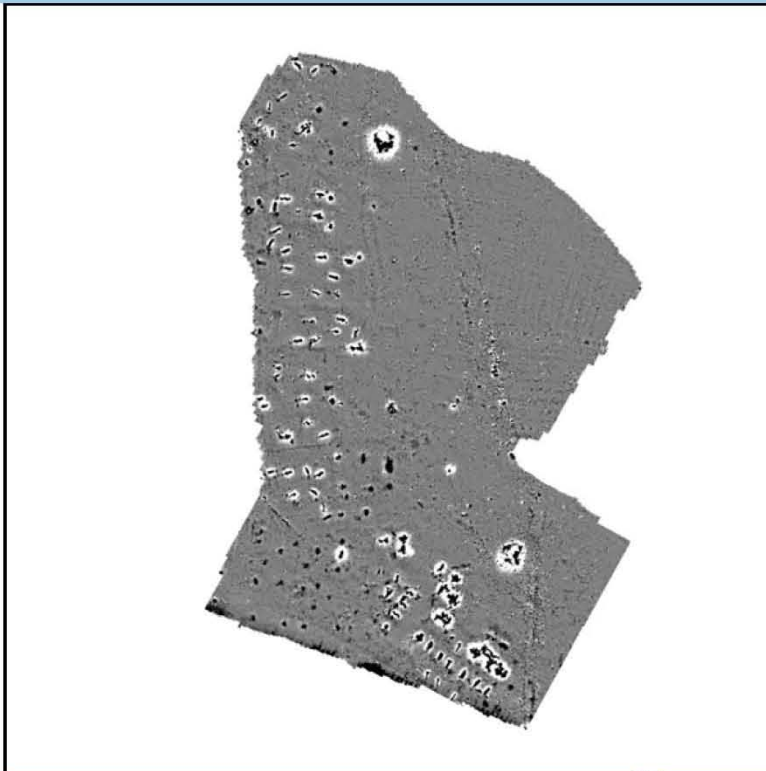




Northamptonshire Archaeology

Archaeological Geophysical Survey on land at
Melton Road, Barrow-on-Soar, Leicestershire
X.A3.2010



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Report 10/44
March 2010



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OAS/S REPORT FORM

PROJECT DETAILS		
Project name	Archaeological Geophysical Survey on land at Melton Road, Barrow upon Soar, Leicestershire X.A3.2010	
Short description	Northamptonshire Archaeology was commissioned by University of Leicester Archaeological Services to conduct archaeological geophysical survey on land at Melton Road, Barrow upon Soar. Magnetometry of a 16ha area revealed evidence of at least 76 probable lime kilns and associated pits. Quarries and changes in the basal geology were also detected.	
Project type	Geophysical survey	
Site status	None	
Previous work	Unknown	
Current Land use	Arable	
Future work	Unknown	
Monument type/ period		
Significant finds	None	
PROJECT LOCATION		
County	Leicestershire	
Site address	Melton Road, Barrow upon Soar	
Study area	16ha	
OS Easting & Northing	458346 317248	
Height OD	45m-65m AOD	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology (NA)	
Project brief originator	University of Leicester Archaeological Services (ULAS)	
Project Design originator	Patrick Clay, ULAS	
Director/Supervisor	Ian Fisher	
Project Manager	Adrian Butler	
Sponsor or funding body	ULAS	
PROJECT DATE		
Start date	18 January 2010	
End date	2 March 2010	
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Journal/monograph, published or forthcoming, or unpublished client report		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	Archaeological Geophysical Survey on land at Melton Road, Barrow upon Soar, Leicestershire	
Serial title & volume	Northamptonshire Archaeology Reports 10/44	
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Fig 2	Magnetometer Survey Results, 1:2500
Fig 3	Magnetometer Survey Interpretation, 1:2500

ARCHAEOLOGICAL GEOPHYSICAL SURVEY ON LAND AT
MELTON ROAD, BARROW UPON SOAR, LEICESTERSHIRE

X.A3.2010

FEBRUARY 2010

ABSTRACT

Northamptonshire Archaeology was commissioned by University of Leicester Archaeological Services to conduct archaeological geophysical survey on land at Melton Road, Barrow upon Soar. Magnetometry of a 16ha area revealed evidence of at least 76 probable lime kilns and associated pits. Quarries and changes in the basal geology were also detected.

