AN ARCHAEOLOGICAL TRENCH EVALUATION ON LAND AT GIBBET MOOR FARM, RACKENFORD, DEVON

prepared for Aardvark EM Ltd

by
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Exeter Archaeology

Report No. 09.74

Project No. 6813

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1. INTRODUCTION

This report has been prepared for Aardvark EM Ltd, and presents the results of an archaeological trench evaluation undertaken by Exeter Archaeology in May 2009 on land at Gibbet Moor Farm, Rackenford, Devon (SS 8818 1718). The evaluation was undertaken as part of a staged programme of work in support of a forthcoming application to Mid Devon District Council for the redevelopment of the site as an energy centre.

1.1 **The site** (Fig. 1. Plate 4)

The site comprises four arable fields which lie adjacent to a complex of farm buildings. It is situated in an elevated position at around 270m AOD. The geology of the site consists of Hallsworth 2, drift from Carboniferous sandstone and shale, with slowly permeable seasonally waterlogged clayey, fine loamy and fine silty soils (Soil Survey of England and Wales 1983).

1.2 **Brief Archaeological and historical background**

The Devon County Historic Environment Record (HER) records a series of prehistoric flint scatters in close proximity to the farm (eg. HER refs. 57996, 6170, 67968 and 61701). There are also three Bronze Age barrows located approximately 220m to the southeast. These are scheduled monuments (Monument number 32232).

The earliest map to show the site in detail is Greenwood's 1827 map of Devon (Fig. 2). This shows does not show any farm buildings within the site but does show a track crossing the site from north to south. The Stoodleigh tithe map of 1841 (fig. 3) shows two cottages in separate occupancy. The modern field system has yet to be set out and the land described as plantation. By 1888 (fig. 4) the cottages have been amalgamated and are described for the first time as Gibbet Moor Farm. The two southernmost fields are shown as they are today but the site of the northern two fields is still occupied largely by coarse woodland (Gibbet Moor Great Plantation) although some clearance of this is evident.

The adjacent area immediately surrounding the farm buildings was subject to archaeological investigation in 2008 (EA project 6403). No significant archeological features or deposits were exposed.

The current site was investigated by geophysical survey in April 2009 as the first element of a staged program of works. This identified a number of linear features, some of which were interpreted as potentially archaeological in origin. The results of the geophysical survey, which are presented in Appendix 1, were used to inform the placement of the evaluation trenches.

2. PROJECT SPECIFICATION

Specifications for the archaeological work were agreed in consultation with the Devon County Historic Environment Service (HES). The principal requirements were:

- to conduct evaluative trenching to target investigate anomalies identified by geophysical survey and to provide a representative spatial sample totalling 3% of the site area;
- to report and archive the results as appropriate.

3. METHOD

Twenty two trenches totalling 950m were excavated using a tracked excavator fitted with a toothless grading bucket (fig. 5). Machine excavation continued until either natural subsoil or the top of archaeological deposits was reached (whichever was higher). Where archaeological deposits were exposed, areas were cleaned back by hand, and the deposits investigated and recorded.

Standard EA recording procedures were employed. Stratigraphic information was recorded on *pro-forma* single context record sheets, a drawn record was compiled in plan and section at scales of 1:10, 1:20 or 1:50 as appropriate and a photographic record was prepared in black and white film and digital (colour) format.

4. RESULTS

No archaeological features or deposits were observed in trenches 5, 8-15, 19, 20 & 22. The typical layer sequence observed within all trenches comprised approximately 250-300mm of ploughsoil directly overlying undisturbed natural geology.

Field 3

4.1 ***Trench 1*** (figs. 5, 6. Plate 1)
This trench measured 30m x 1.8m, was aligned approximately NE-SW and was excavated to a maximum depth of 300mm, exposing natural subsoil (101) across the base. Two N-S aligned linear features (105 and 107) were located towards the southern end of the trench. Both cut through natural subsoil. Context descriptions for this trench are set out in Table 1, Appendix 1 and archaeological features are described below. Neither feature appeared to represent linear anomaly 3a recorded during the geophysical survey.

Feature 105 was aligned N-S and measured approximately 2.90m wide and 150mm deep with steep sides and a flat open base. It contained a thin compact layer of small sub-angular mudstone fragments (109) which appears to represent a coarse or disturbed mettled track. The mettling was overlain by a layer of dark clay silt with rare charcoal flecks (108) which was in turn overlain by a layer of brown clay silt (104). Both layers appear to have accumulated as a result of erosion and natural accumulation. No finds were recovered.

