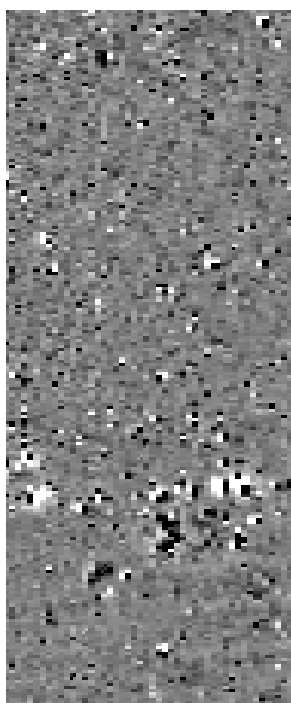




Northamptonshire Archaeology

Archaeological Geophysical Survey on land at Uppingham Road, Bushby, Leicestershire



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Report 11/161

July 2011



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Checked by	Pat Chapman	<i>PC</i>	25/07/2011
Verified & Approved by	Andy Chapman	<i>AC</i>	25/07/2011

OASIS REPORT FORM

PROJECT DETAILS		
Project name	Archaeological Geophysical Survey on land at Uppingham Road, Bushby, Leicestershire	
Short description	Northamptonshire Archaeology was commissioned to carry out a magnetometer survey on an additional 1.25ha to a previous investigation of 6.14ha land to the south of Uppingham Road, Bushby, Leicestershire. The survey detected ridge and furrow of medieval or later date, some of which survived as upstanding earthworks. An interruption to the ridge and furrow at the far western end of the survey area was interpreted as a small quarry pit of probable post-medieval date. Three possible pits were located in the eastern part of the site. A few other small anomalies suggested minor features of possible archaeological interest.	
Project type	Geophysical survey	
Site status	None	
Previous work	DBA (Dawson 2009) Geophysical Survey (Walford 2010)	
Current Land use	Pasture	
Future work	Unknown	
Monument type/ period	Medieval or later ridge and furrow. Nineteenth-century quarry pit	
Significant finds	None	
PROJECT LOCATION		
County	Leicestershire	
Site address	Uppingham Road, Bushby	
Study area	7.39ha	
OS Easting & Northing	SK 659 039	
Height OD	c125-135m AOD	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology (NA)	
Project brief originator	CgMs Consulting	
Project Design originator	NA	
Director/Supervisor	John Walford	
Project Manager	Adrian Butler	
Sponsor or funding body	CgMs Consulting	
PROJECT DATE		
Start date	11 October 2010	
End date	25 July 2011	
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	Journal/monograph, published or forthcoming, or unpublished client report	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 Uppingham Road, Bushby, Leicestershire	
Serial title & volume	Northamptonshire Archaeology Reports 11/163	
Author(s)	Adrian Butler	
Page numbers	4	
Date	25/11/2010	

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Front Cover: Magnetometer data plot

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**ARCHAEOLOGICAL GEOPHYSICAL SURVEY ON LAND AT
UPPINGHAM ROAD, BUSHBY, LEICESTERSHIRE
JULY 2011**

ABSTRACT

Northamptonshire Archaeology was commissioned to carry out a magnetometer survey on an additional 1.25ha to a previous investigation of 6.14ha land to the south of Uppingham Road, Bushby, Leicestershire. The survey detected ridge and furrow of medieval or later date, some of which survived as upstanding earthworks. An interruption to the ridge and furrow at the far western end of the survey area was interpreted as a small quarry pit of probable post-medieval date. Three possible pits were located in the eastern part of the site. A few other small anomalies suggested minor features of possible archaeological interest.

1 INTRODUCTION

Northamptonshire Archaeology (NA) was commissioned by CgMs Consulting to carry out a further 1.25ha of archaeological geophysical prospection, additional to 6.14ha of land previously surveyed (Walford, 2010 ; 7.39ha total) to the south of Uppingham Road, Bushby, Leicestershire (NGR: SK 659 039; Fig 1). The fieldwork comprised a detailed magnetometer survey of the site and was carried out in July 2011.

2 TOPOGRAPHY AND GEOLOGY

The survey area straddled two pasture fields immediately south-east of the village of Bushby. These fields reach a maximum elevation of c 135m in the north-east, by the gate onto the A47 Uppingham Road, and slope down in a south-westerly direction to a minimum elevation of c 115m. The survey area itself lies mainly between the 135m and 125m contours.

