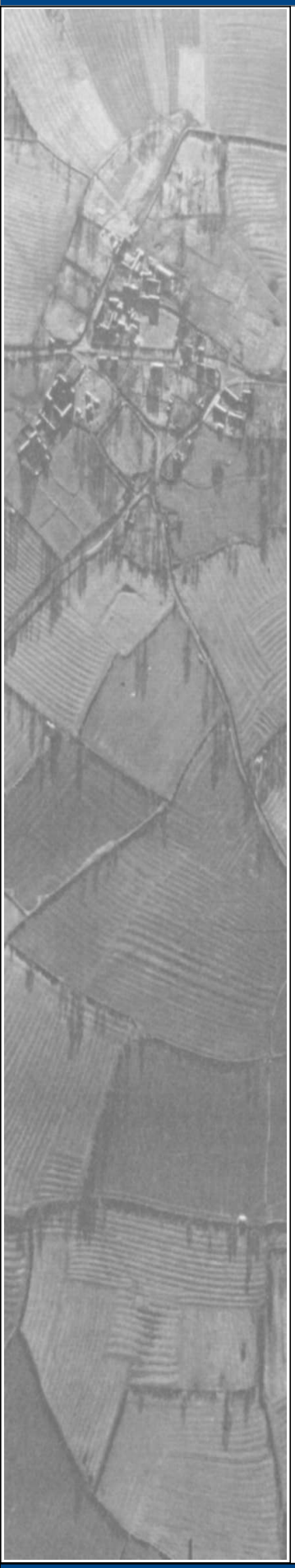

Land South of the Mount
Frome
Somerset

MAGNETOMETER SURVEY REPORT

for

Cotswold Archaeology

Kerry Donaldson & David Sabin

April 2022

Ref. no. J902

ARCHAEOLOGICAL SURVEYS LTD

Land South of the Mount
Frome
Somerset

MAGNETOMETER SURVEY REPORT

for

Cotswold Archaeology

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

Survey dates – 24th January & 11th April 2022
Ordnance Survey Grid Reference – **ST 77850 46475**

Somerset HER PRN: 45453

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SUMMARY

A geophysical survey, comprising detailed magnetometry, was carried out on land to the south of The Mount on the southern edge of Frome in Somerset. The results indicate the presence of a positive curvilinear anomaly near the eastern edge of the survey area, that although only partial, could potentially relate to a small ring ditch feature. A positive linear anomaly has also been located in the south western part of the site and it appears to relate to a former ditch-like feature. Numerous discrete positive responses in the southern and western parts of the site could relate to tree-throw pits. Negative anomalies have been located in the western part of the site and these may relate to the underlying Cornbrash geology although their origin is uncertain.

1 INTRODUCTION

1.1 Survey background

1.1.1 Archaeological Surveys Ltd was commissioned by Cotswold Archaeology to undertake a magnetometer survey of an area of land to the south of The Mount, Keyford, Frome, Somerset. The site has been outlined for a proposed residential development and the survey forms part of an archaeological assessment.

1.1.2 The geophysical survey was carried out in accordance with a Written Scheme of Investigation (WSI) produced by Archaeological Surveys (2022) and approved by Steve Membury, Senior Historic Environment Officer for the South West Heritage Trust, prior to commencing the fieldwork. The survey has relates to Somerset HER PRN: 45453.

1.2 Survey objectives and techniques

1.2.1 The objective of the survey was to use magnetometry to locate geophysical anomalies that may be archaeological in origin so that they may be assessed prior to development of the site. The methodology is considered an efficient and effective approach to archaeological prospection.

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 Archaeological Surveys Ltd is a Registered Organisation with the Chartered Institute for Archaeologists and both company directors are Members of the Chartered Institute for Archaeologists (MCIfA) and have therefore been assessed for their technical competence and ethical suitability and abide by the CIfA Codes of Conduct. 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) (updated 2020) *Standard and Guidance for Archaeological Geophysical Survey.*

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.

1.3.4 Where targeting of anomalies by excavation is to be carried out, care should be taken to place trenches over solid lines or features visible on the abstraction and interpretation plots. Archaeological Surveys abstraction and interpretation avoids the use of dashed or dotted line formats, and broken or fragmented lines used in interpretive plots may well correspond closely with truncation of archaeological features.

