

**LAND AT PEG HILL, YATE  
SOUTH GLOUCESTERSHIRE**

**Report on Archaeological Geophysical Survey  
2011**

**A.D.H. Bartlett**

**Surveyed by:**

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# **Land at Peg Hill, Yate, South Gloucestershire**

## **Report on Archaeological Geophysical Survey, 2011**

### **Introduction**

This geophysical survey was undertaken as part of an archaeological evaluation of a site at Yate, Gloucestershire. The survey was commissioned by Cotswold Archaeology on behalf of Barratt Developments PLC. Fieldwork for the survey was done between 17-22 March 2011. Plans showing the survey findings as previously supplied are now included for the record in this report.

### **The Site**

A full account of the location and topography of the site, and of the archaeological background to the project, is given in the Archaeological Desk Based Assessment [DBA] which has been compiled by Cotswold Archaeology [1]. The following notes are based in part on a summary of this information which was included in the Method Statement for the project, as supplied to Cotswold Archaeology by Bartlett Clark Consultancy, and dated 15 March 2011 [2].

The site is approximately 9ha in area and is located at the northern edge of Yate. It extends across three fields centred at NGR ST 7189 8409. The site is on a west facing slope, and rises from approximately 80m AOD at the western edge to 100m AOD at the east.

The solid geology is Triassic Keuper Marl, and no drift deposits are recorded. These conditions should not present any particular difficulties for a magnetometer survey, although the response at sites with Triassic bedrock is sometimes not particularly strong.

It is mentioned in the DBA that no prehistoric, Roman or later archaeological findings have been recorded from the site itself, although various sites (including a possible earthwork enclosure seen in a 1946 aerial photograph) are present within the surrounding extended study area. Various settlements of medieval origin (including the nearby Rockwood Inn) are present in the vicinity. A number of former field boundaries have been identified on historic maps (as indicated on the plan reproduced from the DBA and inset in figure 4). Ridge and furrow earthworks are also visible on 1940s aerial photographs.

The present site is located immediately to the SE of an extensive evaluation area amounting to c. 103ha which was investigated by means of a sampled magnetometer survey (by Bartlett Clark Consultancy for CgMs of Cheltenham) in late 2009 [3]. Findings from the survey included cultivation effects and possible former trackways and boundaries, but there were few features of particular archaeological interest.

## Survey Procedure

The survey used the standard geophysical methods of recorded magnetometer surveying, supplemented by background magnetic susceptibility testing. Readings were collected using Bartington 1m fluxgate magnetometers, and are plotted at 25cm intervals along transects 1m apart. The results of the survey are shown as a grey scale plot at 1:2000 scale in figure 1, and as a graphical (x-y trace) plot at 1:1250 scale which is reproduced in two sections as figures 2-3. An interpretation of the findings is shown superimposed on figures 2-3, and is reproduced separately to provide a summary of the findings in figure 4.

The survey plots show the magnetometer readings after standard treatments which include adjustment for irregularities in line spacing caused by variations in the instrument zero setting, and slight linear smoothing. Additional 2D low pass filtering has been applied to the grey scale plot to reduce background noise levels.

Colour coding has been used in the interpretation to distinguish different effects. Magnetic anomalies of possible archaeological interest, or at least those which may not be of geological or recent origin, are outlined in red, with weak (and probably natural) features in a light brown. Stronger, and probably recent, magnetic disturbances are outlined in a darker brown. Possible cultivation effects are shown in green, and a pipe (and other ferrous objects) in shades of blue.

The magnetometer survey was supplemented by a background magnetic susceptibility survey with readings taken at 30m intervals using a Bartington MS2 meter and field sensor loop. The readings are presented in a data plot which is inset in figure 4. Susceptibility surveying can provide a useful complement to a magnetometer survey, and indicates the strength of response which is likely to be obtained. It can also be used to provide a broad indication of previously occupied or disturbed areas in which burning associated with past human occupation has enhanced the magnetic susceptibility of the topsoil, although the readings may be affected by a number of non-archaeological factors, including geology, recent activity, and land use.

The magnetometer responds to cut features such as ditches and pits when they are silted with topsoil, which usually has a higher magnetic susceptibility than the underlying natural subsoil. It also detects the thermoremanent magnetism of fired materials, notably baked clay structures such as kilns or hearths, and so responds preferentially to the presence of ancient settlement or industrial remains. It is also strongly affected by ferrous and other debris of recent origin.

The survey grid was set out and located at the required national grid co-ordinates by means of a sub-1m accuracy GPS system. OS co-ordinates of map locations can be read from the AutoCAD (.dwg) version of the plans which can be supplied with this report.

