to the pipe cuts through this area and on the E side of the track is a low boundary wall with a possible building platform adjacent to it. This platform has been disturbed by the track but is 3m wide and at least 3m long. A long stone slab built into the wall may indicate that one wall of the building was incorporated into the field wall. There is no hint of this farmstead on the 1788 map so presumably it went out of use before the late 18th century.

The main building platforms and sub-circular enclosure lie just beyond the proposed works and might be avoided but the platform by the track and associated wall are likely to be severely impacted by the works; a defined excavation area measuring 5m by 3m will be located across the platform and part of the wall; the results may lead to further mitigation that will be discussed in a future project design.

The excavation will be undertaken immediately prior to main works in 2013. GAT will supply plant and welfare.

- Site plans and sections would be at a minimum scale of 1:20. All features will be photographed.
- A photographic record will be maintained throughout, using a digital SLR.
- Any subsurface remains will be recorded photographically, with detailed notations and a measured survey.
- A Leica TRS805 Total Station may also be used if extensive subsurface remains are identified.
- The archive will then be held by GAT under an appropriate project number.

The archive will be held by GAT under an appropriate project number (G2158).

An appropriate level of staffing would be two archaeologists.

This information will be incorporated into the main mitigation report: *RWE Npower Renewables Limited has stated that GAT must provide two colour paper copies and two electronic copies of the main report.*

4.6 Watching brief

This will be conducted during all topsoil stripping and boundary removal associated with the route, including construction compounds and temporary access roads, and the alteration of roadside boundaries on the access routes. Any significant sites identified would be fully excavated and recorded, potentially requiring further mitigation and costs.

Inclusive of this are specific watching brief receptors; these are:

- **PRN 676 (Ardda Medieval Township; area adjacent of track to be benched)**
- **PRN12957 (cottage and enclosure)**
- **PRN 16322 (Railway Incline Ardda)**
- **PRN 31893 (track)**
- **PRN 31898 (drystone wall)**
- **PRN 31900 (drystone wall)**
- **PRN 31902 (drystone wall)**
- **PRN 31905 (drystone wall)**
- **PRN 31908 (drystone wall)**
- **PRN 31909 (drystone walls)**
- **PRN 31910 (drystone wall)**
- **PRN 31916 (field boundary)**
- **PRN 31919 (entrance into enclosure)**
- **PRN 31927 (field boundary wall)**
- **PRN 31929 (sub-oval enclosure)**
- **PRN 31958 (track to footpath)**
- **PRN 31959 (field wall/revetment)**
- **PRN 31971 (field wall)**
- **PRN 32145 (boundaries to road)**
- **PRN 32154 (Tai-isaf-Ardda enclosure)**

These receptors also include preceding evaluation and/or mitigation (q.v.: paras. 4.1 to 4.5).

This work will be programmed in tandem with the construction phase, with some recording of roadside boundaries being undertaken prior to the start of construction .

Based on the IFA. 2001. *Institute for Archaeologists 2001 & 2008 Standard and Guidance for an archaeological watching brief*, an archaeological watching brief is divided in to four categories:

- comprehensive (present during all ground disturbance)
- intensive (present during sensitive ground disturbance)
- intermittent (viewing the trenches after machining)
- partial (as and when seems appropriate).

GAT is recommending an *intensive* archaeological watching brief to be undertaken at appropriate times within construction programme.

- A photographic record will be maintained throughout, using a digital SLR camera set to maximum resolution.
- Any subsurface remains will be recorded photographically, with detailed notations and a measured survey.
- A Leica TRS805 Total Station may also be used if extensive subsurface remains are identified.

The archive will be held by GAT under an appropriate project number (G2158).

Staffing levels for this work are dependent upon the nature and quantity of archaeological features and the nature of the construction programme. An appropriate level of staffing, would be one archaeologist. An additional archaeologist may be required if several watching brief areas are concurrently active.

4.7 Avoidance

Plastic fencing (e.g. Netlon fencing) should be used to clearly define areas to be avoided. The provision and erection of fencing is to be supplied by the contractor but the fencing is to be located under the supervision of an archaeologist.

- **PRN 649 (Cottage, Ardda)**
- **PRN16325 (NGR SH7646867077):** possible long hut, Ardda
- **PRN 31899 (NGR SH75736718):** Clearance cairn - late medieval/early post medieval low cairn about 1m diameter with some larger stones at the edge but no real sign of a kerb. A clearance cairn on the edge of the field.
- **PRN 31913 (NGR SH75746686 C):** Terraced field boundary and possible trackway - *18th century or earlier* terraced field boundary running downslope SE-NW (plate 2). Field to SW about 1m higher than field to NE and terrace revetted with stone facing, some of which has collapsed. At one point stone seems to have been dumped over a corner in the terrace. At the uphill (SE) end a slight linear hollow indicates a ditch or track on the NE side of the terrace. This formed the SW boundary to 'Cae Bach' {A5} as shown on the 1788 map. Cae Bach was under arable in the 18th century. The field to the SW was called 'Cae tan Ty' {B2} and was meadow and rough grazing. This boundary is shown on the 1889 map with a double line. It is not entirely obvious from the map but comparison with other boundaries indicates that the NE line is a ditch and the boundary was composed of a wall and a ditch, shown draining directly into the river.

A track is shown on the 1889 map running down the western side of this boundary leading from Coedty Mawr via a foot bridge to Ffrith Ddu. This was not seen on the ground but some buried remains may survive.

- **PRN 31918 (NGR SH75976716):** Stone structure/long hut - late medieval/early post medieval. Small rectangular stone built structure orientated north-east south-west, measuring c8.5m x 4.7m externally (plate 7). It is built of rough coursed angular shale slabs, and smaller stones forming walls about 0.7m wide. The SE wall is best preserved as it is terraced into the slope and it stands c.1m high, the SW wall is also fairly well preserved but the other two walls survive only at foundation level. The NW wall has a line of facing stones surviving at foundation level. The interior is full of rubble. The building runs along the slope rather than perpendicular to it and has no other characteristics of medieval long huts. Its preservation also suggests an early post medieval rather than a medieval date. It was probably the house associated with a small farmstead including the adjacent enclosure. *The fencing should be very clear as the whole field is to be used for access.*
- **PRN 31920 (NGR SH75956717):** Probable modern clearance cairn - group of large boulders loosely collected together. This is close to the pipe and probably related to the early 20th century pipe construction.
- **PRN 31948 (NGR SH75926706):** Small structure by track to Coed Sadwrn - small structure by track to Coed Sadwrn (GAT Report 928; plate 4). Rectangular, c6m x 5m with low wall surviving to no more than 0.5m high. Abuts main boundary wall and no obvious entrance visible, although SE wall is very poorly preserved with considerable gaps. Not shown on any of the old maps but character of remains is similar to boundary wall etc. and it seems to be roughly contemporary. Probably the structure was too small and insignificant to show on the maps. This structure risks being either levelled in advance of spoil dumping or being buried by spoil unless marked and protected by fencing.
- **PRN 31949 (NGR SH75916707):** Gateway on track to Coed Sadwrn - 19th century gateway across track to Coed Sadwrn, flanked by large unworked stones as gate posts (GAT Report 928; plate 5). The tallest gatepost is 1.9m high and there are holes for hanging a gate on the W side of the stones. The 1889 map shows the track crossing the boundary here but does not mark a gate as such.
- **PRN 31950 (NGR SH76026714 C): Terraced field boundary** - Natural scarp running SE-NW revetted and regularised as a field boundary (plate 6). The scarp is up to 4m high but much of this is natural. Towards the SE end the scarp disappears and the boundary is represented by a simple tumbled wall. The top of the scarp at its highest is revetted with stone facing, much now tumbled. The 1896 map suggests that there were other small enclosures on or against the rocky outcrop at the NW end of the boundary and these might be identified by detailed survey. The map also names the field to the W of this boundary as Erw Bellaf {32} and that to the E as Erw Ty {35}. The 1788 map calls both sides of the boundary 'Erw' {A3} and {A2}, respectively.
- **PRN 31960 (NGR SH76006720): Probable clearance cairn** - Small circular cairn c. 2m diameter composed of small and medium sized sub-rounded stones. Heavily overgrown with grass and moss. 1m high on downhill side but nearly level with ground on uphill side. There is large group of boulders to the NW of this but these are too large to have been moved (unless it was during the pipe construction) and these are probably natural. The works pass to the SE of this feature and it should not be impacted.
- **PRN 31963 (NGR SH76226722): Small enclosure against rock face** - Small sub-rectangular enclosure built against a rock outcrop. Interior is level and the walls survive to no more than 0.7m high. The walls are very overgrown with bracken and difficult to see clearly. There may be a narrow entrance in the SE corner. The field

that this enclosure lies within is called Cae Lloiau (field of the calves) on the 1896 map, which raises the possibility that the enclosure may have been used for managing calves.

- **PRN 31976 (NGR SH75836722): Trackway leading to road from Pont Newydd** - Slight, overgrown lines of stones indicate the walls bounding the track running from Pont Newydd to the road. This is clearly shown on the 1889 map, and is probably of 19th century date, although it could be earlier.
- **PRN 32146: Probable clearance cairn**
- **PRN 32158: Building Platform**
- **PRN 32159: Building Platform**

GAT will advise on the location and orientation of all fencing. This will be programmed immediately prior to main works scheduled for March 2013. An appropriate level of staffing, would be one archaeologist. An additional archaeologist may be required if several watching brief areas are concurrently active.

5 POST-EXCAVATION PHASE

5.1 Introduction

The management of this phase will follow guidelines specified in *Management of Archaeological Projects* (English Heritage, 1991), and relevant guidelines from *Management of Research Projects in the Historic Environment* (English Heritage 2006). Five stages are specified:

Phase 1: project planning

Phase 2: fieldwork

Phase 3: assessment of potential for analysis

Phase 4: analysis and report preparation

Phase 5: dissemination

The post-excavation stage for the project will include phases 3 to 5.

Phase 3 involves an objective assessment of the results of the fieldwork phases (Phases 1 and 2) in order to ascertain the appropriate level of post-excavation analysis and reporting. This phase culminates in the production of a post-excavation assessment report. The second involves carrying out the work identified within the post-excavation assessment report, and culminates in a final report and project archive (Phases 4 and 5).

Note: RWE Npower Renewables Limited has stated that GAT must provide two colour paper copies and two electronic copies of the main report.

5.2 Post-excavation assessment

The level of post-excavation analysis and reporting for the purposes of the assessment will be sufficient to establish the character, scale, date range, artefactual and palaeo-environmental potential and overall significance of the remains. The post-excavation assessment will result in an assessment of potential for analysis report and an updated

project design describing what further work is needed to complete the final report, appropriate publication and archiving.

Style and format of the report will include as a minimum the following:

- A location plan of trenches and/or other fieldwork
- Plans and sections of features located at an appropriate scale
- A section drawing showing depth of deposits including the present ground level with Ordnance Datum, vertical and horizontal scale.
 - A summary statement of the results.
 - A table summarising per trench the features, classes and numbers of artefacts contained within, spot dating of significant finds and an interpretation.
 - An interpretation of the archaeological findings both within the site and within their wider landscape setting.

