Northamptonshire County Council

Northamptonshire Archaeology

Geophysical Survey of

Land at The Hollows,

Little Horwood, Buckinghamshire

February 2008

Adrian Butler

February 2008

Report 08/43

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QUALITY CONTROL

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Checked by	Andy Chapman	*AC*	26/02/08
Approved by	Bill Boismier	*WAB*	26/02/08

OASIS REPORT FORM

PROJECT DETAILS		
Project name	Geophysical Survey on Land at The Hollows, Little Horwood, Buckinghamshire	
Short description	Northamptonshire Archaeology conducted a geophysical survey of land at The Hollows, located to the south of Little Horwood, Buckinghamshire. Approximately 4ha in two fields were examined by detailed gradiometer survey. An extensive land drainage system for the fields was identified. Two possible fired structures with five associated pits were located in Area A. A single ditch and pit were detected in Area B.	
Project type	Geophysical survey	
Site status	None	
Previous work	Bucks SMR5381	
Current Land use	Agricultural	
Future work	Unknown	
Monument type/ period	Ditch	
Significant finds	None	
PROJECT LOCATION		
County	Buckinghamshire	
Site address		
Study area	4 ha	
OS Easting & Northing	4784, 2292	
Height OD	110m AOD	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology	
Project brief originator		
Project Design originator		
Director/Supervisor	Ian Fisher	
Project Manager	Adrian Butler	
Sponsor or funding body	ArchaeoLogica Ltd	
PROJECT DATE		
Start date	February 2008	
End date	February 2008	
ARCHIVES	**Location**	**Content**
Physical	n/a	
Paper	NA	Site survey records
Digital	NA	Geophysical survey & GIS data
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report	
Title	Geophysical Survey on Land at The Hollows, Little Horwood, Buckinghamshire	
Serial title & volume	NA Report 08/43	
Author(s)	Adrian Butler	
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GEOPHYSICAL SURVEY ON LAND AT THE HOLLOWS,

LITTLE HORWOOD, BUCKINGHAMSHIRE

FEBRUARY 2008

ABSTRACT

Northamptonshire Archaeology conducted a geophysical survey of land at The Hollows, located to the south of Little Horwood, Buckinghamshire. Approximately 4ha in two fields were examined by detailed gradiometer survey. An extensive land drainage system for the fields was identified. Two possible fired structures with five associated pits were located in Area A. A single ditch and pit were detected in Area B.

1 INTRODUCTION

Northamptonshire Archaeology was commissioned by ArchaeoLogica Ltd to undertake an archaeological geophysical survey of an area of land at The Hollows farm, south of Little Horwood, Buckinghamshire (NGR SP784,292, Fig 1). The work was undertaken to support a planning proposal for the development of a 'green' burial ground.

The objectives of the geophysical survey were to identify the presence or absence of archaeological remains within the proposed development area. A single detailed magnetometer survey of the *c* 4ha area of land was undertaken in February 2008.

2 TOPOGRAPHY AND GEOLOGY

The land subject to geophysical survey comprises parts of two arable fields to the south of The Hollows farm. It sits on an area of ground gently sloping down to the south-east. The site was divided between two fields. Area A, the southern, mostly square and bounded by a stream on the south side, hedgerows west and east and a fence to the north. The second half of the survey, Area B, continued to the north-east of Area A along the line of a fence that had been removed after the first 150m up to the beginning of The Hollows farm buildings, and extended between 40m and 60m east out into the field.

The western area is mapped by the British Geological Survey as being located upon glacial Sand and Gravels and Oxford Mudstone with deposits of alluvium adjacent to the stream (BGS 2002).

3 ARCHAEOLOGICAL BACKGROUND

The Hollows lies in an area of some archaeological interest. Iron Age and Roman activity has been recorded around Little Horwood. A settlement of that period was identified at Wood End south of the village (NGR SP 79 80; ADS 2008).

The Buckinghamshire SMR (map 129) shows a scatter of Roman pottery (5381) centred approximately 150m east of the north of the site, and 4th-century Roman pottery and metalwork (4135) *c* 500m north-east of Hollows farm.

4 METHODOLOGY

Geophysical survey was carried out in accordance with English Heritage and the Institute of Field Archaeologists Guidelines (EH 1995 & Gaffney, Gater and Ovendon 2002).

Magnetometer Survey

All detailed magnetometer survey was undertaken using Bartington Grad601-2 fluxgate gradiometers. The Grad601-2 is constructed as a dual-sensor instrument with two vertical gradiometers separated on a yoke to enable two lines of survey to be recorded in tandem.

Two blocks were surveyed in detail, Area A, south and Area B north. These were composed of a total of 51 whole and partial, 30m x 30m grid-squares each. Each grid square was traversed at rapid walking pace in zigzag traverses spaced at 1m intervals with data recorded every 0.25m along these. All fieldwork was carried out in accordance with the aforementioned guidelines (EH 1995 & Gaffney, Gater and Ovendon 2002).