1 INTRODUCTION

Northamptonshire Archaeology was commissioned by University of Leicester Archaeological Services (ULAS), to conduct an archaeological geophysical survey on land at Melton Road, Barrow upon Soar, Leicestershire (NGR 458346 317248; Fig 1).

The objectives of the geophysical survey were to identify the presence or absence of archaeological remains within the proposed 16 hectare development area. The fieldwork consisted of an area magnetic gradiometer survey.

2 TOPOGRAPHY AND GEOLOGY

The site is situated to the south-east of Melton Road, and the east of Breachfield Road, on the eastern edge of Barrow upon Soar (Fig 1). The investigation area covers one large arable field located on a relatively steep gradient - roughly 65m AOD in the north-east to 45m AOD in the south-west and west and 50m in the south.

The survey area lies a complex geology. The Scunthorpe mudstone formation has been identified at the top of the hill with Barnstone interbedded mudstone and limestone subcropping on the hillside. Drift geology consists of Thrussington Till on the top of the hill with undifferentiated head (clay, silt, sand and gravel) at the base in the south-west (www.geodata.bgs.ac.uk/website/leicester/viewer.htm).

3 ARCHAEOLOGICAL BACKGROUND

The village of Barrow upon Soar has medieval origins and the historic core is located to the west of the survey area

A flint flake of Paleolithic date was found half a mile east of Barrow Church, a good levallois flake with imperfect butt end and signs of use. Two flint find spots have been recorded within the survey field: a flint fabricator with blunt and polished edges was found along with several other worked flints of late Neolithic - early Bronze Age date (ads.ahds.ac.uk).

In the vicinity of the site there are a few sites of interest. Directly to the north-east of the site there was a probable Roman building, possibly a villa, uncovered during granite quarrying in the 1880s. Further Roman finds were also uncovered, as well as some of late Iron Age date. To the south-west of the site, archaeological work carried out prior to a quarry extension revealed a prehistoric enclosed settlement. Furthermore, to the north there is an undated circular ditched mound (ads.ahds.ac.uk).

In 2006, NA excavated a site at Cotes Road, approximately 1km north-west of the the current site, on the opposite side of Barrow to Melton Road (McAree 2007). Excavation revealed traces of early to middle Iron Age settlement, ten clamp kilns dating to the 15th and 16th centuries, nine 'linear' kilns of similar date to the previous and more substantial brick-lined kilns from the 18th and 19th centuries.

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 a network of 157 contiguous, whole and partial, 30m x 30m grid squares. These were set out manually by tape measure and optical square with the baselines, and some off-sets, located by means of a Leica System 1200 differential GPS. 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

The survey results are dominated by a large number of intensely magnetic, circular, linear and 'key-hole' shaped positive anomalies, with strongly negative halos surrounding them (Figs 2 & 3). Such anomalies indicate 'thermoremnantly magnetised' remains, ie features that have been heated to a high temperature that they develop an exceedingly elevated level of magnetic enhancement. In this case, these anomalies probably represent lime kilns related to Barrow upon Soar's lime production history and appear similar in plan to those found during archaeological excavation at Cotes Road, Barrow upon Soar (McAree 2007).

There are approximately 76 of these magnetic anomalies located along the western and southern edges of the survey, roughly at the base of the scarp in the field. There is no overall alignment or regularity to these anomalies, however, in general the ones in the west are mainly aligned roughly east to west and the ones to the south are south-west to north-east. This alignment appears to reflect the direction of slope. One set of seven keyhole kilns were found to be side by side on a line running north-west to south-east. Interestingly, these particular anomalies are situated along the beaten line of a modern 'unadopted' path. The path is visible on the 1884 Ordnance Survey 1st Edition map for the area, together with the indication "Old Limekilns" (www.old-maps.co.uk).

