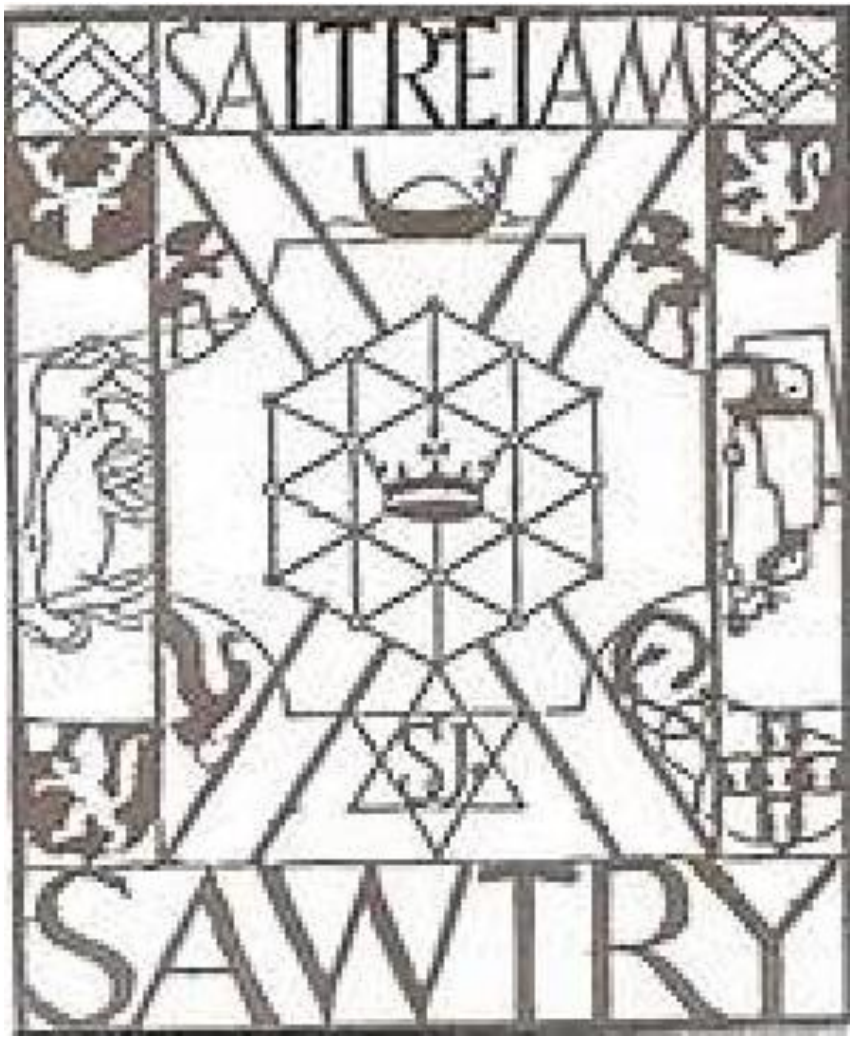
SAWTRY HISTORY SOCIETY



ARCHAEOLOGICAL GEOPHYSICAL SURVEY INTERIM REPORT
SHS17-1_IR-9

GEOPHYSICAL EARTH REISTANCE SURVEY (5 - 8 MAR 20) - HILL TOP, ALCONBURY WESTON

29 August 2022

by

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& Phil Hill BA(Hons)

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LIST OF ILLUSTRATIONS

ACKNOWLEDGEMENTS

SHS gratefully acknowledges the help and assistance of the following:

Kay Chapman	Landowner
John Steele	Tenant Farmer
Philip Smith	Landowners Historical Research Group (LHRG)

