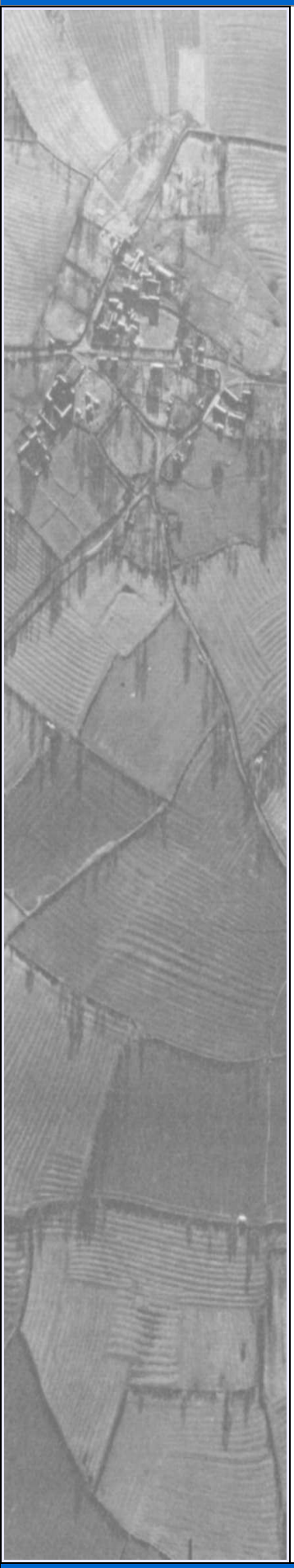

Birchington Vale Holiday Park
Birchington
Kent

MAGNETOMETER SURVEY REPORT

for

Park Holidays UK Ltd

Kerry Donaldson & David Sabin

January 2017

Ref. no. J698

ARCHAEOLOGICAL SURVEYS LTD

Birchington Vale Holiday Park
Birchington
Kent

Magnetometer Survey Report

for

Park Holidays UK Ltd

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

Survey date – 15th December 2016
Ordnance Survey Grid Reference – **TQ 32195 68310**

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SUMMARY

A detailed magnetometer survey was undertaken by Archaeological Surveys Ltd at Birchington Vale Holiday Park in Kent, ahead of a new static caravan/lodge development. The results of the survey indicate the presence of several weakly positive anomalies in the north eastern part of the site (Area 1). These include a positive curvilinear anomaly which may indicate a small ring ditch-like feature, with other short positive linear anomalies and discrete responses which are poorly defined. Larger, weak, amorphous responses have also been located, but it is not possible to determine if they relate to an increased depth of topsoil within naturally formed features or if they relate to anthropogenic activity. In the western part of the site (Area 2) linear zones of strongly magnetic debris indicate ground consolidation and no significant anomalies were located in magnetically quieter strips adjacent to the debris

1 INTRODUCTION

1.1 Survey background

1.1.1 Archaeological Surveys Ltd was commissioned by Park Holidays UK Ltd to undertake a magnetometer survey of an area of land at Birchington Vale Holiday Park in Kent. The site has been outlined for a proposed conversion of a touring caravan site into a static caravan/lodge development, and the survey forms part of an archaeological assessment of the site.

1.1.2 The geophysical survey was carried out in accordance with a magnetometry method statement produced by Archaeological Surveys and issued to Simon Mason, Principal Archaeology Officer at Kent County Council, by Blaise Vyner of Blaise Vyner Archaeological Consultancy prior to commencing the fieldwork. This provides a framework against which the results of the survey can be measured.

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 The survey and report generally follow the recommendations set out by: English Heritage (2008) *Geophysical survey in archaeological field evaluation;* 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 Site location, description and survey conditions

1.3.1 The site is located at Birchington Vale Holiday Park, near Birchington but within the parish of Manston in Kent. It is centred on Ordnance Survey National Grid Reference (OS NGR) TR 32195 68310, see Figs 01 and 02.

1.3.2 The site is an L-shaped parcel of land, covering approximately 2.75ha in total. At the time of survey, the central part of the survey area contained a number of caravans and so could not be surveyed, reducing the survey area to approximately 2.5ha. This was split between Area 1, an area of grass in the eastern part of the site (Plate 1) and Area 2, a zone containing a number of narrow strips separated by wooden fences and bushes defining the touring caravan site (Plate 2).

