



Northamptonshire
County Council

Northamptonshire Archaeology

Archaeological Geophysical Survey of the
Proposed Gilmorton Wind Farm Site, Low
Spinney Farm, Ashby Magna, Leicestershire

December 2008



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January 2009

Report 09/07

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QUALITY CONTROL

	Print name	Signed	Date
Checked by	Pat Chapman	<i>PC</i>	16/01/09
Verified by	Adrian Butler	<i>AJB</i>	15/01/09
Approved by	Bill Boismier	<i>WAB</i>	16/01/09

OASIS REPORT FORM

PROJECT DETAILS		
Project name	Archaeological Geophysical Survey of the Proposed Gilmorton Wind Farm, Low Spinney Farm, Ashby Magna, Leicestershire.	
Short description (250 words maximum)	Northamptonshire Archaeology was commissioned by University of Leicester Archaeological Services, on behalf of TNEI Services Ltd, to conduct geophysical surveys as part of the archaeological evaluation of a proposed wind farm site in the parish of Ashby Magna, Leicestershire. The survey covered the sites of all proposed turbines, access roads and ancillary structures, amounting to a total area of <i>c</i> 9ha. Some features of minor archaeological significance were detected: notably some areas of ridge and furrow cultivation and the site of an old barn. Other anomalies were detected which are probably of geological origin.	
Project type (eg DBA, evaluation etc)	Geophysical Survey	
Site status (none, NT, SAM etc)	None	
Previous work (SMR numbers etc)	Desk-Based Assessment (Hunt 2008)	
Current Land use	Mixed, arable and pasture	
Future work (yes, no, unknown)	Unknown	
Monument type/ period	Ridge and furrow, post-medieval barn	
Significant finds (artefact type and period)	None	
PROJECT LOCATION		
County	Leicestershire	
Site address	Low Spinney Farm, Ashby Magna	
Study area (sq.m or ha)	<i>c</i> 9 ha	
OS Easting & Northing	SP 560 893	
Height OD	<i>c</i> 135-145m AOD	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology	
Project brief originator	University of Leicester Archaeological Services	
Project Design originator	University of Leicester Archaeological Services	
Director/Supervisor	Ian Fisher	
Project Manager	Adrian Butler, Northamptonshire Archaeology	
Sponsor or funding body	TNEI Services Ltd	
PROJECT DATE		
Start date	15 th December 2008	
End date	18 th December 2008	
ARCHIVES		
	Location (Accession no.)	Content (eg pottery, animal bone etc)
Physical	n/a	
Paper	NA	Site survey records
Digital	NA	Geophysical data, GIS mapping
BIBLIOGRAPHY		
	Journal/monograph, published or forthcoming, or unpublished client report (NA report)	
Title	Archaeological Geophysical Survey of the Proposed Gilmorton Wind Farm, Low Spinney Farm, Ashby Magna, Leicestershire.	
Serial title & volume	NA Reports 09/07	
Author(s)	John Walford and Ian Fisher	
Page Numbers	8	
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Contents

1	INTRODUCTION	1
2	ARCHAEOLOGICAL BACKGROUND	1
3	TOPOGRAPHY AND GEOLOGY	1
4	METHODOLOGY	2
5	SURVEY RESULTS	3
6	CONCLUSION	4
	BIBLIOGRAPHY	5

Figures

Fig 1	Site Location	1:20,000
Fig 2	Overview of Survey Results	1:5000
Fig 3	Survey Results - T1, T2, Compound and Meteorological Mast	1:2,500
Fig 4	Interpretation of Results - T1, T2, Compound and Meteorological Mast	1:2,500
Fig 5	Survey Results - T3 and T4	1:2,500
Fig 6	Interpretation of Results - T3 and T4	1:2,500

**ARCHAEOLOGICAL GEOPHYSICAL SURVEY OF THE PROPOSED
GILMORTON WIND FARM SITE, LOW SPINNEY FARM
ASHBY MAGNA, LEICESTERSHIRE
DECEMBER 2008**

