GLAN Y MOR HOLIDAY PARK, CLARACH BAY, CEREDIGION: GEOPHYSICAL SURVEY

DAT Archaeological Services

Prepared by Dyfed Archaeological Trust
For: Allens Caravans Limited.

ymddiriedolaeth archaeolegol DYFED archaeological trust

DYFED ARCHAEOLOGICAL TRUST

REPORT NO: 2021-02
EVENT RECORD NO: 125651

March 2020

GLAN Y MOR HOLIDAY PARK, CLARACH BAY, CEREDIGION: GEOPHYSICAL SURVEY

By

Andrew Shobbrook BA (HONS) ACIfA

Ymddiriedolaeth Archaeolegol Dyfed Cyf
Corner House, 6 Stryd Caerfyrddin, Llandeilo,
Sir Gaerfyrddin SA19 6AE
Ffon: Ymholiadau Cyffredinol 01558 823121
Adran Rheoli Treftadaeth 01558 823131
Ebost: info@dyfedarchaeology.org.uk
Gwefan: www.archaeolegdyfed.org.uk

Dyfed Archaeological Trust Limited
Corner House, 6 Carmarthen Street, Llandeilo,
Carmarthenshire SA19 6AE
Tel: General Enquiries 01558 823121
Heritage Management Section 01558 823131
Email: info@dyfedarchaeology.org.uk
*Website: www.*dyfedarchaeology*.org.uk*

Cwmni cyfyngedig (1198990) ynghyd ag elusen gofrestredig (504616) yw'r Ymddiriedolaeth.
The Trust is both a Limited Company (No. 1198990) and a Registered Charity (No. 504616)
CADEIRYDD *CHAIRMAN J. Protheroe-Jones:.* CYFARWYDDWR *DIRECTOR: K Murphy BA MIFA*

GLAN Y MOR HOLIDAY PARK, CLARACH BAY, CEREDIGION: GEOPHYSICAL SURVEY

Client	Allens Caravans Limited
Event Record No	125651
Report No	2021-02
Project Code	FS20-031
Report Prepared By	Andrew Shobbrook
Fieldwork Directed By	Andrew Shobbrook
Illustrated By	Andrew Shobbrook
Report Approved By	Fran Murphy

Rev Number	Description	Undertaken	Approved	Date
_V1	First Draft	AS	FM	
_V2	Final Draft	AS	FM	16/03/2022

GLAN Y MOR HOLIDAY PARK, CLARACH BAY, CEREDIGION: GEOPHYSICAL SURVEY

CONTENTS

FIGURES

PHOTOGRAPHS

TABLE

GLAN Y MOR HOLIDAY PARK, CLARACH BAY, CEREDIGION: GEOPHYSICAL SURVEY

EXECUTIVE SUMMARY

DAT Archaeological Services were commissioned to undertake a geophysical survey on land at Glan y Mor Holiday Park, Clarach Bay, Ceredigion; land proposed for the construction of 39 new lodge style caravans.

The purpose of the survey was to provide a better indication of the archaeological potential of the site and if required, enable targeting of any further archaeological mitigation requirements before or during the development.

Nearly all of the anomalies recorded over the course of the geophysical survey are considered to be of a modern origin and not archaeological.

CRYNODEB GWEITHREDOL

Comisiynwyd Gwasanaethau Archaeolegol YAD i gynnal arolwg geoffisegol ar dir ym Mharc Gwyliau Glan y Môr, Bae Clarach, Ceredigion; tir arfaethedig ar gyfer adeiladu 39 carafán newydd yn ardull llety.

Pwrpas yr arolwg oedd rhoi syniad gwell o botensial archeolegol y safle ac os angen, galluogi targedu unrhyw ofynion lliniaru archeolegol pellach cyn neu yn ystod y datblygiad.

Ystyrir bod yr holl anomaleddau a gofnodwyd yn ystod yr arolwg geoffisegol o darddiad modern ac nid archeolegol.

