LLWYBR TEGID: LLANUWCHLLYN TO GLANLLYN CYCLE ROUTE

Final Mitigation Report

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

LLWYBR TEGID: LLANUWCHLLYN TO GLANLLYN CYCLE ROUTE

Final Mitigation Report

Historic Environment Primary Reference Number 45300.

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Prepared for: YMGYNGHORIAETH GWYNEDD CONSULTANCY

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***front cover image: Surface of Roman Road, viewed from the north-east (archive image: G2255_079)**

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CRYNODEB ANNHECHNEGOL

Comisiynwyd Ymddiriedolaeth Archaeolegol Gwynedd gan Ymgynghoriaeth Gwynedd Consultancy i ymgymryd â lliniaru archeolegol yn ystod gwaith tir ar gyfer llwybr beicio Llwybr Tegig rhwng Glanllyn a Llanuwchllyn yng Ngwynedd. Adnabyddwyd rhan o ffordd Rufeinig Caersws I Gaer Gai yn ystod y gwaith lliniaru, a cafodd casgliadau ecoffactau ac arteffactau eu hadfer o gyd-destunau sy'n gysylltiedig â'r ffordd Rufeinig, ffos ddraenio ddiweddarach, rhigol, twll postyn, a'r isbridd oedd uwch ben. Roedd yr arteffactau'n cynnwys darnau o grochenwaith, deunydd adeiladu ceramig, gwydr, hoelen haearn, plwm a cherrig a weithiwyd ac a oedd o darddiad Rhufeinig yn gysylltiedig â gaer Caer Gai i'r gogledd, a garnisonwyd rhwng 75AD a 130AD. Roedd yr ecoffactau yn cynnwys siarcol o wastraff tanwydd a phlisgyn cnau cyll, fe anfonwyd samplau ar gyfer dyddio radio carbon o brif lenwad ffos y ffordd Rufeinig a'r rhigol gyfagos. Nid oedd ddigon o garbon i'w ddyddio yn y rhigol, tra bod y dyddiadau o'r llenwad ffos yn amrywio o ganol y ganrif gyntaf CC i ganol y ganrif gyntaf OC ac i gyfnod cynnar/canol yr ail ganrif OC hyd at ganol y drydedd ganrif OC. Mae'n debyg bod y dyddiadau cynharach yn weddill gan eu bod yn cyd-ddyddio sefydliad y gaer, ac bod yr dyddiadau hwyrach yn gysylltiedig â gadawiad y gaer. Dros y cyfan, mae'r canlyniadau wedi darparu gwybodaeth werthfawr ar gyfer yr ardal yn ystod y cyfnod Rhufeinig, gan ychwanegu at y cofnod hysbys o gloddiadau blaenorol ar gyfer gaer Rufeinig Caer Gai yn ogystal â rhwydwaith y Ffordd Rufeinig.

NON-TECHNICAL SUMMARY

Gwynedd Archaeological Trust was commissioned by Ymgynhoriaeth Gwynedd Consultancy to undertake archaeological mitigation during groundworks for the Llwybr Tegid cycle path between Glanllyn and Llanuwchllyn in Gwynedd. A section of the Caersws to Caer Gai Roman road was identified during the mitigation and the ecofact and artefact assemblages were recovered from contexts associated with the Roman road, a later drainage ditch, a gully, a posthole and the overlying subsoil. The artefacts included fragments of pottery, ceramic building material, glass, iron nails, worked lead and worked stone and were of Roman origin associated with the Caer Gai fort to the north, which was garrisoned between 75AD and 130AD. The ecofacts included charcoal from fuel debris and hazelnut shell and selected samples were sent for radiocarbon dating from the primary fill of the Roman road ditch and the neighbouring gully. There was insufficient carbon to date the gully, whilst the dates from the ditch fill varied from mid-first century BC to mid-first century AD and early/mid-second century AD to mid-third century AD. It is likely the earlier date range was residual as it pre-dated the establishment of the fort, but the later date range could relate to the abandonment of the fort. Overall, the results have provided valuable information for the

use of this area during the Roman period, adding to the known record from previous excavations of Caer Gai Roman fort as well as the Roman Road network.

1 INTRODUCTION

Gwynedd Archaeological Trust (GAT) was commissioned by Ymgynhoriaeth Gwynedd Consultancy (YGC) to undertake archaeological mitigation during the construction of a cycle path, known as 'Llwybr Tegid'. The cycle path measured c.2.2km in length and ran through a series of fields immediately to the south of the A494 road between Glanllyn (NGR SH88753184) and Llanuwchllyn (NGR SH87193068), Gwynedd (Figure 01). The mitigation was preceded by an archaeological assessment completed by GAT in 2012 (GAT Report 1055), which concluded that the cycle path would cross the Caersws to Caer Gai Roman road (Primary Reference Number (PRN) 17793; Margary reference number RR642).

The archaeological mitigation was completed between February and March 2014 and comprised a watching brief along the route of the cycle path during groundworks, and a controlled strip of a designated area where the cycle path was expected to cross the Roman road. No significant archaeological activity was identified during the course of the watching brief, but the controlled strip identified the remains of the Roman road, associated ditches and later activity. Based on the results of the mitigation, recommendations were made for the post excavation assessment and analysis of the recovered ecofacts and artefacts from the Roman road and associated features.

The project has been monitored by the Snowdonia National Park Archaeologist (SNPA) and the Gwynedd Archaeological Planning Service (GAPS). The current phase of works has been undertaken in accordance with an approved project design submitted by GAT (cf. Appendix I). The Historic Environment Primary Reference Number for this project is 45300.

The post-excavation work has been undertaken as a phased process in accordance with guidelines specified in Management of Archaeological Projects – MAP2 (English Heritage, 1991), and relevant guidelines from Management of Research Projects in the Historic Environment (English Heritage 2015). Five project phases are specified in MAP2 (English Heritage, 1991):

- MAP2 Phase 1: Project Planning
- MAP2 Phase 2: Fieldwork
- MAP2 Phase 3: Assessment of Potential for Analysis
- MAP2 Phase 4: Analysis and Report Preparation
- MAP2 Phase 5: Dissemination

The current report relates to the analysis, dating, report preparation and dissemination as specified by MAP2 Phases 4 and 5, and also incorporates the results from the preceding phases.

The archaeological mitigation and post-excavation has been undertaken in accordance with the following guidelines:

- English Heritage, 2015, Management of Research Projects in the Historic Environment (MoRPHE).
- English Heritage, 1991, Management of Archaeological Projects
- English Heritage 2005 New Guidelines for the Treatment of Human Remains Excavated from Christian Burial Grounds in England
- English Heritage, 2011, Environmental Archaeology: A guide to the theory and practise of methods, from sampling and recovery to post-excavation. English Heritage Publications. Swindon.
- McKinley, Jacqueline I. and Roberts, Charlotte 1993, Excavation and post excavation treatment of cremated and inhumed human remains. CIFA Technical Paper No. 13
- Royal Commission on Ancient and Historic Monuments of Wales 2015 Guidelines for digital archives.
- Standard and Guidance for Archaeological Excavation (Chartered Institute for Archaeologists, 1995, rev. 2001, 2008 and 2014).
- Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives (Chartered Institute for Archaeologists, 2009 and 2014).
- Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials (Chartered Institute for Archaeologists, 2008 and 2014).

1.1 Aims and Objectives

The aim and objective of the post-excavation and analysis was to place the mitigation results in context, with reference to the known archaeological record and the *Refresh of the Research Framework for the Archaeology of Wales 2011-2016: Romano British* (Dr. J.L. Davies, with comments from Dr Edith Evans).

2 RESULTS

The archaeological mitigation was completed between February and March 2014 and comprised a watching brief along the route of the cycle path during groundworks, and a controlled strip of a designated area where the cycle path route was expected to cross the Roman road. All written information was recorded onto GAT pro-forma recording forms. Photographs were taken using a *Nikon D40* digital SLR set to maximum resolution in RAW and jpeg format. A total of 146 images were taken and archived under project code G2255 (reference: G2255_001 to G2255_146, cf. Appendix II). A selection of archived images are reproduced as plates. The stratigraphic matrix is reproduced in Appendix III.

2.1 Watching Brief

The watching brief monitored the groundworks for the cycle scheme along the majority of the route and commenced near New Inn at the western end of the scheme (NGR SH87263084; Plate 01), continuing eastwards to the small hamlet at Gwern y Lon (NGR SH88293168), a total distance of *c.*1.4km (Figure 01). The width excavated did not exceed 2.0m and the depth did not usually exceed 0.2m (Plate 03), although on crossing field boundaries at times this depth was exceeded. The work involved removing the grass and topsoil and levelling the subsoil to provide an even surface for the stone foundation used for the cycle/pedestrian pathway.

No archaeological features were discovered along the watching brief element of the route. Modern and Victorian pottery was found in a number of areas, which was noted on the recording sheets, but not retained. Drains and culverts associated either with the A494 road or field boundaries were identified and recorded (cf. Plate 02). The route of the A494 in this area was constructed between 1797, the date of the John Evans 'Map of North Wales' and the publication of the 1st Edition Ordnance Survey Map in 1886. The road was constructed to replace an earlier coach or turnpike road which ran further north and closer to Caer Gai (GAT PRN 17649). The tone-built embankments constructed for the A494 road were visible during the watching brief (cf. Plate 04).

2.2 Controlled Strip

The controlled strip was located between NGR SH87813122 and SH87963127, a total distance of 170m (Figure 01; Figure 02). The purpose of the controlled strip was to establish the presence of the Caersws to Caer Gai Roman road at subsurface level within the confines of the cycle route. The width of the controlled strip measured 2.0m.

The Roman road was identified at NGR SH87943126 and included a road surface (agger) and associated drainage ditches; there was also evidence of a later ditch (PRN 74440), a posthole (PRN 74439) and a gully (PRN 74438). The current A494 road ran across the Roman Road almost at a right angle and the terrace engineered to carry the new road was revetted with large stones on its southern side. The design of this terrace and the lack of accompanying road side drainage are likely to have helped preserve the Roman Road under the southern side of the road terrace.

Thirty metres to the west of the Roman road the controlled strip identified the presence of a 5m wide shallow spread of fragmented slates (Plate 06). This was noted on the recording sheets as a modern feature, most likely associated with repairs to the sub-surface of the A494.

2.2.1 Roman road (PRN 17793; RR642)

The deposits above the road agger were cleaned by the mechanical excavator to just above the archaeological horizon. The extent of the road, including the roadside ditches and the gully parallel to the western side was then cleaned and recorded (Plates 05, 07, 08 and 11). In order to examine the construction of the road, a slot 1.0m wide was excavated along the southern edge of the controlled strip through the road and associated features (Figure 03). The spoil was sorted to identify any artefacts that might have been missed during the excavation process. Individual archaeological context numbers were allocated to all layers/deposits/ditch cuts and fills.

The Roman road comprised the agger (012) and a foundation layer (015); two drainage ditches ran parallel to the road on the western and eastern side respectively ([007] and [014]) (Figure 03). The eastern ditch and possibly part of the agger were truncated by a later ditch [003], with only a small section remaining at the southern edge, which contained a single fill (005) (Plate 09). The western ditch [007] was intact, with a width of 1.2m and depth of 0.32m and contained three fills: (011), (009) and (008) respectively (Plate 10). The agger was found to be only 0.15m deep, although there was evidence that some of this material had been disturbed and spread over the backfilled ditches and beyond; this displaced agger

was given a separate context number (013) and possibly reflected the intensive use of the road.

The eastern side of the road was truncated by a later ditch [003] (Figure 03). The ditch was 2.7m wide and 0.7m deep and contained three fills, (010), (006) and (004), all of which contained Roman artefacts. The upper fill (004) also contained displaced agger (013). The ditch may have been used as a drainage channel, possibly associated with later activity at the fort as it contained fragments of Roman roof tile, worked stone and pottery. NO suitable ecofacts were recovered.

The western roadside ditch had a small post-hole cut into the inner edge [016], which had a diameter of 0.35m and depth of 0.28m, and was filled with a single deposit (017) (Figure 03; Figure 04; Plate 12). The post-hole was interpreted as a later feature post-dating the ditch. The fill was fully excavated by hand and an ecofact sample was recovered for dating; no artefacts were recovered.

A shallow linear gully [018] with a north-south orientation was identified to the west of the western roadside ditch. The ditch measured 0.5m wide and 0.19m deep (Figure 03; Plate 13) and was filled by a single deposit (019). No datable artefacts were recovered.

2.3 Ecofact Assessment

The ecofact assemblage collected during the fieldwork comprised:

- A 100% bulk sample was recovered from the primary fill of roadside ditch [007], comprising one 10 litre bucket;
- A 100% bulk sample was recovered from the fill (017) of a posthole [016] comprising one 10 litre bucket. This had been cut through roadside ditch [007];
- A 5% sample, comprising one 10 l itre bucket, was recovered from the primary fill (019) of roadside ditch [018].

The subsequent ecofact post-exacavation assessment was completed as a t wo stage process:

1. The bulk samples were processed in house by GAT. This consisted of flotation and wet sieving using a 500 micron mesh to collect the residue (which collects more than the 1mm = 1000 micron), with the flot collected in a 250 micron mesh. The residues were sorted to recover artefacts and non-floating ecofacts. Once sorted the residues were discarded.
2. Recovered charcoal and charred macroplant was sent for specialist assessment to AOC Archaeology. The submitted material was sieved using a 4mm, 2mm and 1mm system of stack sieves and subsequently examined under magnification (x10 and up to x100). Macroplant identifications were completed using modern reference material and seed atlases stored at AOC Edinburgh. Taxonomic and nomenclature for plants was based on Stace,C. 2010. *New Flora of the British Isles*. 3rd Edition. Cambridge University Press. Charcoal fragments 4mm and l arger were collected for species identification and recommendations for any subsequent analysis and radiocarbon dating.

