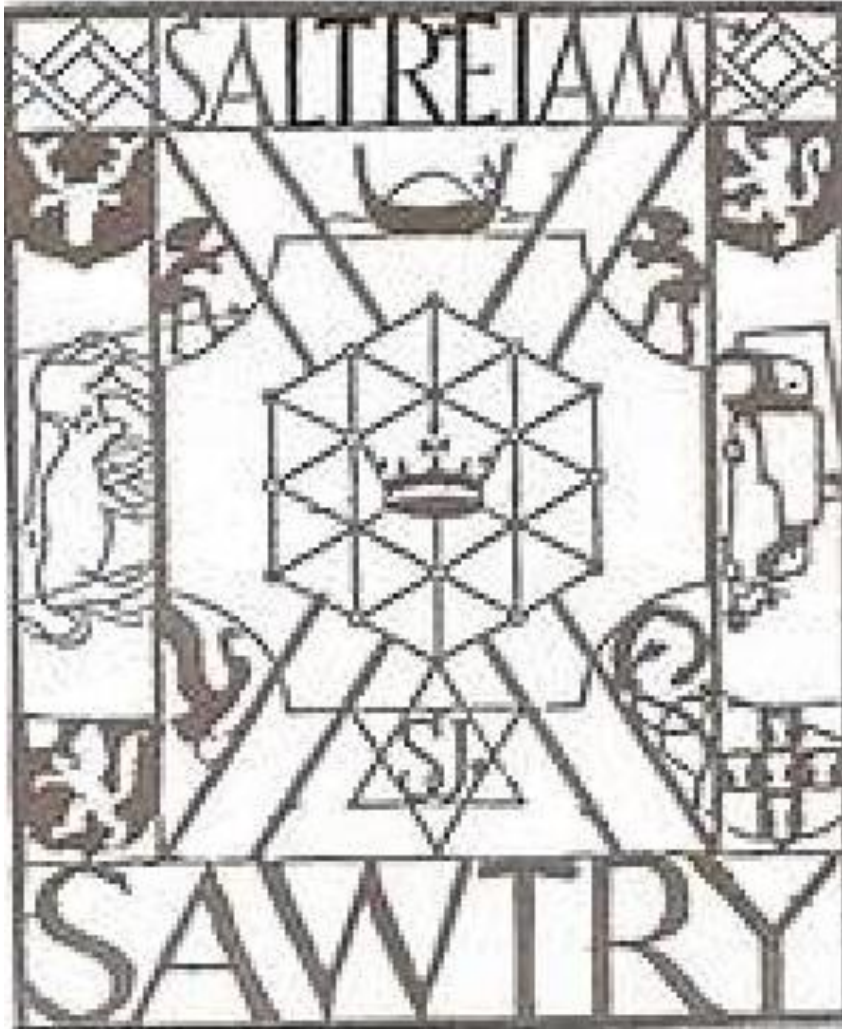


SAWTRY HISTORY SOCIETY



**ARCHAEOLOGICAL GEOPHYSICAL SURVEY INTERIM REPORT
SHS17-1_IR-6**

**GEOPHYSICAL EARTH RESISTANCE SURVEY
(14 MAY 18) - HILL TOP, ALCONBURY WESTON**

27 March 2022

by

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| | |
|--------------|---|
| 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 in 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. An earlier geophysical earth resistance survey was conducted in very dry conditions; this subsequent survey was conducted when the ground conditions were wetter. | | |
| 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, 30 Sep and 6 Oct 17. | | |
| Current land use | Arable farming | | |
| Future work | Geophysical survey and excavation | | |
| Monument type/ period | Iron-Age/Romano-British, <i>circa</i> 100 BC to AD 410 | | |
| Significant finds | N/A | | |
| PROJECT LOCATION | | | |
| County | Cambridgeshire | | |
| Site address | Hill Top, Alconbury Weston | | |
| Study area | 7,200m ² (0.72ha) | | |
| 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 | 14 May 18 | | |
| End date | 14 May 18 | | |
| ARCHIVES | Location | Content | |