GLAN Y MOR HOLIDAY PARK, CLARACH BAY, CEREDIGION: GEOPHYSICAL SURVEY

SUMMARY

DAT Archaeological Services were commissioned by Mr David Middleton of Savills on behalf of their client (Allens Caravans Ltd) to undertake a geophysical survey in an area proposed for the construction of 39 new lodge style caravans. The site is located on at the Glan y Mor Holiday Park, Clarach Bay, Ceredigion (centred on NGR SN 58825 84185).

*Whilst there are no historic assets within the area proposed for development, it was considered that the Arfon Clarach valley is rich in prehistoric and Early Medieval archaeological remains. Plas Gogerdden located some distance to the east of the proposed development testifies to this as the site contains a multiperiod collection of monuments ranging from Bronze Age round barrows and standing stones through to later Early Medieval cemet*eries*. A number of cropmarks are recorded to the north and south east of the holiday park and are considered to be similar in form to those sites which have been found at Plas Gogerdden. Consequently, the potential to encounter preserved prehistoric remains within the development area was considered medium/high.*

Therefore, a geophysical survey was recommended to provide a better indication of the archaeological potential of the site and if required, enable targeting of any further archaeological mitigation before or during the development.

In total, an area measuring 1.1ha was subjected to geophysical survey

A single very tentative semi-circular anomaly was recorded within the southwest portion of Field A and potentially could be archaeological in origin. However, this interpretation was considered uncertain due to the high level of modern disturbance in the vicinity of the potential archaeological feature.

Otherwise, all the anomalies recorded during the survey were considered to be the result of modern activity including underground electrical cables, modern caravan electrical hook up points and small metallic objects of modern origin.

1. INTRODUCTION

1.1 Project Commission

1.1.1 DAT Archaeological Services were commissioned by Mr David Middleton of Savills on behalf of their client (Allens Caravans Ltd) to undertake a geophysical survey within an area proposed for the construction of 39 new lodge style caravans, centred on NGR SN 58825 84185 (Figures 1 and 2).

1.1.2 The development proposals include the reduction in size of Area 1 to accommodate 39 lodge style caravans in lieu of the 100 touring caravans presently permitted (Figure 3)

1.1.3 The geophysical survey was undertaken within Area 1 using a fluxgate gradiometer which detects subtle variations in the earth's magnetic field, which can indicate the presence of buried features such as ditches, pits, walls or postholes, which are not visible on the ground surface. The purpose of the geophysical survey was to provide a better indication of the archaeological potential of the site through the identification of subsurface features which could be indicative of archaeology. This would allow for an informed decision on whether any further archaeological mitigation is required or not in this area before or during the development programme.

1.1.4 It was proposed that Area 2 should be subjected to an archaeological watching brief during future groundworks in this area (Figure 3).

1.2. Scope of the Project

1.2.1 The aim of the project was:

- To identify the presence/absence of any potential archaeological deposits through an initial gradiometer survey;
- To establish the character and extent of any potential archaeological remains within the site area that could be affected by the proposed works;
- To prepare a report and archive on the results of the geophysical survey.

1.3 Report Outline

1.3.1 This report provides a summary and discussion of the geophysical survey and its results and puts those results within their regional and national context.

1.4 Abbreviations

1.4.1 Sites recorded on the regional Historic Environment Record (HER) are identified by their Primary Record Number (PRN) and located by their National Grid Reference (NGR). Sites recorded on the National Monument Record (NMR) held by the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW) are identified by their National Primary Record Number (NPRN). Altitude is expressed to Ordnance Datum (OD). References to cartographic and documentary evidence and published sources will be given in brackets throughout the text, with full details listed in the sources section at the rear of the report.

1.5 Illustrations

1.5.1 Printed map extracts are not necessarily produced to their original scale.

1.6 Timeline

1.6.1 The following timeline (Table 1) is used within this report to give date ranges for the various archaeological periods that may be mentioned within the text.

