Geophysical Survey Report for:

Harlestone 1 (Site 1 in this report)

Harlestone 2 (Site 3 in this report)

Contents

Illustrations

Front cover: 1st Edition O.S map (1886-89).

Summary

- *A fluxgate gradiometer survey was undertaken on three separate sites at Upper Harlestone, Northamptonshire.*

- *The survey identified a series of potentially significant magnetic anomalies at Sites 1 and 3.*

- *Site 1 revealed a complex of rectilinear and linear anomalies denoting enclosure ditches as well as possible building remains. However, it has not been possible to distinguish the precise footprint of any specific buildings.*

- *Site 2 did not reveal any building remains; only traces of ridge and furrow.*

- *Site 3 produced two ditched enclosures that appear to extend further north and eastwards of the area surveyed. This equates with known finds that have been recovered from this area.*

Fig.1: Location of surveys, scale 1:50,000

1.0 Introduction

Stephen Young, acting on behalf of the Community Landscape and Archaeology Survey Project (CLASP), commissioned Pre-Construct Geophysics to undertake a fluxgate gradiometer survey on three sites at Upper Harlestone in Northamptonshire.

The survey methodology described in this report was based upon guidelines set out in the English Heritage document *'Geophysical Survey in Archaeological Field Evaluation'* (David, 1995).

2.0 Location and description

The sites are located on the north-western side of Northampton and to the south-east of the Althorp Estate (Fig 1). Three separate sites,1-3, were surveyed. Each of the surveyed areas is within fields that are currently under arable cultivation.

Site 1 lies at the foot of a gentle slope close to a stream forming its southern boundary. Site 2 lies on a plateau, where the field slopes gently towards the same stream to its south. Site 3 lies to the north of a metalled farm track on gently sloping ground. The geology of Sites 1 and 3 is comprised of Northampton Sand and ironstone, whilst Site 2 is characterised by Great Oolitic Limestone and clays. The magnetic susceptibility of these types of geologies is generally good; in particular, the Northampton Sand and ironstone (British Geological Survey sheet 185, Northampton, published 1974).

3.0 Archaeological and historical background

Stephen Young has provided information in this section of the report.

The three sites surveyed potentially indicate known archaeological sites.

Site 1 was fieldwalked in October 2004, covering an area of about 1ha where 1017 sherds of Roman pottery were recovered as well as roofing tile. In addition, stone scatters were noted, suggesting the presence of at least one stone structure. The pottery retrieved dates between the late 1st to 4th centuries AD.

Aerial photographic evidence indicates that the settlement is far more extensive than the area previously examined, possibly continuing over several fields to the south and east.

Sherds of Nene Valley wares and 2nd century grey wares have been found close to Site 3, as has iron slag; suggesting possible industrial activity (RCHME 1981, 99).

Approximately 300m to the north of Site 3, Roman grey wares and 4th century Nene Valley wares have been recovered. In 2004, Stephen Young fieldwalked an area of 1.5ha immediately to the east of the survey area and recovered over 1200 sherds of pottery dating from the Iron Age to the Second Century AD.

4.0 Methodology

Gradiometry is a non-intrusive scientific prospecting technique used to determine the presence/absence of some classes of sub-surface archaeological features (eg pits, ditches, kilns, and occasionally stone walls). By scanning the soil surface, geophysicists identify areas of varying magnetic susceptibility and can interpret such variation by presenting data in various graphical formats and identifying images that share morphological affinities with diagnostic archaeological remains.

The use of gradiometry is used to establish the presence/absence of buried magnetic anomalies, which may reflect sub-surface archaeological features.

The area survey was conducted using a Bartington Grad – 01 – 1000 dual fluxgate gradiometer with DL601 data logger set to take 4 readings per metre (a sample interval of 0.25m). The zigzag traverse method of survey was used, with 1m wide traverses across 30m x 30m grids. The sensitivity of the machine was set to detect magnetic variation in the order of 0.1 nanoTesla.

