

Brithdir Mawr Reservoir Discontinuance, Flintshire

Archaeological Assessment



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Front cover image: View over reservoir from the North (archive reference: G2596_001)

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CONTENTS

CRYNODEB ANNHECHNEGOL.....	3
NON-TECHNICAL SUMMARY.....	3
1 INTRODUCTION.....	4
2 METHODOLOGY.....	5
2.1 Assessment (Desktop Study).....	5
2.2 Walkover Survey.....	6
2.3 Gazetteer.....	7
3 RESULTS.....	8
3.1 Location and Geological Summary.....	8
3.2 Statutory and Non-Statutory Designations.....	9
3.3 Environmental Remains and Soil Morphology.....	10
3.4 Historical and Archaeological Background.....	11
3.4.1 Introduction.....	11
3.4.2 Prehistoric and Roman Background.....	11
3.4.3 Medieval Background.....	11
3.4.4 Post Medieval and Modern.....	12
3.5 Cartographic Evidence.....	13
3.6 Artefact Potential.....	15
3.7 Aerial Photographs and Lidar.....	16
3.8 The Walkover Survey.....	17
3.9 Gazetteer of Features.....	18
4 CONCLUSION.....	25
4.1 Table of Features and Recommendations.....	26
5 ACKNOWLEDGEMENTS.....	27
6 SOURCES CONSULTED.....	28
6.1 Primary Sources.....	28
6.2 Secondary Sources.....	28
APPENDIX I.....	30
Reproduction of Gwynedd Archaeological Trust written scheme of investigation.....	30
APPENDIX II.....	31
Gwynedd Archaeological Trust photographic metadata.....	31
APPENDIX III.....	32
Categories of importance.....	32

Figures

Figure 01: Location map showing Brithdir Mawr reservoir, based on Ordnance Survey 1:10000 County Series Map Sheet SJ16NW; Scale 1:7500 @ A4. © Crown Copyright. All Right Reserved; licence number 100022432.

Figure 02: Particular of Brithdir Mawr, naming pieces of land with their corresponding acreages (Source: National Library of Wales).

Figure 03: Section of the Tithe Map for the parish of Cilcain, 1841; Scale 1:5000@A4. Source: National Archives.

Figure 04: Ordnance Survey 1st Edition 6 inch Flintshire County Series Map Sheet XIII; published in 1878. Scale: 1 to 5000@A4.

Figure 05: Ordnance Survey 3rd Edition 25 inch Denbighshire County Series Map Sheet XV.9; published in 1912. Scale: 1 to 5000@A4.

Figure 06: Reproduction of RAF 3G/TUD/UK192 PART I, frame 6056 taken on the 9th May 1946.

Figure 07: Brithdir Mawr Reservoir Photographic Survey Location Map - Part 1; Scale 1 to 1000 @A4

Figure 08: Brithdir Mawr Reservoir Photographic Survey Location Map - Part 2; Scale 1 to 1000 @A4

Figure 09: Gazetteer of Features, based on Ordnance Survey 1:10000 County Series Map Sheet SJ16NW; Scale 1:10000 @ A4. © Crown Copyright. All Right Reserved; licence number 100022432.

Plates

Plate 01: Access gate to the reservoirs; scale 1x1m (archive reference: G2597_001)

Plate 02: North East embankment of Cilcain 2; scale 1x1m (archive reference: G2597_005)

Plate 03: Fields to the east of Cilcain 2; no scale (archive reference: G2597_006)

Plate 04: Footbridge over spillway access from Cilcain 2; 1x1m (archive reference: G2597_008)

Plate 05: Brick and concrete construction of spillway access; scale 1x1m (archive reference: G2597_009)

Plate 06: Concrete spillway leading to Nant Gain; no scale (archive reference: G2597_010)

Plate 07: Embankment running to the north of both reservoirs; scale 1x1m (archive reference: G2597_013)

Plate 08: Nant Gain routed alongside bank to spillway; scale 1x1m (archive reference: G2597_012)

Plate 09: Secondary overflow near to central dividing bank; no scale (archive reference: G2597_014)

Plate 10: Concrete reinforcement to embankments; scale 1x1m (archive reference: G2597_015)

Plate 11: Obsolete sluice gate, Cilcain 1; scale 1x1m (archive reference: G2597_021)

Plate 12: Southern most bank of the reservoirs; scale 1x1m (archive reference: G2597_030)

Plate 13: Ruins of Greenland House from tree line (PRN 55395); no scale (archive reference: G2597_028)

Plate 14: Ruins of Greenland House (PRN 55395); 1x1m (archive reference: G2597_024)

Plate 15: Slump of stones to the north of Greenland House (PRN 55395); 1x1m (archive reference: G2597_027)

Plate 16: Old entrance to Greenland House (PRN 55395); 1x1m (archive reference: G2597_026)

CRYNODEB ANNHECHNEGOL

Gofynnwyd Ymddiriedolaeth Archeolegol Gwynedd oddi wrth Stillwater Associates Limited ar ran Dŵr Cymru i ymgymryd asesiad archeolegol fel rhan o astudiaeth dichonoldeb yn edrych tu fewn y posibilrwydd symudiad o'r argae sy'n bodoli (terfyniad cronfa) ym Mrithdir Mawr, Sir Dinbych.

Mae Brithdir Mawr, Sir Dinbych, ei lleoli yn droedfryniau dwyrain o'r Clwydian, rhwng Loggerheads ac Afon-wen, ardal sy'n gymeriadol gan gyfundrefn caeau yn dyddio o'r cyfnod ganoloesoedd hyd at y diwedd o'r 18fed a 19eg ganrif. Mae'r gronfa yn rhyw 2.7km i'r dde o bentref Cilcain a 2.7km de orllewin o Pantymwyn.

Nid oedd yna nodweddion newydd dynodedig yn ystod yr asesiad seiliedig ddesg ac roedd cofnod ysgrifenedig a ffotograffiaeth o'r coronaf ei chwblhau.

NON-TECHNICAL SUMMARY

Gwynedd Archaeological Trust (GAT) was asked by Stillwater Associates Limited on behalf of Dŵr Cymru to undertake an archaeological assessment as part of a feasibility study looking into the possible removal of an existing dam (reservoir discontinuance) at Brithdir Mawr, Denbighshire.

Brithdir Mawr, Denbighshire, is situated in the eastern foothills of the Clwydians, between Loggerheads and Afon-wen, an area characterised by field systems dating from the medieval period through to the late 18th and 19th centuries. The reservoir is approximately 2.7km to the south of Cilcain village and 2.7km south west of Pantymwyn.

No new features were identified during the desk based assessment and a written and photographic record of the reservoir infrastructure was completed.

1 INTRODUCTION

Gwynedd Archaeological Trust (GAT) was asked by Stillwater Associates Limited on behalf of Dŵr Cymru to undertake an archaeological assessment as part of a feasibility study looking into the possible removal of an existing dam (reservoir discontinuance) at Brithdir Mawr, near the A541 and A494 roads southwest of Pantymwyn, Denbighshire (NGR SJ17906270; Figure 01). The study area straddles the border between the counties of Denbighshire and Flintshire with the majority of the reservoir infrastructure situated in Denbighshire.

As specified in data supplied by Stillwater Associates Limited, Brithdir Mawr reservoir was constructed in 1897 and consists of a 94m long, 9m high earthfill embankment with a puddle clay core. The inlet for this reservoir is described as uncontrolled from the surrounding 200 hectares. It has a 7.6m long primary, a 9.75m secondary spillway and two low level outlets with inline sluice valves. The reservoir measures c. 150m long East to West and 100m wide North to South. The preferred removal strategy includes the complete removal of the embankment, whilst retaining all or most of the appurtenant structures and the re-use of embankment material within the reservoir basin where possible. Access to the reservoir would be via an unclassified road and private farm track from the North East.

The assessment conforms to the guidelines specified in the Chartered Institute for Archaeologists *Standard and Guidance for Historic Environment Desk-Based Assessment* (Chartered Institute for Archaeologists, 2014). The assessment was completed in February 2019.

The assessment was monitored by the Development Control Archaeologist, Clwyd-Powys Archaeological Trust (CPAT) and a written scheme of investigation was prepared by GAT and approved by CPAT prior to undertaking the assessment ([Appendix I](#)).

The Clwyd-Powys Archaeological Trust Historic Environment Record Enquiry Reference Number for this project is E6442.

GAT is certified to ISO 9001:2015 and ISO 14001:2015 (Cert. No. 74180/B/0001/UK/En) and is a Registered Organisation with the Chartered Institute for Archaeologists and a member of the Federation of Archaeological Managers and Employers (FAME).

2 METHODOLOGY

2.1 Assessment (Desktop Study)

A desk-based assessment is defined as “a programme of study of the historic environment within a specified area or site on land, the inter-tidal zone or underwater that addresses agreed research and/or conservation objectives. It consists of an analysis of existing written, graphic, photographic and electronic information in order to identify the likely heritage assets, their interests and significance and the character of the study area, including appropriate consideration of the settings of heritage....Significance is to be judged in a local, regional, national or international context as appropriate” (ClfA 2014, 4).

The desk-based assessment involved a study of the following resources:

1. The regional Historic Environment Register ((HER) Clwyd-Powys Archaeological Trust, 41 Broad St, Welshpool SY21 7RR) was examined for information concerning the study area. This included an examination of the core HER, the 1:2500 County Series Ordnance Survey maps and any secondary information held within the HER. All identified assets were mapped, described and added to a gazetteer of sites and the relative importance of any assets defined;
2. The National Monuments Record of Wales (Royal Commission on the Ancient and Historical Monuments of Wales, Plas Crug, Aberystwyth SY23 1NJ) was checked for assets additional to the HER;
3. Aerial photographs from the National Monuments Record of Wales (Royal Commission on the Ancient and Historical Monuments of Wales, National Monuments Record of Wales, Plas Crug, Aberystwyth SY23 1NJ) were examined for potential assets;
4. An on-line catalogue search of the National Library of Wales (Penglais Rd, Aberystwyth SY23 3BU) will be completed;
5. The regional archives (The Old Rectory, Rectory Ln, Hawarden, Deeside CH5 3NN) were consulted for information on any archive data, including primary and secondary sources, historic maps and estate maps. The examination of the archive data included historic mapping including the local tithe map and schedule;
6. Light Detection and Ranging (LiDAR) data was examined from the Lle Geo-Portal at <http://lle.gov.wales/home> for information on potential surface features using digital terrain modelling and digital surface modelling.

2.2 Walkover Survey

A walkover survey was undertaken on 12/02/2019 and examined the reservoir area as detailed on Figure 01. The aim of the walkover survey was to identify all known and new archaeological features on the ground and accurately map and describe them on GAT proformas. The features were then added to the overall gazetteer and their relative importance defined. A photographic record was maintained in RAW format using a digital SLR set to maximum resolution (Nikon D5100; resolution: 4928 x 3264 [16.2 effective megapixels]) and a photographic metadata archive completed (G2596_001 to G2596_042; cf. [Appendix II](#)), with images archived in TIFF format.

2.3 Gazetteer

A gazetteer has been compiled for all known and new sites within and within proximity to the specified route; the gazetteer includes the following:

1. Feature Number
2. Site name
3. PRN number
4. Grid reference
5. Period
6. Site type
7. Assessment category
8. Description
9. Impact
10. Recommendation for further assessment/evaluation
11. Recommendation for mitigatory measures

3 RESULTS

3.1 Location and Geological Summary

Brithdir Mawr, Denbighshire, is situated in the eastern foothills of the Clwydians, between Loggerheads and Afon-wen, an area characterised by field systems dating from the medieval period through to the late 18th and 19th centuries. The reservoir is approximately 2.7km to the south of Cilcain village and 2.7km south west of Pantymwyn. The study area straddles the border between the counties of Denbighshire and Flintshire with the majority of the reservoir infrastructure situated in Denbighshire.