Period	Approximate date	
Palaeolithic –	*c.*450,000 – 10,000 BC	Prehistoric
Mesolithic –	*c.* 10,000 – 4400 BC	
Neolithic –	*c.*4400 – 2300 BC	
Bronze Age –	*c.*2300 – 700 BC	
Iron Age –	*c.*700 BC – AD 43	
Roman (Romano-British) Period –	AD 43 – *c.* AD 410	Historic
Post-Roman / Early Medieval Period –	*c.* AD 410 – AD 1086	
Medieval Period –	1086 – 1536	
Post-Medieval Period[1] –	1536 – 1750	
Industrial Period –	1750 – 1899	
Modern –	20th century onwards	

Table 1: Archaeological and Historical Timeline for Wales

[1] The post-medieval and industrial periods are combined as the post-medieval period on the Regional Historic Environment Record as held by Dyfed Archaeological Trust

Figure 1: Location map showing the proposed development area outlined in red.

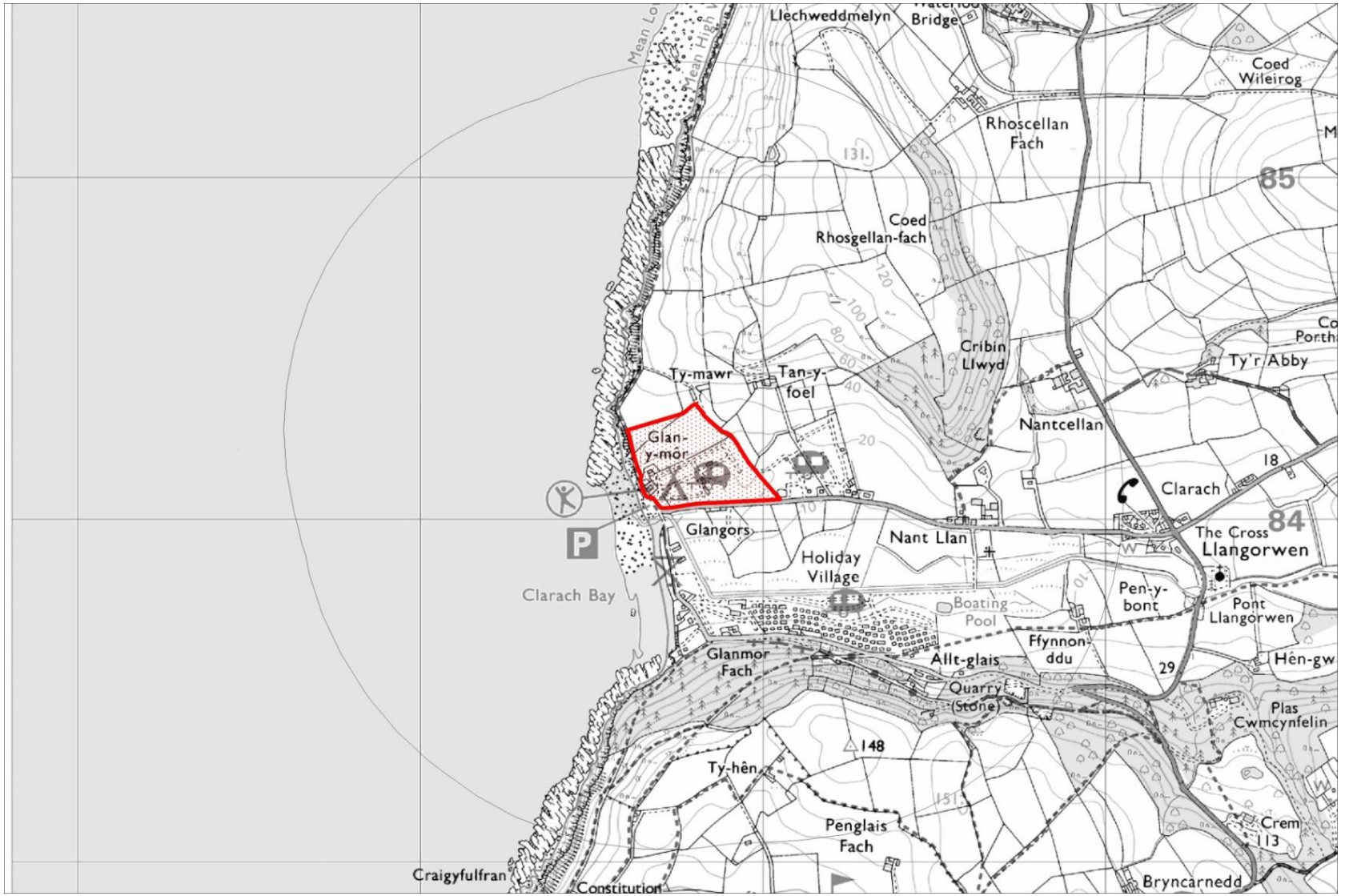

Figure 2: Proposed development area (outlined in red)

