

# **LAND AT WHEATPIECES, TEWKESBURY**

## **Archaeological Geophysical Survey 2015**

**26 January 2016**

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# Land at Wheatpieces, Tewkesbury, Gloucestershire

## Geophysical Survey 2015

### Abstract

*This geophysical survey was undertaken as part of an archaeological field evaluation of a proposed development site at Tewkesbury, Gloucestershire.*

*The survey has produced a generally quiet response with only limited findings. Pipes and land drains were detected, but the only magnetic anomalies of potential archaeological relevance which could be identified were an apparent circular feature at the south-eastern corner of the evaluation area, and some possible silted pits.*

### 1. Introduction

The survey was commissioned from Bartlett Clark Consultancy, Specialists in Archaeogeophysics of Oxford, by Headland Archaeology (UK) Ltd on behalf of Bloor Homes. A first visit was made to the site in April 2015, but it was found to be under a rape crop, and the fieldwork was therefore completed following removal of the crop in August.

Data plots and mapping showing the survey findings have previously been supplied to Headland Archaeology, and used in support of subsequent trenching. The survey plans are now included for the record in this report.

### 2. Objectives of the Survey

The general aim of the geophysical survey was to identify the extent and character of any archaeological remains capable of producing a magnetic response; these can include ditches, large pits, kilns, ovens etc. Specific aims are:

- to investigate the archaeological potential of the site;
- assess the presence /absence of potential archaeological anomalies that might be identified; and
- to determine the level of risk that the archaeological resource would present to the proposed development;

### 3. Topography and Geology

The site is located on the southern edge of Tewkesbury at NGR SO 902309 (as shown on the location map inset in Illustration 1). The proposed development area extends

across two fields and part of a wooded area to the north, as indicated by the red outline in figure 1. The survey coverage was confined to the area as marked by blue cross hatching on the location plan, and amounts to 7.56 ha.

The solid geology of the site comprises Jurassic Lias Group Mudstone and Sandstone. No superficial deposits are recorded for the site. (British Geological Survey website).

Soils on Jurassic bedrock usually respond well to magnetometer surveying, as was confirmed here by magnetic susceptibility readings taken at the site. These gave readings between 12-40 ( $\times 10^{-5}$  SI/kg), with a mean of 24. These are well within a range which should permit productive magnetic investigation, and suggest conditions here should not present any unusual difficulties for a magnetometer survey.

#### **4. Archaeological Background**

We are told by Headland Archaeology that there is evidence of late prehistoric and Roman activity in the vicinity of the site. There are also traces of ridge and furrow within the evaluation area.

#### **5. Survey Procedure**

The procedure used for the investigation was a recorded magnetometer survey carried out following a standard methodology for a survey of this kind. A survey grid was set out at the required locations, and tied to the OS grid using a GPS system with VRS correction to provide 0.1m or greater accuracy. The plans are therefore geo-referenced, and OS coordinates of map locations can be read from the AutoCAD version of the plans.

The magnetometer readings were collected along transects 1m apart using Bartington 1m fluxgate gradiometers, and are plotted at 25cm intervals along each transect. The results of the survey are presented as a grey scale plot in Illustration 1 (1:2000 scale at A3), and as a graphical (x-y trace) plotted in two sections at 1:1250 in Illustrations 2-3. Inclusion of both types of presentation allows the detected magnetic anomalies to be examined in plan and profile respectively.

The graphical (x-y) plots represent minimally pre-processed magnetometer readings, as recommended for initial presentation of survey data in the 2008 English Heritage geophysical guidelines document [1]. Adjustments are made for irregularities in line spacing caused by variations in the instrument zero setting (as is required for legibility in gradiometer data), but no further filtering or other process which could affect the anomaly profiles or influence the interpretation of the data has been applied. A weak additional 2D low pass filter has been applied to the grey scale plot to reduce background noise levels.

An interpretation of the findings is shown in illustrations 2-3, and is reproduced separately to provide a summary of the findings in Illustration 4. Colour coding has been used in the interpretation to distinguish different interpretations and anomaly types.

## 6. Results

The survey has detected various subsurface features and disturbances, a few of which may be of archaeological relevance. It is probable that the relative lack of findings represents a genuine absence of substantial archaeological features across much of the site, given that ground conditions should be favourable for an investigation of this kind.

Features visible in the survey plots include two conspicuous pipes (marked in blue in the interpretation). These are likely to represent an east-west iron water pipe at A, and perhaps a large gas main at B.

