

**Land at Parkfields
Devizes
Wiltshire**

MAGNETOMETER SURVEY REPORT

for

Tetra Tech

Kerry Donaldson & David Sabin

July 2021

Ref. no. J870

ARCHAEOLOGICAL SURVEYS LTD

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Devizes
Wiltshire**

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Primary archive location - Archaeological Surveys Ltd, Yatesbury, Wiltshire

Survey date – 28th June 2021

Ordnance Survey Grid Reference – **SU 01315 62160**



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SUMMARY

A geophysical survey, comprising detailed magnetometry, was conducted by Archaeological Surveys Ltd within a small area of land at Devizes, Wiltshire, ahead of a potential residential development. A number of geophysical anomalies were located in the south eastern part of the survey area which could be associated with a formerly mapped building and its surrounding environs. Positive linear anomalies in the northern part of the site could be associated with formerly mapped boundary features, but this is not certain. A small number of positive linear and discrete responses have been located in the northern part of the site, but they lack a coherent morphology which prevents confident interpretation as former cut features. Modern magnetic debris and disturbance has also been encountered, including a number of buried services.

1 INTRODUCTION

1.1 *Survey background*

- 1.1.1 Archaeological Surveys Ltd was commissioned by Tetra Tech to undertake a magnetometer survey of an area of land at Parkfields, Devizes, Wiltshire. The site has been outlined for a proposed residential development for up to 57 dwellings (Wiltshire planning application no. 21/02477/OUT) 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 (2021) and issued to Wiltshire Council prior to commencing the survey.

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 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*.

- 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 lies north of Quakers Road and south of Parkfields in Devizes. It is centred on Ordnance Survey National Grid Reference (OS NGR) SU 01315 62160, see Figs 01 and 02.
- 1.4.2 The geophysical survey covers approximately 1.4ha of grassland that had been previously used as the sports ground for the police headquarters to the south. The site had been left unmanaged for a period and required mowing prior to survey. An earthwork bank extends east to west within the central part of the site and this contains a number of mature trees. Included within the site, but not surveyable, are former tennis courts in the south west, as well as three small areas of grass that form roundabouts or islands and are part of the residential road system.
- 1.4.3 The ground conditions across the site were generally considered to be favourable for the collection of magnetometry data. Weather conditions during the survey were overcast with light rain.

1.5 *Site history and archaeological potential*

- 1.5.1 An Archaeological and Heritage Desk-Based Assessment has been produced by Tetra Tech (2021). It outlines that the site contains a linear earthwork, which is recorded on mapping from the 19th and 20th centuries and which could relate to part of the park pale of Roundway Park. Archaeological evaluation ahead of development to the east identified Mesolithic and Neolithic worked flints, Bronze Age pottery and a number of ditches, with at least one being post medieval in date. The site lies between the locations of the civil war siege of Devizes to the south and the Battle of Roundway Down (1643) to the north and there is potential for some military activity within the surrounding area.
- 1.5.2 The 1840 tithe map shows the earthwork as a linear boundary, with a second boundary extending towards it from the south. In the northern part of the site curving dashed lines appear to indicate former boundaries that may flank a track. In the south eastern part of the site a rectangular building and two small square structures are also recorded on the tithe map. Immediately to the south of the site an area of ridge and furrow is recorded on the Historic Environment Record.

1.6 *Geology and soils*

- 1.6.1 The underlying solid geology across the site is from the Upper Greensand Formation (BGS, 2017).
- 1.6.2 The overlying soil across the survey area is from the Ardington association and is a typical argillic brown earth. It consists of a deep, well drained, fine and coarse loamy glauconitic soil (Soil Survey of England and Wales, 1983).
- 1.6.3 Magnetometry survey carried out across similar soils has produced variable results as they are often 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 thermoremanence (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 ± 8000 nT, although the recorded range is ± 3000 nT, 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 <60s.

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 $\pm 3000\text{nT}$ and clipped for display at $\pm 3\text{nT}$ and $\pm 50\text{nT}$ with high values in red and low values in blue. 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 the 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 1.4ha within a single land parcel.
- 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.