The bedrock geology in the study area is Elwy Formation – Mudstone, Siltstone and Sandstone. This is a sedimentary bedrock formed during the Silurian Period and suggests the local environment was once dominated by deep seas. This is overlain by a Devensian Till – Diamicton which is a superficial deposit formed by the ice age conditions during the Quaternary Period (British Geological Survey, <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>).

3.2 Statutory and Non-Statutory Designations

There are no Scheduled Monuments (SM) within a 1km radius of the Brithdir Mawr reservoir. The nearest SM are situated to the south west of the study area and are the Coed Clwyd Cairns (SM DE248) which are funerary monuments dating to the Bronze Age period. There are also two Iron Age hillforts located in the uplands to the south west of the study area and close to the cairns (SM DE248), Moel-y-Gaer Camp (SM DE010) and Moel Fenlli Camp (SM DE009).

There are two Listed Buildings located within a 1km radius of the Brithdir Mawr reservoir. The first of these is the post medieval Brithdir Mawr Hall House (Cadw Listed Building, 298) which is located 250m to the north of the reservoir and is a ground floor hall house originally constructed in 1589, it has been considerably altered over time. The second listed building is the barn to the west of Carreg-y-Pennill house (Cadw Listed Building, 802).

Ref Number	Name	PRN	Easting	Northing	Grade
DE248	Coed Clwyd Cairns	102313	315992	361309	SM
DE010	Moel-y-Gaer Camp	100607	314872	361749	SM
DE009	Moel Fenlli Camp	102310	316299	360087	SM
298	Brithdir Mawr Hall House	104081	317849	362936	II*
802	Carreg-y-Pennill, barn to W of House	25929	317980	362510	II

The study area lies just outside the border of the of the Vale of Clwyd *Landscape of Outstanding Historic Interest in Wales* (Cadw/ICOMOS 1998), more specifically Historic Landscape Character Area 1038, Moel Famau, Llandymog, Nannerch, Cilcain and Llanbedr Dyffryn Clwyd, Denbighshire (CPAT, <http://www.cpat.org.uk/projects/longer/histland/clwyd/1038.htm>). This area is characterised by the steep-sided upland of the Clwydian hills.

3.3 Environmental Remains and Soil Morphology

The potential for the recovery of environmental remains is thought to be **low** as the discontinuance scheme only includes the removal of the reservoir structures and not large scale disturbance to otherwise untouched ground.

Full detail of the soil morphology is unknown at this stage but it is likely to consist of a sandy, silty clay typical of glacial deposits.

3.4 Historical and Archaeological Background

3.4.1 Introduction

Brithdir Mawr is partially located within the Vale of Clywd Registered Landscape of Historic Interest and is situated in the eastern foothills of the Clwydians, between Loggerheads and Afon-wen. This area is characterised by field systems dating from the medieval period through to the late 18th and 19th centuries. Remnant strip fields with hedged boundaries associated with the settlement at Cilcain represent the enclosure of former Medieval open fields. Whilst straight sided fields, some hedged some bounded by drystone walls, predominate the higher slopes show the late 18th and 19th century enclosure of former common grazing and moorland (source: https://landmap-portal.naturalresources.wales/view_survey.php?survey_id=7695).

3.4.2 Prehistoric and Roman Background

The Clwydian hills are rich in archaeology dating to the prehistoric period. There are a number of Bronze Age burial mounds/cairns located in the Clwydian hills to the east and south east of Moel y Gaer hillfort and at the summit of Foel Fenlli hillfort which are the closest Scheduled Monuments to the study area. There have also been a number of Bronze Age flat axes found on the slopes of Moel Arthur hillfort. (CPAT, HLCA 1038)

The most dominant prehistoric sites in the area are the Iron Age hillforts themselves with their univallate and bivallate earthworks. Roman activity in the area is represented by the hoard of Roman coins found in the Cefn Goleu Cairn (PRN102303). (Ibid)

3.4.3 Medieval Background

There are two settlements of medieval origin close to the study area, Cilcain and Nannerch where there is evidence of the enclosure of former medieval open fields into strips fields with hedged boundaries. Closer to the study area the fields are larger, more irregularly shaped field systems with hedged boundaries representative of farmland of the medieval period. (https://landmap-portal.naturalresources.wales/view_survey.php?survey_id=7695).

3.4.4 Post Medieval and Modern

Located 250m to the north of the reservoir is the Grade II* listed Brithdir Mawr Medieval Hall House (PRN 102293; NGR SJ1784962936), which is a ground floor hall house originally constructed in 1589 that has been considerably altered over time. The land on which the reservoir now lies formed part of the farmland associated with this house. The hall house has been studied, described and recorded in detail, and includes a date stone of 1642 suggesting some alterations at that time (Smith and Hayes 1964). From at least the late 18th century Brithdir Mawr formed part of the Coed Coch estate of the Wynne family, whose country house lies in parkland in Dolwen, Denbighshire. Estate records show that in 1790 Brithdir Mawr formed a substantial farm within the estate, that this is so is indicated by the fact that the title of the rentals for this part of the estate includes the name of the farm' *A Rental of the Ruthin, Brithdir, Colomendy and Holywell Estates belonging to John Wynne Esquire for the year 1799* (NLW Coed Coch and Trovarth Papers 2603), also suggesting its probable former significance as a smaller estate itself, later amalgamated with Coed Coch. A terrier dated to 1790 indicates that it covered an area of 122 acres and 10 perches in statute measure (Figure 02). Twenty three parcels of land are described as being part of the farm (NLW, Coed Coch and Trovarth Papers 3289). Whilst no map has been found associated with the terrier, the fields of Werglodd tan y tŷ, Cae'r ffynnon and Ffrith tân are thought to cover the location of the reservoir (Figure 02).

To the east is a post medieval lime kiln (PRN 104081; NGR SJ18086275) which has now been lost beneath earth and stones used to create a level terrace in the area.

3.5 Cartographic Evidence

The tithe map of 1841 (National Archives, Figure 03) shows the reservoir to lie within the former fields 1473 and 1479 of Brithdir Mawr farm. The table below details the apportionment and names of these and surrounding fields, detailing also the agricultural use to which they were put in 1841, with the numbers corresponding to those shown on the map. The Werglodd and Cae'r ffynnon place names mirror those noted in 1790 (NLW, Coed Coch and Trovarth Papers 3289). The place name for field 1474 includes *hen dŷ* (old house), and may suggest the presence of an additional former house close to this location, although this is not certain.

Landowner	Occupier	Numbers referring to the plan	Name and Description of Land and premeses	State of Cultivation	Quantities of Statute Measure		
					A	R	P
Wynne, John Lloyd	William Williams		Brithdir Mawr				
		1476	House, yard, Garden etc	Buildings	2	3	6
		1477	Berllan	Orchard	-	2	33
		1479	Werglodd	Pasture	12	1	-
		1475	Cae'r Ffynnon, waste in it	Pasture	10	-	8
		1474	Ffrith yr hen dy	Pasture	8	-	22
		1473	Trwyn such, waste in	Arable	8	-	5

An examination of the 6-inch to 1 mile County Series Ordnance Survey maps of the area dating to 1878 (Sheets Flintshire XIII, Flintshire XIII.SW and Denbighshire XV.SW) show the area prior to the establishment of the reservoir situated on the course of Aber Eilun, with the woodland, field systems and river very similar to that shown on the tithe map (Figure 03). All the later editions (Flintshire XIII.SW published 1900 and Denbighshire XV.SW published in 1914, 1933 and 1950) show the reservoir with the annotation 'Mold Water Company', as

does the 25 inch 3rd edition 25 inch Denbighshire County Series map sheet XV.9 of 1919 (Figure 05). A boundary enclosure, presumably demarcating the boundary of the water company land, is also shown. The larger curved concrete spillway does not feature on the historic mapping, therefore must post-date 1950.

3.6 Artefact Potential

The potential for the recovery of artefacts is thought to be **low** as the discontinuance scheme only includes the removal of the reservoir structures and not large scale disturbance to otherwise untouched ground. However, there was a hoard of 13 Roman coins (PRN 102303) found during the excavations of the Cefn Goleu cairn (PRN 102301) in 1954 which is within the 1km radius of the reservoir.

3.7 Aerial Photographs and Lidar

Four aerial photographs were examined dating from 1946 to 1984. The first two of these, RAF 3G/TUD/UK192 Part I frame 6056 taken on the 9th May 1946 (Figure 06) and RAF CPE/UK/1996 frame 2408 taken on the 13th April 1947 show the reservoir as shown on the historic mapping. The curved concrete spillway has not been constructed and Brithdir Mawr (PRN 102293; Feature 01) and Brithdir Canol (NPRN 37300) can be seen to the north of the reservoir. The farmstead at Cwm-Llydan (PRN 69841; Feature 07) can also be clearly seen to the west of the reservoir and appears to have been in a much better condition during the 1940's.

The third aerial photograph OS 65 181 frame 19 taken on the 16th August 1965 again shows that the reservoir is unchanged from its original design. There appears to have been some movement of field boundaries and the resultant scaring is visible in the photograph. Brithdir Mawr (PRN 102293; Feature 01) and Brithdir Canol (NPRN 37300) can be seen to the north of the reservoir and Cwm-Llydan (PRN 69841; Feature 07) is seen to the west as a 'U' shaped farmstead.

The final photograph, ADAS 196 frame 061 taken on the 9th June 1984, shows the addition of the long curved concrete spillway to the reservoir. Brithdir Mawr (PRN 102293; Feature 01) and Brithdir Canol (NPRN 37300) can be seen to the north of the reservoir and some of the trees surrounding the buildings appear to have been cleared. The field between the houses and the reservoir in this photograph at first glance appears to show some interesting linear and curvilinear anomalies. However, when looking at all the aerial photographs together in conjunction with the historic mapping these anomalies correlate with previous field boundaries.

No new features of interest were noted on any of the aerial photographs examined as part of this assessment.

The Lle Geo-Portal at <http://lle.gov.wales/home> was checked for any Light Detection and Ranging (LiDAR) data but the study area lies outside of the coverage currently available.

3.8 The Walkover Survey

The walkover survey was undertaken on the 12th February 2019. A photograph location plan has been completed and is included as Figures 07 & 08.

Access to the reservoir is through two moderately sloping fields (Plate 01) below Brithdir Canol (NPRN 37300), the converted barn and cow shed situated to the east of Brithdir Mawr (PRN 102293). On the north east side of the reservoir a large concrete retaining wall has been placed at the entrance to the curving spillway that leads to the Aber Eilun (Plate 02). The spillway has a concrete base and stone lined sides reinforced with mesh (Plate 03). These features were not part of the original reservoir design and were added sometime between 1965 and 1984.