There are various linear sequences of small magnetic anomalies which are likely to represent land drains (with each anomaly indicating a section of clay pipe). Some of these form a parallel north-south pattern, which is most clearly defined near C. Disturbances at D and E are caused by nearby electricity poles, and there are various other recent disturbances near field boundaries (indicated in grey in Illustration 4). There is also a relatively uniform scatter of small ferrous items across the site. These are represented by narrow spikes in the graphical plot (Illustrations 2-3), and are outlined in blue in the interpretation.

The findings which might support an archaeological interpretation are outlined in red. They include a possible circular feature which lies on the boundary of the evaluation area in the south-east corner of the survey at F. This is c. 14m in diameter, and so could perhaps be a hut circle or small burial mound. A few possible pit-like features are marked nearby, but they are fewer than might be expected in an area of dense settlement activity.

Other similar features are marked in the western field at G and H, but they are dispersed, and not conclusively distinguishable from the overall scatter of (mainly) natural background magnetic anomalies (outlined in light brown).

Remains of ridge and furrow cultivation are sometimes detectable in a magnetometer survey, but will not necessarily be visible if they align with the magnetometer transects, as may be the case here.

## 7. Conclusions

The survey has detected a small group of features of potential archaeological relevance in the south-eastern corner of the survey, but other such findings appear to be too isolated or dispersed to suggest the presence of any further concentrations of archaeological activity.

**Report by:**

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**on behalf of:**

Headland Archaeology (UK) Ltd

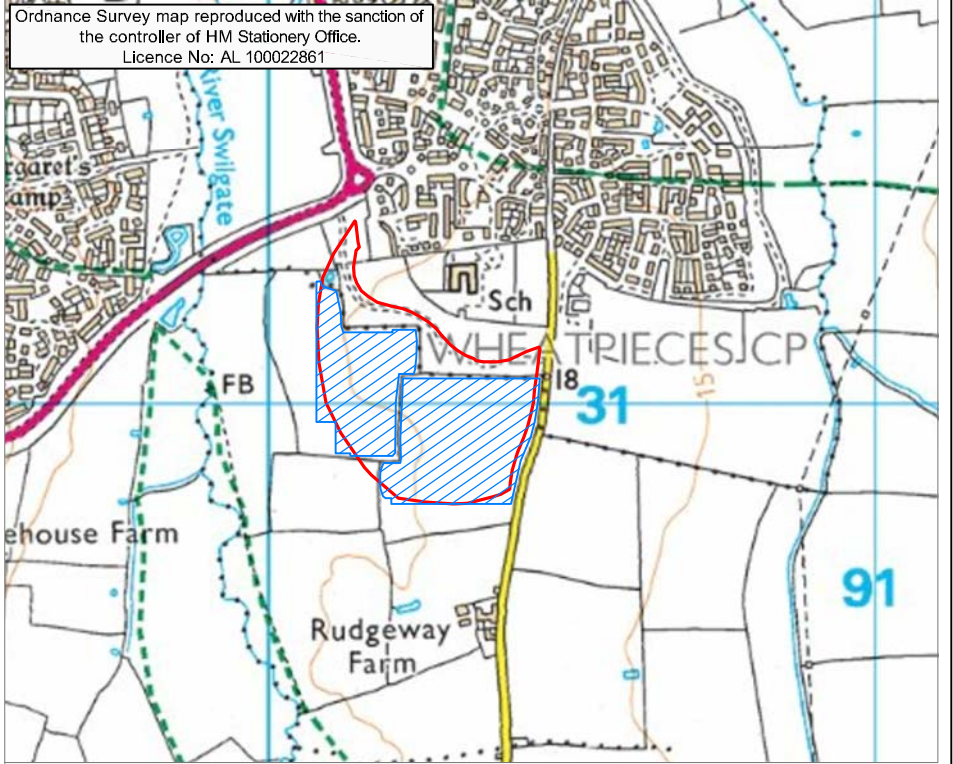
26 January 2016

The fieldwork for this project was done by P. Cottrell and M. Berry.