Participating volunteers

OASIS REPORT FORM

PROJECT DETAILS	**OASIS No:**	
Project name	Geophysical earth resistance survey of Hill Top field in Alconbury Weston	
Short description	An earth resistance survey was undertaken west of the central area of the site where the coins and metal artefacts finds plot and recent field walking survey suggest a concentration of activity spanning several centuries, in order to determine the westward extent of potential archaeology.	
Project type	Geophysical survey	
Site status	N/A	
Previous work	1. Desk-top research into previous archaeological investigations undertaken by local and commercial archaeologists prior to 2009. 2. Desk-top analysis of the results of metal detecting undertaken by the Landowners Historical Research Group (LHRG) from 2009 to 2018. 3. Geophysical magnetometry survey, 24 Feb 17. 4. Geophysical earth resistance survey, 7-8 May 17. 5. Field walking survey undertaken over two sessions, 30 Sep and 6 Oct 17. 6. Geophysical earth resistance survey, 14 May 18. 7. Evaluation excavation undertaken over four sessions over the period 30 Oct 18 - 18 Feb 19. 8. Evaluation excavation undertaken concurrently with this survey, 22 Feb - 8 Mar 20.	
Current land use	Arable farming	
Future work	Geophysical survey and excavation	
Monument type/ period	Iron-Age/Romano-British, *circa* 100 BC to AD 410	
Significant finds	N/A	
PROJECT LOCATION		
County	Cambridgeshire	
Site address	Hill Top, Alconbury Weston	
Study area	8,000m^2 (0.80ha)	
OS grid reference	TL18374 77628	
Height OD	48m	
PROJECT CREATORS		
Organisation	Sawtry History Society	
Project brief originator	Sawtry History Society	
Project design originator	N/A	
Director/Supervisor	Phil Hill	
Project Manager	Kevin Redgate	
Sponsor or funding body	Sawtry History Society	
PROJECT DATE		
Start date	5 Mar 20	
End date	8 Mar 20	
ARCHIVES	Location	Content
Physical		
Paper		
Digital	SHS Archaeological Digital Archive	SHS Archaeological Digital Records and Media
BIBLIOGRAPHY		
Title	Geophysical Earth Resistance Survey (5 - 8 Mar 20) - Hill Top, Alconbury Weston	
Serial title & volume	N/A	
Author(s)	Kevin Redgate & Phil Hill	

Page numbers	010, plus 3 Annexes and 1 Enclosure
Date	29 August 2022

1. **Introduction**.

1.1. Hill Top has provided tantalizing evidence of a potentially significant Romano-British settlement through the antiquarian investigations of Dr J R Garrood MD in the 1932, and the developer led commercial archaeological evaluations of the both the Archaeology Section of Cambridgeshire County Council (CCCAFU) and Birmingham University Field Archaeology Unit (BUFAU) 1990s. This evidence has been significantly reinforced, not just by the quantity of coins and metal artefacts detected during the period 2009 to 2018, but by the presence of numerous artefacts of high status and significance within the metal finds assemblage, by the finds recovered during the earlier field walking survey and by previous geophysical magnetometry and earth resistance surveys.

1.2. The survey consisted of a single earth resistance survey carried out over the period 5 - 8 Mar 20, the purpose of which was to expand earth resistance coverage west of previous surveys.

2. **Site Details**.

2.1. **Event Number**.

2.2. **Location**. The site consists of Hill Top field and Long Nines field to the south-east. It is located west of the A1 and east of Vinegar Hill in the centre of Alconbury Weston Civil Parish (Figure 2.1), and centrally in the northern half of National Grid Reference (NGR) square TL1877 (Figures 2.2 and 2.3).