The large earthfill embankment is approximately 4m high at its northern most point (Plate 04) and concrete has been added to the top of the Victorian retaining wall along the whole c.100m length of embankment (Plate 05). The height of the embankment increases to c.9m when traversing the embankment north to south and is steeply sloping west to east (Plate 06). At the southernmost point of the embankment the Victorian revetted wall is clearly visible at the spillway entrance constructed from dressed rectangular stone blocks, coursed, but courses of varying height and bonded with mortar (Plate 07). The spillway is created from a series of steps and runs into the Aber Eilun at the bottom (Plate 08). Concrete and gabion baskets have been added at the base of this spillway to reinforce the ground in this area probably at the same time the new curved spillway was constructed (Plate 09 & 10). An access 'tunnel' is situated at the base of the bank which was not accessed during the walkover survey (Plate 11). The type of construction used for this 'tunnel' suggests it formed part of the original reservoir design (Plate 12).

There is a modern building situated at the 90 degree bend in the embankment and a stone revetment wall has been built in this area to enable vehicle access between the building and the reservoir (Plate 13). The construction material and style of this revetment suggests it is a later addition when the house was built. Brithdir Mawr (PRN 102293) is not visible from the site but Brithdir Canol (NPRN 37300), the barn and cowshed associated with the farmstead now converted into a house, can be clearly seen (Plate 14). The barn has obviously been subject to a large scheme of renovation (Plate 15). To the south east of Brithdir Canol (NPRN 37300) there is an area where a level terrace has been created which could be the location of the lime kiln (PRN 104081) however access could not be gained to the area in order to confirm this (Plate 16).

3.9 Gazetteer of Features

A 1km radius search of the CPAT HER centred on the reservoir (NGR SJ1788262677) was undertaken for this assessment which returned 10 results in total. Three of the results represent entries only known from documentary evidence or placenames and have therefore been excluded from the gazetteer. All the features noted below are shown on Figure 09 with green stars numbered (gazetteer of features). All the recommendations are based on the current understanding of the scheme proposals and their impact on the features. In the event of alterations to the scheme, the recommendations might have to be revisited.

Feature Number	01
Site Name	Brithdir Mawr Hall House
PRN Number	102293
Grid Reference	SJ1784962936
Period	Post Medieval
Site Type	House
Assessment Category	A
Description	Grade II* listed Brithdir Mawr Medieval Hall House. A ground floor hall house originally constructed in 1589, it has been considerably altered over time.
Impact	None
Recommendation for further assessment/evaluation	None
Recommendation for mitigatory measures	Avoidance

Feature Number	02
Site Name	Brithdir Mawr Limekiln
PRN Number	104081
Grid Reference	SJ18086275
Period	Post Medieval
Site Type	Lime Kiln
Assessment Category	C
Description	<p>To the east is a post medieval lime kiln which has now been lost beneath earth and stones used to create a level terrace in the area.</p> <p>Possibly located during walkover survey but access restricted and location overgrown.</p>
Impact	None
Recommendation for further assessment/evaluation	None
Recommendation for mitigatory measures	Avoidance

Feature Number	03
Site Name	25929
PRN Number	Carreg-y-Pennill, barn to west of house
Grid Reference	SJ1798062510
Period	Post Medieval
Site Type	Barn
Assessment Category	B
Description	Grade II listed barn
Impact	None
Recommendation for further assessment/evaluation	None
Recommendation for mitigatory measures	Avoidance

Feature Number	04
Site Name	Cefn Coch barrow
PRN Number	102302
Grid Reference	SJ17246223
Period	Bronze Age
Site Type	Round Barrow (Ring Cairn)
Assessment Category	B
Description	Cairn excavated 1950-4 it contained no primary burial. Ten secondary cremations were found accompanied by 4 urns and a pigmy cup as well as other grave goods. Partly damaged stone kerb surrounded the cairn. Could not be located during the forestry survey undertaken in 1997 (Thomas, 1997)
Impact	None
Recommendation for further assessment/evaluation	None
Recommendation for mitigatory measures	Avoidance

Feature Number	05
Site Name	Cefn Goleu Cairn
PRN Number	102301
Grid Reference	SJ17246223
Period	Multiperiod
Site Type	Structure
Assessment Category	B
Description	Cairn excavated 1950-4. Central cist. No primary burial but 10 secondary burials with 4 urns and a pigmy cup. Various finds including 13 Roman coins. Cairn originally 12m diameter 1.1m high. Could not be located during the forestry survey undertaken in 1997 (Thomas, 1997)
Impact	None
Recommendation for further assessment/evaluation	None
Recommendation for mitigatory measures	Avoidance

Feature Number	06
Site Name	Cefn Goleu Cairn, coin hoard
PRN Number	102303
Grid Reference	SJ17246223
Period	Roman
Site Type	Hoard (Coin)
Assessment Category	B
Description	During the excavation of this bronze age cairn 13 Roman coins were found. Mixed silver and bronze dating from Vespasian AD69 to Antoninius Pius AD161. Removed during excavations in 1954 (Thomas D, 1997).
Impact	None
Recommendation for further assessment/evaluation	None
Recommendation for mitigatory measures	None

Feature Number	07
Site Name	Cwm-Llydan
PRN Number	69841
Grid Reference	SJ1734362647
Period	Post Medieval
Site Type	Farmstead
Assessment Category	C
Description	Possible farmstead named Cwm Llydan depicted on 1st edition OS map. The buildings include an L-shaped range and a detached building forming the third side of a U-shape. From the modern digital map, it appears that very little survives, possibly only part of the southern side the 'U'. (Kennedy, 2003)
Impact	None
Recommendation for further assessment/evaluation	None
Recommendation for mitigatory measures	Avoidance

4 CONCLUSION

An archaeological assessment was carried out on the site of the reservoir at Brithdir Mawr, Denbighshire. The archaeological desk based assessment noted that there are 7 features within a 1km radius of the reservoir, and no previously unknown archaeological features were identified. The most dominant prehistoric sites in the wider area are the Iron Age hillforts themselves with their univallate and bivallate earthworks, but Bronze Age barrows are also represented (Feature 4-5). Roman activity in the area is represented by the hoard of Roman coins found in the Cefn Goleu Cairn (Feature 6).

There are two settlements of medieval origin close to the study area, Cilcain and Nannerch where there is evidence of the enclosure of former medieval open fields into strips fields with hedged boundaries. In post-medieval times the area was noted to be part of Brithdir Mawr farm, which became part of the Coed Coch estate, and is the dominant historic feature in the vicinity of the reservoir, dating to Tudor times (Feature 1). Much of the landscape, buildings (Feature 3) and field systems noted in the area probably date to agricultural improvements carried out by or for the estate in the 18th and early 19th centuries, and the limekiln (Feature 2) can also be ascribed to this period.

Whilst the potential for the identification of further archaeological remains in the wider area remains high, neither these or any of the sites listed in the gazetteer should be affected by the reservoir discontinuance works as the works only affect the footprint of the reservoir itself where the ground is likely to have been heavily disturbed. A full written and photographic survey of the existing structures has been completed as part of this assessment.

4.1 Table of Features and Recommendations

Asset_No	PRN	Site_Name	Period	NGR	Recommendations for Further Assessment	Mitigation Recommendations
01	102293	Brithdir Mawr Hall House	Post Medieval	SJ1784962936	None	Avoidance
02	104081	Brithdir Mawr Limekiln	Post Medieval	SJ18086275	None	Avoidance
03	25929	Carreg-y-Pennill, barn to west of house	Post Medieval	SJ1798062510	None	Avoidance
04	102302	Cefn Coch barrow	Bronze Age	SJ17246223	None	Avoidance
05	102301	Cefn Goleu Cairn	Multiperiod	SJ17246223	None	Avoidance
06	102303	Cefn Goleu Cairn, coin hoard	Roman	SJ17246223	None	None
07	69841	Cwm-Llydan	Post Medieval	SJ1734362647	None	Avoidance

5 ACKNOWLEDGEMENTS

Thanks must go to Roby Pugh from DCWW for his assistance in accessing the reservoir site. Also to the staff at the National Library of Wales and the Flintshire Archive Service are thanked for providing the archive and cartographic material in support of this project.

6 SOURCES CONSULTED

6.1 Primary Sources

National Archives

Tithe Map of Cilcain, 1841

Conwy Archives, Llandudno

Ordnance Survey 1st edition 6 inch Flintshire County Series map of 1878. Sheet XIII

Ordnance Survey 3rd edition 25 inch Denbighshire County Series map of 1912. Sheet XV.9

National Library of Wales

Coed Coch and Trovarth Estate Papers 3289 *Particulars of Brithdir Mawr farm* (not dated but c. 1790)

Register of Aerial Photography, Welsh Assembly Government, Cardiff

Vertical Images

RAF 3G/TUD/UK192 Part I frame 6056 taken 9th May 1946

RAF CPE/UK/1996 frame 2408 taken 13th April 1947

OS 65 181 frame 19 taken 16th August 1965

ADAS 196 frame 37 taken 9th June 1984

6.2 Secondary Sources

Baxter, C.L., 2005, Tir Gofal Management Plan: Heritage Management Information (HE1). Penbedw - NE/06/5088, CPAT Report

British Geological Survey, <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>.

Cadw/ICOMOS 1998 *Register of Landscapes of Outstanding Historic Interest in Wales*

Cadw, 2016. Database of Listed Buildings in Wales. Online

CPAT, HLCA 1038, Moel Famau, Llandymog, Nannerch, Cilcain and Llanbedr Dyffryn Clwyd, Denbighshire. Online <http://www.cpat.org.uk/projects/longer/histland/clwyd/1038.htm>

English Heritage, 1991, Management of Archaeological Projects

English Heritage, 2015, Management of Research Projects in the Historic Environment (MoRPHE). *Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs)* (Version 1.1)

Kennedy, A. E., 2003, Tir Gofal Management Plan: Heritage Management Information (HE1). Maes-y-groes - NE/06/3540. CPAT Report.