| Physical | | | |
| Paper | | | |
| Digital | SHS Archaeological Digital Archive | SHS Archaeological Digital Records and Media | |
| BIBLIOGRAPHY | | | |
| Title | Geophysical Earth Resistance Survey (14 May 18) - Hill Top, Alconbury Weston | | |
| Serial title & volume | N/A | | |
| Author(s) | Kevin Redgate & Phil Hill | | |
| Page numbers | 009, plus 3 Annexes and 1 Enclosure | | |
| Date | 27 March 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 on 14 May 18, the purpose of which was twofold; to expand earth resistance coverage west of the earlier survey (site grid squares -1,-1, -2,-1, -1,-2, -2,-2, -1,-3, -2,-3, -1,-4, -2,-4) and to obtain a clearer results over much of the previous survey area (site grid squares 1,-1, 1,-2, 2,-2, 3,-2, 4,-2, 1,-3, 2,-3, 3,-3, 4,-3, 1,-4).

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)

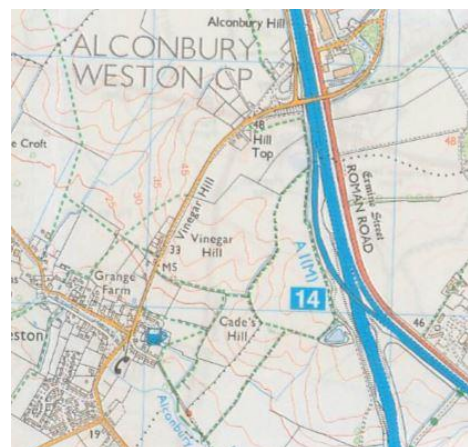


Figure 2.2: Site Relative to Alconbury Weston (Ordnance Survey, 2006)

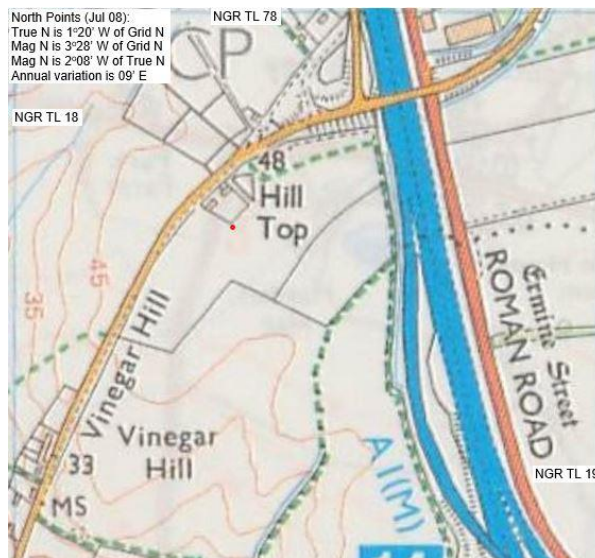


Figure 2.3: Hill Top Site with SBM in red (Ordnance Survey, 2006)

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 silage.

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).