**Reference**

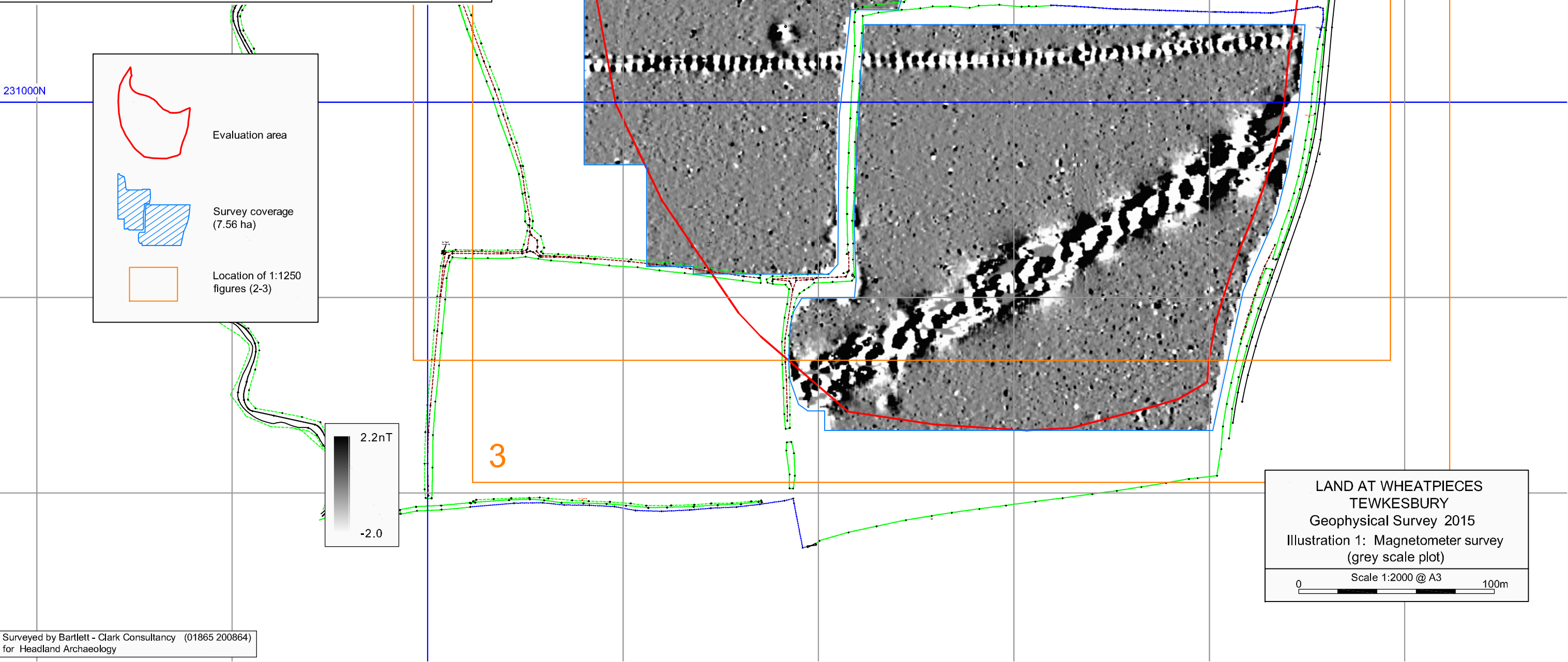
- [1] English Heritage 2008a *Geophysical Survey in Archaeological Field Evaluation* (English Heritage: Swindon, 2008), English Heritage Research


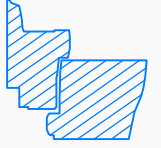

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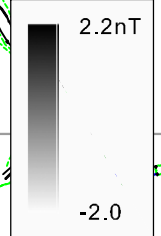


Site location 1:12500

Background mapping based on site plan by  
A. Marshall Surveying Ltd









 Evaluation area  
 Survey coverage (7.56 ha)  
 Location of 1:1250 figures (2-3)



**LAND AT WHEATPIECES  
TEWKESBURY**  
 Geophysical Survey 2015  
 Illustration 1: Magnetometer survey  
 (grey scale plot)  
 Scale 1:2000 @ A3  
 0 100m