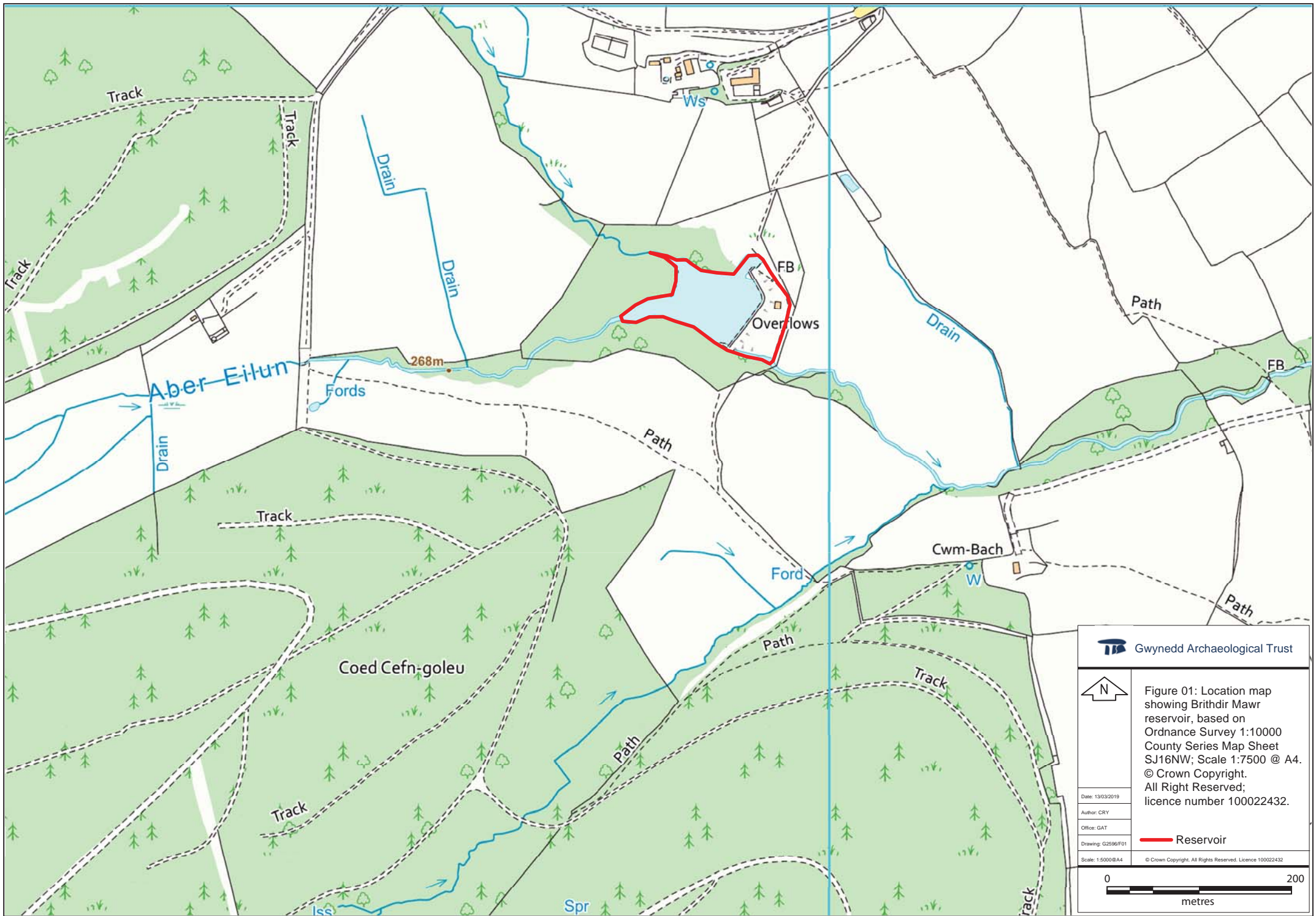
Moel Arthur Camp (FN010), Cadw Scheduled Monument Report, accessed online - <http://cadwpublic-api.azurewebsites.net/reports/sam/FullReport?lang=en&id=3084>




Royal Commission on Ancient and Historic Monuments of Wales 2015 *Guidelines for digital archives*

Smith, P. and Hayes, P. 1964 'Brithdir Mawr, Cilcain', *Flintshire Historical Society Journal* 21, 64-71

Standard and Guidance for Historic Environment Desk-Based Assessment (Chartered Institute for Archaeologists, 2014).

Thomas, D. 1997, Forest Enterprise Archaeological Survey: Phase 2. CPAT Report.



 Gwynedd Archaeological Trust	
 N	Figure 01: Location map showing Brithdir Mawr reservoir, based on Ordnance Survey 1:10000 County Series Map Sheet SJ16NW; Scale 1:7500 @ A4. © Crown Copyright. All Right Reserved; licence number 100022432.
Date: 13/03/2019 Author: CRY Office: GAT Drawing: G2596/F01 Scale: 1:5000@A4	<div style="display: flex; align-items: center;"> <div style="width: 20px; height: 5px; background-color: red; margin-right: 5px;"></div> Reservoir </div>
 0 200 metres	

Brithdir Mawr Farm

1 Houe, Yard, Gardens, Orchard, & Walk Sec ^a	4" 1" 2"	} In the parish of Kethera in the County of Merioneth
2 Winglodd tan of Ty	12" " 2"	
3 Cae'r Hymanon	0" 1" 26"	
4 Mant' e hin Pw	1" 3" 29"	
5 Gwith tan	7" 1" 25"	
6 Gwith nesa in Mynydd	6" 3" 19"	
7 Tawyn Swick	6" 0" 2"	
8 Winglodd bach	2" 3" 15"	
9 Coed	2" 3" 24"	
10 Dadd Grogog	6" 1" "	
11 Maes isa	4" " 31"	
12 Ew with Ben Maes ipa	2" 2" 32"	
13 Cae'r Coed	5" " 20"	
14 Ew tan of Walk	1" 3" 16"	
15 Tyddyn	7" 3" 13"	
16 Coed Mynydd	1" 3" 0"	
17 } Cae'r Edward	0" 1" 16"	
18 } " " "	6" 2" 33"	
19 Ew'r Lwm	2" 2" "	} In the parish of Llanferris in the County of Denbigh
20 Cae y Câr	5" " 37"	
21 Mlach	2" 3" 32"	
22 Gwith Gornel	4" 2" 11"	
23 Cefnias	9" " 34"	
Total		39" 2" 3"
Total		122" 0" 10"


 Gwynedd Archaeological Trust

Figure 02: Particular of Brithdir Mawr, naming pieces of land with their corresponding acreages (Source: National Library of Wales).

Date: 13/02/2019
Author: CRY
Office: GAT
Drawing: G2569102



 Gwynedd Archaeological Trust



Figure 03: Section of the Tithe Map for the parish of Cilcain, 1841;
 Scale 1:5000@A4.
 Source: National Archives.