The assessment identified 27 fragments of charcoal, weighing 54.7g; the dominant species was birch (*Betula* sp), followed by oak (*Quercus* sp), alder (*Alnus glutinosa* L), elm and hazel (*Corylus avellana* L). The charcoal was mostly from the primary fill of the Roman road ditch (east side) [003], with smaller amounts (0.9g and 0.7g) from the posthole and shallow linear ditch, respectively. There was no evidence for worked wood in any example and all samples represented mixed wood fuel debris. Macroplant evidence was limited to hazelnut shell fragments (0.1g) from the roadside ditch fill and w ere interpreted as food refuse, possibly reused as material for kindling. The assessment suggested that the large concentration of charcoal within the primary ditch fill along with a smaller number of hazelnut shell fragments, probably derived from the deliberate disposal of fuel and food waste, whilst the charcoal

from the posthole and shallow ditch could have been re-deposited or reworked into these two features.

The assessment recommended the alder, birch, elm, hazel charcoal and hazelnut shell as suitable for radiocarbon dating.

A copy of the assessment report by AOC Archaeology is included in Appendix IV. The remaining ecofacts will be accessioned to the Gwynedd Museum and Archives Service *Storiel* facility.

2.4 Artefact Assessment: Ceramic building material (CBM)

The Ceramic building material (CBM) was assessed by Gill Dunn, based at Grosvenor Museum in Chester, and comprised 107 fragments from the following contexts:

Finds No.	Context No.	Context	Material	Description	Weight (g)
01	(002)	Subsoil	CBM	29 fragments of very weathered in orange and orange/pink fabrics; one fragment of *tegula*	1606
02	(002)	Subsoil	CBM	21 fragments of very weathered in an orange fabric	1243
03	(010)	Drainage Ditch	CBM	7 fragments of orange fabric with red ironstone inclusions	142
04	(006)	Drainage Ditch	CBM	2 fragments very weathered in a red/orange fabric; one fragment of *tegula*	184
05	(005)	Roman Roadside Ditches	CBM	16 fragments very weathered fragments in an orange fabric; one fragment of *tegula*	1274
06	(009)	Roman Roadside Ditches	CBM	4 weathered fragments in an orange fabric	22
07	(008)	Roman Roadside Ditches	CBM	4 fragments of very weathered red/orange fabric	22
08	(004)	Drainage Ditch	CBM	24 fragments of very weathered orange/red fabric; one fragment of *tegula*	2272

The assessment concluded that the fragments were mostly an orange or orange/red fabric in a poor weathered condition, with many of the diagnostic surfaces worn away. Specific forms were difficult to identify but were generally brick or tile, with five examples of *tegulae* (flanged roof tiles). The lack of identifiable forms and the condition of the assemblage meant that it was not possible to assign a date to the material.

No recommendations were made for further analysis in the specialist report. A copy of the assessment report is included in Appendix V. The artefacts will be ac cessioned to the Gwynedd Museum and Archives Service *Storiel* facility, in line with their 2009 guidelines.

2.5 Artefact Assessment: Pottery

The pottery was assessed by Gill Dunn, based at Grosvenor Museum Chester, and comprised 15 sherds from the following contexts:

Finds no.	Context No.	Context	Description	Weight (g)
16	(002)	Subsoil	1 body sherd in a coarse orange fabric	6
17	(002)	Subsoil	1 fragment of pottery	15
18	(002)	Subsoil	1 fragment of pottery	10
19	(002)	Subsoil	1 Fragment of pottery	14
20	(004)	Drainage Ditch	1 body sherd in a fine pale orange fabric	67
21	(004)	Drainage Ditch	1 rim sherd of a coarse pale orange fabric	46
22	(005)	Roman Road Ditch (East Side)	Base sherd of black burnished ware	37
23	(005)	Roman Road Ditch (East Side)	1 sherd in a coarse orange fabric	8
24	(005)	Roman Road Ditch (East Side)	1 body sherd of an orange	15
25	(005)	Roman Road Ditch (East Side)	1 body sherd	84
26	(006)	Drainage Ditch	Base sherd of black burnished ware	6
27	(006)	Drainage Ditch	Body sherd of orange fabric	10
28	(006)	Drainage Ditch	Body sherd of orange vessel	13
29	(006)	Drainage Ditch	Body sherd of orange vessel	6
30	(006)	Drainage Ditch	Rim sherd	82
31	(006)	Drainage Ditch	Base sherd of black burnished ware	16
32	(010)	Drainage Ditch	Rim sherd, possibly samian	8
16	(002)	Subsoil	1 body sherd in a coarse orange fabric	6

The assessment identified a range of vessel forms including amphora, a dish, mortarium and bowl. The indeterminate body sherds were identified as possible storage jars and/or

beakers. Find numbers 27, 28 and 29 were identified as the same fabric, possibly from the same vessel; find numbers 21 and 30 were from the same mortarium; find numbers 26 and 31 were black-burnished ware sherds from the same vessel.

The assessment concluded that the pottery had a date range of the late first to early second century with the black-burnished ware giving a *terminus post quem* of 120AD. A Dressel 20 amphora from the subsoil had a wide date range of the first to third century, but a closer date was not possible from a single body sherd.

No recommendations were made for further analysis in the specialist report; a copy of the assessment report is included in Appendix VI. The artefacts will be accessioned to the Gwynedd Museum and Archives Service *Storiel* facility, in line with their 2009 guidelines.

2.6 Artefact Assessment: Glass

A glass fragment was submitted to Hilary Cool of Barbican Research Associates for assessment. The aim of the assessment was to identify vessel function, type and date range, with a possibility of recommendations for further analysis. The fragment (Find Number 15) was recovered from the tertiary fill (008) of the western roadside ditch.

The glass fragment was of a blue/green hue weighing 7.8g, and measured 37 x 20 mm. The assessment report concluded that glass was from a " prismatic, most probably square, bottle… in common use from the later first century into the third century with their main *floruit* in the second century. These storage vessels are found on all types of Romano-British sites during that time, often in large quantities".

No recommendations were made for further analysis in the specialist report; a copy of the assessment report is included in Appendix VII. The artefacts will be accessioned to the Gwynedd Museum and Archives Service *Storiel* facility, in line with their 2009 guidelines.

2.7 Artefact Assessment: Metal

A total of five oxidised and degraded metal artefacts were sent to Phil Parkes, metallurgist and archaeological conservator, at Cardiff University for diagnostic X-ray and assessment. The artefacts were x-rayed using a Faxitron 43805 cabinet system and the X-ray films were digitised using an Array Corporation 2905 Laser Film Digitiser. The metal assemblage comprised of:

Finds No.	Context No.	Context	Material	Description	Weight (g)
10	(013)	Dispersed agger, overlies roadside ditches	Fe	Possible iron nails	5
11	(013)	Dispersed agger, overlies roadside ditches	Pb	Rolled/Folded lead object	11
12	(010)	Primary fill of Roman Road Ditch (East Side)	Fe	Possible iron nail	1
13	(002)	Subsoil	Pb	Lead Fragment	8
14	(008)	Upper fill of Roman Road Ditch (West Side)	Metal	Lump of corroded metal	26

The artefacts included iron nails, with flat round heads and square cross-sections tapering to a point, waste lead and a small piece of rolled/folded lead (Figure 05). Find number 14 (008) had no discernible shape and could not be identified further. A copy of the X-ray report is included in Appendix VIII

No recommendations were made for further analysis by Phil Parkes. Dr Jörn Schuster (*Archaeological Small Finds*), was contacted for advice and guidance and it was determined that the metal assemblage does not require further analysis. The iron nails were identified as *Manning Type 1B* nails, as defined in the *Catalogue of the Romano-British iron tools, fittings and weapons in the British Museum,* and were a general purpose fixing nail in frequent use and of no further diagnostic value. The lead was likely a r olled-up piece of leadsheet, possibly intended to fit into a smelter for re-melting that may have fallen onto the *agger* during transport with other scrap metal items. It was not thought likely to be a c urse tablet. The artefacts will be accessioned to the Gwynedd Museum and Archives Service *Storiel* facility, in line with their 2009 guidelines.

2.8 Artefact Assessment: Worked Stone

Gwynedd Archaeological Trust completed the assessment of the worked stone recovered from context (004), the upper fill the Roman road ditch (east side). A petrological examination of the archaeological artefacts was undertaken following standard methodology detailed in British Standard EN 12407 (2007); initial observation was made with the naked eye followed by use of a x20 Gem-A lens.

The assessment aim was to establish origin and function, both in terms of petrology and use. The assessment observed characteristics to known lithologies both locally and regionally. It was determined that the artefact was a sedimentary rock and considered to be highly likely to have a local origin. It was sourced from the Nant Ffrancon Siltstones outcropping north-west and north-east of the eastern end of Llyn Tegid. Evidence of tooling and working was noted on the stone, suggestive of working into a building stone.

The report concluded that the stone was of local origin and that similar material was identified as being part of the stone wall which made up part of the Phase II defences Caer Gai Roman fort, dated to the mid-2nd century A.D.

No recommendations were made for further analysis; a copy of the assessment report is included in Appendix IX. A photographic record of the worked stone has been completed (photographic archive reference: G2255_147 to G2255_151). The worked stone will be accessioned to the Gwynedd Museum and Archives Service *Storiel* facility, in line with their 2009 guidelines.

2.9 Ecofact Analysis: Radiocarbon Dating

Radiocarbon dating was proposed for selected charcoal fragments and macroplants, based on recommendations by AOC Archaeology (GAT Report 1393 Appendix III) and guidance from Derek Hamilton of the SUERC Radiocarbon Dating Laboratory :

Context	Feature	Sample	Species	Name
011	Linear 007	1	*Alnus glutinosa* L.	Alder
011	Linear 007	1	*Corylus avellana* L.	Hazel
019	Gully 018	3	*Betula* sp.	Birch
019	Gully 018	3	*Ulmus* sp.	Elm

GAT was advised that the sample from Posthole 016 was not suitable for dating as there was only one species identified and that secure taphonomic association between the death of a sample of charcoal and the activity surrounding the posthole was tenuous.

The purpose of the radiocarbon dating was to provide calibrated date ranges for the ditch fill and gully fill, to inform the sequence of activity. This was particularly important for the gully, for which a sequence had not been defined.

The radiocarbon dating was completed at the SUERC Radiocarbon Dating Laboratory in East Kilbride. The samples were analysed at the SUERC Accelerator Mass Spectrometry (AMS) Laboratory using its 5MV and 250KV National Electrostatic Corporation AMS systems to undertake ^{14}C, ^{10}Be, ^{26}Al, ^{36}Cl and ^{129}I analyses.

A copy of the results is included in Appendix X and summarised below.

The charred material was calibrated at SUERC's laboratory following the age ranges determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4). The radiocarbon date (^{14}C) is quoted in conventional years BP, before 1950 AD. The results as follows:

Lab No	**Context No**	**Context Description**	**Material/ species**	**Radiocarbon Age (BP)**	**$\delta^{13}C$ (‰)**	**Calibrated date (95.4% probability)**
SUERC-81317 (GU48721)	011	Primary fill of Roman Road ditch [007] (western side)	Wood charcoal: Alder (*Alnus glutinosa* L.)	1996 ± 24	-28.4 ‰	46calBC(95.4%) 60calAD
SUERC-81318 (GU48722)	011	Primary fill of Roman Road ditch [007] (western side)	Wood charcoal: Hazel (*Corylus avellana* L.)	1829±22	-29.2 ‰	128(95.4%)240calAD
GU48723	019	Fill of gully [018]	Wood charcoal: Birch (*Betula* sp.)	n/a	n/a	n/a
GU48724	019	Fill of gully [018]	Wood charcoal: Elm caryopsis (*Ulmus* sp.)	n/a	n/a	n/a

The two dates from the primary fill of the Roman Road ditch were more varied than expected: the Alder produced a calibrated date range from mid-first century BC to the mid-first century AD, which was before the period when Caer Gai fort was garrisoned (75AD to 130AD), whilst the Hazel produced a date between the early/mid-second century AD and the mid-third century AD, when the fort went out of use. There were no dates from the Birch or Elm charcoal recovered from the gully fill: the dating failed in both cases due to insufficient carbon.

3 CONCLUSION

The archaeological mitigation undertaken during the construction of the Llwybr Tegid cycle route has provided valuable information for the use of this area during the Roman period, adding to the known record from previous excavations of Caer Gai Roman fort, located 250m to the north as well as existing information for the Roman Road network.

The archaeological mitigation confirmed the results of the archaeological assessment (Richards 2012), which identified the point at which the route of the Caer Gai to Caersws Roman road was crossed by the cycle path, and the results provided important information on the location and construction of the Roman road.