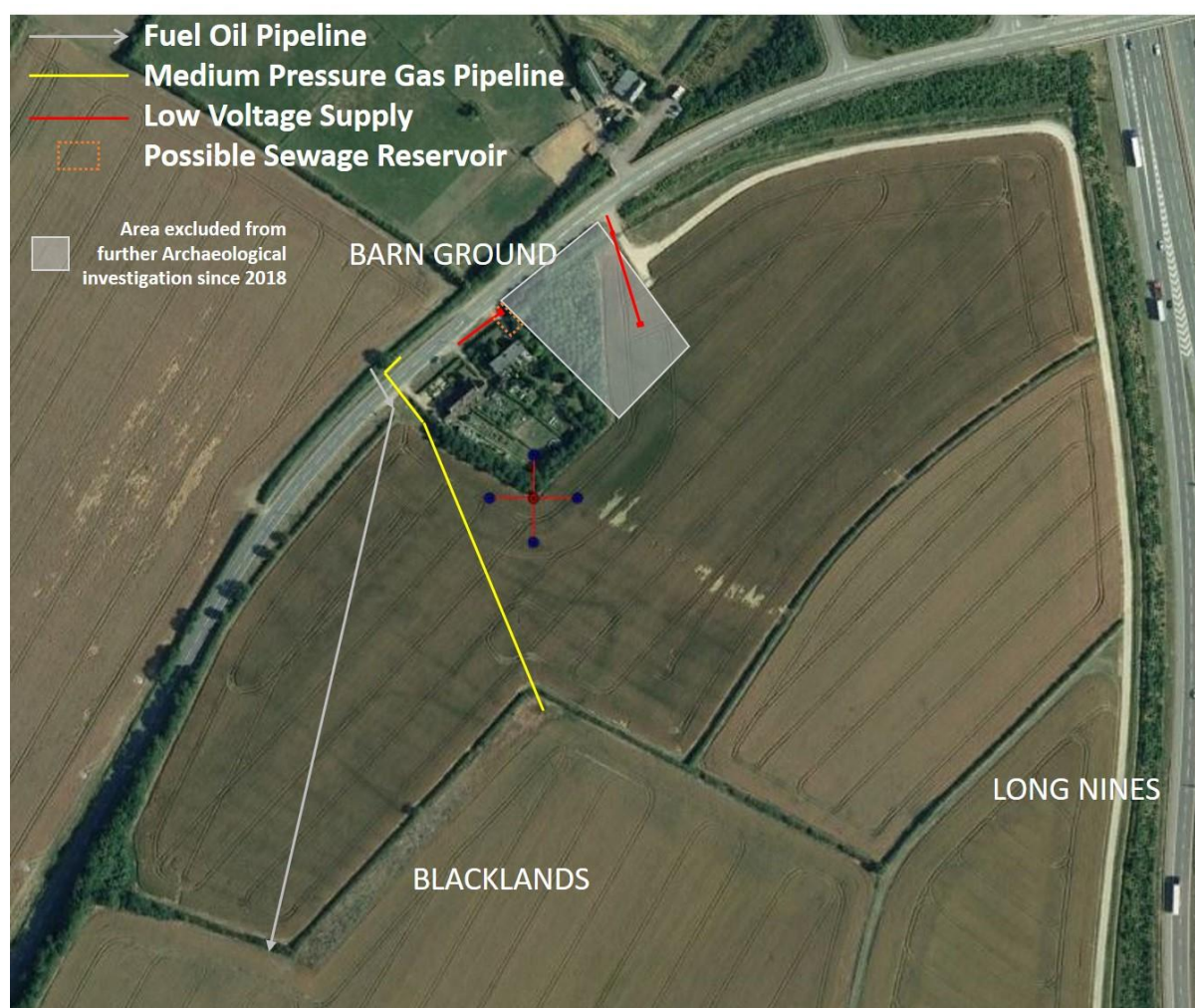


Figure 2.5: Utilities (Google Earth, 2016)

