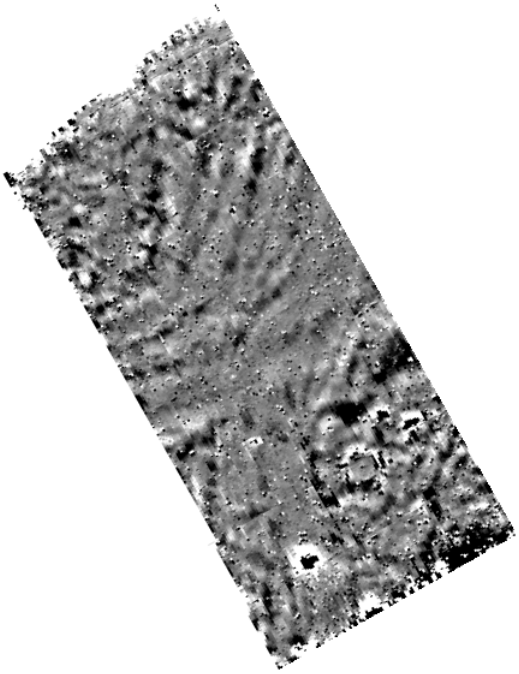
Northamptonshire Archaeology

Archaeological geophysical survey of land to the east of Golf Road, Mablethorpe, Lincolnshire February 2013



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Report 13/40

February 2013

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QUALITY CONTROL

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OASIS REPORT FORM

PROJECT DETAILS	**OASIS No: 144670**	
Project name	Archaeological geophysical survey of land to the east of Golf Road, Mablethorpe, Lincolnshire, February 2013	
Short description	Northamptonshire Archaeology was commissioned to carry out a detailed magnetometer survey on land east of Golf Road, Mablethorpe, Lincolnshire. The survey identified a cluster of magnetically enhanced features which may represent parts of a saltern (salt production site).	
Project type	Geophysical survey	
Site status	None	
Previous work	Desk-based assessment (Dawson 2010) Geophysical survey (Bunn 2011)	
Current Land use	Pasture	
Future work	Unknown	
Monument type/ period	Possible saltern	
Significant finds		
PROJECT LOCATION		
County	Lincolnshire	
Site address	Land to the east of Golf Road, Mablethorpe, Lincolnshire	
Study area	*c* 3ha	
OS grid reference	TF 500 853	
Height OD	*c* 2m AOD	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology (NA)	
Project brief originator	CgMs Consulting	
Project Design originator	NA	
Director/Supervisor	Ian Fisher	
Project Manager	Mark Holmes	
Sponsor or funding body	CgMs Consulting	
PROJECT DATE		
Start date	11 February 2013	
End date	12 February 2013	
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BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report	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 of land to the east of Golf Road, Mablethorpe, Lincolnshire, February 2013	
Serial title & volume	Northamptonshire Archaeology Reports 13/40	
Author(s)	John Walford	
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ARCHAEOLOGICAL GEOPHYSICAL SURVEY OF LAND TO THE EAST OF GOLF ROAD, MABLETHORPE, LINCOLNSHIRE FEBRUARY 2013

ABSTRACT

Northamptonshire Archaeology was commissioned to carry out a detailed magnetometer survey on land east of Golf Road, Mablethorpe, Lincolnshire. The survey identified a cluster of magnetically enhanced features which may represent parts of a saltern (salt production site).

1 INTRODUCTION

Northamptonshire Archaeology (NA) was commissioned by CgMs Consulting to conduct a geophysical survey in support of a planning application for land to the east of Golf Road, Mablethorpe, Lincolnshire (NGR TF 500 853; Fig 1). The aim of the survey was to investigate whether the proposed development would damage or destroy any archaeological remains.

The fieldwork was conducted on 11th to 12th February 2013 and comprised the detailed magnetometer survey of *c* 3ha of land.

2 TOPOGRAPHY AND GEOLOGY

The site consists of the northern part of a pasture field located *c* 0.5km north-west of Mablethorpe town centre and lying at an elevation of *c*2m aOD. The field is bounded to the south by Kingsley Road, to the north by Jacklins Crescent and to the east by Enterprise Road. To its west there are further fields extending towards Golf Road.