## Results

The survey has detected a number of subsurface features and disturbances, some of which

may relate to former boundaries or past land use. The findings otherwise may be of only limited archaeological concern. The three fields within the survey area are numbered 1-3 for reference on figure 4. Findings are described for each field in turn.

The susceptibility readings across the site are sufficiently high (with a mean value of  $30 \times 10^{-5}$  SI) to indicate that conditions should be favourable for the magnetic detection of archaeological features. A moderate level of background magnetic activity (as indicated in figure 4 by small magnetic anomalies outlined in light brown) is visible in all parts of the survey. This is consistent with the presence of a magnetically responsive topsoil, and should not obscure any more substantial archaeological features which may be present.

### *Field 1*

The magnetic susceptibility readings are higher, particularly towards the SE of this field, than in other parts of the site, but this must be a consequence of topography or land use because the survey provides no evidence in this field (or elsewhere) for the presence of a substantial archaeological site.

Findings in field 1 include linear features (A and B as labelled on figure 4) which may relate to former field boundaries (as indicated on the inset copy of figure 3 from the DBA). Some small pit-like features are outlined in red, the largest of which is near the intersection of A and B at C. This could be a disturbance at the corner or entrance of a former field, but there are no other groups or clusters of such features to suggest the presence of an archaeological site.

Other findings in this field include a few strong recent disturbances near field boundaries, and some weak linear markings (visible in the grey scale plot) which are likely to be cultivation effects. The linear features (shown in green) align with the direction of former ridge and furrow (as identified from 1940s aerial photographs, and indicated on the inset plan). Linear disturbances detected in the survey do not appear to correspond to field boundaries (except perhaps for features A and B).

### *Field 2*

This field also contains recent disturbances and cultivation effects as seen in field 1, but with the addition of two areas of disturbed magnetic activity around D and E. Most of the magnetic anomalies in these areas are small, and may in part represent a slight intensification of the overall (natural) background magnetic activity. A few of the larger features are indicated in red, and could perhaps be interpreted as silted pits. Such features may be of archaeological origin, but in this context (surrounded by other natural or recent disturbances, and forming no coherent or interpretable plan) their significance remains uncertain.

### *Field 3*

This field is pasture rather than arable, and so gave lower magnetic susceptibility readings

(because the readings are reduced when measured through dense turf). A pipe (seen also in field 2) continues along the eastern boundary of the field, but there are no other identifiable findings.

## **Conclusions**

The survey has not produced any conclusive evidence for the presence of archaeological features, other than possible former field boundaries (at A and B in field 1), and cultivation effects. (Other former boundaries as shown on a map of 1838 were not detected. This suggests they were perhaps marked by hedges, which leave little trace when removed, rather than ditches.)

It is possible that silted pits or hollows may be present (at locations including C, D, E), but the significance of these findings remains uncertain. Their plan and distribution does not suggest the presence of a substantial or significant archaeological site.

## **Report by:**

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11 May 2011

The fieldwork for this project was done by P. Cottrell and C. Oatley.

## **References**

[1] Land at Peg Hill, Yate, South Gloucestershire: Archaeological Desk-Based Assessment and Heritage Statement for Barton Willmore on behalf of Barratt Strategic. CA Project 3068; CA Report 10055. Cotswold Archaeology, December 2010.

[2] Peg Hill, Yate, South Gloucestershire: Method Statement for Archaeological Geophysical Survey, 2011. Document prepared by A. Bartlett, Bartlett Clark Consultancy for Cotswold Archaeology: 15 March 2011.

[3] Land at Yate, South Gloucestershire. Report on Archaeogeophysical Survey 2009. Report by A. Bartlett, Bartlett Clark Consultancy for CgMs Consulting, Cheltenham. 27 January 2010.

372000E

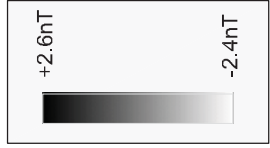
2009 survey

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184000N

Figure 2

Figure 3










Area proposed for magnetometer survey

Land at Peg Hill, Yate, South Gloucestershire  
Geophysical Survey 2011  
Figure 1: Location of magnetometer survey (with grey scale plot)



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	magnetic anomalies (archaeological ?)
	magnetic anomalies (non-archaeological / natural ?)
	strong magnetic anomalies (recent ?)
	former boundaries ?
	cultivation
	pipe
	strong magnetic disturbances (mainly ferrous)



