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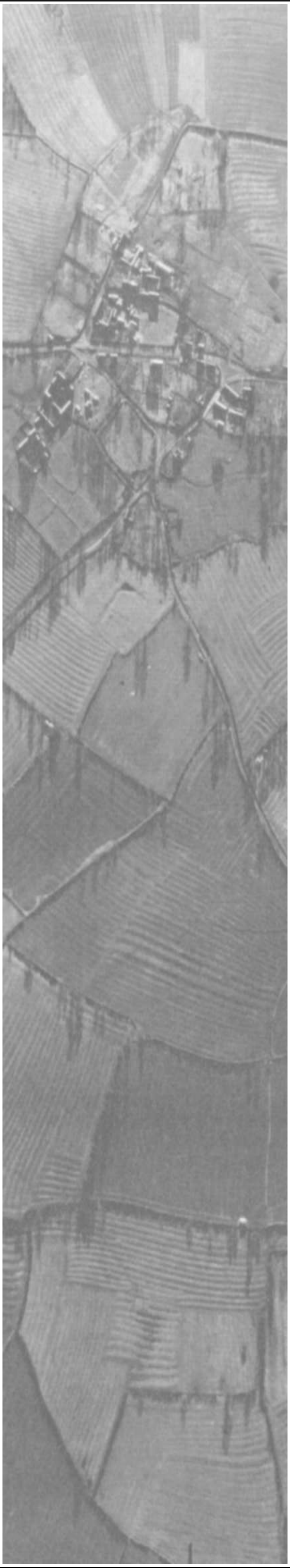
Specialist Geophysical Surveyors



Phase 3 – Potters Wood
Land south of Edmondsham Road
Verwood
Dorset

MAGNETOMETER SURVEY REPORT

for

Landgage Heritage

Kerry Donaldson & David Sabin

May 2022

Ref. no. J919

ARCHAEOLOGICAL SURVEYS LTD

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Land south of Edmondsham Road
Verwood
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MAGNETOMETER SURVEY REPORT

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

Survey date – 11th May 2022
Ordnance Survey Grid Reference – **SU 08090 09490**

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SUMMARY

Detailed magnetometry was carried out by Archaeological Surveys Ltd ahead of a residential development at Verwood in Dorset. The results indicate the presence of a number of anomalies including an L-shaped positive linear anomaly that could relate to a cut feature. Other narrow, positive linear and discrete anomalies could also relate to cut features, but they generally lack a coherent morphology. A broad, negative response appears to relate to an agricultural headland or boundary ditch.

1 INTRODUCTION

1.1 Survey background

1.1.1 Archaeological Surveys Ltd was commissioned by Landgage Heritage, on behalf of Pennyfarthing Homes, to undertake a magnetometer survey of an area of land to the south west of the new development of Potters Wood, south of Edmondsham Road and north west of Eastworth Road on the northern edge of Verwood in Dorset. The site has been outlined as Phase 3 of the Potters Wood development and the survey forms part of an archaeological assessment.

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 to the north west of Eastworth Road and south west of the Potters Wood development to the south of Edmondsham Road on the north western edge of Verwood, Dorset. It is centred on Ordnance Survey National Grid Reference (OS NGR) SU 08090 09490, see Figs 01 and 02.

1.4.2 The geophysical survey covers approximately 1.5ha of pasture, grazed by horses at the time of survey. The southern part of the site is a flat plateau at around 49m AOD, with a number of mature trees marking a former boundary at the edge of a slope as the land drops to the north west to 44m AOD at the north western edge of the site.

1.4.3 The ground conditions across the site were generally considered to be favourable for the collection of magnetometry data. The field margins were overgrown by trees and scrubby vegetation which impeded survey in places. Weather conditions during the survey were variable with periods of heavy rain.