The Roman road network in northwest Wales is numbered according to a system developed by I. D. Margary (1896-1976). Margary's system uses single figures for main roads, double figures for secondary roads and three figures for minor roads. The Roman road identified during the archaeological mitigation was part of Margary's road designation RR642, which incorporated the road from Caer Gai Roman Fort (SM ME018; PRN 1569) to Caersws Roman fort (SM MG 001; PRN 772). Clear evidence for the complete route from Caer Gai to Caersws is still being collated (Hopewell 2013:72); however, by comparison, the route from Caer Gai to Tomen y Mur, Trawsfynydd is considered to be the most complete Roman road in Gwynedd (Hopewell 2013:44). Establishing the line of the route between Caer Gai and Caersws has relied on the observations of a series of researchers since the nineteenth century to build up a picture of the route (Margary 1957:77; Hopewell 2013:72). Work by Mr J Lloyd at Pen-y-Bylchau (Powys) on the Mynydd Argoed – Crygnant (NMR NPRN 400030) section in the early 1960s resulted in the discovery of the road being engineered to traverse the hillside at this point (NGR SJ053193 to NGR SJ050194). Excavation on the lower hillside causeway revealed a 4.8m wide agger with a surface of frost-shattered mudstones, flanked on one side by chock stones. The agger was flanked by side ditches silted up with a soft brown soil (Jones, Putnam and T oller 1998:119). Excavations on the upper hillside causeway revealed a 4.4m wide agger with a surface of mudstone chips and gravel over a foundation spread of medium-sized stone. The agger was flanked by side ditches (Jones, Putnam and Toller 1998:119). Refining the route information collected by Margary, Lloyd and others has been possible through the Cadw funded work on Roman roads undertaken by GAT and CPAT since 2002 (cf. Hopewell 2013) and this has used a variety of techniques including aerial photography, field survey, geophysical survey and m ore recently Lidar coverage. Surveys of this type require archaeological excavation, where appropriate, to provide additional data, particularly concerning the recovery of dating and environmental

evidence and any relationships between associated features. An example of this work on the Caer Gai to Caersws road was recorded at NGR SH885305 in 2003 when some 300m of soilmark and hedgeline were recorded at Dolfawr, south east of Caer Gai (NMR NPRN 309128). The archaeological mitigation during the cycle path scheme has provided further information on the design and construction of the road, and with a recorded agger width of 4.4m, it is identical in that regard to part of the road at Pen-y-Bylchau in Powys. The surviving agger surface at Llwybr Tegid (012), consisted of locally derived siltstone, with both angular pieces and others rounded in shape, suggesting that at least two different sources of stone were used to create the road surface. The agger was bedded into (015) a silty sand, holding the surface in place as traffic passed along it. The excavations of Llwybr Tegid (GAT PRN 17792) and Pen-y-Bylchau (NMR NPRN 400030) can be compared directly to other sections excavated across other Roman roads in northwest Wales. In 1979 a section of RR69a, the road from the Roman fort of Canovium, Caerhun to Tomen y Mur, Trawsfynydd, was identified close to Rhiw Bach Quarry, Ffestiniog (NGR SH74004620; Crew 1979:28). As a follow up to this discovery, GAT conducted an archaeological excavation in 2006 to the north of Rhiw Bach Quarry at NGR SH73614763 (GAT PRN 17691). This uncovered a road 5.5m wide, which was constructed to raft over the peat deposits present at this point, and the entire depth of road surface was no more than 180mm (Hopewell 2013: 39), The route of RR69a was also examined at Garreglwyd, north east of Llan Ffestiniog (NGR SH72334250), by GAT, who undertook a programme of survey and excavation in 1990 within an upland section of the Roman road (Longley 1996). The excavation identified the roadside ditches of the Roman road but not the agger, which had been completely removed at this point during the creation of the current road (Longley 1996: 214). The width between the centre points of the two ditches was 7.5m, suggesting the road would have been at least 5.0m in width. Further excavation along the route of RR69a was undertaken by Gwynedd Archaeological Trust in 2014, 60m to the north of the 1990 project. The 2014 project identified the eastern drainage ditch of the Roman road, running parallel to the current access track (GAT PRN 17678; NGR SH72414257). The ditch measured up to 1.0m in width. This section of the road was also in an upland area of semi-improved land. In this instance, a line of stones had been placed along the outer edge of the drainage ditch to stabilise the edge (Smith and Owen 2014:8-9). In comparison with these other sites it is evident that the section of the road identified at Llwybr Tegid survived in good condition and at a shallow depth.

The artefact assemblage from Llwybr Tegid, whilst small in quantity, was varied in content. The artefacts were recovered from the road surface (agger), the roadside ditch fills and the subsoil and included fragments of pottery, ceramic building material, glass, metal and worked stone and were of Roman origin associated with Caer Gai fort. The glass was from a

storage vessel in common use from the later first century into the third century, but with the main period of use in the second century. The ceramic building material included roof tile fragments and the metal included nails and worked lead, probably either intended for or sourced from the fort. A fragment of worked stone from the Roman road ditch fill (east side) was of local origin and was interpreted as a remnant of the fort defences. The pottery included sherds from an amphora vessel, a dish, mortarium and a bowl; the typologies present include black-burnished ware datable to the late first to early second century and Spanish Dressel 20 amphora with a date range of the first to third century. Caer Gai Roman fort was garrisoned between 75AD and 130AD and the artefacts complemented this timeline.

The radiocarbon dates from the primary fill of the ditch along the western side of the Roman Road did not correlate well with the occupation of the fort, producing dates from 46BC to 60AD and 128AD to 240AD. The earlier date range has to be interpreted as being from charcoal that was earlier than the excavation of the ditch, which must have entered the ditch through some undefined action that may have been root or animal activity or windblown. There were no artefacts in the primary ditch fill to compare with the radiocarbon dates, but the second and tertiary fills included the weathered ceramic building material, the metalwork and the glass bottle fragment, whilst the east side ditch contained the pottery and more ceramic building material. If the earlier radiocarbon date range is dismissed as residual, the question arises as to whether the more acceptable second to third century radiocarbon date correlates with the later stages or abandonment of the fort. The main issue with this is that the date is from the primary fill, and if the road and ditches were constructed at the same time as the fort was established, around 75AD, it would be surprising if the ditch only started to be filled over fifty years later. One possibility is that the ditch was recut or excavated during its use and the primary fill and subsequent fills formed after this. As there was no archaeological evidence for a ditch recut, this remains as conjecture and a larger sample area would be required to explore this. The radiocarbon dates from the fill of the gully were unsuccessful, due to the lack of sufficient carbon from both available samples. As there were no datable artefacts recovered from the gully, its provenance is still unknown.

As with the recent archaeological mitigation at Caer Gai Roman Fort (Cooke 2014a; Cooke 2014b), the assemblage from Llwybr Tegid proved that even small scale excavations within or within proximity to the fort can produce volumes of material that are both varied and diagnostic. The 2014 archaeological mitigation at the fort also produced fragments of Roman ceramic building material, pottery sherds and glass. The assemblage included brick, tile and *tegulae*, but in greater quantities to Llwybr Tegid, where the assemblage was more fragmentary and abraded. A greater quantity of pottery was recovered from Llwybr Tegid, however, with the Caer Gai excavation limited to three pottery sherds including a single

sherd of mortarium, probably from the Wroxeter area, a basal sherd of South Gaulish bowl, and the base of a grey jar. The samian form may be dated c.A.D.70-110 and this date would suit the other fragments of pottery found. In addition, a shoulder fragment from a blue/green square bottle, similar to that from Llwybr Tegid and common from the later first century into the third century was also recovered, as were four fragments of un-butchered animal bones. The typological dates of the pottery sherds and the glass fragment were consistent with the occupation dates for the fort.

The site of Caer Gai appears to have been occupied after the Roman fort went out of use (White 1986: 141 quoting Jarrett pers. comm.) but no dating evidence has been recovered or published to support this. The next securely dated phase of occupation dates from 1650, when the present **'H'** plan house was constructed within the ramparts of the fort (GAT PRN 12322; NMR NPRN 28254). The house was accompanied by a garden, some of the earthworks of which remain (NMR NPRN 406900).

Between 1797, the date of the John Evans 'Map of North Wales' and the surveying of the 1st Edition Ordnance Survey Map in 1886, a section of road between NGR SH 88813 32230 and NGR SH 87427 31145 was constructed to replace an earlier coach or turnpike road which ran further north and closer to Caer Gai (GAT PRN 17649; NMR NPRN 303522). The construction of this new section of road ran across the Roman Road almost at a right angle and the terrace engineered to carry the new road was revetted with large stones on its southern side]. The design of this terrace and the lack of accompanying road side drainage are likely to have preserved the RR642 under the southern side of the road terrace.

The mitigation results provide an important addition to the local archaeological record and to the key research aims from the *Refresh of the Research Framework for the Archaeology of Wales 2011-2016: Romano British* (Dr. J.L. Davies, with comments from Dr Edith Evans). The research aims of key relevance include:

- The Archaeology of the early campaigning years: pre-Flavian and Flavian;
- Technology and Industry;
- General Themes, viz.,
    - More radiocarbon dates, particularly for the late Roman period;
    - More regional excavation to obtain a more holistic view;
    - Two critical phases: (a) the 1st century invasion period; and (b) the Late Roman period, with particular reference to whether the lack of surviving

artefacts in the 4th century is really indicative of abandonment, or merely signifies withdrawal from the market economy;

- More attention paid to environmental sampling.

Whilst the *Archaeology of the early campaigning years* research theme focuses primarily on the need for further site identification through air reconnaissance and the use of the Portable Antiquity Scheme to identify new sites, the results from Llwybr Tegid, whilst not a new site (the road being a known feature), do provide further information and archaeological evidence for that period that can be added to the record. The same principle applies to *Technology and Industry*, where the key theme of analysing metalwork to assist in identifying the origin of the ore and the extraction sites used, cannot be addressed directly by the Llwybr Tegid artefacts. The metalwork at Llwybr Tegid included ubiquitous nails and a rolled piece of lead, likely a scrap item, sourced from and intended for re-melting, which is unlikely to be suitable for producing a distinctive isotope signal. However, these artefacts do add to the archaeological record, as do the glass, pottery and worked stone. Their accession to the Gwynedd Museum and Archive Services *Storiel* facility will also allow for future study and the results can certainly be seen in terms of the general research theme of contributing to a more holistic view of the period. The project has also added to the palaeoenvironmental record in terms of charcoal species identification and use; the ecofacts were interpreted as food and fuel debris, most likely deliberately deposited in the roadside ditch during occupation of the fort. This too provides information for activity near the fort and would be a useful comparison with palaeoenvironmental results from other parts of the Roman road network.

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Figure 01: Cycle path route, trench location and Gwynedd HER sites

Cycle path route

2014 GAT trench location

17,733 HER site with PRN

17,733 Route of Roman Road with PRN

17,642 Route of 19th Century Post Road with PRN

N

Date: 16/08/2017

Author: NMC

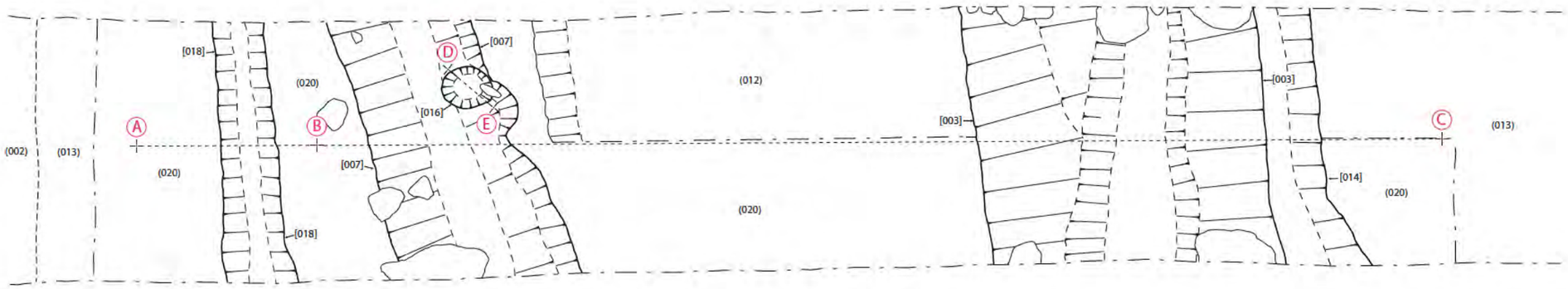
Office:

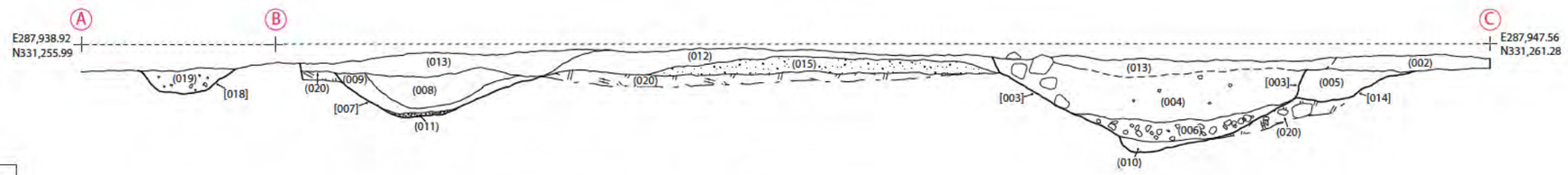
Drawing: G2215U M2PSFIG1

Scale: 1:6000@A3

0 25 50 100 metres


287,800
331,600
331,400
331,200
Track
Caergai
Caer Gai
ROMAN FORT
Well
Pond
Track
Ditch
Ditch
Road RR642
171.0m
FB
Track
FB
Gwynedd Archaeological Trust
Figure 02: Trench locations and geophysical survey results
2014 GAT trench location
1982 GAT trench location
N
Date: 09/06/2017
Author: NMC
Office:
Drawing: G2255/M2PSMFig2
Scale: 1:2000@A4
©Reproduced from Ordnance Survey Mapping with the permission of H.M.S.O. Crown Copyright, 100023382, 2017
0
25
50
metres





(002) Subsoil
[003] Cut for large ditch east of Roman Road
(004) Upper fill of [003]
(005) Fill of [014]
(006) Fill of [003]
(010) Fill of [003] below (006)
(012) Roman Road agger
(013) Dispersed agger
[014] Possible cut for post Roman ditch
(015) Redeposited sand
[016] Cut of post-hole
[018] Cut of linear gully
(019) Fill of [018]
(020) Natural

0 1 2 3m

Figure 03: Plan and section of Roman Road and linear gully [018] (Scale 1:40 @ A3). Section D-E shown on Figure 04.