The geology of the site consists of Holocene silts and clays laid down in a tidal marsh environment. Boreholes drilled immediately to the west of the site have shown these deposits to extend to a depth of *c*12m below ground level (Abatech 2007).

3 ARCHAEOLOGICAL BACKGROUND

The proposed development area lies within the 'Lincolnshire Marsh'; an area of former tidal marshes formed by late Holocene marine transgressions. This is not likely to have been a favoured settlement location, and it is expected that any archaeological remains that may be present will relate to salt production and other transient exploitation of the marsh (Dawson 2010, 11-12).

Salt production sites, or salterns, are relatively common along the Lincolnshire coast and southwards into the Fens (Lane and Morris 2001). The majority are of Iron Age or Roman date, although medieval examples are also known. Their most diagnostic feature is the presence of 'briquetage'; (fragments of ceramic evaporation troughs and pedestels) together with debris from the fires over which brine was boiled.

A geophysical survey has recently been conducted on the land to the immediate west of the proposed development area (Bunn 2011). It detected a complex of geological anomalies which were interpreted as representing tidal creeks. Amongst these, there was a small group of relatively enhanced positive anomalies which were tentatively suggested to represent a saltern.

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).

A system of 30m grids was established within the field to be surveyed. The grids were established with a tape measure and optical square and were tied in to the Ordnance Survey National Grid by measurement to the surrounding field boundaries. 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 square.

All fieldwork methods complied with the guidelines issued by English Heritage and by the Institute for Archaeologists (EH 2008; IfA 2011), and with the written scheme of investigation for the project (NA 2013).

The survey data were processed using Geoplot 3.00v 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 two greyscale plots, at ranges of +/- 4nT and +/- 10nT black/white. These plots have been scaled, rotated and resampled (georectified) for display against the Ordnance Survey base mapping (Fig 2). The two different display ranges have been chosen so that all significant aspects of the data may be clearly seen. This report also includes an interpretation diagram (Fig 3) and a plot of the unprocessed survey data (Fig 4).

5 SURVEY RESULTS

The survey data is dominated by geological anomalies (discussed below), but contains one small group of potentially significant anomalies lying in the south-eastern part of the survey area. These are relatively small anomalies, variously amorphous or elongated in shape, with typical peak intensities in the range of 10nT to 20nT. They would be consistent with patches or burnt soil or accumulations of ceramic debris, such as might be found on a saltern.

The geological anomalies are typical of those found in former tidal marsh environments, and match up well with those detected in the fields to the west of the present survey area (Bunn 2011). Their overall pattern, with two converging sets of linear trends, probably represents part of the network of creeks which flowed through the marsh. Research on similar sites, including one at Spalding, Lincolnshire, has shown that the patterning arises because iron sulphide, which is weakly magnetic, forms more readily in mud flat deposits than in the coarser sediment which fills channels (Kattenberg 2008, 171-4).

A very large and intense dipolar anomaly, located towards the southern corner of the survey area, represents a buried ferrous object of considerable size. The much smaller

dipolar anomalies which occur at random across the survey area probably represent insignificant pieces of ferrous scrap.

Along the northern and southern edges of the survey area there are large magnetic halos caused by the adjacent buildings and fences. There is also an intensely magnetic linear anomaly of alternating polarity which runs along the southern edge of the survey area and indicates the line of a pipe or cable.

6 CONCLUSION

The survey has identified a group of anomalies which probably indicate patches of burnt sediment. Given their location in an area of former tidal flats, the most plausible interpretation is that they represent a saltern, where brine was boiled to extract salt. Such sites are typically of Iron Age, Roman, or medieval date.

No other archaeological remains have been detected. However, areas of deep Holocene sediment are not especially favourable environments for geophysical survey and waterlogged timber structures (*eg* fish-traps, brushwood tracks) in particular are '*often undetectable*' (EH 2008, 17). It would be prudent to keep these limitations in mind when considering the significance of the findings presented here.

