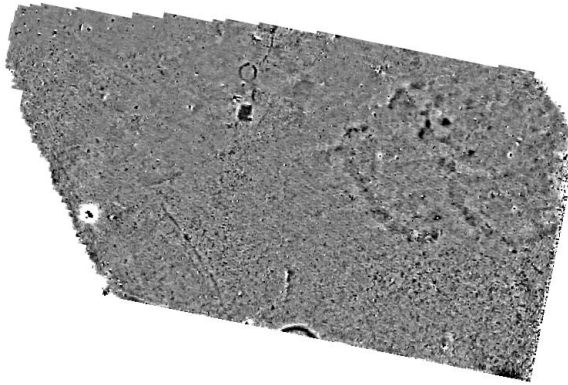




Northamptonshire Archaeology

Archaeological geophysical survey on land to the
north of Finmere Quarry, Finmere, Oxfordshire
May and November 2010



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

Heather Smith

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STAFF

Project Manager Adrian Butler BSc MA AlfA

Fieldwork Ian Fisher BSc
 Katherine Fawcett BSc
 Heather Smith BSc MA
 John Walford MSc
 Paul Clements BA
 Karl Hanson MA
 David Haynes
 Peter Townend MA

Text and illustrations Heather Smith
 Adrian Butler
 Ian Fisher
 John Walford
 Carol Simmonds BA

QUALITY CONTROL

	Print name	Signature	Date
Verified by	Adrian Butler	<i>AB</i>	05/11/10
Checked by	Pat Chapman	<i>PC</i>	05/11/10
Approved by	Andy Chapman	<i>AC</i>	08/11/10

OASIS REPORT FORM

PROJECT DETAILS		
Project name	Archaeological Geophysical Survey on land to the north of Finmere Quarry, Finmere, Oxfordshire	
Short description	Northamptonshire Archaeology was commissioned to carry out a geophysical survey on approximately 10.5 hectares of land in three fields proposed for a northern extension to Finmere Quarry and Landfill Site, Banbury Road, Finmere, Oxfordshire. The magnetometer survey revealed several anomalies indicating archaeological features; a possible iron Age roundhouse or earlier circular monument, a pit, six ditches and a curvilinear ditch that could be part of a large circular feature. It is likely that these features could be a continuation of the complex of Bronze Age and Iron Age features previously excavated to the south of the current survey. Also revealed were areas of diffuse anomalies that could indicate previous shallow quarrying or natural geology. Other anomalies were more likely to be of modern origin responding to ferrous debris and ferrous objects.	
Project type	Geophysical survey	
Site status	None	
Previous work	Geophysical survey (Butler and Fisher 2006), Cultural Heritage Assessment (Josephs 2005), Excavation (Kenyon 2001)	
Current Land use	Arable	
Future work	Unknown	
Monument type/ period	Iron Age roundhouse	
Significant finds		
PROJECT LOCATION		
County	Oxfordshire	
Site address	Finmere Quarry, Banbury Road, Finmere	
Study area	10.5ha	
OS Easting & Northing	Centre SP 6260 3275	
Height OD	c120m aOD	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology (NA)	
Project brief originator	Andrew Josephs Ltd	
Project Design originator	NA	
Director/Supervisor	Ian Fisher	
Project Manager	Adrian Butler	
Sponsor or funding body	Premier Aggregates Ltd	
PROJECT DATE		
Start date	24 May 2010	
End date	08 November 2010	
ARCHIVES	Location	Content
Physical	N/A	
Paper	NA	Site survey records
Digital	NA	Geophysical survey & GIS data
BIBLIOGRAPHY		
Title	Journal/monograph, published or forthcoming, or unpublished client report	
Title	Archaeological Geophysical Survey on land to the north of Finmere Quarry, Finmere, Oxfordshire, May and November 2010	
Serial title & volume	Northamptonshire Archaeology Report 10/181	
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Fig 2 Magnetometer Survey Results Fields 1, 2 & 3, 1:2500
Fig 3 Magnetometer Survey Interpretation Fields 1, 2 & 3, 1:2500

ARCHAEOLOGICAL GEOPHYSICAL SURVEY ON LAND TO THE NORTH OF FINMERE QUARRY, FINMERE, OXFORDSHIRE MAY AND NOVEMBER 2010

ABSTRACT

Northamptonshire Archaeology was commissioned to carry out a geophysical survey on approximately 10.5 hectares of land in three fields proposed for a northern extension to Finmere Quarry and Landfill Site, Banbury Road, Finmere, Oxfordshire.