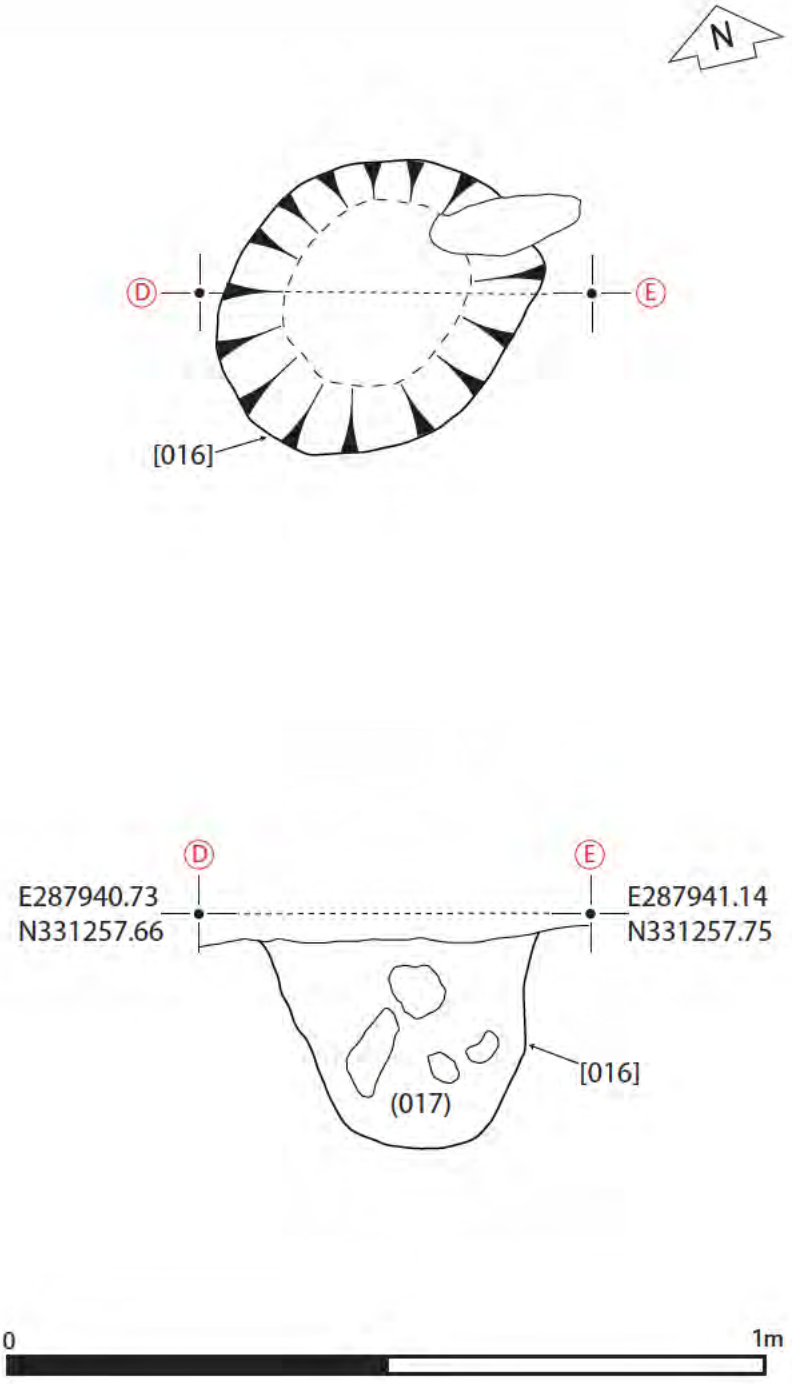


Figure 04: Plan and section of posthole [016] (Scale 1:10 @ A4).

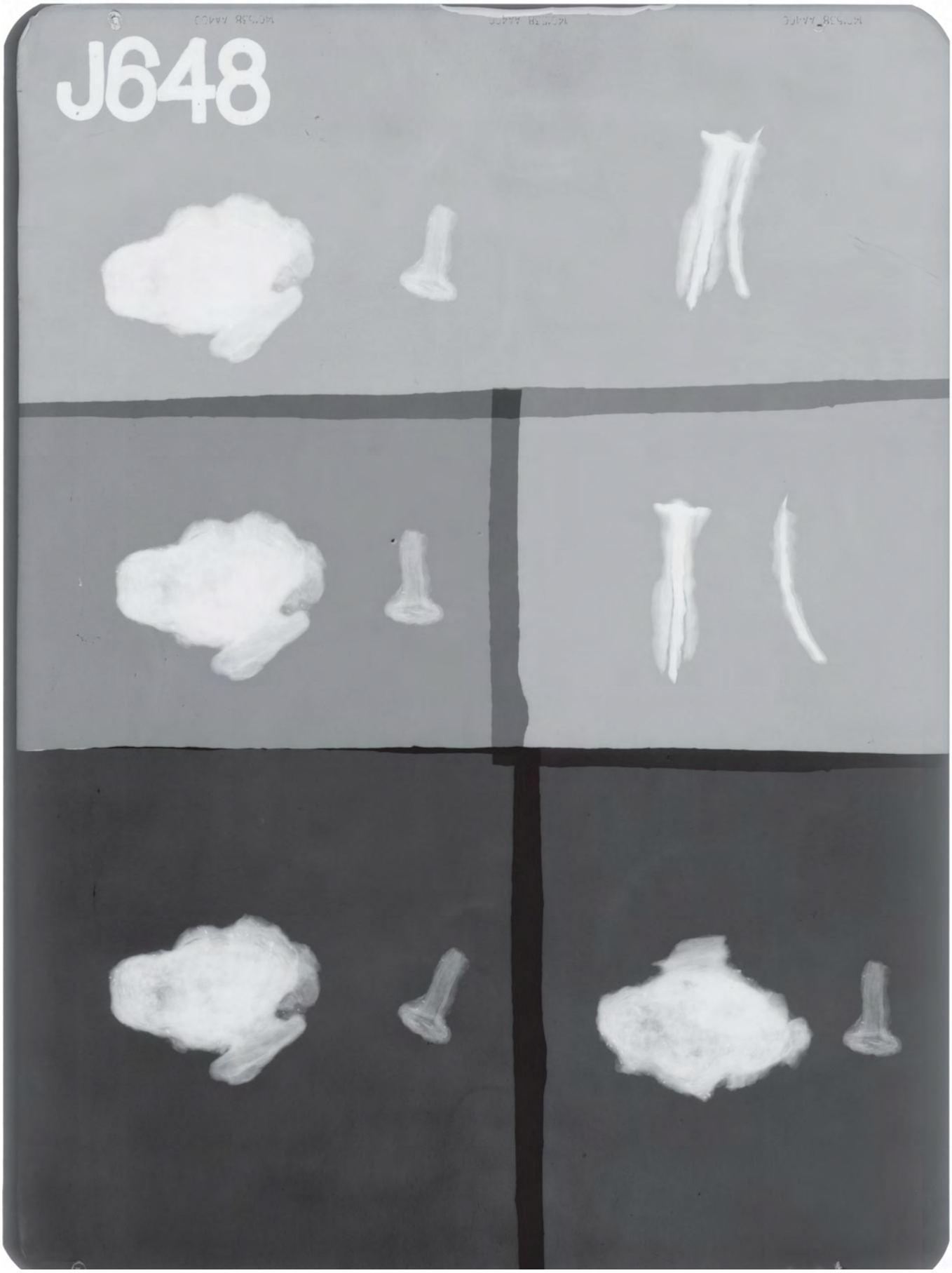


Figure 05: Reproduction of X-Ray for metal artefacts Find Nos. 10 to 14
(X-Ray reference: J648; Source: Phil Parkes, 2017).

Plate 1: Site location shot, viewed from the southwest; scale: none (archive reference: G2255_001).

Plate 2: Water at culvert head, northeastern end of field; scale: none (archive reference: G2255_041).

Plate 3: Completed soil strip; scale: 1x1m (archive reference: G2255_035).

Plate 4: Northeastern end of field detailing stone embankment for main road; scale: 1x1m (archive reference: G2255_052).

Plate 5: Edge of Roman Road (Primary Reference Number 17793; Margary reference number RR642); scale: 1x1m (archive reference: G2255_012).

Plate 6: Slate spread - eastern end of feature; scale: 1x1m (archive reference: G2255_088).

Plate 7: Edge of Roman Road; scale: 1x1m (archive reference: G2255_015).

Plate 8: Roman Road agger surface (context 012); scale: 2x1m (archive reference: G2255_079).

Plate 9: Northwest facing section of large ditch (Context [003]; Primary Reference Number 74440) at eastern side of Roman Road; scale: 2x1m (archive reference: G2255_097).

Plate 10: Southeast facing section of the Roman Road ditch (western side); scale: 1x1m and 1x0.3m (archive reference: G2255_091).

Plate 11: General shot across the Roman Road; scale: 2x1m (archive reference: G2255_117).

Plate 12: Post-hole (Context [016]; Primary Reference Number 74439), cutting the Roman roadside ditch (western side) ditch; scale: 1x0.3m (archive reference: G2255_138).

Plate 13: Linear gully (Context [018]; Primary Reference Number 74438) located to the west of the Roman Road; scale: 1x1m (archive reference: G2255_135).

APPENDIX I

Reproduction of Gwynedd Archaeological Trust project design for MAP 2 Phase 4 (January 2018)

A494 ‘LLWYBR TEGID’ CYCLE ROUTE, GWYNEDD (G2255)

PROJECT DESIGN FOR ANALYSIS AND REPORT PREPARATION

(MAP2 PHASE 4)

Prepared for

Ymgynhoriaeth Gwynedd Consultancy (YGC)

January 2018

Ymddiriedolaeth Archaeolegol Gwynedd

Gwynedd Archaeological Trust

A494 'LLWYBR TEGID' CYCLE ROUTE, GWYNEDD

PROJECT DESIGN FOR ANALYSIS AND REPORT PREPARATION

(MAP2 PHASE 4)

Prepared for Ymgynhoriaeth Gwynedd Consultancy (YGC), *December 2017*

CONTENTS

Approvals Table				
	Role	**Printed Name**	**Signature**	**Date**
Originated by	Document Author			
Reviewed by	Document Reviewer			
Approved by	Principal Archaeologist			

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

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

Name	Signature	Date

1 INTRODUCTION

Gwynedd Archaeological Trust (GAT) has been commissioned by Ymgynhoriaeth Gwynedd Consultancy (YGC) to prepare a project design for post-excavation analysis and report preparation. This follows a programme of archaeological mitigation during groundworks for a 2.2km cycle route between Llanuwchllyn and the Glan-Llyn Outdoor Education Centre (NGR SH88753184; Figure 1) and a subsequent post-excavation assessment of potential for analysis stage (GAT Report 1393).

The post-excavation is being undertaken as a phased process in accordance with guidelines specified in *Management of Archaeological Projects – MAP2* (English Heritage, 1991), and relevant guidelines from *Management of Research Projects in the Historic Environment* (English Heritage 2015). Five project phases are specified in *MAP2* (English Heritage, 1991):

- MAP2 Phase 1: Project Planning
- MAP2 Phase 2: Fieldwork
- MAP2 Phase 3: Assessment of Potential for Analysis
- MAP2 Phase 4: Analysis and Report Preparation
- MAP2 Phase 5: Dissemination

The current design specifically relates to MAP2 Phase 4: Analysis and Report Preparation. The proposed methodology and nominated specialists are noted in Sections 3.1 and 3.2. Dissemination of the results will be undertaken as part of MAP2 Phase 5.

Reference has also been made to the following guidelines:

- Campbell, G., Moffett, L. and Straker, V. *Environmental Archaeology: A guide to the theory and practise of methods, from sampling and recovery to post-excavation* (2nd edition). (English Heritage Publications. Swindon, 2011).
- *Standard and Guidance for Archaeological Excavation* (Chartered Institute for Archaeologists, 1995, rev. 2001, 2008 and 2014).
- *Standard and Guidance for Archaeological Watching Brief* (Chartered Institute for Archaeologists, 1995, rev. 2001, 2008 and 2014).
- *Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives* (Chartered Institute for Archaeologists, 2009 and 2014).
- *Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials* (Chartered Institute for Archaeologists, 2008 and 2014).

- *Royal Commission for Ancient and Historic Monuments Wales Guidelines for Digital Archives Version 1*

All phases of this project are being monitored by the Gwynedd Archaeological Planning Services (GAPS). The content of this and any future project designs and reporting must be approved by GAPS.

1.1 Aims and Objectives

To place the results in context, reference shall be made to *A Research Framework for the Archaeology of Wales Version 03, Final Refresh Document March 2017*, specifically the Refresh of the Research Framework for the Archaeology of Wales 2011-2016: Romano British (Dr. J.L. Davies, with comments from Dr Edith Evans).

2 ARCHAEOLOGICAL RESULTS

Mitigation was preceded by an archaeological assessment completed in 2012 (GAT Report 1055), which concluded that the cycle path would likely cross the former route of the Caersws to Caer Gai Roman road (RR642). The archaeological mitigation was completed between February and March 2014 and comprised a watching brief along the route of the cycle path and a controlled strip of a designated area where the cycle path route was expected to cross the Roman road. No significant archaeological activity was identified during the course of the watching brief, but the controlled strip identified the remains of the Roman road, associated ditches and later activity. Based on the results of the mitigation, recommendations were made for the post excavation assessment and analysis of the recovered ecofacts and artefacts. The post-excavation assessment of the potential for analysis (MAP2 Phase 3; GAT Report 1393) was completed for the artefact and ecofact assemblages recovered from contexts associated with the road, a later drainage ditch, a gully, a posthole and the overlying subsoil. The artefacts included fragments of pottery, ceramic building material, glass, metal and worked stone and were of Roman origin associated with the Caer Gai fort, 250m to the north. The pottery included sherds from an amphora, a dish, mortarium and a bowl; the black-burnished ware sherds provided a *terminus post quem* of 120AD. The glass was from a storage vessel in common use from the later first century into the third century, but with the main period of use in the second century. The ceramic building material included roof tile fragments and the metal included nails and worked lead. The single worked stone from the Roman road ditch (east side) was of local origin and was interpreted as part of the fort defences. The ecofact assemblage was recovered from the primary fill of the Roman road ditch (west side), the posthole and the gully. The ecofact assessment identified charcoal from mixed wood fuel debris in all the features and charcoal suitable for dating was recovered from all contexts assessed. The ceramic building material and glass provided a more general timeline and further analysis of these artefacts and the worked stone could not improve on this and was not recommended. It was deemed possible that the nails and worked lead may have diagnostic potential and further analysis by a specialist was recommended. The submission of the charcoal/macroplants from the Roman road ditch, posthole and gully for radiocarbon dating was recommended, to provide date ranges for all three features and inform on the sequence of activity . This was particularly important for the posthole and gully, as the posthole was the latest sequenced feature on site, cutting into the Roman road ditch, whilst the gully was an isolated feature, with an undetermined date range. It was recommended that all artefacts be accessioned to a suitable museum for archiving.

