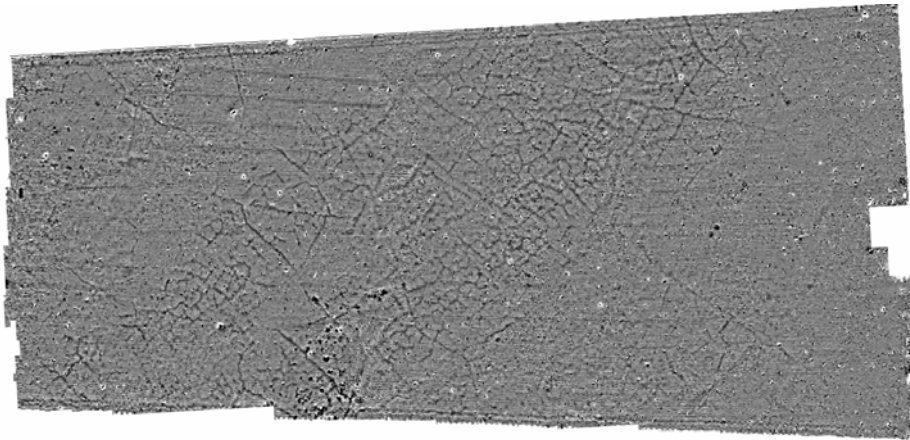




Northamptonshire County Council

Northamptonshire Archaeology

Archaeological Geophysical Survey
near Dimmock's Cote Quarry
Wicken, Cambridgeshire
ECB3305
November 2009



John Walford and Ian Fisher

November 2009

Report 09/169

Northamptonshire Archaeology

2 Bolton House
Wootton Hall Park
Northampton NN4 8BE
t. 01604 700493 f. 01604 702822
e. sparry@northamptonshire.gov.uk
w. www.northantsarchaeology.co.uk



Northamptonshire
County Council



STAFF

Project Manager Adrian Butler BSc MA AlfA

Fieldwork Paul Clements BA
 Heather Smith MA
 John Walford MSc

Text John Walford
 Ian Fisher BSc

Illustrations Ian Fisher

QUALITY CONTROL

	Print name	Signature	Date
Checked by	Pat Chapman	<i>PC</i>	24/11/09
Verified by	Adrian Butler	<i>AB</i>	25/11/09
Approved by	Andy Chapman	<i>AC</i>	25/11/09

OAS/S REPORT FORM 64949

PROJECT DETAILS		
Project name	Archaeological Geophysical Survey near Dimmock's Cote Quarry, Wicken, Cambridgeshire. (ECB 3305)	
Short description	Northamptonshire Archaeology was commissioned by Andy Josephs Ltd to conduct an archaeological geophysical survey on land at Field Farm, to the south of Dimmock's Cote Quarry, Wicken, Cambridgeshire, in November 2009. Approximately 19.5ha was investigated by detailed magnetic gradiometer survey. This revealed a dense palimpsest of natural and anthropogenic anomalies. Several sets of possible archaeological features could be distinguished, indicating the presence of at least two enclosures and various pits, perhaps of Iron Age or Roman date. Traces of ridge and furrow cultivation were also identified. Other anomalies were of an indeterminate nature and could not be interpreted with confidence.	
Project type	Geophysical survey	
Site status	None	
Previous work	Air photo interpretation (Palmer 2002, Palmer 2009)	
Current Land use	Arable	
Future work	Trial Trenching	
Monument type/ period	Possible Iron Age or Roman enclosures, Medieval ridge and furrow	
Significant finds	None	
PROJECT LOCATION		
County	Cambridgeshire	
Site address	Field Farm, Wicken, Cambridgeshire	
Study area	19.5ha	
OS Easting & Northing	Centred on TL 545 719	
Height OD	5m AOD	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology (NA)	
Project brief originator	Andy Josephs Ltd	
Project Design originator	Northamptonshire Archaeology	
Director/Supervisor	Paul Clements	
Project Manager	Adrian Butler	
Sponsor or funding body	Andy Josephs Ltd	
PROJECT DATE		
Start date	9 th November 2009	
End date	13 th November 2009	
ARCHIVES	Location	Content
Physical	ECB 3305	
Paper	NA	Site survey records
Digital	NA	Geophysical survey & GIS data
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report	
Title	Archaeological Geophysical Survey near Dimmock's Cote Quarry, Wicken, Cambridgeshire	
Serial title & volume	Northamptonshire Archaeology Reports 09/169	
Author(s)	John Walford and Ian Fisher	
Page numbers	5	
Date	25/11/2009	

