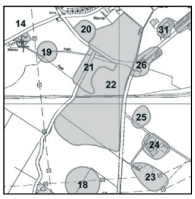
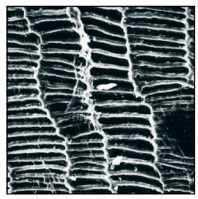
YTKM20










YATTON KEYNELL TO KINGTON ST MICHAEL PROPOSED PIPELINE, WILTSHIRE

GEOPHYSICAL SURVEY

commissioned by RSK ADAS Ltd

May 2020

HEADLAND ARCHAEOLOGY

REGISTERED ORGANISATION CIfA

YATTON KEYNELL TO KINGTON ST MICHAEL PROPOSED PIPELINE, WILTSHIRE

GEOPHYSICAL SURVEY

commissioned by RSK ADAS Ltd

May 2020

This report adheres to the quality standard of ISO 9001:2015

PROJECT INFO:

HA Project Code **YTKM20** / NGR **ST 8662 7766 – ST 8914 7749** / Parish **Yatton Keynell –Kington St Michael** / Local Authority **Wiltshire County Council** / OASIS Ref. **headland5-395087**

PROJECT TEAM:

Project Manager **Sam Harrison** / Author **Peter Cottrell** / Fieldwork **Krasimir Dyulgerski, Olivier Vansassenbrouk** / Graphics **Rafael Maya-Torcelly, Sam Harrison**

Approved by **Sam Harrison** .....

