GEOPHYSICAL SURVEY REPORT

GEOPHYSICS FOR ARCHAEOLOGY & ENGINEERING

Land off London Road, Markfield, Leicestershire

Client

University of Leicester Archaeological Services

Survey Report

11131

Date

May 2017

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Project name:
Land off London Road, Markfield, Leicestershire

SUMO Job reference:
11131

Client:
University of Leicester Archaeological Services

Survey date:
21 April 2017

Report date:
11 May 2017

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LIST OF FIGURES

DIGITAL CONTENT (Archive Data)

- Minimally Processed Greyscale Images and XY Trace Plots in DWG format
- DWG Viewer
- Digital Copies of Report Text and Figures (both PDF and native formats)

1 SUMMARY OF RESULTS

A detailed magnetometer survey was conducted over approximately 5ha of arable farmland and pasture. No archaeological responses have been detected. The anomalies identified include land drains, an underground service, and areas of magnetic disturbance.

2 INTRODUCTION

2.1 Background synopsis

SUMO Services Ltd were commissioned to undertake a geophysical survey of an area outlined for residential development. This survey forms part of an archaeological investigation being undertaken by **University of Leicester Archaeological Services (ULAS)** on behalf of **Jelson Homes Ltd.**

2.2 Site details

NGR / Postcode	SK 493 094 / LE67 9XJ
Location	The site is located to the south of London Road, south of Markfield, Leicestershire. Lower Grange Farm lies immediately to the north of the site, with agricultural land to the east, south and west.
HER/SMR	Leicestershire
District	Hinckley and Bosworth
Parish	Markfield CP
Topography	Relatively flat, with a slight fall from east to west
Current Land Use	Arable and pasture
Weather	Overcast, dry
Geology	Solid: Edwalton Member – mudstone. Superficial: Oadby Member – diamicton (BGS 2017).
Soils	Whimple 3 Association (572f), reddish fine loamy or fine silty over clayey soils (SSEW 1983).
Archaeology	"*There are few known archaeological sites in the close vicinity of the site. This may be due to the fact that the site lies in an area that has seen little development in recent years and is therefore unattested archaeologically. This also suggests that the preservation of any archaeological remains in the area may be very good.* *The most significant site in the area is probably the Roman quarry, which lies 310m to the east of the site. Therefore, there is low to moderate potential for Roman archaeology in the area. There is low potential for prehistoric, medieval and post-medieval remains to be discovered during any new development on the site*" (ULAS 2016).
Survey Methods	Magnetometer survey (fluxgate gradiometer)
Study Area	5ha

2.3 Aims and Objectives

To locate and characterise any anomalies of possible archaeological interest within the study area.

3 METHODS, PROCESSING & PRESENTATION

3.1 Standards & Guidance

This report and all fieldwork have been conducted in accordance with the latest guidance documents issued by Historic England (EH 2008) (then English Heritage) and the Chartered Institute for Archaeologists (IfA 2002 & CIfA 2014).

3.2 Survey methods

Detailed magnetic survey was chosen as an efficient and effective method of locating archaeological anomalies.

Technique	Instrument	Traverse Interval	Sample Interval
Magnetometer	Bartington Grad 601-2	1.0m	0.25m

More information regarding this technique is included in Appendix A

3.3 Data Processing

The following basic processing steps have been carried out on the data used in this report:

De-stripe
De-stagger
Interpolate

3.4 Presentation of results and interpretation

. The presentation of the results for each site involves a grey-scale plot of processed data. Magnetic anomalies are identified, interpreted and plotted onto the 'Interpretation' drawings. The minimally processed data are provided as a greyscale image in the Archive Data Folder with an XY trace plot in CAD format. A CAD viewer is also provided.

When interpreting the results, several factors are taken into consideration, including the nature of archaeological features being investigated and the local conditions at the site (geology, pedology, topography etc.). Anomalies are categorised by their potential origin. Where responses can be related to other existing evidence, the anomalies will be given specific categories, such as: *Abbey Wall* or *Roman Road*. Where the interpretation is based largely on the geophysical data, levels of confidence are implied, for example: *Probable*, or *Possible Archaeology*. The former is used for a confident interpretation, based on anomaly definition and/or other corroborative data such as cropmarks. Poor anomaly definition, a lack of clear patterns to the responses and an absence of other supporting data reduces confidence, hence the classification *Possible*.

4 RESULTS

The survey has been divided into three survey areas (Areas 1-3).

4.1 *Probable/Possible Archaeology*

4.1.1 No magnetic responses have been recorded that could be interpreted as being of archaeological interest.

4.2 *Agricultural – Ploughing, Land drains*

4.2.1 A series of weak bipolar, parallel linear anomalies are visible running approximately north-south in Area 2, while a further similar response has been detected in the north of Area 2 and the east of Area 3. These are all likely to be related to land drains.

4.3 *Uncertain*

4.3.1 Parallel linear anomalies in the east of Area 1 have been categorised as being of uncertain origin. It is possible that they are a result of agricultural activity, drains or evidence of ploughing.

4.3.2 A further curvilinear trend has been detected in Area 3. This is again of uncertain origin, and may relate to a land drain, former field boundary or fenceline.

4.4 *Ferrous / Magnetic Disturbance*

4.4.1 A weak bipolar linear anomaly in Area 2 is likely to be related to an underground pipe, given that it runs towards a manhole recorded on the base mapping.

4.4.2 A large area of magnetic disturbance in the north-west of Area 2 is indicative of modern made ground, i.e. hardcore, buried rubble.

4.4.3 Ferrous responses close to boundaries are due to adjacent fences and gates. Smaller scale ferrous anomalies ("iron spikes") are present throughout the data and their form is best illustrated in the XY trace plots. These responses are characteristic of small pieces of ferrous debris (or brick / tile) in the topsoil and are commonly assigned a modern origin. Only the most prominent of these are highlighted on the interpretation diagram.Two of the larger magnetic responses are a result of manholes.

5 DATA APPRAISAL & CONFIDENCE ASSESSMENT

English Heritage Guidelines (EH 2008) Table 4 states that the typical magnetic response on mudstone can be variable. The detection of anomalies of uncertain origin and land drains suggests that this survey is likely to have detected any archaeological features, if present.

6 CONCLUSION

The survey at Markfield has not identified any responses of archaeological origin, corresponding with the low potential for archaeological remains outlined in the desk-based assessment (ULAS 2016). Linear anomalies of uncertain origin are likely to be related to modern agricultural activity, though their exact origin cannot be determined with confidence. The remaining features include land drains, an underground service and an area of modern made ground.

7 REFERENCES

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