Feature 107 was aligned parallel to feature 105. It measured 2.5m wide and 180mm deep and had a wide, shallow profile with moderately sloping sides and a flat open base. As with 107 it contained a thin compact layer of small sub-angular mudstone fragments (110) representing a coarse or disturbed mettled track. It was overlain by a layer of clay silt (106) mottled by root activity. No finds were recovered

4.2 ***Trench 2*** (figs. 5, 6)
This trench measured 30m x 1.8m, was aligned approximately NE-SW and was excavated to a maximum depth of 300mm, exposing natural subsoil (201) across the

base. A NW-SE aligned linear feature (204) was located at the northern end of the trench, cutting from the level of natural subsoil. Context descriptions for this trench are set out in Table 2, Appendix 1 and the archaeological feature is described below. The feature appears to represent linear anomaly 3a recorded during the geophysical survey, also observed during investigations conducted in 2008 (EA project 6403).

Feature 204 was aligned NW-SE and measured approximately 1.6m wide and 60mm deep. It had a wide and shallow profile with gently sloping sides and a flat base. Within the base of the feature was a thin compact layer of small to medium sub-angular mudstone fragments (202) which is interpreted as representing a possible coarse or disturbed mettled track. It was overlain by a layer of brown clay silt (203). No finds were recovered.

Field 4

4.3 ***Trench 3*** (figs. 5, 7)
This trench measured 50m x 1.8m, was aligned approximately NE-SW and was excavated to a maximum depth of 300mm, exposing natural subsoil (301) across the base. A NW-SE aligned linear feature (304) was located at the northern end of the trench, cutting from the level of natural subsoil. Context descriptions for this trench are set out in Table 3, Appendix 1 and the archaeological feature is described below. The feature appears to represent linear anomaly 4a recorded during the geophysical survey.

Feature 304 was aligned NW-SE and measured approximately 2.1m wide and 100mm deep. It had a wide, shallow profile, with gently sloping sides and a flat base. It contained a thin compact layer of small to medium sub-angular mudstone fragments (302) representing the remains of a mettled track. It was overlain by a layer of dark brown silty clay (303). No finds were recovered.

4.4 ***Trench 4*** (figs. 5, 7)
This trench measured 50m x 1.8m, was aligned approximately NW-SE and was excavated to a maximum depth of 300mm, exposing natural subsoil (401) across the base. An approximately NW-SE aligned linear feature (403) was exposed at the SE end of the trench, cutting from the level of natural subsoil. Context descriptions for this trench are set out in Table 4, Appendix 1 and the archaeological feature is described below. The feature appears to represent linear anomaly 4a recorded during the geophysical survey.

Feature 403 represents a further exposure of track 304 (trench 3). As the track was fully investigated to either side of this exposure (trenches 3 and 6), it was located and recorded but not fully excavated.

4.5 ***Trench 6*** (figs. 5, 7. Plate 2)
This trench measured 50m x 1.8m, was aligned approximately E-W and was excavated to a maximum depth of 300mm, exposing natural subsoil (601) across the base. An approximately NW-SE aligned linear feature (604) was exposed at the eastern end of the trench, cutting from the level of natural subsoil. Context descriptions for this trench are set out in Table 6, Appendix 1 and the archaeological feature is described below. The feature appears to represent linear anomaly 4a recorded during the geophysical survey.

Feature 604 was aligned NW-SE and represents a further exposure of track 304 (trench 3). It measured approximately 2.35m wide and 150mm deep and had a wide, shallow profile with moderately sloping sides and a flat base. As seen in trench 3, it contained a thin compact layer of small to medium sub-

angular mudstone fragments (603). Narrow, linear depressions extended along either side of the metalling and may represent either wheel ruts or drainage channels. The distance between them measuring 1.10m. The metalling was overlain by dark brown silty clay (602), which is likely to have formed naturally. No finds were recovered.

Field 1

4.6 ***Trench 16*** (figs 5, 8. Plate 3)
This trench measured 50m x 1.8m, was aligned approximately NW-SE and was excavated to a maximum depth of 300mm, exposing natural subsoil (1601) across the base. An E-W aligned linear feature (1603) was exposed towards the centre of the trench, cutting from the level of natural subsoil. Context descriptions for this trench are set out in Table 16, Appendix 1 and the archaeological feature is described below. The feature appears to represent linear anomaly 1a recorded during the geophysical survey.

Feature 1603 was aligned E-W and measured approximately 1.8m wide and 100mm deep. It had a wide, shallow profile with gently sloping sides and a flat base. It contained a thin compact layer of small to medium sub-angular mudstone fragments (1604) interpreted as representing a coarse or disturbed mettled track surface. It was overlain by a layer of greyish brown clay silt (1602). No finds were recovered.