Figure 2.1: Site Relative to Alconbury Weston (Google Earth, 2016)

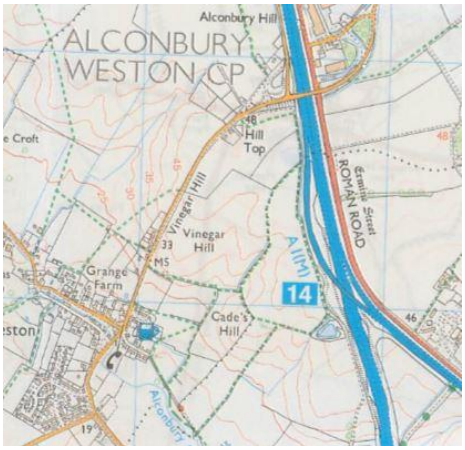

Figure 2.2: Site Relative to Alconbury Weston (Ordnance Survey, 2006)

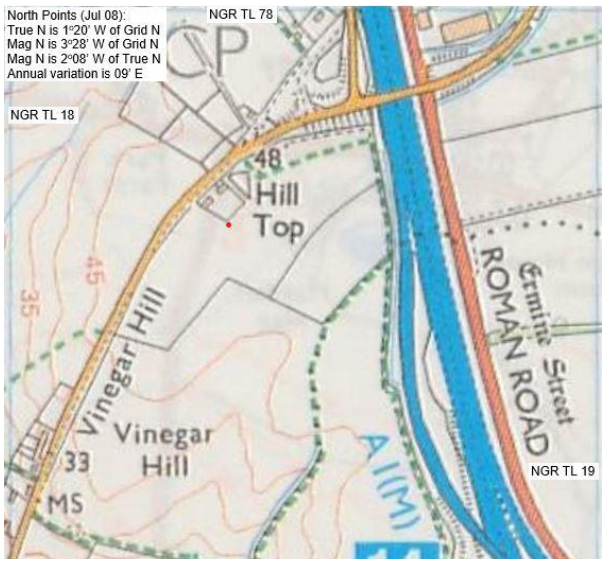

Figure 2.3: Hill Top Site with SBM in red (Ordnance Survey, 2006)

2.3. **Site Benchmark (SBM)**. This has been set on the edge of the tree line adjacent to the south corner of the residential gardens at NGR TL 18374 77628, as shown by the red dot (Figure 2.3).

2.4. **Site Grid**. The site grid can be found at Annex A.

2.5. **Geology**. The site sits on the west edge of a plateau on the 45m contour that overlooks the broad Alconbury Brook valley. The bedrock is Oxford Clay Formation-Mudstone with Oadby Member-Diamicton superficial deposits, above which is an unknown depth of plough-soil (Figure 2.4).

Figure 2.4: Site Geology (British Geological Survey, 2017)

2.6. **Protection**. The site is not protected or within a conservation area.

2.7. **Land Use**. The two fields that comprise the site were used for arable farming and, as such, subjected to modern farming methods including ploughing and harrowing for crops, and deeper mole ploughing for drainage. From early 2018, Hill Top was held as grassland for hay and sileage.

2.8. **Utilities**. An active branch of the ex-government fuel oil pipeline (now under private ownership) runs through the west end of the site, whilst a medium pressure gas pipeline runs through the site on a north/south alignment west of the Hill Top cottages. There is also a short low voltage (230V/480V) supply line serving the new barn in the berm enclosure and a low voltage supply line to the north of Hill Top Cottages that serves a sewage kiosk; suggesting that there is an underground sewage tank at the northeast of Hill Top Cottages (see Figure 2.5).

