GEOPHYSICAL SURVEY REPORT

GEOPHYSICS FOR ARCHAEOLOGY & ENGINEERING

Land off Bardon Road, Coalville, Leicestershire

Client
CgMs Consulting

For
David Wilson Homes

Survey Report
11435

Date
July 2017

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Project name:
Land off Bardon Road, Coalville, Leicestershire

SUMO Job reference:
11435

Client:
CgMs Consulting
For:
David Wilson Homes

Survey date:
23 June 2017

Report date:
11 July 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 0.7ha of grassland. No archaeological responses have been detected, however a modern trackway has been revealed. The remaining anomalies are also of modern origin, and include areas of magnetic disturbance from nearby ferrous metal objects, such as pylons, manhole covers and fencing.

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 **CgMs Consulting** on behalf of **David Wilson Homes**.

2.2 Site details

NGR / Postcode	SK 442 129 / LE67 4BL
Location	The site is located to the south of Bardon Road, Coalville, Leicestershire. The Midland Railway line forms the south-western boundary of the site, with residential housing to the north and north-west. An area of agricultural land bounds the site to the south-east.
HER/SMR	Leicestershire
District	North West Leicestershire
District Ward	Bardon
Topography	Sloping down from north-east to south-west.
Current Land Use	Grassland/rough pasture
Weather	Overcast, occasional showers
Geology	Solid: Gunthorpe Member - mudstone. Superficial: Oadby Member - diamicton is recorded across the north of the site, with Alluvial deposits of clay, silt, sand and gravel across the south (BGS 2017).
Soils	Salop Association (711m), reddish fine loamy over clayey, fine loamy and clayey soils (SSEW 1983).
Archaeology	A Desk-Based Assessment of land immediately to the northwest of the proposed development site concludes that the archaeological potential of the site is low for the Anglo-Saxon, medieval and post-medieval periods, low to moderate for the Roman periods and moderate for the prehistoric period. A prehistoric material scatter was recorded on the site to the north, and the low-moderate potential potential for Roman remains stems from the fact that two possible Roman roads lie to the north of the site (NH 2013).
Survey Methods	Magnetometer survey (fluxgate gradiometer)
Study Area	c. 1.3ha - approximately 0.6ha could not be surveyed due to dense, overgrown vegetation.

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), the Chartered Institute for Archaeologists (CIfA 2014) and the European Archaeological Council (EAC 2016).

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 two survey areas (Areas 1-2).

4.1 *Probable/Possible Archaeology*

No magnetic responses have been recorded that could be interpreted as being of archaeological interest, despite the moderate potential for prehistoric, and the low-moderate potential for Roman remains.

4.2 *Ferrous / Magnetic Disturbance*

4.2.1 A linear band of magnetic disturbance is visible running approximately northwest-southeast across the site, and crosses over the drainage ditch which bisects the site. The response is associated with a modern trackway.

4.2.2 Areas of magnetic disturbance are visible in the south-east and east of the area, and are likely of modern origin. It is probable that these relate to areas of made ground/rubble.

4.2.3 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.

5 DATA APPRAISAL & CONFIDENCE ASSESSMENT

5.1 Historic England guidelines (EH 2008) Table 4 states that the average magnetic response on mudstone is variable. A trackway has been detected in the data, however much of the site is dominated by areas of magnetic disturbance which has the potential to mask weaker archaeological responses.

6 CONCLUSION

6.1 The survey at Coalville has not revealed any responses of archaeological origin, despite the moderate potential for prehistoric and Roman remains. A modern track has been identified, along with several areas of magnetic disturbance which likely relate to areas of modern made ground. Magnetic disturbance from nearby ferrous objects, including an electricity pylon, a manhole cover, and fences have also been detected.

7 REFERENCES

BGS 2017 British Geological Survey, Geology of Britain viewer [Accessed 10/07/2017] *website*: (http://www.bgs.ac.uk/opengeoscience/home.html?Accordion1=1#maps)

CIfA 2014 *Standard and Guidance for Archaeological Geophysical Survey.* Amended 2016. CIfA Guidance note. Chartered Institute for Archaeologists, Reading http://www.archaeologists.net/sites/default/files/CIfAS%26GGeophysics_2.pdf

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EH 2008 *Geophysical Survey in Archaeological Field Evaluation.* English Heritage, Swindon https://content.historicengland.org.uk/images-books/publications/geophysical-survey-in-archaeological-field-evaluation/geophysics-guidelines.pdf/

NH 2013 *Land off Bardon Road, Coalville, Leicestershire - Heritage Statement.* Nexus Heritage; unpublished report.

SSEW 1983 *Soils of England and Wales. Sheet 3, Midland and Western England*. Soil Survey of England and Wales, Harpenden.