Artefact analysis will be sufficient to establish date ranges of archaeological deposits, a general assessment of the types of pottery and other artefacts to assist in characterising the archaeology, and to establish the potential for all categories of artefacts should further archaeological work be necessary.

5.3 Analysis and report preparation

The work undertaken during this phase of the project will be carried out according to the recommendations contained within the post-excavation assessment report and updated project design.

5.4 Production of site archive

A full archive including plans, photographs, written material and any other material resulting from the project will be prepared. All plans, photographs and descriptions will be labelled and cross-referenced, and lodged in an appropriate place (to be decided in consultation with the regional Sites and Monuments Record) within six months of the completion of the project. All digital data will be archived with the Royal Commission on the Ancient and Historical Monuments of Wales .

6 HEALTH AND SAFETY

The Trust subscribes to the SCAUM (Standing Conference of Archaeological Unit Managers) Health and Safety Policy as defined in **Health and Safety in Field Archaeology** (2006). Risks will be assessed prior to and during the work.

7 INSURANCE

Liability Insurance - Aviva Policy 24765101CHC/000405

- Employers' Liability: Limit of Indemnity £10m in any one occurrence
- Public Liability: Limit of Indemnity £5m in any one occurrence

The current period expires 21/06/13

8 SOURCES CONSULTED

Capita Symonds 2012 *Coedty Replacement Pipeline Project, Dolgarrog. Environmental Statement*

Evans, R. 2010. Gwynedd Archaeological Trust Report **900**: Hydro-Electric Pipeline, Dolgarrog – Archaeological Assessment

Evans, R. & Kenney, J. Gwynedd Archaeological Trust Report **928**: Archaeological Assessment: Dolgarrog Hydro-Electric Works

Standard and Guidance for Archaeological Evaluation (Institute for Archaeologists, 1994, rev. 2001 & 2008)

Standard and Guidance for Archaeological Watching Brief (Institute for Archaeologists, 1994, rev. 2001 & 2008)

Standard and Guidance for Archaeological Excavation (Institute for Archaeologists, 1994, rev. 2001 & 2008)

APPENDIX II: GAZETTEER OF SITES SURVEYED

PRN Number: 12957 NAME: Cottage and enclosure

Grid Ref: SH765066150

Period: Medieval/ Post-medieval

Category: A

Part of the Ardda medieval township. The cottage and enclosures are not within the survey area, although the terraces running below and to the NE of the cottage are (PRN 36384).

PRN Number: 16321 NAME: Dolgarrog Hydro-Electric Plant

Grid Ref: SH7655167184

Period: Early 20th Century

Category: B

The junction of pipes and valve house known as Marble Arch, after an iron gantry footbridge over the incline. The original Marble Arch had to be demolished as it was unsafe, with this arch being built at some point after 1925.

PRN Number: 16322 NAME: Railway Incline

Grid Ref: SH7650167162 (Centred)

Period: 19th Century

Category: A

The incline, aligned ENE-WNW, was initially built for the slate quarry tramway in the early 1860s and was in operation by 1864. It is first shown on the 1889 map. It was reused in 1907 to construct a railway for building the Llyn Eigiau dam, and again in 1917 to build the Llyn Cowlyd dam. It continued to be used during the early 20th century to take equipment up and down the escarpment. There was a winch and a ropeway on the incline in the 1950s. Much of the upper part of the incline is still well preserved and is located outside of the survey area. The lower half is cut down into the natural geology, with high, steep sides at the bottom, which gradually become shallower as the incline rises to the WSW, where it is located partially on a stone embankment.

PRN Number: 31890 NAME: Llyn Coedty Valve House

Grid Ref: SH75586672

Period: Modern

Category: D

A small corrugated iron structure located at the foot of Llyn Coedty dam, with the pipe entering it. A concrete and stone wall surrounds the valve house on two and a half sides. It is used as a valve house for water exiting the dam and entering the pipe.

PRN Number: 31893 NAME: Coed Sadwrn Track

Grid Ref: NGR SH75886707 (Centred)

Period: 18th Century or earlier

Category: B

A trackway leading towards Coed Sadwrn, aligned roughly NW-SE. This is well defined on the western side of the gateway (PRN 31949), seen as a clear hollow-way with 0.4m high banks on either side for part of its route. As it approaches the gateway to the SE it peters out. It continues to the NW under the pipe until it meets the modern road. Shown in detail on the 1889 map, but the track is also marked on the 1816-1824 map, and shown running from the gateway on the 1788 map. The area is overgrown and evidence for the continuation of the track to the east and SE may be visible underneath.

PRN Number: 31894 NAME: Llyn Coedty Leat

Grid Ref: SH75576673 to SH75686789, SH75666709 (Centred)

Period: Mid 20th Century

Category: B

Llyn Coedty Leat, associated with the hydro-electric works, is orientated NE-SW running into Llyn Coedty reservoir from Rowlyn Isaf, in a concrete channel approximately 8m wide. It cuts through the former field systems of Bont Newydd and Ffrith Ddu. Constructed from pre-formed concrete slabs, it was built in two phases, a short section was built at the time of the dams construction, with the remaining majority built between 1955-8. The initials 'MAC' have been inlaid with pebbles into the mortar on the SE side of the leat. The trackway adjacent to the leat was in part the route of a tramway for the construction of the leat. The route of the leat and working spaces for its construction are marked on a map in the Sidney Colwyn Foulkes Collection and the route of the leat was designed by Colwyn Foulkes to minimise the impact on the landscape.

PRN Number: 31897 NAME: Modern Bridge

Grid Ref: SH75756732

Period: Modern

Category: D

A modern concrete bridge faced with stone crossing the leat. It must date from the construction of the leat in the 1950s as it is constructed perfectly inline with the top of the leat. It was built on the line of a road leading from the valley to the farms of Pont Newydd, Ffrith Ddu and Coed Ty Mawr, which may have medieval or post-medieval origins.

PRN Number: 31898

NAME: Field Boundary

Grid Ref: SH75726718 (Centred)

Period: Late medieval/ Early Post-medieval

Category: B

Late medieval/ Early Post-medieval meandering drystone wall in a fairly ruinous state. Up to two rough courses wide and high, with no evidence of any facing or core. The wall becomes more substantial towards the SW corner where a possible entranceway exists. Another possible entranceway is located towards its SE corner, although given the overall ruinous state of the wall it is impossible to be sure if these represent original entranceways or not. It probably forms the boundary to the Pont Newydd Cottage fields or paddocks and dates to the 18th century or earlier.

PRN Number: 31900

NAME: Field Boundary

Grid Ref: SH75696709 (Centred)

Period: 19th Century

Category: C

A group of three drystone walls dating to the 19th Century, orientated NNE-SSW, ENE-WSW, and NE-SW respectively. The NE-SW aligned wall is fairly well preserved, along with the ENE end of the ENE-WSW aligned wall. The walls survive with a maximum of 13 courses (0.7m high) of loose rounded boulders. The NNE-SSW aligned wall is built close to, but not adjoining field boundary wall PRN 31898. There is a possible entranceway located at the NE end of the NE-SW aligned wall. The walls character appears to be of 19th century date and they probably form a later subdivision of the field boundary systems in the area.

PRN Number: 31902

NAME: Field Boundary

Grid Ref: SH75656699 (Centred)

Period: Late medieval/ Early Post-medieval

Category: B

Late medieval/ Early Post-medieval slightly curving drystone wall orientated roughly north-south. Mostly surviving in a ruinous state, up to two courses high (0.6m), and 1.5m wide. Towards the south, close to the Ffrith Ddu farmhouse, the wall is better preserved, measuring up to 1m in height. It probably forms part of the early fields and paddocks associated with Ffrith Ddu farmhouse directly to the south, and may be of 18th century or earlier date.

PRN Number: 31905

NAME: Field Boundary

Grid Ref: SH75576690 (Centred)

Period: Late medieval/ Early Post-medieval

Category: B

Late medieval/ Early Post-medieval wall orientated NW-SE. Rebuilt and straightened at the NW end where it survives up to five courses, 0.7m high and 1m wide. There is a possible entranceway between the rebuilt section at the NW end and the more ruinous wall to the SE. At the SE end the wall survives to a maximum of two courses, 0.7m high and 1.3m wide. Its character appears to be of 19th century date, and was most likely originally part of the wandering wall system around Ffrith-Ddu. The SE end of this wall has been removed, possibly during the construction work for the pipe. NE-SW aligned wall PRN 31909 runs perpendicular to the SE end of the wall but is not built into it.

PRN Number: 31907

NAME: Pipe

Grid Ref: SH75526674 to SH76566718

Period: Early 20th Century

Category: B

A riveted and welded six foot pipe running from Coedty Reservoir to its junction with other pipes at Marble Arch, and thence down to the power station at the aluminium works. It was built on concrete piers and a plinth, and was completed in 1924. However, there were problems with the pipe and it failed under test and caused flooding in a village. The pipe was damaged in the flood of November 1925 and rebuilt by March 1927. There are numerous points along the pipe where water is leaking from it.

PRN Number: 31908

NAME: Field Boundary

Grid Ref: SH75606678 (Centred)

Period: Late medieval/ Early Post-medieval

Category: B

Late medieval/ Early Post-medieval drystone wall in very poor condition with trees growing along its length. Constructed of loose rounded boulders, on average two courses high, and aligned roughly NE-SW. A small stretch of wall survives in better condition, with a maximum height of 1m, towards the SW end. Makes use of natural stone outcrops where possible. Detailed on the 1889 map as a line of trees, so the wall must have been out of use by then.

PRN Number: 31909 NAME: Field Boundary

Grid Ref: SH75656692 (Centred)

Period: Late medieval/ Early Post-medieval

Category: B

Late medieval/ Early Post-medieval drystone walls south of Ffrith Ddu farmhouse. Surviving up to three courses high (0.75m), and approximately 1m wide. Constructed from loose sub-rounded boulders. There is some tumble associated with the wall on the SE side. At its NE end the wall is in significantly better condition, with ten courses (1.5m) surviving. There is an entranceway towards the NE end where a path is shown on the 1st Edition OS Map of 1889. It runs perpendicular to boundary wall PRN 31905 but is not built into it. It is associated with a number of other, less well preserved walls, forming small rectangular fields with entranceways around the remains of the Ffrith Ddu farmhouse. These walls wander slightly and are probably of a pre-19th century date.

PRN Number: 31910 NAME: Field Boundary

Grid Ref: SH75726697 (Centred)

Period: Late medieval/ Early Post-medieval

Category: E

Late medieval/ Early Post-medieval drystone wall, probably associated with the Ffrith Ddu farmhouse. The wall is orientated NW-SE and survives up to four courses (1m) high, with an approximate width of 1m. It is constructed for sub-rounded and angular boulders, and slopes downhill to the SE where it is in a very ruinous state. A rough boulder, about 1.3m high and 0.4m wide, inscribed with a possible Latin Cross orientated slightly NNW-SSE, was located within the wall. The stone is broken along its western side. At its NW end it is abutted by boundary wall PRN 31900. Originally shown as continuing further to the NW on the 1889 1st Edition OS map, there is no evidence of this on the ground today.