Plate 1: Area 1 looking north east

Plate 2: Area 2 looking south west

1.3.3 The ground conditions across the site were generally considered to be favourable for the collection of magnetometry data, although numerous sources of magnetic disturbance were located within and surrounding the survey area. Weather conditions during the survey were fine.

1.4 Site history and archaeological potential

1.4.1 The Kent Historic Environment Record indicates that the north eastern part of the site (Area 1) contains cropmark evidence for a possible enclosure identified from aerial photographs, with a second enclosure within land immediately to the east. Roman features including a gully and possible structures are also recorded within the site. A number of Bronze Age ring ditches have also been identified within the surrounding area. Situated approximately 400m and 800m to the south are a number of enclosures, identified from aerial photographs through the National Monument Mapping Programme and located through geophysical survey (Archaeological Surveys, 2010). Subsequent archaeological evaluation revealed pottery within the enclosure ditches dating them to the 12th to 14th centuries. A number of prehistoric ditches and gullies were also identified, as well as a number of possible chalk quarries or bomb craters. A number of late Bronze Age and early Iron Age gullies, ditches and pits were also encountered (Moody, 2010).

1.4.2 The location of the cropmark enclosure within the site and other enclosures and ring ditches in the vicinity indicates that there is potential for the site to contain geophysical anomalies relating to buried archaeological features. However, the modern use of the site as a caravan park may have had some impact.

1.5 Geology and soils

1.5.1 The underlying geology is the Margate Chalk Member (Upper Chalk) with overlying older Head Brickearth deposits (BGS, 2017).

1.5.2 The overlying soil across the site is from the Hamble 1 association and is a typical argillic brown earth. It consists of a deep, well drained, often stoneless, fine silty soil (Soil Survey of England and Wales, 1983).

1.5.3 Magnetometry carried out over similar geology and soil has produced good results, although at times it can be difficult to distinguish naturally formed features from those with an anthropogenic origin. 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 are factors associated with the formation of localised fields. Additional details are set out below and within Appendix A.

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).

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 20 Hz. The cart is pushed at walking speed and not towed. Each sensor is not zeroed in the field as the vertical axis alignment is precisely fixed leaving sensor offsets that are removed during data processing. The fixing of the vertical alignment ensures the sensors are not unduly influenced by localised magnetic fields and that the vertical component of a magnetic anomaly is measured. The gradiometers have a range of recording data between ±0.1nT and ±10,000nT. They are linked to a Leica GS10 RTK GPS 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 is manifest 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 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 ±10000nT and clipped for display at ±5nT for Area 1 and ±10nT for Area 2 . 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 for Area 2 in the form of high pass filtering (Fig 04). This effectively removes low frequency variation along a traverse that has been caused by large magnetic bodies. Data treated to additional processing has 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 is considered by the manufacturer to be data that is 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 very high density of data collection.

2.3.7 The raster images are combined with base mapping using ProgeCAD Professional 2016, creating DWG (2010) file formats. All images are externally referenced to the CAD drawing in order to maintain good graphical quality. The CAD plots are effectively georeferenced facilitating relocation of features using GPS, resection method, etc.

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

2.3.9 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 each survey area. Where further interpretation is possible, or where a number of possible origins should be considered, more subjective discussion is set out in Section 4.

2.3.10 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 a total of two survey areas covering approximately 2.5ha.

3.1.2 Magnetic anomalies located can be generally classified as positive anomalies of an uncertain origin, 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. Widespread magnetic debris and disturbance was encountered within Area 2 and this has the potential to obscure weak anomalies.

3.2.2 Amorphous and large pit-like anomalies within Area 1 cannot be confidently interpreted as the response could indicate naturally or anthropogenically formed 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 basic explanation of the characteristics of the magnetic anomalies is set out for each category in order to justify interpretation, a basic key is indicated to allow cross referencing to the abstraction and interpretation plot. CAD layer names are included to aid reference to associated digital files (.dwg/.dxf). Sub-headings are then used to group anomalies with similar characteristics for each survey area.