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 The data indicate the presence of magnetic debris close to the periphery of the survey area and other patches within the site. This relates to ferrous material, probably of relatively modern origin, within patches of made ground and areas of burning and dumping, some may relate to the use of the site as a sports ground. Small zones of high magnitude anomalies associated with this debris have the potential to obscure other weak anomalies.

3.2.3 The Upper Greensand Formation can be associated with low levels of magnetic susceptibility and poor magnetic contrast. However, the survey has located linear anomalies likely to be associated with former cut features and ridge and furrow type cultivation, which may infer that topsoil from at least the medieval period is capable of producing useful magnetic contrast when filling former ditch-like features.

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 <u>there is not enough evidence to confidently suggest an origin</u> . Anomalies in this category <u>may well be related to archaeologically significant features, but equally relatively modern features, geological/pedological features and agricultural features should be considered</u> . 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 <u>does not include</u> 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 <u>may, therefore, be archaeologically significant</u> . 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.
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Table 1: List and description of interpretation categories

3.4 List of anomalies

Area centred on OS NGR 401315 162160, see Figs 03 – 05.

Anomalies with an uncertain origin

(1) – A group of positive and negative responses can be seen in the south eastern corner of the site. The tithe map shows a rectangular building in this area along with two small square structures in the 1840s, and it is likely that the responses, and some of the adjacent magnetic debris, are associated with the building and its surrounding environs.

(2 & 3) – In the northern part of the site are two positive curvilinear responses. Anomaly (2) is fragmented, broader and stronger than (3), and while it is possible that there is some association between (2) and the negative linear anomaly (5) to the south west, it is possible that (2) and (3) relate to the formerly mapped curving boundary features recorded on the tithe map.

(4) – A positive response is located in the northern part of the site. It appears to be part the matrix of the ridge and furrow, however, the origin of the enhancement is uncertain and it may be that the ridge and furrow has preserved or disturbed a pre-existing feature.

(5) – A negative linear anomaly is located in the central part of the survey area. It is not clear if it has an association with anomaly (2) to the north east, or if it has archaeological potential. This type of anomaly can be a response to a buried service.

Anomalies associated with land management

(6) – In the southern part of the site are a positive linear anomaly and adjacent weak, multiple dipolar, linear anomaly. These appear to relate to a former linear boundary ditch and land drain. Another land drain can be seen within the ridge and furrow to the north.

Anomalies with an agricultural origin

(7) – Parallel linear anomalies, oriented north west to south east, relate to former ridge and furrow.

Anomalies associated with magnetic debris

(8) – A patch of magnetic debris can be seen in the central part of the survey area. Aerial images indicate a rectangular concrete pad within this area, likely to be associated with a former sports field feature; however, the response could be to burnt material. Other patches of magnetic debris are evident around the margins of the site.

(9) – The site contains numerous and widespread strong, discrete, dipolar anomalies which relate to ferrous and other magnetically thermoremanent objects within the topsoil.

Anomalies with a modern origin

(10 – 12) – The site contains a number of buried services. A negative anomaly in the north western corner of the site is likely to relate to a sewer pipe, the strong discrete response along it is likely to relate to an inspection chamber cover. Close to the western edge are two positive linear responses (11) that are also likely to relate to services. Extending through the centre of the site is a strong, multiple dipolar, linear anomaly (12) which is a response to an iron/steel pipe, with a second extending along the southern edge of the site.

(13) – Magnetic disturbance can be seen along the extant earthwork bank in the central part of the site. It is not clear if the response is to former fenceposts, or possibly to another service, but the material is highly magnetic. Ferrous fencing around the margins of the site have also produced magnetic disturbance.

4 CONCLUSION

4.1.1 Detailed magnetometry has located a number of geophysical anomalies within the site; however, their archaeological potential cannot be determined. In the south eastern part of the survey area a number of anomalies appear to be associated with the site of former building, mapped during the early 19th century. Further north, positive linear anomalies could be associated with other mapped boundary features. A small number of discrete positive and positive linear responses have been located, but their origin is uncertain. The site contains evidence for former ridge and furrow as well as a number of services.