PRN Number: 31913 NAME: Terraced Field Boundary and Possible Trackway

Grid Ref: SH75746686 (Centred)

Period: 18th Century or Earlier

Category: E

Terraced field boundary running SE-NW downslope. The field to the SW is about 1m higher than the field to the NE, and the terrace is revetted with stone facing, some of which has collapsed. At the SE end a slight linear hollow indicates a ditch or track on the NE side of the terrace. There are two gaps in the field boundary close to each other at the SE end, and roughly in line with the gap in the parallel field boundary PRN 31943, suggesting that one of these gaps represents an entranceway. This wall formed the SW boundary to 'Cae Bach' and the NE boundary to 'Cae tan Ty' as shown on the 1788 map. Cae Bach was under arable, while Cae tan Ty was given over to meadow and rough grazing in the 18th century. This boundary is shown on the 1889 map with a double line, which comparison with other boundaries indicates that the NE line represents a ditch. The boundary was therefore originally comprised of a wall and a ditch, shown draining directly into the river. No evidence of the ditch remains today. A track is shown on the 1889 map running down the SW side of this boundary leading from Coedy Mawr via a footbridge to Ffrith Ddu. This was not seen on the ground but buried remains may survive. A possible field boundary PRN 31944 runs roughly perpendicular to the NE at the walls NW end.

PRN Number: 31916 NAME: Field Boundary

Grid Ref: SH75916707 (Centred)

Period: 19th Century

Category: B

Two interconnecting 19th century drystone walls, aligned NW-SE, and NNW-SSE, and part of the boundary to Coed Sadwrn farm. A gateway (PRN 31949) and track (PRN 31893) are located at the intersection of these walls, with a rectangular structure (PRN 31948) abutting the northern side of the NW-SE aligned wall. The walls survive up to two rough courses wide (1m) and high (0.75m). The NW-SE aligned section roughly follows the line of an early boundary along the western side of 'Erw' and 'Tir Newydd' as shown on the 1788 map, while the NNW-SSE section runs along the line of the track to Coed Sadwrn (PRN 31893). A second possible entranceway is located in the NW-SE aligned wall adjacent to gateway PRN 31949, although given the rundown nature of this section of wall it may be just an area of collapse or possibly a more modern intrusion. A third possible entranceway is located on the NNW-SSE aligned wall.

PRN Number: 31918 NAME: Stone Structure/ Long Hut

Grid Ref: SH75976716

Period: Late medieval/ Early Post-medieval

Category: E

Small rectangular stone built structure orientated NE-SW and measuring approximately 8.5m x 4.7m externally. It is built with a mix of rough coursed angular shale slabs and smaller stones, forming walls approximately 0.7m wide. The SE and SW walls are the best preserved, with the former terraced into the slope and standing roughly 1m high. The other two walls survive only at foundation level, with the NE wall having a line of facing stones surviving. The interior is full of rubble. The building runs along the slope rather than perpendicular to it, but has no other characteristics of a medieval long hut. Its preservation suggests an Early Post-medieval, rather than a medieval date. It was probably the house associated with a small farmstead including the adjacent enclosure (PRN 31929) to the NE, and it is located directly in line with a possible entranceway (PRN 31919) into that enclosure. Although the enclosure is shown on the maps there is no hint of a building here on the 1788 map.

PRN Number: 31919 NAME: Entrance into Enclosure

Grid Ref: SH75986719

Period: Late medieval/ Early Post-medieval

Category: B

A 2m wide gap on the SW side of a small enclosure (PRN 31929), opposite the remains of a long hut (PRN 31948). The gap in the drystone wall is roughly made, with a pile of stones located against the inside of the wall on the SE side, which appear to be the result of the construction or widening of the entranceway. A track runs through the gap into the enclosure from the long hut in the adjacent field, none of which are shown on the old maps. This entranceway may be part of the original enclosure, therefore demonstrating a contemporary nature between the enclosure and the long hut. However, the pile of stones adjacent to the entranceway, suggest that either it was widened at some point or that the entranceway was created within an existing wall. The relatively small size of the stone pile would suggest they come from the widening of an existing entranceway.

PRN Number: 31925 NAME: Trackway

Grid Ref: SH75956702 (Centred)

Period: Early 20th Century

Category: C

Track running beside the Low Level Leat and presumably constructed in 1925 to service the leat. Reuses part of the Llyn Eigiau railway trackbed, and for most of its length follows the line of the Llyn Cowlyd tramway. Parts of the trackway are cut through natural stone outcrops which form high banks on either side of the track.

PRN Number: 31927 NAME: Field Boundary

Grid Ref: SH76146713 (Centred)

Period: Late medieval/ Early Post-medieval

Category: B

Late medieval/ Early Post-medieval denuded field wall with stones aligned roughly north-south. Some of the stones are large boulders up to 0.75m high and 0.75m wide, but no coursing survives. This wall is shown on the 1889 map as quite straight but looks slightly wandering on the ground. There is a gap roughly in the centre of the wall which may have been an entranceway. However, it is located adjacent to the pole for a modern overhead power line and it is possible that this gap was formed when the pole was erected. The wall is also shown on the 1788 map. The field to the east was called 'Cae Fynnon' and was arable in 1788. The field to the west was 'Erw' and was under pasture in 1788 despite the name, which suggests that it was originally enclosed for arable.

PRN Number: 31928 NAME: Former Drum House and Coed Sadwrn Railway Yard

Grid Ref: SH76366712

Period: Early 20th Century

Category: B

Corrugated iron shed on the Llyn Cowlyd tramway identified by Jones and Gwyn as a drum house, formed as part of the Coed Sadwrn yard. The shed is built on a platform cut into a rocky outcrop above a level area that formed the small railway yard. The shed and the yard are shown on the 1913 map and were part of the railway system for the construction of the Llyn Eigiau dam. The shed was the probable location of a winch in the 1950s. There was also another small shed in this area in the 1930s, but this is not on the 1913 map and seems to be a late and temporary addition.

PRN Number: 31929 NAME: Sub-oval Enclosure

Grid Ref: SH75976721 (Centred)

Period: Late medieval/ Early Post-medieval

Category: B

Sub-oval enclosure defined by low denuded walls, on average 0.3m high. Large naturally set boulders have been incorporated into the enclosure walls as well as a large natural stone outcrop on the SE side. There is a gap in the NE side that may be an entrance to match the one on the SW side. This route seems to have been used for access recently and the gap in the NE side is not as clear and convincing as that in the SW side, and may therefore have been made more recently so as to allow access through the enclosure. This enclosure is named as Erw Bach on the 1896 map, while on the 1788 map it is shown as a distinct enclosure but labelled as part of 'Erw', with 'Cae Bach' applied to a field much further west. The 'erw' name indicates a possible arable field, although on the 1788 map the area is shown as under pasture. Near the enclosures SW corner, it is joined to a

field boundary wall (PRN 31959) which runs away to the SW. The remains of a wall continue to the NE at the NE corner of the enclosure, and is most likely part of the same field boundary system as PRN 31959, although this area of wall is not shown on any of the old maps. A rectangular enclosure was also visible adjoining the outside of the enclosure along its NW edge, and running along the edge of a scarp. This enclosure was also not shown on the old maps and was not surveyed as the woodland surrounding it was too dense. The presence of these walls suggests a more developed field system in the area than shown on any of the maps.

PRN Number: 31931 NAME: Tramway to Cwm Eigiau

Grid Ref: SH76056706 (Centred)

Period: 19th Century

Category: A

Slate quarry tramway built to service two "small and unpromising" quarries exploited between 1825 and 1873. The tramway was constructed in the early 1860s and was in operation by 1864. The tramway was reused in 1907 to construct a railway for building the Llyn Eigiau dam. Work on the dam was completed in November 1910, and in 1911 all plant was removed apart from the track on the incline through the woods. It was again reused in 1917 as the start of the tramway to build Cowlyd dam.

PRN Number: 31933 NAME: Leat and Related Drains

Grid Ref: SH76086691 (Centred)

Period: Early 20th Century

Category: A

Upper leat built as part of the water catchment system for the hydro-power station built for the aluminium works. The leat was constructed between 1907 and 1911 and is shown on the 1913 map. The upper leats ran from the Afon Ddu and the Afon Porth-lwyd to a pipe that took the water down to the power station. There are two drains running down from the Afon Porth-lwyd branch of the leat, allowing overflow water to flow back into the river.

PRN Number: 31934 NAME: Incline and Water Pipe

Grid Ref: SH76476704

Period: Early 20th Century

Category: A

Part of the water catchment system for the hydro-power station built for the aluminium works between 1907 and 1911. The incline is used to take the water in a pipe from the upper leat to the power station. It runs downhill for approximately 185m from a height of 269.66m OD to 232.53m OD. The incline is shown on 1913 map, although it does not indicate the pipe. The pipe was made redundant when the pipeline from Llyn Cowlyd was constructed in 1936-7, but is still used as part of the surge protection for the Coedyd system.

PRN Number: 31943 NAME: Tumbled Field Wall

Grid Ref: SH75776692 (Centred)

Period: Early 19th Century

Category: C

Low tumbled wall running SW-NW downhill. SE end is quite well defined, with a possible structure or platform (PRN 36387) located adjacent on its SW side. The wall peters out to the NW where it is possibly truncated by a modern trackway. There are two gaps within the wall which may indicate two separate entrances. Not completely straight, wanders slightly, and in parts is only visible as a stony scarp. It measures approximately 1m wide and up to 0.6m (five courses) high in its best preserved sections. This field was under arable in the late 18th century and this boundary is not shown on the 1788 map. It therefore seems to be a sub-division added in the 19th century as it is shown on the 1889 map.

PRN Number: 31944 NAME: Possible Field Boundary

Grid Ref: SH75746688 (Centred)

Period: Medieval/ Prehistoric

Category: E

Fairly gradual and indistinct scarp running NE-SW and joining up with field boundary PRN 31913 at its SW end. Peters out to the NE where it may turn upslope to the SE, although this is unclear. Measures between 2m and 5m wide, and up to 1m high. Some rocks are visible and it is possible that this is a natural feature of the bedrock, but its relation to the slope and the field boundary PRN 31913 make it appear like a field boundary.

PRN Number: 31948 NAME: Small Structure by Track to Coed Sadwrn

Grid Ref: SH75926706

Period: 19th Century

Category: E

A small rectangular structure measuring approximately 6m by 5m, with a possible entrance on its SE side, although its walls are very badly preserved in this area. The walls survive to a maximum height of 0.5m. It abuts the main field boundary wall (PRN 31916). A couple of trees have heavily disturbed the structure. Not shown on any of the old maps, but its character is similar to the boundary wall and appears to be roughly contemporary. Most likely the structure was too small and/ or insignificant to be shown on the maps.

PRN Number: 31949 NAME: Gateway on Track to Coed Sadwrn
Grid Ref: SH75916707
Period: 19th Century
Category: C

Gateway across the track to Coed Sadwrn (PRN 31893), constructed from two large unworked stones which form the gate posts. The tallest gatepost is 1.9m high and there are holes for hanging a gate on the western side of the stones. The 1889 map shows the track (PRN 31893) crossing the boundary wall (PRN 31916) here, but does not mark the gate as such.

