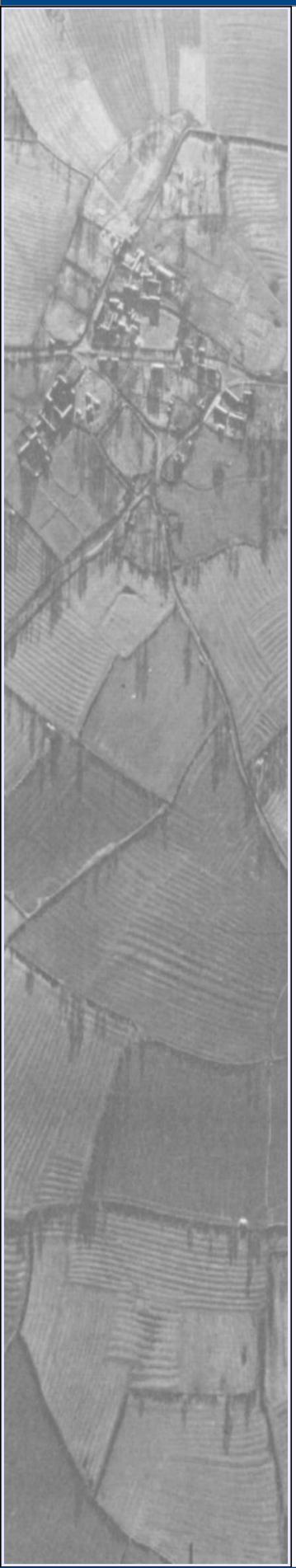


Woltson Priory
Wolston
Warwickshire

MAGNETOMETER & EARTH RESISTANCE SURVEY REPORT

for

Warwickshire Wildlife Trust

Kerry Donaldson & David Sabin

September 2021

Ref. no. J857

ARCHAEOLOGICAL SURVEYS LTD

Woltson Priory

Magnetometer & Earth Resistance Survey Report

for

Warwickshire Wildlife Trust

Fieldwork by David Sabin BSc (Hons) MCIfA
Report by Kerry Donaldson BSc (Hons)
Report checked by David Sabin
Primary archive location - Archaeological Surveys Ltd, Yatesbury, Wiltshire

Survey dates – 9th & 20th August 2021
Ordnance Survey Grid Reference – **SP 41510 75860**

Monument no: 1007721
Case no: SL00234095

Archaeological Surveys Ltd
1 West Nolands, Nolands Road, Yatesbury, Calne, Wiltshire, SN11 8YD
Tel: 01249 814231 Fax: 0871 661 8804
Email: info@archaeological-surveys.co.uk
Web: www.archaeological-surveys.co.uk

CONTENTS

LIST OF FIGURES

LIST OF PLATES

LIST OF TABLES

SUMMARY

A geophysical survey was carried out by Archaeological Surveys Ltd on the site of Wolston Priory as part of the Warwickshire Wildlife Trust's Dunsmore Living Landscapes project. Both detailed magnetometry and earth resistance (resistivity) was carried out over a 1ha pasture field within the scheduled monument under a Section 42 licence from Historic England. The results of the survey demonstrate the presence of a number of anomalies within the southern part of the site which, although poorly defined, could indicate the presence of archaeological features beneath the extant ridge and furrow. To the north are a small number of extant earthwork/ditches that have a corresponding geophysical response. In the north west are several linear anomalies that appear to relate to cut, ditch-like features; however the results suggest that these have truncated the ridge and furrow.

1 INTRODUCTION

1.1 Survey background

1.1.1 Archaeological Surveys Ltd was commissioned by The Warwickshire Wildlife Trust to undertake a magnetometer and earth resistance (resistivity) survey of an area of land at Woltson Priory. The site contains the scheduled remains of Wolston Priory and the survey was carried out in order to research the archaeological potential of the site under the National Lottery Heritage Fund-supported Dunsmore Living Landscape project

1.1.2 The site is a scheduled monument (List Entry no. 1007721) and the survey was carried out under a Section 42 Licence, (case no. SL00234095), issued by Neil Rimmington, Inspector of Ancient Monuments for Historic England. The survey area included a small pasture field that contains the earthwork remains of medieval ridge and furrow which overlie the remains of the medieval Wolston Priory. A moated site to the north west is also included within the scheduling, but this was not subject to survey.

1.2 Survey objectives and techniques

1.2.1 The objective of the survey was to use magnetometry and resistivity to locate geophysical anomalies that could relate to the buried remains of the medieval priory. The methodology is considered an efficient and effective approach to archaeological prospection as magnetometry and resistivity produce a complementary data set.

1.2.2 Geophysical survey can provide useful information on the archaeological potential of a site; however, the outcome of any survey relies on a number of factors and as a consequence results can vary. The success in meeting the aims and objectives of a survey is, therefore, often impossible to

predetermine.

1.3 Standards, guidance and recommendations for the use of this report

1.3.1 The survey and report follow the recommendations set out by: European Archaeological Council (2015) *Guidelines for the Use of Geophysics in Archaeology;* Institute for Archaeologists (2002) *The use of Geophysical Techniques in Archaeological Evaluations.* The work has been carried out to the Chartered Institute for Archaeologists (2014) *Standard and Guidance for Archaeological Geophysical Survey.* Note: currently Historic England (2018) no longer support the guidelines set out in English Heritage (2008) *Geophysical survey in archaeological field evaluation* and there are currently no plans to update the document. As a consequence, other sources of written guidance referring to this document may be out of date and/or contain unsupported information (e.g. Chartered Institute for Archaeologists, 2014).

1.3.2 Archaeological Surveys Ltd provide a detailed geophysical survey report and it is recommended that where possible the contents should be considered in full. The Summary provides a brief overview of the results with more detail available in the Discussion and/or Conclusion. The *List of anomalies* within the Results provides a detailed assessment of the anomalies within separate categories which can be useful in inferring a level of confidence to the interpretation. Quality and factors influencing the interpretation of anomalies is also set out within the results.

1.3.3 It is recommended that the full report should always be considered when using data and interpretation plots; where this is not possible, in the field for example, the abstraction and interpretation plots should retain their colour coding and be used with a corresponding legend.

1.4 Site location, description and survey conditions

1.4.1 The site is located to the north west of Priory Road, on the northern edge of Wolston in Warwickshire. It is centred on Ordnance Survey National Grid Reference (OS NGR) SP 41510 75860, see Figs 01 and 02.

1.4.2 The survey area consists of a single, small field of approximately 1ha used for pasture. A track passes through the eastern part of the field from a gateway near the south eastern corner heading towards the north eastern corner to allow access to land parcels to the north and north east of the site. The track consists of compacted stone, brick, etc and was unsuitable for resistivity survey. A narrow grass strip lies between the track and the eastern limit of the survey area. The southern part of the strip had been recently landscaped and reinstated as part of building works immediately to the east, the central part of the strip was used for parking by builders working on the adjacent site and the northern part of the strip contained unmown grass. The land tends to slope down gently towards the north, and the northern edge of the field was notably damp and contained rushes that probably indicated periods of waterlogging

and/or poor soil drainage in this low lying area.

1.4.3 The north eastern side of the survey area is bounded by a hedgerow separating the site from the garden of a residential dwelling known as The Priory that lies approximately 40m to the east. Wooden fencing along the south eastern boundary separates the area from recently converted or rebuilt barns. Wooden fencing forms the southern boundary with residential dwellings and a path immediately to the south. Residential dwellings also lie beyond a hedgerow to the south west of the site with a moated site lying to the north west. The northern hedgerow separates the site from a small area of low lying waterlogged ground with scrubby cover, bulrushes etc.

Plate 1: Survey area looking south east

1.4.4 The geophysical survey covered approximately 1ha with the magnetometry. The resistivity survey was initially started on the same day as the magnetometry; however, a battery failure caused the resistance meter to stop working and so the survey was halted until it could be replaced. The resistivity survey then proceeded at a later date and the two datasets were joined. Full coverage of the site by resistivity was not possible due to the presence of hay bales, unmown grass and vehicles in a strip along the eastern part of the area, approximately 0.83ha was covered.