ABSTRACT

Northamptonshire Archaeology was commissioned by University of Leicester Archaeological Services, on behalf of TNEI Services Ltd, to conduct geophysical surveys as part of the archaeological evaluation of a proposed wind farm site in the parish of Ashby Magna, Leicestershire. The survey covered the sites of all proposed turbines, access roads and ancillary structures, amounting to a total area of c9ha. Some features of minor archaeological significance were detected: notably some areas of ridge and furrow cultivation and the site of an old barn. Other anomalies were detected which are probably of geological origin.

1 INTRODUCTION

Northamptonshire Archaeology was commissioned by University of Leicester Archaeological Services, on behalf of TNEI Services Ltd, to conduct geophysical surveys as part of the archaeological evaluation of a proposed wind farm site in the parish of Ashby Magna, Leicestershire. The survey investigated a total area of c9ha, centred on SP 560 893 and comprising a 1ha block around the base of each proposed turbine, plus further blocks to cover the site compound, access tracks and a meteorological mast.

2 ARCHAEOLOGICAL BACKGROUND

A desk-based assessment of the site has noted that no archaeological remains have been discovered or recorded within the development area, although material of prehistoric and Romano-British date has been discovered at various locations close by (Hunt 2008; 10-11). A site visit conducted during the course of this assessment revealed that some areas of ridge and furrow earthworks survive towards the north of the area (Hunt 2008; 14). A study of the available historic mapping identified the site of a former barn which was extant in 1886 but demolished sometime between 1967 and 1993 (Hunt 2008; 7-9).

3 TOPOGRAPHY AND GEOLOGY

The proposed development lies over a substrate of boulder clay (Hunt 2008; 3). It occupies part of

the western flank of a low hill and is bisected by the head of a westward trending valley. Its elevation ranges from just over 150m AOD in the east, to *c* 125m AOD in the west, in the valley bottom. The areas subject to geophysical survey lay mostly between the 145m and 135m contours.

4 METHODOLOGY

The survey was conducted with Bartington Grad 601-2, twin sensor array, vertical component fluxgate gradiometers (Bartington and Chapman 2003). These are standard instruments for archaeological survey and can resolve magnetic variations as slight as 0.1 nanotesla (nT).

The corner points of each survey area were set out with a Leica System 1200 differential GPS. These areas were then subdivided into 20m grid squares by means of tape measure and optical square. The instruments were carried at a brisk but steady pace through each grid, collecting data along 1m spaced traverse lines. Measurements were automatically triggered every 0.25m along the traverses, giving a total of 1600 measurements per grid.

All fieldwork was carried out in accordance with the project's Written Scheme of Investigation (ULAS 2008) and with regard to the geophysical survey guidelines issued by English Heritage and by the Institute of Field Archaeologists (EH 2008 & Gaffney, Gater and Ovendon 2002).

The data was processed using Geoplot 3.00s software. The 'Zero Mean Traverse' function was used to remove slight striping effects and bring the entire data-set to a homogenous average of zero nanoTesla. Destaggering of the data was performed as necessary.

The processed data is presented in this report in the form of greyscale plots (scale +3.0nT to -3.0nT black to white). These have been scaled, rotated and resampled (georectified) for display against the Ordnance Survey base mapping (Figs 2, 3 and 5). Interpretation plots have been overlaid onto the greyscales (Figs 4 and 6). Stacked trace plots have not been included as it was considered that they would be illegible at printing scales and uninformative to the non-specialist reader.

5 SURVEY RESULTS

Compound and adjacent access tracks (Figs 2 to 4)

The survey of these areas detected very little, apart from weak traces of ridge and furrow. There is one short linear anomaly towards the south west of the compound area and a solitary pit-type anomaly in there field to the south. Whilst these features could conceivably represent a length of infilled ditch and a pit, they both seem more likely to be of geological origin.