Contents

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

Figures

Fig 1 Site Location	1:25,000
Fig 2 Magnetometer Survey Results	1:2500
Fig 3 Magnetometer Survey Interpretation	1:2500

**ARCHAEOLOGICAL GEOPHYSICAL SURVEY NEAR
DIMMOCK'S COTE QUARRY, WICKEN, CAMBRIDGESHIRE
NOVEMBER 2009**

ABSTRACT

Northamptonshire Archaeology was commissioned by Andrew Josephs Ltd to conduct an archaeological geophysical survey on land at Field Farm, to the south of Dimmock's Cote Quarry, Wicken, Cambridgeshire, in November 2009. Approximately 19.5ha was investigated by detailed magnetic gradiometer survey. This revealed a dense palimpsest of natural and anthropogenic anomalies. Several sets of possible archaeological features could be distinguished, indicating the presence of at least two enclosures and various pits, perhaps of Iron Age or Roman date. Traces of ridge and furrow cultivation were also identified. Other anomalies were of an indeterminate nature and could not be interpreted with confidence.

1 INTRODUCTION

Northamptonshire Archaeology was commissioned by Andrew Josephs Consultants, to conduct an archaeological geophysical survey of land at Field Farm, to the south of Dimmock's Cote Quarry, Wicken, Cambridgeshire. The survey area comprised an almost rectangular field of approximately 19.5ha, centred on NGR TL 5451 7186 (Fig 1)

The survey was undertaken as part of a scheme to assess the archaeological potential of the site prior to the proposed expansion of the quarry. Fieldwork took place between 9th and 13th November 2009, at which time the field was under arable cultivation.

2 TOPOGRAPHY AND GEOLOGY

The site is located approximately 2km north-west of Wicken, south of the A1123 (Dimmock's Cote Road). It is bounded to the east by Upware Road and to the west by a track named Fodderfen Drove. The River Cam flows approximately 500m to the west.

The site lies upon a low promontory of Upware Limestone which projects northwards into the fenland basin and is surrounded to the east, north and west by Holocene deposits of freshwater origin (Gilmour 2009, 7). It stands at c 5m AOD. Two broad ridges run across the site on a north-south axis. These have been interpreted as medieval plough headlands (Palmer 2009), but seem unusually large for such features.

3 ARCHAEOLOGICAL BACKGROUND

Although the archaeology of the survey area itself is poorly known, a dense cluster of archaeological features has been discovered immediately to the north. Excavations in advance of quarrying to the north of the A1123 have revealed Neolithic pits, a complex of Bronze Age features and enclosures and field boundaries of Iron Age and Roman date (Gilmour 2009, 7-10). Cropmarks indicate an enclosure and trackway at TL 5425 7217 and a ring ditch, possible villa and further enclosures in the vicinity of TL 541 723 (Palmer 2009; Gilmour 2009, 7, plate 4).

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 survey area was divided into 30m grid squares by means of a tape measure and optical square and tie-in measurements were taken from the field boundaries. The gradiometers 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 3600 measurements per grid.

All fieldwork methods complied with the guidelines issued by English Heritage, and by the Institute for Archaeologists (EH 2008; Gaffney, Gater and Ovendon 2002).

The survey data was processed using Geoplot 3.00u software. Striping, caused by slight mismatches in sensor balance, was removed using the 'Zero Mean Traverse' function and destaggering of the data was performed as necessary.

The processed data is presented in this report in the form of greyscale plots (scale +4nT to -4nT black ~ white). These have been scaled, rotated and resampled (georectified) for display against the Ordnance Survey base mapping (Fig 2). An interpretative diagram has been produced and is shown overlain onto the data in Figure 3.

5 SURVEY RESULTS

Magnetometer Data (Figs 2-3)

An extensive palimpsest of weakly positive linear anomalies occurs across the survey area. This presented a particularly difficult challenge to the interpreter, as there is no objective way to determine which anomalies represent archaeological features and which represent natural cracking of the bedrock. The most reliable determinant is that archaeological features tend to exhibit regular, sometimes rectilinear, layouts whereas natural ones are usually either irregular or broadly hexagonal in form. There must, however, be a considerable degree of uncertainty where such subjective criteria are employed and the reader is asked to bear this in mind when reading the following discussion.