1.4.5 The ground conditions across the site were generally considered to be favourable for the collection of geophysical data with the exception of the track and strip of land to the east of the track where surface conditions were unsuitable for resistivity. Weather conditions during the survey were fine.

1.5 Site history and archaeological potential

1.5.1 Wolston Priory is a scheduled monument (List Entry no. 1007721) and was founded between 1086 and 1194 as an alien cell of the Benedictine abbey of St Pierre-sur-Dives in France. The site is believed to have been used by a very small number of monks but the priory buildings included a hall, barn, stable and grange but by 1388 a number of the buildings were in a ruined state. In 1394 the alien priory was sold to the Carthusian priory of St Anne in Coventry in order for the land to be used for agriculture. The site includes a small field containing ridge and furrow, a number of earthworks throughout, a platform at the southern end and a moated site to the north west. The moated site is believed to have been constructed by the Carthusians in the late 14th or early 15th century, with the priory buildings to the south east demolished around this time and overlain by ridge and furrow.

1.5.2 The large residential property currently known as The Priory, located approximately 40m east of the site, is a Grade II* listed house. The listing indicates that it has evolved over time and contains fabric from the 14th/15th, 16th, 17th and early 20th centuries. The listing also indicates that the building incorporates part of a timber-framed range dating to the late 14th to early 15th centuries which can be identified as part of the priory at Wolston that existed to the west.

1.5.3 During the course of the survey linear earthworks relating to former ridge and furrow cultivation were identified across much of the site with the exception of the eastern side adjacent to the modern track. A shallow linear depression representing a former ditch-like feature appears to cross the central part of the field from east to west although it is unclear whether it cuts the ridge and furrow or not. A low bank was also identified adjacent to the moat close to the north eastern boundary.

1.6 Geology and soils

1.6.1 The underlying geology is from the Merica Mudstone Group with overlying River Terrace Deposits of sand and gravel across the majority of the site and alluvium along the northern edge (BGS, 2017).

1.6.2 The overlying soil across the site is from the Arrow association and is a gleyic brown earth. It consists of a deep, permeable, coarse loamy soil affected by groundwater over glaciofluvial drift (Soil Survey of England and Wales, 1983).

1.6.3 Geophysical surveys carried out over similar geology and soil has produced good results. The site is, therefore, considered suitable for survey.

2 METHODOLOGY

2.1 Technical synopsis - magnetometry

2.1.1 Magnetometry survey records localised magnetic fields that can be associated with features formed by human activity. Magnetic susceptibility and magnetic thermoremnance (also known as thermoremanence) are factors associated with the formation of localised fields.

2.1.2 Iron minerals within the soil may become altered by burning and the break down of biological material; effectively the magnetic susceptibility of the soil is increased, and the iron minerals become magnetic in the presence of the Earth's magnetic field. Accumulations of magnetically enhanced soils within features, such as pits and ditches, may produce magnetic anomalies that can be mapped by magnetic prospection.

2.1.3 Magnetic thermoremnance can occur when ferrous minerals have been heated to high temperatures such as in a kiln, hearth, oven etc. On cooling, a permanent magnetisation may be acquired due to the presence of the Earth's magnetic field. Certain natural processes associated with the formation of some igneous and metamorphic rock may also result in magnetic thermoremnance.

2.1.4 The localised variations in magnetism are measured as sub-units of the Tesla, which is a SI unit of magnetic flux density. These sub-units are nano Teslas (nT), which are equivalent to 10^{-9} Tesla (T). Additional details are set out in 2.2 below and within Appendix A.

2.2 Technical synopsis - resistivity

2.2.1 The electrical resistance or resistivity of the soil depends upon moisture content and distribution. Buried features such as walls can affect the moisture distribution and are usually more moisture resistant than other features such as the infill of a ditch. A stone wall will generally give a high resistance response, and the moisture retentive content of a ditch can give a low resistance response although in certain conditions it may also produce a high resistance anomaly.

2.2.2 Localised variations in resistance are measured in ohms (Ω) which is the SI unit for electrical impedance or resistance. Additional details are set out in 2.2 below and within Appendix B.

2.3 Equipment configuration, data collection and survey detail - magnetometry

2.3.1 The detailed magnetic survey was carried out using a SENSYS MAGNETO®MXPDA 5 channel cart-based system. The instrument has 5 fluxgate gradiometers (FGM650) spaced 0.5m apart with readings recorded at 20Hz. The cart is pushed at walking speed and not towed. Each sensor is not zeroed in the field as the vertical axis alignment is precisely fixed leaving sensor offsets that are removed during data processing. The fixing of the vertical alignment ensures the

sensors are not unduly influenced by localised magnetic fields and that the vertical component of a magnetic anomaly is measured. The gradiometers have a range of recording data between ±0.1nT and ±3000nT. They are linked to a Leica GS10 RTK GNSS with data recorded by SENSYS MAGNETO®MXPDA software on a rugged PDA computer system.

2.3.2 Due to the fixed offsets within the fluxgate sensors, as a result of the manufacturing and tensioning process, the survey data do not provide a visually useful dataset until a zero median traverse algorithm is applied. It is recognised that this has the potential to affect some anomalies detrimentally by removing linear features orientated parallel to survey transects. However, this has not been noted as a particular problem with the system due to the high resolution data collection, generally long length of traverses and variability within the magnetic characteristics of a linear anomaly.

2.3.3 Data are collected along a series of parallel survey transects to achieve 100% coverage of the surveyable land. The length of each transect is variable and relates to the size of the survey area and other factors including ground conditions. A visual display allows accurate placing of transects and helps maintain the correct separation between adjacent traverses. Data are not collected within fixed grids and data points are considered to be random even though the data are collected in a systematic manner covering all accessible areas (Aspinall, Gaffney and Schmidt, 2009).

2.3.4 Fluxgate sensors are highly sensitive to temperature change and this manifests as drift during the course of a survey. This can be particularly noticeable during the morning as temperatures rise and the equipment warms or cools. Sensor drift within the course of a traverse will appear as a line trending from negative to positive after processing with a zero median traverse algorithm. To remove the potential for temperature drift, data were collected after a 20 minute stabilisation period and traverses were limited to a time of generally <100s.

2.4 Equipment configuration, data collection and survey detail - resistivity

2.4.1 The earth resistance survey was carried out with a Geoscan Research RM85 mounted on a MSP25 Mobile Sensor Platform. The platform comprises a wheeled resistance array with four spiked wheels that act as the four probes of a square array which are set 0.75m apart on an aluminium frame. It is configured as a multiplexed 0.75m square array recording alpha, and beta measurements every 0.25m along traverses separated by 1m; however, due to high levels of noise, only beta data were considered acceptable. Readings are triggered by distance encoder pulses from an MSP25 wheel after an initial calibration. The survey was carried out in a zig-zag fashion over grids 40m x 40m in size.

2.4.2 The survey grids were set out to the Ordnance Survey OSGB36 datum using a Leica GS10 RTK GNSS. The GNSS is used in conjunction with Leica's SmartNet service, where positional corrections are sent via a mobile

telephone link. Positional accuracy of around 10 – 20mm is possible using the system. The instrument is regularly checked against the ETRS89 reference framework using Ordnance Survey ground marker C1ST7784 (Horton).

2.5 Data processing and presentation

2.5.1 Magnetic data collected by the MAGNETO®MXPDA cart-based system are initially prepared using SENSYS MAGNETO®DLMGPS software. The software effectively allocates a geographic position for each data point and can compensate for fixed offsets present within the FGM650 sensors. The offsets are positive or negative values present on all fluxgate gradiometer sensors. Some systems use manual or electronic balancing to effectively zero the sensors; however, this is a short term measure that is prone to drift through temperature changes and vibration and can easily be incorrectly set due to localised magnetic fields. The FGM650 sensors are very accurately aligned to the vertical magnetic gradient and are highly stable showing negligible drift on long traverses. The offset values are removed using TerraSurveyor software.

2.5.2 Survey tracks are analysed and georeferenced raw data (UTM Z30N) are then exported in ASCII format for further analysis and display within TerraSurveyor. The removal of the offset values (compensation) of the sensors is also carried out in TerraSurveyor using a zero median traverse function. Data are then considered to be minimally processed. Note: without the zero median traverse function it is not possible to create a meaningful data plot as all sensors have a different offset value. Although a zero median traverse algorithm can remove anomalies aligned with the survey tracks, in practice this rarely occurs due to the use of long traverses, high resolution measurement and variability within the magnetic susceptibility of long linear features.