The data was processed using *Archeosurveyor 0.28.4.6*. It was clipped to reduce the distorting effect of extremely high or low readings caused by discrete pieces of ferrous metal on the site. The results are plotted as greyscale and trace plot images (Figs 3 and 4).

Instrument	Bartington Grad-601
Grid size	30m x 30m
Sample interval	0.25
Traverse interval	1.0m
Traverse method	Zigzag
Sensitivity	0.1nT
Processing software	Arheosurveyor v. 1
Weather conditions	Cloudy/rain
Area surveyed	2.6ha
Date of survey	10/09/04
Survey personnel	Peter Masters and Peter Heykoop
Central National Grid Reference	

Table 1: Summary of survey parameters

5.0 Results (Figs. 2, 3 & 4)

Site 1 (Figs. 2 & 3)

The ground surface of Site 1 sloped gently from north-west to south-east, with a slight rise to the south-west. An area of c2ha was surveyed in order to detect the remains of a potential Roman settlement site.

The results have identified a complex of linear and curvilinear anomalies, which appear to relate to at least three phases of archaeological activity: provisionally modern, medieval and Romano-British.

The existing track/footpath was clearly detected by the gradiometer and is represented in the grey scale plot as a strong linear anomaly (shown as pink line). At the foot of the slope adjacent to the hedgeline, a zone of high magnetic readings (**1**) was recorded denoting modern debris/metalling near the footpath style.

To the north-east of the farm track/footpath, two discrete dipolar anomalies (circled pink) can be seen in the resultant plot denoting ferrous remains such as horseshoes, brick fragments etc.

A broader zone of high magnetic readings to the east of the track (large pink circle) appears to not resolve as a recognisable archaeological anomaly. It is possible that it represents occupation debris or an area of ferrous material such as brick and tile fragments scattered from the track.

A series of broadly spaced parallel linear anomalies trending in north-west to south-east direction are the ploughed out remains of ridge and furrow (orange lines).

A rectilinear anomaly (**2**) on the north-west side of the site denotes the outline of an enclosure ditch, which encompasses a smaller enclosure or paddock. To the south-west of this, a sub-rectangular anomaly (**3**) appears to possibly conjoin or truncate enclosure **2**.

Adjacent to the footpath/farm track is a diffuse curvilinear shaped anomaly (**4**) possibly representing an enclosure ditch, although truncated by the modern track/path.

The south-western zone of the survey area shows strong magnetic variation indicating dense settlement activity. This area lies on a slight rise above the lower lying ground to the east. A series of rectilinear and linear anomalies (**5**) were detected in this area, indicating enclosure ditches or possibly in one or two cases robbed wall foundations as these appear to more regular in the plot (**6**).

A particularly strong zone of magnetic readings is clearly indicated in the trace plot close to the south-western edge of the survey (**7**). These readings possibly represent a dense area of occupation, which may denote building remains such as roofing tile and areas of burning. A scatter of building material and tile fragments were noted in this area.

No clear plan of a Roman villa complex can be distinguished from this plot, although the site extends further westwards and only a partial mapping of the settlement has been possible using the gradiometer.

Site 2 (Figs. 2 & 4)

This area of investigation was fixed upon a potential limestone scatter, suggesting the presence of a possible a building of Roman date. An area 60m x 90m was surveyed.

A series of diffuse curvilinear anomalies (orange lines) were detected, indicating the ploughed out remains of ridge and furrow. They appear more diffuse towards the east, where the ground slopes gradually downhill from a plateau towards a stream at the bottom of the field.

Two short linear very weakly magnetic anomalies (olive green lines) probably denote modern cultivation marks. In the north-east corner, a discrete anomaly (circled pink) was detected indicating a modern ferrous spike caused by the close proximity of the current hedgeline.

No indications of earlier remains were detected.

Site 3 (Figs. 2 & 4)

An area measuring 60m x 60m was surveyed to assess the presence/absence of potential archaeological remains in this area. This survey area was based upon Roman pottery finds and industrial materials (see background information above).