The majority of the anomalies cluster in a broad band aligned north-east to south-west across the centre of the field. The most readily interpreted features within this zone form an intricate pattern of small cellular units. Such patterning is typical of periglacial frost polygons, and it is noteworthy that this type of feature was frequently encountered during the recent excavations at Dimmock's Cote Quarry (Gilmour 2009, 13).

There are three groups of anomalies which are interpreted, with moderate confidence, as being archaeologically significant. One, located almost mid-way along the field, comprises a rectangular arrangement of linear anomalies, measuring c 60m by 35m and an adjacent set forming an irregular pentagon about 45m across. A double linear anomaly heads south-eastwards from the middle of this group and a single linear anomaly projects from the pentagon. These anomalies are suggested to represent two conjoined ditched enclosures and trackway, perhaps of Iron Age or Roman date.

Another potentially significant group of anomalies occurs to the south-west of the first and extends up to the southern edge of the survey area. The main elements are a set of linear anomalies, perhaps defining a broadly sub-rectangular enclosure about 70m long by 40m wide, and an associated cluster of small and discrete positive anomalies. The latter are of a type which often indicate pits. In this case they exhibit a moderately enhanced magnetic response (anomaly peaks in the region of 10nT), which might indicate the present of burnt soil or industrial residues within the pit fills. A prehistoric or Roman date for these features is thought most plausible.

The third group of anomalies lies towards the north-east of the field. These comprise a set of linear anomalies defining parts of a complex of small sub-rectangular units. They seem too regular to be of natural origin and are tentatively interpreted as representing part of a system of small paddocks or fields of unknown date.

Apart from the above, there are a substantial number of other linear anomalies which might represent archaeological features but are not confidently identified as such. Some seem to define enclosures but exhibit irregular and disjointed forms which make such an interpretation doubtful. Others look plausibly archaeological along part of their length but then merge seamlessly into undoubted geological features.

Small and discrete positive magnetic anomalies are scattered randomly across the survey area. The majority exhibit the strong central peak and negative halo characteristic of ferrous anomalies, indicating the presence of small pieces of iron or steel debris within the ploughsoil. A small number, however, exhibit much more subdued magnetic responses and are more likely to represent pits or natural hollows. A pair of such features occurs towards the eastern end of the field and others occur singly. One, close to the western field edge, is of unusually elongated form.

Finally, the data contains evidence for two separate cultivation regimes. A fragmentary set of parallel linear anomalies spaced at intervals of c 17m and aligned east to west almost certainly represent fragments of ridge and furrow associated with the former open fields of Wicken. A much more widespread set of faint and tightly spaced negative linear anomalies, also aligned approximately east to west, relates to the modern ploughing of the field. Broader anomalies running parallel with these, along the northern and southern field margins, are thought to be of similarly recent agricultural origin.

Other Observations

Although the project brief did not include fieldwalking, small quantities of pottery and worked flints were observed across the field surface during the survey. The pottery included Roman material and also some coarse flint tempered sherds. Two specimens of the latter were retained and have been provisionally identified as Iron Age (Andy Chapman pers com).

6 CONCLUSION

The magnetometer data suggests the presence of archaeological features, including enclosures, pits and a trackway, at various locations within the survey area. However, a dense network of geological cracks has also been detected and there are many indeterminate anomalies which could be of either natural or anthropogenic origin. It is to be hoped that archaeological trial trenching will resolve some of these uncertainties. Should this be the case, then the interpretation presented here must be revised accordingly.

BIBLIOGRAPHY

Bartington, G, and Chapman, C, 2003 A high-stability fluxgate magnetic gradiometer for shallow geophysical survey applications, *Archaeological Prospection*, **11**, 19-34