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

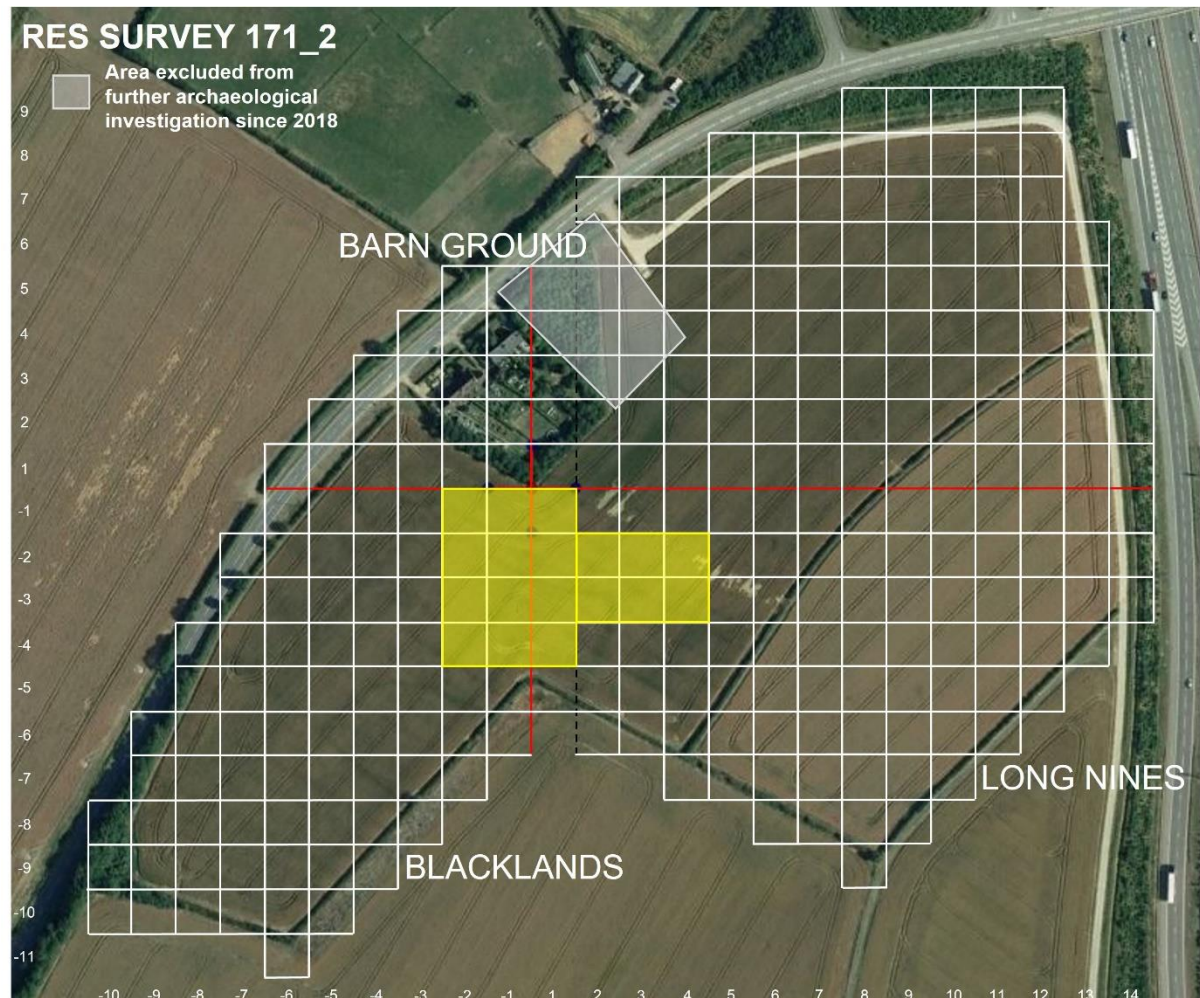


Figure 3.1: Site grid with survey area highlighted (Google Earth, 2016)

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).

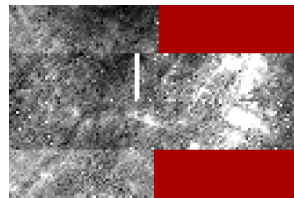


Figure 4.1a: Raw data

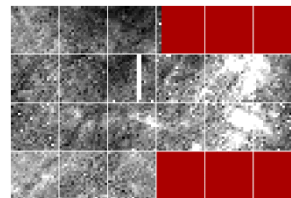


Figure 4.1b: Raw data

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).