1.4 Site location, description and survey conditions

1.4.1 The site is located on the southern edge of Keyford, Frome. It is centred on Ordnance Survey National Grid Reference (OS NGR) ST 77850 46475, see Figs 01 and 02.

1.4.2 The geophysical survey covers approximately 5ha within five land parcels. The site is bounded by the B3092 to the west, and to the north by the new residential development of Dragonfly Close. To the east and south is agricultural land, with Feltham Lane further to the east and Birchill Lane further to the south. Area 1 is an arable field forming the north western part of the site, at the time of survey it contained maize stubble. Area 2 lies to the east of Area 1 and is separated from it by a hedgerow with some wire fencing. It had been grazed by horses prior to the survey but the field margins were

generally overgrown. Areas 3 - 5 are small zones of survey located at the northern end of three separate pasture fields that lie immediately south of Areas 1 and 2. The three areas are separated by hedgerows and at the time of survey contained moderately long grass.

1.4.3 The ground conditions across the site were generally considered to be favourable for the collection of magnetometry data, although sticky soil was encountered in parts of Area 1. Weather conditions during the survey were fine.

Plate 1: Area 1 looking north west

1.5 Site history and archaeological potential

1.5.1 A Historic Environment Desk-Based Assessment has been prepared by Cotswold Archaeology (2021) which outlines that the site does not contain any designated or non-designated heritage assets, although it has not been subject to previous archaeological investigation. The nearest scheduled monuments are the deserted medieval settlement of Tytherington Bridge, c1.5km to the south west and a drying house at the Coach House in the centre of Frome, c1.4km to the north. There are a lack of prehistoric or Romano-British sites in the vicinity, with a single rim sherd of a Samian drinking cup located c160m to the south east. The site is likely to have been within the agricultural hinterland of Frome during the medieval period, with enclosure during the 17th and 18th centuries reflecting the medieval strip fields, or selions. These become amalgamated over time to form the five land parcels seen today. Traces of a field system have also been recorded to the south and south east, and documentary evidence suggests a medieval deer park was located on land to the south west of the B3092.

1.6 Geology and soils

1.6.1 The underlying solid geology across the site is limestone from the Cornbrash Formation (BGS, 2017).

1.6.2 The overlying soil across the survey area is from the Evesham 1 association and is a calcareous pelosol. It consists of a slowly permeable, calcareous, clayey soil associated with shallow, well drained, brashy, calcareous soils over limestone (Soil Survey of England and Wales, 1983).

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

2 METHODOLOGY

2.1 Technical synopsis

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 Equipment configuration, data collection and survey detail

2.2.1 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 measurement range of ±8000nT, although the recorded range is ±3000nT, and resolution is around 0.1nT. They are linked to a Leica GS10 RTK GNSS with data recorded by SENSYS MAGNETO®MXPDA software on a rugged PDA computer system.

2.2.2 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.

2.2.3 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).

2.2.4 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.

2.3 Data processing and presentation

2.3.1 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.

2.3.2 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.

2.3.3 The minimally processed data are collected between limits of ±3000nT and clipped for display at ±10nT. Data are interpolated to a resolution of effectively 0.5m between tracks and 0.15m along each survey track.

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

2.3.5 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 are considered by the manufacturer to be data that are compensated by SENSYS MAGNETO DLMGPS software, see 2.3.1 and 2.3.2. Note: traceplots are not considered to be appropriate as they do not provide an accurate or useful assessment of the magnetic anomalies due to the very high density of data collection. In addition, traceplots cannot be meaningfully plotted against base mapping and in areas of complexity traces may be lost or highly confused. Traceplots may be used to demonstrate characteristic magnetic profiles across discrete features where it is considered beneficial.

2.3.6 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 GNSS, resection method, etc.

2.3.7 An abstraction and interpretation is 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. Appendix E sets out CAD layer names with colour and graphic content for each interpretation category, see 3.3.

2.3.8 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.