Some scattered dipolar anomalies occur, indicating pieces of ferrous or ceramic debris within the soil, and there is a small area of magnetic halo at the north end of the access track, which relates to the adjacent building. Another large magnetic halo, immediately south-west of the Compound, was caused by parked farm machinery.

Turbines 1-2, meteorological mast and adjacent access tracks (Figs 2 to 4)

Ridge and furrow is apparent in the vicinity of Turbine 1, but otherwise there are no certain archaeological anomalies within this area. The faint alternating linear anomalies which occur in various places are very characteristic of field drains. Small dipolar anomalies of ferrous or ceramic origin are widespread. The faint and diffuse trends apparent in the vicinity of Turbine 2 and the meteorological mast are almost certainly of geological origin.

Turbines 3-4 and associated access track (Figs 2, 5 and 6)

Traces of ridge and furrow have been detected in this area, particularly around and to the west of Turbine 3. There is also an area of magnetic noise relating to a former barn (see Section 2, above). This noise comprises two elements, a large rectangular area of scattered dipolar anomalies, consistent with a spread of ceramic and ferrous debris, and a smaller square area of intense magnetic responses which probably relate to *in-situ* brick footings. A discontinuous linear anomaly with sporadic ferrous responses runs south from the vicinity of the barn. This marks the line of an old field boundary depicted on the 1886 Ordnance Survey map that has since been removed.

Other old field boundaries are apparent in the vicinity of Turbine 4, some as linear anomalies and others as linear scatters of magnetic noise. They all correlate with the field layout recorded in 1886, except for the easternmost one which was mapped as a single ditch but appears in the data as a pair of anomalies *c*13m apart. The most plausible interpretation of this would be that the two anomalies represent the side ditches of a track which once ran along the field margin but which was removed sometime prior to 1886.

Some minor linear anomalies cross the line of the track between Turbines 3 and 4. They are quite ill defined, and whilst they may represent sections of ditches, this can only be a tentative interpretation. There are also field drain anomalies in the vicinity of Turbine 4 and, to the south of these, a cluster of discrete pit-type anomalies. Although an archaeological explanation for these cannot be excluded, their large size and lack of associated features most strongly suggests a geological origin. They may, for instance, indicate silted hollows within the surface of the boulder clay.

6 CONCLUSION

The survey results suggest that there is little of archaeological significance within the footprint of their proposed development. The only substantial remains to be detected are some areas of ridge and furrow cultivation and the site of a post-medieval barn. A section of ditched track is also tentatively identified. Other anomalies are attributable to geological features, field drains and ferrous debris.

It is, however, important to note the possible limitations of this survey. Firstly, magnetic survey is best suited to the detection of substantial cut and filled features and smaller ones, such as post-holes or cremation deposits rarely produce distinct anomalies. And, secondly, the effectiveness of magnetic survey is dependent on the nature of the underlying geology. On boulder clay, results can be variable (EH 2008; 15), and there are instances where even substantial archaeological remains have proven undetectable. Thus the results of this survey should be considered alongside all other available sources of archaeological information and should not be relied upon in isolation.