4.7 ***Trench 17*** (figs. 5, 8)
This trench measured 50m x 1.8m, was aligned approximately NW-SE and was excavated to a maximum depth of 300mm, exposing natural subsoil (1701) across the base. An approximately E-W aligned linear feature (1706) was exposed towards the centre of the trench, cutting from the level of natural subsoil. Context descriptions for this trench are set out in Table 17, Appendix 1 and the archaeological feature is described below. The feature appears to represent linear anomaly 1a recorded during the geophysical survey.

Feature 1706 represents a further exposure of track 1603 exposed in trench 16. It measured approximately 1.85m wide and 110mm deep and had a wide, shallow profile with gently sloping sides and a flat base. As in trench 16 it contained a thin compact layer of small to medium sub-angular mudstone fragments (1705). No finds were recovered.

Field 2

4.8 ***Trench 18*** (figs. 5, 8)
This trench measured 50m x 1.8m, was aligned approximately NW-SE and was excavated to a maximum depth of 300mm, exposing natural subsoil (1801) across the base. A NE-SW aligned linear feature (1802) was exposed towards the centre of the trench, cutting from the level of natural subsoil. Context descriptions for this trench are set out in Table 18, Appendix 1 and the archaeological feature is described below. The feature appears to represent linear anomaly 2d recorded during the geophysical survey.

Feature 1802 measured approximately 2.8m wide and 320mm deep had a wide, shallow profile, with irregular, gently sloping sides and an undulating base. It was infilled by a layer of reddish brown clay loam (1803) from which was recovered a single sherd of post-medieval (probably 19th century) pottery, along with lumps of corroded iron and coal.

4.9 ***Trench 21*** (figs. 5,8)
This trench measured 50m x 1.8m, was aligned approximately NW-SE and was excavated to a maximum depth of 300mm, exposing natural subsoil across the base. An E-W aligned linear feature (2104) was exposed towards the centre of the trench, cutting from the level of natural subsoil. Context descriptions for this trench are set out in Table 21, Appendix 1 and the archaeological feature is described below. The feature appears to represent linear anomaly 2a recorded during the geophysical survey.

Feature 2104 represents a further exposure of the track seen in trenches 16-18. It measured approximately 1.2m wide and 60mm deep and had a wide, shallow profile with gently sloping sides and a flat base. It contained a patchy scatter of small to medium sub-angular mudstone fragments (2103) representing the remnants of the track. This was overlain by a layer of greyish brown clay silt (2102). No finds were recovered.

5. DISCUSSION

The geophysical survey and trench evaluation has found evidence for at least five small, insubstantial mettled trackways crossing the site. The form of each is largely consistent, although their survival is variable. Each comprised a shallow linear depression with a flat base, into which was set a lightweight mettled surface consisting of a single layer of closely packed stone fragments.

The southernmost track, (Fig. 5; 1a/2a), had been identified in the geophysical survey as a long sinuous linear anomaly crossing fields 1 and 2. Subsequently exposed within trenches 16, 17 and 21 it featured distinct gulleys or depressions along the sides of the track that may be the result of use, or deliberately created to aid drainage. There is also evidence of damage and removal of stone both during its use and by later ploughing. It was not present within trench 18, having been removed by a later, probably 19th-century ditch.

Within field 4, geophysical linear anomaly 4a was investigated in trenches 3, 4 and 6 and its function confirmed as a track. Again, depressions along the sides of the track may be the result of use, or deliberately created to aid drainage.

Within field 3, geophysical linear anomaly 3a has also been identified as a mettled track (trench 2). This feature was very shallow and its absence from trench 1 can be attributed to complete removal by ploughing. A further two mettled tracks crossed trench 1 on a N-S alignment. Neither of these had been identified by geophysical survey.

No evidence has been found to date the trackways, although it is highly likely that they are contemporary with each other. Examination of current and historic mapping indicates that features 3a and 4a respect the existing field layout, suggesting they have no great age. It is likely that they represent tracks into and across an area depicted on a map of 1888 (fig. 4) as Gibbet Moor Great Plantation (the Tithe map of 1841 depicts the land enclosed by fields 1-4 as a single parcel). All of the trackways identified appear to radiate outwards from the existing complex of farm buildings which are present from 1841 as a pair of semi-detached cottages.

6. CONCLUSION

The site has been subject to a thorough archaeological examination via geophysical survey and trench evaluation. The trackways identified are of probable post-medieval date and are considered to be of low archaeological value. No features or deposits have been found to indicate earlier activity and no pottery or other dating evidence of any period has been found. No evidence has been found to suggest that the known prehistoric burial ground to the SE of the site extends within the proposal area. In view of the shallow soil cover across the site, it is likely that any ephemeral archaeological features that may have been present (post holes/shallow pits etc) have been destroyed by ploughing.