Uphill, to the north-east of these kilns, a collection of more amorphous intense anomalies were detected. The larger, more eastern anomaly could possibly reflect a large dump of kiln material, such as brick linings, whereas the more westerly anomalies possibly series' of kilns built adjacent or cut into each other over time. Two very large and complex anomalies were located in the north and south of the field, uphill from the kiln area. These would seem likely to represent backfilled limestone quarries, as marked on the 1884 Ordnance Survey map.

Positive circular anomalies likely to represent pits were identified, the majority distributed from the south-western corner of the field towards the centre (Figs 2 & 3). The intensity and character of these pit anomalies indicates that many are likely to be filled with burnt and fired (thermoremnantly magnetised) material. Linear positive magnetic anomalies adjacent to the western boundary of the field may form constituent parts of a 120m x 80m sub-rectangular ditched enclosure. Although there are several kiln-type anomalies enclosed by the ditches, the function of the feature remains unclear.

A change in the magnetic background from uneven and speckled in the north and east of the survey, to a more consistent level in the west and south probably reflects the change in geology uphill to down.

6 CONCLUSION

Geophysical survey of a field at Melton Road, Barrow on Soar located evidence of approximately 76 possible lime kilns, associated pits and two backfilled quarry pits. A possible rectangular ditched enclosure was identified on the western side of the field. Lime burning at Cotes Road, Barrow, was found to have taken place almost continuously between the 15th and 19th centuries (McAree 2007). It is reasonable to expect a similar date range at Melton Road, perhaps developing north to south along the hillside to the most ordered kilns in the south-east. These final industrial features, situated on a long-lived path, were ideally placed for access to both the River Soar and the railway (Fig 1).

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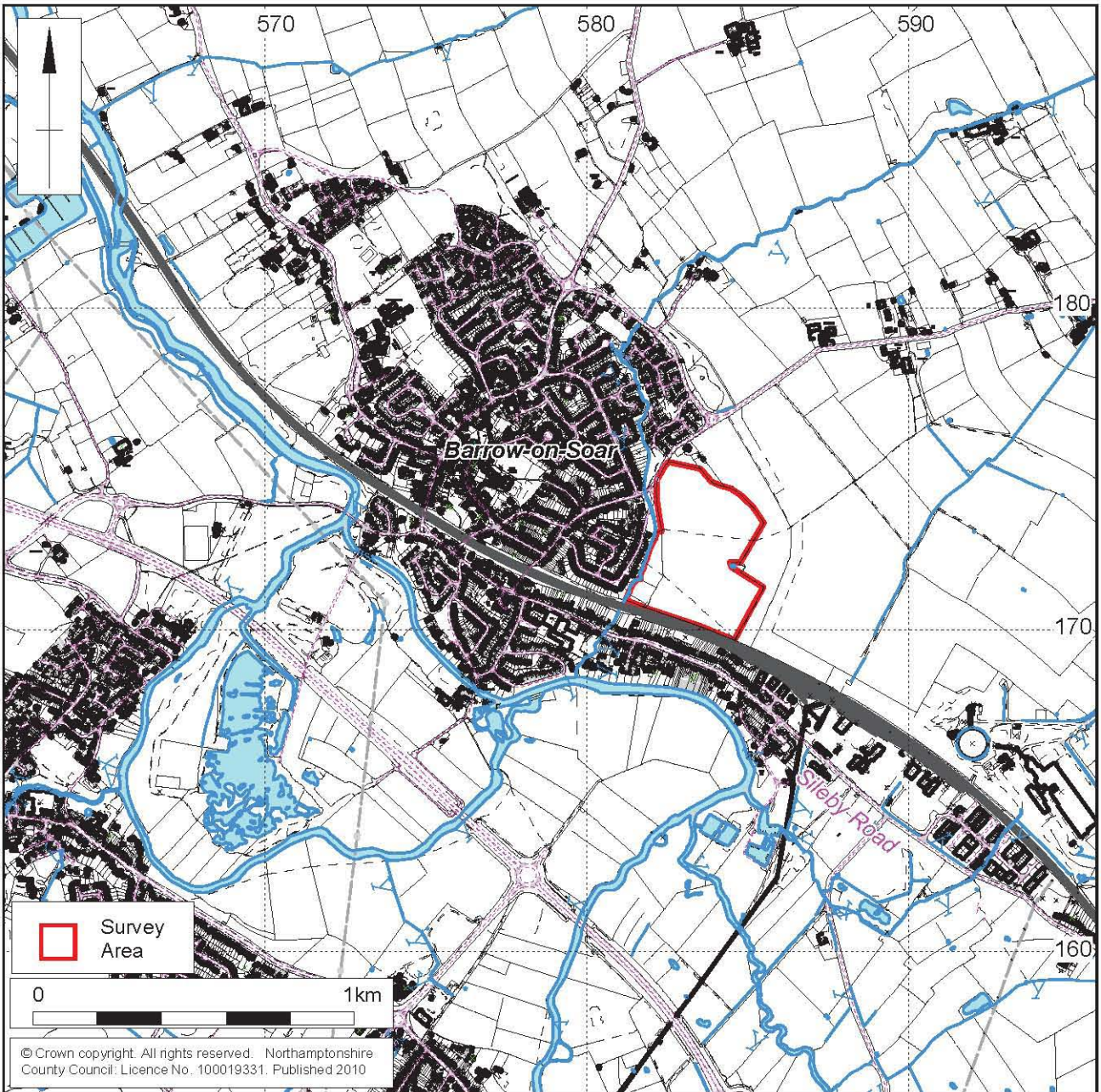
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1:20,000