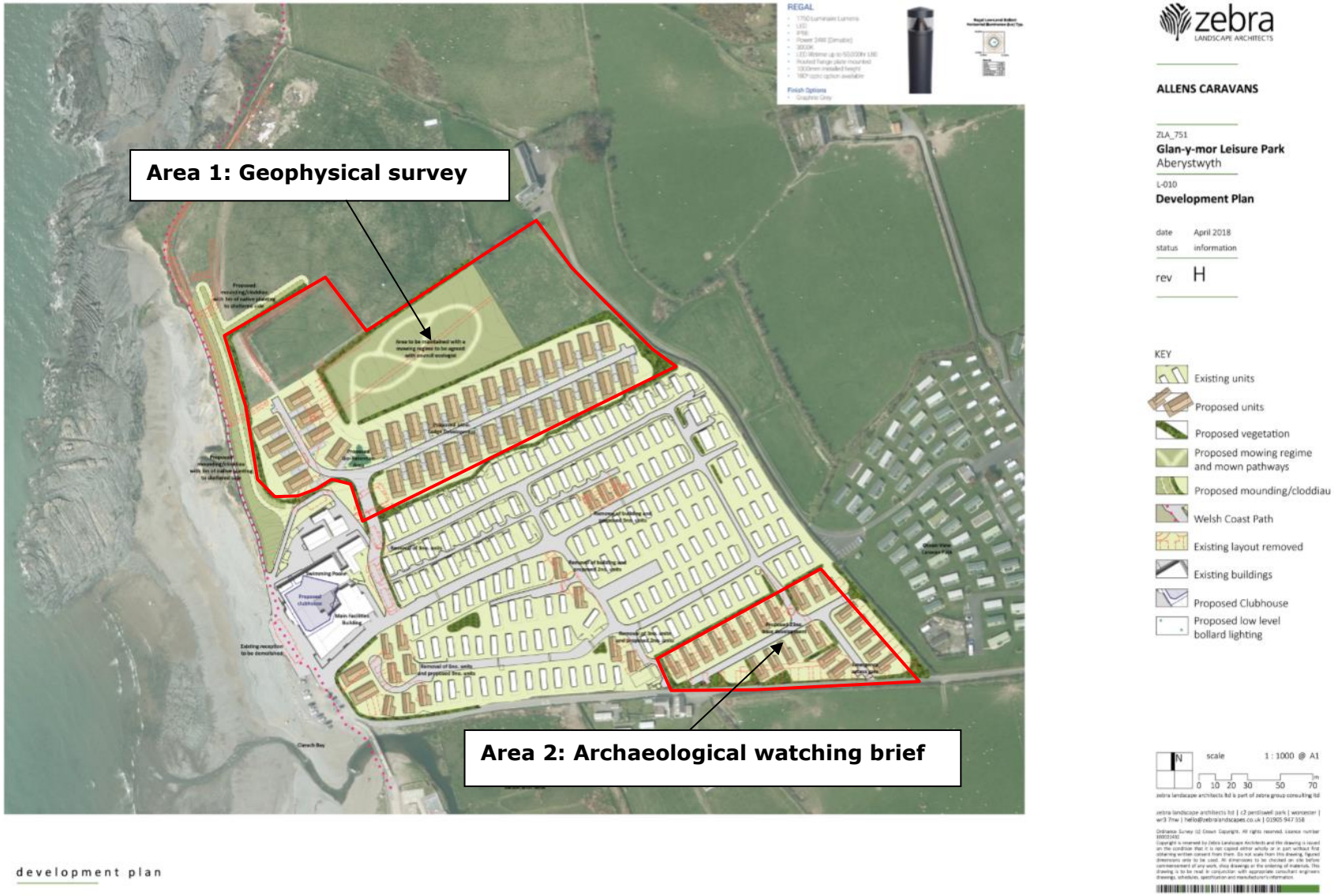

Figure 3: Glan Y Mor Holiday Park development proposals, with archaeological mitigation areas highlighted in red.

Figure 4: Extract of Figure 3 showing the field divisions within Area 1 where geophysical survey was proposed.

2. THE SITE

2.1 Site Location and Topography

2.1.1 The proposed development area lies within Glan y Mor Holiday Park, Clarach Bay, that lies on the north Ceredigion coast (Figure 2). The development area was split into three separate fields (Figure 4). Field A comprised a pasture field used during the summer months to accommodate touring caravans, with electric points (Photo 1). Field B was the smallest field and comprised a pasture field that had recently been used as a paddock (Photo 2). The third field (Field C) was located to the north east and comprised rough unimproved grassland with patches of dense vegetation, building rubble, and tarmac waste and soil tips.

2.1.2 The British Geological Survey records the bedrock beneath the development area as the Aberystwyth Grits – formed approximately 433 to 444 million years ago in the Silurian Period when the local environment was previously dominated by shallow carbonate seas. Overlying the bedrock two different types of superficial geology had been deposited within the northern and southern portion of the site. The northernmost is described as being formed of clay, silt, sand and gravel which was deposited 3 million years ago during the quaternary period. The southernmost in turn is described as comprising of sand and gravel which was formed around 2 million years ago during the Quaternary period. (BGS online).

Photo 1: View northeast across field (Field A) used to accommodate touring caravans with electrical points in foreground.

Photo 2: View southeast from the north-western corner of the small paddock field (Field B).

2.2 Archaeological Potential