Plate 1: Survey area looking north

1.5 Site history and archaeological potential

1.5.1 A Historic Environment Desk-Based Assessment (Landgage Heritage, 2021) outlines that there are no designated or undesignated heritage assets within the site, but that is has not been subject to any previous archaeological investigation. A geophysical survey on land to the north east located magnetic debris which could be associated with a kiln, and although subsequent evaluation recorded a number of features, including clay extraction pits dating to the medieval and post medieval periods, no evidence of a kiln structure was located. A number of undated linear ditches were located immediately to the north east of the site. The 1847 tithe map shows a number of boundaries in the southern part of the site, with only the partial remains of the most eastern boundary surviving as a number of extant mature trees. The 1901 Ordnance Survey map shows this boundary with the southern part of the site containing mixed woodland, the majority of which was removed during the 20th century.

1.6 Geology and soils

1.6.1 The underlying geology is Broadstone Sand Member – Sand (BGS, 2017).

1.6.2 The overlying soil across the site is from the Shirrell Heath 1 association and is a humo-ferric podzol. It consists of a well drained, very acid, sandy soil (Soil Survey of England and Wales, 1983). Observations of the soils on site were of a fine grey sandy soil on the higher land to the south east and a brown loam on land to the north west. A patch of damp more clayey soil associated with rushes was noted in the north western part of the field.

1.6.3 The underlying geology and soils are frequently associated with low magnetic contrast and low levels of magnetic susceptibility. However, cut features of archaeological potential may be located where human activity has altered the magnetic characteristics of the soil sufficiently. The underlying geology and soils are, therefore, considered acceptable 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 ±3nT. Data are interpolated to a resolution of effectively 0.5m between tracks and 0.15m along each survey track.

2.3.4 Additional data processing has been carried out in the form of high pass filtering which has been clipped for display at ±2nT. This effectively removes low frequency variation along a traverse that has been caused by large magnetic bodies, cultivation or rapid temperature change. Data treated to additional processing have been compared to unprocessed data to ensure that no significant anomalies have been removed.

2.3.5 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.

2.3.6 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.

2.3.7 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.

2.3.8 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.

2.3.9 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 the survey area.

2.3.10 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 approximately 1.5ha.

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 disturbance and strong discrete dipolar anomalies relating to ferrous objects. Anomalies located within each survey area have been numbered and are described in 3.4 below.

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. Unsurveyed zones within the site relate to rough vegetation and trees.

3.2.2 The magnetic data have provided evidence of magnetic anomalies, particularly in the northern part of the site. The magnetic contrast appears to be weak and this is likely to relate to low magnetic susceptibility within the soil. In addition, almost no anomalies were located on the grey sandy soil in the southern part of the site. Although the site is mapped under a single soil association, Shirrel Heath 1 which is a humo-ferric podsol, site observations indicated clear differences between the soil colour of the more elevated southern part of the site, which was grey to dark grey, compared to the abrupt change to brown soil on the sloping land forming the northern part of the site. The brown soil also appeared more loamy and clayey particularly towards the north western corner.

3.2.3 Mass specific magnetic susceptibility measurement was carried out on two soil samples in order to assess whether there were significant differences associated with the differing soil colour and texture across the site. The measurement was also considered useful in understanding whether the darker sandy soil was as a result of the incorporation of burnt material e.g. ash, or whether it was more likely to have been caused by increased carbon relating to ancient humic material. The measurement was carried out in support of the magnetometry and was not an objective of the survey. The magnetic susceptibility of the samples was measured at low frequency (lf) and high frequency (hf) using a Bartington MS2 meter with MS2B sensor. The dark grey topsoil produced a low frequency average value (X_{lf}) of 2.7 $10^{-8}m^3kg^{-1}$; the brown topsoil an average value of 10.0 $10^{-8}m^3kg^{-1}$. The high frequency average value (X_{hf}) of the samples was slightly lower and not considered significant. The values were derived from subsamples but only represents two points within the site; no subsoil or solid geology samples could be obtained.