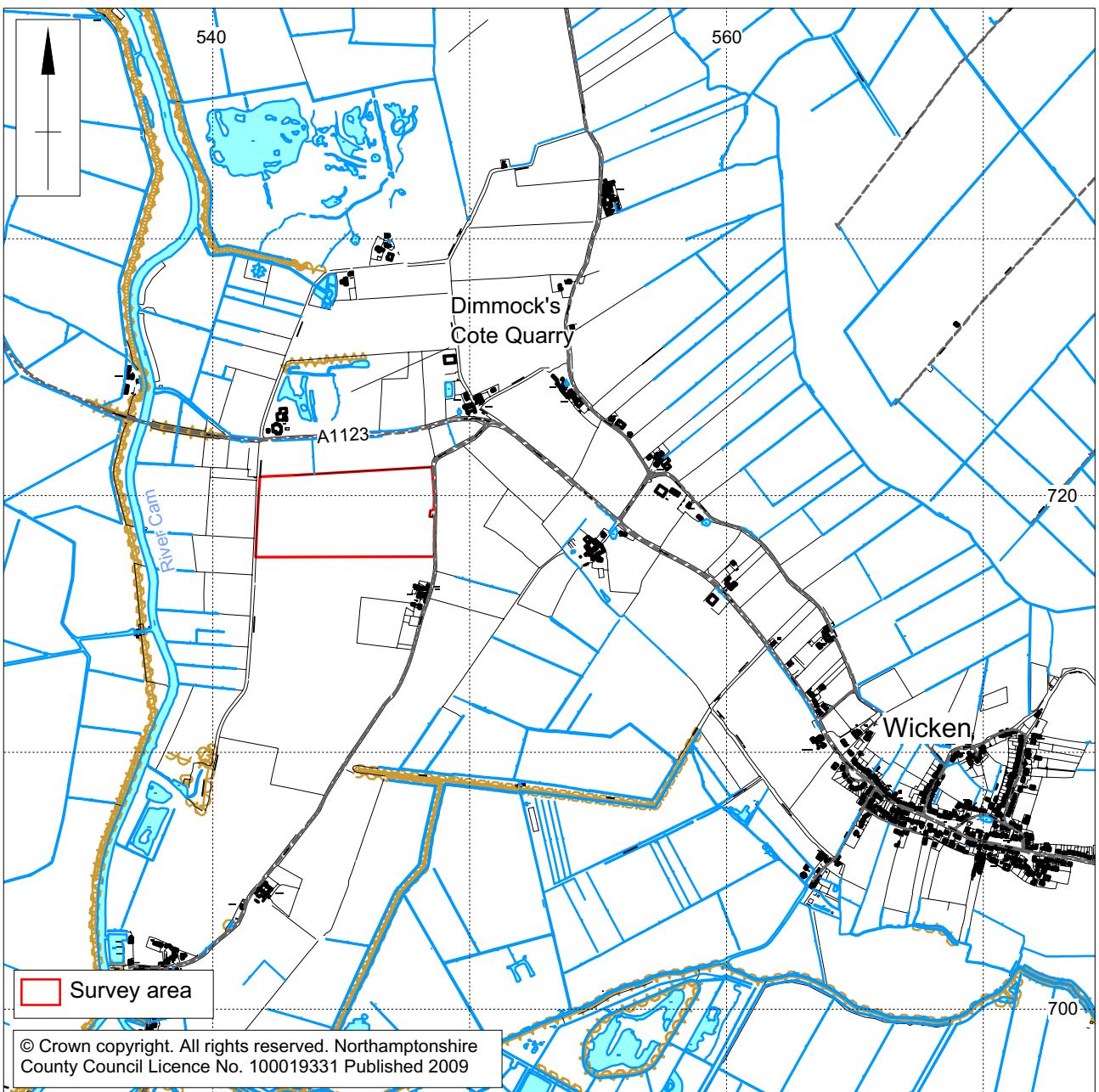
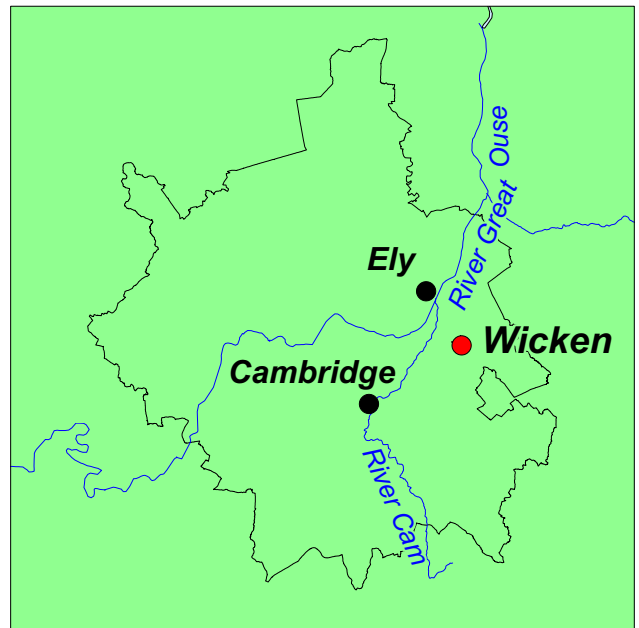
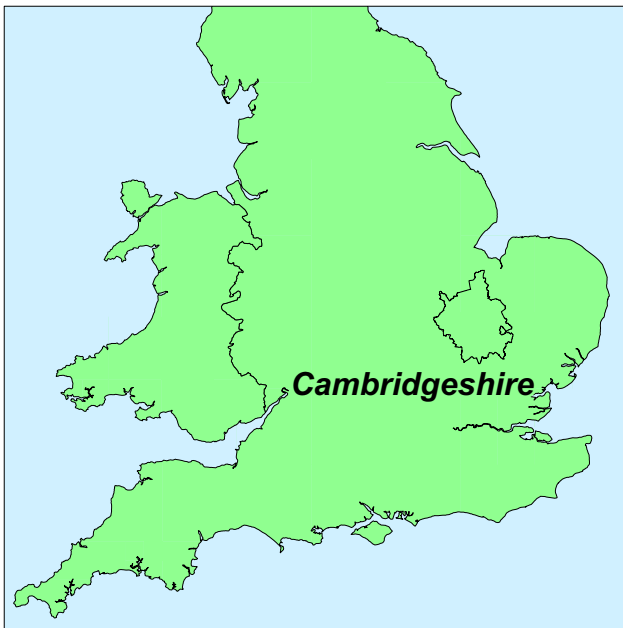
EH 2008 *Geophysical Survey in Archaeological Field Evaluation*, English Heritage