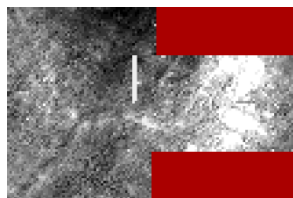


Figure 4.2a: Corrected data #1

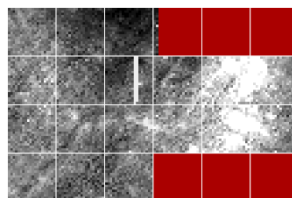


Figure 4.2b: Corrected data #1

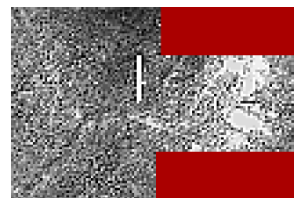


Figure 4.3a: Corrected data #2

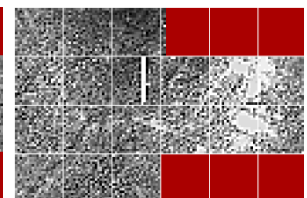


Figure 4.3b: Corrected data #2

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).

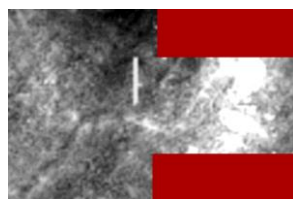


Figure 4.4a: Filtered data #1

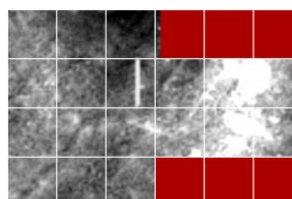


Figure 4.4b: Filtered data #1

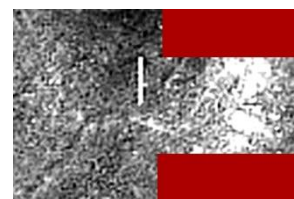


Figure 4.5a: Filtered data #2

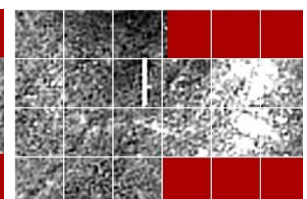


Figure 4.5b: Filtered data #2

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 broad vertical white band in 3,3 is a surveying error that should be overlooked when viewing the results.

5.2. The first anomaly of significance is the large mass of high resistance in squares 5,2, 5,3, 6,2 and 6,3. This is interpreted as compacted building rubble or (with a little optimism) an intact floor. Two plough marks on a northwest-southeast alignment can be seen truncating this mass in square 5,2.

5.3. A narrow high resistance linear anomaly can be seen extending southwest from the above-mentioned high resistance mass in square 5,3 and terminating in square 4,2, which is

possible evidence of a wall. A second narrow high resistance linear anomaly can be seen extending northwest from the above-mentioned high resistance mass in square 5,2 and terminating in square 3,2, which is at a right angle to the previous anomaly and may also be possible evidence of a wall.

5.4. A low resistance linear anomaly is visible on a northeast-southwest alignment in squares 1,1 and 2,2, which curves to an east-west alignment extending into square 3,2. This anomaly coincides with a cropmark visible on the Google Earth 2016 image which has been assessed as an Iron Age enclosure ditch (Redgate & Hill, 2020:8).

5.5. A short low resistance linear anomaly is visible on a northeast-southwest alignment in square 4,3 which is parallel with the first high resistance anomaly mentioned in 5.3 above, and may be possible evidence of a wall.

5.6. A weak low resistance linear anomaly on a northwest-southeast alignment can be seen in squares 1,4, 1,3, 2,3 and 2,2, which aligns with the known medium pressure gas pipeline.

6. **Summary.** The survey was, generally, successful in achieving its aim. It provided greater clarity of the high resistance mass located in site squares 3,-3, 4,-3, 3,-2 and 4,-2, whilst westward expansion of the earth resistance coverage revealed further archaeological anomalies; reinforcing the assessed Iron Age origins of the site (Redgate & Hill, 2020:8; 2021:14).

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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