Report sub-heading CAD layer names and plot colour	**Description and origin of anomalies**
Anomalies with an uncertain origin AS-ABST MAG POS LINEAR UNCERTAIN AS-ABST MAG POS DISCRETE UNCERTAIN AS-ABST MAG POS UNCERTAIN 	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. 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 with an agricultural origin AS-ABST MAG AGRICULTURAL 	The anomalies are often linear and form a series of parallel responses or are parallel to extant land boundaries. Where the response is broad, former ridge and furrow is likely; narrow response is often related to modern ploughing.
Anomalies associated with magnetic debris AS-ABST MAG DEBRIS AS-ABST MAG STRONG DIPOLAR 	Magnetic debris often appears as areas containing many small dipolar anomalies that may range from weak to very strong in magnitude. It often occurs where there has been dumping or ground make-up and is 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, or hearths 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 AS-ABST MAG DISTURBANCE AS-ABST MAG SERVICE	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 such 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 and with hysteresis 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 1

Area centred on OS NGR 632325 168315, see Figs 03 - 05.

Anomalies with an uncertain origin

(1) - Located in the north western corner of Area 1 is a positive curvilinear anomaly. It has an outer diameter of up to 5.5m enclosing an area with a 4.1m diameter. It is possible that this relates to a small ring ditch feature, with a 1m wide ditch. There is a gap on the north western side, although this may have been caused by truncation through ploughing. There is a short, positive linear anomaly that extends for at least 2m from the south eastern corner and another positive linear anomaly located immediately to the west. The anomalies are not well defined; however, it is possible that they relate to cut features with archaeological potential.

(2) - The survey area contains a number of discrete positive responses that appear to relate to pit-like features. It is not possible to determine if they relate to naturally formed features, or if they have an anthropogenic origin.

(3) - A weakly positive linear anomaly extends through the centre of the survey area with a south east to north west orientation. It is not clear if this relates to a cut feature that pre or post-dates the agricultural anomalies (5) as although this type of response may indicate a ditch-like feature, a modern feature, such as a pipe trench, may also produce such a response. Several other short, weakly positive linear anomalies are located within the survey area, but they lack any coherent morphology to aid interpretation.

(4) - Towards the centre of the survey area is a weakly positive response, with a second towards the western edge. The response indicates magnetic enhancement, but is is not possible to determine if this relates to an increased

depth of topsoil within a naturally formed feature, or if it relates to anthropogenic activity.

Anomalies with an agricultural origin

(5) - A series of parallel linear anomalies appear to relate to former agricultural activity.

Anomalies associated with magnetic debris

(6) - A zone of strongly magnetic debris along the southern edge of the survey area relates to material with a ferrous content that has been used for ground consolidation.

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

Anomalies with a modern origin

(8) - Magnetic disturbance from nearby caravans in the western part of the site and other ferrous material in the north.

3.5 List of anomalies - Area 2

Area centred on OS NGR 632150 168315, see Figs 03 - 05.

Anomalies associated with magnetic debris

(9) - Area 2 contains widespread magnetic contamination from highly magnetic material used for ground consolidation within areas used by touring caravans. While it may have obscured weaker anomalies, should any linear anomalies extend through the site they would have been seen within the areas with less contamination.

Anomalies with a modern origin

(10) - Two services/pipes can be seen to converge in the southern part of the survey area.

4 CONCLUSION

4.1.1 The detailed magnetometer survey located a number of positive linear, curvilinear and discrete responses in the north eastern part of the site (Area 1). They are generally weak, and lack a coherent morphology preventing confident interpretation; however, there is evidence for a positive curvilinear anomaly which could indicate a small ring ditch feature. While the linear and discrete positive anomalies may relate to ditch-like and pit-like features, they are poorly defined and weak. Two amorphous positive responses may indicate magnetically enhanced material or an increased depth of topsoil within large pit-like features, but it is not possible to determine if they are naturally or anthropogenically formed.

4.1.2 Area 2 has been used as a touring caravan site and contains a number of narrow strips, separated by wooden fences and bushes/hedges. The results of the survey indicate the presence of strongly magnetic debris on the northern side of the fences, which relates to magnetically thermoremnant and ferrous material used in ground consolidation. Although the strong response could obscure weaker anomalies, there are zones with less contamination where no significant anomalies have been located.

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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 field. The difference between the two sensors will relate to the strength 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. It has been found that clipping data to ranges between ±5nT and ±3nT often improves the appearance of features associated with archaeology. Different ranges are applied to data in order to determine the most suitable for anomaly abstraction and display.

Zero (destripe) Median/Mean Traverse

The median (or mean) of 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 baseline value of gradiometer sensors.

High Pass Filtering

A mathematical process used to remove low frequency anomalies relating to survey tracks, modern agricultural features and other large magnetic bodies within or adjacent to survey areas.