Gaffney, C, Gater, J, and Ovendon, S, 2002 *The Use of Geophysical Techniques in Archaeological Evaluations*, Institute of Field Archaeologists Technical Paper, **6**

Gilmour, N, 2009 *Neolithic to Early Roman Archaeology at Dimmock's Cote Quarry, Wicken, Cambridgeshire*, Oxford Archaeology East report, **1085**

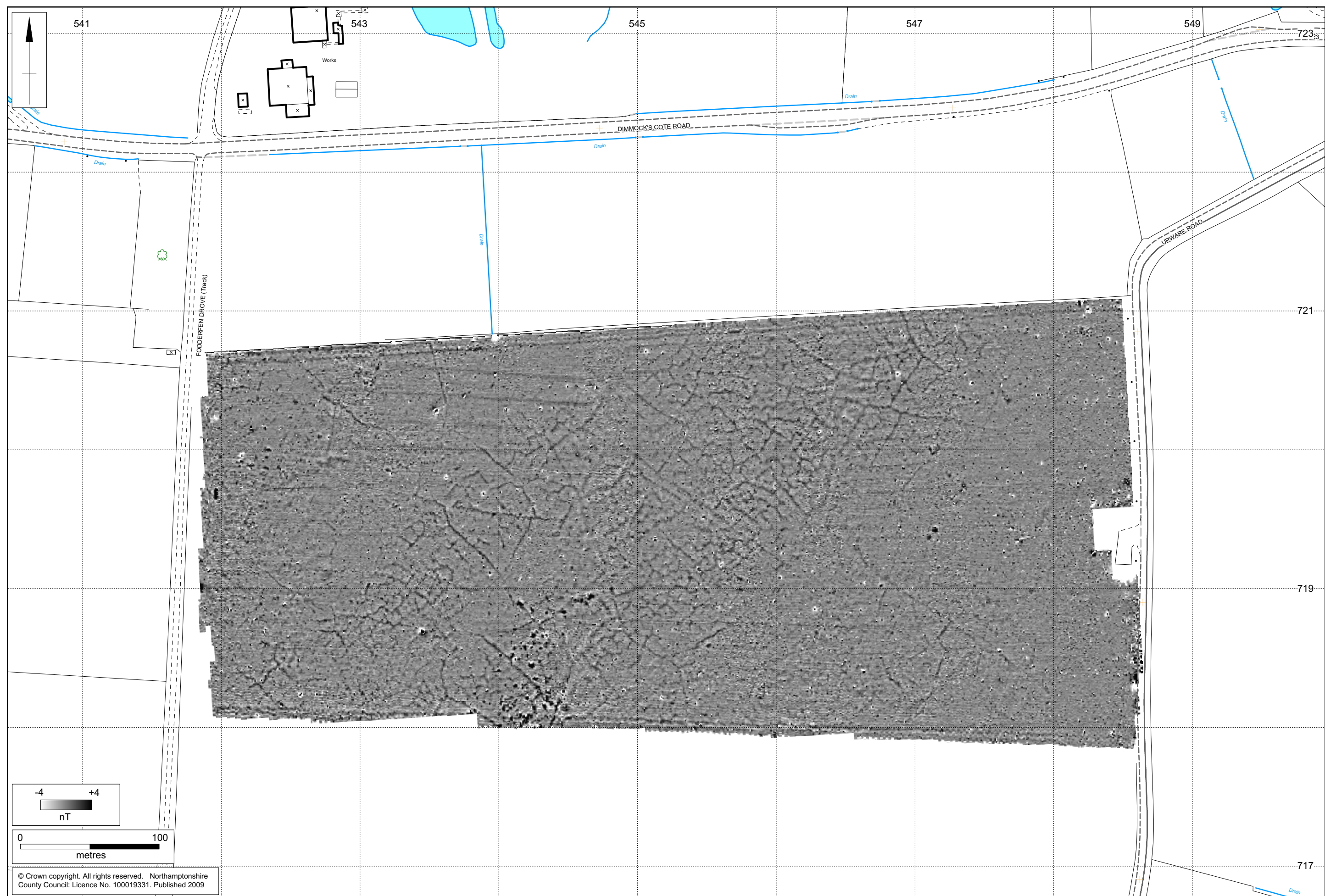
Palmer, R, 2002 *Red Barn, TL 546723, Wicken, Cambridgeshire: Aerial Photographic Assessment*, Air Photo Services report, **2002/5**