3.2.4 The mass specific magnetic susceptibility measurements are useful although may not be representative of the whole site. The values obtained from the darker soil are extremely low and probably relate to leaching of iron due to high acidity, they also indicate that it is unlikely that the dark colour relates to the incorporation of burnt material and that it is much more likely that this is accumulated humic remnants high in carbon. It should also be considered that the very low values may be associated with very poor conditions for the formation of magnetic anomalies. The brown soil demonstrates significantly higher values of magnetic susceptibility similar to or slightly higher than many clay loam and chalk soils. The brown colour may well indicate increased iron content possibly from illuviation. The values obtained could be more consistent with the formation of useful magnetic anomalies although confidence is limited by a lack of data from the subsoil/geology.

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	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	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 408090 09490, see Figs 03 – 05.

Anomalies with an uncertain origin

(1) – An L-shaped positive linear anomaly is located in the northern part of the survey area. The anomaly indicates a response to a cut feature; however, anomalies (2), (4) and (9) all appear to extend towards it and its date and function are uncertain.

(2) – A weakly positive, narrow linear anomaly appears to extend towards anomaly (1). It is possible that it is associated with agricultural activity, although gullies and ditches on a similar orientation were located on land immediately to the north east during evaluation, and it is possible that the anomaly relates to a similar feature. Two parallel linear anomalies are situated 20m to the south east and could also be associated.

(3) – A broad, negative band extends across the centre of the survey area, parallel with the north western and south eastern boundaries. It is situated at the base of a slope and could relate to a former headland or unmapped boundary feature.

(4) – A positive and negative anomaly appear to extend towards the junction of the two axis seen in the L-shaped anomaly (1). It is not clear if they are associated, such responses could relate to former ridge and furrow. Two weakly positive responses can be seen to the north and could be associated.

(5 & 6) – A group of positive curvilinear and discrete responses (5) can be seen at the western edge of the survey area immediately north of anomaly (3). A similar group, surrounding a negative response is located close to the eastern edge of the survey area on the top of the slope to the south of (3).

(7) – Fragmented, weakly positive linear anomalies are located in the central part of the survey area. They are situated on the top of the slope and are partially, but not fully parallel with the north western and south eastern field boundaries or the agricultural anomalies to the south.

(8) – The survey area contains a small number of discrete positive responses. Those in the south are very weak (<1nT) and could be associated with tree removal in the 20th century, those in the north are generally stronger (10-15nT), which could indicate an association with burnt material.

Anomalies associated with land management

(9) – A weakly positive, multiple dipolar, linear anomaly is located in the northern part of the survey area. It appears to extend towards anomaly (1), which could

suggest an association. The anomaly indicates a response to a ceramic land drain.

Anomalies with an agricultural origin

(10) – A series of parallel linear anomalies can be seen in the northern part of the site extending towards anomaly (3) and parallel with the south western field boundary. To the south the anomalies are oriented parallel with the south eastern field boundary. They relate to former agricultural activity.

Anomalies associated with magnetic debris

(11) – Strong, discrete, dipolar anomalies are responses to ferrous and other magnetically thermoremnant objects, such as brick/tile in the topsoil.

Anomalies with a modern origin

(12) – Magnetic disturbance from ferrous fencing along the north eastern edge of the site.

4 CONCLUSION

4.1.1 The geophysical survey located a number of anomalies, mainly within the northern part of the site. These include an L-shaped positive linear anomaly, that could relate to a cut feature and a broad negative response that could relate to an agricultural headland or boundary feature. Other linear and discrete anomalies could relate to cut features, but they are either fragmented or lack a coherent morphology.

5 REFERENCES

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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.

High Pass Filter

Removes low frequency anomalies within the data that are not considered to be archaeologically significant and may be natural in origin. A window passes over the data, the mean of all the data within the window is subtracted from the centre value. The size of the window is adjusted as is the weighting which may be uniform or Gaussian. The process is used to improve the visibility of anomalies of interest.