Low Pass Filtering

A mathematical process used to remove high frequency anomalies relating to uneven ground, vibration, etc.

Appendix C – survey and data information

Area 1 minimally processed data

Filename: J698-mag-Area1-proc.xcp
Description: Imported as Composite from: J698-mag-Area1.asc
Instrument Type: Sensys DLMGPS
Units: nT
UTM Zone: 31U
Survey corner coordinates (X/Y):OSGGB36
Northwest corner: 632268.199697785, 168352.963368411 m
Southeast corner: 632379.799697785, 168259.063368411 m
Collection Method: Randomised
Sensors: 5
Dummy Value: 32702
Source GPS Points: 158600
Dimensions
Composite Size (readings): 744 x 626
Survey Size (meters): 112 m x 93.9 m
Grid Size: 112 m x 93.9 m
X Interval: 0.15 m
Y Interval: 0.15 m
Stats
Max: 5.53
Min: -5.50
Std Dev: 2.12
Mean: -0.09
Median: 0.00
Composite Area: 1.0479 ha
Surveyed Area: 0.63615 ha
PROGRAM
Name: TerraSurveyor
Version: 3.0.23.0
Processes: 1
1 Base Layer
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -5.00 to 5.00 nT

Area 2 minimally processed data

Filename: J698-mag-Area2-proc.xcp
Description: Imported as Composite from: J698-mag-Area2.asc
Instrument Type: Sensys DLMGPS
Units: nT
UTM Zone: 31U
Survey corner coordinates (X/Y):
Northwest corner: 632010.887932518, 168414.773347387 m
Southeast corner: 632287.937932518, 168236.573347387 m
Collection Method: Randomised
Sensors: 5
Dummy Value: 32702
Source GPS Points: 474000
Dimensions
Composite Size (readings): 1847 x 1188
Survey Size (meters): 277 m x 178 m
Grid Size: 277 m x 178 m
X Interval: 0.15 m
Y Interval: 0.15 m
Stats
Max: 11.05
Min: -11.00
Std Dev: 6.29
Mean: -0.45
Median: 0.01
Composite Area: 4.937 ha
Surveyed Area: 1.9329 ha
Processes: 1
1 Base Layer
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00 nT

Area 2 filtered data

Filename: J698-mag-Area2-proc-hpf.xcp
Description: Imported as Composite from: J698-mag-Area2.asc
Instrument Type: Sensys DLMGPS
Units: nT
UTM Zone: 31U
Survey corner coordinates (X/Y):OSGB36
Northwest corner: 632010.887932518, 168414.773347387 m
Southeast corner: 632287.937932518, 168236.573347387 m
Collection Method: Randomised
Sensors: 5
Dummy Value: 32702

Source GPS Points: 474000

Dimensions
Composite Size (readings): 1847 x 1188
Survey Size (meters): 277 m x 178 m
Grid Size: 277 m x 178 m
X Interval: 0.15 m
Y Interval: 0.15 m

Stats
Max: 11.05
Min: -11.00
Std Dev: 5.87
Mean: -0.33
Median: 0.03
Composite Area: 4.937 ha
Surveyed Area: 1.9329 ha

Processes: 1
1 Base Layer

GPS based Proce5
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 High pass Uniform (median) filter: Window dia: 150
5 Clip from -10.00 to 10.00 nT

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 Kent Historic Environment Record with printed copies on request The report will also be uploaded to the Online AccesS to the Index of archaeological investigationS (OASIS).

Archive contents:

Geophysical data - path: J698 Birchington\Data				
Path and Filename	**Software**	**Description**	**Date**	**Creator**
birch1\MX\.prm,.dgb,.disp	Sensys MXPDA	Proprietary data formats representing magnetometer survey traverses logged to a PDA.	15/12/16	D.J.Sabin
birch1\MX\J698-mag-Area1.asc birch1\MX\J698-mag-Area2.asc	Sensys DLMGPS	ASCII CSV (tab) file representing survey area in eastings, northings (UTM Z30N), magnetic measurement, traverse file and sensor number.	19/12/16	D.J.Sabin
Area1\comps\J6988-mag-Area1.xcp Area2\comps\J6988-mag-Area2.xcp	TerraSurveyor 3.0.23.0	Composite data file derived from ASCII CSV.	19/12/16	K.T.Donaldson
Area1\comps\J698-mag-Area1-proc.xcp Area2\comps\J698-mag-Area2-proc.xcp Area2\comps\J698-mag-Area2-proc-hpf.xcp	TerraSurveyor 3.0.23.0	Processed composite data file (zmt and clipping to ±5nT). Processed composite data file (zmt and clipping to ±10nT). Processed composite data file (zmt, high pass filtered and clipping to ±10nT).	19/12/16	K.T.Donaldson
Graphic data - path: J698 Birchington\Data				
Area1\graphics\ J698-mag-Area1-proc.tif	TerraSurveyor 3.0.23.0	TIF file showing a minimally processed greyscale plot clipped to ±5nT.	19/12/16	K.T.Donaldson
Area1\graphics\ J698-mag-Area1-proc.tfw	TerraSurveyor 3.0.23.0	World file for georeferencing TIF to OSGB36.	19/12/16	K.T.Donaldson
Area2\graphics\ J698-mag-Area2-proc.tif	TerraSurveyor 3.0.23.0	TIF file showing a minimally processed greyscale plot clipped to ±10nT.	19/12/16	K.T.Donaldson
Area2\graphics\ J698-mag-Area2 proc.tfw	TerraSurveyor 3.0.23.0	World file for georeferencing TIF to OSGB36.	19/12/16	K.T.Donaldson
Area2\graphics\ J698-mag-Area2-proc.-hpftif	TerraSurveyor 3.0.23.0	TIF file showing a filtered greyscale plot clipped to ±10nT.	19/12/16	K.T.Donaldson
Area2\graphics\ J698-mag-Area2 proc-hpf.tfw	TerraSurveyor 3.0.23.0	World file for georeferencing TIF to OSGB36.	19/12/16	K.T.Donaldson
CAD data - path: J698 Birchington\CAD				
J698 version 1.dwg	ProgeCAD 2016	CAD file for creating plots of greyscales, abstraction, interpretation and mapping. Grid coordinates as OSGB. AutoCAD 2010 format.	13/12/16	K.T.Donaldson
Text data - path: J698 Birchington\Documentation				
J698 report.odt	OpenOffice.org 3.0.1 Writer	Report text as an Open Office document.	05/01/17	K.T.Donaldson

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Geophysical Survey
Birchington Vale Holiday Park
Birchington
Kent

Survey location

Map of survey area

Survey location

Site centred on OS NGR
TR 32195 68310

SCALE 1:25 000

0m 500m 1000m

SCALE TRUE AT A3

FIG 01

Archaeological Surveys Ltd

Geophysical Survey
Birchington Vale Holiday Park
Birchington
Kent

Referencing information

Referencing grid to OSGB36 datum at 50m intervals

Data collected at 20Hz and georeferenced to ETRS89 zone 30 with conversion to OSGB36 using OSTN02

632050 168250

Survey tracks

Survey track start

Survey track stop

SCALE 1:1500

0m 10 20 30 40 50m

SCALE TRUE AT A3

FIG 02

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Geophysical Survey
Birchington Vale Holiday Park
Birchington
Kent

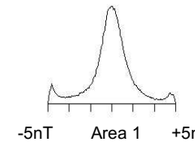
N

Area 2

Area 1

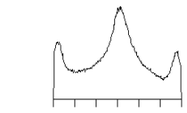
Unsurveyable - caravans

Greyscale plot of minimally processed magnetometer data



+5nT

-5nT



+10nT

-10nT

SCALE 1:1250

0m 10 20 30 40 50m

SCALE TRUE AT A3

FIG 03

Archaeological Surveys Ltd

Geophysical Survey
Birchington Vale Holiday Park
Birchington
Kent

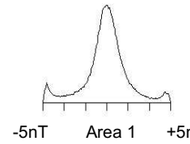
N

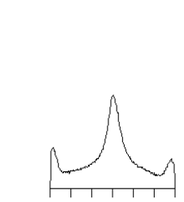
Area 2

Area 1

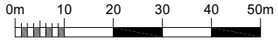
Unsurveyable - caravans

Greyscale plot of filtered magnetometer data (Area 2)





SCALE 1:1250



SCALE TRUE AT A3

FIG 04

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Geophysical Survey
Birchington Vale Holiday Park
Birchington
Kent

Abstraction and interpretation of magnetometer anomalies

- Positive linear anomaly - possible ditch-like feature
- Linear anomaly - of agricultural origin
- Discrete positive response - possible pit-like feature
- 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

FIG 05