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HEADLAND ARCHAEOLOGY

part of the RSK Group

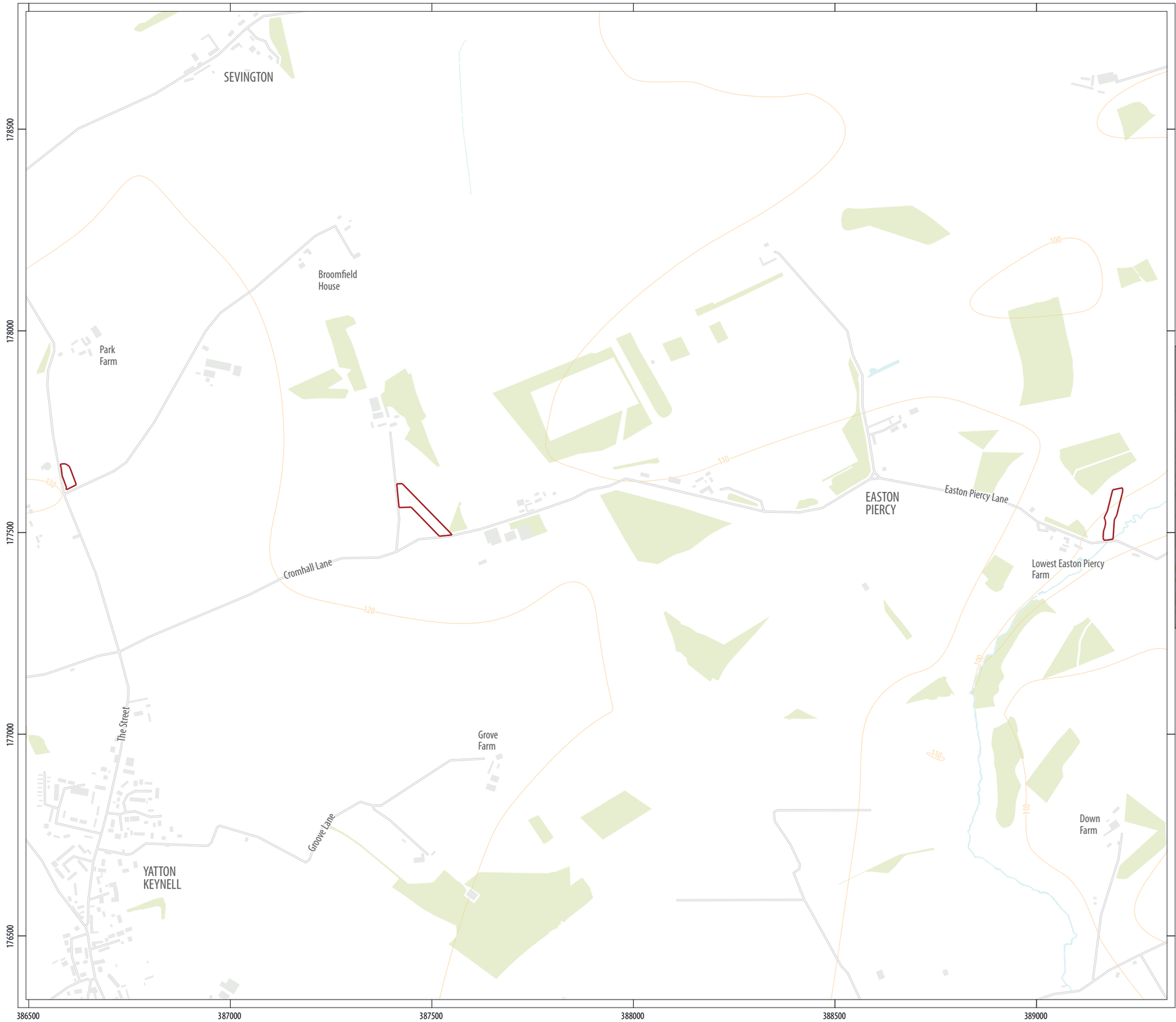
REGISTERED ORGANISATION CIfA

PROJECT SUMMARY

Headland Archaeology (UK) Ltd undertook a geophysical (magnetometer) survey of 3 areas on land between Yatton Keynell and Kington St Michael, to inform planning proposals for a new pipeline. No anomalies of clear archaeological potential have been identified. Several dipolar anomalies have been detected which are consistent with modern activity including a twentieth century farm track, a buried service pipe and a pylon base. Two small and localised areas of high magnitude anomalies have been identified in Area 602 which may be due to archaeological activity such as pits, and spreads of enhanced material but, in the absence of any coherent archaeological pattern, these are assessed as of low archaeological potential. A possible, former, field boundary, or water-course has been tentatively identified in Area 603. Elsewhere, on the basis of the geophysical survey, the site is assessed as of low archaeological potential.

CONTENTS

LIST OF ILLUSTRATIONS



Yatton Tower to Kingston St Michael
Proposed Pipeline
Yatton Keynell
South Gloucestershire

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geophysical survey area

ILLUS 1 Site location

YATTON KEYNELL TO KINGTON ST MICHAEL PROPOSED PIPELINE, WILTSHIRE

GEOPHYSICAL SURVEY

1 INTRODUCTION

Headland Archaeology (UK) Ltd was commissioned by RSK ADAS Ltd (the Client), to undertake a geophysical (magnetometer) survey on three parcels of land between Yatton Keynell and Kington St Michael, Wiltshire, to inform planning proposals for a new proposed pipeline. The results of the survey will inform future archaeological strategy at the site, if required.

The survey was undertaken in order to assess the impact of the proposed development on the historic environment. It was undertaken in accordance with an Archaeological Written Scheme of Investigation (WSI) (Harrison 2020), which was submitted to the client, with guidance within the National Planning Policy Framework (MHCLG 2019) and in line with current best practice (Chartered Institute for Archaeologists 2014, Europae Archaeologia Consilium 2016).

1.1 SITE LOCATION, TOPOGRAPHY AND LAND-USE

The Geophysical Survey Area (GSA) comprises of three separate areas (Areas: 602, 603, and 604) along small sections of the proposed pipeline. Area 602, at the west of the scheme, immediately east of Yatton Tower, is centred on ST 8662 7766 (Illus 1 & 2). Area 603, located to the north of Cromhall Lane and east of an access track to Broomsfield Farm, is centred at ST 8743 7754. (Illus 1 & 3). Area 604, at the east of the route, located north of Easton Piercy Lane, is centred on ST 8914 7749 (Illus 1 & 4).