The data was analysed using Geoplot 3.00u software. Low (negative) magnetism is shown as white and high (positive) magnetism as black in the resultant greyscale plots. To avoid the introduction processing of errors, minimal manipulation was carried out on the data. The 'Zero Mean Traverse' function was applied in order to bring the average level of each data line into a balanced zero.

The processed data is presented here in the form of a greyscale highlighting the weaker magnetic anomalies (-4nT / +4nT scale; Fig 2) georectified to the Ordnance Survey base. An interpretative plot has been generated from the results (Fig 3), both figures are referred to directly in the following section.

5 SURVEY RESULTS

The survey results and interpretation can be found in Figs 2 and 3. Both areas of survey, North and South, were found to be magnetically effected by quantities of ferrous material in the field boundaries. There was, therefore, disturbance on three sides of the Area A and also of Area B. This included where the north-east boundary had been removed in Area B, apparently leaving an amount of magnetic material in the ground.

Area A was characterised by a network of chains of dipolar magnetic anomalies. These linear anomalies are likely to reflect land drain pipelines, and are organised in the classic 'herringbone' pattern of rows of drains lying north-east to south-west and north-west to south-east, meeting at a central axial drain orientated towards the stream in the south. A number of larger ferrous anomalies were detected across the field but are considered likely to be ploughsoil contained and unlikely to be of great importance. The south of Area A, adjacent to the stream, yielded several more interesting anomalies. Two intensely positive magnetic anomalies (16-21nT) were detected, each approximately 2.5m in diameter. The anomalies are believed to have the characteristic that may indicate fired structures, such as hearths or ovens. Four discrete positive anomalies, possibly pits, were identified around the more northern feature, a single pit-type anomaly adjacent to the southern 'fired' feature.

Survey of Area B also detected land drains, the majority aligned north-west to south-east, parallel with the western field boundary. A linear positive magnetic anomaly was identified orientated north-west – south-east from approximately 10m north of the end of the north-western field boundary. The anomaly is likely to indicate a buried ditch of unknown date, although it was not to be found on the 1880, 1885 or 1900 Ordnance Survey mapping (www.old-maps.co.uk accessed 22/02/2008). To the south of the ditch survey located a solitary discrete anomaly, probably a pit. A weakly positive right-angled anomaly was detected situated in the northern extremity of Area B. This may indicate a ditch, possibly part of an enclosure. A considerable quantity of dipolar, ferrous material was detected to the south of the feature, probably indicating scrap iron ploughed under the surface.

6 CONCLUSION

Magnetometer prospection of land at The Hollows served to map the land drainage scheme for the two fields surveyed. Archaeologically, a pair of possible fired features with associated pits were located in the south of Area A and 50m of possible ditch and a single pit were identified in Area B. Even taken as a group, these features do not seem likely to constitute a significant quantity of archaeological material, although it should be stressed that the technique used will only detect deposits that have been magnetically enhanced. The presence of the drainage system suggests that water is an issue in these fields and as such can be responsible for chemical changes which subdue a magnetic response.

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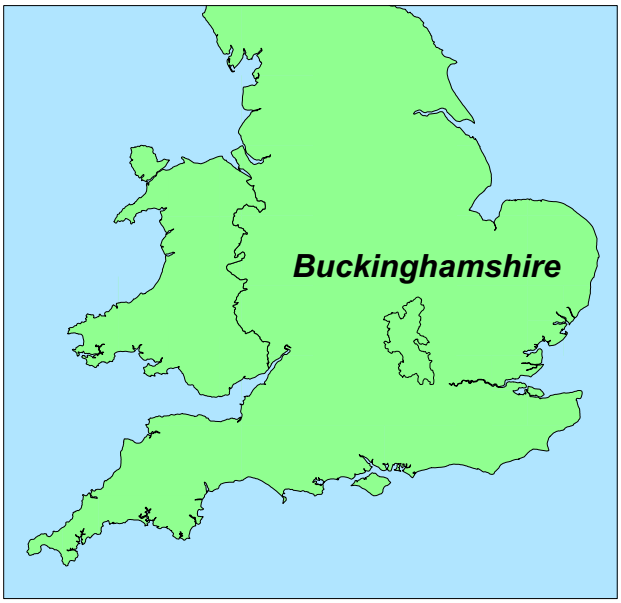