Site Location Fig 1

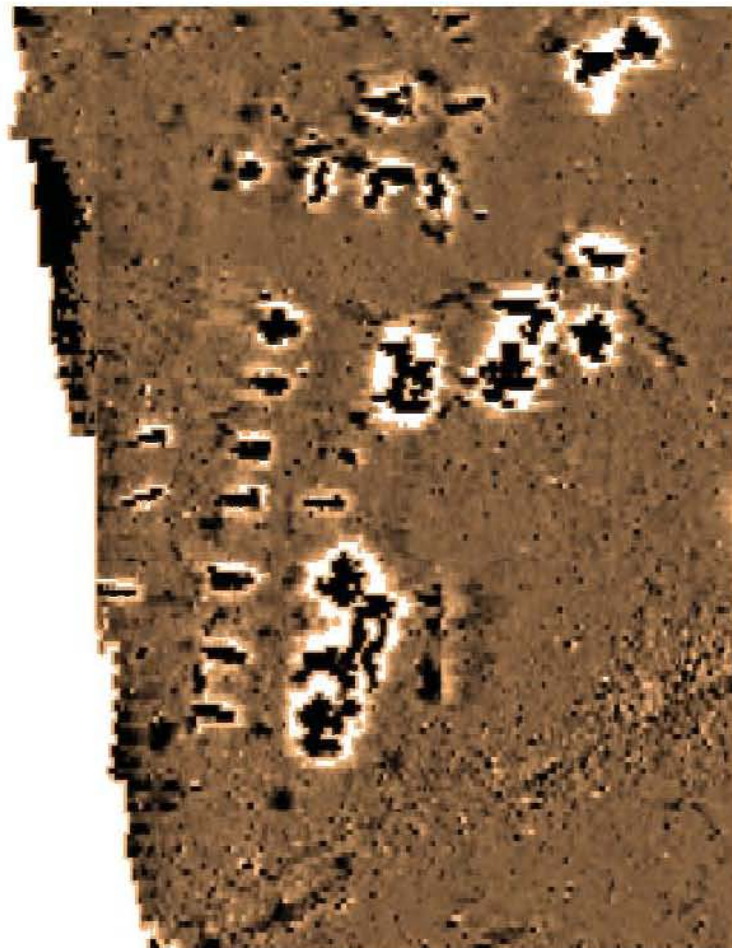






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