A number of potentially significant anomalies were revealed.

A series of parallel linear anomalies (orange lines) running in a north-west to south-east direction are the ploughed out remains of ridge and furrow.

A strongly magnetic sub-rectilinear anomaly (**8**) was detected in the northern half of the area surveyed indicating part of a possible enclosure. Within the enclosure, and possibly conjoined to it, is a tear-drop shaped anomaly (**9**) indicating an internal ditched feature. Close to and within the larger of the two enclosures, a sparse scatter of discrete pit-like anomalies were detected indicating possible pit-like features or possible areas of burning (circled red).

Outside of the putative enclosures, a number of individual dipolar anomalies (circled pink) were detected denoting ferrous-like remains such as brick/tile fragments and iron debris.

6.0 Conclusions

The survey has identified an extensive arrangement of linear and rectilinear anomalies which, for the most part, represent two distinct periods of activity, Romano-British and medieval.

Site 1 revealed part of a Romano-British settlement comprising linear and rectilinear arrangements of ditches that indicate possible remains of paddocks/enclosures. No recognisable indications of wall foundations were detected (representing a stone structure such as a Roman villa). It is likely that more extensive remains, possibly building remains, lie to the south-east of the area surveyed. An extension to the present survey area would allow a more complete assessment of the underlying remains to be made.

The second of the three sites surveyed did not reveal any potential archaeological remains related to a stone structure. Although the area surveyed contained an extensive stone scatter, it is suggested that this is possibly of natural origin.

Site 3 revealed a tear-drop shaped feature, which appears to lie within a rectilinear shaped enclosure. Only part of the site has been revealed by gradiometry and it is apparent that the remains are more extensive.

All three sites displayed the remains of medieval ridge and furrow cultivation lines.

7.0 Acknowledgements

Pre-Construct Geophysics would like to thank Stephen Young for this commission.

8.0 References

B.G.S. 1974*, Sheet 185.Northampton Solid and Drift Edition*. 1:50,000 Series. Keyworth, British Geological Survey.

Clark, A. J. 1990 *Seeing Beneath the Soil*. London, Batsford.

David, A. 1995 *Geophysical Survey in Archaeological Field Evaluation*. London, English Heritage: Research & Professional Guidelines No.**1**.

RCHME 1981 Royal Commission on Historical Monuments for England, *An Inventory of Archaeological Sites in North-West Northamptonshire volume III*