Palmer, R, 2009 *Dimmock's Quarry, TL 545720, Wicken, Cambridgeshire, Aerial Photographic Update*, Air Photo Services report, **2009/11**



Scale 1:25,000

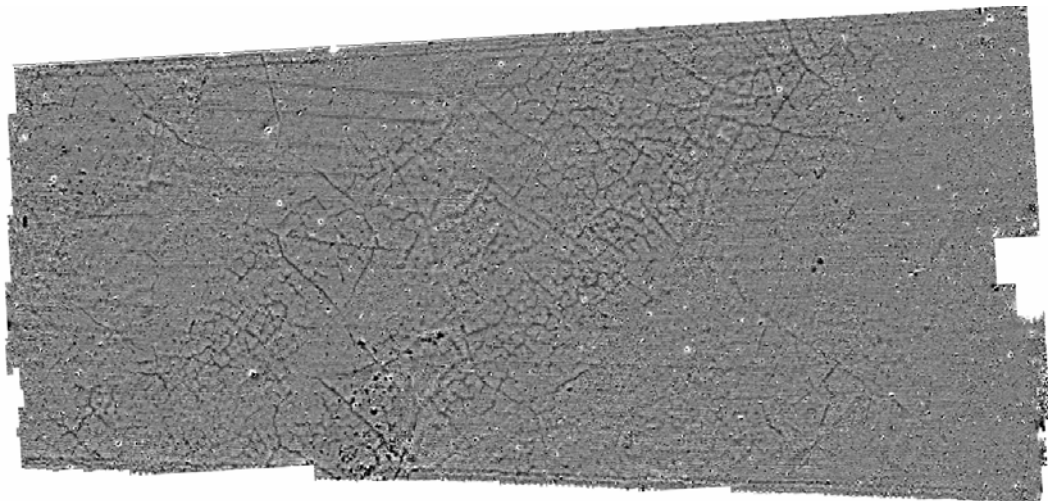
Site location Fig 1





Northamptonshire County Council

Northamptonshire Archaeology



Northamptonshire Archaeology

2 Bolton House
Wootton Hall Park
Northampton NN4 8BE
t. 01604 700493 f. 01604 702822
e. sparry@northamptonshire.gov.uk
w. www.northantsarchaeology.co.uk



Northamptonshire
County Council