3 METHODOLOGY

3.1 Artefact Analysis

The MAP2 Phase 3 metal artefact assessment completed by Phil Parkes (metallurgist and archaeological conservator at Cardiff University), identified five oxidised and degraded metal artefacts, which included iron nails and rolled/folded lead from the Roman road surface (*agger*) and an iron nail from the primary fill of the east side Roman road ditch. It was recommended in the MAP2 Phase 3 report (GAT Report 1393) that the nails and lead may have diagnostic value and specialist analysis was recommended. Dr Jörn Schuster (*Archaeological Small Finds*), was contacted for advice and guidance and it was determined that the metal assemblage does not require further analysis. The iron nails were identified as *Manning Type 1B* nails, as defined in the *Catalogue of the Romano-British iron tools, fittings and weapons in the British Museum,* and were a general purpose fixing nail in frequent use and of no further diagnostic value. The lead was likely a rolled-up piece of leadsheet, possibly intended to fit into a smelter for re-melting that may have fallen onto the *agger* during transport with other scrap metal items. It was not thought likely to be a curse tablet.

One of the key themes from the current *Research Framework for the Archaeology of Wales* for the Romano-British period is the analysis of metalwork to identify metallurgical signatures for different ores, which may assist in identifying the origin of the ore and the extraction sites used. This would contribute to the identification of Roman period mining on extraction sites and the identification of military control at extraction sites where Roman activity is known. This would be achived through lead isotope analysis, but as the current object is likely a scrap item, sourced from and intended for remelting, it is unlikely to be suitable for producing a distinctive isotope signal.

Regardless of the ubiquity of the artefacts, it is still recommended that they are accessioned to a suitable museum for archiving, where they would be accessible for any future study. As the site is located in Gwynedd, the nominated museum is Storiel, based in Bangor. Accessioning will be in in accordance with their current guidelines and will be completed as part of MAP2 Phase 5 (Dissemination and Archiving).

3.2 Ecofact Analysis (Radiocarbon Dating)

Radiocarbon dating will be completed for the following charcoal fragments and macroplants, based on the recommendations by AOC Archaeology (GAT Report 1393 Appendix III) and guidance from Derek Hamilton of the SUERC Radiocarbon Dating Laboratory :

Context	Feature	Sample	Species	Name
011	Linear 007	1	*Alnus glutinosa* L.	Alder
011	Linear 007	1	*Corylus avellana* L.	Hazel
019	Gully 018	3	*Betula* sp.	Birch
019	Gully 018	3	*Ulmus* sp.	Elm

GAT was advised that the sample from Posthole 016 was not suitable for dating as there was only one species identified and that secure taphonomic association between the death of a sample of charcoal and the activity surrounding the posthole was tenuous.

The purpose of the radiocarbon dating will be to provide calibrated date ranges for the ditch fill and gully fill, to inform the sequence of activity. This is particularly important for the gully, for which a sequence is not currently defined.

The radiocarbon dating will be completed at the SUERC Radiocarbon Dating Laboratory in East Kilbride. The samples will be analysed at the SUERC Accelerator Mass Spectrometry (AMS) Laboratory using its 5MV and 250KV National Electrostatic Corporation AMS systems to undertake ^{14}C, ^{10}Be, ^{26}Al, ^{36}Cl and ^{129}I analyses. In addition, the 250 kV instrument is dedicated to ^{14}C and positive ion measurements.

3.3 Reporting

Following completion of the analyses outlined above, a fully illustrated MAP2 Phase 4 report will be produced that will review and contextualise the results from all stages of the project. The report will compare the results to other contemporary sites. The report will incorporate the following elements:

1 Non-technical summary
2 Introduction
3 Background
4 Methodology and Results
5 Conclusions
6 Sources Consulted
7 Figures
8 Plates
9 Appendix I – Approved Project Design
10 Appendix II – Specialist Reports

The report will consider the research themes and general themes defined by the *Research Framework for the Archaeology of Wales 2011-2016: Roman* (March 2017). The post-excavation will be able to consider the general themes within the Research Framework, which prioritises more radiocarbon dating, particularly from the late Roman period and for which the dates from the gully and the posthole may be of relevance.

On completion of the report, the following dissemination will apply:

1. A digital report will be provided to SNPA and GAPS (draft report then final report).
2. A paper report plus a digital report will be provided to the regional Historic Environment Record, Gwynedd Archaeological Trust; this will be submitted within six months of report completion (final report only).
3. A digital report and archive (including photographic and drawn) data will be provided to RCAHMW (final report only). Submission of digital information to the Royal Commission on the Ancient and Historical Monuments of Wales shall be undertaken in accordance with the RCAHMW Guidelines for Digital Archives Version 1. Digital information will include the photographic archive and associated metadata
4. A digital report(s) plus paper report(s) (if requested) will be provided to the client (draft report then final report).

5. It is proposed ultimately to publish a summary of the work in Archaeology in Wales, the journal for the Council of British Archaeology Wales. This will be undertaken as part of MAP2 Phase 5.The MAP2 Phase 5 dissemination process will be confirmed with SNPA/GAPS and client via correspondence once the MAP2 Phase 4 report is approved.

4 SOURCES CONSULTED

1. Campbell, G., Moffett, L. and Straker, V. *Environmental Archaeology: A guide to the theory and practise of methods, from sampling and recovery to post-excavation* (2nd edition). (English Heritage Publications. Swindon, 2011)
2. Chartered Institute for Archaeologists, 2014. *Standard and Guidance for archaeological excavation*
3. Chartered Institute for Archaeologists, 2014. *Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives* (Chartered Institute for Archaeologists, 2009 and 2014).
4. Chartered Institute for Archaeologists, 2014. *Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials*
5. Davies, Dr. J.L., (with comments from Dr Edith Evans), 2017. *A Research Framework for the Archaeology of Wales Version 03, Final Refresh Document*
6. English Heritage 1991 *Management of Archaeological Projects,* English Heritage, London.
7. Jones, B., McGuinness, N. & Smith, S. G., 2017. Llwybr Tegid: Llanuwchllyn to Glanllyn Cycle Route MAP2 Phase 3: Assessment of Potential for Analysis. Gwynedd Archaeological Trust Report 1393.
8. Kelly R S, 1986 'A Section across the Road Between Caer Gai and Tomen y Mur' *JMHRS X Pt II*.
9. Lee, E. 2009 *Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide*, English Heritage, Swindon.
10. Manning, W. H. 1985. *Catalogue of the Romano-British Iron Tools, Fittings and Weapons in The British Museum.* British Museum Publications, London

5 FIGURE 01

5.1 Location Map

Gwynedd Archaeological Trust

Figure 01: Cycle path route, trench location and Gwynedd HER sites

Cycle path route

2014 GAT trench location

17,733 HER site with PRN

17,733 Route of Roman Road with PRN

17,642 Route of 19th Century Post Road with PRN

N

Date: 16/08/2017

Author: NMC

Office:

Drawing: G2215U M2PSFIG1

Scale: 1:6000@A3

0 25 50 100 metres

APPENDIX II

Gwynedd Archaeological Trust photographic metadata

File reference	Project phase	Site sub-division	Description	View from	Scale (s)	Date taken	Originating person	Report plate No.
G2255_001	Controlled Strip	Field 10	Site location shot	SW	-	05/02/14	Ken Owen	Plate 1
G2255_002	Controlled Strip	Field 10	Site location shot + Caer Gai	SE	-	05/02/14	Ken Owen	
G2255_003	Controlled Strip	Field 10	Site location shot	E	-	05/02/14	Ken Owen	
G2255_004	Controlled Strip	Field 10	Topsoiled area from CH1120	NE	1x1m	05/02/14	Ken Owen	
G2255_005	Controlled Strip	Field 10	Topsoiled area from CH1000	NE	1x1m	05/02/14	Ken Owen	
G2255_006	Controlled Strip	Field 10	Topsoiled area from CH990	E	1x1m	05/02/14	Ken Owen	
G2255_007	Controlled Strip	Field 10	General shot of setting out line of trench	E	-	06/02/14	Iwan G Parry	
G2255_008	Controlled Strip	Field 10	General trenching	E	1x1m	06/02/14	Iwan G Parry	
G2255_009	Controlled Strip	Field 10	General trenching	ENE	-	06/02/14	Iwan G Parry	
G2255_010	Controlled Strip	Field 10	General trenching	ENE	1x1m	06/02/14	Iwan G Parry	
G2255_011	Controlled Strip	Field 10	Edge of Roman Road	SE	1x1m	07/02/14	Iwan G Parry	
G2255_012	Controlled Strip	Field 10	Edge of Roman Road	E	1x1m	07/02/14	Iwan G Parry	Plate 5
G2255_013	Controlled Strip	Field 10	Edge of Roman Road	E	1x1m	07/02/14	Iwan G Parry	
G2255_014	Controlled Strip	Field 10	Edge of Roman Road	NE	1x1m	07/02/14	Iwan G Parry	
G2255_015	Controlled Strip	Field 10	Edge of Roman Road	SE	1x1m	07/02/14	Iwan G Parry	Plate 7
G2255_016	Controlled Strip	Field 10	Edge of Roman Road	SE	1x1m	07/02/14	Iwan G Parry	
G2255_017	Controlled Strip	Field 10	Edge of Roman Road	S	1x1m	07/02/14	Iwan G Parry	
G2255_018	Watching brief	Field 4	Sheep!	SW	-	21/02/14	Ken Owen	
G2255_019	Watching brief	Field 4	Pre-ex location shot	SW	-	21/02/14	Ken Owen	
G2255_020	Watching brief	Field 4	Pre-ex location shot - New Inn	NE	-	21/02/14	Ken Owen	
G2255_021	Watching brief	Field 4	Topsoil stripping	NE	-	21/02/14	Ken Owen	
G2255_022	Watching brief	Field 4	Completed area at NE of field	NE	1x1m	21/02/14	Ken Owen	
G2255_023	Watching brief	Field 4	Completed area at NE of field	NE	1x1m	21/02/14	Ken Owen	
G2255_024	Watching brief	Field 4	Arching around telegraph pole	NE	1x1m	21/02/14	Ken Owen	
G2255_025	Watching brief	Field 4	Completed soil strip	SW	1x1m	21/02/14	Ken Owen	
G2255_026	Watching brief	Field 5	Location shot	NE	-	26/02/14	Ken Owen	
G2255_027	Watching brief	Field 6	Location shot	SSW	-	26/02/14	Ken Owen	

File reference	Project phase	Site sub-division	Description	View from	Scale (s)	Date taken	Originating person	Report plate No.
G2255_028	Watching brief	Field 6	Location shot	NE	-	26/02/14	Ken Owen	
G2255_029	Watching brief	Field 6	General topsoiling	E	-	26/02/14	Ken Owen	
G2255_030	Watching brief	Field 6	Topsoiled area	NE	-	26/02/14	Ken Owen	
G2255_031	Watching brief	Field 6	Finished area	NE	1x1m	26/02/14	Ken Owen	
G2255_032	Watching brief	Field 6	Finished area	NE	1x1m	26/02/14	Ken Owen	
G2255_033	Watching brief	Field 6	Completed soil strip	NE	1x1m	27/02/14	Ken Owen	
G2255_034	Watching brief	Field 5	Completed soil strip	SW	1x1m	27/02/14	Ken Owen	
G2255_035	Watching brief	Field 5	Completed soil strip	NE	1x1m	27/02/14	Ken Owen	Plate 3
G2255_036	Watching brief	Field 11	Pre-ex shot - SW end of field	E	-	27/02/14	Ken Owen	
G2255_037	Watching brief	Field 11	Pre-ex shot - NE end of field	S	-	27/02/14	Ken Owen	
G2255_038	Watching brief	Field 11	Trenched area at the wet NE corner	NNE	1x1m	27/02/14	Ken Owen	
G2255_039	Watching brief	Field 11	Culvert at the marshy area at the NE end of field	SE	1x1m	27/02/14	Ken Owen	
G2255_040	Watching brief	Field 11	General shot	NE	-	27/02/14	Ken Owen	
G2255_041	Watching brief	Field 11	Water at culvert head - NE end of field	NNE	-	27/02/14	Ken Owen	Plate 2
G2255_042	Watching brief	Field 11	General shot of SW end of field	SW	-	27/02/14	Ken Owen	
G2255_043	Watching brief	Field 11	General shot	E	-	27/02/14	Ken Owen	
G2255_044	Watching brief	Field 11	Stone gatepost with hinge hole	SE	1x1m	27/02/14	Ken Owen	
G2255_045	Watching brief	Field 11	Completed area - NE end of field	SW	1x1m	27/02/14	Ken Owen	
G2255_046	Watching brief	Field 11	Completed area - SW end of field	NE	1x1m	27/02/14	Ken Owen	
G2255_047	Watching brief	Field 11	Completed area - SW end of field	SW	1x1m	27/02/14	Ken Owen	
G2255_048	Watching brief	Field 12	Completed area - SW end of field	SW	1x1m	28/02/14	Ken Owen	
G2255_049	Watching brief	Field 12	Central area - completed	SW	1x1m	28/02/14	Ken Owen	
G2255_050	Watching brief	Field 12	Central area - completed	NE	1x1m	28/02/14	Ken Owen	
G2255_051	Watching brief	Field 12	NE end of field	SW	1x1m	28/02/14	Ken Owen	
G2255_052	Watching brief	Field 12	NE end of field - stone embankment for main road	SE	1x1m	28/02/14	Ken Owen	Plate 4
G2255_053	Watching brief	Field 13	General pre-ex shot	E	-	28/02/14	Ken Owen	