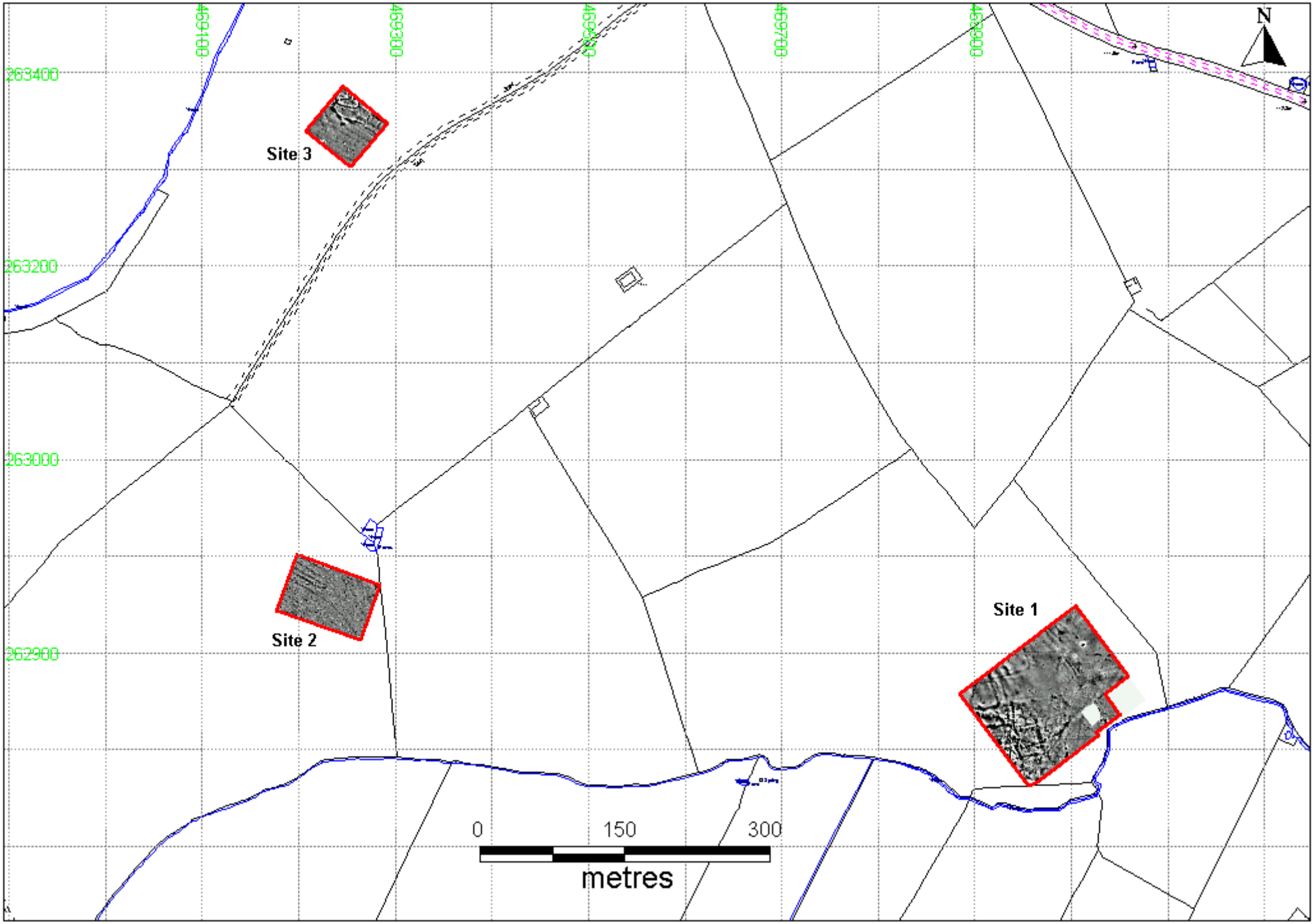
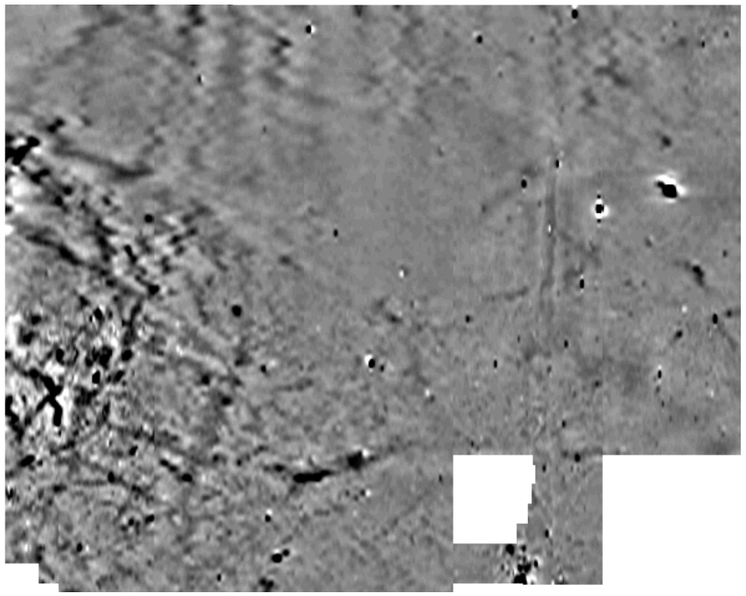