BIBLIOGRAPHY

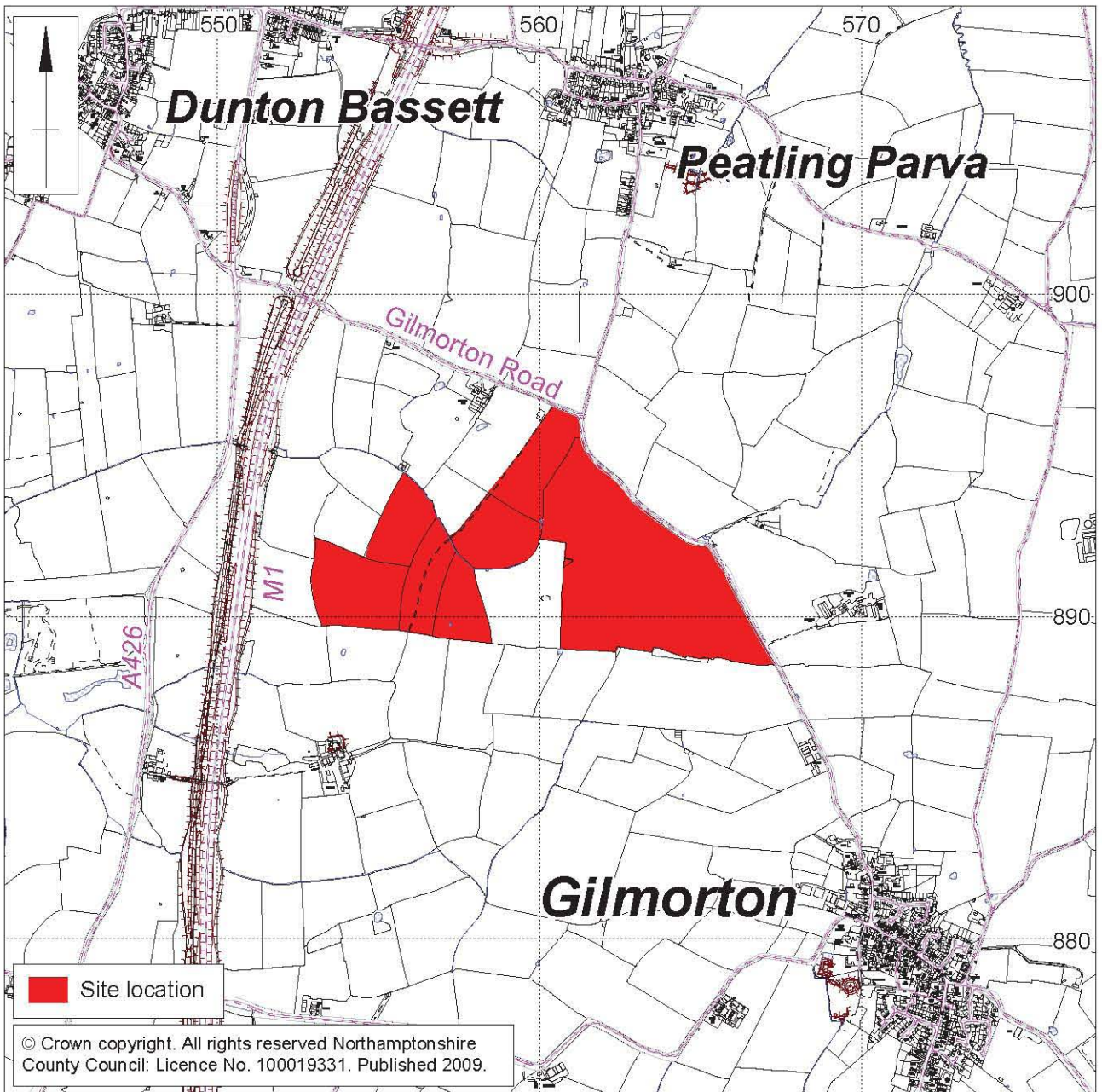
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