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: J919-mag.xcp
Description: Imported as Composite from: J919-mag.asc
Instrument Type: Sensys DLMGPS
Units:
UTM Zone: 30U
Survey corner coordinates (X/Y):
Northwest corner: 408008.150905567, 109578.854428672 m
Southeast corner: 408177.500905567, 109409.054428672 m
Direction of 1st Traverse: 90 deg
Collection Method: Parallel
Sensors: 1
Dummy Value: 32702

Dimensions
Survey Size (meters): 169 m x 170 m
X&Y Interval: 0.15 m
Source GPS Points: Active: 380198, Recorded: 380198

Stats
Max: 3.32
Min: -3.30
Std Dev: 0.95
Mean: 0.02
Median: -0.01

Composite Area: 2.8756 ha
Surveyed Area: 1.3858 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

Stats
Max: 2.21
Min: -2.20
Std Dev: 0.67
Mean: 0.01
Median: 0.01
GPS based Proce6
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to UTM).
3 DeStripe Median Traverse:
4 High pass Uniform (median) filter: Window dia: 200
5 Lo pass Uniform (median) filter: Window dia: 13
6 Clip from -2.00 to 2.00

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 Dorset 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	J919-mag-**[area number/name]**.asc J919-mag-**[area number/name]**.xcp J919-mag-**[area number/name]**-proc.xcp	Raw data as ASCII CSV TerraSurveyor raw data TerraSurveyor minimally processed data
Graphics	J919-mag-**[area number/name]**-proc.tif	Image in TIF format
Drawing	J919-**[version number]**.dwg	CAD file in 2018 dwg format
Report	J919 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 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)
AS-ABST MAG NEG UNCERTAIN		Blue 0,0,255	Polygon (cross hatched ANSI37)
Anomalies relating to land management			
AS-ABST MAG LAND DRAIN		Cyan 0,255,255	Line or polyline
Anomalies with an agricultural origin			
AS-ABST MAG AGRICULTURAL		Green 0,255,0	Line or polyline
Anomalies associated with magnetic debris			
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 F – copyright and intellectual property

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Survey location

N

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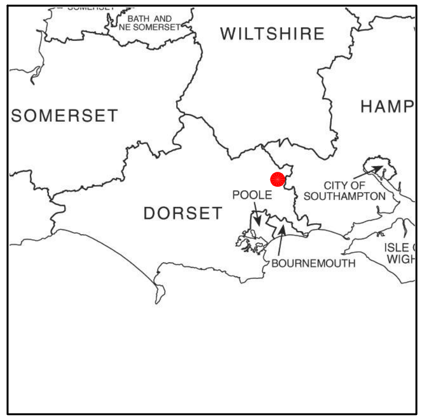
Verwood, Dorset