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

3 RESULTS

3.1 General assessment of survey results

3.1.1 The detailed magnetic survey was carried out over a total of five survey areas covering approximately 5ha.

3.1.2 Magnetic anomalies located can be generally classified as positive and negative anomalies of an uncertain origin, anomalies associated with land management, linear anomalies of an agricultural origin, areas of magnetic debris and disturbance, strong discrete dipolar anomalies relating to ferrous objects and strong multiple dipolar linear anomalies relating to buried services or pipelines. Anomalies located within each survey area have been numbered and are described in 3.4 below with the results considered as a whole.

3.2 Statement of data quality and factors influencing the interpretation of anomalies

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

3.2.2 Small zones of high magnitude magnetic disturbance are located close to the field boundaries and these are likely to relate modern ferrous objects; they are unlikely to have obscured weak anomalies within the site. High magnitude responses to a steel pipeline within Area 3 - 5 were located and may obscure small discrete anomalies if they are present.

3.2.3 Wide zones around the periphery of Area 2 were unsurveyable due to overgrown field boundaries. The archaeological potential of a curvilinear anomaly near the south western corner of the field cannot be confidently determined as a significant proportion of the feature was overgrown by thorn bushes.

3.2.4 Most of the survey areas demonstrate the presence of magnetic anomalies caused by former cultivation. Area 1 contains a significant number of weak linear anomalies associated with modern cultivation, as well as additional low-level magnetic noise caused by modern ferrous material within the soil and sensor vibration relating to maize stubble.

3.2.5 Anomalies located by the survey generally appear to show good magnetic contrast indicating suitable soil for magnetometry. Similar soil on other sites

has also produced good results.

3.3 Data interpretation

3.3.1 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 general explanation of the characteristics of the magnetic anomalies is set out for each category in order to justify interpretation, see Table 1.

Interpretation category	Description and origin of anomalies
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. Positive anomalies are indicative of magnetically enhanced soils that may form the fill of 'cut' features or may be produced by accumulation within layers or 'earthwork' features; soils subject to burning may also produce positive anomalies. Negative anomalies are produced by material of comparatively low magnetic susceptibility such as stone and subsoil.
Anomalies relating to land management	Anomalies are mainly linear and may be indicative of the magnetically enhanced fill of cut features (i.e. ditches). The anomalies may be long and/or form rectilinear elements and they may relate to topographic features or be visible on early mapping. Associated agricultural anomalies (e.g. headlands, plough marks and former ridge and furrow) may support the interpretation. Land drains can appear in a classic herringbone pattern of interconnected multiple dipolar linear anomalies, or as parallel linear anomalies. The multiple dipolar response indicates ceramic land drains.
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. This category does not include agricultural features of early date or considered to be of archaeological potential (e.g. animal stockades, enclosures, farmsteads, etc).
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. It is also possible that the response may be caused by natural material such as certain gravels and fragments of igneous or metamorphic rock. 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. Buried services may produce characteristic multiple dipolar anomalies dependant upon their construction.

Table 1: List and description of interpretation categories

3.4 List of anomalies

Area centred on OS NGR 377850 146475, see Figs 03 & 04.

Anomalies with an uncertain origin

(1) – Located near the south eastern corner of Area 2 is a positive curvilinear anomaly. It is possible that it forms the western side of a ring ditch feature with a c13m diameter, but as only a small part of the feature can be seen on the edge of the site, its origin cannot be confidently determined.

(2 - 5) – A number of discrete, positive anomalies (2) are located to the north west of anomaly (1) in Area 2. A large group of similar responses (3) can be seen to the south in Area 3. Several other clusters and more isolated discrete anomalies appear elsewhere in the site (4) with a small number of discrete negative responses (5) also. Several have an elongated form and dimensions of c1.5m by 3.5-4m; however, it is not possible to determine if they have an anthropogenic origin or relate to naturally formed features, such as tree throw pits.

(6) - A positive linear anomaly within Area 3 may indicate a former ditch-like feature. It is unclear whether the anomaly is related to a possible drainage feature or whether it has archaeological potential.

(7) – A linear group of negative linear and discrete responses appear to form a segmented feature extending through the south eastern part of Area 1 into Area 3 where it is a weakly positive response. It is not clear what the anomalies relate to as such anomalies could be a response to a back-filled ditch or material upcast from a ditch, or perhaps where a modern pipe has been taken out, although it has a broadly linear form, it is sinuous and this could infer a natural origin.