2.2.1 The development area is situated near several sites which date from prehistoric times through to the post-medieval period. The archaeological potential of the development area was evaluated in a historic environment desk-based assessment (Meek 2019) and the following detail has been summarised from this report.

2.2.2 The earliest example of preserved archaeological remains recorded in close proximity to the proposed development consists of a submerged forest at Clarach Bay which is considered to be Mesolithic in date (NPRN 524725). Similar submerged Mesolithic forests have also be found at Borth and Ynys Las to the north and are thought to represent surviving evidence of land inundated due to rising sea levels. The first evidence of human activity near the development area comprises a single chance find of a flint scraper found near Allt Glas (PRN 8219) which is considered to be either Mesolithic or Neolithic in date.

2.2.3 Immediately to the north of the development area a possible flint working site is recorded (PRN 30908), although it's exact location is not certain. A possible undated cropmark enclosure (PRN 63997) depicted on modern aerial photographs has been recorded in the vicinity of the development area.

2.2.4 The remains of a confirmed cropmark were recorded south east of the Glan y Mor Holiday Park and on the southern side of the main access road (PRN 63985, NPRN 404549). The cropmark is described as being a sub-circular enclosure which may represent the remains of an Iron Age enclosure. Although due to the enclosures positioning within the base of the valley it could represent the remains of a funerary and ritual enclosure and would be similar to those found at Plas Gogerddan 3km to the east. Further to the southeast of this enclosure a second site is recorded in the

form of a pit alignment (NPRN 404550) and is again thought to represent funerary and ritual activity rather than settlement.