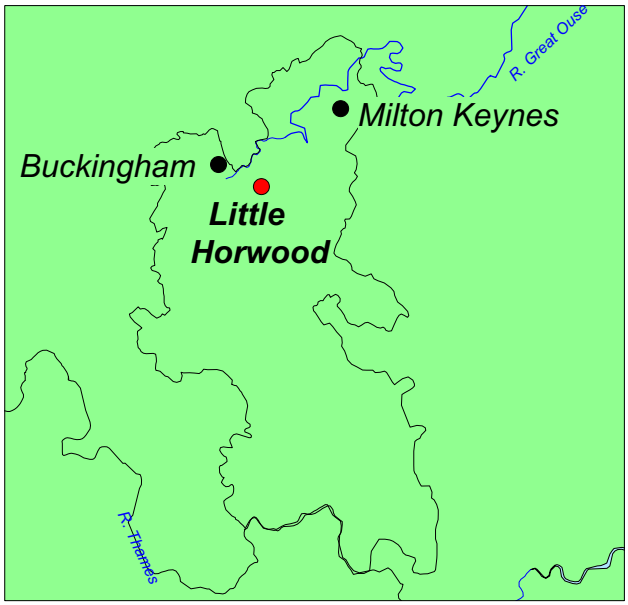

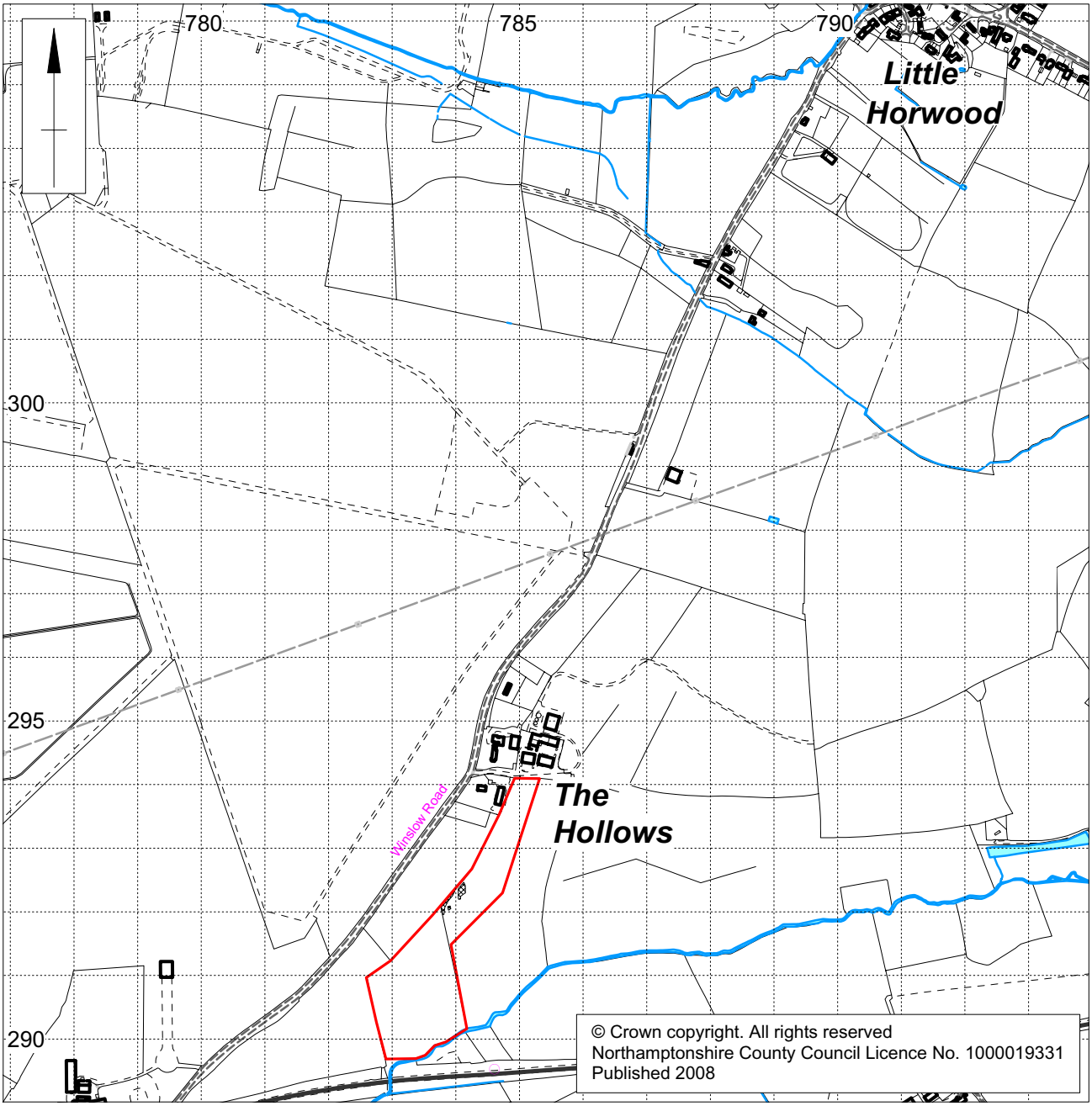

Scale 1:10,000

Site Location Fig 1

Scale 1:1250

Gradiometer Survey Results Fig 2

Scale 1:1250

Gradiometer Survey Interpretation Fig 3