The solid geology of the survey area comprises a limestone band within the Upper Lias. This is overlain by a drift of boulder clay (Dawson 2009, 8)

3 ARCHAEOLOGICAL BACKGROUND

The survey area and its environs has been the subject of a recent desk-based assessment (Dawson 2009). This document notes the discovery of a poorly dated prehistoric flint scatter and an assemblage of Roman finds from fields to the south-west of the survey area (approximate NGR SK 655 034). It also states that ridge and furrow earthworks, of presumed medieval origin, survive across part of the survey area. Geophysical survey by NA in 2010 located a former quarry pit, more ridge and furrow a burnt feature and possible ditch (Walford 2010).

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 grid of 30m x 30m squares which were established by means of a tape measure and optical square. The locations of key points within this grid were subsequently recorded with a Leica System 1200 dGPS.

The gradiometers were carried at a brisk but steady pace through each grid square, 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 ($\pm 4nT$ black/white). These have been scaled, rotated and resampled (georectified) for display against the Ordnance Survey base mapping (Fig 2). Interpretative overlays have been produced and are shown in Figure 3.

5 SURVEY RESULTS

The entire set of survey results are listed below.

Field 2_2

Four different groups of anomalies were identified in this field (Figs 2 & 3). In the west, survey located three discrete, but sizable, positive magnetic anomalies (c3m diameter) likely to reflect pits. A north to south line of dipolar (paired positive/negative) magnetic anomalies, indicating buried ferrous targets were identified to the immediate east of the possible pits. These are likely to have been part of a former field boundary, illustrated on the first edition Ordnance Survey map of the area (Old-Maps, www.Old-Maps.co.uk). Dipolar anomalies were detected across the field, where ferrous and ceramic scrap was contained in the ploughsoil.

To the east of the boundary, four short linear chains of dipoles indicated the presence of ceramic field drains running both along and perpendicular to ridge and furrow. Traces of the former cultivation pattern were detected as weak, parallel north-west – south-east positive linear anomalies.

Field 2

The data from this field exhibits a series of very weak, parallel, north-south aligned linear anomalies which represent slight traces of ploughed-out ridge and furrow. Other anomalies, of less certain interpretation, occur in the southern part of the field. These are generally weak and diffuse, and as such seem most likely to be of geological origin. One slightly better defined linear anomaly in the same area may denote a possible, but this is tentative.

Field 1

The data from this field largely reflects the pattern of the surviving earthworks. Ridge and furrow anomalies, aligned approximately north to south, are present across the majority of the area surveyed. However, they are absent from an area of ground, about 40m

across, in the extreme west of the survey area. This interruption coincides with the location of a gravel pit marked on the first edition Ordnance Survey map of the area (Old-Maps, www.Old-Maps.co.uk). To the south they appear fade which may be a result of alluvial build up from an earlier water course.

Within the area of the former quarry pit there is a cluster of discrete but somewhat amorphous magnetic anomalies. One of these, which attains a maximum intensity of c100nT, is most probably indicative of a large piece of deeply buried ironwork. But the surrounding anomalies are much weaker (typically c10nT) and would be more consistent with small pits or concentrations of burnt soil within the quarry pit.

Beyond the quarry there are two other small discrete anomalies. One, located towards the north-west corner of the survey area, attains a maximum intensity of c12nT and probably indicates another small pit or concentration of burnt soil (Fig 3A). The other, which is more centrally located, attains a maximum intensity of c50nT (Fig 3B). An anomaly of this strength might be caused either by a deeply buried piece of iron or by an intensely burnt hearth or kiln.

Two narrow positive linear anomalies run parallel to the ridge and furrow in this survey area. The western of the two appears to align upon a similar but curving anomaly further to the south (Fig 3C). As a group, these three anomalies coincide with the line of a track shown on the first edition Ordnance Survey map (Old-Maps 2010), and it seems likely that they indicate small drainage gullies on either side of the trackway itself.

A broad, slightly negative linear anomaly crosses the central part of the survey area from south-west to north-east (Fig 3D). This could represent a stone-metalled track leading to the quarry but it is perhaps more likely to be of geological origin. Other possible geological anomalies occur in the extreme south-east of the survey area.