Date: 13/03/2019

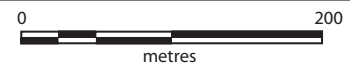
Author: CRY

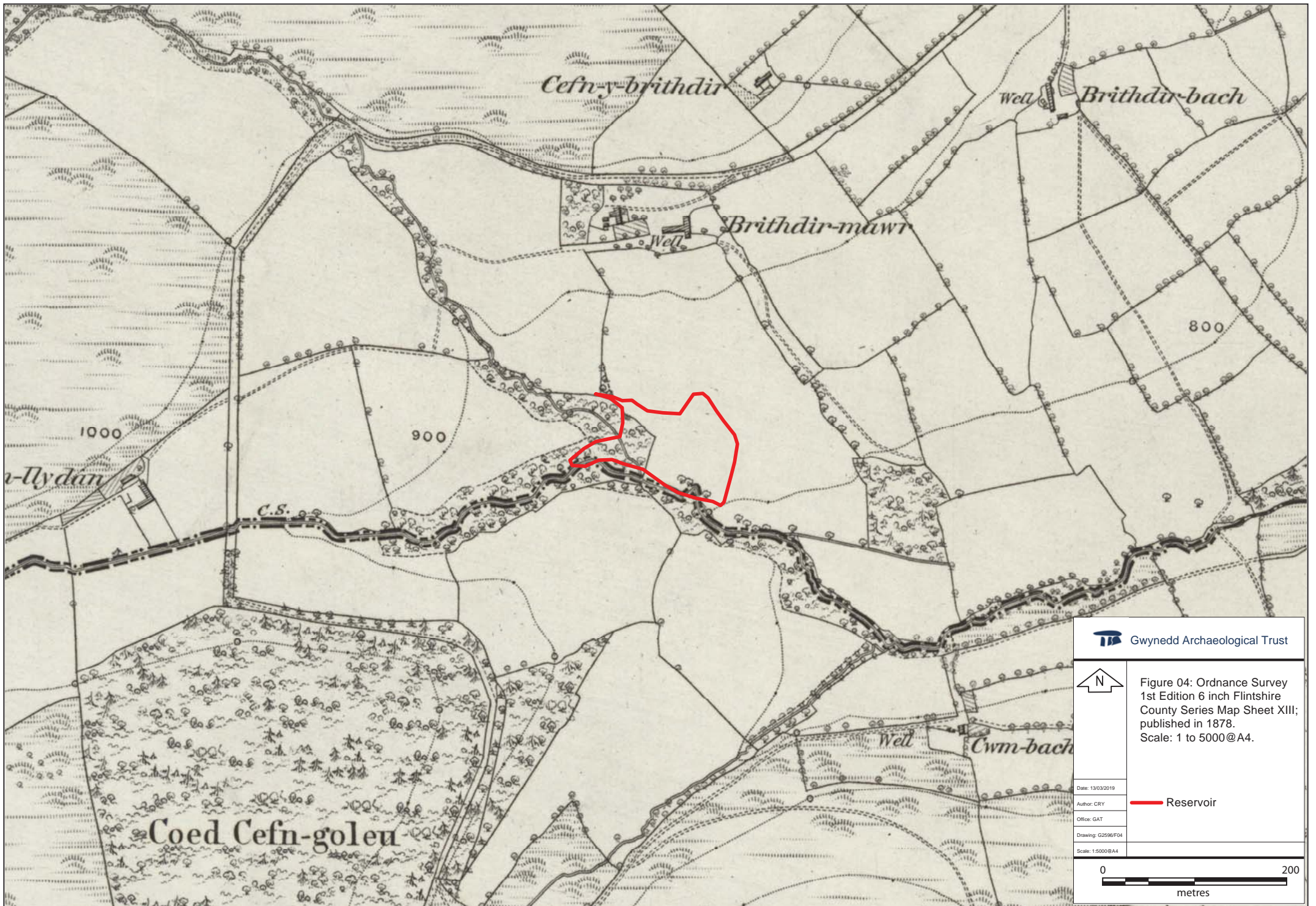
Office: GAT

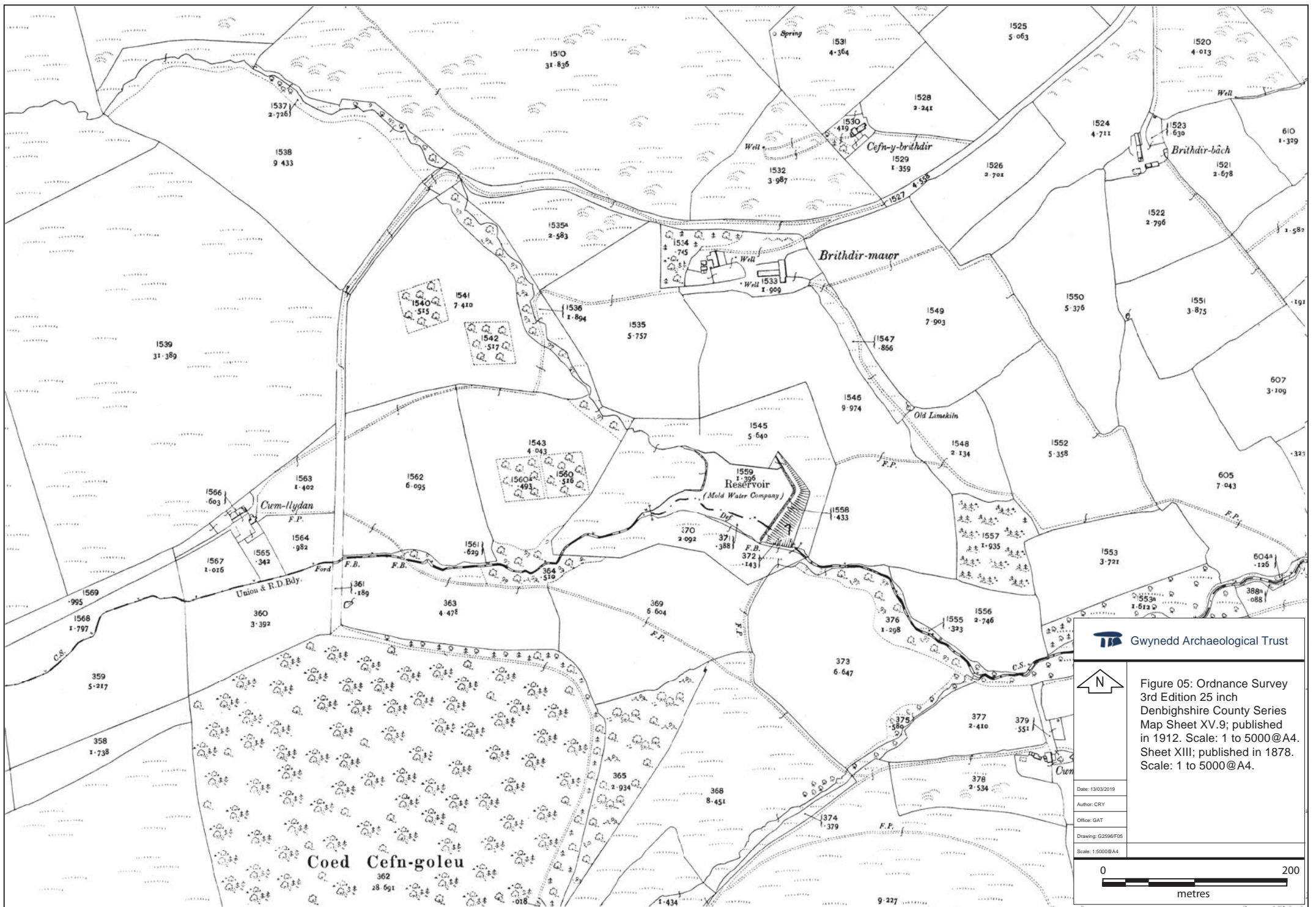
Drawing: G2596/F03


Scale: 1:5000@A4

 Reservoir







 Gwynedd Archaeological Trust





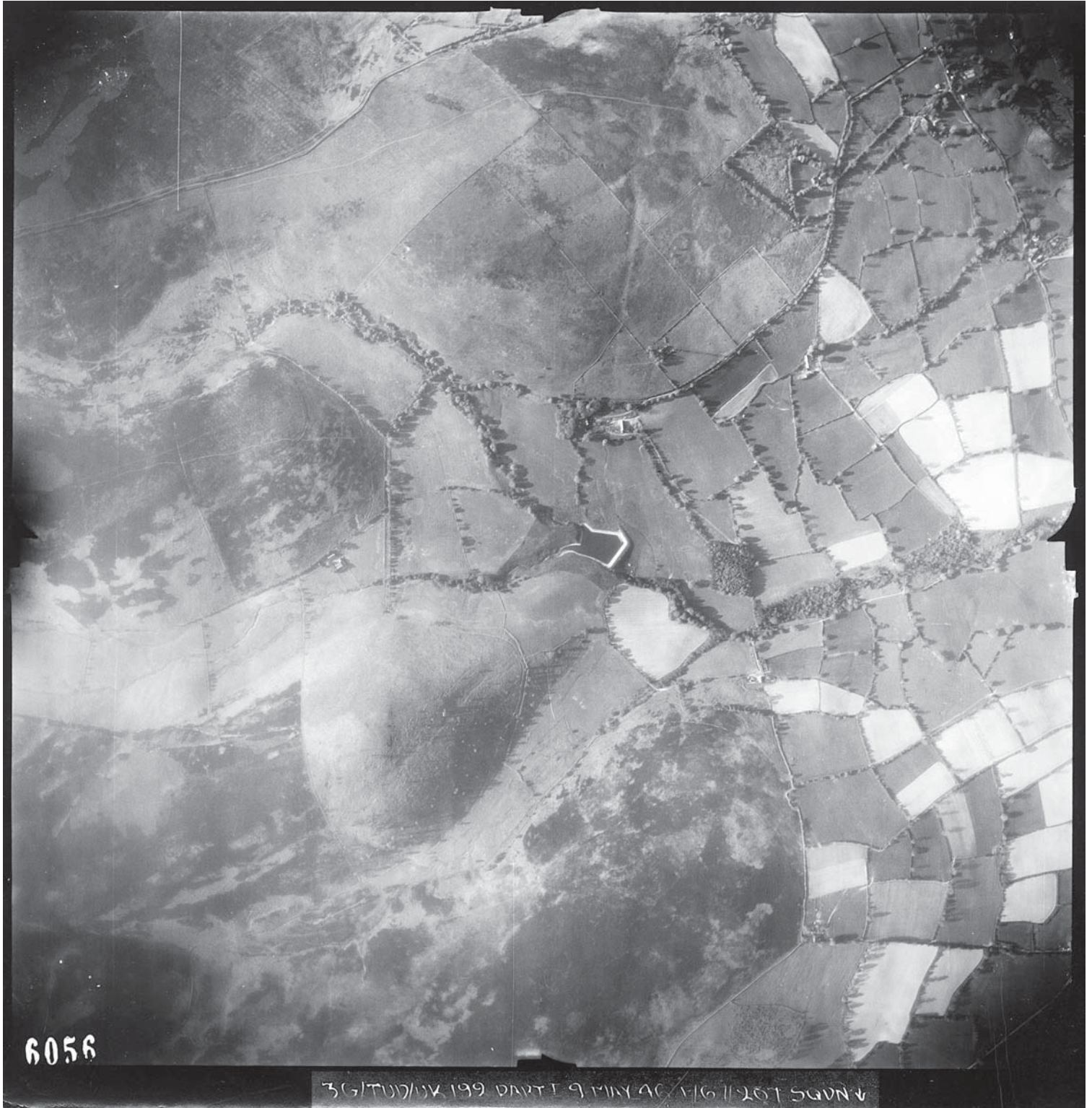
Figure 05: Ordnance Survey
 3rd Edition 25 inch
 Denbighshire County Series
 Map Sheet XV.9; published
 in 1912. Scale: 1 to 5000@A4.
 Sheet XIII; published in 1878.
 Scale: 1 to 5000@A4.

Date: 13/03/2019
Author: CRY
Office: GAT
Drawing: G2596/F05
Scale: 1:5000@A4

0 200



metres



Gwynedd Archaeological Trust



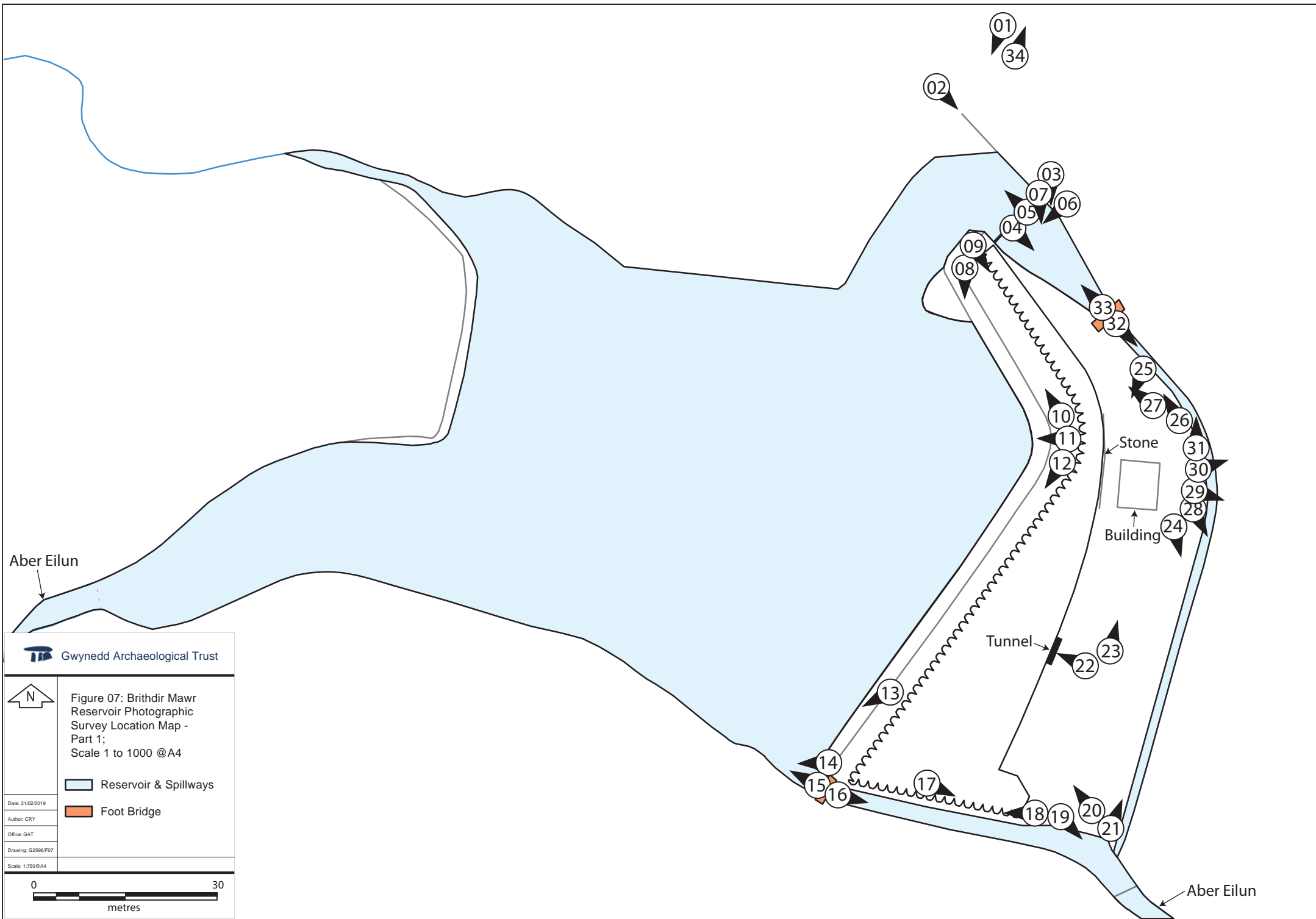
Figure 06: Reproduction of
RAF 3G/TUD/UK192 PART I,
frame 6056 taken on the
9th May 1946.

Date: 13/03/2019

Author: CRY

Office: GAT

Drawing: G2596/F08



Aber Eilun

Gwynedd Archaeological Trust



Figure 07: Brithdir Mawr Reservoir Photographic Survey Location Map - Part 1; Scale 1 to 1000 @A4