7. PROJECT ARCHIVE AND 'OASIS' REPORT

A fully integrated project archive has been compiled and will be deposited at the museum of Barnstaple and North Devon, under museum accession number ########.

A report of the evaluation (including a pdf version of this document) will be submitted to the on-line database OASIS (On-line AccesS to the Index of archaeological investigationS), under OASIS ID: exeterar1 60724

ACKNOWLEDGEMENTS

The work was commissioned by Aardvark and was administered by Peter Stead (EA). Fieldwork was supervised by Alex Farnell with assistance from Chris Hooper, Marie Leverett and Andrew West. Report production was undertaken by Alex Farnell. The illustrations were prepared by Sarnia Blackmore.

BIBLIOGRAPHY

Soil Survey of England and Wales. 1983. *Soils of England and Wales: Sheet 5 South West England.* Ordnance Survey, Southampton.

APPENDIX 1: Context Descriptions

Table 1: Trench 1

Context No.	Depth (b.g.s.)	Description	Interpretation
100	0-0.3m	Dark brown sandy clay loam	Topsoil
101	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil
102	0.3-0.4m	Brown, friable clay silt, with occasional sub-angular stones	Fill of 103
103	0.3-0.4m	Linear cut with, narrow, shallow profile and undulating base.	Probable root disturbance
104	0.3-0.42m	Strong brown, clay silt.	Fill of 105
105	0.3-0.48m	Wide shallow linear cut with steep sides and a flat base.	Cut of probable trackway
106	0.3-0.43m	Brown clay silt, mottled with grey.	Fill of cut 107
107	0.3-0.48m	Wide shallow linear with moderate sloping sides and a flat base	Cut of possible trackway.
108	0.42-0.48m	Dark brown friable clay silt with rare charcoal flecks	Fill of 105
109	0.48-0.54m	Layer of closely packed silt/mudstone fragments	Mettled surface within the base of 105
110	0.48-0.53m	Layer of silt/mudstone fragments	Mettled surface within the base of 107

Table 2: Trench 2

Context No.	Depth (b.g.s.)	Description	Interpretation
200	0-0.3m	Dark brown sandy clay loam	Topsoil
201	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil
202	0.35-0.40m	Layer of mudstone fragments	Possible disturbed mettled surface.
203	0.3-0.35	Mid brown, friable ,clay silt	Fill of 204
204	0.3-0.4m	Wide shallow linear cut with gently sloping sides and an undulating base.	Cut of possible mettled trackway.

Table 3: Trench 3

Context No.	Depth (b.g.s.)	Description	Interpretation
300	0-0.3m	Dark brown sandy clay loam	Topsoil
301	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil
302	0.3-0.35m	Dark brown friable, silty clay	Fill of 304
303	0.35-0.38m	Layer of compacted mudstone fragments	Mettled track surface
304	0.30-0.38m	Wide shallow linear cut with gently sloping sides and a flat base	Cut of mettled trackway

Table 4: Trench 4

Context No.	Depth (b.g.s.)	Description	Interpretation
400	0-0.3m	Dark brown sandy clay loam	Topsoil
401	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil
402	0.3m+	Dark reddish brown, friable, silty clay	Fill of 403
403	0.3m+	Linear feature	Cut of linear feature

Table 5: Trench 5

Context No.	Depth (b.g.s.)	Description	Interpretation
500	0-0.3m	Dark brown sandy clay loam	Topsoil
501	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil

Table 6: Trench 6

Context No.	Depth (b.g.s.)	Description	Interpretation
600	0-0.3m	Dark brown sandy clay loam	Topsoil
601	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil
602	0.3-	Dark reddish brown, friable, silty clay	Fill of 604
603		Layer of compacted mudstone fragments	Mettled track surface
604		Wide, shallow linear cut with moderately sloping sides and a flat base	Cut for mettled trackway

Table 7: Trench 7

Context No.	Depth (b.g.s.)	Description	Interpretation
700	0-0.3m	Dark brown sandy clay loam	Topsoil
701	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil

Table 8: Trench 8

Context No.	Depth (b.g.s.)	Description	Interpretation
800	0-0.3m	Dark brown sandy clay loam	Topsoil
801	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil

Table 9: Trench 9

Context No.	Depth (b.g.s.)	Description	Interpretation
900	0-0.3m	Dark brown sandy clay loam	Topsoil
901	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil

Table 10: Trench 10

Context No.	Depth (b.g.s.)	Description	Interpretation
1000	0-0.3m	Dark brown sandy clay loam	Topsoil
1001	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil

Table 11: Trench 11

Context No.	Depth (b.g.s.)	Description	Interpretation
1100	0-0.3m	Dark brown sandy clay loam	Topsoil
1101	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil

Table 12: Trench 12

Context No.	Depth (b.g.s.)	Description	Interpretation
1200	0-0.3m	Dark brown sandy clay loam	Topsoil
1201	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil

Table 13: Trench 13

Context No.	Depth (b.g.s.)	Description	Interpretation
1300	0-0.3m	Dark brown sandy clay loam	Topsoil
1301	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil

Table 14: Trench 14

Context No.	Depth (b.g.s.)	Description	Interpretation
1400	0-0.3m	Dark brown sandy clay loam	Topsoil
1401	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil

Table 15: Trench 15

Context No.	Depth (b.g.s.)	Description	Interpretation
1500	0-0.3m	Dark brown sandy clay loam	Topsoil
1501	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil

Table 16: Trench 16

Context No.	Depth (b.g.s.)	Description	Interpretation
1600	0-0.3m	Dark brown sandy clay loam	Topsoil
1601	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil
1602	0.3-0.37m	Mid grey brown, firm, clay silt	Fill of 1603
1603	0.3-0.42m	Wide, shallow cut with gently sloping sides and a flat base	Cut of probable mettled trakway
1604	0.37-.042m	Layer of compacted mudstone fragments	Disturbed mettled track surface

Table 17: Trench 17

Context	Depth (b.g.s.)	Description	Interpretation

No.			
1700	0-0.3m	Dark brown sandy clay loam	Topsoil
1701	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil
1702	0.2-0.34m	Brown, friable, clay silt	Fill of 1703
1703	0.2-0.34m	Irregular, sub-circular cut	Probable natural hollow
1704	0.2-0.25m	Mid grey brown, silty loam	Fill of 1706
1705	0.25-0.3m	Layer of compacted mudstone fragments	Probable disturbed mettled track surface
1706	0.2-0.3m	Wide, shallow linear cut with moderate sloping sides and a flat base	Cut for probable mettled trackway

Table 18: Trench 18

Context No.	Depth (b.g.s.)	Description	Interpretation
1800	0-0.3m	Dark brown sandy clay loam	Topsoil
1801	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil
1802	0.2-0.6m	Wide shallow linear cut with gently sloping sides and an undulating base	Cut of linear feature
1803	0.2-0.6m	Mid reddish brown, clay loam	Fill of 1802

Table 19: Trench 19

Context No.	Depth (b.g.s.)	Description	Interpretation
1900	0-0.3m	Dark brown sandy clay loam	Topsoil
1901	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil

Table 20: Trench 20

Context No.	Depth (b.g.s.)	Description	Interpretation
2000	0-0.3m	Dark brown sandy clay loam	Topsoil
2001	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil

Table 21: Trench 21

Context No.	Depth (b.g.s.)	Description	Interpretation
2100	0-0.2m	Dark brown sandy clay loam	Topsoil
2101	0..2m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil
2102	0.2-0.26m	Mid grey brown, friable, clay silt	Fill of 2103
2103	0.26-0.3m	Patchy scatter of mudstone fragments	Possible remnant of mettled track surface
2104	0.2-0.3m	Wide shallow linear cut, with gently sloping sides and a concave base	Cut of possible disturbed mettled trackway

Table 22: Trench 22

Context No.	Depth (b.g.s.)	Description	Interpretation
2200	0-0.3m	Dark brown sandy clay loam	Topsoil
2201	0..3m+	Banded yellow and orange clay and mudstone fragments	Natural subsoil

APPENDIX 2:

GEOPHYSICAL SURVEY AT GIBBET MOOR FARM, STOODLEIGH, DEVON

by

C. Smart

Exeter Archaeology

Report No. 09.45

Project No. 6813

April 2009

Contents

List of illustrations

Summary

Name of site: Gibbet Moor Farm
Grid reference: SX 6836 9251
Address of site: Gibbet Moor Farm, Stoodleigh, Devon
Client: Aardvark EM Limited
Project number: EA6813
Date(s) of survey: 02.04.2009 – 09.04.2009
Author and lead surveyor: Dr Chris Smart
Assistant surveyor(s): Alex Farnell and Marie Leverett

Site:
The site consists of four arable fields to the west and south of Gibbet Moor Farm, Stoodleigh, Devon. The Stoodleigh Tithe map, dated 1841, shows that at that date the area covered by the four fields was a single parcel of land. A group of three prehistoric burial mounds lay only 300m to the southeast. Geophysical survey has the potential to reveal features associated with prehistoric activity as well as later, medieval or post-medieval boundaries.