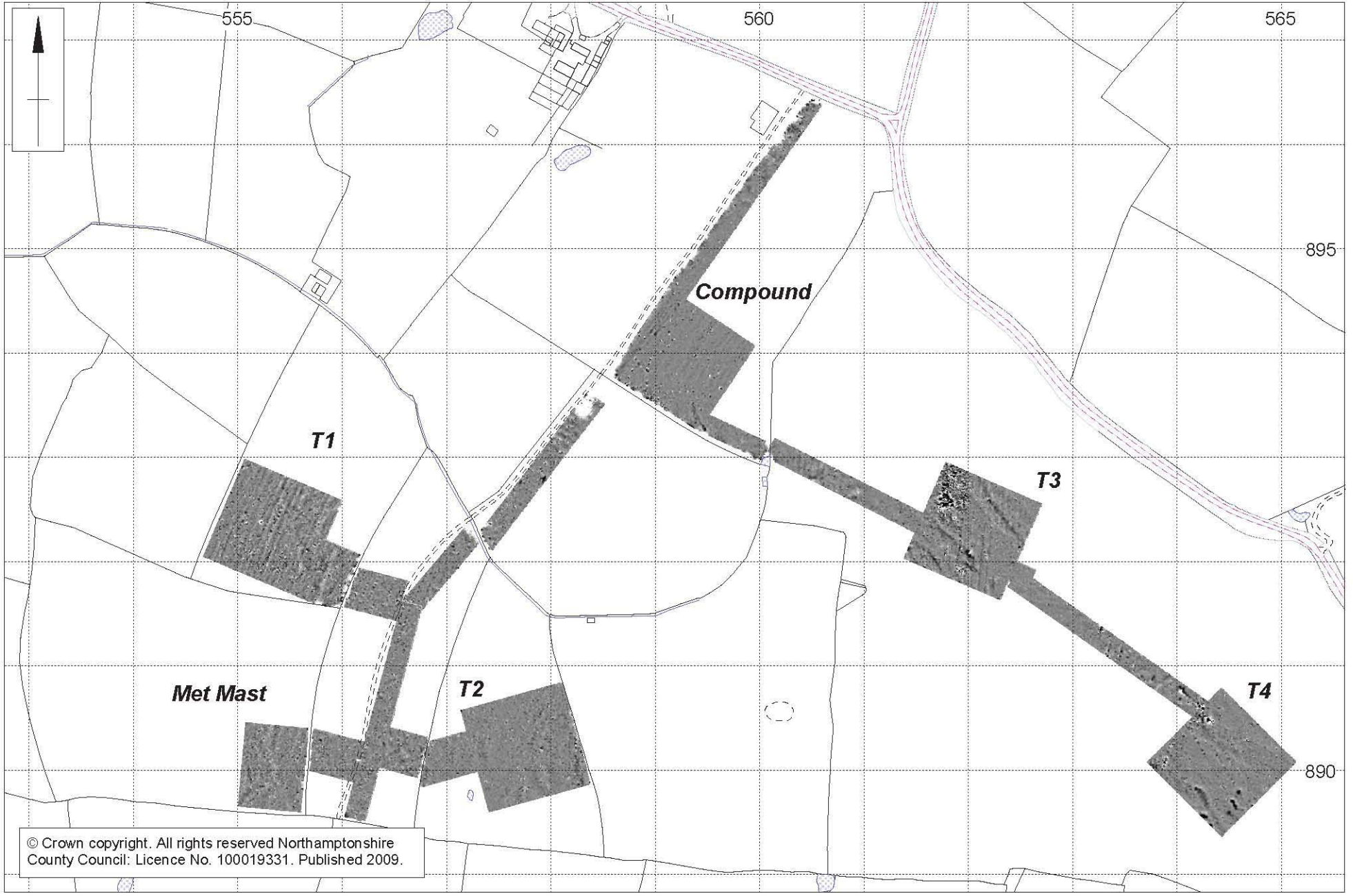
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