2.2.5 There are no Roman or Early Medieval sites recorded in close proximity to the development, although this may be attributed to the possibility that sites dating to these periods have not yet been discovered in this area.

2.2.6 The medieval chapel of Capel Kiluellan (PRN 11489) lies just to the north of the holiday park and it is assumed that the village of Clarach to the south east would have medieval origins but evidence for this may since have been hidden by the development of the later post-medieval village or lost through coastal erosion.

2.2.7 During the post medieval period All Saint's church (PRN 5412) was built in 1838-41 by H.J.Underwood of Oxford and is located to the south east of the development and just to the south of the village of Clarach. Sites also dating to this period are recorded in the form of two quarries present on the southern side of the valley (PRN 16132) and a sluice or drain (PRN 30760) which is recorded near to the medieval chapel of Capel Kiluellan.

3. METHODOLOGY

3.1 A fluxgate gradiometer with a DL601 data logger was used to conduct the detailed geophysical survey, which detects variations in the earth's magnetic field. A sample interval of 0.25m (four readings per metre) was used with 1m wide traverses across 30m x 30m grids using the zigzag traverse method of collecting data. The gradiometers sensitivity was set to detect a magnetic variation in the order of 0.1 nanoTesla.

3.2 The survey grid was tied into the local Ordnance Survey grid using a Trimble R8s integrated GNSS with TSC3 controller.

3.3 The data was processed using *Terrasurveyor 3.0.35.10* and is presented with a minimum of processing. The presence of high values caused by ferrous objects, which tend to hide fine details and obscure archaeological features, have been 'clipped' to remove the extreme values allowing the finer details to show through.

3.4 The processed data has been presented as a grey-scale plot, overlaid on local topographical features. The main magnetic anomalies have been identified and an interpretation of those results is also given where appropriate.

3.5 The resulting survey results and interpretation diagrams should not be seen as a definitive model of what lies beneath the ground surface, not all buried features will provide a magnetic response that can be identified by the gradiometer. In interpreting those features that are recorded the shape is the principal diagnostic tool, along with a comparison with known features from other surveys. The intensity of the magnetic response could provide further information, a strong response, for example, indicates burning, high ferric content or thermoremnancy in geology. The context may provide further clues but the interpretation of many of these features is still largely subjective.

3.6 All measurements given will be approximate as accurate measurements are difficult to determine from fluxgate gradiometer surveys. The width and length of the identified features can be affected by its relative depth and magnetic strength.

3.7 As much of the development area as possible was subjected to geophysical survey. However, Field C was not surveyed as the areas was too overgrown and contained dumps of waste tarmac and building rubble. A

large area of hard standing in Field B was also not suitable for geophysical survey.

4. RESULTS

4.1 The geophysical survey results are presented as a greyscale plot in Figure 5. In total an area of 1.1ha was surveyed. The geophysical survey recorded no features of probable archaeological origin in Field B

4.2 Figure 6 shows an interpretation of the survey results in Field A, which are discussed by category below:

Ferrous material (Dipoles)

4.3 In geophysical greyscale plots, dipole anomalies are commonly seen across a range of sites, particularly agricultural land. Generally, unless they form a pattern or part of a larger feature they are not thought to be archaeologically significant. They are usually the result of miscellaneous modern ferrous rich debris, such as brick and tile fragments as well as objects such as horseshoes or broken ploughshares, which lie within the topsoil. In rare instances, isolated dipoles may reflect features of archaeological interest, but only further intrusive investigation can verify this. Within the results collected during this geophysical survey two separate intense groupings of small high reading dipoles were recorded within Field A and are thought to represent magnetic debris across the field created by small metallic objects, such as tent pegs left by holiday makers during their stay at the site.

Magnetic interference

4.4 Magnetic disturbance can occur where the survey encroaches near a field boundary, such as wire-fencing, that contains a ferrous material. In this instance, where the disturbance has occurred a single polarity response has been exhibited. During the survey sufficient distance was maintained between the survey area and surrounding livestock fences which helped to keep magnetic interference to a minimal.