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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 thermoremanent 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. Thermoremanent 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. Thermoremanent features include ovens, hearths, and kilns. In addition thermoremanent 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:	J870-mag-proc.xcp	Max:	3.32
Description:	Imported as Composite from: J870-mag.asc	Min:	-3.30
Instrument Type:	Sensys DLMGPS	Std Dev:	1.53
Units:		Mean:	0.00
UTM Zone:	30U	Median:	0.00
Survey corner coordinates (X/Y):	OSGB36	Composite Area:	2.6081 ha
Northwest corner:	401246.86, 162249.54 m	Surveyed Area:	1.4065 ha
Southeast corner:	401400.46, 162079.74 m	PROGRAM	
Collection Method:	Randomised	Name:	TerraSurveyorPre
Sensors:	5	Version:	3.0.36.24
Dummy Value:	32702	GPS based Proce5	
Dimensions		1 Base Layer.	
Survey Size (meters):	154 m x 170 m	2 Unit Conversion Layer (Lat/Long to UTM).	
X&Y Interval:	0.15 m	3 DeStripe Median Traverse:	
Source GPS Points:	Active: 457600, Recorded: 457600	4 High pass Uniform (median) filter: Window dia: 200	
Stats		5 Clip from -3.00 to 3.00	

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 Wiltshire 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	J870-mag.asc J870-mag.xcp J870-mag-proc.xcp	Raw data as ASCII CSV TerraSurveyor raw data TerraSurveyor minimally processed data
Graphics	J870-mag-proc.tif	Image in TIF format
Drawing	J870-[version number].dwg	CAD file in 2018 dwg format
Report	J870 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 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)







AS-ABST MAG LAND DRAIN		Cyan 0,255,255	Line or polyline
Anomalies with an agricultural origin			
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

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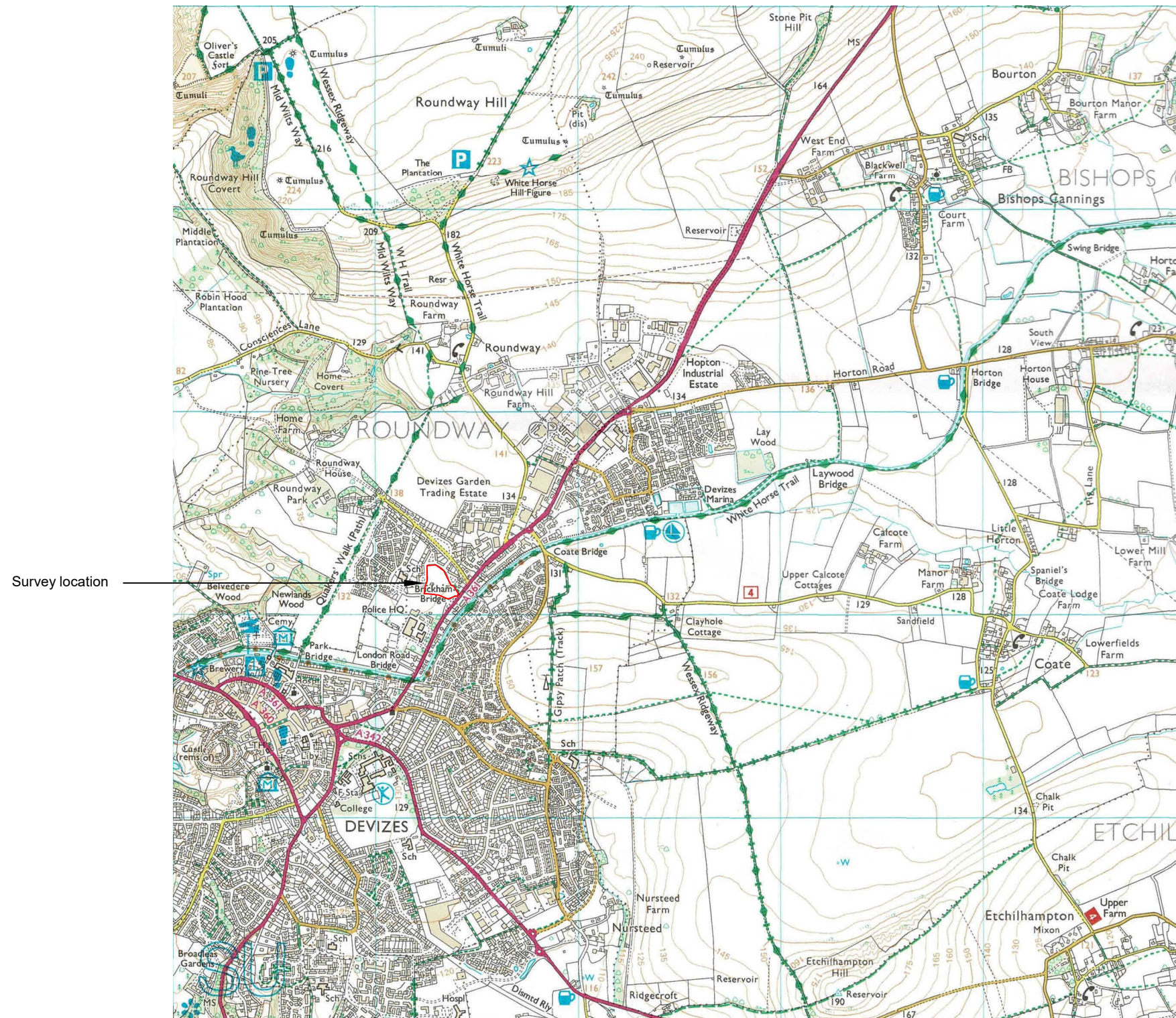
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**Geophysical Survey
Land at Parkfields
Devizes
Wiltshire**