2.5.3 The minimally processed magnetic data are collected between limits of ±3000nT and clipped for display at ±3nT. Data are interpolated to a resolution of effectively 0.5m between tracks and 0.15m along each survey track.

2.5.4 Appendix D contains metadata concerning the magnetometer survey and data attributes and is derived directly from TerraSurveyor. Reference should be made to Appendix C for further information on processing.

2.5.5 For magnetometry data a TIF file is produced by TerraSurveyor software along with an associated world file (.TFW) that allows automatic georeferencing (OSGB36 datum) when using GIS or CAD software. The main form of data display used in the report is the minimally processed greyscale plot. With regard to the Sensys MXPDA, minimally processed data is considered by the manufacturer to be data that is compensated by SENSYS MAGNETO DLMGPS software, see 2.3.3 and 2.3.4. Note: traceplots are not considered to be appropriate as they do not provide an accurate or useful assessment of the magnetic anomalies due to very high density of data collection.

2.5.6 Data logged by the RM85 resistance meter are downloaded and processed within TerraSurveyor and Geoplot 4 software. Appendix D metadata sets out the data range and the processing sequence, with further details regarding the processing functions set out within Appendix C.

2.5.7 TIF files are prepared in TerraSurveyor for the earth resistance data. The main form of resistivity data display used in the report is a greyscale raster graphic image which has been clipped at 2SD for display and with no other processing applied.

2.5.8 The raster images are combined with base mapping using ProgeCAD Professional 2021 creating DWG (2018) file formats. All images are externally referenced to the CAD drawing in order to maintain good graphical quality. The CAD plots are effectively georeferenced facilitating relocation of features using GPS, resection method, etc.

2.5.9 An abstraction and interpretation is also drawn and plotted for all geophysical anomalies located by the survey. Anomalies are abstracted using colour coded points, lines and polygons. All plots are scaled to landscape A3 for paper printing.

2.5.10 A brief summary of each anomaly, with an appropriate reference number, is set out in list form within the results (Section 3) to allow a rapid and objective assessment of features within each survey area. Where further interpretation is possible, or where a number of possible origins should be considered, more subjective discussion is set out in Section 4.

2.5.11 The abstraction and interpretation procedure has been supported by analysis of a digital terrain model derived from the Environment Agency's LiDAR (Light Detection and Ranging) data. Shaded relief plots are created using Surfer 15 (Azimuth:135, Altitude:45, Z factor:10), (Fig 05).

2.5.12 A digital archive is produced with this report, see Appendix E below. The main archive is held at the offices of Archaeological Surveys Ltd.

3 RESULTS

3.1 Data interpretation

3.1.1 The list of sub-headings below attempts to define a number of separate categories that reflect the range and type of features located during the survey. A basic explanation of the characteristics of the geophysical anomalies is set out for each category in order to justify interpretation, see Table 1.

Interpretation category	Description and origin of anomalies
Anomalies with archaeological potential	Anomalies have the characteristics (mainly morphological) of a range of archaeological features such as pits, ditches, structural remains, etc. The category is used where there is a high level of confidence which may be due to additional supporting information where morphology is unclear or uncharacteristic.
Anomalies with an uncertain origin	The category applies to a range of anomalies where there is not enough evidence to confidently suggest an origin. Anomalies in this category may well be related to archaeologically significant features, but equally relatively modern features, geological/pedological features and agricultural features should be considered. Morphology may be unclear or uncharacteristic and there may be a lack of additional supporting information.
Anomalies with an agricultural origin	The anomalies are often linear and form a series of parallel responses or are parallel to extant land boundaries. Where the response is broad, former ridge and furrow is likely; narrow response is often related to modern ploughing.
Anomalies associated with magnetic debris	Magnetic debris often appears as areas containing many small dipolar anomalies that may range from weak to very strong in magnitude. They often occur where there has been dumping or ground make-up and are related to magnetically thermoremnant materials such as brick or tile or other small fragments of ferrous material. This type of response is occasionally associated with kilns, furnace structures, hearths and nail spreads from former wooden structures or rooves and may, therefore, be archaeologically significant. Strong discrete dipolar anomalies are responses to ferrous objects within the topsoil.
Anomalies with a modern origin	The magnetic response is often strong and dipolar indicative of ferrous material and may be associated with extant above surface features such as wire fencing, cables, pylons etc. Often a significant area around these features has a strong magnetic flux which may create magnetic disturbance; such disturbance can effectively obscure low magnitude anomalies if they are present. Fluxgate sensors may respond erratically adjacent to strong magnetic sources. Resistivity anomalies may be high or low and are clearly associated with extant modern features.

Table 1: List and description of interpretation categories

3.2 General assessment of survey results - magnetometry

3.2.1 The detailed magnetic survey was carried out over approximately 1ha.

3.2.2 Magnetic anomalies located can be generally classified as positive and negative anomalies of an archaeological origin, positive and negative anomalies relating to extant earthwork features, positive and negative anomalies of an uncertain origin, linear anomalies of an agricultural origin, areas of magnetic debris and disturbance and strong discrete dipolar anomalies relating to ferrous objects. Anomalies located within the survey area have been numbered and are described in 3.4 below with subsequent discussion in Section 4.

3.3 Statement of data quality - magnetometry

3.3.1 Data are considered representative of the magnetic anomalies present within the site. There are no significant defects within the dataset.

3.3.2 The eastern side of the site, and close to the southern and western boundaries, the data have located dense zones of magnetic debris that have the potential to obscure weak anomalies of archaeological potential should they exist within those areas. Magnetic disturbance of modern origin was also

located close to the southern boundary.

3.3.3 The survey located linear anomalies associated with ridge and furrow earthworks and former ditch-like features that indicate useful magnetic contrast within the topsoil and/or shallow subsoil.

3.4 List of anomalies – magnetometry

Area centred on OS NGR 441510 275860, see Figs 03 & 04.

Anomalies with an archaeological origin

(M1) – Located in the southern part of the site are a number of positive and negative discrete and linear responses. Although they do not have a clearly defined morphology, it is possible that they relate to structural remains that are related to the former priory buildings. A linear zone of magnetic enhancement appears to relate to material associated with occupation that has been preserved under one of the ridges of the ridge and furrow that overlie it, while the furrows appear to have partially truncated the underlying features. The magnetic anomalies partially correspond to a zone of variable resistance (R1) and also patches of high resistance (R4).

Anomalies associated with extant earthwork features

(M2) – Situated in the north eastern part of the site are a negative linear anomaly with adjacent positive response to the south which are associated with an extant earthwork that appears to end abruptly at the ridge and furrow. It is not clear if it has been truncated by the ridge and furrow, but it is possible that it extends south westwards as anomaly (M5). Anomalies (M2) correspond to low and high resistance anomalies (R2).

(M3) – A negative linear anomaly, with associated positive responses on the southern side, corresponds to an extant linear ditch-like depression that extends across the site. It is not clear if it truncates the ridge and furrow, but it appears to delimit the slightly higher ground to the south. It corresponds to anomaly (R3).

Anomalies with an uncertain origin

(M4) – A number of positive and negative linear and discrete responses can be seen in the south western part of the site. They are poorly defined and lack clarity, but it is possible that they relate to features associated with the priory remains.

(M5) – A negative linear anomaly with a positive response partially along the southern edge extends across the northern central part of the survey area. It is very indistinct but it is possible that it relates to an extension of anomaly (M2) seen as a clearly defined response to the north east.

(M6) – A number of positive and negative linear and discrete responses are located in the north western part of the survey area, adjacent to the moated site. It appears that several of the linear anomalies have truncated the ridge and furrow, but others could relate to material preserved beneath the ridges. Although it is not possible to ascertain the date or function of the anomalies, it is possible that they relate to further archaeological features.

(M7) – The north eastern part of the survey area contains a negative linear anomaly that appears to truncate other anomalies (M6). This type of response could relate to a buried service or drain.