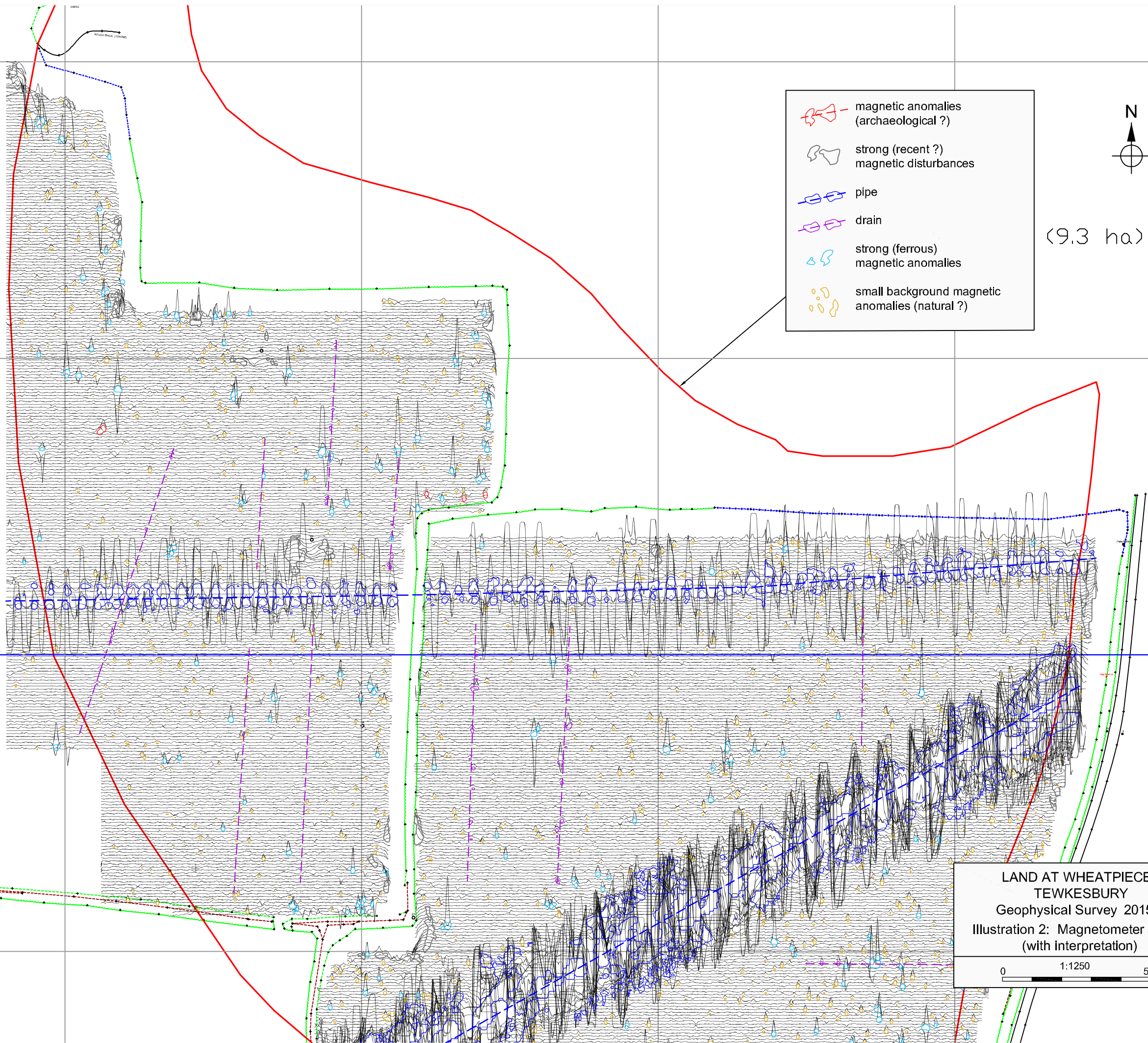
Background mapping based on site plan by  
A. Marshall Surveying Ltd

45nT

-  magnetic anomalies  
(archaeological ?)
-  strong (recent ?)  
magnetic disturbances
-  pipe
-  drain
-  strong (ferrous)  
magnetic anomalies
-  small background magnetic  
anomalies (natural ?)



(9.3 ha)









LAND AT WHEATPIECES  
TEWKESBURY  
Geophysical Survey 2015  
Illustration 2: Magnetometer survey  
(with interpretation)

0 1:1250 50m

Surveyed by Bartlett - Clark Consultancy (01865 200864)  
for Headland Archaeology

Background mapping based on site plan by  
A. Marshall Surveying Ltd



-  magnetic anomalies  
(archaeological ?)
-  strong (recent ?)  
magnetic disturbances
-  pipe
-  drain
-  strong (ferrous)  
magnetic anomalies
-  small background magnetic  
anomalies (natural ?)

45nT

LAND AT WHEATPIECES  
TEWKESBURY  
Geophysical Survey 2015  
Illustration 3: Magnetometer survey  
(with interpretation)

0 1:1250 50m

Surveyed by Bartlett - Clark Consultancy (01865 200864)  
for Headland Archaeology









Background mapping based on site plan by  
A. Marshall Surveying Ltd



Site Boundary (9.3 ha)

231000N

390300E

-  magnetic anomalies (archaeological ?)
-  strong (recent ?) magnetic disturbances
-  pipe
-  drain
-  strong (ferrous) magnetic anomalies
-  small background magnetic anomalies (natural ?)

LAND AT WHEATPIECES  
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Illustration 4: Summary of findings

0 Scale 1:2000 @ A3 100m

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