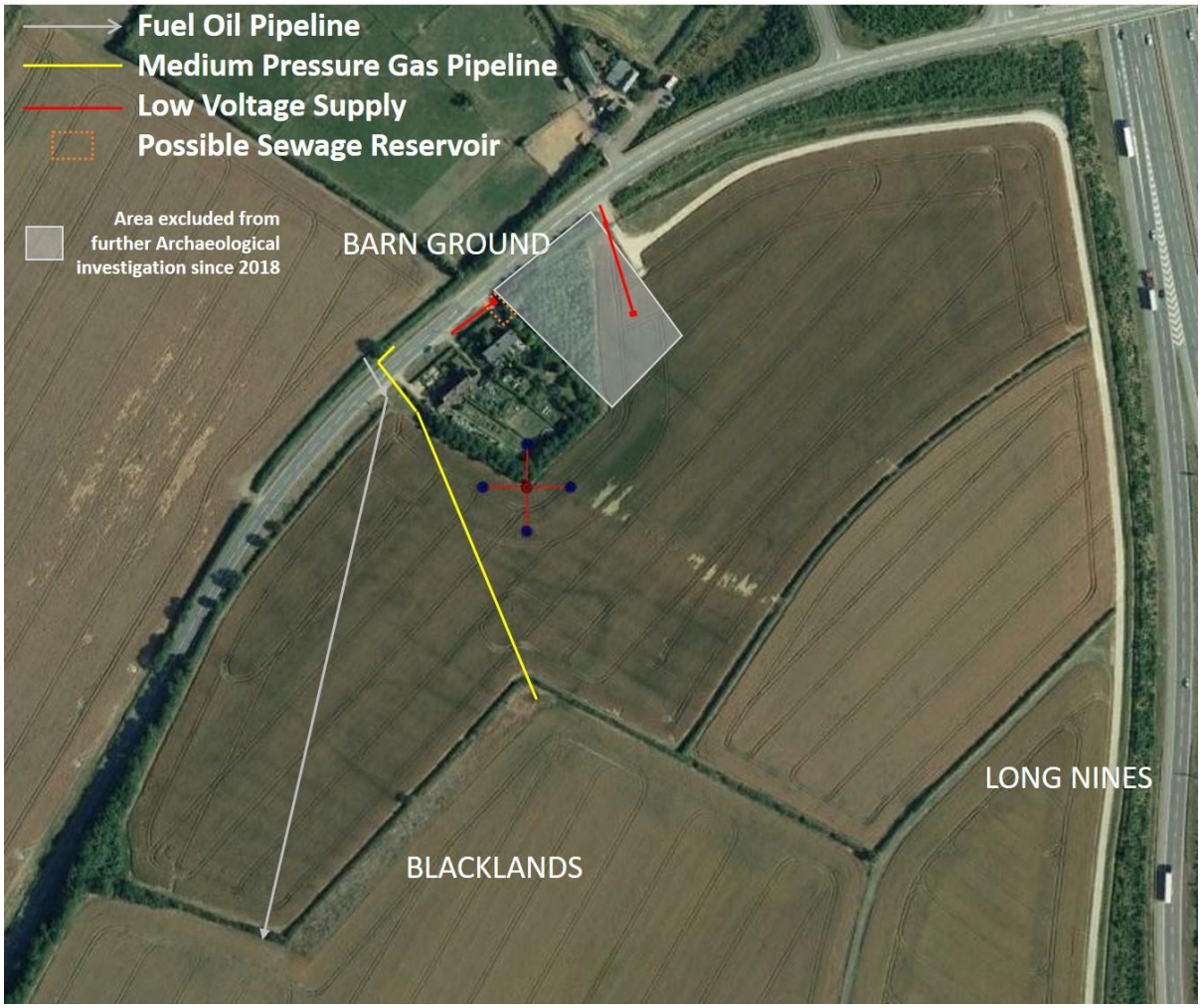

Figure 2.5: Utilities (Google Earth, 2016)

2.9. **Historical Background**. In 1932 Dr J R Garood MD, a local antiquarian of the Cambridgeshire & Huntingdonshire Archaeological Society (CHAS), began investigating the fields of Blacklands and Barn Ground (the previous field names of the field now known as Hill Top) as part of a wider investigation of Iron Age and Roman-British settlement sites on Alconbury Hill. Further archaeological investigations were undertaken by the Archaeology Field Unit of Cambridgeshire County Council (CCCAFU) in 1991, 1992 and 1995 in advance of A1 widening. Archaeological investigations were also carried out by Birmingham University Field Archaeology Unit (BUFAU) in 1996 also in advance of A1 widening. Since 2009 the two fields of the site have undergone methodical metal detecting which has produced a considerable volume of Roman artefacts ranging from coins to high status jewellery spanning four centuries of Roman occupation. Incidental to the metal finds was a wealth of ceramic artefacts including pot sherds, Ceramic Building Material (CBM) and *tesserae*. Sawtry Archaeology, under the auspice of Sawtry History Society, has undertaken periodic, and ongoing, archaeological investigations since 2017.