Fig. 2 Location of Sites 1-3, scale - 1:5000

RAW DATA

SITE 1

GREYSCALE IMAGE OF
ENHANCED DATA



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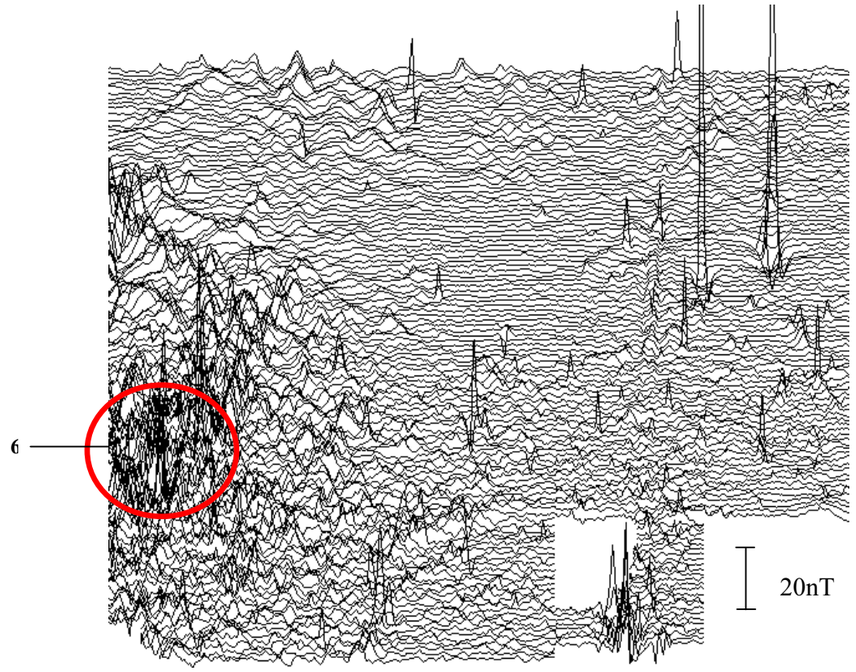
- 2 nT 2

N

60m



TRACE PLOT
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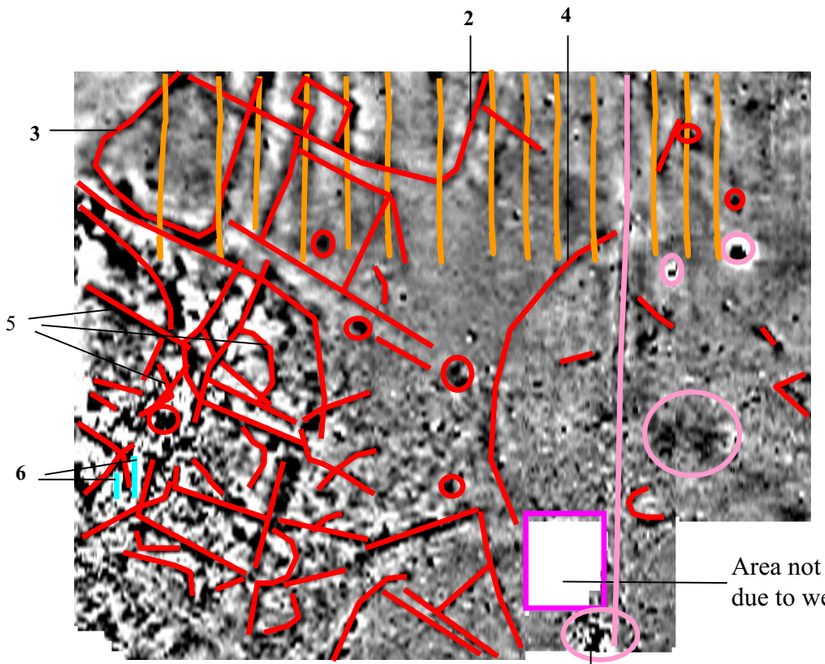
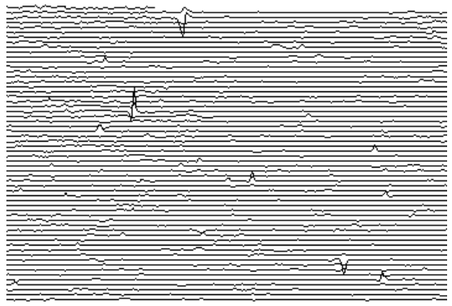