(M8) – A zone of positive and negative responses in the western part of the site appear to have an association with burning. There is no topographic feature visible in the LiDAR imagery or any corresponding resistance response, and it is, therefore, possible that this relates to a relatively modern feature or activity such as a bonfire.

Anomalies with an agricultural origin

(M9) – The site contains a series of parallel linear anomalies relating to ridge and furrow.

Anomalies associated with magnetic debris

(M10) – The site contains widespread magnetic debris around the south western and western edges, but mainly in a large zone in the south east and a linear zone in the north east. The south eastern zone corresponds with a formerly mapped land parcel which appears to contain magnetic debris, such as brick and tile that has either been dumped or demolished within the former land plot before the boundary was removed in the 20th century. The linear zone in the north east relates to material used within the consolidation of the trackway that extends northwards through the site.

(M11) – The site contains a number of strong, discrete, dipolar anomalies which are a response to buried ferrous and other magnetically thermoremnant objects, such as brick and tile, within the topsoil.

Anomalies with a modern origin

(M12) – Magnetic disturbance from very strongly magnetic objects and material within and adjacent to the southern part of the site.

3.5 General assessment of survey results – resistivity

3.5.1 The earth resistance survey was carried out over approximately 0.83ha.

3.5.2 Resistance anomalies located can be generally classified as high and low

resistance anomalies of archaeological potential, high and low resistance anomalies associated with extant earthworks, anomalies of uncertain origin and anomalies associated with agricultural activity. Anomalies located within each survey area have been numbered and will be outlined in 3.7 below with subsequent discussion in Section 4.

3.6 Statement of data quality and other factors influencing the results - resistivity

3.6.1 Data are considered representative of the resistive anomalies present within the site. Although the majority of the survey was carried out after a generally prolonged dry period, recent light rain and heavy dew had produced damp conditions on the ground surface at the time of data collection. Numerous mole hills were also present in the southern part of the site and the relatively light and sandy soil combined with the surface moisture proved problematic for the wheeled probes on the MSP25 cart. Both damp soil and water partly contaminated the MSP25 wheel internal contact plates and produced high levels of noise within data collected by the alpha probe configuration; however, data from the beta configuration generally appeared good with little evidence of excessive noise. As a consequence, only beta data were used within this report.

3.6.2 Numerous resistive 'spikes' were encountered across the site but mainly along the line of tracks or where ground cover was thin. The very high erroneous readings occur due to poor contact between the mobile probes and the ground surface. The surface of the sandy soil is prone to rapid drying particularly where there is little or no ground cover. Processing effectively removes the high responses and comparison is made between processed and unprocessed data to ensure that there are no detrimental effects on other anomalies.

3.6.3 Generally the data demonstrate useful resistive contrast and numerous high and low resistance anomalies are present.

3.7 List of anomalies – resistivity

Area centred on OS NGR 441510 275860, see Figs 03 & 04.

Anomalies of archaeological potential

(R1) – A zone of high frequency variable resistance could indicate an area of potential structural remains. There is some correspondence with magnetic anomalies (M1).

Anomalies associated with extant earthwork features

(R2) – A low resistance linear with high resistance to the south corresponds to a low earthwork feature within the site and is also associated with magnetic anomalies

(M2).

(R3) – A broad, linear zone of low resistance corresponds to an extant ditch-like depression that extends through the site.

Anomalies of uncertain origin

(R4) – Amorphous and discrete patches of high resistance can be seen around anomaly (R1). Although there is no clear definition of any features, and high resistance responses could be associated with variations in the underlying gravels, it is possible that these are associated with rubble spreads relating to the former priory buildings.

(R5) – Broad linear zones of high resistance to the west of anomalies (R4), have a similar response and could be associated. They may relate to naturally drier ground disturbed by former ridge and furrow cultivation.

(R6) – In the north eastern part of the site is a very high resistance response extending partially along the line of the ridge and furrow to the north and partly to the south of anomaly (R2). It is not clear if it relates directly to (R2), but it is possible. Further linear zones of high resistance also appear to be associated with the ridges to the west.

(R7) – A low resistance linear anomaly extends across the northern part of the survey area. It has an associated, but fragmented, positive anomaly to the south. They correspond to the complex of magnetic anomalies (M6). The low resistance anomaly indicates a response to a linear ditch-like feature.

(R8) – A low resistance linear anomaly extends through the southern part of the site, roughly parallel with anomaly (R3) to the north. The response suggests a cut feature and it appears that it may have truncated high resistance anomalies (R5). Another short low resistance linear anomaly can be seen to the south east, this appears to have truncated the ridge and furrow.

(R9) – In the north eastern part of the site there is a low resistance linear anomaly. This corresponds to anomaly (M7), but it is not clear if it relates to a cut feature of archaeological potential or a more modern feature, such as a service or drain.

Anomalies with an agricultural origin

(R10 & R11) - A series of high resistance (R10) and low resistance (R11) linear anomalies extend throughout the site and relate to extant ridge and furrow. Although they are generally parallel and oriented north north west to south south east, there are a number in the north west that appear to deviate to the north to avoid the moated site. Anomalies (R10) relate to the ridges, a number of which appear to have defined areas of higher response, possibly associated with preserved archaeological remains (R5 & R6), while anomalies (R11) relate to the furrows which appear to have truncated the earlier features.

4 DISCUSSION

4.1.1 The results of the detailed magnetometry and resistivity have produced a complimentary dataset. The magnetometry indicates a number of positive and negative anomalies within the south eastern part of the site (M1) that although do not have a clearly defined morphology, do have the potential to relate to archaeological features that pre-date the ridge and furrow. Negative anomalies could be responses to structural remains, while positive responses could indicate cut features and zones of occupation material. This area corresponds to a zone of variable resistance (R1), including some contact resistance which is usually associated with very hard material, such as stone, on the surface. Surrounding this are areas of high resistance (R4), which could relate to buried masonry; however, they are poorly defined. Further high resistance zones in the south west (R5) could indicate some preservation of archaeological material beneath the ridges of the ridge and furrow, and although there are some weakly positive and negative anomalies within this part of the site (M4), they again lack a coherent morphology. It is possible however, that the zones may merely represent natural variations in the soil matrix and moisture content.

4.1.2 In the south eastern corner of the site there is widespread magnetic debris (M10) and unfortunately its strength and concentration obscures any other underlying weaker anomalies. However, the resistivity in this part of the site indicates the presence of ridge and furrow, rather than widespread high resistance anomalies.

4.1.3 In the northern part of the site there are a number of linear and discrete anomalies seen within the magnetic data (M6) with the linear anomalies corresponding to linear high resistance responses (R7). These could relate to further archaeological features; however, it appears that the linear anomalies relate to cut features that have truncated the ridge and furrow, although there is no clear surface expression.

4.1.4 The majority of the site contains extant ridge and furrow as well as a small number of linear earthwork features. These have a corresponding magnetic (M2) and resistance (R2) response and appear to suggest a linear ditch on the northern side of a southern bank. There appears to be truncation of the ridge and furrow, but this is not clear.

5 CONCLUSION

5.1.1 The geophysical survey comprised resistivity and magnetometry within the site. The magnetometry results have revealed a number of positive and negative anomalies in the south eastern part of the site that although lack a coherent morphology, could relate to archaeological features that pre-date the ridge and furrow. These correspond to a zone of variable resistance which could indicate spreads of masonry rubble. To the west of these there are a number of weakly positive and negative magnetic responses, but they lack any clearly defined morphology.

5.1.2 To the north are a number of extant linear earthworks/ditches which correspond to magnetic and resistance anomalies. It is, however, possible that one earthwork feature in the north eastern part of the site has been truncated by ridge and furrow. The extant ridge and furrow have also resulted in magnetic and resistance responses, with some parts of the ridges having a notably higher resistance response, which could suggest preservation of archaeological material beneath; however, natural variations in the soil should also be considered.

5.1.3 In the north western part of the site there are a number of magnetic and resistance anomalies which could relate to former cut features although there appears to be some truncation of the ridge and furrow suggesting that they are related to later features.

6 REFERENCES

British Geological Survey, 2017. *Geology of Britain 3D (Beta version), 1:50 000 scale [online]* available from http://mapapps.bgs.ac.uk/geologyofbritain3d/index.html? [accessed 2/9/2021].