3. Methods.

3.1. **Survey Grid**. The survey area consisting of eighteen 20m x 20m squares was established from the site grid as shown at Figure 3.1.

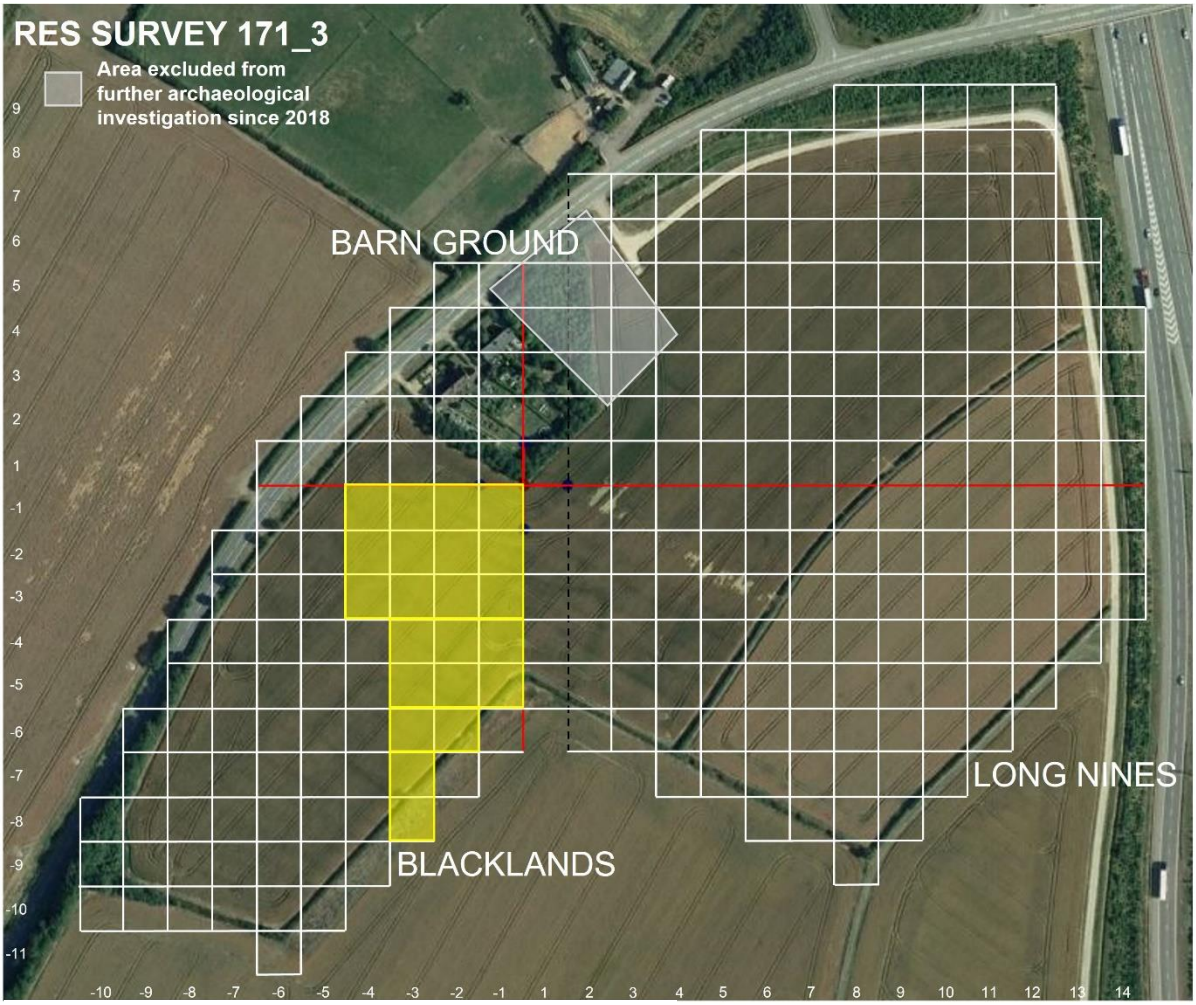

Figure 3.1: Site grid with survey area highlighted (Google Earth, 2016)

3.2. **Earth Resistance Survey**. The survey was carried out using the Geoscan Research RM85 Resistance Meter System and PA20 Probe Array assembly. Each survey square consisted of twenty traverse lines with readings being taken at one metre intervals along each traverse. The survey started in the southwest square of the survey area, traverses in each survey square started in the SW corner and followed a north-south zig-zag pattern to end in the SE corner. The Survey Record Sheet is at Annex B.

4. **Results**. Survey data was imported into Snuffler (version 1.21) as a single data set. The data plots presented in Figures 4.1 to 4.5 are presented in the default linear display option and greyscale display type; other display options and types are provided at Annex C:

black = low resistance; pits, ditches, clay dumps
= high magnetic response; iron, steel, brick, burned soil, kilns, hearths, ditches, pits