6 CONCLUSION

The previous stages of survey in Fields 1 – 2, has detected evidence for medieval or post-medieval ridge and furrow cultivation and for a nineteenth-century quarry pit and possible trackway. It has also detected two small anomalies which could represent a pit and a burnt feature of indeterminate date, as well as a possible ditch.

Additional survey of Field 2_2 located three possible pits, a former field boundary, ridge and furrow and field drains.

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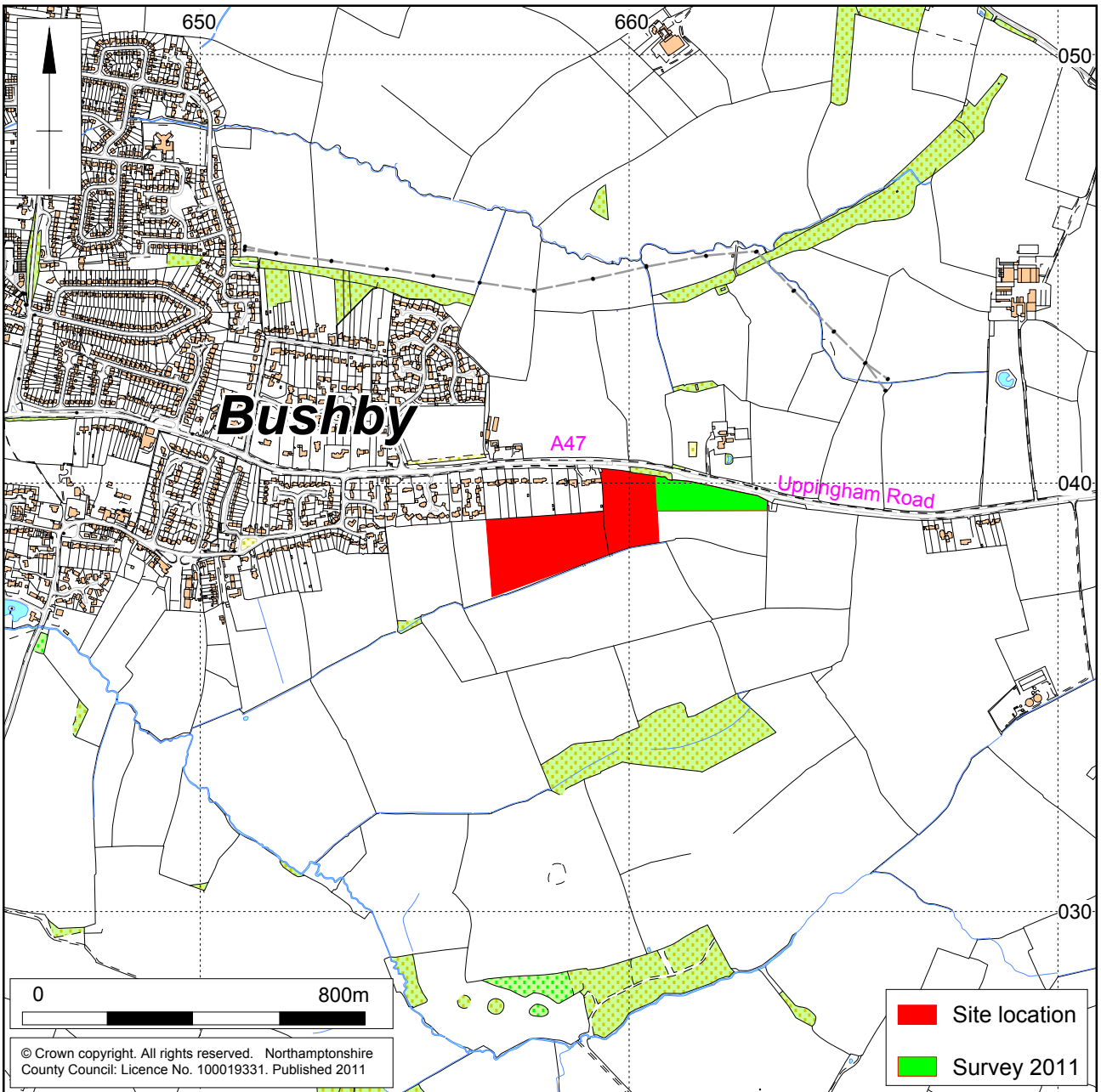
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ONLINE