Chartered Institute for Archaeologists, 2014. *Standard and Guidance for archaeological geophysical survey*. IfA, University of Reading.

European Archaeological Council, 2015. *EAC Guidelines for the Use of Geophysics in Archaeology: Questions to Ask and Points to Consider.* Europae Archaeologia Consilium and Association Internationale sans But Lucratif, Belgium.

Historic England, 2018. Geophysical Survey Advice [online] available from https://historicengland.org.uk/advice/technical-advice/archaeological-science/geophysics/ [accessed July 2018].

Institute for Archaeologists, 2002. *The use of Geophysical Techniques in Archaeological Evaluations*. IfA Paper No. 6. IfA, University of Reading.

Schmidt, A., 2013. *Geophysical Data in Archaeology: A Guide to Good Practice.* Oxbow Books.

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

Appendix A – basic principles of magnetic survey

Iron minerals are always present to some degree within the topsoil and enhancement associated with human activity is related to increases in the level of magnetic susceptibility and thermoremnant material. Magnetic susceptibility is an induced magnetism within a material when it is in the presence of a magnetic field. This can be thought of as effectively permanent due to the presence of the Earth's magnetic field. Thermoremnant magnetism occurs when ferrous material is heated beyond a specific temperature known as the Curie Point. Demagnetisation occurs at this temperature with re-magnetisation by the Earth's magnetic field upon cooling.

Enhancement of magnetic susceptibility can occur in areas subject to burning and complex fermentation processes on biological material; these are frequently associated with human settlement. Thermoremnant features include ovens, hearths, and kilns. In addition thermoremnant material such as tile and brick may also be associated with human activity and settlement.

Silting and deliberate infilling of ditches and pits with magnetically enhanced soil can create an area of enhancement compared with surrounding soils and subsoils into which the feature is cut. Mapping enhanced areas will produce linear and discrete anomalies allowing an assessment and characterisation of hidden subsurface features.

It should be noted that areas of negative enhancement can be produced from material having lower magnetic properties compared to the topsoil. This is common for many sedimentary bedrocks and subsoils which were often used in the construction of banks and walls etc. Mapping these 'negative' anomalies may also reveal archaeological features.

Magnetic survey or magnetometry can be carried out using a fluxgate gradiometer and may be referred to as gradiometry. The SENSYS gradiometer is a passive instrument consisting of two fluxgate sensors mounted vertically 65cm apart. The instrument is carried about 10-20cm above the ground surface and the upper sensor measures the Earth's magnetic field as does the lower sensor but this is influenced to a greater degree by any localised buried magnetic field. The difference between the two sensors will relate to the strength of the magnetic field created by the buried feature.

There are a number of factors that may affect the magnetic survey and these include soil type, local geology and previous human activity. Situations arise where magnetic disturbance associated with modern services, metal fencing, dumped waste material etc., obscures low magnitude fields associated with archaeological features.

Appendix B – basic principles of earth resistance survey (resistivity)

Earth resistance survey, commonly known as resistivity, relies on the variability of conduction of current through soil and the subsurface matrix. The variability relates to the distribution of moisture within different materials so that non-porous features, such as foundations, produce a relatively high resistance response and more moisture retentive soil, such as found within the fill of a former ditch, produces a low resistance measurement. The technique is, therefore, influenced by climatic factors although the success of a survey can be difficult to predict based on these alone. Soil type, ground use, vegetative cover and the nature of buried features and subsoil are all factors that will influence the outcome of a survey.

The technique involves inputting a small electrical current into the ground and measuring subtle variations to the current at regular intervals across an area. The current input and measurement requires a series of probes to be inserted into the ground and the configuration of these can influence the resolution of resistive anomalies and the depth of response. Research has demonstrated that the twin electrode configuration is one of the most useful for archaeological prospection. It requires a mobile frame with two electrodes separated usually by 0.5m and a pair of remote probes linked to the logging instrument using a long cable.

Cart-based systems are also regularly used in archaeological prospection, and generally these require four spiked wheels to inject current into the ground and take measurements. The four wheels act as a square array which can be electronically switched to change the orientation of measurement and current input. Two

or three readings are rapidly logged at each recording station and these are referred to as alpha, beta and gamma. The gamma is often not recorded as this represents the difference between the alpha and beta configurations and can be derived during data processing. The alpha and beta datasets often demonstrate subtle differences that relate to the orientation of subsurface features and both are analysed as part of the abstraction and interpretation process. Advantages of cart systems are speed and resolution and they do not require a trailing cable; however, ground conditions are more critical and problems can be encountered with ground cover and in areas that are excessively damp or dry.

When using the twin probe configuration a useful reading interval for archaeological prospection across an area is 1m. Data are logged at 1m centres along traverses separated by 1m. Where areas contain known archaeological features 0.5m x 0.5m or 1m x 0.5 readings are considered more informative. Data collected by cart-based systems are typically at 0.25m centres along traverses separated by 1m.

Appendix C – data processing notes

Clipping

Minimum and maximum values are set and replace data outside of the range with those values. Extreme values are removed improving colour or greyscale contrast associated with data values that may be archaeologically significant. Different ranges are applied to data in order to determine the most suitable for anomaly abstraction and display.

Zero Median/Mean Traverse

The median (or mean) of data from each traverse is calculated ignoring data outside a threshold value, the median (or mean) is then subtracted from the traverse. The process is used to equalise differences between the offset values of the gradiometer sensors. The process can remove archaeological features that run along a traverse but with the high resolution datasets created by the Sensys FGM650 sensors and the method of data collection this has not been a notable problem. In fact, the removal of offsets using software avoids carrying out a balancing procedure on site, which inevitably can never be done in magnetically clean conditions and results in improperly aligned fluxgate sensors and/or electronic adjustment values.

Appendix D – survey and data information

Magnetometry

Filename: J857-mag-proc.xcp
Description: Imported as Composite from: J857-mag.asc
Instrument Type: Sensys DLMGPS
Units:
UTM Zone: 30U
Survey corner coordinates (X/Y):OSGB36
Northwest corner: 441455.47, 275918.22 m
Southeast corner: 441572.77, 275804.67 m
Collection Method: Randomised
Sensors: 5
Dummy Value: 32702
Dimensions
Survey Size (meters): 117 m x 114 m
X&Y Interval: 0.15 m
Source GPS Points: Active: 322282, Recorded: 322282
Stats
Max: 3.32
Min: -3.30
Std Dev: 1.65
Mean: -0.01
Median: 0.02
Composite Area: 1.3319 ha
Surveyed Area: 0.99942 ha
PROGRAM
Name: TerraSurveyorPre
Version: 3.0.36.24
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to UTM).
3 DeStripe Median Traverse:
4 Clip from -3.00 to 3.00

Resistivity

Filename: J857-res-beta-combined.xcp
Description:
Instrument Type: Surfer ASCII
Units: Ohm
Collection Method: ZigZag
Sensors: 2 @ 1 m spacing.
Dummy Value: 2047.5
Dimensions
Survey Size (meters): 120 m x 160 m
X&Y Interval: 0.251 m
Stats
Max: 47.82
Min: 0.77
Std Dev: 10.79
Mean: 24.19
Median: 22.60
Composite Area: 1.9231 ha
Surveyed Area: 0.83095 ha
Processess: 2
1 Base Layer
1 Clip at 2.00 SD

Appendix E – digital archive

Archaeological Surveys Ltd hold the primary digital archive at their offices in Wiltshire. Data are backed-up onto an on-site data storage drive and at the earliest opportunity data are copied to CD ROM for storage on-site and off-site.

A printed copy of the report will be sent to Historic England at the Midlands office with a PDF copy sent to

Neil Rimmington and Paul Linford at Historic England. The Warwickshire Historic Environment Record will also be sent a copy. The report will also be uploaded to the Online AccesS to the Index of archaeological investigationS (OASIS).