Map of survey area



Survey location

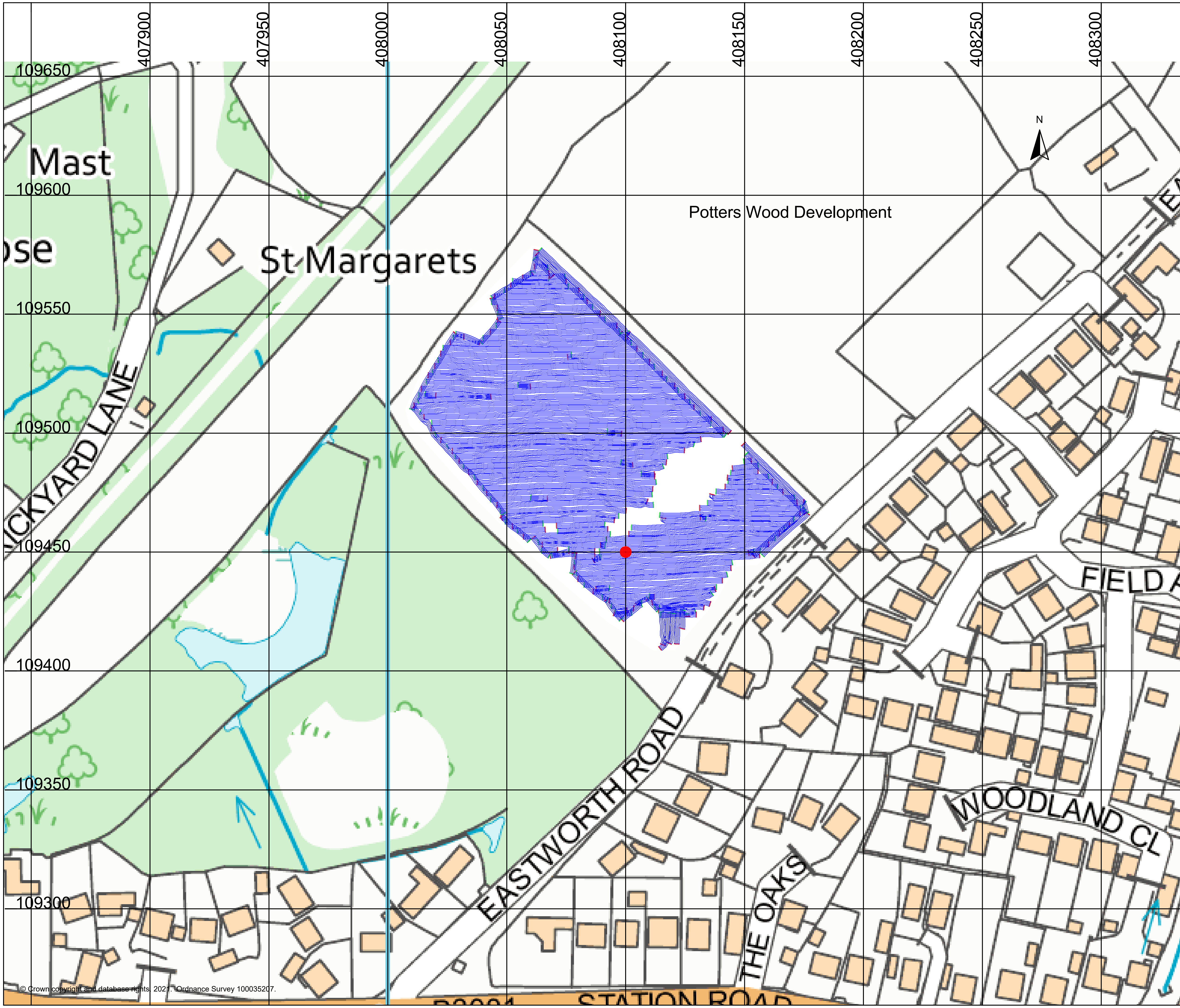
Site centred on OS NGR
SU 08090 09490

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

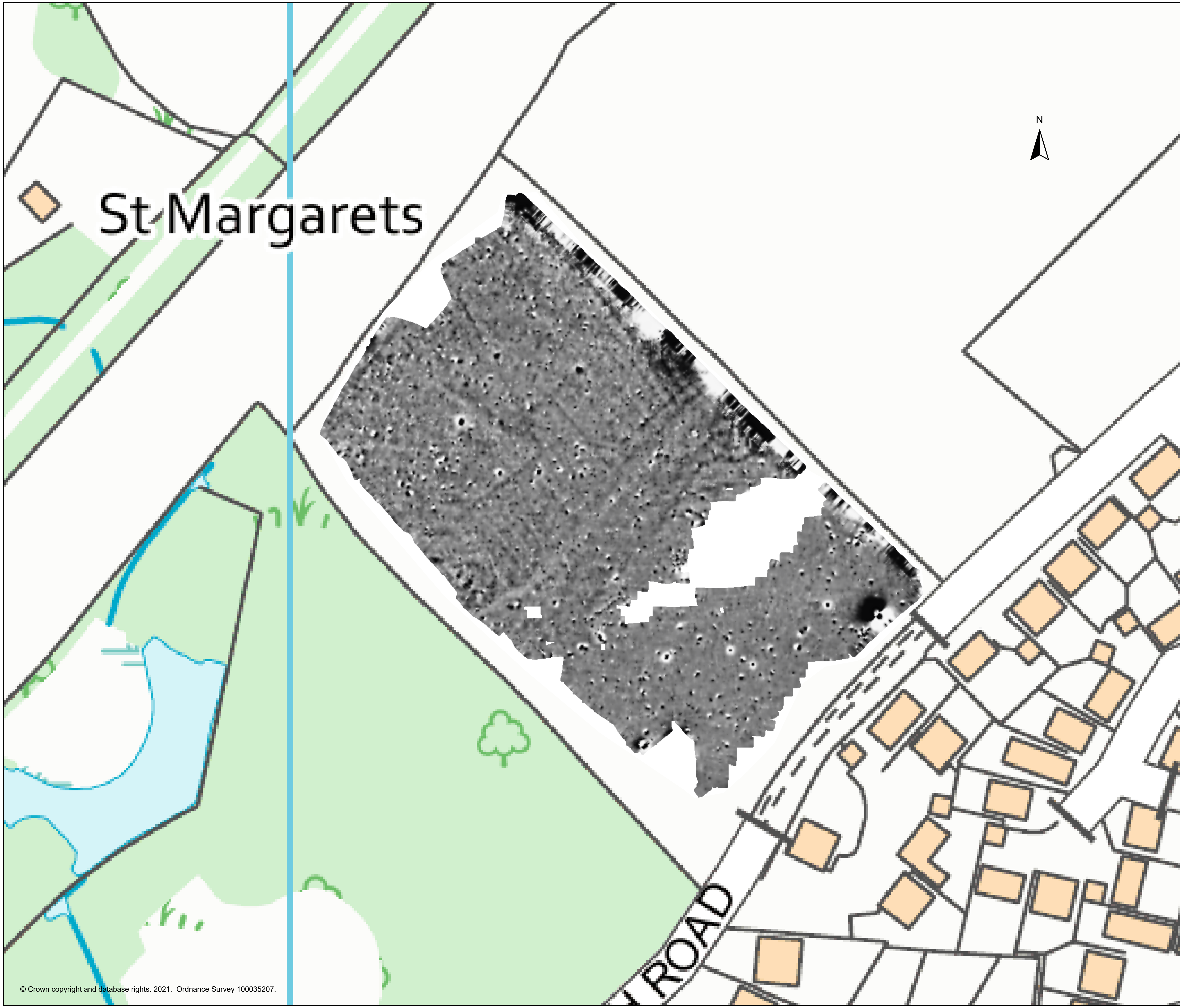
- 408100 109450
- Survey tracks
- Survey track start
- Survey track stop

SCALE 1:1500

0m 10 20 30 40 50m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 02



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Greyscale plot of minimally processed magnetometer data