The magnetometer survey revealed several anomalies indicating archaeological features, a possible Iron Age roundhouse or earlier circular monument, a pit, six ditches and a curvilinear ditch that could be part of a large circular feature. It is likely that these features could be a continuation of the complex of Bronze Age and Iron Age features previously excavated to the south of the current survey. Also revealed were areas of diffuse anomalies that could indicate previous shallow quarrying or natural geology. Other anomalies were more likely to be of modern origin responding to ferrous debris and ferrous objects.

1 INTRODUCTION

Northamptonshire Archaeology was commissioned by Andrew Josephs Ltd, on behalf of Premier Aggregates Ltd, to carry out a geophysical survey on land proposed for a northern extension to Finmere Quarry and Landfill Site, Banbury Road, Finmere, Oxfordshire, centred on National Grid Reference (NGR) SP 6260 3275, (Fig 1). The site surveyed is approximately 10.5 hectares in area, split between three fields to the south of the A421 Banbury Road. The survey of the two eastern fields was undertaken in May 2010, while the western field was surveyed later, in November 2010 after the crop had been harvested.

The archaeological magnetometer survey was commissioned in order to identify the presence or absence of archaeological remains susceptible to geophysical survey within the area and to inform any future stages of investigation.

2 TOPOGRAPHY AND GEOLOGY

The site is located approximately 1km to the south-west of the village of Finmere. The three fields form a roughly rectangular area and lie immediately to the north of the existing landfill quarry, with the access road to the quarry running between the fields. They are bounded on the north by the A421 Banbury Road and on the west by a dismantled railway line.

The site is situated at c120m aOD and is relatively flat. At the time of the survey all fields were arable. The eastern fields, which are actually divided into two by a hedge, not shown on the Ordnance Survey map, both contained a crop of beans. The western field was not surveyed in May due to a high crop of oilseed rape, and so was surveyed in November.

The bedrock geology of the area consists of fine grained limestone with beds of mudstone of the Great Oolite group of Mid Jurassic age. The drift geology consists of superficial glaciofluvial deposits of sands and gravels (British Geological Survey 2002).

3 ARCHAEOLOGICAL BACKGROUND

The areas to the south and west of the existing quarry have been investigated previously, including a cultural heritage assessment that covered a radius of 1km and so included the current survey area to the north of the quarry (Josephs 2005). A cropmark of a possible Bronze Age enclosure has been noted in the north-west of the site in the western field (Oxfordshire HER ref 13468, Josephs 2005). No other archaeological features are known in the three fields that are the subject of the current geophysical survey.

However, the investigations did reveal archaeological remains nearby. In the now quarried field adjacent to the south of Field 3, a complex of features including cremations, pits, ring ditches, enclosures and a trackway were revealed by excavation and are thought to be of Bronze Age and Iron Age date. (Oxfordshire HER PRN 13469, Josephs 2005, Kenyon 2001). Prehistoric flint scatters were found during fieldwalking of land immediately to the south of Fields 1 and 2 (Josephs 2005). A previous geophysical survey by Northamptonshire Archaeology took place in 2006 in fields to the west and south-east of the quarry, and revealed a circular and a sub-rectangular enclosure and related ditches about 100m to the south-west of Field 3, as well as areas of ridge and furrow (Butler and Fisher 2006). A subsequent excavation of the field to the south-east of the quarry, about 700m away from the current survey area revealed three undated linear features (Mundin and Ford 2008). Along the line of the current A421 to the east of Field 1, a watching brief and excavation revealed ditches, pits and a hearth, dating from the Late Iron Age and Roman periods, (Grundon 1999, Josephs 2005).