File reference	Project phase	Site sub-division	Description	View from	Scale (s)	Date taken	Originating person	Report plate No.
G2255_054	Watching brief	Field 13	General location shot	E	-	28/02/14	Ken Owen	
G2255_055	Watching brief	Field 13	General shot - SW corner of field	SW	-	28/02/14	Ken Owen	
G2255_056	Watching brief	Field 13	Shot of existing large drainage ditch	NNE	-	28/02/14	Ken Owen	
G2255_057	Watching brief	Field 13	Road embankment and culvert below the road	E	-	28/02/14	Ken Owen	
G2255_058	Watching brief	Field 6	Post-med linear ditch - Section	S	1x1m	28/02/14	Ken Owen	
G2255_059	Watching brief	Field 6	Post-med linear ditch - Section	S	1x1m	28/02/14	Ken Owen	
G2255_060	Watching brief	Field 6	Post-med linear ditch - Section	S	1x1m	03/03/14	Ken Owen	
G2255_061	Watching brief	Field 6	Section of post-med linear ditch	S	1x1m	03/03/14	Ken Owen	
G2255_062	Watching brief	Field 13	Completed area at SW of field	NE	1x1m	03/03/14	Ken Owen	
G2255_064	Watching brief	Field 13	Completed area	NE	1x1m	03/03/14	Ken Owen	
G2255_065	Watching brief	Field 8	Working shot, looking towards Field 7	ENE	-	04/03/14	Ken Owen	
G2255_066	Watching brief	Field 8	Working shot, looking towards Field 7	ENE	-	04/03/14	Ken Owen	
G2255_067	Watching brief	Field 7	Working shot - stream at the end of Field 7	SE	-	04/03/14	Ken Owen	
G2255_068	Watching brief	Field 8	Working shot - boundary with Field 7	ESE	-	04/03/14	Ken Owen	
G2255_069	Watching brief	Field 7	Completed area near the western end of Field 7	SW	1x1m	04/03/14	Ken Owen	
G2255_070	Watching brief	Field 7	Completed area near the western end of Field 7	SW	1x1m	04/03/14	Ken Owen	
G2255_071	Watching brief	Field 7	Working shot	WSW	-	04/03/14	Ken Owen	
G2255_072	Watching brief	Field 7	Culvert below main road	SW	-	04/03/14	Ken Owen	
G2255_073	Excavation	Field 10	Outer ditch on western side of Roman road	NW	1x1m	05/03/14	Ken Owen	
G2255_074	Excavation	Field 10	Inner (Roman) ditch on western side of road	NW	1x1m	05/03/14	Ken Owen	
G2255_075	Excavation	Field 10	Section across Roman road	SW	2x1m	05/03/14	Ken Owen	
G2255_076	Excavation	Field 10	Made up ground? At eastern end of Roman road	NW	1x1m	05/03/14	Ken Owen	
G2255_077	Excavation	Field 10	Roman roadside ditch at eastern side of road	NW	1x1m	05/03/14	Ken Owen	
G2255_078	Excavation	Field 10	Section across Roman road	NE	2x1m	05/03/14	Ken Owen	
G2255_079	Excavation	Field 10	Roman road surface	NE	2x1m	05/03/14	Ken Owen	Plate 8
G2255_080	Excavation	Field 10	Roman road surface	SW	2x1m	05/03/14	Ken Owen	
G2255_081	Excavation	Field 10	Roman road surface	SW	2x1m	05/03/14	Ken Owen	

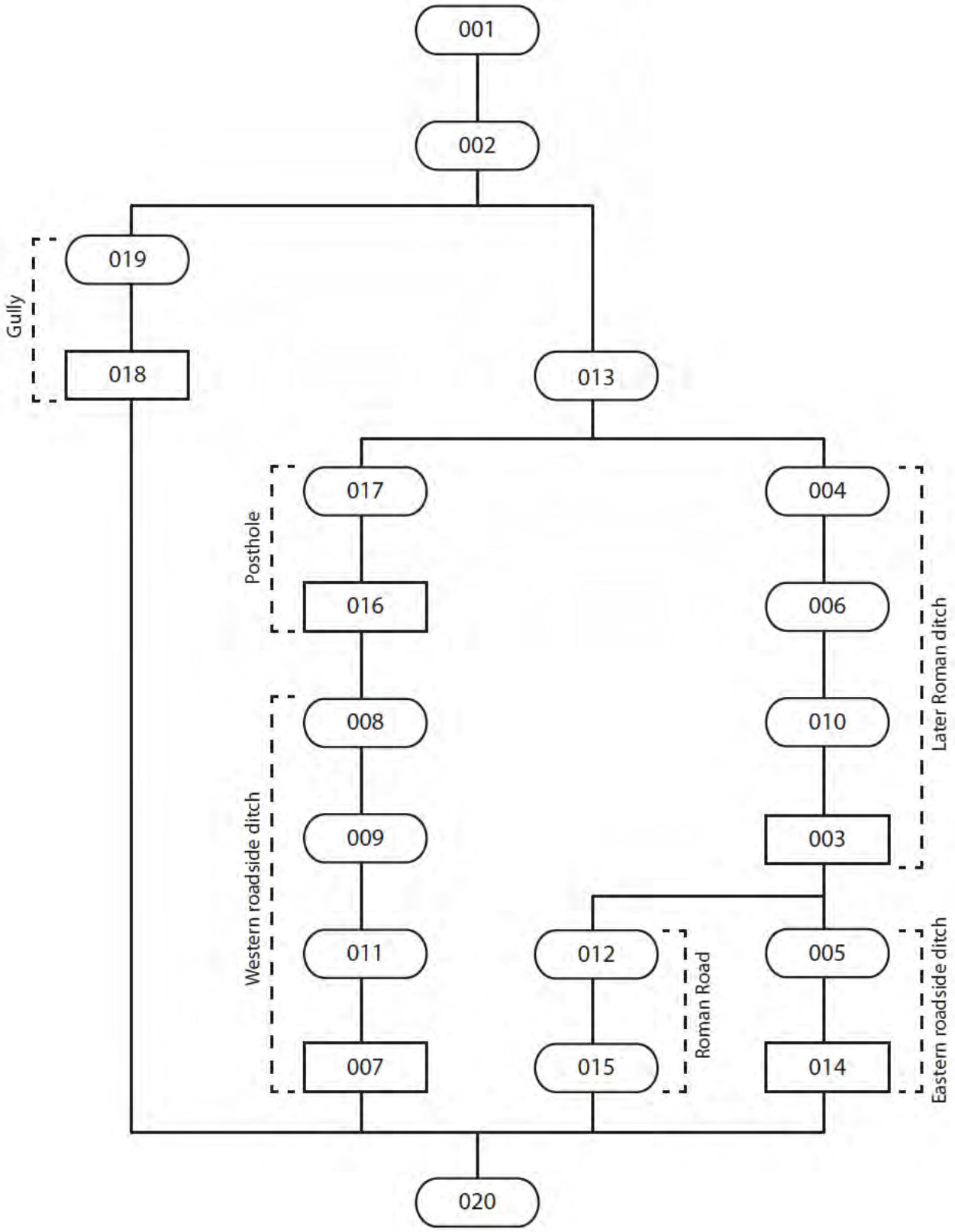
File reference	Project phase	Site sub-division	Description	View from	Scale (s)	Date taken	Originating person	Report plate No.
G2255_082	Excavation	Field 10	Roman road	SE	2x1m	05/03/14	Ken Owen	
G2255_083	Excavation	Field 10	Roman road	SW	2x1m	05/03/14	Ken Owen	
G2255_084	Excavation	Field 10	Roman road	NW	2x1m	05/03/14	Ken Owen	
G2255_085	Excavation	Field 10	Roman road	NW	1x1m	05/03/14	Ken Owen	
G2255_086	Excavation	Field 10	Roman road	NE	2x1m	05/03/14	Ken Owen	
G2255_087	Excavation	Field 10	Slate spread - western end of feature	NNW	1x1m	06/03/14	Ken Owen	
G2255_088	Excavation	Field 10	Slate spread - eastern end of feature	NNW	1x1m	06/03/14	Ken Owen	Plate 6
G2255_089	Excavation	Field 10	Slate spread	ENE	2x1m	06/03/14	Ken Owen	
G2255_090	Excavation	Field 10	Slate spread	WSW	2x1m	06/03/14	Ken Owen	
G2255_091	Excavation	Field 10	Section - Western Roman roadside ditch	SE	1x1m,1x0.3m	13/03/14	Ken Owen	Plate 10
G2255_092	Excavation	Field 10	Section - Western Roman roadside ditch	SE	1x1m,1x0.3m	13/03/14	Ken Owen	
G2255_093	Excavation	Field 10	Section - Western Roman roadside ditch. No ID board	SE	1x1m,1x0.3m	13/03/14	Ken Owen	
G2255_094	Excavation	Field 10	Section - Western Roman roadside ditch. No ID board	NW	1x1m,1x0.3m	13/03/14	Ken Owen	
G2255_095	Excavation	Field 10	Section - Western Roman roadside ditch. No ID board	NW	1x1m,1x0.3m	13/03/14	Ken Owen	
G2255_096	Excavation	Field 10	Section - Western Roman roadside ditch. No ID board	NW	1x1m,1x0.3m	13/03/14	Ken Owen	
G2255_097	Excavation	Field 10	Section of large ditch at eastern side of Roman road	NW	2x1m	14/03/14	Ken Owen	Plate 9
G2255_098	Excavation	Field 10	Section of large ditch at eastern side of Roman road	NW	2x1m	14/03/14	Ken Owen	
G2255_099	Excavation	Field 10	Section of large ditch at eastern side of Roman road. No ID board	NW	2x1m	14/03/14	Ken Owen	
G2255_100	Excavation	Field 10	Section of large ditch at eastern side of Roman road. No ID board	SE	1x1m	14/03/14	Ken Owen	
G2255_101	Excavation	Field 10	Section of large ditch at eastern side of Roman road. No ID board	SE	1x1m	14/03/14	Ken Owen	

File reference	Project phase	Site sub-division	Description	View from	Scale (s)	Date taken	Originating person	Report plate No.
G2255_102	Excavation	Field 10	Section of large ditch at eastern side of Roman road. No ID board. No ID board	SE	1x1m	14/03/14	Ken Owen	
G2255_103	Watching brief	Field 8	General working shots	W	-	14/03/14	Ken Owen	
G2255_104	Watching brief	Field 8	General working shots	W	-	14/03/14	Ken Owen	
G2255_105	Watching brief	Field 8	General working shots	E	-	14/03/14	Ken Owen	
G2255_106	Watching brief	Field 8	General working shots	SW	-	14/03/14	Ken Owen	
G2255_107	Watching brief	Field 8	Possible wall foundation/stone dump	N	1x1m	14/03/14	Ken Owen	
G2255_108	Watching brief	Field 8	Possible wall foundation/stone dump	S	1x1m	14/03/14	Ken Owen	
G2255_109	Watching brief	Field 8	Topsoiled area at eastern end of field	ENE	1x1m	17/03/14	Ken Owen	
G2255_110	Watching brief	Field 8	Topsoiled area at eastern end of field	WSW	1x1m	17/03/14	Ken Owen	
G2255_111	Watching brief	Field 8	Possible wall foundation/stone dump	ESE	2x1m	17/03/14	Ken Owen	
G2255_112	Watching brief	Field 8	Possible wall foundation/stone dump	SSW	2x1m	17/03/14	Ken Owen	
G2255_113	Watching brief	Field 8	Possible wall foundation/stone dump	SSW	2x1m	17/03/14	Ken Owen	
G2255_114	Excavation	Field 10	Section of western ditch	SE	1x1m	18/03/14	Ken Owen	
G2255_115	Excavation	Field 10	Post-Roman cut into Road surface and eastern roadside ditch	SE	1x1m	18/03/14	Ken Owen	
G2255_116	Excavation	Field 10	Post-Roman cut into Road surface and eastern roadside ditch	SE	1x1m	18/03/14	Ken Owen	
G2255_117	Excavation	Field 10	General shot across Roman road	NE	2x1m	18/03/14	Ken Owen	Plate 11
G2255_118	Excavation	Field 10	General shot across Roman road	NE	2x1m	18/03/14	Ken Owen	
G2255_119	Excavation	Field 10	Agger	SE	1x1m	18/03/14	Ken Owen	
G2255_120	Excavation	Field 10	General shot across Roman road	SW	2x1m	18/03/14	Ken Owen	
G2255_121	Excavation	Field 10	Western ditch	NW	2x1m	18/03/14	Ken Owen	
G2255_122	Excavation	Field 10	Eastern ditches	NW	-	18/03/14	Ken Owen	
G2255_123	Watching brief	Field 8	General shot of stone dump, mid-ex	N	2x1m	19/03/14	Ken Owen	
G2255_124	Watching brief	Field 8	General shot of stone dump, mid-ex	E	2x1m	19/03/14	Ken Owen	
G2255_125	Watching brief	Field 8	General shot of stone dump, mid-ex	E	2x1m	19/03/14	Ken Owen	
G2255_126	Watching brief	Field 8	General shot of stone dump, mid-ex	NW	2x1m	19/03/14	Ken Owen	