Geology and soils:
The underlying geology consists of Carboniferous sandstones and shales. Soils are of the Hallsworth 2 (712e) series, which are described as slowly permeable seasonally waterlogged clayey, fine loamy and fine silty soils (Soil Survey 1983).

Survey type: Magnetometer (gradiometer) survey
Equipment: Bartington Instruments Ltd. Grad601-2
Area surveyed: 3.70ha ***Grid size:*** 30m by 30m
Traverse interval: 1m ***Sample interval:*** 0.25m

Results:
A magnetometer (gradiometer) survey was undertaken in advance of proposed development in order to assess the potential for archaeological remains. Features associated with the enclosure and drainage of Gibbet Moor in the 19th century, and subsequent agricultural use, were most prominent. A general scatter of magnetic debris was observed across the site, and probably relates to minor ground disturbance and spreads of weakly magnetic material. A variety of isolated positive point anomalies are indicative of natural hollows, tree throws, or pits of archaeological derivation but these cannot be ascribed to a single feature class with certainty. A curvilinear ditch or gully running through Fields 1 and 2 offers the most archaeological potential, especially given the proximity to nearby prehistoric burial mounds and the recovery of worked flint from across the site.

1. INTRODUCTION

This report has been commissioned by Aardvark EM Limited to present the results of a geophysical survey of four fields at Gibbet Moor Farm, Stoodleigh, Devon (Fig. 1; NGR 288154 117149). The survey was undertaken by Exeter Archaeology (EA) between the 2nd and 9th of April 2009 as the first element of a staged programme of works, to provide supporting information in respect of a forthcoming planning application for the redevelopment of the site as an energy centre.

1.1 **Site description**

The site (Fig.1) consists of four fields situated to the south and west of Gibbet Moor Farm, Stoodleigh, and is situated immediately south of the A361 North Devon Link Road. The southern boundary of the site functions as the boundary between Stoodleigh and Templeton parishes. Gibbet Moor Farm lay at about 270m AOD on a level plateau that extends about one kilometre east-west. The plateau sits at the head of a number of coombes, with views extending down these to the north, west, south and east.

1.2 **Land use**

All four fields are currently ploughed. When visited, Field 1 had been ploughed but not harrowed, which had left a very uneven surface upon which to carry out the survey. Fields 2, 3 and 4 had each been ploughed, harrowed and sown with winter wheat. The perimeter of each field was heavily wheel-rutted due to waterlogged conditions. In particular, the southern edge of Field 1, and the southern and eastern sides of Field 2, were unfit for geophysical survey. The southeast corner of Field 2 had returned to a moorland habitat with dense juncas grass.

1.3 **Geology and soils**

The underlying geology consists of Carboniferous sandstones and shales. Soils are of the Hallsworth 2 (712e) series, which are described as slowly permeable seasonally waterlogged clayey, fine loamy and fine silty soils (Soil Survey 1983).

1.4 **Site history and archaeological potential**

The Devon County Historic Environment Record (HER) records a series of prehistoric flint scatters in close proximity to the farm (eg. HER refs. 57996, 6170, 67968 and 61701). There are also three Bronze Age bowl barrows located approximately 220m to the southeast. These are scheduled monuments (Monument number 32232).

As implied by its name, Gibbet Moor Farm is probably a late establishment carved from unenclosed ground in the 19th century. There is no farm complex shown on the 1802 Ordnance Survey 3-inch Surveyor's Drawing. The Stoodleigh parish tithe map of 1841 shows a pair of cottages on the site and that the land surrounding them was a single parcel. First Edition Ordnance Survey mapping, dated 1891, shows that Fields 1 and 2 had been created by that time. However, the remainder of the site is without subdivisions, and the north and west sides of this parcel are shown as mixed scrub and broad-leaved woodland of Gibbet Moor Great Plantation.

2. AIMS

The aim of the geophysical survey is to evaluate the archaeological potential of the site using suitable geophysical techniques. The results are intended to inform decisions regarding further archaeological investigation and development of the site.

3. METHOD

An area of approximately 3.70ha was subject to magnetometer (gradiometer) survey. Magnetometer survey was selected as a proven method of accurately and rapidly detecting archaeological features (Appendix A)

3.1 **Survey Design**

A total of 50 complete and partial 30m x 30m survey grids were located relative to the boundaries of Fields 1 to 4, using a Leica total station. They were positioned relative to the site boundary using LISCAD. The magnetic survey was undertaken using a Bartington Instruments Ltd. Grad601-2 dual sensor gradiometer sampling four readings per metre at 1m traverse intervals in the 1nT range.