Reservoir & Spillways
Foot Bridge

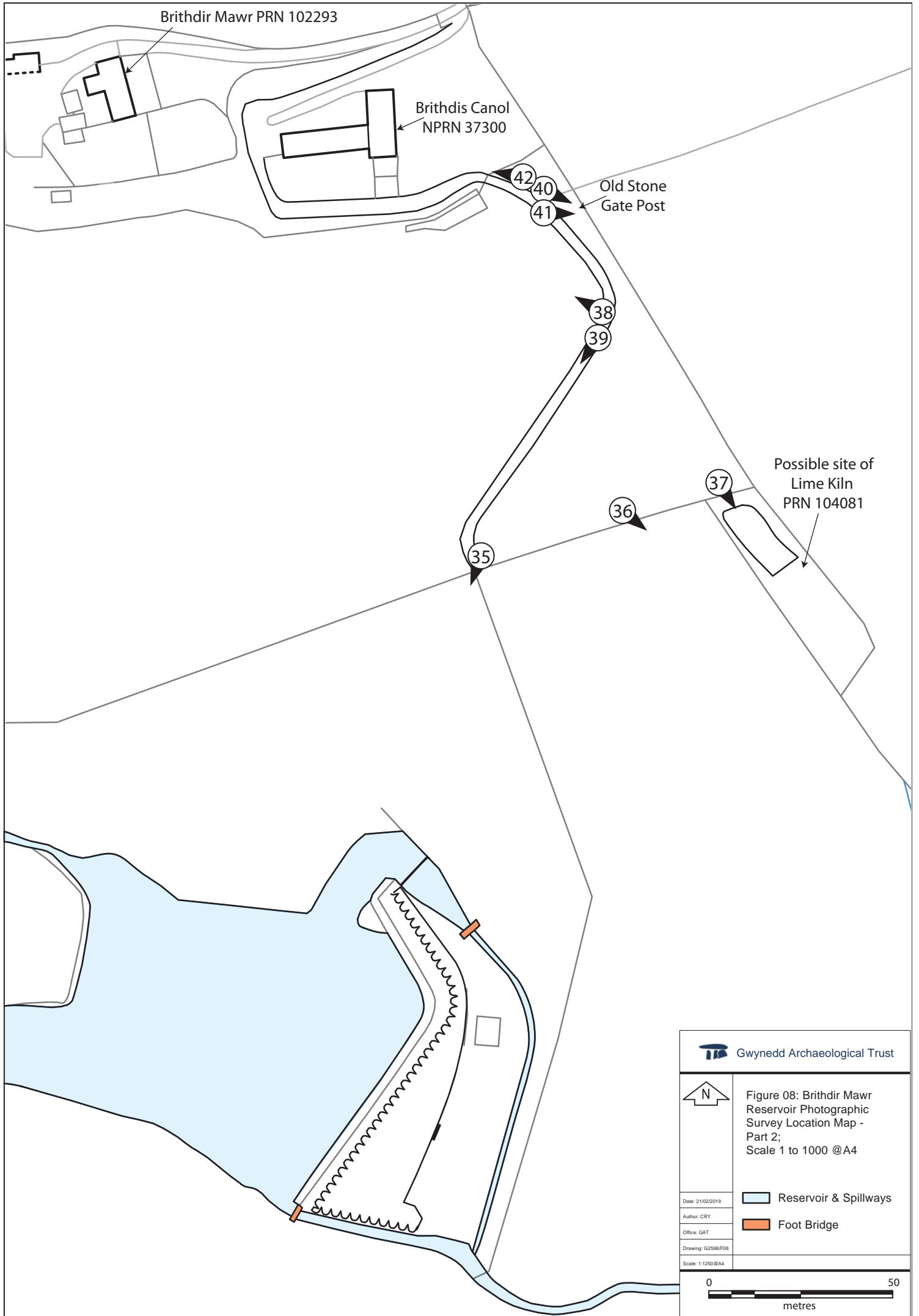
Date: 21/02/2019
Author: CRY
Office: GAT
Drawing: G2596/F07
Scale: 1:750@A4



Stone
Building

Tunnel

Aber Eilun



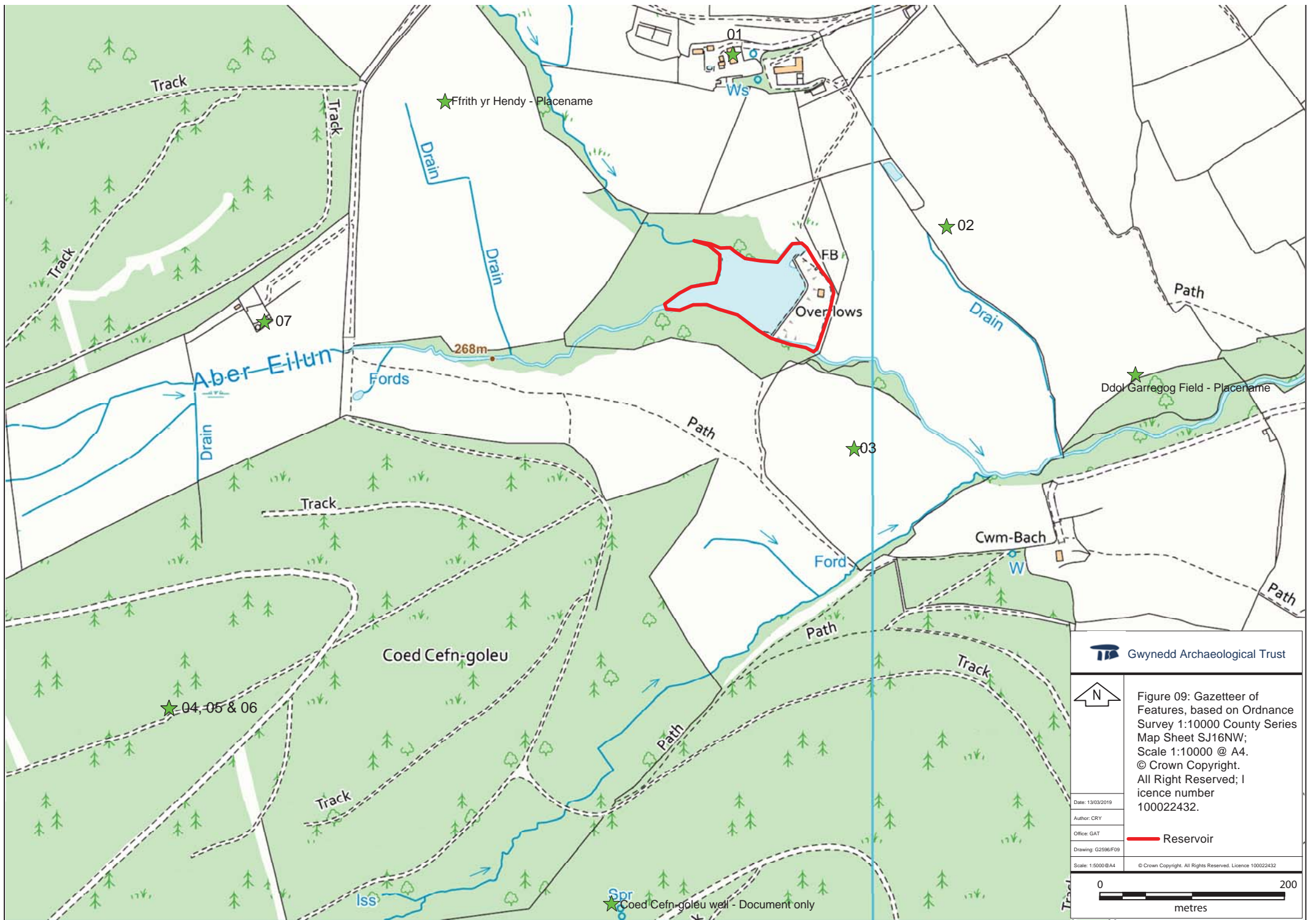




Plate 01: Sloping fields above the reservoir; no scale (archive reference: G2596_039)



Plate 02: Concrete retaining wall adjacent to spillway access; no scale (archive reference: G2596_005)



Plate 03: Top of large curving concrete spillway; no scale (archive reference: G2596_004)



Plate 04: Earthfill embankment, North western end; scale 1x1m (archive reference: G2596_007)



Plate 05: Concrete addition on top of Victorian retaining wall; scale 1x1m (archive reference: G2596_008)



Plate 06: Steeply sloping embankment; scale 1x1m (archive reference: G2596_012)



Plate 07: Original Victorian retaining walls and spillway access; scale 1x1m G2596_015)



Plate 08: Original stepped spillway leading to Aber Eilun; no scale (archive reference: G2596_016)



Plate 09: Concrete reinforcement at base of spillway; scale 1x1m (archive reference: G2596_018)



Plate 10: Gabion basket reinforcement at base of spillway; no scale (archive reference: G2596_019)



Plate 11: 'Tunnel' entrance situated at base of embankment; scale 1x1m (archive reference: G2596_020)



Plate 12: Close up of 'tunnel' entrance; scale 1x1m (archive reference: G2596_022)



Plate 13: Modern building and stone revetment wall; scale 1x1m (archive reference: G2596_025)



Plate 14: Brithdis Canol (NPRN 37300) seen from reservoir; no scale (archive reference: G2596_034)



Plate 15: Brithdis Canol (NRPN 37300); no scale (archive reference: G2596_038)



Plate 16: Possible location of lime kiln (PRN 104081); no scale (archive reference: G2596_037)

APPENDIX I

Reproduction of Gwynedd Archaeological Trust written scheme of investigation

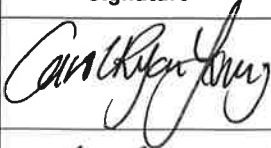


BRITHDIR MAWR RESERVOIR
(G2596)

WRITTEN SCHEME OF INVESTIGATION FOR
ARCHAEOLOGICAL ASSESSMENT

Prepared for Stillwater Associates Limited
February 2019



Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

Approvals Table				
	Role	Printed Name	Signature	Date
Originated by	Document Author	Caralynn Jung		11/02/19
Reviewed by	Document Reviewer	JOHN ROBERTS		11/04/19
Approved by	Principal Archaeologist	JOHN ROBERTS		11/02/19

Revision History			
Rev No.	Summary of Changes	Ref Section	Purpose of Issue

All GAT staff should sign their copy to confirm the project specification is read and understood and retain a copy of the specification for the duration of their involvement with the project. On completion, the specification should be retained with the project archive:

Name

Signature

Date

BRITHDIR MAWR RESRVOIR (G2596)

WRITTEN SCHEME OF INVESTIGATION FOR ARCHAEOLOGICAL ASSESSMENT

Prepared for *Stillwater Associates Limited*, February 2019

CONTENTS

1 INTRODUCTION 5

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND 7

3 METHODOLOGY..... 8

 3.1 Assessment (Desktop Study)..... 8

 3.2 Photographic and Descriptive Survey 9

 3.3 Gazetteer10

 3.4 Data processing and report compilation.....13

4 PERSONNEL.....15

5 INSURANCE.....16

 5.1 Public/Products Liability.....16

 5.2 Employers Liability.....16

 5.3 Professional Indemnity16

6 SOURCES CONSULTED17

FIGURE 01.....18

 Location Map with assessment area and access route outlined in red. Based on Ordnance Survey 1:10000 County Series Map Sheets SJ16 Scale 1:7500 @ A4. © Crown Copyright. All Rights Reserved. License Number AI100020895.18

1 INTRODUCTION

Gwynedd Archaeological Trust (GAT) has been asked by Stillwater Associates Limited on behalf of Dŵr Cymru to prepare a written scheme of investigation for an archaeological assessment as part of a feasibility study looking into the possible removal of an existing dam (reservoir discontinuance) at Brithdir Mawr, near the A541 and A494 roads southwest of Pantymwyn, Denbighshire (NGR SJ17906270; Figure 01).

As specified in data supplied by Stillwater Associates Limited, Brithdir Mawr reservoir was constructed in 1897 and consists of a 94m long, 9m high earthfill embankment with a puddle clay core. The inlet for this reservoir is described as uncontrolled from the surrounding 200 hectares. It has a 7.6m long primary, a 9.75m secondary spillway and two pipe outlets with inline sluice valves. The reservoir measures c. 150m long East to West and 100m wide North to South. The preferred removal strategy includes the complete removal of the embankment, all appurtenant structures (outlet pipes, supply pipes, spillway structures etc) and the re-use of embankment material where possible within the reservoir basin area. Access to the reservoir would be via an unclassified road and private farm track from the North East (Figure 01).

The assessment will conform to the guidelines specified in the Chartered Institute for Archaeologists *Standard and Guidance for Historic Environment Desk-Based Assessment* (Chartered Institute for Archaeologists, 2014). The format of this written scheme of investigation corresponds to the requirements of section 2.3 of MoRPHE (English Heritage 2015) and to MAP2 (English Heritage, 1991, *Management of Archaeological Projects*). The assessment is scheduled to be completed in February 2019.

The assessment will be monitored by the Development Control Archaeologist, Clwyd-Powys Archaeological Trust (CPAT); the content of this written scheme of investigation and all subsequent reporting by GAT must be approved by CPAT prior to final issue.