File reference	Project phase	Site sub-division	Description	View from	Scale (s)	Date taken	Originating person	Report plate No.
G2255_127	Excavation	Field 10	Ditches [003] + [014]	SE	2x1m	24/03/14	Ken Owen	
G2255_128	Excavation	Field 10	Ditches [003] + [014]	SE	2x1m	24/03/14	Ken Owen	
G2255_129	Excavation	Field 10	Ditches [003] + [014]	NW	2x1m	24/03/14	Ken Owen	
G2255_130	Excavation	Field 10	Ditches [003] + [014], close-up	SE	1x1m	24/03/14	Ken Owen	
G2255_131	Excavation	Field 10	Ditches [003] + [014]	SE	1x1m	24/03/14	Ken Owen	
G2255_132	Excavation	Field 10	Ditch [007]	SE	1x1m	24/03/14	Ken Owen	
G2255_133	Excavation	Field 10	Ditch [007]	NW	1x1m	24/03/14	Ken Owen	
G2255_134	Excavation	Field 10	Linear gully to west of Roman road [018]	SW	1x1m	24/03/14	Ken Owen	
G2255_135	Excavation	Field 10	Linear gully to west of Roman road [018]	NW	1x1m	24/03/14	Ken Owen	Plate 13
G2255_136	Excavation	Field 10	Section of linear gully [018]	NW	1x0.3m	24/03/14	Ken Owen	
G2255_137	Excavation	Field 10	Section of linear gully [018]	SE	1x0.3m	24/03/14	Ken Owen	
G2255_138	Excavation	Field 10	Post-hole within ditch [007], Post-hole [016]	SW	1x0.3m	24/03/14	Ken Owen	Plate 12
G2255_139	Excavation	Field 10	Post-hole within ditch [007], Post-hole [016]	SE	1x0.3m	24/03/14	Ken Owen	
G2255_140	Excavation	Field 10	General post-ex shots	SW	2x1m	26/03/14	Ken Owen	
G2255_141	Excavation	Field 10	General post-ex shots	S	1x1m	26/03/14	Ken Owen	
G2255_142	Excavation	Field 10	General post-ex shots	SSW	2x1m	26/03/14	Ken Owen	
G2255_143	Excavation	Field 10	General post-ex shots	S	1x1m	26/03/14	Ken Owen	
G2255_144	Excavation	Field 10	General post-ex shots	E	1x1m	26/03/14	Ken Owen	
G2255_145	Excavation	Field 10	General post-ex shots	SE	1x1m	26/03/14	Ken Owen	
G2255_146	Excavation	Field 10	General post-ex shots	NE	2x1m	26/03/14	Ken Owen	

APPENDIX III

Reproduction of Gwynedd Archaeological Trust stratigraphic matrix



Appendix X: Stratigraphic Matrix

APPENDIX IV

Reproduction of Ecofact Assessment Report, AOC Archaeology Group, July 2017

Llwybr Tegid

AOC Project no: 23901
Site Code: G2255
Date: July 2017

AOC Archaeology Group

ARCHAEOLOGY | HERITAGE | CONSERVATION

Llwybr Tegid

On Behalf of: Gwynedd Archaeological Trust (GAT)

National Grid Reference (NGR):

AOC Project No:

Prepared by: **Jackaline Robertson**

Illustration by: **N/A**

Date of Fieldwork:

Date of Report: **July 2017**

This document has been prepared in accordance with AOC standard operating procedures.

Author: Jackaline Robertson **Date: July 2017**
Approved by: Ciara Clarke **Date: August 2017**

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Factual data

Three flots and a single charcoal sample were submitted for environmental analysis from Gwynedd Archaeological trust from the excavation undertaken at Llwybr Tegid. The samples were collected from a linear feature, a post hole and a gully. A small quanity of carbonised hazelnut (Corylus avellana L) shells was recovered but there was a relatively large charcoal assemblage which was concentrated within the linear feature. The aim of this assessment was to recover environmental evidence, identify to species where possible and determine its suitability to provide reliable c14 dating.

Methodology

The flots were sieved using a 4mm, 2mm and 1mm system of stack sieves. The flots were analysed using a low power microscope. All plant macrofossils were subsequently examined at magnifications of x10 and up to x100 where necessary to aid identification. Identifications were confirmed using modern reference material and seed atlases stored at AOC Edinburgh (Cappers *et al* 2006). Taxonomic and nomenclature for plants follows Stace (2010). Charcoal 4mm and larger was collected for species identification.

Results

The results are recorded below in table 1 the charcoal species.

Table 1 Charcoal species

Feature	Sample	Context	Species	Name	Frag	Rw	Weight(g)
Linear 007	1	10-011	*Alnus glutinosa* L.	Alder	3		
Linear 007	1	10-011	*Betula* sp.	Birch	13		
Linear 007	1	10-011	*Corylus avellana* L.	Hazel		1	
Linear 007	1	10-011	*Quercus* sp.	Oak	2	1	53.1
P/H 016	2	10-017	*Alnus glutinosa* L.	Alder	1		
P/H 016	2	10-017	*Quercus* sp.	Oak	3		0.9
Gully 018	3	10-019	*Betula* sp.	Birch	2		
Gully 018	3	10-019	*Ulmus* sp.	Elm	1		0.7

The charcoal assemblage

The charcoal assemblage totalled 54.7g and 2 7 fragments were selected for species identification. The species identified were alder (*Alnus glutinosa* L), birch (*Betula* sp), elm, hazel (*Corylus avellana* L) and oak (*Quercus* sp). The dominate species was birch which formed 55% of the identified assemblage followed by, oak 22%, alder 15%, elm 4% and h azel 4%. There were two fragments of hazel and oak roundwood in context [10-011]. The charcoal was concentrated within context [010-011] which had 53.1g compared to 0.9g and 0.7g in contexts [10-017] and [10-019] respectively. There was no evidence of any worked wood or *in situ* structural burning of small discrete elements such as posts, stakes and or wattle screens. It is considered that these deposits of mixed wood species are representative of fuel debris.

The macroplant

Three fragments of hazelnut shell (0.1g) were recovered from context [10-011]. Preservation of this material was good and the fragments are suitable for dating if required. These shell remains are representative of food refuse and possibly reuse as a kindling material.

Modern Contamination

Small quantities of roots, insect remains and modern seeds were noted in all three samples but there is no evidence that the archaeological security of the charcoal assemblage has been compromised.

Recommendations

The alder, birch, elm, hazel charcoal and hazelnut shell are all suitable for radiocarbon dating. Where possible the oak should be avoided as this is a slow growing species which can prove unreliable for dating. The large concentration of charcoal within context [10-011] along with a smaller number of hazelnut shell fragments has probably derived from the deliberate disposal of fuel and food waste. The smaller quantities of charcoal noted within contexts [10-17] and [10-19] could have been re-deposited or reworked into these two features. The charcoal from context [10-011] is more likely to provide an accurate date relating to the activity taking place on site. The charcoal and hazelnut shell remains are representative of domestic fuel and food debris.

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Stace,C. 2010. *New Flora of the British Isles*. 3rd Edition. Cambridge University Press










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APPENDIX V

Reproduction of Ceramic Assessment Report, Gill Dunn, November 2017

Roman ceramic building material from Llwybr Tegid, Gwynedd (G2255)

Catalogue of material

(002) 01
Twenty-nine fragments weighing 1,606g.
Very weathered in orange and orange/pink fabrics. Includes a *tegula* flange (width 31mm), fragments with sanding, indicating the underside of a tile, and a corner fragment of a tile but no complete measurements. Brick fragments are also present but there are no complete measurements to identify the forms.

(002) 02
Twenty-one fragments weighing 1,243g.
Very weathered in an orange fabric. The only complete measurements are from a tile with a thickness of 21mm and a brick in an orange/red fabric with a thickness of 44mm.

(004) 08
Twenty-four fragments weighing 2,272g.
Very weathered. Two fragments are identifiable to form:

i) part of a *tegula* flange but no complete measurements.

ii) flange of a *tegula* in a dark orange/red fabric. Height of flange 45mm, width 23mm, thickness of tile 22mm.

The assemblage also includes a brick fragment in a very sandy fabric with few inclusions but the lack of complete measurements means that it is not possible to identify the exact form.

(005) 05
Sixteen fragments weighing 1,274g.
Very weathered fragments in an orange fabric. Thirteen of the fragments are unidentifiable to form. The remaining three are tiles with some sanding on the base and edges. Complete thicknesses are: 24mm, 31mm (corner fragment) and 34mm (edge of a *tegula*).

(006) 04
Two fragments weighing 184g.
Very weathered in a red/orange fabric. No complete measurements so unidentifiable to form.

(008) 07
Four fragments weighing 530g.
Very weathered. Two fragments are of indeterminate form. One is a fragment of brick in a

red/orange fabric. One fragment, less weathered, in a red fabric is identifiable as a tile, probably a *tegula* with sanded edges and base, maximum thickness 37mm.

(009) 06
Four weathered fragments in an orange fabric, weighing 22g.

(010) 03
Seven fragments weighing 142g.
The material is very weathered with all original surfaces lost. Given the existing dimensions it is considered that they are all fragments of tiles but the exact forms are unidentifiable as there are no complete measurements. Orange fabric with red ironstone inclusions.

Summary of the assemblage

A total of 107 fragments of Roman ceramic building material was recovered, weighing 7,273g, giving an average fragment weight of 68g. The material comes from the subsoil (002); (004), (006) and (010), the fills of drainage ditch (003); and (005), (008) and (009), the fills of the Roman roadside ditches (014) and (007). This therefore means that 46.7% by fragment count and 39.2% by weight, is from the subsoil. These are quantified below:

Subsoil (002) : 50 fragments weighing 2,849g

Drainage ditch (003) : 33 fragments weighing 2,598g

Roadside ditch (014) : 16 fragments weighing 1,274 g

Roadside ditch (007) : 8 fragments weighing 552g

All fragments are in an orange or orange/red fabric and are in a poor weathered condition. Many of the surfaces are lost and any features on the brick or tile have subsequently worn away.

Specific forms are difficult to identify due to the lack of complete measurements, though some can be generally identified as brick or tile. There are five examples of *tegulae* (flanged roof tiles) represented in the assemblage, including flanges.

Unfortunately, this lack of identifiable forms and the condition of the assemblage means that it is not possible to assign a date to the material.

G. Dunn
November 2017

APPENDIX VI

Reproduction of Pottery Assessment Report, Gill Dunn, December 2017

Roman pottery from Llwybr Tegid, Gwynedd (G2255)

Catalogue of pottery

(002) 2
One body sherd of a Spanish Dressel 20 olive oil amphora. Weathered. Weight 67g

(002) 16
One body sherd in a coarse orange fabric. Weight 6g

(004) 20
One body sherd in a fine pale orange fabric. Very weathered, all surfaces lost. Possibly a large storage vessel. Weight 67g

(004) 21
One rim sherd of a hooked rim mortarium in a coarse pale orange fabric with quartz and red ironstone inclusions. Very weathered. Sherd join with Find no 30 from (006). Weight 46g

(005) 22
Base and lower wall fragment of a Dorset black-burnished ware bowl. Right-angled cross-hatching. Weight 37g

(005) 23
One body sherd in a coarse orange fabric. Very weathered, possibly a fragment of tile. Weight 8g

(005) 24
One body sherd of an orange ware vessel in a coarse fabric with quartz and red ironstone inclusions. Very weathered. Weight 15g

(005) 25
One body sherd in a coarse buff fabric. Very weathered. Weight 84g

(006) 26
Base sherd of a black-burnished ware ?bowl. Good condition. Sherd link with (006) 31. Date of 120+ AD. Weight 6g

(006) 27
Body sherd of vessel in a fine orange fabric. Very weathered. Weight 10g

(006) 28
Body sherd of an orange ware vessel. Very weathered. Weight 13g

(006) 29
Body sherd of an orange ware vessel. Very weathered. Weight 6g

Finds 27, 28 and 29 are of the same fabric and it is possible that they are from the same vessel though there are no sherd joins due to their poor abraded condition.

(006) 30
Rim sherd of a hooked-rim mortarium, including the spout. Very weathered. Sherd link with Find no 21 from (004). Weight 82g

(006) 31
Base sherd of a black-burnished ware bowl/dish. Good condition. Scribed decoration on the underside of the base. Same vessel as (006) 26. Weight 16g

(010) 32
Rim sherd of a samian ware dish. Very weathered so most of the slip is missing. Weight 8g

Summary of the assemblage

A total of 15 sherds weighing 471g was recovered from the site, giving an average sherd weight of 31.4g. All are coarse wares except for one rim sherd of a samian dish. The majority of the sherds are in a poor abraded condition resulting in the surfaces, and hence any decoration, being lost, and in the case of the samian vessel, the slip is worn. The material comes from the subsoil (002); (004), (006) and (010), the fills of drainage ditch (003); and (005), the fill of the Roman roadside ditch (014):

Subsoil (002) : 2 sherds weighing 73g

Drainage ditch (003) : 9 sherds weighing 254g

Roadside ditch (014) : 4 sherds weighing 144g

There are a range of vessel forms including amphora, a dish, mortarium and bowl. The indeterminate body sherds are probably from storage jars and/or beakers.

Find numbers 27, 28 and 29 from (006) are of the same fabric and could be from the same vessel. Sherds from (004) and (006) (Find numbers 21 and 30) are from the same mortarium, and two of the black-burnished ware sherds (Find numbers 26 and 31 from (006)) also join.

The pottery has a date range of the late first to early second century with the black-burnished ware giving a *terminus post quem* of 120AD. The Dressel 20 amphora has a wide date range of the first to third century but a single body sherd cannot be more closely dated.

NB Sherds (002) 17, (002) 18 and (002) 19 are post-medieval in date.

G. Dunn
December 2017

APPENDIX VII

Reproduction of Glass Assessment Report, H.E.M. Cool, September 2017

Roman vessel glass from 'Llwybr Tegid' cycle route. Llanuwchllyn to Glan-llyn outdoor activity centre, Gwynedd

H.E.M. Cool

Report submitted to the Gwynedd Archaeological Trust September 2017

The glass fragment from the upper fill of ditch 7 comes from a prismatic, most probably square, bottle (Price and Cottam 1998, 194-8). These were in common use from the later first century into the third century with their main *floruit* in the second century. These storage vessels are found on all types of Romano-British sites during that time, often in large quantities.

Prismatic bottle; body fragment. Blue/green. Straight side curving over to shoulder; wear scratches on side shoulder junction. Dimensions 37 x 20mm, weight 4.8g. 008 : sf 15.

Bibliography

Price, J. and Cottam, S. 1998. *Romano-British Glass Vessels: a Handbook* CBA Practical Handbook in Archaeology 14 (York)

APPENDIX VIII

Reproduction of X-Ray Report, Dr. Phil Parkes, September 2017

X-ray and assessment of finds,
GAT Site G2255 A494 Llwybr Tegid Llanuwchllyn to Glanllyn

Notes

Objects from excavations at GAT Site G2255: A494 Llwybr Tegid Llanuwchllyn to Glanllyn, were received for x-raying and assessment. The finds are generally in a sound condition although one nail has flaking corrosion and splits leading to it being in several pieces. Finds were x-rayed using a Faxitron 43805 cabinet system. X-ray films were digitised using an Array Corporation 2905 Laser Film Digitiser. Below are comments on information provided by the x-rays.