File type	Naming scheme	Description
Data	J857-mag.asc J857-mag.xcp J857-mag-proc.xcp J857-res-beta-combined.xcp J857-res-beta-combined-2SD.xcp	Raw data as ASCII CSV TerraSurveyor raw magnetometry data TerraSurveyor minimally processed mag data TerraSurveyor raw resistivity data TerraSurveyor minimally processed res data
Graphics	J857-mag-proc.tif J857-res-beta-combined.tif	Image in TIF format with TFW
Drawing	J857 version 1.dwg	CAD file in 2018 dwg format
Report	J857 report.odt	Report text in LibraOffice odt format

Table 2: Archive metadata

Appendix F – CAD layers for abstraction and interpretation plots

The table below sets out Archaeological Surveys Ltd CAD layer names with associated colours and graphical content. Where CAD files are available layers may be extracted for further CAD/GIS use. Note: hatched polygon boundaries are contained within layers with the RGB colour code 254, 255, 255 (near white) in order to prevent their visibility.

Report sub-heading and associated CAD layer names	Colour with RGB index		Layer content
Anomalies with archaeological potential			
AS-ABST MAG POS DISCRETE ARCHAEOLOGY		Red 255,0,0	Solid donut, point or polygon (solid)
AS-ABST MAG POS ARCHAEOLOGY		Red 255,0,0	Polygon (cross hatched ANSI37)
AS-ABST MAG NEG LINEAR ARCHAEOLOGY		127,0,255	Line, polyline or polygon (solid)
AS-ABST RES HIGH ARCHAEOLOGY		153,0,0,	Line, polyline or polygon (Net)
AS-ABST RES LOW ARCHAEOLOGY		191,127,255	Line, polyline or polygon (Net)
Anomalies with an uncertain origin			
AS-ABST MAG POS LINEAR UNCERTAIN		255,127,0	Line, polyline or polygon (solid)
AS-ABST MAG NEG LINEAR UNCERTAIN		Blue 0,0,255	Line, polyline or polygon (solid)
AS-ABST MAG POS DISCRETE UNCERTAIN		255,127,0	Solid donut, point or polygon (solid)
AS-ABST MAG NEG DISCRETE UNCERTAIN		Blue 0,0,255	Solid donut, point or polygon (solid)
AS-ABST RES HIGH LINEAR UNCERTAIN		153,133,76	Line, polyline or polygon (solid)
AS-ABST RES HIGH AREA UNCERTAIN		153,133,76	Polygon (net)
AS-ABST RES LOW LINEAR UNCERTAIN		127, 223, 255	Line, polyline or polygon (solid)
Anomalies with an agricultural origin			
AS-ABST MAG RIDGE AND FURROW		0,127,63	Line, polyline or polygon (cross hatched ANSI37)
AS-ABST RES RIDGE AND FURROW		0,127,63	Line, polyline or polygon (cross hatched net)
Anomalies associated with magnetic debris			
AS-ABST MAG DEBRIS		132, 132, 132	Polygon (cross hatched ANSI37)
AS-ABST MAG STRONG DIPOLAR		132, 132, 132	Solid donut, point or polygon (solid)
Anomalies with a modern origin			
AS-ABST MAG DISTURBANCE		132, 132, 132	Polygon (hatched ANSI31)

Table 3: CAD layering

Appendix G – copyright and intellectual property

This report may contain material that is non-Archaeological Surveys Ltd copyright (eg Ordnance Survey, Crown Copyright) or the intellectual property of third parties, which we are able to provide for limited reproduction under the terms of our own copyright licences, but for which copyright itself is non-transferable by Archaeological Surveys Ltd. Users remain bound by the conditions of the Copyright, Design and Patents Act 1988 with regard to multiple copying and electronic dissemination of this report.

Archaeological Surveys Ltd shall retain intellectual property rights for the materials and records created as part of this project. A non-exclusive, transferable, sub-licensable, perpetual and royalty-free licence shall be granted to the client on full payment of works in order for them to use, reproduce and enhance the reports, documentation, graphics and illustrations produced as part of this project for the purpose for which they were commissioned. Copyright licence will also be granted to the local authority for planning use and within in the Historic Environment Record for public dissemination upon payment by the client. Any document produced to meet planning requirements may be freely copied for planning, development control, research and outreach purposes without recourse to the originator, subject to all due and appropriate acknowledgements being provided and to the terms of the original contract with the client. Archaeological Surveys Ltd shall retain the right to be identified as the author and originator of the material.

The report, data and any associated material produced by Archaeological surveys Ltd cannot be freely used for any commercial activity other than those set out above. Any unauthorised use will be considered to be in breach of copyright.

Title of Goods remains with Archaeological Surveys Ltd until payment has cleared. Late payment may jeopardise any planning decision as there will be no transfer of title, licensing or any other right of copy or use of this report. Archaeological Surveys Ltd do not give permission for use of the report and associated data in cases of late payment. Any such use will be considered to be in breach of copyright. Late payment may also incur interest at 8% over the Bank of England base rate. Non-payment will be pursued by legal action.

Appendix H – Historic England Geophysical Survey Summary Questionnaire

Survey Details

Name of Site: Wolston Priory

County: Warwickshire

NGR Grid Reference (Centre of survey to nearest 100m): SP 41510 75855

Start Date: 9/8/21 End Date:20/8/21

Geology at site (Drift and Solid): Mercia Mudstone (Keuper Marl), River Terrace (1) sand and gravel deposits and alluvium

Known archaeological Sites/Monuments covered by the survey
(Scheduled Monument No. or National Archaeological Record No. if known)

Wolston Priory and Moated Site, Rugby, Warwickshire (List entry no: 1007721)

Archaeological Sites/Monument types detected by survey
(Type and Period if known. "?" where any doubt).

Medieval structure?
Medieval ditch?
Medieval earthwork?
Post-medieval ditch?
Medieval ridge and furrow

Surveyor (Organisation, if applicable, otherwise individual responsible for the survey): David Sabin

Name of Client, if any: Warwickshire Wildlife Trust

Purpose of Survey:

To identify anomalies of archaeological potential within scheduled area

Location of:

a) Primary archive, i.e. raw data, electronic archive etc: Archaeological Surveys Ltd, 1 West Nolands, Nolands Road, Yatesbury, Calne, SN11 8YD

b) Full Report: As above

Technical Details

Type of Survey: Magnetometry

Area Surveyed, if applicable (In hectares to one decimal place): 1ha

Traverse Separation, if regular: 0.5m **Reading/Sample Interval:** 20Hz

Type, Make and model of Instrumentation: SENSYS Magneto MXPDA

Land use at the time of the survey (Use term/terms from the attached list or specify other): Grassland

Technical Details

Type of Survey: Resistivity

Area Surveyed, if applicable (In hectares to one decimal place): 0.8ha

Traverse Separation, if regular: 1m **Reading/Sample Interval:** 0.25m

Type, Make and model of Instrumentation:
Geoscan Research RM85 mounted on a MSP25 Mobile Sensor Platform

For Resistivity Survey:

Probe configuration: Square array

Probe Spacing: 0.75m

Land use at the time of the survey (Use term/terms from the attached list or specify other): Grassland

Archaeological Surveys
Specialist Geophysical Surveyors

Geophysical Survey
Wolston Priory
Wolston
Warwickshire

Map of survey area

Survey location

Site centred on OS NGR
SP 41510 75860

SCALE 1:25 000

0m 500m 1000m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 01

Archaeological Surveys
Specialist Geophysical Surveyors

Geophysical Survey
Wolston Priory
Wolston
Warwickshire

Magnetometry referencing

441450
441500
441550
275950
275900
275850
275800
275750

Resistivity referencing

N

441494.94
275890.45
(1b)
5b
Bales
4b
(2b)
8b
9b
10b
1b
441515.84
7b
6b
275813.23

Referencing information

Magnetometry referencing grid to OSGB36 datum at 50m intervals

- Survey tracks
- Survey track start
- Survey track stop
- Scheduled monument boundary
- 40m earth resistance grids
- (1b) Initial survey grid
- 8b Subsequent survey grid
- Survey start and traverse direction (zig-zag)