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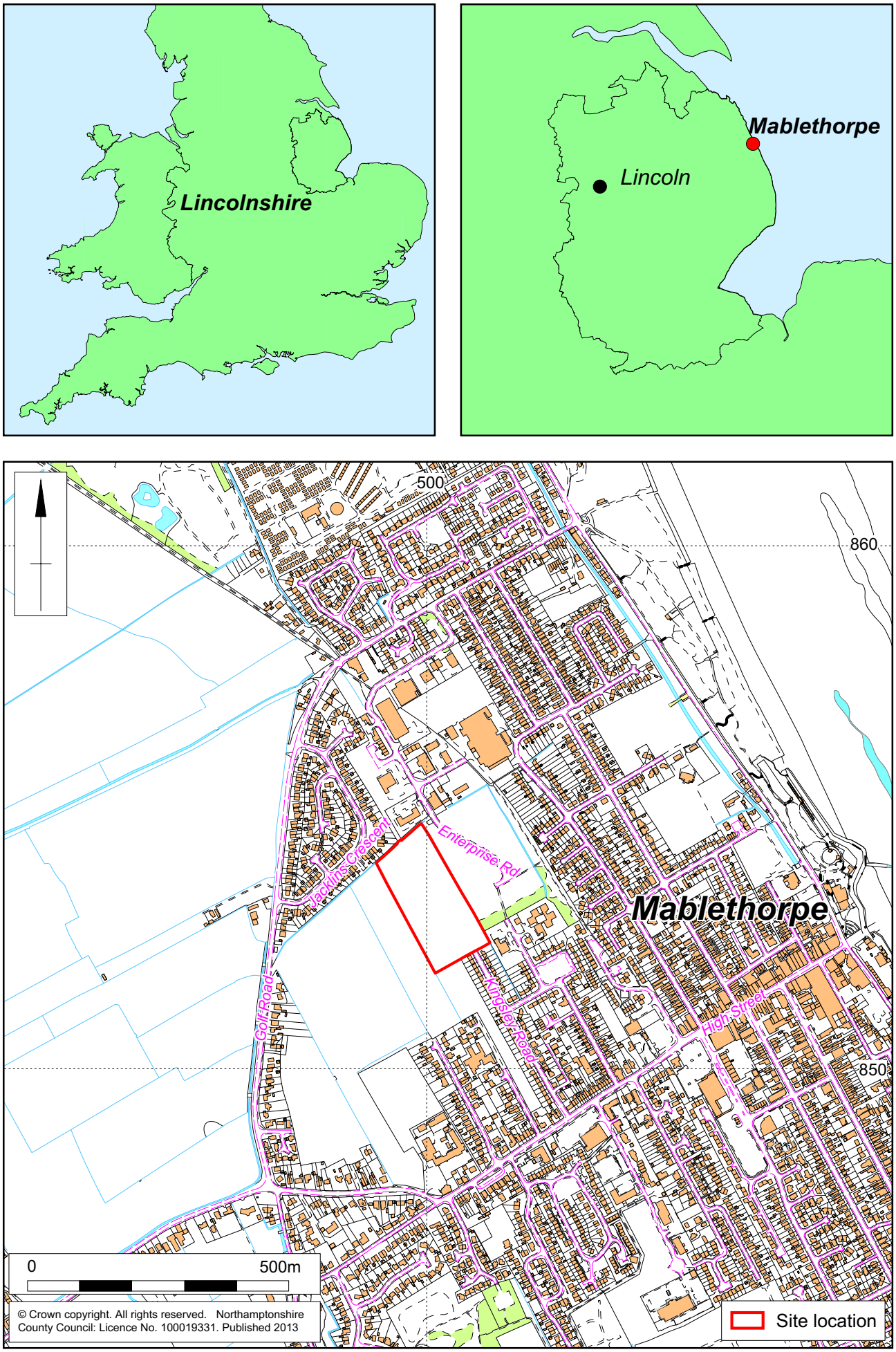
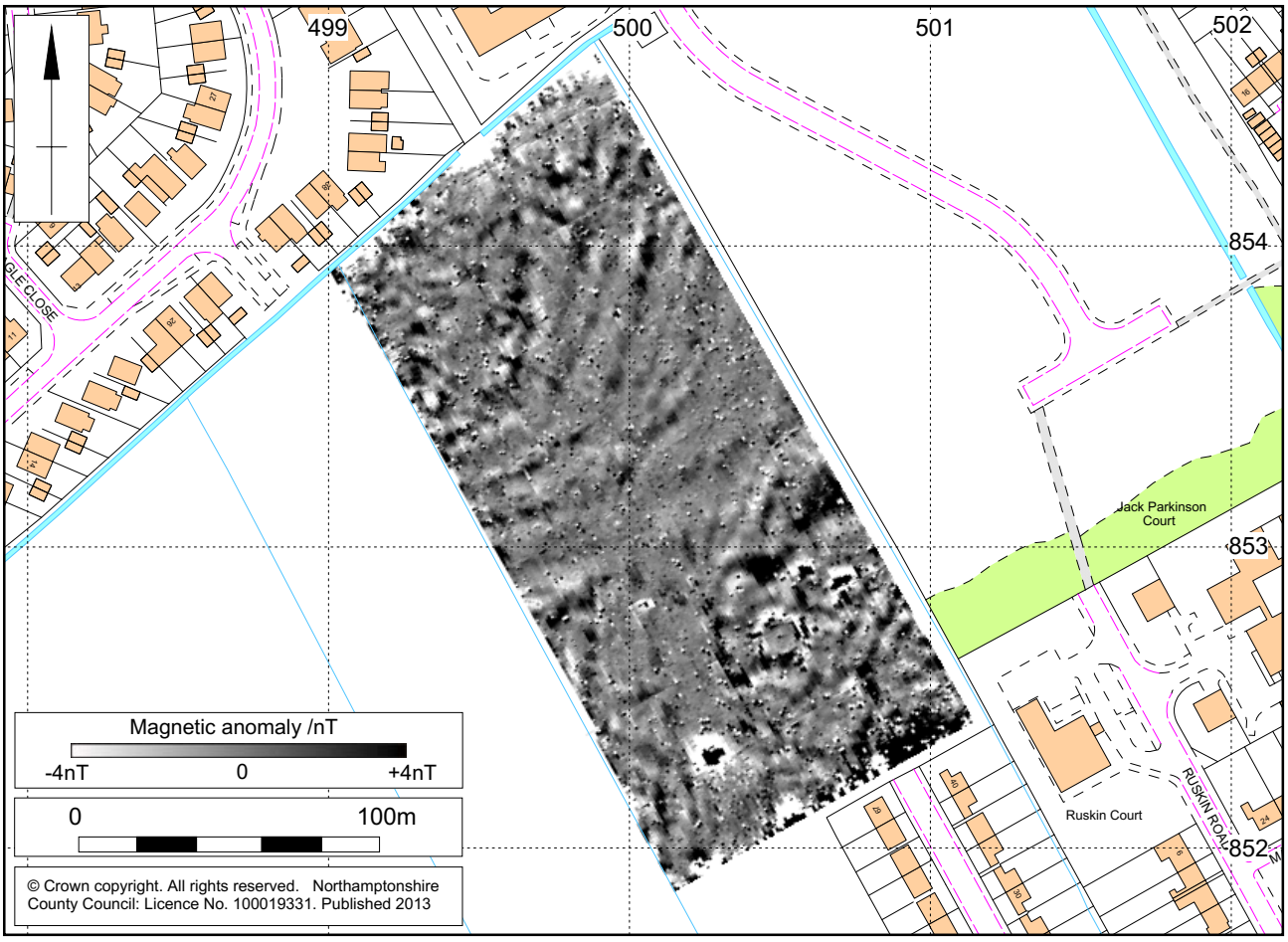