SCALE 1:1000

0m 10 20 30 40 50m

SCALE TRUE AT A3

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KTD	DJS	FIG 03

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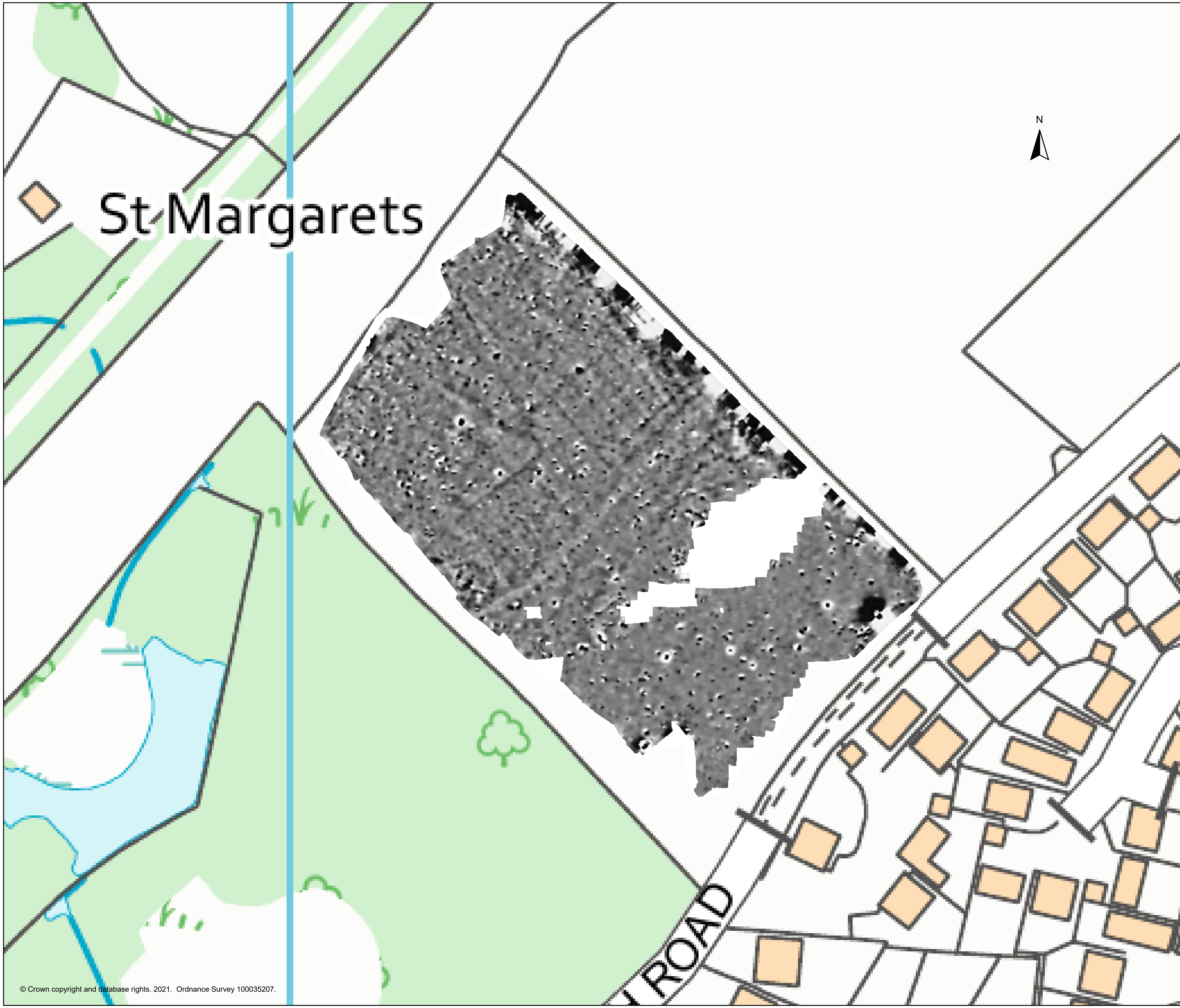
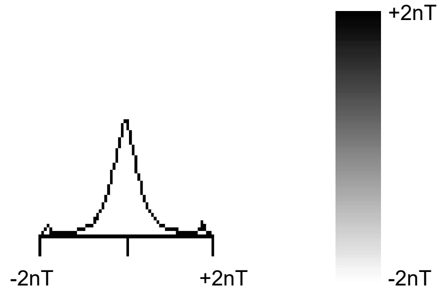