white = high resistance; walls, rubble, paving areas
= low magnetic response; stone features
red = areas not surveyed
linear = display colour blocks are assigned to equal ranges of values
non-linear = display colour blocks are assigned to equal numbers of readings
relief plot = displays results as a 3D image
- high resistance readings are high points
- low resistance readings are low points

4.1. **Raw Data Plots**. Raw data plots are provided in pairs; the first plot without grid lines in order to present an uninterrupted picture, the second plot with grid lines in order to aid with orientation (Figure 4.1).

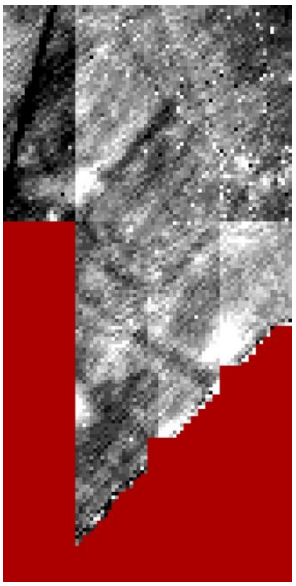

Figure 4.1a: Raw data

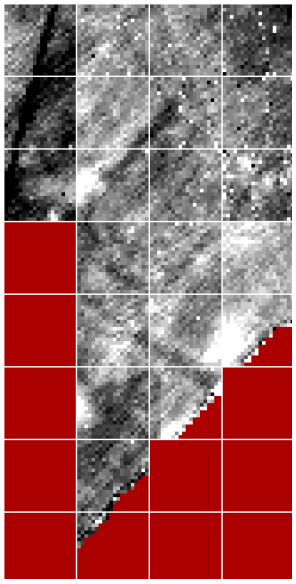

Figure 4.1b: Raw data

4.2. **Corrected Data Plots**. Corrected data plots are provided in pairs; the first plot without grid lines in order to present an uninterrupted picture, the second plot with grid lines in order to aid with orientation. Correction to the raw data was applied in two stages, firstly through the application of clip, de-spike and edge correction (Figure 4.2) and secondly through the further application of sharpen (Figure 4.3).