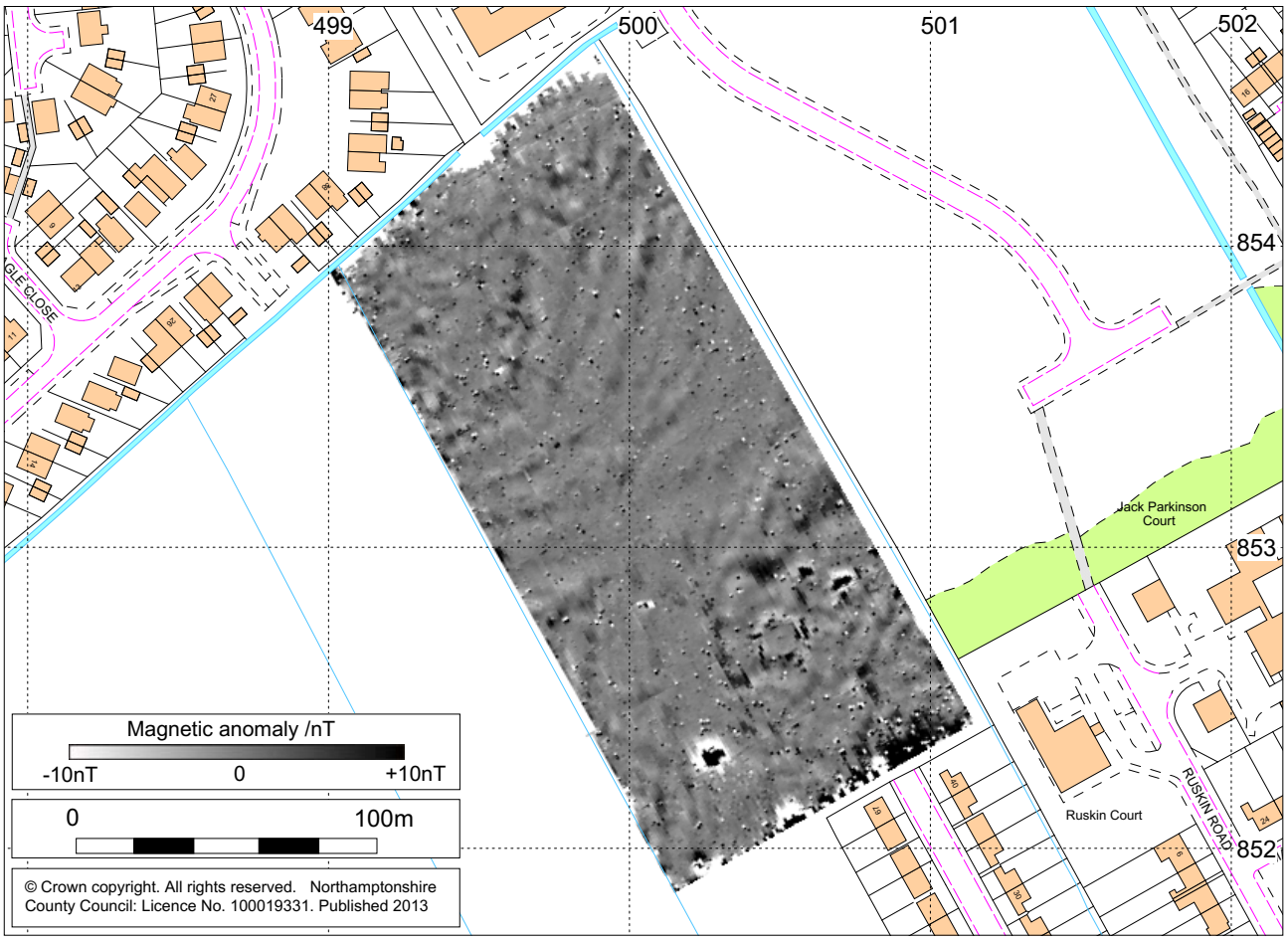