Tentative archaeological feature (Dark blue)

4.5 A half-circular anomaly was recorded within the western area of Field A and is tentatively thought to represent the remains of an excavated ditch. The ditch measured roughly 8.2m long and varied in width between 1.26m and 0.80m wide. It is possible that this feature may be archaeological in origin.

Modern electrical service cable (Golden brown)

4.6 The routes of modern electrical service cables were recorded running across Field A in two places.

Electrical supply points (Orange)

4.7 In total eleven high reading circular anomalies were recording within the central area of Field A and are thought to correspond with eleven individual electrical supply points which were installed in the field to supply touring caravans with electricity.

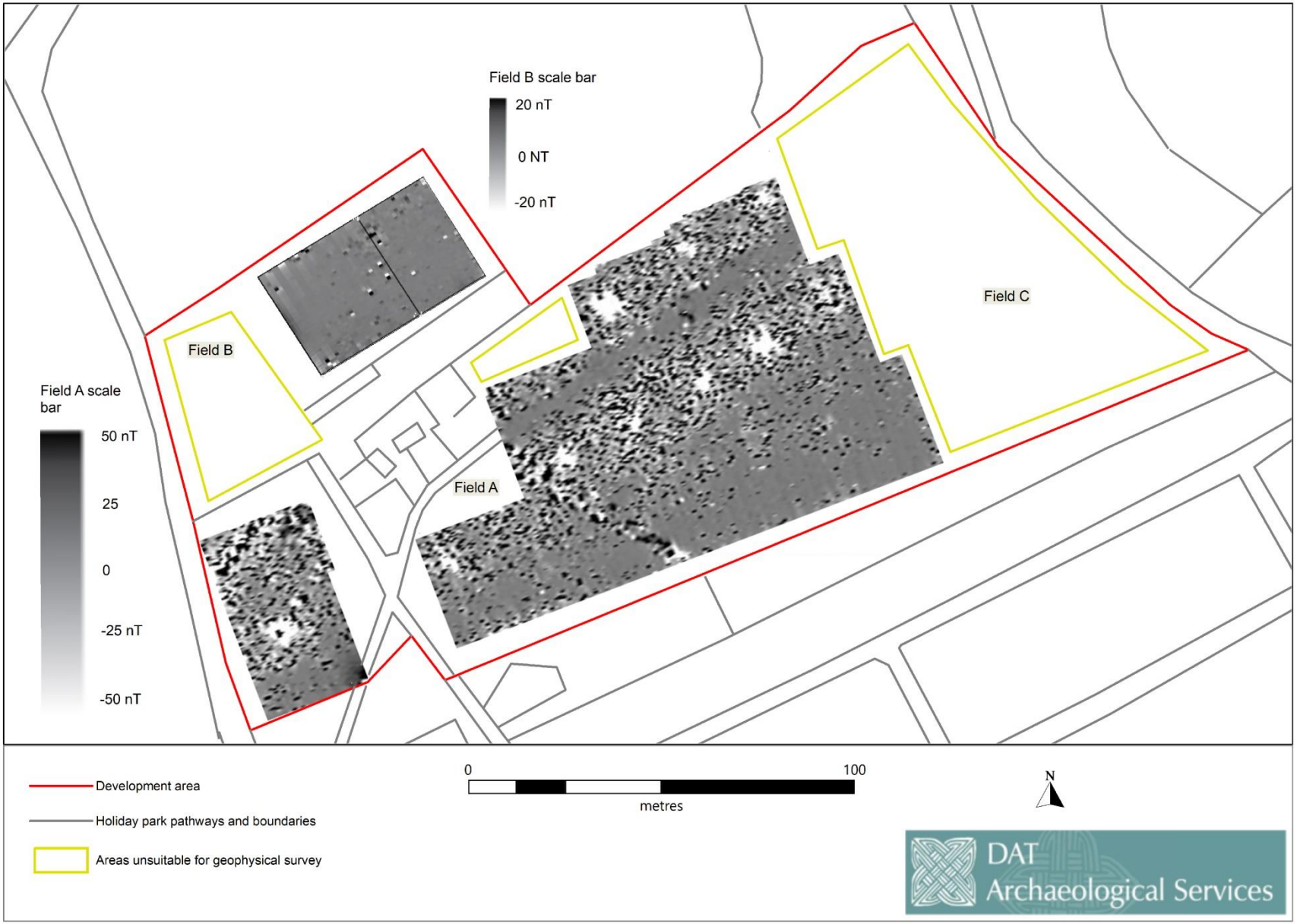

Figure 5: Geophysical survey greyscale plot.

Figure 6: Geophysical survey interpretation

5. CONCLUSIONS

5.1 Generally the quality of the survey data was good; with little interference from external influences.

5.2 The results of the geophysical survey suggest that Field B is devoid of archaeological features.

5.3 Field C was not subjected to geophysical survey as it was too overgrown and contained dumps of waste tarmac and building rubble

5.3 The strongest anomaly recorded during the geophysical survey appeared to represent an electrical service cable running across Field A in two places.

5.4 A second linear anomaly devoid of any high reading dipole anomalies was recorded running southwest-northeast across Field A and corresponded with the route of an existing rough trackway.

5.5 Several strong anomalies recorded within Field A denote the positions of electrical points for touring caravans.

5.6 Within the southwestern corner of Field A the survey recorded a semi-circular anomaly which could potentially be archaeological in origin, and may represent surviving evidence of a prehistoric ring ditch; although this is a tentative suggestion.

5.7 Numerous small strong magnetic readings recorded spread across Field A are thought to represent small metallic objects, such as tent pegs left behind by visitors staying at the holiday park.

5.8 The results of the geophysical survey suggest that Field A is largely devoid of potential archaeological features, apart from a tentative suggestion that the survey recorded evidence for a prehistoric ring ditch.