4. RESULTS (Figures 2-9).

The results of survey in each of the four fields at Gibbet Moor Farm are presented in sequence below. In general, there is a general distribution of magnetic disturbance across all fields that is likely to be a combined result of general ground disturbance and variation within the underlying geology. Specifically, ground disturbance within Fields 3 and 4 may be a result of tree-growth and felling associated with Gibbet Moor Great Plantation.

4.1 **Field 1** (Figure 8)

A weak positive linear anomaly, oriented roughly east-west, was identified across the southern end of Field 1 (Feature 1a). The southeast corner of this field could not be surveyed due to waterlogging and so the full length of this feature could not be ascertained, but it is likely that Feature 2a in Field 2 is a continuation of it. This broadly curvilinear feature has the potential to be a ditch of archaeological significance as it bears no obvious relation to the post-medieval field layout. A weak positive linear anomaly at the northern end of Field 1, Feature 1b, runs broadly parallel with Feature 1a but is of a different character so may of different age and purpose.

There are a number of positive point anomalies in Field 1 that may represent pits or hollows of archaeological interest, but they may also be a result of natural hollows or tree disturbance. There is no pattern to their distribution and no firm conclusions can be drawn from these potential features.

A linear band of irregular magnetic disturbance (Feature 1c) seen running from the northeast to the southwest corner of Field 1 is not of archaeological significance. The anomaly is a result of traversing across the substantial wheel-ruts of a track running from gateway to gateway of the ploughed field. There are the ephemeral traces of a

north-south aligned sequence of agricultural striations (plough-scarring), across the field. Magnetic disturbance at the northern end of Field 1 is likely to be a combined result of an irregular ground surface and proximity to the hedge.

4.2 **Field 2** (Figure 8)
Feature 2a is a faint positive curvilinear anomaly that is likely to represent a ditch or gully. It is possible that this is a continuation of Feature 1a, seen in Field 1. Similar to Field 1, there are traces of a north-south aligned sequence of agricultural striations (plough-scarring), across the field. It is perhaps significant that these appear to overlay and cut through Feature 2a, implying an earlier date of origin. There is a positive linear anomaly (Feature 2b) extending from the western edge of Field 2, but it does not appear to continue into Field 1. The purpose or origins of this ditch or gully are unknown. At the northwest edge of Field 2 are a series of parallel positive linear anomalies (Feature 2c), oriented roughly northwest-southeast. These weak anomalies run parallel with the southern side of an access road to the south of Gibbet Moor Farm and it is suggested that they are a result of plough-scarring.

There are a number of positive point anomalies in Field 2 that may represent pits or hollows of archaeological interest, but they may also be a result of natural hollows or tree disturbance. Broadly-speaking, they are found to the north of Feature 2a, and so may be within any enclosure formed by that feature, but no firm conclusions can be drawn from these potential features.

There is a general background scatter of low magnitude magnetic debris represented by dipolar readings, which probably derive from general ground disturbance. There are also numerous stronger dipolar responses, which may represent weak ferrous or thermoremnant material, such as brick, fired clay and other heat-affected debris. Feature 2d appears as a discontinuous dipolar linear anomaly that may, for example, represent a clay drain within a trench.

4.3 **Field 3** (Figure 9)
Feature 3a is a sinuous positive linear anomaly, indicative of a ditch or gully. This feature was identified during a previous archaeological evaluation conducted during the construction of the new access road to Gibbet Moor Farm. When excavated, the ditch was shown to measure 1.48m in width and 0.14m in depth. Importantly, pottery recovered from its fill suggested a 19th-century date (Exeter Archaeology Project 6403). In the northern corner of Fields 3 and 4 is a pond and it is likely that Feature 3a, which runs to it, represents a drainage channel dug when Gibbet Moor was first enclosed.

There are a number of positive point anomalies in Field 3 that may represent pits or hollows of archaeological interest, but they may also be a result of natural hollows or tree disturbance. Given that this area was, in the late 19th century, Gibbet Moor Great Plantation, it is possible that these anomalies are of little archaeological significance.

There are two incidences of intense magnetic disturbance within Field 3 caused first by an electricity pylon, and second by digging adjacent to a pond.

4.4 **Field 4** (Figure 9)
Feature 4a is a positive curvilinear anomaly that is likely to represent a ditch or gully. It purpose and origin cannot be ascertained, but the fact that it has the same magnetic character and also orientation as Feature 3a in Field 3, may suggest that it is similarly a drainage ditch of 19th-century date.