PRN Number: 31950 NAME: Field Boundary
Grid Ref: SH76026714 (Centred)
Period: Late medieval/ Early Post-medieval
Category: B

Natural scarp running SE-NW, revetted and regularised as a field boundary. The scarp is up to 4m high at its NW end, but much of this is natural. Towards the SE end the scarp disappears and the boundary is replaced by a simple tumbled wall. The top of the scarp at its highest is revetted with stone facing, now much tumbled. There are two possible entranceways located in the wall, one roughly central and one to the SE. These possible entranceways are used as farmers tracks today and it is impossible to tell if they represent original entranceways or not. The 1896 map suggests that there were small enclosures on or against the rocky outcrop at the NW end of the boundary where it joins up with Enclosure PRN 31929. The map also names the field to the west of this boundary as 'Erw Bellaf' and that to the east as 'Erw Ty'. The 1788 map calls both sides of the boundary 'Erw', indicating arable fields.

PRN Number: 31951 NAME: Original Access Track to Pipe
Grid Ref: SH76086721 (Centred)
Period: Early 20th Century
Category: D

The SW end of a NE-SW aligned trackway, which curves to the north and then joins the line of the pipe. At this point the trackway passes through a gap in the rock outcrops. The gap may have been a natural one that was improved, although a lot of stone clearance, if not actual quarrying of rock must have been done. No obvious traces of quarrying on rock face but this is heavily overgrown with lichen and moss. The track currently leads to a gate in a modern fence but extent of grass and moss growth and the lack of obvious tool marks on the rock face make it appear to be of some antiquity. However it is not shown on the old maps and does lead to the pipe. In places it can be seen that the surface of the track is covered with hardcore. There is a short section of track running from the main track to the west and curving to the top of a small rock outcrop overlooking the pipe. The relationship to the pipe, the presence of hardcore, and the absence from the old maps, suggests that this track was used for access while building the pipe and dates from the 1920s.

PRN Number: 31952 NAME: Former Locomotive Shed
Grid Ref: SH76406706
Period: Early 20th Century
Category: B

Rectangular corrugated iron shed identified by Jones and Gwyn as a locomotive shed on siding on the Llyn Cowlyd tramway.

PRN Number: 31954 NAME: Field Boundary
Grid Ref: SH75816696 (Centred)
Period: Prehistoric?
Category: E

A rough line of stones running NW-SE uphill, including one stone set on edge. The alignment continues for approximately 30m, with a large natural boulder forming part of it. Some of the stones in the line look possibly laid and others look natural. There is a possible entranceway at its NW end prior to its truncation by the modern pipe. There is also a rough line of stones crossing the middle of this wall running NE-SW, which may represent a further wall or a structure. However, the field is very stony and this could be a chance alignment. Evaluation showed that this was a field boundary, although heavily denuded. The wall is on the same alignment as other field boundaries in the area, but is not shown on any of the old maps. Its condition may suggest that it is older than the other boundaries and could be prehistoric. This field may have suffered severely from erosion as it is shown on the 1788 map as being under arable, which currently seems unlikely with the quantity of stones. However, if it was of much better quality in the past its use as a prehistoric field seems more likely.

PRN Number: 31955 NAME: Natural Boulders
Grid Ref: SH75816699
Period: Unknown
Category: E

A group of stones around an outcropping of bedrock. Evaluation showed that this was just a natural collection of stones.

PRN Number: 31956 NAME: Possible Field Boundary

Grid Ref: SH75776694 (Centred)

Period: Prehistoric?

Category: E

A 7m long scarp running SW-NE along the slope, with a rock projecting from its SW end. The scarp is up to 0.7m high and 1.5m wide. Excavation of the NE end where it peters out, failed to show whether this was a natural feature or the remains of an early field boundary.

PRN Number: 31957 NAME: Field Boundary

Grid Ref: SH75846699 (Centred)

Period: 18th Century or earlier

Category: E

Denuded field wall running along the side of a tackway. Generally largely collapsed and consisting of one remaining course. However, one portion of the wall survives up to eight courses (1m) high. It formed the eastern boundary to a field called 'Cae Bach' on the 1788 map. This is shown as being under arable and belonging to Coed Sadwrn rather than Coedty Mawr, but seems to be a later enclosure than the fields clustered around Coed Sadwrn.

PRN Number: 31958 NAME: Trackway

Grid Ref: SH75896713 (Centred)

Period: 20th Century

Category: C

A fairly modern trackway, approximately 2m wide, running ENE-WSW from the modern road to the entranceway within field boundary PRN 31959. A pathway is shown on the 1889 map running through this entranceway, but the trackway is on a different alignment and was likely created to allow access to the pipe in the 20th century. No evidence of the original pathway survives.

PRN Number: 31959 NAME: Field Boundary

Grid Ref: SH75926716 (Centred)

Period: Late medieval/ Early Post-medieval

Category: B

Late medieval/ Early Post-medieval field boundary wall partially running along the top of a natural escarpment, aligned NE-SW. The wall is in a fairly ruinous state with a maximum of four courses surviving. A revetment of rounded boulders, approximately 1m high, is located within the escarpment area. A line of hazel and ash grows along the wall indicating a former hedge. Many of the hazel are old coppices and some trunks are bent showing where they were once laid. An entranceway is visible where a 20th century track runs (PRN 31958) through it, although the entranceway is most likely earlier. The wall joins up with enclosure PRN 31929 at its NE end and is most likely contemporary with it.

PRN Number: 31962 NAME: Access Track

Grid Ref: SH76246722 (Centred)

Period: Early 20th Century

Category: D

One of several tracks that were probably built for the construction of the pipeline and are still used for access for maintenance.

PRN Number: 31965 NAME: Drainage Channels

Grid Ref: SH76326726

Period: Later 20th Century

Category: D

Later 20th century neatly revetted drainage channels running from the base of a boulder filled ravine and dividing into two channels. The channels are constructed from mortared field stone, with the base lined with stone. The channels are part of the overflow drain from the upper leat. Nearby is a reinforced concrete pipe running down the slope to the main pipe. This used to be attached to the main pipe as a surge pipe, releasing water pressure in case of flooding. This would have carried excess water up to the Low Level Leat.

PRN Number: 31969 NAME: Small Farmstead

Grid Ref: SH76446723 (Centred)

Period: Roman? And/ or Late medieval/ Early Post-medieval

Category: E

One definite and one probable building platform lay between a tumbled wall and the base of a low rocky escarpment. Some of the wall survives to a height of 0.5m but a large area of possible collapse is overgrown in the middle of the wall. There is a possible entranceway in the wall at its SE end where it meets the field boundary

wall, aligned north-south. However, this area is heavily overgrown and it is impossible to be certain if this represents an original entranceway or not. The tumbled wall continues along to the west where it joins with a stone outcrop to form a natural boundary where it continues westward. The best defined platform is roughly rectangular in shape, measures about 10m x 3m, and lies parallel to the slope. To its east is a less well defined platform on the same alignment, and measuring about 5m x 2m. Given its smaller size it may represent a yard rather than for a building. To the north is a sub-circular enclosure c.6m in diameter, located on the edge of a sharp slope. There may have been an entrance in the SW side of the enclosure, but this area has been heavily disturbed by tree roots and it is impossible to be certain. A modern track giving access to the pipe cuts through this area and on the east side of the track is a low boundary wall with a roundhouse adjacent to it (PRN 36094). This boundary wall would have originally joined up with the walls to the west, which would have in turn joined up with boundary wall PRN 31971 to the south, but these relationships have been destroyed by the access track. The roundhouse has been tentatively dated to the Roman period and it is possible that the whole of the farmstead dates to that period as well, although the boundary walls may be of a later date.

PRN Number: 31971 NAME: Field Boundary

Grid Ref: SH76496718 (Centred)

Period: Late medieval/ Early Post-medieval

Category: B

Late medieval/ Early Post-medieval field wall that becomes a terrace as it descends the slope. Most of its corner has been cut away by the modern trackway, but it continues on the other side of the incline. It generally appears as a low tumbled wall but becomes a terrace, 1m high, near the corner. Large oaks and coppiced hazel grow along the boundary. It would have originally joined up with the boundary wall of the farmstead (PRN 31969) to the north. This is shown on the 1788 map as the NE boundary of 'Bryn Kelin'.

PRN Number: 31972 NAME: Possible Field Terrace

Grid Ref: SH76446709 (Centred)

Period: Late medieval/ Early Post-medieval

Category: B

There is a small scarp about 7m wide running roughly east-west within the planning boundary and continuing to the east. It appears to turn slightly to the south at its western end, although it also peters out at this point and it is difficult to be certain. It may represent a terrace which has been enhanced and regularised by agriculture.

PRN Number: 31974 NAME: Stream Channel

Grid Ref: SH75726722

Period: 20th Century

Category: D

Channel for stream passing under leat, roughly lined with boulders where the stream that has been channelled under the leat. Although this looks ancient it was presumably constructed when the leat was built, although some of the stream may have been canalised previously.

PRN Number: 32146 NAME: Possible Clearance Cairn

Grid Ref: SH75806723

Period: Unknown

Category: E

A small, roughly circular mound measuring approximately 3m in diameter and with a height of 0.3m. Some stones visible although mostly grassed over. Located on a slight slope. May represent a clearance cairn.

PRN Number: 32148 NAME: Gallt y Rhiw Stone (Rock Cannon)

Grid Ref: SH76716650

Period: Post-medieval

Category: E

A small rock cannon measuring 1m by 0.8m, located at the edge of a modern trackway. Mostly mossed over, containing numerous drilled holes. This stone has been previously identified by the Royal Commission on Ancient and Historical Monuments in Wales (NPRN 276535), but was not identified by them as a rock cannon. However, the number of holes and the location of the stone strongly support this interpretation.

PRN Number: 32151 NAME: Possible Building Platform

Grid Ref: SH76676631 (Centred)

Period: Medieval?

Category: A

A roughly rectangular set of loose stones measuring 3m x 1.8m x 0.8m high, located on a flat platform, terraced into the hillside. The platform itself measures approximately 10m by 8m. The stones and platform are aligned roughly NW-SE and may represent the remains of a building. Not shown on any of the old maps, which may suggest an early date, although it may be that the feature was too small and/ or insignificant to be shown on the maps. The terrace measures approximately 20m by 11m, and slopes down by a maximum of 3m from NW-SE

PRN Number: 32152 NAME: Ardda Enclosure II
Grid Ref: SH76596619 (Centred)
Period: Post-medieval
Category: C

Small enclosure in ruinous state measuring approximately 15m by 12m. The walls survive with an average of three courses (1m) high, and a width of 1m. A large amount of stone rubble is located around the walls and within the centre of the enclosure. A possible stone step or entranceway is visible leading down into the enclosure from the NW at its NE corner. The area is heavily overgrown and it is likely that the remains of more walls exist underneath. The enclosure is attached to a field boundary wall which has been truncated by the modern trackway, but which would have originally joined up with PRN 36383 and PRN 36385 to the NNE and SSW respectively. To the SE the enclosure has been truncated by the leat. The enclosure is shown on the 1st Edition OS map.