5.9 Further intrusive archaeological investigation, in the form of trial trench excavation or full excavation, would be needed to determine the date, character, and significance of the tentative semi-circular anomaly recorded in Field A. However, it should be noted that the anomaly may potentially be of recent origin due to the high level of modern disturbance recorded surrounding this feature.

6. SOURCES

Published

CIfA, 2014 *Chartered Institute of Field Archaeologists Standards and Guidance for Archaeological Geophysical Survey*

Meek, J, 2019. *Glan y Mor Holiday Park, Clarach Bay, Ceredigion: Historic Environment Desk-Based Assessment. DAT. Report no. 2019/28*

Murphy, K, 1992. "Plas Gogerddan, Dyfed: A Multi-period Burial and Ritual Site", *The Archaeological Journal.* Vol 149:1- 37

National Standard and Guidance for Collecting and Depositing Archaeological Archives in Wales 2017.

http://www.welshmuseumsfederation.org/en/news-archive/resources-landing/Collections/national-standard-and-guidance-for-collecting-and-depositing-archaeological-archives-in-wales-2017.html

Online resources

British Geological Survey [online] Date Accessed 4th March, 2021.http://mapapps.bgs.ac.uk/geologyofbritain/home.html.

7. GLOSSARY

Fluxgate Gradiometer	An instrument used to measure magnetism to search for areas of disturbed ground that may be associated with subsurface archaeological features.
nanoTesla (nT)	A unit of measurement of a magnetic field.
Ferrous object	Metals and alloys that contain iron.
Dipole	An anomaly consisting of a single positive response with an associated negative response forming a 'halo effect'. The negative and positive response is of equal magnitude but opposite polarity and are caused by the same feature. Dipole anomalies are very commonly observed across a range of sites, particularly agricultural land. Generally, unless the dipoles form part of a larger pattern or feature they are regarded as not significant. They are usually the result of modern ferrous rich debris such as brick and tile fragments as well as objects such as horseshoes or broken ploughshares, which lie within the topsoil.

ymddiriedolaeth archaeolegol

DYFED

archaeological trust