The Clwyd-Powys Archaeological Trust Historic Environment Record Enquiry Reference Number for this project is E6442.

GAT is certified to ISO 9001:2015 and ISO 14001:2015 (Cert. No. 74180/B/0001/UK/En) and is a Registered Organisation with the Chartered Institute for Archaeologists and a member of the Federation of Archaeological Managers and Employers (FAME).

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Brithdir Mawr is partially located within the Vale of Clywd Registered Landscape of Historic Interest and is situated in the eastern foothills of the Clwydians, between Loggerheads and Afon-wen. This area is characterised by field systems dating from the medieval period through to the late 18th and 19th centuries. Remnant strip fields with hedged boundaries associated with the settlement at Cilcain represent the enclosure of former Medieval open fields. Whilst straight sided fields, some hedged some bounded by drystone walls, predominate the higher slopes show the late 18th and 19th century enclosure of former common grazing and moorland (source: https://landmap-portal.naturalresources.wales/view_survey.php?survey_id=7695).

Located 250m to the north of the reservoir is the Grade II listed Brithdir Mawr Medieval Hall House (PRN 102293; NGR SJ1784962936). A ground floor hall house originally constructed in 1589, it has been considerably altered over time. To the east is a post medieval lime kiln (PRN 104081; NGR SJ18086275) which has now been lost beneath earth and stones used to create a level terrace in the area.

A brief examination of the 6-inch to 1 mile Ordnance Survey maps of the area (Sheets Flintshire XIII, Flintshire XIII.SW and Denbighshire XV.SW) shows the establishment of the reservoir situated on the course of Aber Eilun. The First edition Flintshire map (Flintshire XIII, published 1878) shows fields and woodland within the assessment area. All the later editions (Flintshire XIII.SW published 1900 and Denbighshire XV.SW published in 1914, 1933 and 1950) show the reservoir with the annotation 'Mold Water Company'. The foot print of the reservoir has not changed since construction.

3 METHODOLOGY

3.1 Assessment (Desktop Study)

A desk-based assessment is defined as “a programme of study of the historic environment within a specified area or site on land, the inter-tidal zone or underwater that addresses agreed research and/or conservation objectives. It consists of an analysis of existing written, graphic, photographic and electronic information in order to identify the likely heritage assets, their interests and significance and the character of the study area, including appropriate consideration of the settings of heritage....Significance is to be judged in a local, regional, national or international context as appropriate” (ClfA 2014, 4).

The desk-based assessment will involve a study of the following resources:

1. The regional Historic Environment Register ((HER) Clwyd-Powys Archaeological Trust, 41 Broad St, Welshpool SY21 7RR) will be examined for information concerning the study area. This will include an examination of the core HER, the 1:2500 County Series Ordnance Survey maps and any secondary information held within the HER. All identified assets will be mapped, described and added to a gazetteer of sites and the relative importance of any assets defined;
2. The National Monuments Record of Wales (Royal Commission on the Ancient and Historical Monuments of Wales, Plas Crug, Aberystwyth SY23 1NJ) will be checked for assets additional to the HER;
3. Aerial photographs from the National Monuments Record of Wales (Royal Commission on the Ancient and Historical Monuments of Wales, National Monuments Record of Wales, Plas Crug, Aberystwyth SY23 1NJ) will be examined for potential assets;
4. An on-line catalogue search of the National Library of Wales (Penglais Rd, Aberystwyth SY23 3BU) will be completed;
5. Archive data, including primary and secondary sources, historic maps and estate maps will be examined at the regional archives (The Old Rectory, Rectory Ln, Hawarden, Deeside CH5 3NN). The examination of the archive data will include historic mapping including the local tithe map and schedule;
6. If available for the assessment area, Light Detection and Ranging (LiDAR) data will be examined from the Lle Geo-Portal at <http://lle.gov.wales/home> for information on potential surface features using digital terrain modelling and digital surface modelling.

3.2 Photographic and Descriptive Survey

A photographic and descriptive survey will be undertaken that will incorporate the reservoir area as located on Figure 01. All known and new archaeological assets identified within close proximity to the reservoir will be located and described on GAT pro-formas and a written description and photographic record of the visible reservoir infrastructure will be completed. Any recorded assets, as well as the reservoir, will then be added to the overall gazetteer and their relative importance defined. The potential for sub-surface archaeology will be estimated and defined.

A photographic record will be maintained in RAW format using a digital SLR set to maximum resolution (Nikon D3000; resolution: 3,872 × 2,592 [10.2 effective megapixels]) and a photographic metadata table will be completed and included in the report. Photographic images will be archived in TIFF format; the archive numbering system will start from **G2596_001**. A handheld GPS unit will also be used during the photographic survey.

3.3 Gazetteer

A gazetteer will be compiled for any identified sites within and within proximity to the specified route based on information sourced from the regional HER; the gazetteer will include:

1. Feature Number
2. Site name
3. PRN number
4. Grid reference
5. Period
6. Site type
7. Assessment category
8. Description
9. Impact
10. Recommendation for further assessment/evaluation
11. Recommendation for mitigatory measures.

The following categories will be used to define the assessment category of the archaeological asset:

Category A - Sites of National Importance.

Scheduled Monuments, Listed Buildings of grade II* and above, as well as those that would meet the requirements for scheduling (ancient monuments) or listing (buildings) or both. Sites that are scheduled or listed have legal protection, and it is recommended that all Category A sites remain preserved and protected *in situ*.

Category B - Sites of regional or county importance.

Grade II listed buildings and sites which would not fulfil the criteria for scheduling or listing, but which are nevertheless of particular importance within the region. Preservation *in situ* is the preferred option for Category B sites, but if damage or destruction cannot be avoided, appropriate detailed recording might be an acceptable alternative.

Category C - Sites of district or local importance.

Sites which are not of sufficient importance to justify a recommendation for preservation if threatened. Category C sites nevertheless merit adequate recording in advance of damage or destruction.

Category D - Minor and damaged sites.

Sites that are of minor importance or are so badly damaged that too little remains to justify their inclusion in a higher category. For Category D sites, rapid recording, either in advance of or during destruction, should be sufficient.

Category E - Sites needing further investigation.

Sites, the importance of which is as yet undetermined and which will require further work before they can be allocated to categories A - D are temporarily placed in this category, with specific recommendations for further evaluation. In this report several sites of unknown potential have been allocated to this category.

The impact of the proposed works on any asset will be identified using the following impact criteria, defined either as *none*, *slight*, *unlikely*, *likely*, *significant*, *considerable* or *unknown* as follows:

None:

There is no construction impact on this asset.

Slight:

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

Unlikely:

This category indicates sites that fall within the band of interest but are unlikely to be directly affected. This includes sites such as standing and occupied buildings at the margins of the band of interest.

Likely:

Sites towards the edges of the study area, which may not be directly affected, but are likely to be damaged in some way by the construction activity.

Significant:

The partial removal of an asset affecting its overall integrity. Assets falling into this category may be linear features such as roads or tramways where the removal of part of the feature could make overall interpretation problematic.

Considerable:

The total removal of an asset or its partial removal which would effectively destroy the remainder of the site.

Unknown:

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

3.4 Data processing and report compilation

Following completion of the stages outlined above, a report will be produced incorporating the following:

1. Front cover;
2. Inner cover;
3. Figures and Plates List
4. Non-technical summary;
5. Introduction;
6. Methodology
 - a. Desk-based assessment
7. Results
 - a. Desk based assessment
 - i. Location and geological summary
 - ii. Statutory and non-statutory designations
 - iii. Environmental remains and soil morphology
 - iv. Historical and archaeological background
 - v. Cartographic evidence
 - vi. Artefact potential
 - vii. Aerial photographs and LiDAR;
 - b. Gazetteer of features
8. Conclusions and recommendations
 - a. Conclusion
 - b. Table of sites and recommendations
9. Acknowledgements
10. Bibliography
 - a. Primary sources
 - b. Secondary sources
11. Figures; inc.:
 - location plan;
 - historic mapping;
 - location plan with identified features
12. Appendix I (approved written scheme of investigation)
13. Appendix II (Sites listed on GAT Historic Environment Record)
14. Appendix III (Definition of mitigation terms)
15. Appendix IV Photographic metadata (walkover survey)

Illustrations will include plans of the location of the study area and archaeological sites. Historical maps, when appropriate and if copyright permissions allow, will be included.

A full archive including plans, photographs, written material and any other material resulting from the project will be prepared. The archaeological assessment outlined in this written scheme of investigation will be submitted in draft format in February 2019; a final report will be submitted to the Historic Environment within six months of submitting the draft report (August 2019).

The following dissemination will apply:

- A paper report(s) plus digital report(s) will be provided to the client/consultant and CPAT (draft report then final report);
- A paper report plus a digital report will be provided to the regional Historic Environment Record, Clwyd-Powys Archaeological Trust; this will be submitted within six months of project completion (final report only), along with any relevant, digital information such as the project database, GIS table(s) and photographs. All digital datasets submitted will conform to the required standards set out in *Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs) (Version 1)*;
- A digital report and archive (including photographic and drawn) data will be provided to Royal Commission on Ancient and Historic Monuments, Wales (final report only), in accordance with the *RCAHMW Guidelines for Digital Archives Version 1*. Digital information will include the photographic archive and associated metadata;

4 PERSONNEL

The project will be managed by John Roberts, Principal Archaeologist GAT Contracts Section. The assessment will be completed by a project archaeologist who will have responsibility for completing the desk based assessment, maintaining the site archive, liaising with CPAT and *Stillwater Associates Limited* and submitting the draft report and final report. The project manager will be responsible for reviewing and approving the report prior to submission.

5 INSURANCE

5.1 Public/Products Liability

Limit of Indemnity- £5,000,000 any one event in respect of Public Liability

INSURER Aviva Insurance Limited

POLICY TYPE Public Liability

POLICY NUMBER 24765101CHC/UN/000375

EXPIRY DATE 21/06/2019

5.2 Employers Liability

Limit of Indemnity- £10,000,000 any one occurrence.

The cover has been issued on the insurers standard policy form and is subject to their usual terms and conditions. A copy of the policy wording is available on request.