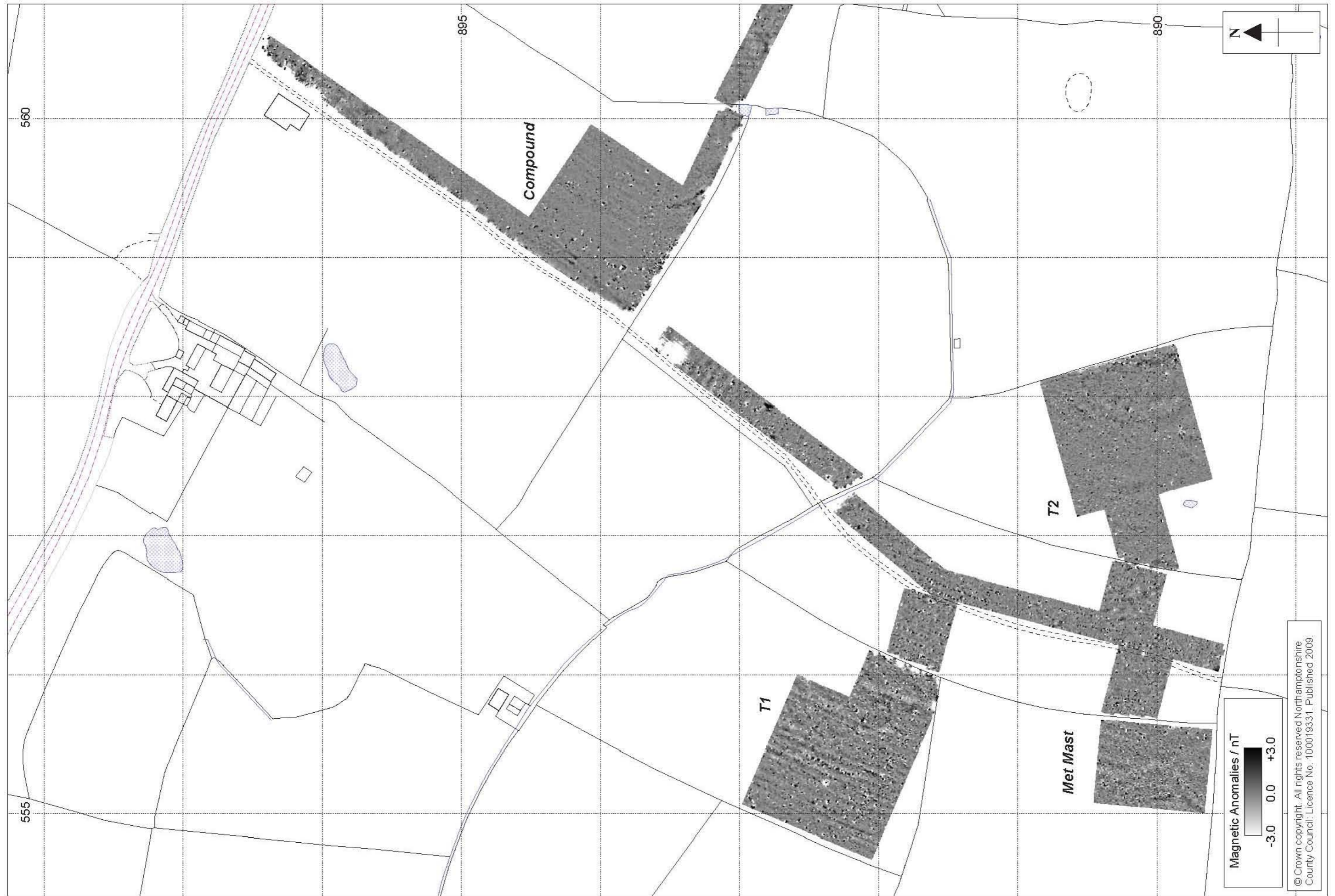
Site location Fig 1