Scale 1:10,000

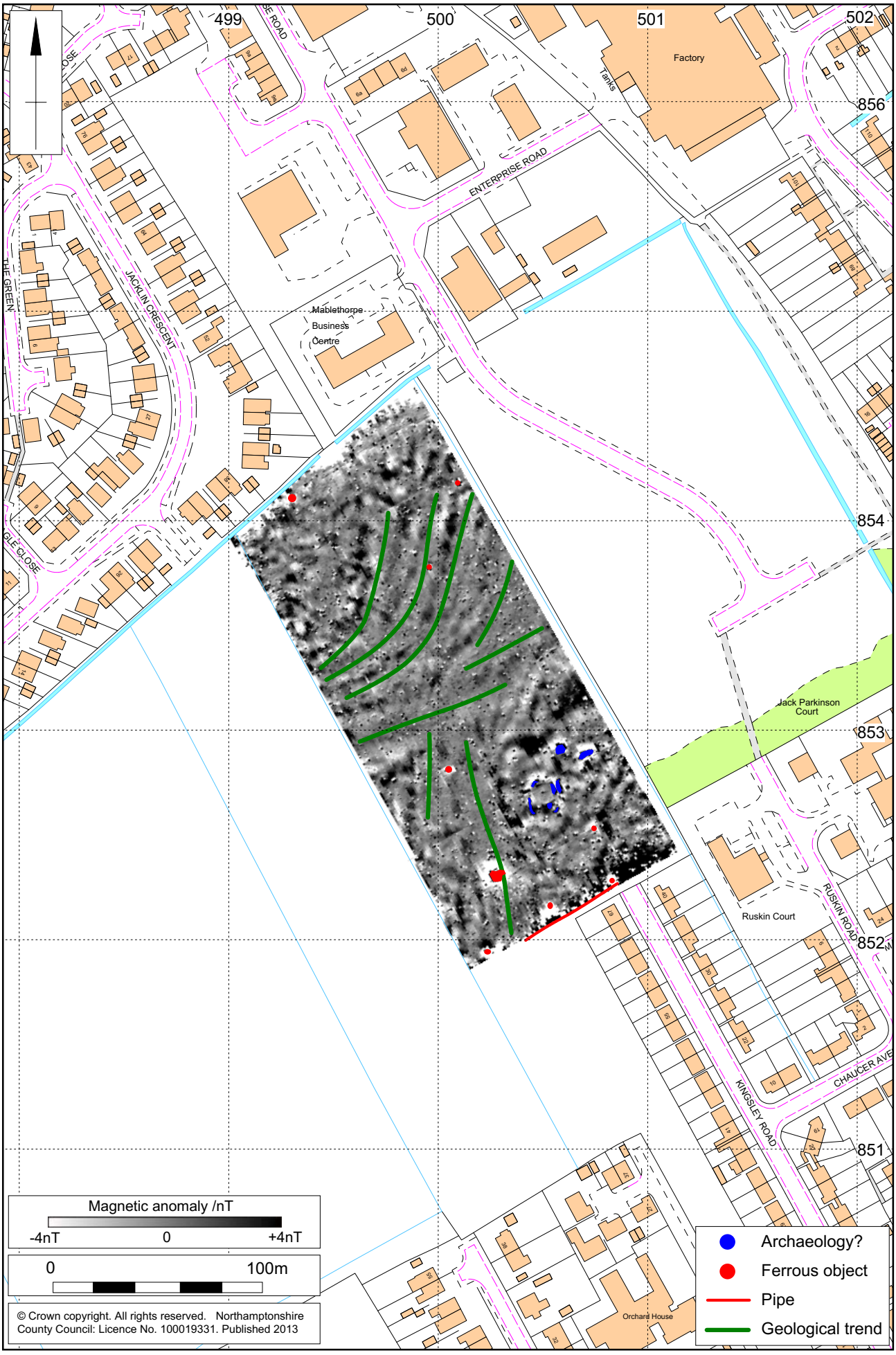
Site Location Fig 1





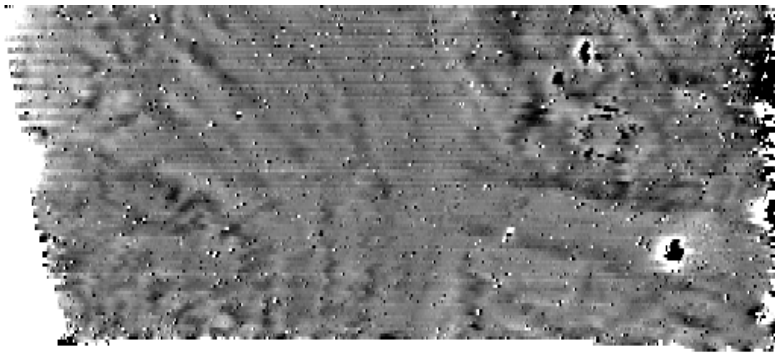
Scale 1:2500 (A4)

Magnetometer survey results Fig 2



Scale 1:2500 (A4)

Magnetometer survey interpretation Fig 3



0 125m

Magnetic anomaly /nT

-10nT 0 -10nT

1:2500

Unprocessed magnetometer data Fig 4

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