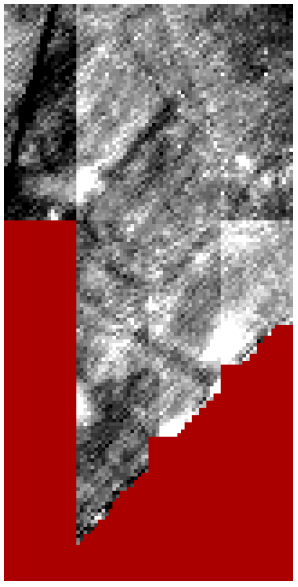

Figure 4.2a: Corrected data #1

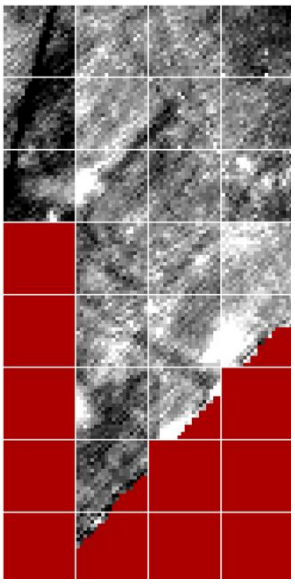

Figure 4.2b: Corrected data #1

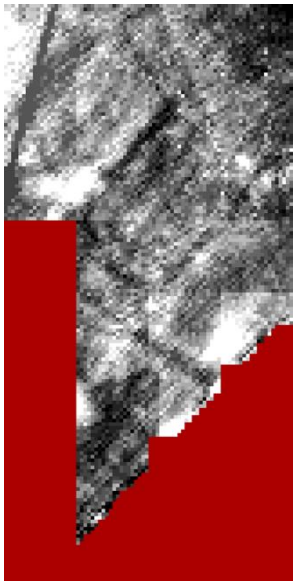

Figure 4.3a: Corrected data #2

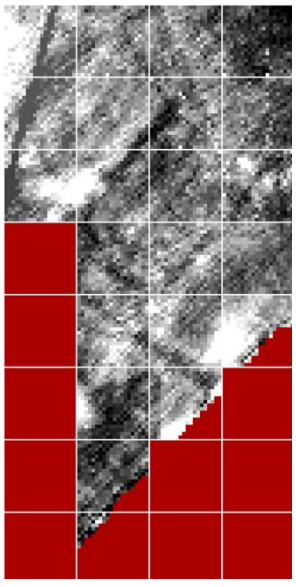

Figure 4.3b: Corrected data #2

4.3. **Filtered Data Plots**. Filtered data plots are provided in pairs; the first plot without grid lines in order to present an uninterrupted picture, the second plot with grid lines in order to aid with orientation. The corrected earth resistance data plots in Figures 4.2 and Figures 4.3 were both filtered by the application of interpolate (x2) (Figures 4.4 and 4.5).