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 areas were divided into a network of contiguous, 30m x 30m grid squares. These were set out manually by 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 3600 measurements per grid.

All fieldwork was carried out in accordance with the guidelines issued by English Heritage and by the Institute for Archaeology (EH 2008; Gaffney, Gater and Ovendon 2002).

The data was processed using Geoplot 3.00u software. Striping, occasionally caused by slight mismatches in sensor balance, was removed using the 'Zero Mean Traverse' function (ZMT) and destaggering of the data was performed as necessary. The processed data is presented in this report in the form of a greyscale plot (scale +4nT to -4nT black ~ white). This has been scaled, rotated and resampled (georectified) for display against the Ordnance Survey base mapping (Fig 2). An interpretative plot has been produced and is shown overlain onto the data in Figure 3.

5 SURVEY RESULTS

See Figures 2 and 3 for magnetometer survey results and interpretation.

Field 1

In this easternmost field the magnetometer survey results show a spread of discrete paired positive and negative (dipolar) anomalies, which probably represent ferrous debris in the plough soil. In the centre of the northern part of the survey area a positive magnetic anomaly covers a large area. This is probably caused by the effects of the pylon situated just to the north.

A negative linear anomaly crosses the south of the field parallel with the field boundary, and is also seen in the results from Field 2. This is likely to be a feature related to modern ploughing, possibly the edge of cultivation.

An area of diffuse positive anomalies occurs in the east of the field, these are likely to reflect changes in underlying geology.

Field 2

The results for this field also show a spread of discrete dipolar anomalies across the field, with concentrations along the northern edge and the south-western corner. These probably represent ferrous debris. The concentration in the south-west is likely due to the entrance to the field in this corner. A larger positive anomaly in the north-east of the field probably indicates a piece of buried ferrous material.

As in Field 1, a negative linear anomaly runs parallel to the southern field boundary, and is probably caused by modern ploughing effects such as the edge of cultivation. A second negative linear anomaly crosses the field, aligned south-west to north-east, from the south-west corner of the field to a point midway along the eastern field boundary. This could conceivably be the result of compacted soil, due to passage of farm machinery along a path from the field entrance to an entrance to Field 1, which is midway along the boundary between the fields, but it is uncertain if the locations match exactly.

A positive linear anomaly aligned south-south-west to north-north-east crosses the centre of the field, this could be the response of a ditch.

Field 3

The larger westernmost field contains several magnetic anomalies that could be of archaeological origin. Near the centre of the southern edge of the field is a well-defined positive curvilinear anomaly. This response is typically produced from a large ditch. It is probable that not all of this feature was revealed and it could continue south to form a circular ring ditch or enclosure, and be related to the complex of Bronze Age and Iron Age ring ditches and enclosures found in the field immediately to the south (Oxfordshire HER PRN 13469). To the west is a positive linear anomaly orientated north-west to south-east, reflecting a ditch. To the north is a positive linear anomaly aligned north to south, probably representing a second ditch.

In the centre of the northern side of the field is a penannular positive magnetic anomaly about 10m in diameter. It is well defined with a clear gap on the northern side. This morphology is indicative of either an Iron Age roundhouse or an earlier circular

monument. To the north of this circular anomaly is a stretch of positive linear anomaly, representing another ditch. A similar but shorter anomaly to the south also indicates a ditch. To the south a sub-rectangular positive anomaly approximately 8m by 10m, may represent a large pit, of uncertain function and date. Another positive linear anomaly, which could indicate a fifth ditch, is situated to the east of the pit. To the north of this set of features is an irregular positive anomaly, this is likely to represent a smaller pit.

The results for the north-east corner of the field have a different appearance from the rest, revealing curvilinear bands of diffuse positive magnetic anomalies. These types of anomalies are often the result of previous shallow quarrying, although they could be of geological origin.