Feature 4b is represented by a pair of positive linear anomalies running alongside the western edge of Field 4. The faint anomalies are spaced about 10m apart and possibly demark the line of two ephemeral ditches or gullies. During the late 19th century the western side of Field 4 was part of Gibbet Moor Great Plantation as it is possible that these features relate to that phase of use. Like Feature 3a in Field 3, they probably drain into the pond in the northern corner of the site. Feature 4c is a weak bipolar linear anomaly that is likely to represent the course of a clay land-drain or similar.

There are the traces of a northwest-southeast aligned sequence of agricultural striations (plough-scarring), across the field. Feature 4d, a series of faint positive linear anomalies running alongside the southern edge of Field 4, are likely to be a product of ploughing around the perimeter of the field, although an alternative origin should not be dismissed.

5. DISCUSSION

Detailed magnetometer (gradiometer) survey of four fields at Gibbet Moor Farm, Stoodleigh, did not reveal a significant level of archaeological potential. However, a small assemblage of Late Neolithic / Early Bronze Age flint was collected from each field during the conduct of the survey and it is possible that *in situ* remains of this date have either been heavily truncated or are too ephemeral to be detected. Flint scatters were already recorded from the site and the presence of three Bronze Age burial mounds a little to the southeast are indicative of past human activity in the area. There are a number of small positive point anomalies that may represent pits of archaeological origin, particularly within Field 2, but it is also possible that these are a result of minor ground disturbance. Features 1a and 2a in Fields 1 and 2 are likely to offer the most archaeological potential. Together they form a curvilinear ditch or gully that sits uncomfortably within the layout of the 19th-century field pattern. It is possible that they are of prehistoric date.

The survey showed the site to have a general background scatter of weak magnetic debris and disturbance. The course of several post-medieval drainage channels was evident, as were series of ploughmarks in all fields. It was noted that the soils suffered from excessive water-logging and a high level of wheel rutting was evident around the perimeter of each field, probably accounting for some of the general magnetic disturbance in these areas.

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APPENDIX A: BASIC PRINCIPLES OF MAGNETIC SURVEY

High-resolution magnetic survey can be used to detect localised anomalies in the Earth's magnetic field (Clark 1990, 64-97; Gaffney and Gater 2003, 36-42). Iron is present in soils, clays and geology as weakly magnetised chemical compounds. The past activities of man impact upon the natural state and distribution of these magnetised compounds, which can be detected as a contrast or variation with the Earth's magnetic field. Such changes in *magnetic susceptibility* and *thermoremanence* are produced by different actions.

A material's *magnetic susceptibility* relates to the magnetism that is induced in it when placed in a magnetic field. The Earth's magnetic field is permanent and therefore the induced magnetism of a material is also permanent. The greater the induced magnetism, the higher the susceptibility. There is natural variation in the magnetic susceptibility of rock, subsoils and topsoils, but it can also be affected by heating and biological or fermentation processes. Accurate measurement of localised variations in magnetic susceptibility enables a picture of human activity to be constructed. As topsoil usually has a greater magnetism than subsoil and bedrock, archaeological features cut into these and backfilled or silted-up with topsoil will have a greater magnetic susceptibility and show as a positive anomaly. Examples include ditches and pits, but may also include natural hollows and channels. On shallow soils, plough-marks can often show as positive linear anomalies. Conversely, if less magnetic material, such as building stone, is introduced into the topsoil (higher magnetism), it will have a lower magnetic susceptibility and show as a negative anomaly. Examples include buried wall foundations, floor surfaces and earthen banks, but natural outcrops of geology may also give a similar negative response.

Thermoremanence is the magnetism of a material that has been heated to the Curie point (675^{o}C for haematite and 565^{o}C for magnetite), at which time it becomes demagnetised, then re-magnetised by the Earth's magnetic field. The acquired magnetism is in the direction of the Earth's field at the time of cooling. Archaeological features that will show such affects are hearths, furnaces and kilns. Materials, such as brick and tile, and even ash, will also acquire thermoremanence detectible by detailed magnetic survey.

For detailed magnetic survey, Exeter Archaeology employs a Bartington Instruments Ltd. Grad601-2 fluxgate gradiometer (commonly known as a *magnetometer*). A fluxgate gradiometer is a passive device consisting of two vertically-mounted sensors

spaced 0.5m apart. The upper sensor measures the Earth's magnetic field. The lower sensor, which is carried approximately 0.3m from the ground, also measures the Earth's field but is directly affected by alterations to it caused by human activity (outlined above). The magnitude of the buried anomaly is calculated by subtracting the upper sensor reading from the lower sensor reading. The greater the contrast between the magnetic susceptibility of the surrounding area and an archaeological feature, the more distinctive the results are likely to be. A high level of background magnetic susceptibility may hinder the recognition of archaeological features.

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