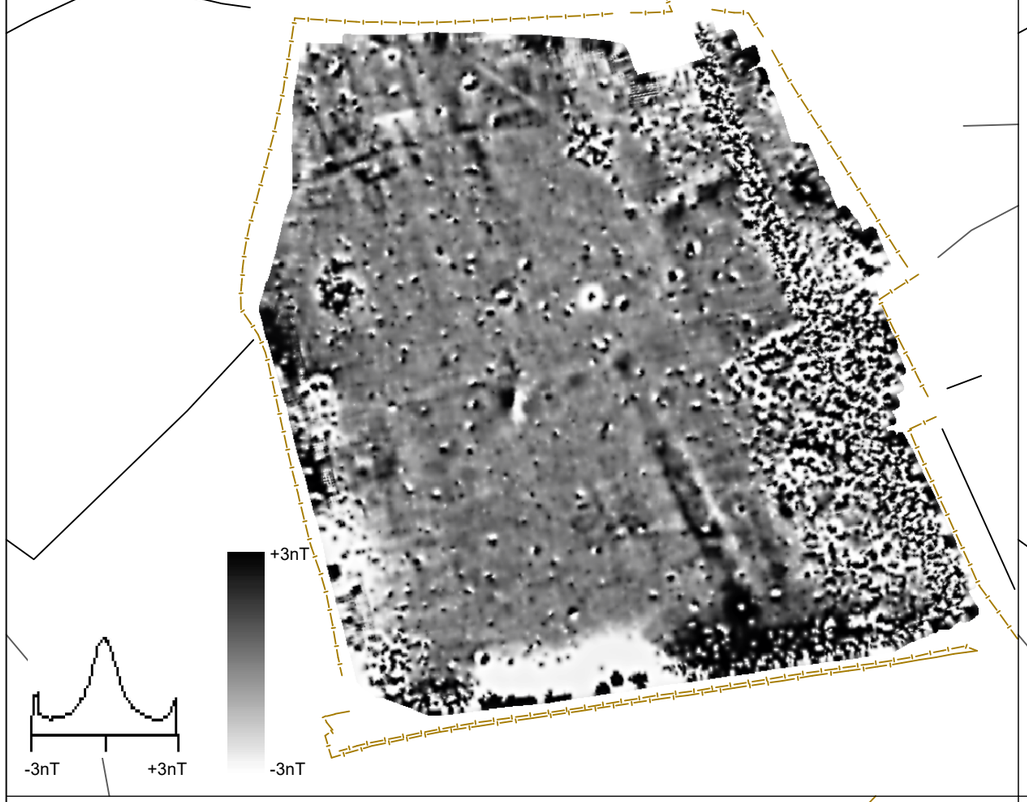
SCALE 1:1000

0m 10 20 30 40 50m

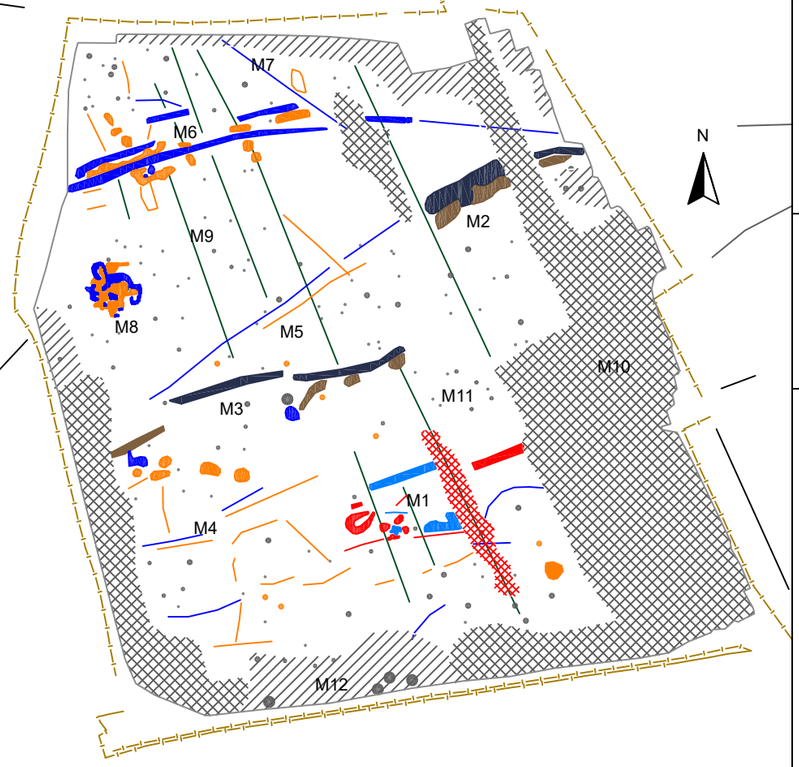
SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 02

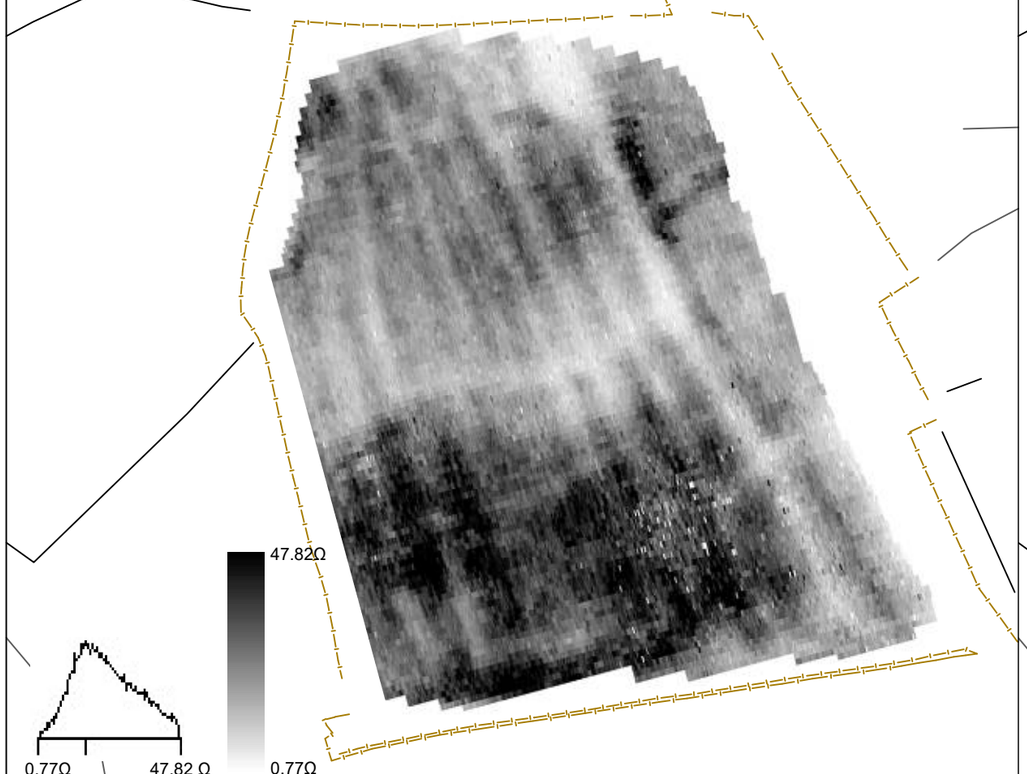
Minimally processed magnetometer data



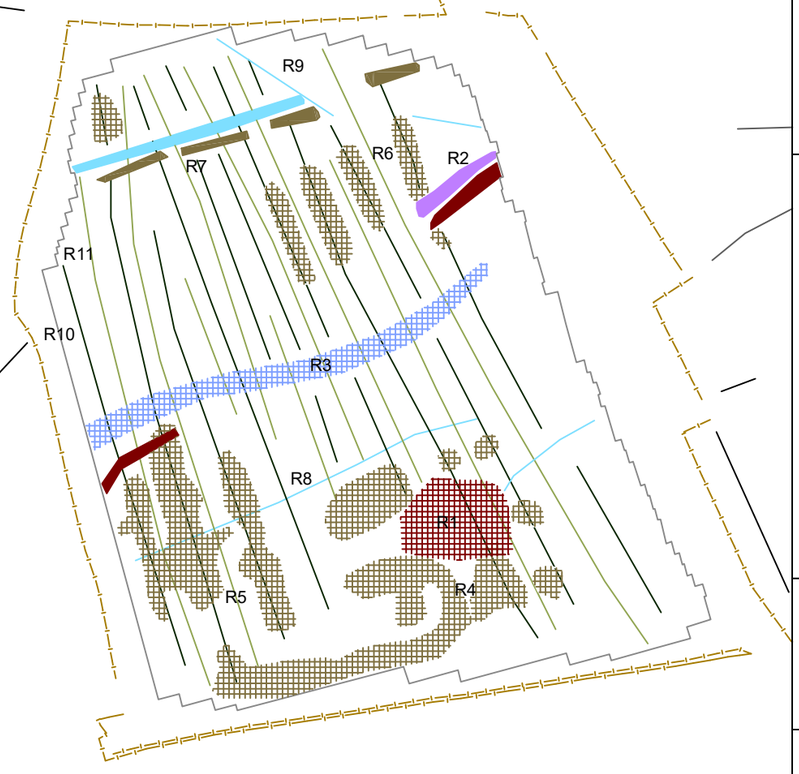
Magnetometry abstraction & interpretation