As in the other two fields, there are a large number of small discrete dipolar anomalies across the field indicating the presence of ferrous debris. The positive and negative anomalies in a linear distribution at the eastern edge of the field are probably related to the quarry access road or services. A strong positive anomaly with a negative halo near the western edge of the field could indicate the presence of a large piece of ferrous material.

6 CONCLUSION

The results of the geophysical survey show clear signs of some archaeological features. Survey of the western part of the area revealed a penannular anomaly that could reflect either an Iron Age roundhouse or an earlier circular monument. There is also a large sub-rectangular anomaly that could indicate a pit, a smaller irregular pit and a large, well defined, curvilinear ditch that could be part of a large circular feature. Also in this area are five linear anomalies that could represent ditches. It is likely that these features could be a continuation of the complex of Bronze Age and Iron Age features previously excavated to the south of the current survey. Another linear ditch occurs in the middle field.

Also revealed are areas of diffuse anomalies that could indicate previous shallow quarrying or natural geology.

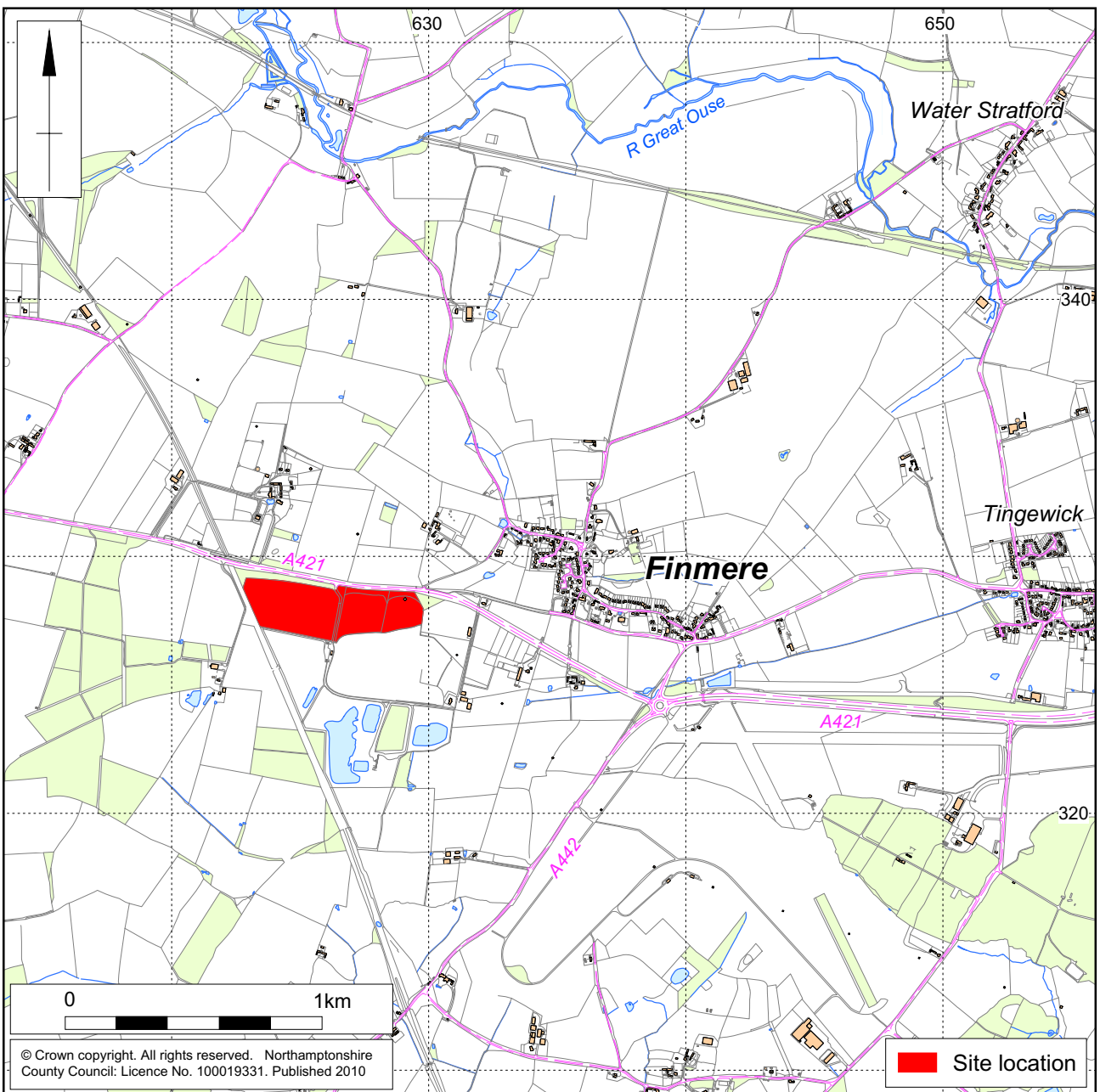
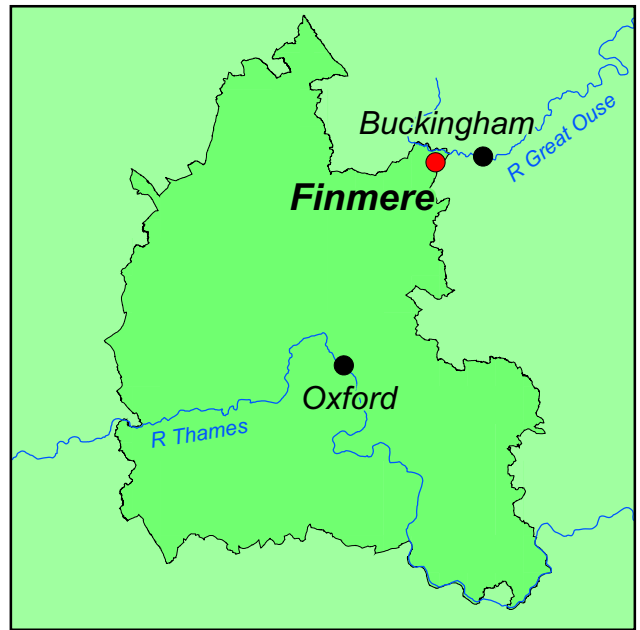
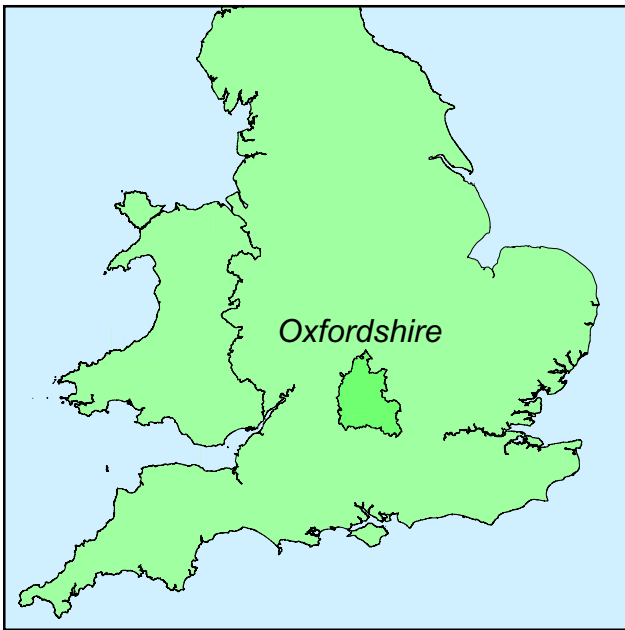
Other anomalies revealed are more likely to be of modern origin such as ferrous debris in the plough soil and buried ferrous objects.