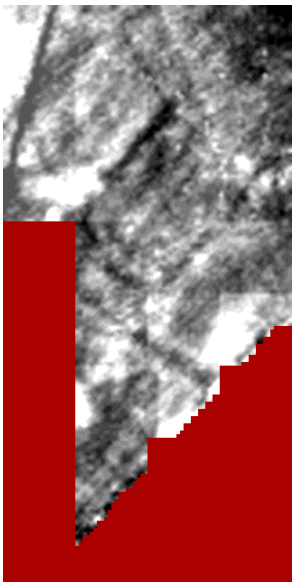

Figure 4.4a: Filtered data #1

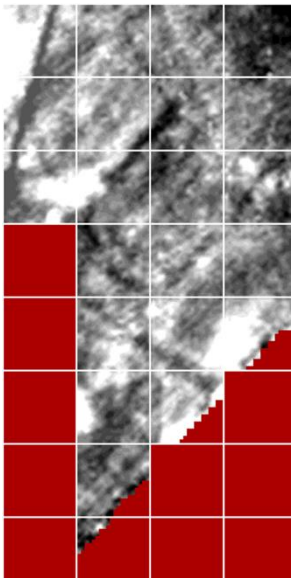

Figure 4.4b: Filtered data #1

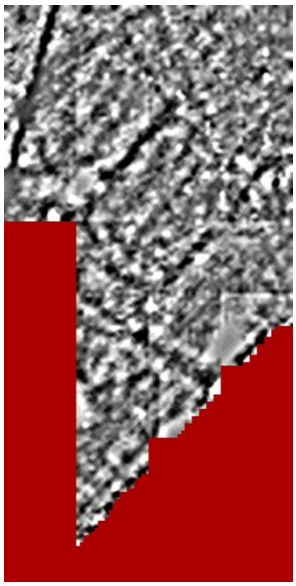

Figure 4.5a: Filtered data #2

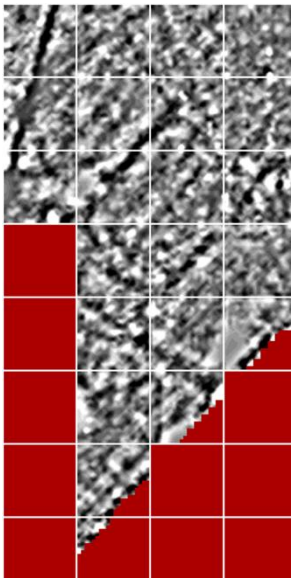

Figure 4.5b: Filtered data #2

5. **Analysis**. The filtered results in Figures 4.4 and 4.5 show a number of distinct anomalies that are discussed below. Survey squares are numerically referenced from left to right and bottom to top.

5.1. The weak high resistance linear anomaly on a north-northwest/south-southeast alignment from the northwest edge of 3,8 to the southeast edge of 4,5 corresponds with the medium pressure gas pipeline shown in Figure 2.5.

5.2. The strong low resistance linear anomaly on a north-northeast/south-southwest alignment from the northeast edge of 1,8 to the southwest edge of 1,6 corresponds with the fuel oil pipeline shown on Figure 2.5.

5.3. The low resistance northeast-southwest linear anomaly extending from the northeast corner of 4,6 to the southeast corner of 3,5 aligns with the northeast cropmark (#1) visible on the Google Earth 2016 image truncated by the inverted field boundary that is assessed as being an Iron Age enclosure ditch (Redgate & Hill, 2020: 8-9).

5.4. The low resistance northwest-southeast linear anomaly extending from the east edge of 2,4 to the northeast corner of 3,3 aligns with the southwest cropmark (#2) visible on the Google Earth 2016 image that is also assessed as being an Iron Age enclosure ditch (Redgate & Hill, 2020: 8-9).

5.5. The low resistance northeast-southwest linear anomaly starting in the centre of 3,7 extending to centre of 2,6, the low resistance right-angled anomaly at the southwest corner of 2,6 and northwest corner of 2,5 and the low resistance northwest-southeast anomaly in the centre of 2,5 appear to be related and aligned with the above-mentioned anomaly.

5.6. The slow resistance square(ish) linear anomaly with central low resistance circular anomaly within, in the northeast corner of 2,2, is centrally placed within cropmark #2 against the field boundary (when viewed on the Google Earth 2016 image) and is suggestive of being archaeological that warrants further investigation.

5.7. The two low resistance ring anomalies in 2,3 immediately north of the above mentioned square(ish) anomaly are also within cropmark #2, are also suggestive of being archaeological and warrant further investigation.

5.8. The numerous high resistance areas, particularly those straddling 1,6/2,6 and 3,4/4,4, and on the west edge of 2,3, are suggestive of being compacted surfaces that require further investigation to determine whether they are archaeological.

6. **Summary**. The survey was successful in achieving its aim. It provided further evidence of archaeological anomalies extending further to the west; reinforcing further the assessed Iron Age origins of the site (Redgate & Hill, 2020: 8; 2021: 14; 2022: 6).

ANNEXES

A. Site Grid.
B. Sawtry History Society Geophysical Survey Record Sheet.
C. Additional Data Plot Display Options and Composite Plots.

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