Find number	X-ray number	Notes
10	J648	1 x nail corrosion has split and detached from shaft. Nail has a round, flat head and a shaft with a square cross-section tapering to a point. The nail was consolidated with Butvar B98 (Polyvinvl butyral) to try and reduce further losses. 1 x nail shaft or wire? Thin iron wire, appears to taper to a point with a probable round cross-section.
11		Lead object, waste?
12	J648	Nail fragment, flat round head with nail shaft having a square x-section, tip missing and broken.
13		Small piece of rolled / folded lead.
14	J648	Lump of iron corrosion with small stone attached. No discernible shape that would identify it as an object. Some spots of more dense material appears to be within the corrosion, but this is also noted on Δ12 and so may be a natural part of the burial environment rather than something associated with the object.

Phil Parkes
28/11/17

APPENDIX IX

Reproduction of Worked Stone Assessment Report, Spencer Gavin Smith, June 2017

Stone Methodology and Report

Methodology

Spencer Gavin Smith has been commissioned by *Gwynedd Archaeological Trust* (GAT) to undertake an assessment of piece of stone recovered from an archaeological excavation at Llwybr Tegid, Llanuwchllyn, Gwynedd in 2014. The stone will be assessed in line with information from the British Geological Survey in association with Chartered Institute of Archaeologists guidance.

Assessment of finds material recovered from intrusive fieldwork cannot be undertaken without knowledge of its provenance. Information on context, phasing, date and methods of retrieval and an internally consistent stratigraphic matrix should be provided for assessment (CIFA 2014, 3.5.2).

Report

A piece of stone [53] was assessed for this report. It was recovered from within the fill of a Roman roadside ditch (Context 004) of road RR642 (Caer Gai to Caersws), 235m south east of the Roman Fort of Caer Gai.

[53] Shaped Stone (plates ?-?)

Dimensions:
Maximum Surviving Length: 382mm
Maximum Surviving Width: 108mm
Maximum Surviving Depth: 54mm

A piece of Nant Ffrancon Subgroup – Siltstone. Mid grey in colour. Three of the faces (1) (2) & (3) show similar weathering patterns whilst the fourth (4) is much more angular, with the bedding planes from which the stone has been won much more angular in their definition. This would suggest that face (4) was not as exposed to the weather as the other faces prior to its deposition in the secondary fill of the roadside ditch (004).

There appear to be tooling fracture marks on face (1), which has been dressed to form a relatively flat surface, and the marks suggest the stone was worked from the broader to the narrower end. Face (2) is smoothly weathered up to 220mm along its length from the broader end, but appears to have lost a bedding plane prior to deposition, as the surface is much rougher from this point to the narrower end. Face (3) is similar to face (1) in texture, but lacks obvious tooling fracture marks. Face (4) is not weathered compared to the other faces, suggesting it was protected from this prior to deposition.

Conclusion

This piece of stone has been prepared for use in a structure of some kind, and its position in the secondary fill of the Roman roadside ditch (004) suggests it was part of a Roman structure, or at least quarried during the Roman period. Similar material was identified as being part of the stone wall which made up part of the Phase II defences – dated to the mid-2nd century A.D. – excavated by the Gwynedd Archaeological Trust in 1982 (White 1986: 136).

Bibliography

British Geological Survey Map Viewer: Available from:
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Chartered Institute for Archaeologists 2014 [Online] Standard and guidance for the collection, documentation, conservation and research of archaeological materials. Available from: http://www.archaeologists.net/sites/default/files/CIfAS&GFinds_1.pdf

White, R. B. 1986 The Roman Fort at Caer Gai, Meirionnydd: A Section through the Defences, Archaeologica Cambrensis 135, 134-146.

APPENDIX X

Reproduction of Radiocarbon Dating results

Scottish Universities Environmental Research Centre
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Director: Professor F M Stuart Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE

27 August 2018

Laboratory Code	SUERC-81317 (GU48721)
Submitter	Bethan Jones Gwynedd Archaeological Trust Craig Beuno Garth Road Gwynedd LL57 2RT
Site Reference	G2255 Llwybr Tegid
Context Reference	11
Sample Reference	<01>
Material	Charcoal : Alder
$\delta^{13}C$ relative to VPDB	-28.4 ‰
Radiocarbon Age BP	1996 ± 24

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

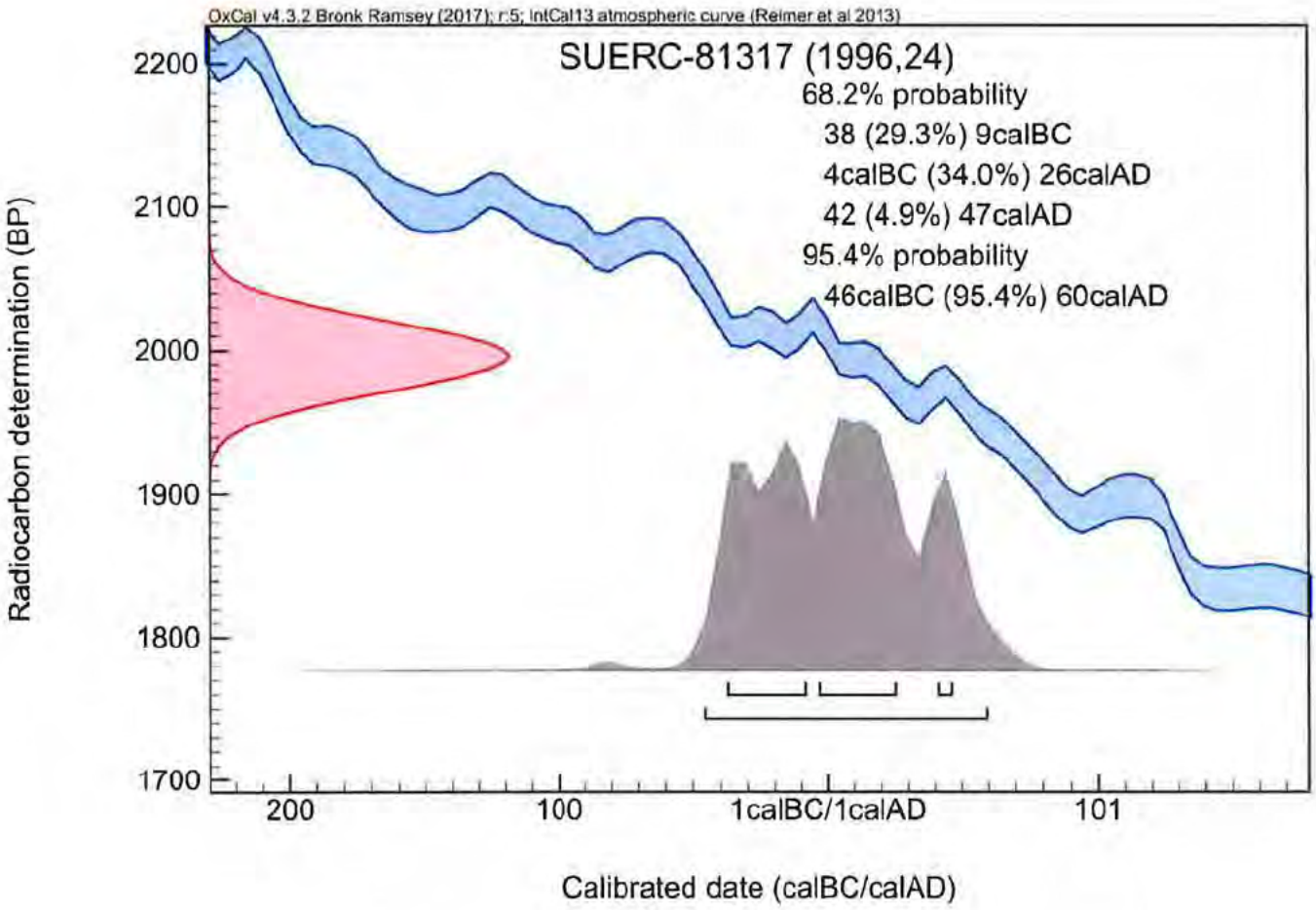
Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by : E Dunbar

Checked and signed off by : P Naysmith

RECEIVED
30 AUG 2018



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve.†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*

† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

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RADIOCARBON DATING CERTIFICATE

27 August 2018

Laboratory Code	SUERC-81318 (GU48722)
Submitter	Bethan Jones Gwynedd Archaeological Trust Craig Beuno Garth Road Gwynedd LL57 2RT
Site Reference	G2255 Llwybr Tegid
Context Reference	11
Sample Reference	<01>
Material	Charcoal : Hazel
$\delta^{13}C$ relative to VPDB	-29.2 ‰
Radiocarbon Age BP	1829 ± 22

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

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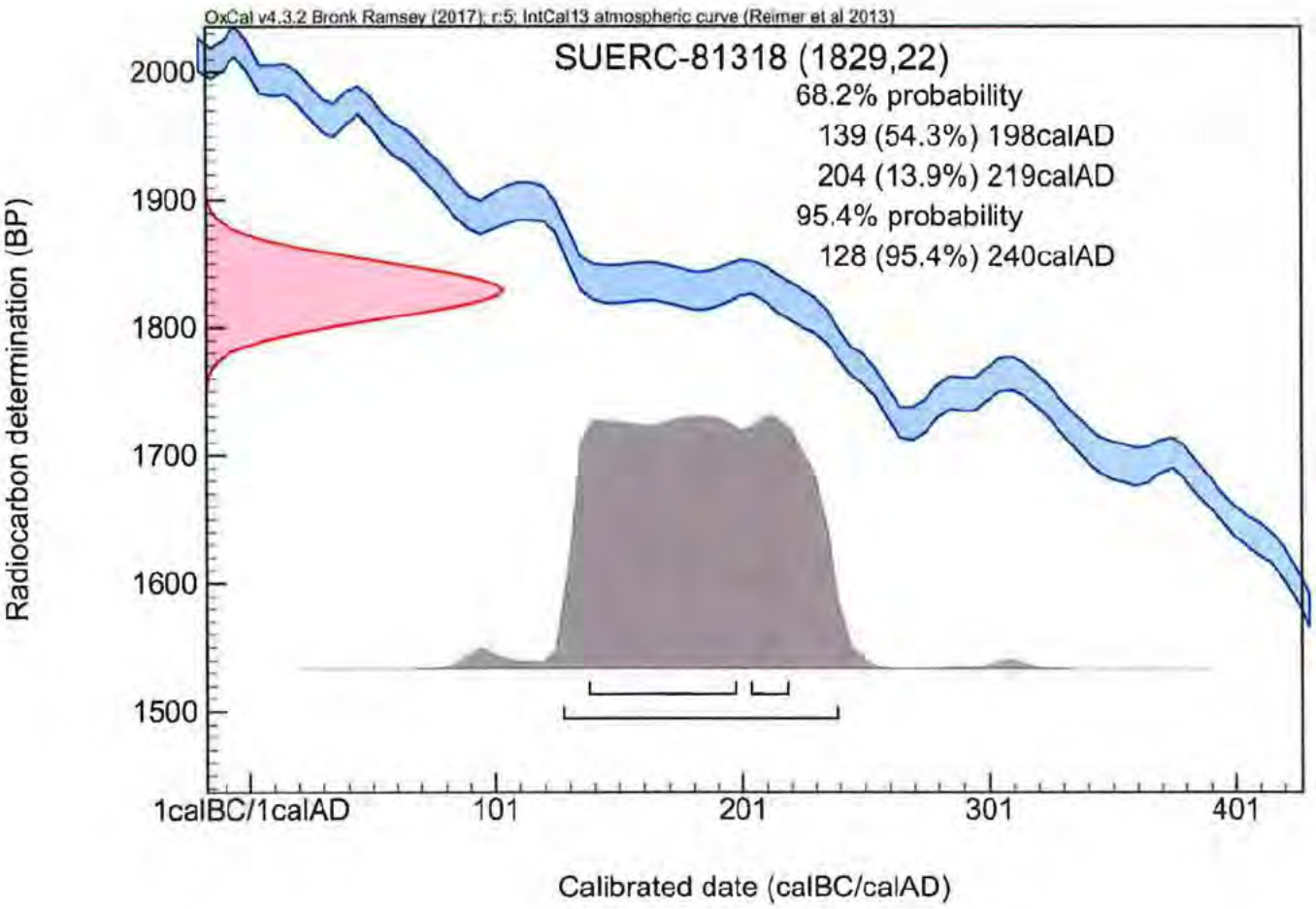
For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by : E Dunbar

Checked and signed off by : P Naysmith



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4. *

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve. †

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*

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RADIOCARBON DATING CERTIFICATE

27 August 2018

Laboratory Code	GU48723
Submitter	Bethan Jones Gwynedd Archaeological Trust Craig Beuno Garth Road Gwynedd LL57 2RT
Site Reference	G2255 Llwybr Tegid
Context Reference	19
Sample Reference	<03>
Material	Charcoal : Birch
Result	Failed due to insufficient carbon.

N.B. Any questions directed to the laboratory should quote the GU coding given above.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk .

Checked and signed off by : P. Naysmith

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RADIOCARBON DATING CERTIFICATE

27 August 2018

Laboratory Code	GU48724
Submitter	Bethan Jones Gwynedd Archaeological Trust Craig Beuno Garth Road Gwynedd LL57 2RT
Site Reference	G2255 Llwybr Tegid
Context Reference	19
Sample Reference	<03>
Material	Charcoal : Elm

Result Failed due to insufficient carbon.

N.B. Any questions directed to the laboratory should quote the GU coding given above.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk .

Checked and signed off by : P Naysmith

Gwynedd Archaeological Trust
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