PRN Number: 32154 NAME: Tai-isaf-Ardda Enclosure
Grid Ref: SH76466609 (Centred)
Period: Medieval?
Category: B

An enclosure in a fairly ruinous state, covering an area measuring approximately 44m by 38m. The walls are mostly grassed over with only small sections, three to five courses (0.5m) high, still visible. A number of terraced platforms are located within the enclosure, with one containing a stone and cement trough. A large oval hollow, measuring 14m by 8m, and with a maximum depth of 1.8m, is located to the SW of the enclosure and may represent a pond. The NW wall, aligned NE-SW, continues to the NE where it joins up with the boundary walls associated with the Ardda cottage and enclosure PRN12957. A number of entranceways are visible within the enclosure. However, the ruinous state and overgrown nature of the area, along with the modern use of some of these entranceways, means it is impossible to be certain which ones are original, modern, or represent collapsed areas of wall. The whole enclosure is set within a NE-SW aligned terrace measuring between 1.2m and 2.6m deep. The enclosure is shown on the 1st Edition OS Map, except for the wall at the NE end which was not shown until the 3rd Edition in 1913, suggesting this was a later addition.

PRN Number: 36094 NAME: Possible Roundhouse
Grid Ref: SH76446723 (Centred)
Period: Roman?
Category: E

A circular roundhouse and boundary wall which was excavated by GAT in 2012. A track giving access to the pipe cuts through this area and on the west side of the track is PRN 31969. The roundhouse is approximately 8m in diameter (externally), continuing underneath the trackway. The boundary wall is a later addition which was built on top of the roundhouse, most likely in the Late medieval/ Early Post-medieval period. The wall runs north-south before turning to the NE at its northern end and would have originally joined the boundary wall of PRN 31969 to the west, but the modern access track has truncated it here, although remains of the wall may exist underneath the trackway. To the NE the boundary wall incorporates a large natural stone outcrop before it is truncated by the modern water pipe. Dating for the roundhouse comes from a piece of 2nd to 4th century Roman pottery located underneath the floor of the roundhouse.

PRN Number: 36377 NAME: Possible Cairn
Grid Ref: SH76446713
Period: Unknown
Category: E

A roughly circular low mound, measuring approximately 5.5m in diameter and with a height of 0.2m. Some stones are visible throughout, although mostly grassed over. May represent a clearance cairn.

PRN Number: 36379 NAME: Field Boundary
Grid Ref: SH76686645 (Centred)
Period: Medieval/ Post-medieval
Category: C

Drystone wall in a very ruinous state, aligned roughly east-west and truncated in two places by the modern tracks running ENE-WSW. No evidence that the modern tracks incorporated an original entranceway. Survives up to two courses in height (0.75m), with a width of 1.2m. Mostly obscured by shrubbery or grassed over. Part of a system of field boundaries in the area and visible on the OS 1st edition map of 1889.

PRN Number: 36380 NAME: Possible Field Boundary
Grid Ref: SH76676640 (Centred)
Period: Medieval?
Category: D

A faint scarp aligned approximately east-west and running downhill towards a spring. It measures on average 1m wide and 0.2m high, although it measures approximately 1m high at its western end. Truncated by a modern trackway. Not visible on any map and may represent a natural scarp rather than a field boundary.

PRN Number: 36381 NAME: Possible Field Boundary

Grid Ref: SH76686636 (Centred)

Period: Medieval?

Category: D

A slightly curving scarp, aligned approximately WNW-ESE and measuring between 1m and 2m wide. Very faint in places, between 0.1m and 0.7m (WNW end) high, with the occasional stone visible along its line. The scarp slopes down to the south at the western end, but to the north at the eastern end after the modern trackway truncates it. To the ESE it turns to the south where it runs into a natural, high scarp. Not visible on any map. May represent an old field boundary or a natural scarp.

PRN Number: 36382 NAME: Field Boundary

Grid Ref: SH76656627 (Centred)

Period: Medieval/ Post-medieval

Category: C

Grassed over drystone field boundaries, visible now as prominent stony scarps. Truncated by a modern trackway to the east and by the leat to the west. Approximately 0.5m high and up to 2m wide. They are aligned east-west and north-south, with the N-S section truncated by a modern farmers track 3m wide. No evidence to suggest if this entranceway was original or not. A large concentration of stone rubble is located nearby which represents the collapsed and collected remains of these walls. Visible on the 1st Edition OS map, although the western most section is not shown, possibly suggesting that this was a later addition. Part of a series of field boundaries in the area, and the same as PRN 36383 located directly to the west, on the other side of the modern trackway.

PRN Number: 36383 NAME: Field Boundary

Grid Ref: SH76616627 (Centred)

Period: Medieval/ Post-medieval

Category: C

Grassed over drystone field boundaries, visible now as prominent stony scarps. Two sections of wall, three courses (1.1m) high are still visible, although most of the walls are not. Truncated by modern trackways to the north, south, and east., with no evidence to show if these tracks used existing entranceways or not. Approximately 0.5m high and up to 2m wide. Aligned roughly NNE-SSW, with a line of trees at the SW end. An E-W aligned section joins up with PRN 36382 to the east of the modern trackway. Would have originally joined up with the boundary walls associated with the enclosure to the SW (PRN 32152). Visible on the 1st Edition OS map and part of a series of field boundaries in the area.

PRN Number: 36384 NAME: Terraces

Grid Ref: SH76566619 (Centred)

Period: Medieval/ Post-medieval

Category: B

A series of scarps forming flat terraces in the hillside associated with a cottage and its enclosures (PRN 12957). The scarps are approximately 3.5m high and are located running to the NE from the cottage to the nearby field boundaries (PRN 36383), as well as below the cottage to the SE. They are aligned approximately NE-SW and north-south. The modern trackway to the SE partly truncates the terraces and it is likely that the enclosure PRN 32152 located to the east would have originally been positioned on one of these terraces. The majority of these scarps are shown on the 1st edition OS map.

PRN Number: 36385 NAME: Field Boundary

Grid Ref: SH76496608 (Centred)

Period: Post-medieval

Category: B

Drystone wall in good condition. Aligned roughly NE-SW and surviving up to five courses (1m) high, with a width of 1m. Located opposite enclosure PRN 32154 and most likely part of the field boundary system associated with this enclosure. Shown on the 1st Edition OS map continuing to the NE, and joining up with PRN 32152. Buttresses have been built on its SE side, most likely to prevent collapse into the leat which runs alongside it. Given its good condition, and the presence of the buttresses, it is most likely that this section of wall has been rebuilt at some point. A wire fence runs along its length, indicating a continued use of this boundary line.

PRN Number: 36386 NAME: Concrete Platform

Grid Ref: SH76096710 (Centred)

Period: 20th Century

Category: D

A concrete pad measuring 2.2m by 3.7m, with a height of 1.2m. Two smaller parallel pads, containing iron rods, and measuring 1.75m by 0.35m are located directly to the east. Mostly overgrown. These are most likely part of a siding to the Llyn Eigiau railway.

PRN Number: 36387

NAME: Possible Structure

Grid Ref: SH75756692 (Centred)

Period: 19th Century

Category: C

A roughly rectangular feature consisting of low, grassed over ridges adjacent to field boundary PRN 31943, and most likely contemporary with it. It measures approximately 9.5m by 4m and is aligned NW-SW. Most likely represents a small structure, although the purpose of the structure is unknown. Not visible on any of the maps, suggesting it was too small and/ or insignificant to be shown on the maps.

10 FIGURES AND PLATES

FIGURES:

FIGURE 01: SITE LOCATION

FIGURE 02: TOPOGRAPHIC SURVEY (WESTERN PART)

FIGURE 03: TOPOGRAPHIC SURVEY (CENTRAL PART)

FIGURE 04: TOPOGRAPHIC SURVEY (EASTERN PART)

FIGURE 05: TOPOGRAPHIC SURVEY: ARDDA TOWNSHIP AREA

FIGURE 06: PRN 31969, ROUNDHOUSE SITE

FIGURE 07: PRN 32154: ARDDA TOWNSHIP

PLATES:

Plate 01: PRN 16321 - Marble Arch Pipe Junction, View From SW

Plate 02: PRN 16322 - Quarry Incline, View from WSW

Plate 03: PRN 31890 and 31907 - Llyn Coedty Valve House and Pipe, View from SW

Plate 04: PRN 31893 - Coed Sadwrn Track, View From NW

Plate 05: PRN 31894 - Llyn Coedty Leat, View From NE

Plate 06: PRN 31897 - Modern Bridge, View From SW

Plate 07: PRN 31898 - Field Boundary, View From West

Plate 08: PRN 31900 - Field Boundary, View From SW

Plate 09: PRN 31902 - Field Boundary, View From NW

Plate 10: PRN 31905 - Field Boundary, View From SW

Plate 11: PRN 31908 - Field Boundary, View From SE

Plate 12: PRN 31909 - Field Boundary, View From SE

Plate 13: PRN 31910 - Field Boundary, View from N

Plate 14: PRN 31913 - Field Boundary, View From NW

Plate 15: PRN 31916 - Field Boundary, View From NW

Plate 16: PRN 31918 - Remains of Long Hut, View From NW

Plate 17: PRN 31919 - Entrance into Enclosure PRN 31929, View From NE

Plate 18: PRN 31925 - Trackway, View From SE

Plate 19: PRN 31927 - Field Boundary, View From SSE

Plate 20: PRN 31929 - Sub-oval Enclosure, View From North

Plate 21: PRN 31929 - Sub-oval Enclosure, View From NW
 Plate 22: PRN 31931 - Tramway to Cwm Eigiau, View From NE
 Plate 23: PRN 31933 - Drain From Leat, View From NW
 Plate 24: PRN 31934 - Incline and Water Pipe, View From SW
 Plate 25: PRN 31943 - Field Boundary, View From SE
 Plate 26: PRN 31944 - Possible Field Boundary, View From North
 Plate 27: PRN 31948 - Small Structure by Track to Coed Sadwrn, View From North
 Plate 28: PRN 31949 - Gateway on Track to Coed Sadwrn, View From SW
 Plate 29: PRN 31950 - Field Boundary, View From SE
 Plate 30: PRN 31951 - Trackway, View From North
 Plate 31: PRN 31952 - Former Locomotive Shed, View From NNW
 Plate 32: PRN 31954 - Field Boundary, View From SE
 Plate 33: PRN 31956 - Possible Field Boundary, View From NE
 Plate 34: PRN 31957 - Field Boundary, View From WNW
 Plate 35: PRN 31958 - Trackway, View From East
 Plate 36: PRN 31959 - Field Boundary, View From NW
 Plate 37: PRN 31962 - Access Track, View From South
 Plate 38: PRN 31965 - Drainage Channels, View From South
 Plate 39: PRN 31969 - Small Farmstead, View From NE
 Plate 40: PRN 31969 - Small Farmstead, View From SE
 Plate 41: PRN 31969 - Small Farmstead, Possible Roundhouse, View From NE
 Plate 42: PRN 31971 - Field Boundary, View From SE
 Plate 43: PRN 31972 - Possible Field Boundary, View From North
 Plate 44: PRN 31974 - Channel for Stream Passing Under Leat, View From SE
 Plate 45: PRN 32146 - Possible Cairn, View From SE
 Plate 46: PRN 32148 - Gallt y Rhiw Stone (Rock Cannon), View From East
 Plate 47: PRN 32151 - Possible Building Platform, View From SSW
 Plate 48: PRN 32152 - Ardda Enclosure II, View From SE
 Plate 49: PRN 32154 - Tai-isaf-Ardda Enclosure, View From NW
 Plate 50: PRN 32154 - Tai-isaf-Ardda Enclosure, View From SE
 Plate 51: PRN 36094 - Possible Roundhouse, Excavated 2012, View From NW
 Plate 52: PRN 36377 - Possible Cairn, View From NE
 Plate 53: PRN 36379 - Field Boundary, View From East
 Plate 54: PRN 36380 - Possible Field Boundary, View From West