Map of survey area



Survey location



● Survey location

Site centred on OS NGR
SU 01315 62160

SCALE 1:25 000



SCALE TRUE AT A3

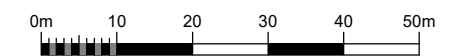
**Geophysical Survey
Land at Parkfields
Devizes
Wiltshire**

Referencing information

Referencing grid to OSGB36 datum at 50m intervals

- 401300 162200
- Survey tracks
- - - Survey track start
- - - Survey track stop
- ⬮ Development boundary

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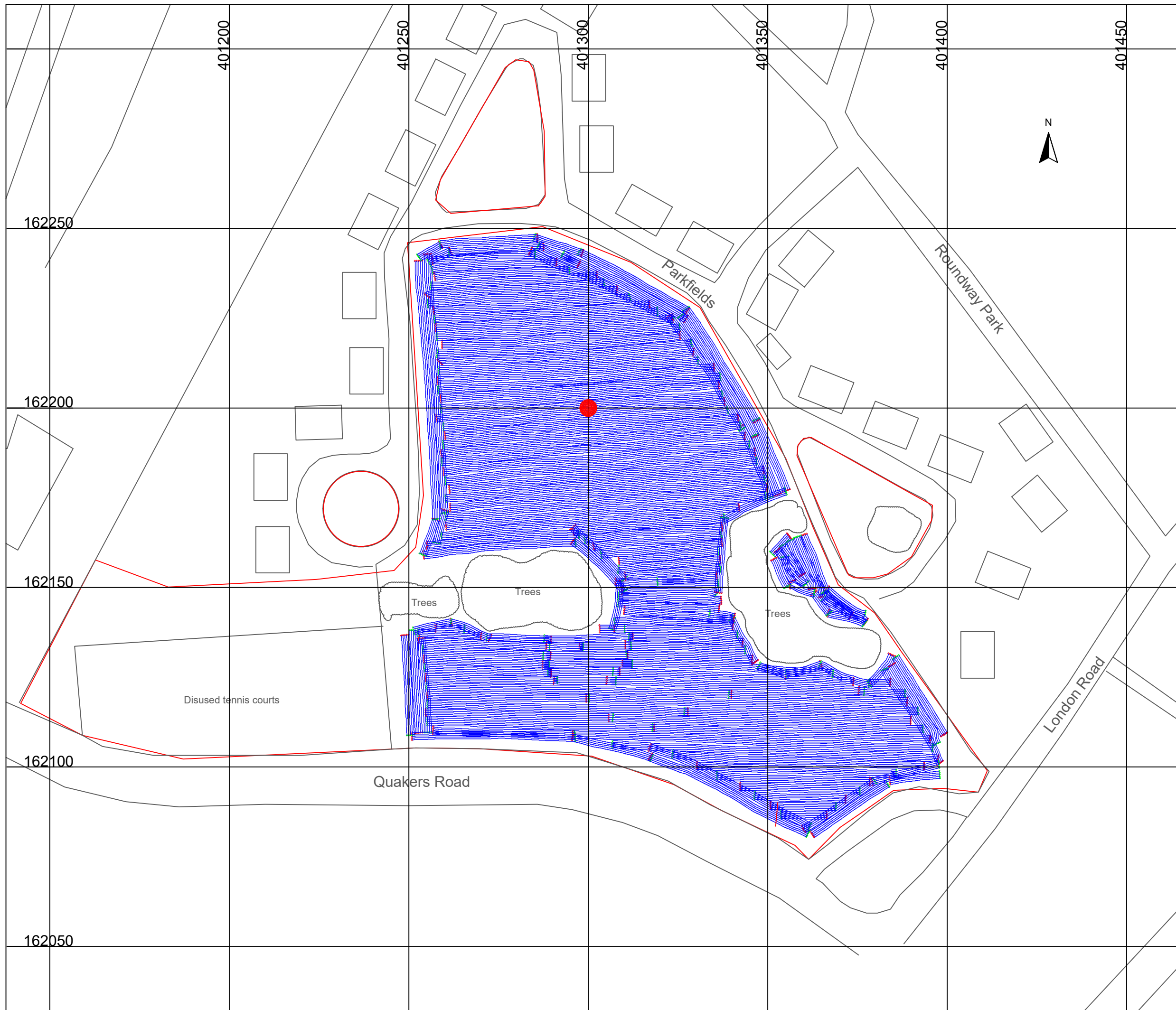


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KTD

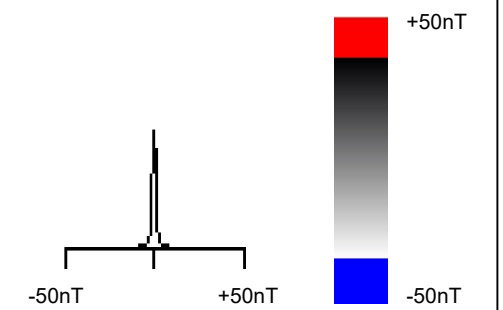
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FIG 02

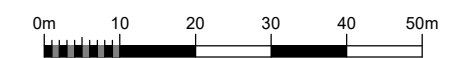


**Geophysical Survey
Land at Parkfields
Devizes
Wiltshire**

**Greyscale plot of minimally
processed magnetometer data
clipped at $\pm 50\text{nT}$**



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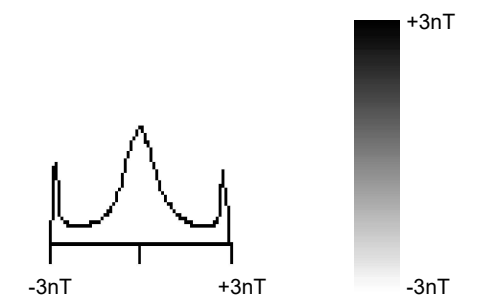
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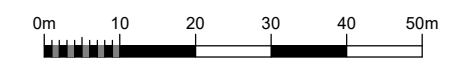
FIG 03

**Geophysical Survey
Land at Parkfields
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**Greyscale plot of minimally
processed magnetometer data
clipped at $\pm 3nT$**



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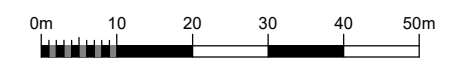
FIG 04

**Geophysical Survey
Land at Parkfields
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**Abstraction and interpretation of
magnetic anomalies**

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

SCALE 1:1000



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FIG 05