(8) – A negative linear and curvilinear response is situated in the northern part of Area 1. The linear anomaly is oriented parallel with the former ridge and furrow; however, it has an eastern extension at the northern end and a curvilinear response also to the east. It is not clear what has formed the anomaly, but a negative response would could indicate stone.

Anomalies associated with land management

(9) – A number of formerly mapped field boundaries can be seen in the western part of the site.

Anomalies with an agricultural origin

(10) – Linear anomalies associated with former ridge and furrow.

(11) – Linear anomalies, orthogonal to the ridge and furrow in Area 2 indicate a later episode of cultivation.

Anomalies associated with magnetic debris

(12) – Small patches of magnetic debris at the edges of Area 2 relate to modern dumping and ground make-up.

(13) – Strong, discrete, dipolar anomalies are a response to ferrous and other magnetically thermoremnant objects within the topsoil.

Anomalies with a modern origin

(14) – A strong, multiple dipolar, linear anomaly relates to a water pipe in the southern part of the site.

4 CONCLUSION

4.1.1 The geophysical survey has located a positive curvilinear anomaly at the eastern edge of the survey area. It is possible that the anomaly relates to a ring ditch feature with a 13m diameter and an archaeological origin should be considered. A positive linear anomaly has also been located in the south western part of the site and although it may relate to a cut, ditch-like feature, its origin and date are uncertain. Within much of the eastern and southern parts of the site there are numerous discrete positive responses which appear to relate to pit-like features. While such features could be anthropogenic in origin, the lack of a coherent pattern and number may indicate that they relate to former tree throw pits. Negative responses in the western part of the site appear to relate to a segmented, sinuous, linear feature; negative anomalies may indicate a response to the underlying Cornbrash geology, although it is not possible to determine if the anomalies are anthropogenic or natural in origin.

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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 – 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 C – survey and data information

Filename: J902-mag-Area1-proc.xcp
Instrument Type: Sensys DLMGPS
Units:
UTM Zone: 30U
Survey corner coordinates (X/Y):OSGB36
Northwest corner: 377732.31, 146581.67 m
Southeast corner: 377870.76, 146381.72 m
Collection Method: Randomised
Sensors: 5
Dummy Value: 32702
Dimensions
Survey Size (meters): 138 m x 200 m
X&Y Interval: 0.15 m
Source GPS Points: Active: 513300, Recorded: 513300
Stats
Max: 5.53
Min: -5.50
Std Dev: 2.55
Mean: 0.03
Median: 0.05
Composite Area: 2.7683 ha
Surveyed Area: 1.741 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 -10.00 to 10.00

Area 2
Filename: J902-mag-Area2-proc.xcp
Northwest corner: 377789.30, 146638.02 m
Southeast corner: 377954.75, 146464.77 m
Dimensions
Survey Size (meters): 165 m x 173 m
X&Y Interval: 0.15 m
Source GPS Points: Active: 444991, Recorded: 444991
Stats
Max: 11.05
Min: -11.00
Std Dev: 3.52
Mean: 0.13
Median: 0.05
Composite Area: 2.8664 ha
Surveyed Area: 1.6624 ha
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to UTM).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00

Filename: J902-mag-Area3-proc.xcp
Northwest corner: 377773.48, 146427.75 m
Southeast corner: 377887.48, 146326.80 m
Dimensions
Survey Size (meters): 114 m x 101 m
X&Y Interval: 0.15 m
Source GPS Points: Active: 162359, Recorded: 162359
Stats
Max: 11.05
Min: -11.00
Std Dev: 3.58
Mean: 0.14
Median: 0.01
Composite Area: 1.1508 ha
Surveyed Area: 0.6093 ha
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to UTM).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to UTM).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00

Filename: J902-mag-Area4-proc.xcp
Northwest corner: 377857.58, 146454.77 m
Southeast corner: 377928.83, 146383.07 m
Dimensions
Survey Size (meters): 71.3 m x 71.7 m
X&Y Interval: 0.15 m
Source GPS Points: Active: 75800, Recorded: 75800
Stats
Max: 11.05
Min: -11.00
Std Dev: 4.17
Mean: -0.09
Median: 0.07
Composite Area: 0.51086 ha
Surveyed Area: 0.2809 ha

GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to UTM).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00

Filename: J902-mag-Area5-proc.xcp
Northwest corner: 377891.76, 146512.28 m
Southeast corner: 377984.01, 146430.23 m
Dimensions
Survey Size (meters): 92.3 m x 82.1 m
X&Y Interval: 0.15 m
Source GPS Points: Active: 97500, Recorded: 97500
Stats
Max: 11.05
Min: -11.00
Std Dev: 4.18
Mean: 0.05
Median: 0.03
Composite Area: 0.75691 ha
Surveyed Area: 0.3839 ha
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to UTM).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00

Appendix D – 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 PDF copy will be supplied to the Somerset Historic Environment Record with greyscale images and abstraction layers made available on request. The report will also be uploaded to the Online AccesS to the Index of archaeological investigationS (OASIS).

Archive contents:

File type	Naming scheme	Description
Data	J902-mag-**[area number/name]**.asc J902-mag-**[area number/name]**.xcp J902-mag-**[area number/name]**-proc.xcp	Raw data as ASCII CSV TerraSurveyor raw data TerraSurveyor minimally processed data
Graphics	J902-mag-**[area number/name]**-proc.tif	Image in TIF format
Drawing	J902-**[version number]**.dwg	CAD file in 2018 dwg format
Report	J902 report.odt	Report text in LibreOffice odt format

Table 2: Archive metadata

Appendix E – 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 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 MAG POS UNCERTAIN		255,127,0	Polygon (cross hatched ANSI37)
Anomalies relating to land management			
AS-ABST MAG BOUNDARY		127,0,0	Line, polyline or polygon (solid or cross hatched ANSI37)
Anomalies with an agricultural origin			
AS-ABST MAG AGRICULTURAL		Green 0,255,0	Line or polyline
AS-ABST MAG RIDGE AND FURROW		0,127,63	Line, polyline or polygon (cross hatched ANSI37)
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)
AS-ABST MAG SERVICE		132, 132, 132	Line or polyline

Table 3: CAD layering

Appendix F – copyright and intellectual property

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Archaeological Surveys
Specialist Geophysical Surveyors

Geophysical Survey
Land South of The Mount
Frome
Somerset

Map of survey area

● Survey location

Site centred on OS NGR
ST 77850 46475

SCALE 1:25 000

0m 500m 1000m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 01

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Referencing information

Referencing grid to OSGB36 datum at 50m intervals

377850 146450

Survey tracks

Survey track start

Survey track stop

Development boundary

SCALE 1:1250

0m 10 20 30 40 50m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 02

377650 377700 377750 377800 377850 377900 377950 378000

146600 146550 146500 146450 146400 146350

N

Area 1 Area 2 Area 3 Area 4 Area 5

B 3092

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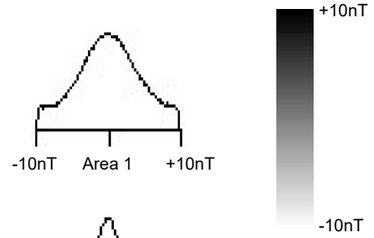
Greyscale plot of minimally processed magnetometer data



SCALE 1:1250

0m 10 20 30 40 50m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 03

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Abstraction and interpretation of magnetic anomalies

Area 1

Area 2

Area 3

Area 4

Area 5

B 3092

N

- Positive linear anomaly - possible ditch-like feature
- Linear anomaly - of agricultural origin
- Linear anomaly - ridge and furrow
- Positive linear anomaly - former field boundary
- Negative linear anomaly - material of low magnetic susceptibility
- Discrete positive response - possible pit-like feature
- Discrete negative response - material of low magnetic susceptibility
- Positive anomaly - magnetically enhanced material
- Magnetic debris - spread of magnetically thermoremnant/ferrous material
- Magnetic disturbance from ferrous material
- Strong multiple dipolar linear anomaly - pipeline / cable / service
- Strong dipolar anomaly - ferrous object

SCALE 1:1250

0m 10 20 30 40 50m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 04