Plate 55: PRN 36381 - Possible Field Boundary, View From West

Plate 56: PRN 36382 - Field Boundary, View From WNW

Plate 57: PRN 36383 - Field Boundary, View From South

Plate 58: PRN 36384 - Terraces, View From SW

Plate 59: PRN 36385 - Field Boundary, View From West

Plate 60: PRN 36386 - Concrete Platform, View From NW

Plate 61: PRN 36387 - Possible Structure, View From NE

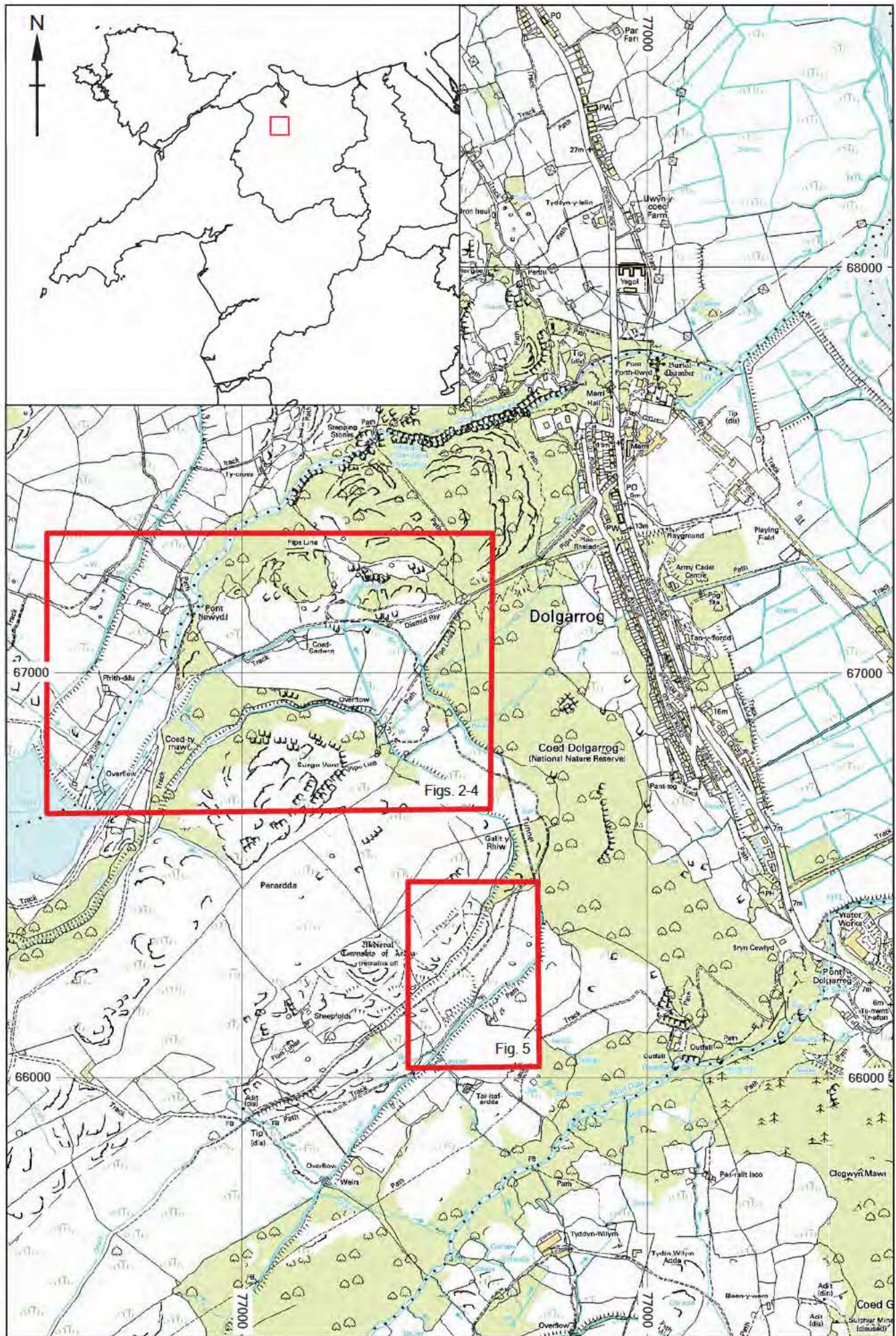


Fig. 1: Site Location

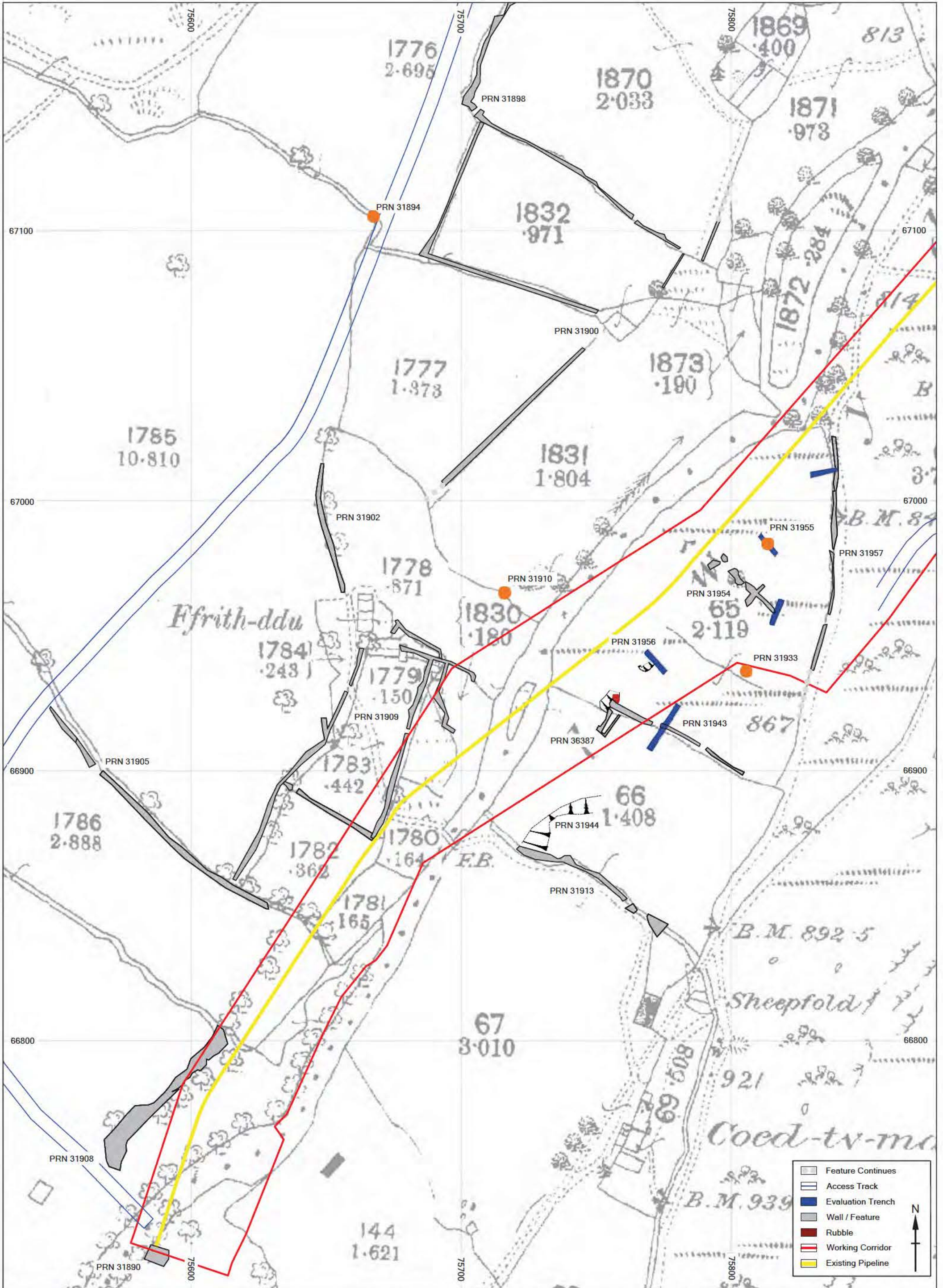


Fig. 2: Topographic Survey: Western Part. Overlain on the OS 1st Edition 25 Inch Map (1889)