INTERPRETIVE
PLAN

Fig 3: Site 1 - Greyscale and trace plots of raw and enhanced data with interpretive plan, scale - 1:1250

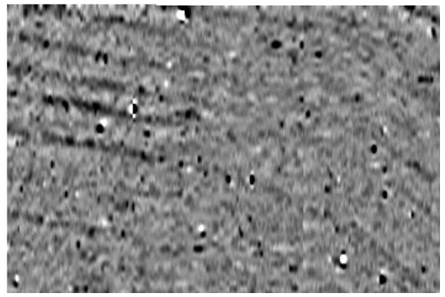
SITE 2

TRACE PLOT
OF UNCLIPPED DATA



20nT

RAW DATA



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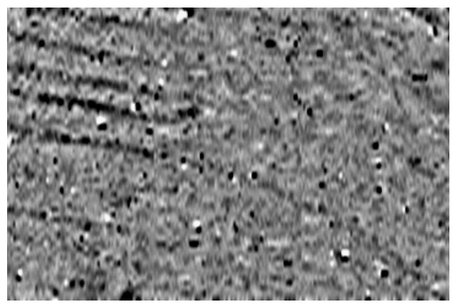
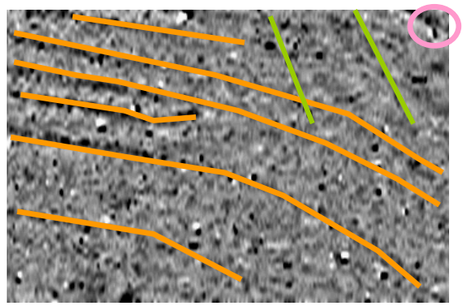
N

GREYSCALE IMAGE OF
ENHANCED DATA



- 2 nT 2

INTERPRETIVE
PLAN



60m

SITE 3

TRACE PLOT
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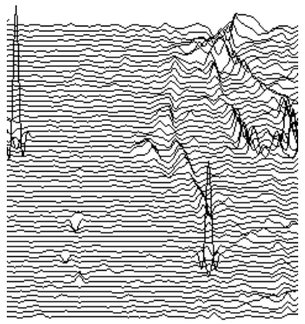

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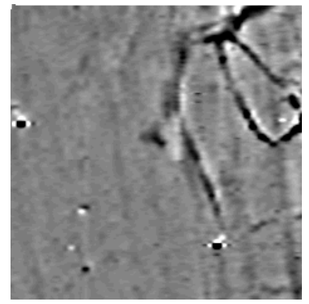
RAW DATA



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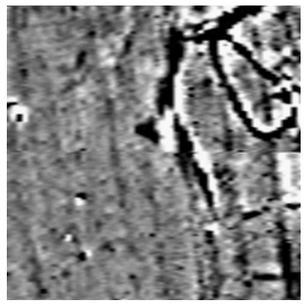
GREYSCALE IMAGE OF
ENHANCED DATA



- 2.5 nT 2.5

INTERPRETIVE
PLAN

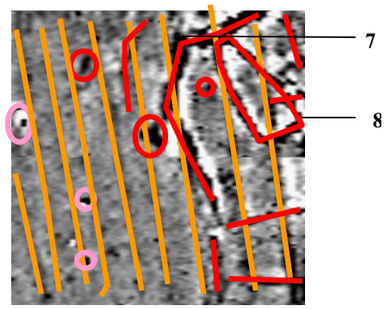


Fig 4: Sites 2 and 3 - Greyscale and trace plots of raw and enhanced data, with interpretive plan scale - 1:1250