Greyscale plot of
filtered magnetometer data



SCALE 1:1000

0m 10 20 30 40 50m

SCALE TRUE AT A3

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KTD	DJS	FIG 04

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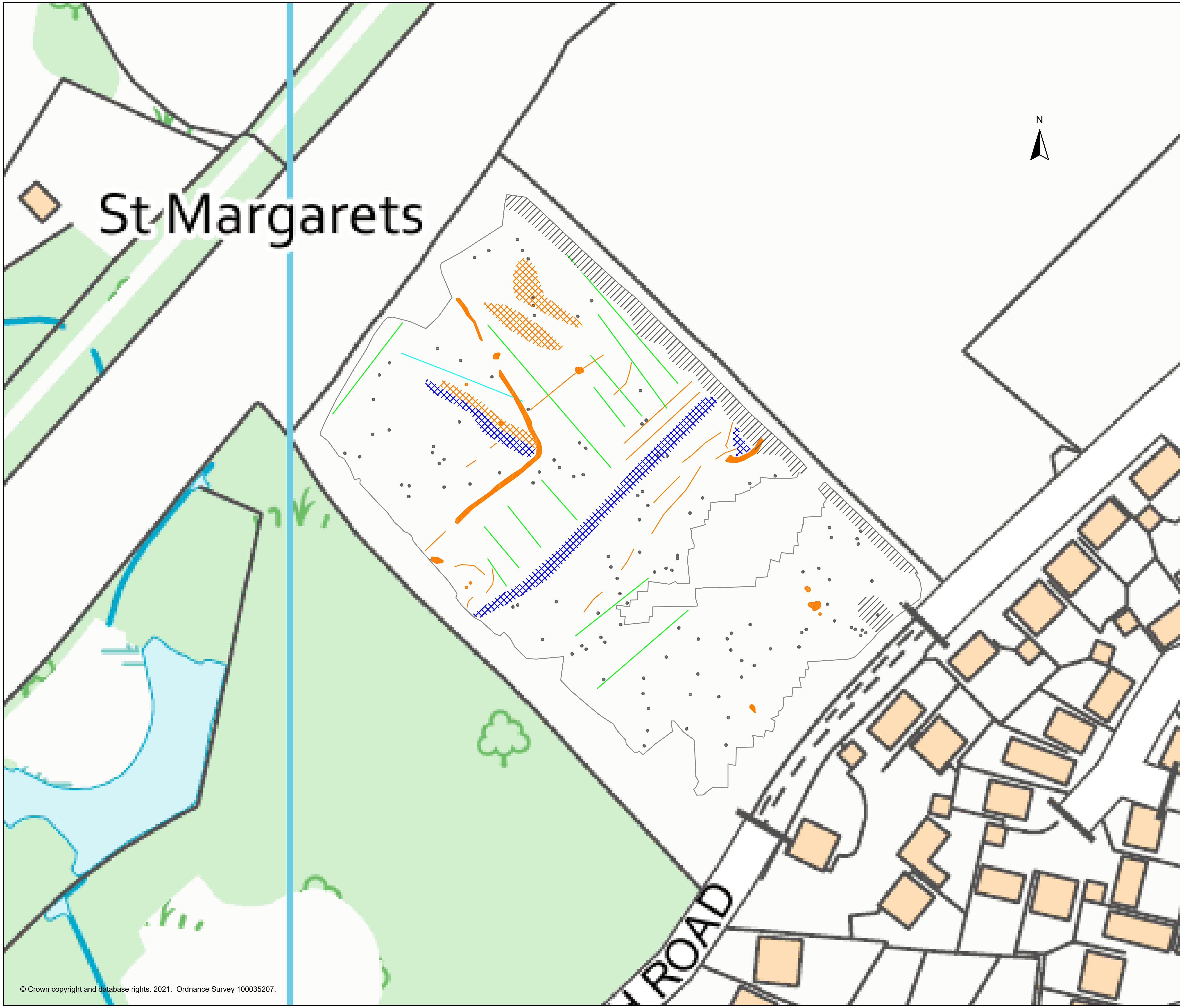

Abstraction and interpretation of magnetic anomalies

- Positive linear anomaly - possible ditch-like feature
- Linear anomaly - of agricultural origin
- Weak multiple dipolar linear anomaly - possible land drain
- Discrete positive response - possible pit-like feature
- Positive anomaly - magnetically enhanced material
- Negative anomaly - material of low magnetic susceptibility
- Magnetic disturbance from ferrous material
- Strong dipolar anomaly - ferrous object

SCALE 1:1000

0m 10 20 30 40 50m

SCALE TRUE AT A3

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KTD	DJS	FIG 05