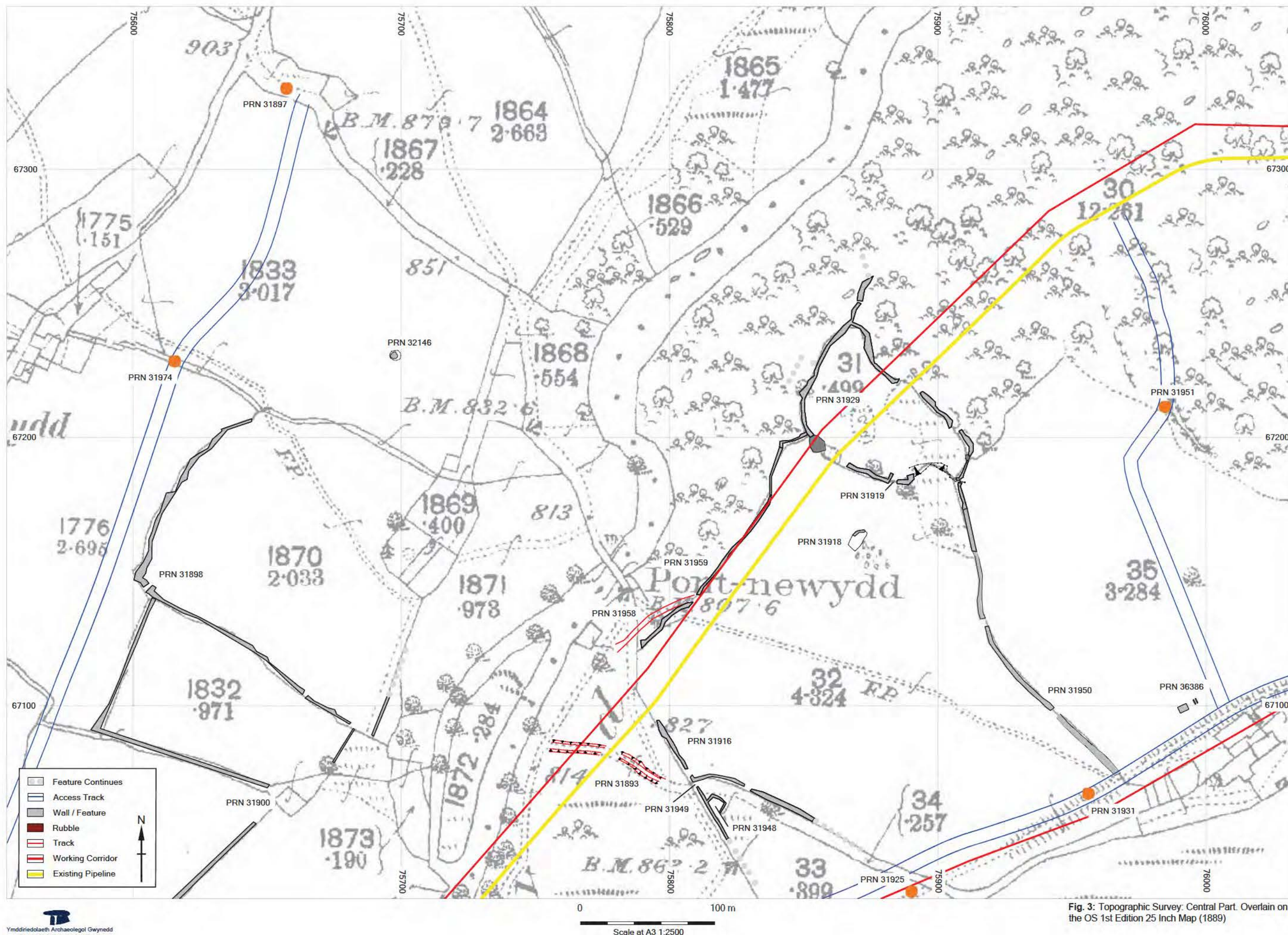


Fig. 3: Topographic Survey: Central Part. Overlain on the OS 1st Edition 25 Inch Map (1889)

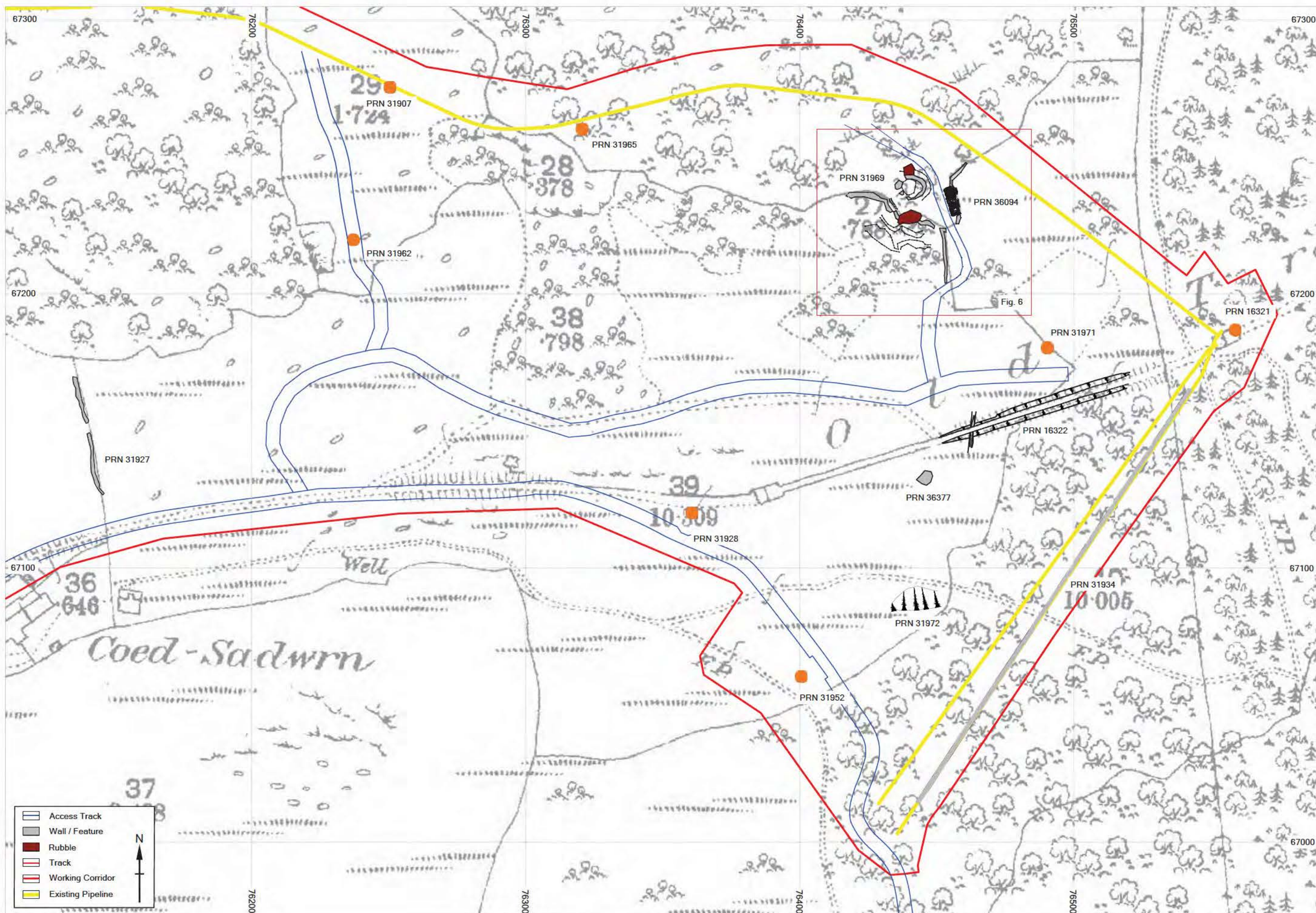


Fig. 4: Topographic Survey: Eastern Part. Overlain on the OS 1st Edition 25 Inch Map (1889)

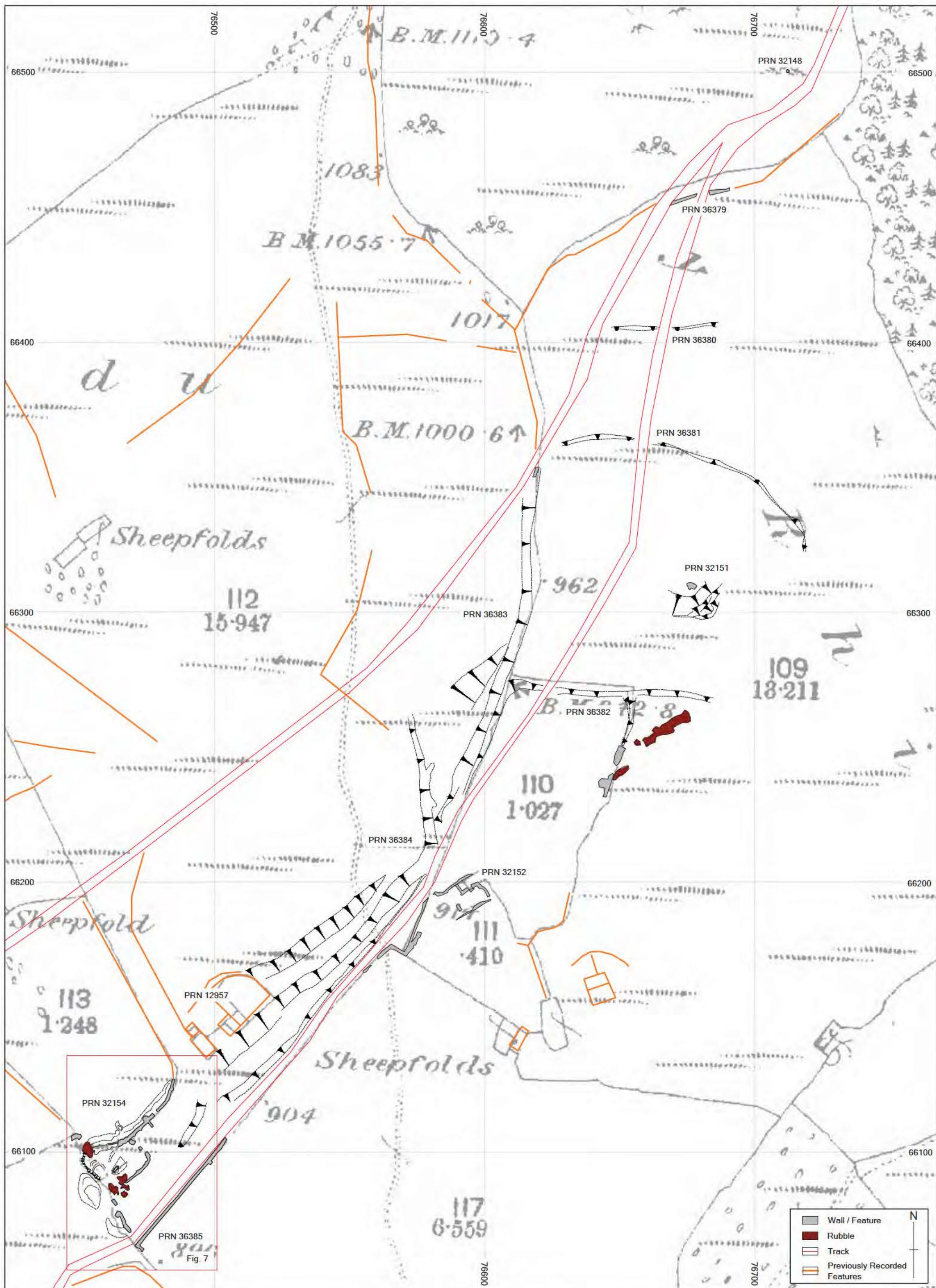


Fig. 5: Topographic Survey: Ardda Township Area. Overlain on the OS 1st Edition 25 Inch Map (1889)