Old-Maps 2010 <http://www.old-maps.co.uk/maps.html> Ordnance Survey Historic Mapping, Leicestershire, accessed 17/10/2010 & 21/07/2011



Scale 1:15,000

Site Location Fig 1

1:2000



Magnetometer Survey Results Fig 2

Magnetic anomaly /nT

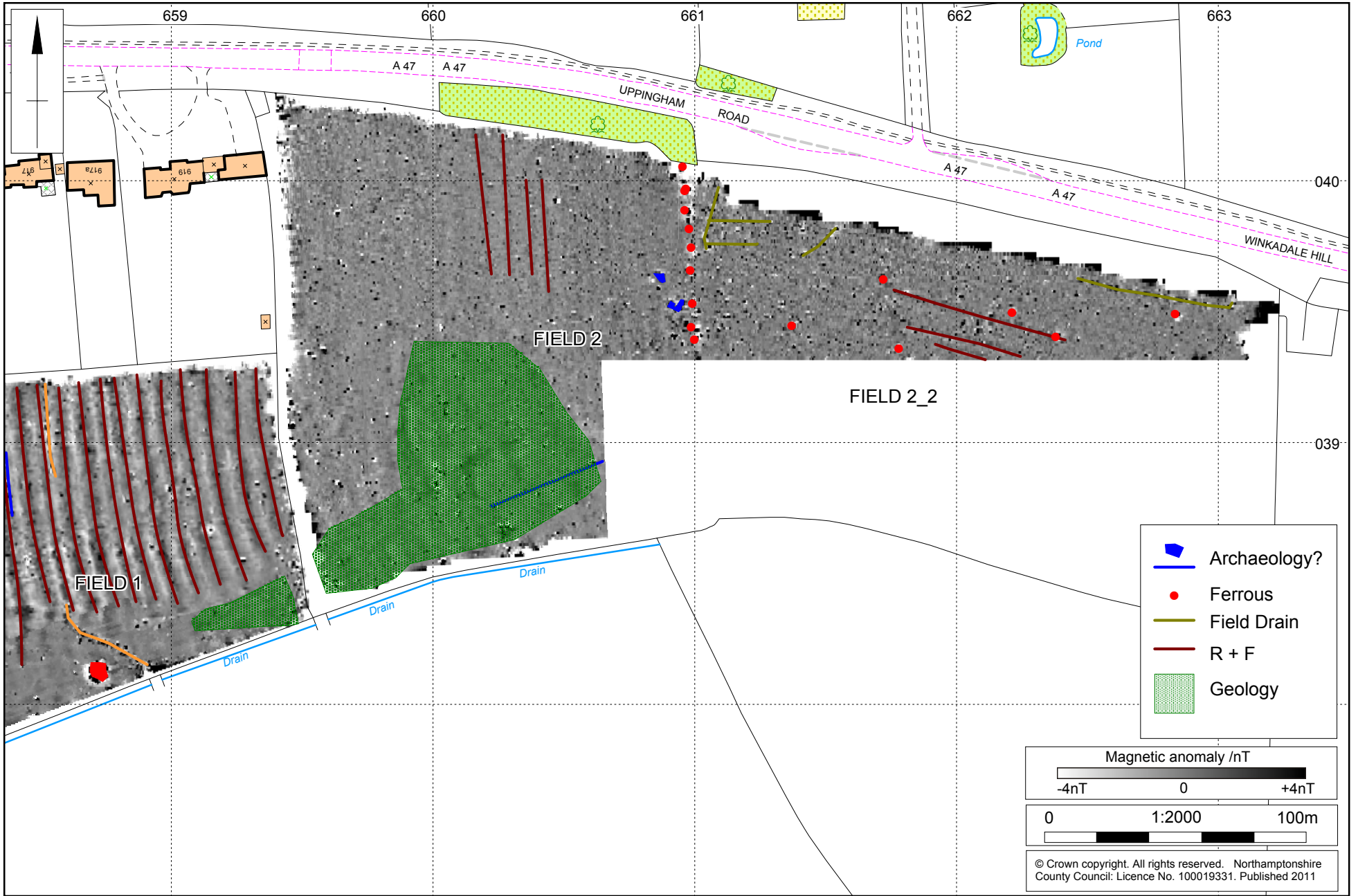
-4nT 0 +4nT

0 1:2000 100m

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1:2000

Magnetometer Survey Interpretation Fig 3





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