Minimally processed resistivity data



Resistivity abstraction & interpretation



Archaeological Surveys
Specialist Geophysical Surveyors

Geophysical Survey
Wolston Priory
Wolston
Warwickshire

Greyscale plot of minimally processed geophysical data & abstraction & interpretation of anomalies

- Positive linear anomaly - cut feature of archaeological potential
- Negative linear anomaly - of archaeological potential
- Positive linear anomaly - associated with extant earthwork feature
- Negative linear anomaly - associated with extant earthwork feature
- Positive linear anomaly - possible ditch-like feature
- Negative linear anomaly - material of low magnetic susceptibility
- Linear anomaly - ridge and furrow
- Discrete positive response - cut feature of archaeological potential
- Discrete negative response - of archaeological potential
- Discrete negative response - of uncertain origin
- Discrete positive response - possible pit-like feature
- Positive anomaly - magnetically enhanced material of archaeological potential
- Magnetic debris - spread of magnetically thermoremnant/ferrous material
- Magnetic disturbance from ferrous material
- Strong dipolar anomaly - ferrous object
- High resistance linear anomaly - associated with structural remains
- Low resistance linear anomaly - associated with extant earthwork feature
- High resistance linear anomaly - of associated with extant earthwork feature
- High resistance linear anomaly - of uncertain origin
- Low resistance linear anomaly - of uncertain origin
- High resistance linear anomaly - ridge and furrow (ridge)
- Low resistance linear anomaly - ridge and furrow (furrow)
- Area of variable resistance - possible structural remains or debris
- Area of high resistance - of uncertain origin
- Area of low resistance - associated with extant ditch

SCALE 1:1000

0m 10 20 30 40 50m

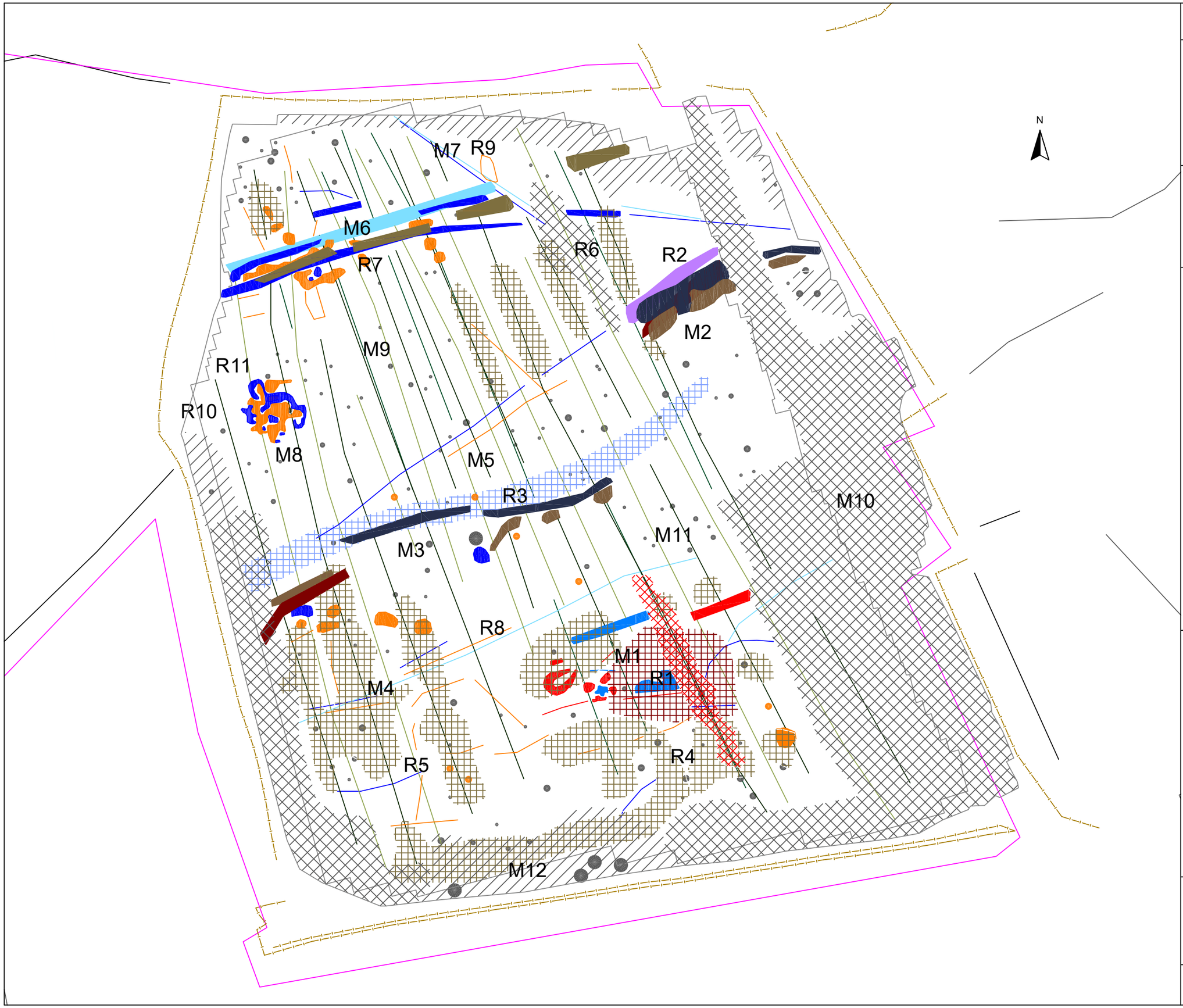
SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 03

Archaeological Surveys
Specialist Geophysical Surveyors

Geophysical Survey
Wolston Priory
Wolston
Warwickshire

Abstraction and interpretation of magnetic and resistance anomalies



- Positive linear anomaly - cut feature of archaeological potential
- Negative linear anomaly - of archaeological potential
- Positive linear anomaly - associated with extant earthwork feature
- Negative linear anomaly - associated with extant earthwork feature
- Positive linear anomaly - possible ditch-like feature
- Negative linear anomaly - material of low magnetic susceptibility
- Linear anomaly - ridge and furrow
- Discrete positive response - cut feature of archaeological potential
- Discrete negative response - of archaeological potential
- Discrete negative response - of uncertain origin
- Discrete positive response - possible pit-like feature
- Positive anomaly - magnetically enhanced material of archaeological potential
- Magnetic debris - spread of magnetically thermoremnant/ferrous material
- Magnetic disturbance from ferrous material
- Strong dipolar anomaly - ferrous object
- High resistance linear anomaly - associated with structural remains
- Low resistance linear anomaly - associated with extant earthwork feature
- High resistance linear anomaly - of associated with extant earthwork feature
- High resistance linear anomaly - of uncertain origin
- Low resistance linear anomaly - of uncertain origin
- High resistance linear anomaly - ridge and furrow (ridge)
- Low resistance linear anomaly - ridge and furrow (furrow)
- Area of variable resistance - possible structural remains or debris
- Area of high resistance - of uncertain origin
- Area of low resistance - associated with extant ditch

SCALE 1:500

0m 5 10 15 20 25m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 04

Archaeological Surveys
Specialist Geophysical Surveyors

Geophysical Survey
Wolston Priory
Wolston
Warwickshire

Digital Terrain Model

Derived from Environment Agency's LiDAR data 1m resolution

Scheduled monument boundary

SCALE 1:1000

0m 10 20 30 40 50m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 05