60 m

Land at Peg Hill, Yate,  
South Gloucestershire  
Geophysical Survey 2011  
Figure 2: Magnetometer survey  
(with interpretation)



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for Cotswold Archaeology

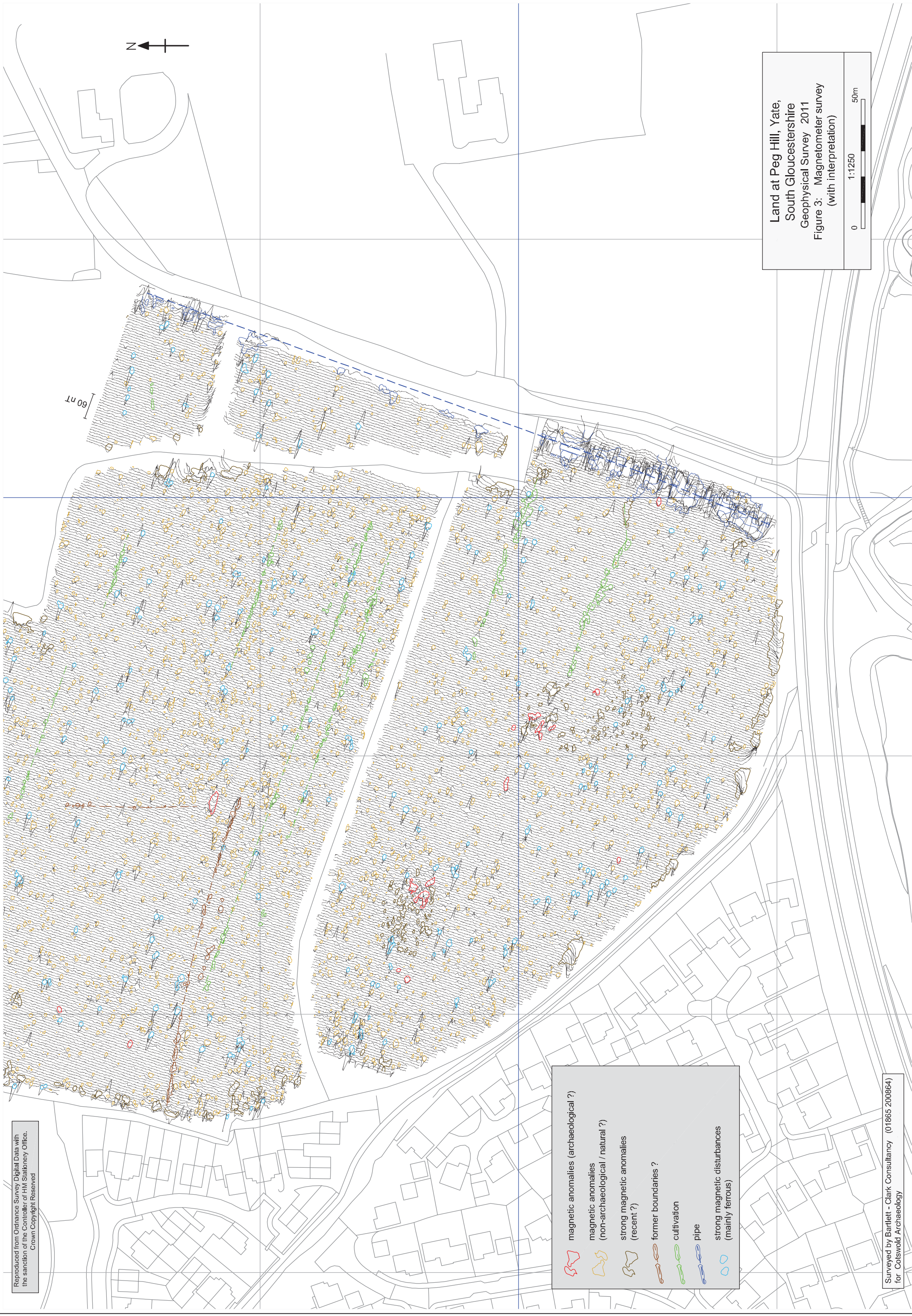




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60 m



Land at Peg Hill, Yate,  
South Gloucestershire  
Geophysical Survey 2011  
Figure 3: Magnetometer survey  
(with interpretation)

0 1:1250 50m

-  magnetic anomalies (archaeological ?)
-  magnetic anomalies (non-archaeological / natural ?)
-  strong magnetic anomalies (recent ?)
-  former boundaries ?
-  cultivation
-  pipe
-  strong magnetic disturbances (mainly ferrous)