Scale 1:5000 @ A4

Overview of Survey Results

Fig 2





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Scale 1:2500 @ A3

Survey Results - T1, T2, Compound & Meteorological Mast Fig 3

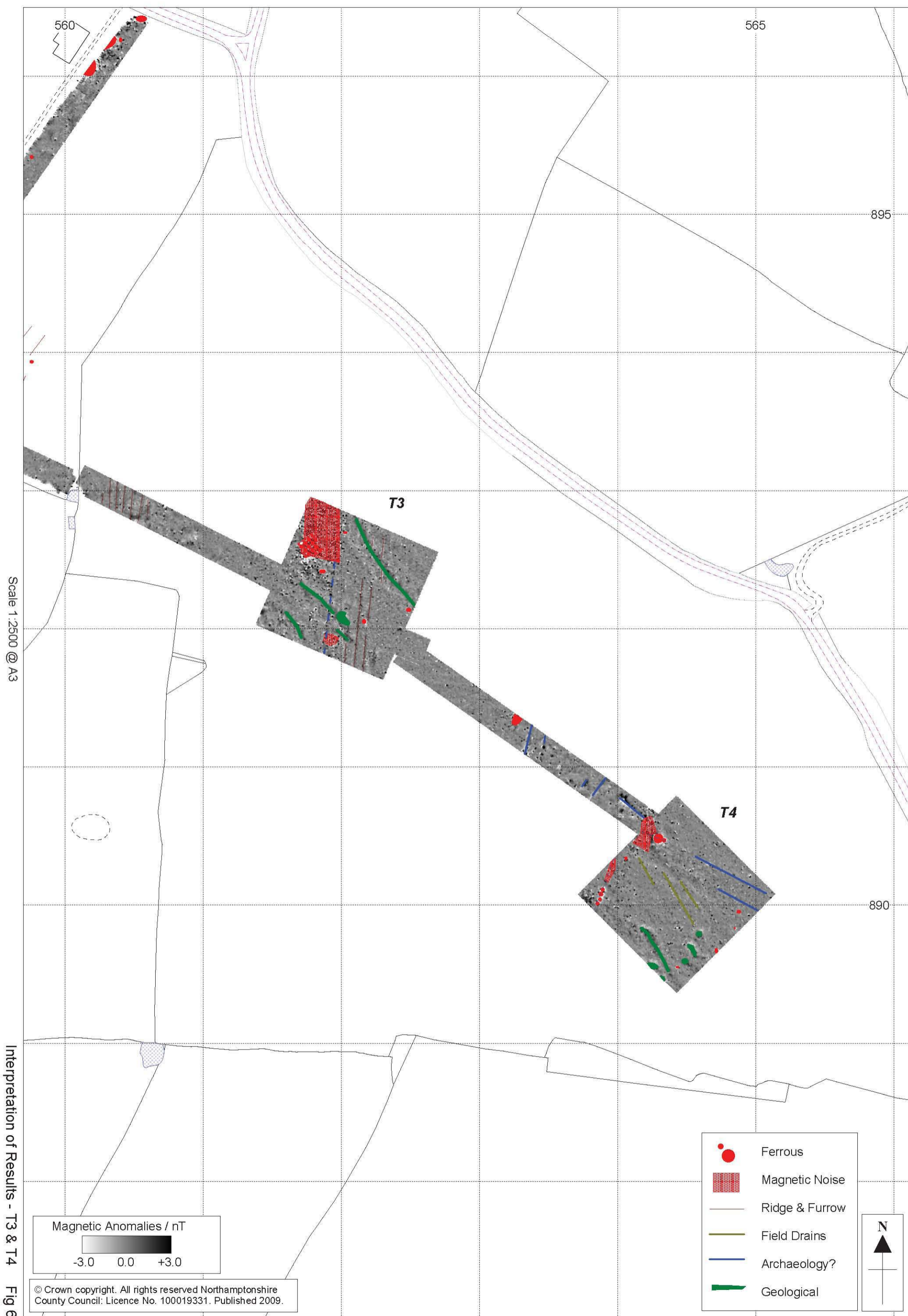
Scale 1:2500 @ A3

Interpretation of Results - T1, T2, Compound & Meteorological Mast

Fig 4

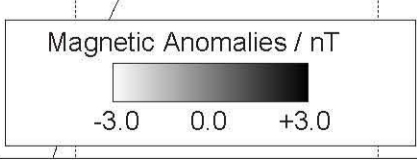






Scale 1:2500 @ A3

Interpretation of Results - T3 & T4 Fig 6



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- Ferrous
- Magnetic Noise
- Ridge & Furrow
- Field Drains
- Archaeology?
- Geological