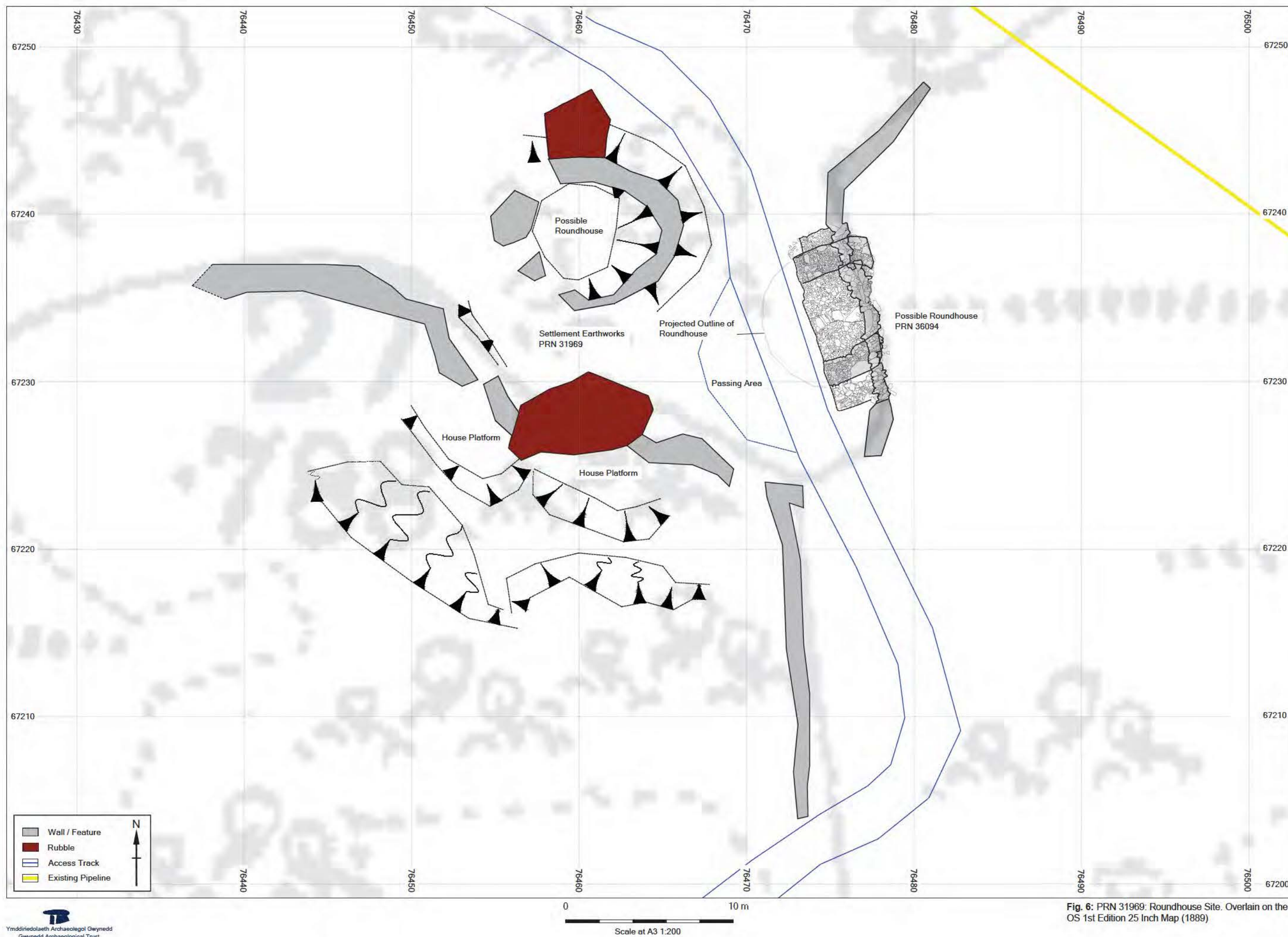


Fig. 6: PRN 31969: Roundhouse Site. Overlain on the OS 1st Edition 25 Inch Map (1889)

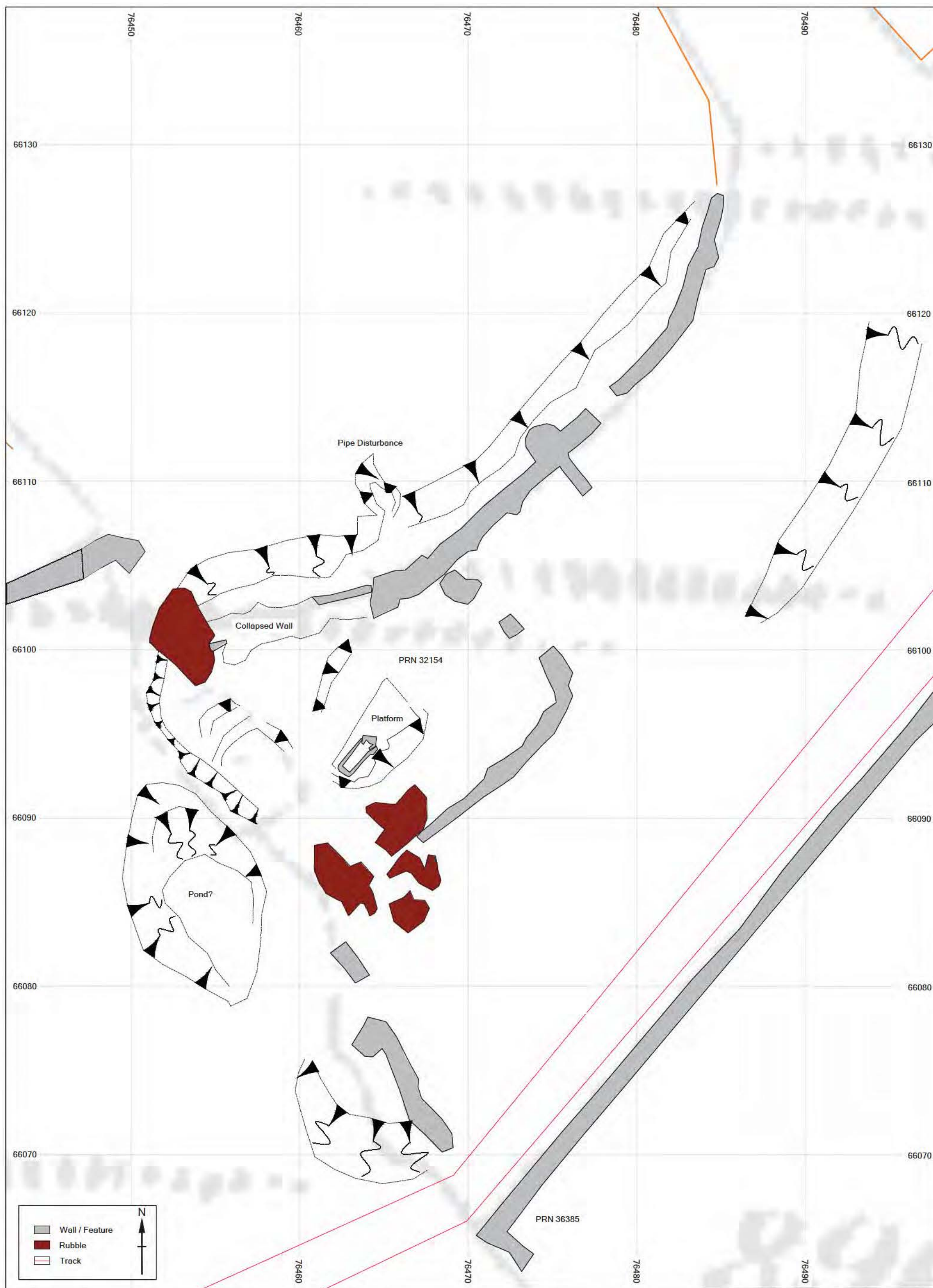


Fig. 7: PRN 32154: Ardda Township. Overlain on the OS 1st Edition 25 Inch Map (1889)



Plate 01: PRN 16321 - Marble Arch Pipe Junction, View From SW



Plate 03: PRN 31890 and 31907 - Llyn Coedty Valve House and Pipe, View From SW



Plate 02: PRN 16322 - Quarry Incline, View from WSW



Plate 04: PRN 31893 - Coed Sadwrn Track, View From NW



Plate 05: PRN 31894 - Llyn Coedty Leat, View From NE



Plate 06: PRN 31897 - Modern Bridge, View From SW



Plate 07: PRN 31898 - Field Boundary, View From West



Plate 08: PRN 31900 - Field Boundary, View From SW



Plate 10: PRN 31905 - Field Boundary, View From SW



Plate 09: PRN 31902 - Field Boundary, View From NW



Plate 11: PRN 31908 - Field Boundary, View From SE



Plate 12: PRN 31909 - Field Boundary, View From SE



Plate 14: PRN 31913 - Field Boundary, View From NW



Plate 13: PRN 31910 - Field Boundary, View from N



Plate 15: PRN 31916 - Field Boundary, View From NW



Plate 16: PRN 31918 - Remains of Long Hut, View From NW



Plate 17: PRN 31919 - Entrance into Enclosure PRN 31929, View From NE



Plate 18: PRN 31925 - Trackway, View From SE



Plate 20: PRN 31929 - Sub-oval Enclosure, View From North



Plate 19: PRN 31927 - Field Boundary, View From SSE



Plate 21: PRN 31929 - Sub-oval Enclosure, View From NW



Plate 22: PRN 31931 - Tramway to Cwm Eigiau, View From NE



Plate 23: PRN 31933 - Drain From Leat, View From NW



Plate 24: PRN 31934 - Incline and Water Pipe, View From SW



Plate 25: PRN 31943 - Field Boundary, View From SE



Plate 27: PRN 31948 - Small Structure by Track to Coed Sadwrn, View From North



Plate 26: PRN 31944 - Possible Field Boundary, View From North



Plate 28: PRN 31949 - Gateway on Track to Coed Sadwrn, View From SW



Plate 29: PRN 31950 - Field Boundary, View From SE



Plate 30: PRN 31951 - Trackway, View From North



Plate 31: PRN 31952 - Former Locomotive Shed, View From NNW



Plate 32: PRN 31954 - Field Boundary, View From SE



Plate 34: PRN 31957 - Field Boundary, View From WNW



Plate 33: PRN 31956 - Possible Field Boundary, View From NE



Plate 35: PRN 31958 - Trackway, View From East



Plate 36: PRN 31959 - Field Boundary, View From NW



Plate 38: PRN 31965 - Drainage Channels, View From South



Plate 37: PRN 31962 - Access Track, View From South



Plate 39: PRN 31969 - Small Farmstead, View From NE



Plate 40: PRN 31969 - Small Farmstead, View From SE



Plate 41: PRN 31969 - Small Farmstead, Possible Roundhouse, View From NE



Plate 42: PRN 31971 - Field Boundary, View From SE



Plate 43: PRN 31972 - Possible Field Boundary, View From North



Plate 45: PRN 32146 - Possible Cairn, View From SE



Plate 44: PRN 31974 - Channel for Stream Passing Under Leat, View From SE



Plate 46: PRN 32148 - Gallt y Rhiw Stone (Rock Cannon), View From East



Plate 47: PRN 32151 - Possible Building Platform, View From SSW



Plate 49: PRN 32154 - Tai-isaf-Ardda Enclosure, View From NW



Plate 48: PRN 32152 - Ardda Enclosure II, View From SE



Plate 50: PRN 32154 - Tai-isaf-Ardda Enclosure, View From SE



Plate 51: PRN 36094 - Possible Roundhouse, Excavated 2012, View From NW



Plate 53: PRN 36379 - Field Boundary, View From East



Plate 52: PRN 36377 - Possible Cairn, View From NE



Plate 54: PRN 36380 - Possible Field Boundary, View From West



Plate 55: PRN 36381 - Possible Field Boundary, View From West



Plate 57: PRN 36383 - Field Boundary, View From South



Plate 56: PRN 36382 - Field Boundary, View From WNW



Plate 58: PRN 36384 - Terraces, View From SW



Plate 59: PRN 36385 - Field Boundary, View From West



Plate 61: PRN 36387 - Possible Structure, View From NE



Plate 60: PRN 36386 - Concrete Platform, View From NW



Gwynedd Archaeological Trust
Ymddiriedolaeth Archaeolegol Gwynedd

Craig Beuno, Ffordd y Garth, Bangor, Gwynedd. LL57 2RT
Ffon: 01248 352535. Ffacs: 01248 370925. email: gat@heneb.co.uk