INSURER Aviva Insurance Limited

POLICY TYPE Employers Liability

POLICY NUMBER 24765101 CHC / UN/000375

EXPIRY DATE 21/06/2019

5.3 Professional Indemnity

Limit of Indemnity- £5,000,000 in respect of each and every claim

INSURER Hiscox Insurance Company Limited

POLICY TYPE Professional Indemnity

POLICY NUMBER 9446015

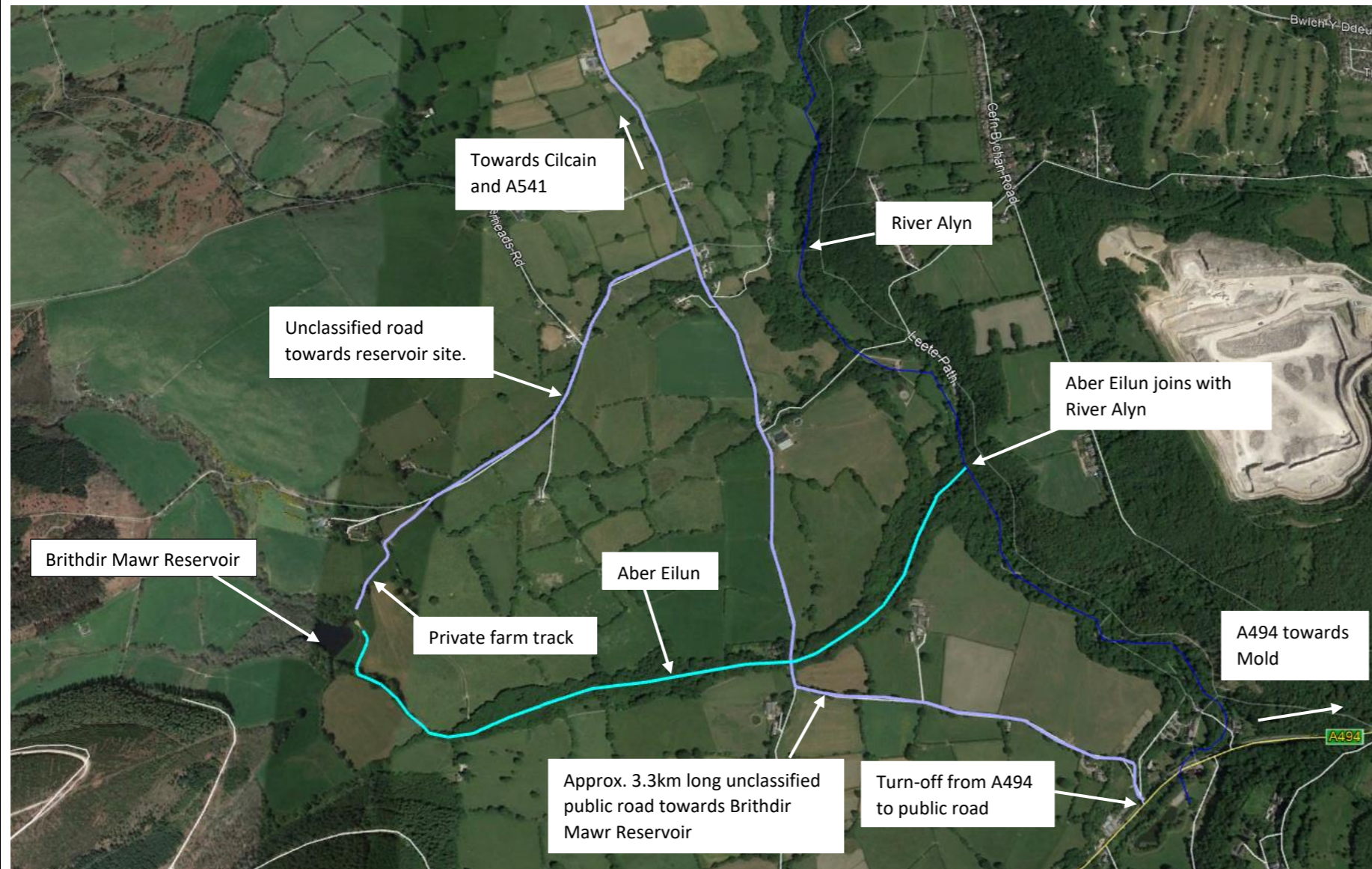
EXPIRY DATE 22/07/2019

6 SOURCES CONSULTED

1. English Heritage, 1991, Management of Archaeological Projects
2. English Heritage, 2015, Management of Research Projects in the Historic Environment (MoRPHE).
3. *Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs)* (Version 1)
4. https://landmap-portal.naturalresources.wales/view_survey.php?survey_id=7695
5. Ordnance Survey (Sheets XIII, XIII.SW, XV.SW, First to Fourth Edition 6-inch to 1 mile)
6. Royal Commission on Ancient and Historic Monuments of Wales 2015 *Guidelines for digital archives*
7. Standard and Guidance for Historic Environment Desk-Based Assessment (Chartered Institute for Archaeologists, 2014).

FIGURE 01

**Location Map (Stillwater Associates Limited Drawing number SE639-005,
January 2019)**

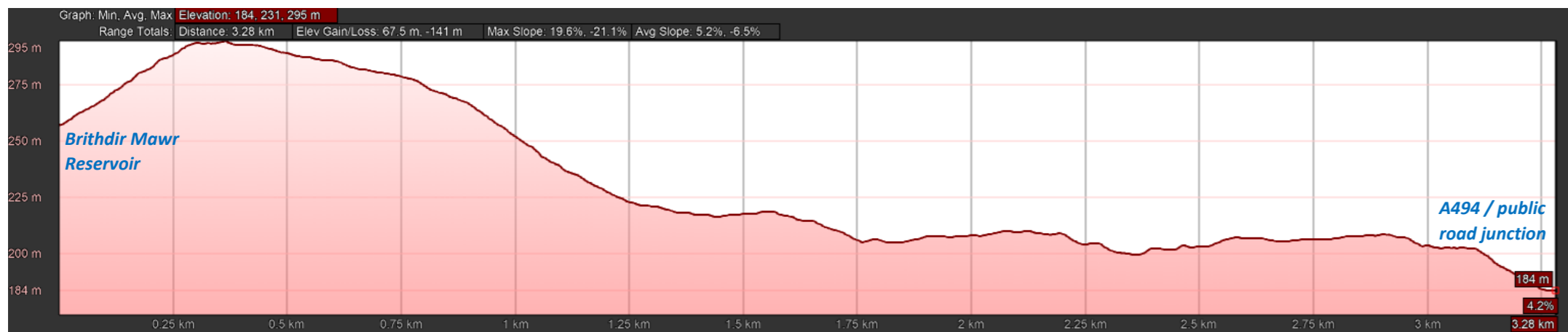


View of lockable access gate at entrance to reservoir



View of private farm track looking north

Access plan for Brithdir Mawr Reservoir



Elevation profile of access route from A494 to reservoir

Notes:
Refer to accompanying text description of access route.



Client:	Dŵr Cymru Welsh Water
Project:	Brithdir Mawr Reservoir Discontinuance Feasibility Assessment
Drawing title:	Brithdir Mawr Reservoir Site Access
Drawing number:	SE439-005
Date:	January 2019

APPENDIX II

Gwynedd Archaeological Trust photographic metadata

PHOTO RECORD NUMBER*	DESCRIPTION*	VIEW FROM	SCALE(S)	CREATOR OF DIGITAL PHOTO*	DATE OF CREATION OF DIGITAL PHOTO*	ORIGINATING ORGANISATION	PLATE
G2596_001	Overview of reservoir from entrance	NNE	1x1m	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	Cover
G2596_002	View down concrete revetment to spillway (curved)	NW	1x1m	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_003	View down curved spillway - footbridge and building	NNW	1x1m	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_004	View down curved spillway - footbridge and building	NW	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	03
G2596_005	View up Spillway to reservoir	SE	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	02
G2596_006	Across spillway to large concrete revetment	NE	1x1m	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_007	Across spillway to large concrete revetment	N	1x1m	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	04
G2596_008	Across reservoir from top of NE bank	N	1x1m	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	05
G2596_009	View along NE bank	NNW	1x1m	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_010	View along NE bank	SSE	1x1m	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_011	View across reservoir from bend in bank	E	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_012	View along SE bank	NE	1x1m	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	06
G2596_013	Entrance to stepped spillway	ENE	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_014	Entrance to stepped spillway - no access behind reservoir	E	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	

PHOTO RECORD NUMBER*	DESCRIPTION*	VIEW FROM	SCALE(S)	CREATOR OF DIGITAL PHOTO*	DATE OF CREATION OF DIGITAL PHOTO*	ORIGINATING ORGANISATION	PLATE
G2596_015	Entrance to stepped spillway - no access behind reservoir	SE	1x1m	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	07
G2596_016	Down stepped spillway	WNW	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	08
G2596_017	Bottom of stepped spillway	NW	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_018	View up stepped spillway	E	1x1m	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	09
G2596_019	Spillways joins Aber Eilun	NW	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	10
G2596_020	View of SE bank & entrance to tunnel	SE	1x1m	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	11
G2596_021	Up curved spillway from bottom	SSW	1x1m	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_022	Entrance to tunnel in SE bank	SE	1x1m	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	12
G2596_023	View from bottom of SE bank to building	SSW	1x1m	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_024	View across spillway to Aber Eilun	NNW	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_025	Revetment - bend in banks	NNE	1x1m	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	13
G2596_026	View to foot bridge NE bank	SSE	1x1m	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_027	NE bank from base	SE	1x1m	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_028	View over fields	NW	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	

PHOTO RECORD NUMBER*	DESCRIPTION*	VIEW FROM	SCALE(S)	CREATOR OF DIGITAL PHOTO*	DATE OF CREATION OF DIGITAL PHOTO*	ORIGINATING ORGANISATION	PLATE
G2596_029	View over fields	W	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_030	View over fields	SW	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_031	View over foot bridge to fields	S	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_032	Down spillway from foot bridge	NW	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_033	Up curved spillway from foot bridge	SE	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_034	View of Hall House from reservoir PRN 102293	N	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	14
G2596_035	Reservoir from entrance gate	NE	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_036	View across field to pos location of lime kiln PRN 104081	NW	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_037	Pos quarried out area Near pos lime kilm PRN 104081	NNW	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	16
G2596_038	Hall house from field - PRN 102293	SSE	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	15
G2596_039	View towards reservoir from gate at top of field	NE	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	01
G2596_040	Old gate post near hall house	NW	1x1m	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_041	Old gate post near hall house - metal hinges	NW	1x1m	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	
G2596_042	Hall House - PRN 102293	SE	-	Carol Ryan Young	12/02/2019	Gwynedd Archaeological Trust	

APPENDIX III

Categories of importance

The following categories will be used to define the assessment category of the archaeological asset:

Category A - Sites of National Importance.

Scheduled Monuments, Listed Buildings of grade II* and above, as well as those that would meet the requirements for scheduling (ancient monuments) or listing (buildings) or both. Sites that are scheduled or listed have legal protection, and it is recommended that all Category A sites remain preserved and protected *in situ*.

Category B - Sites of regional or county importance.

Grade II listed buildings and sites which would not fulfil the criteria for scheduling or listing, but which are nevertheless of particular importance within the region. Preservation *in situ* is the preferred option for Category B sites, but if damage or destruction cannot be avoided, appropriate detailed recording might be an acceptable alternative.

Category C - Sites of district or local importance.

Sites which are not of sufficient importance to justify a recommendation for preservation if threatened. Category C sites nevertheless merit adequate recording in advance of damage or destruction.

Category D - Minor and damaged sites.

Sites that are of minor importance or are so badly damaged that too little remains to justify their inclusion in a higher category. For Category D sites, rapid recording, either in advance of or during destruction, should be sufficient.

Category E - Sites needing further investigation.

Sites, the importance of which is as yet undetermined and which will require further work before they can be allocated to categories A - D are temporarily placed in this category, with specific recommendations for further evaluation. In this report several sites of unknown potential have been allocated to this category.

The impact of the proposed works on any asset will be identified using the following impact criteria, defined either as *none*, *slight*, *unlikely*, *likely*, *significant*, *considerable* or *unknown* as follows:

None:

There is no construction impact on this asset.

Slight:

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

Unlikely:

This category indicates sites that fall within the band of interest but are unlikely to be directly affected. This includes sites such as standing and occupied buildings at the margins of the band of interest.

Likely:

Sites towards the edges of the study area, which may not be directly affected, but are likely to be damaged in some way by the construction activity.

Significant:

The partial removal of an asset affecting its overall integrity. Assets falling into this category may be linear features such as roads or tramways where the removal of part of the feature could make overall interpretation problematic.

Considerable:

The total removal of an asset or its partial removal which would effectively destroy the remainder of the site.

Unknown:

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



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