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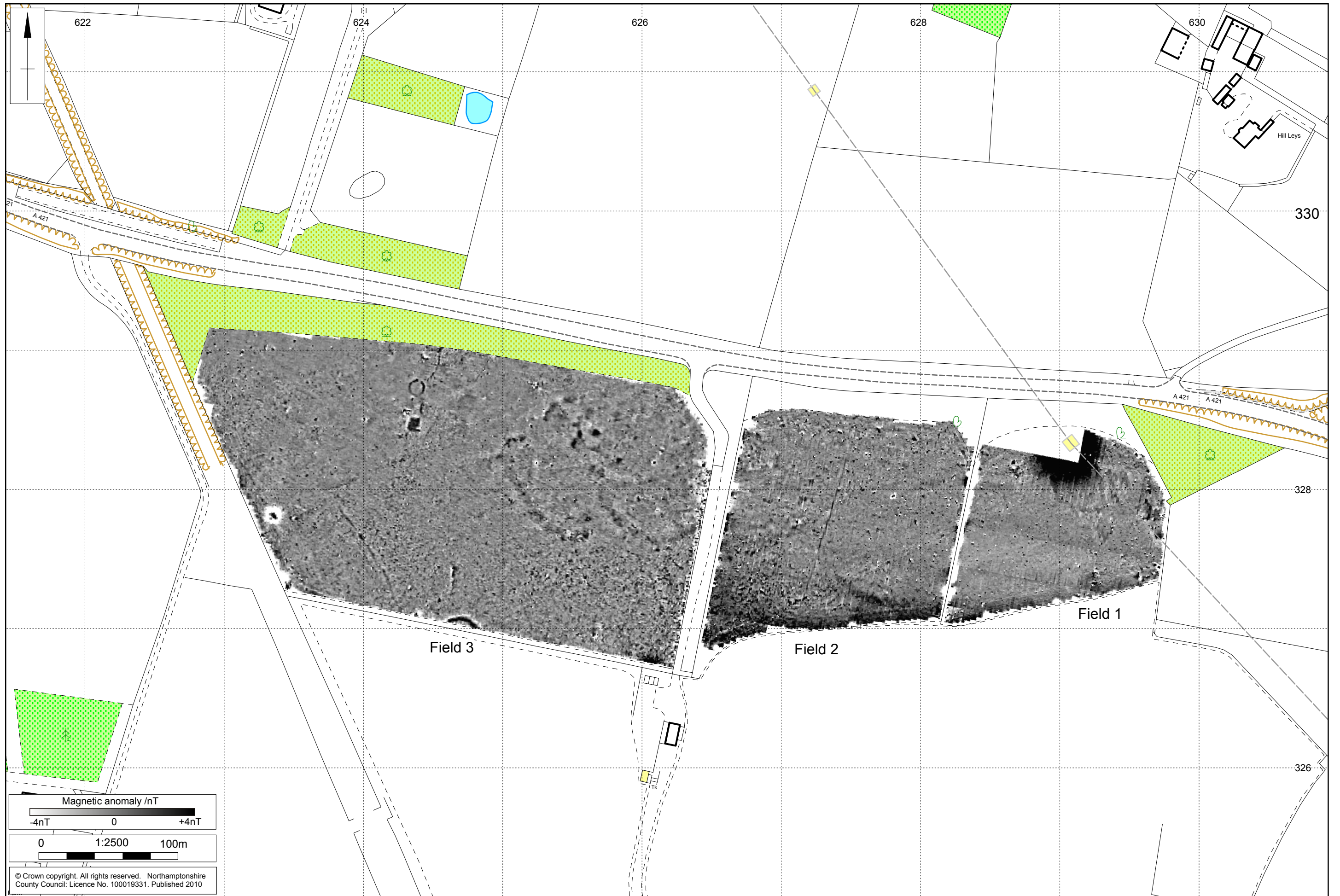
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- Oxfordshire Heritage Search www.oxfordshire.gov.uk/wps/portal/publicsite Accessed 02/11/2010



Scale 1:25,000

Site location Fig 1







Northamptonshire County Council

Northamptonshire Archaeology

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2 Bolton House
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Northampton NN4 8BE

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