Area 602 lies close to a road junction and is abutted by roads to the south and west. Area 603 butts a road along its southern edge and a farm track to the north–east. Area 604 is split into two sections, within two separate fields, separated by a mature field boundary. In the southernmost field the proposed survey area is bisected by a modern farm track).

At the time of the survey, all the areas were under pasture. A small area in the south of Area 604 was planted with saplings and deemed unsuitable for survey (Illus 4). The track in the southern field was unbounded and thus included in the surveyed area.

The survey was carried out on the 11th May 2020.

1.2 GEOLOGY AND SOILS

The bedrock geology of the western area comprises Kellaways clay member (mudstone). For the central survey area, the bedrock geology comprises Cornbrash formation (limestone). The bedrock of the eastern survey area comprises Forest marble formation (mudstone). No superficial deposits are recorded for any of the survey areas (NERC 2020).

The soils at areas 602 and 604 are classified in the Soilscape 9 Association, characterised as lime–rich loams and clays with impeded drainage The soil at area 603 is classified in the Soilscape 3 Association, characterised as shallow, lime-rich soil soils over limestone (Cranfield University 2020).

2 ARCHAEOLOGICAL BACKGROUND

No information of archaeological background was provided for the GSA. Historic mapping show that the areas concerned have changed little apart from the addition of a farm track at Area 604.

ILLUS 2 Area 602, looking south

3 AIMS, METHODOLOGY AND PRESENTATION

The general aim of the geophysical survey was to provide enough information to establish the presence/absence, character and extent of any archaeological remains within the GSA. This will therefore enable an assessment to be made of the impact of the proposed development on any sub-surface archaeological remains, if present.

The specific archaeological objectives of the geophysical survey were:

- to gather enough information to inform the extent, condition, character and date (as far as circumstances permit) of any archaeological features and deposits within the GSA;
- to obtain information that will contribute to an evaluation of the significance of the scheme upon cultural heritage assets; and
- to prepare a report summarising the results of the survey.

3.1 MAGNETOMETER SURVEY

Magnetic survey methods rely on the ability of a variety of instruments to measure very small magnetic fields associated with buried archaeological remains. A feature such as a ditch, pit or kiln can act like a small magnet, or series of magnets, that produce distortions (anomalies) in the earth's magnetic field. In mapping these slight variations, detailed plans of sites can be obtained as buried features often produce reasonably characteristic anomaly shapes and strengths (Gaffney & Gater 2003). Further information on soil magnetism and the interpretation of magnetic anomalies is provided in Appendix 1.

The survey was undertaken using four Bartington Grad601 sensors mounted at 1m intervals (1m traverse interval) onto a rigid carrying frame. The system was programmed to take readings at a frequency of 10Hz (allowing for a 10–15cm sample interval) on roaming traverses (swaths) 4m apart. These readings were stored on an external weatherproof laptop and later downloaded for processing and interpretation. The system was linked to a Trimble R8s Real Time Kinetic (RTK) differential Global Positioning System (dGPS) outputting in NMEA mode to ensure a high positional accuracy for each data point.

MLGrad601 and MultiGrad601 (Geomar Software Inc.) software was used to collect and export the data. Terrasurveyor V3.0.35.1 (DWConsulting) software was used to process and present the data.

3.2 REPORTING

A general site location plan is shown in Illus 1 at a scale of 1:10,000. Illus 2, 3 & 4 are site condition photographs. Illus 5 is a 1:10,000 survey location plan showing greyscale images. Large-scale, fully processed (greyscale) data, minimally processed data (XY trace plot) and an interpretative plot are presented at a scale of 1:1,500 in Illus 6 to Illus 14 inclusive.

ILLUS 3 Area 603, looking south-east

Technical information on the equipment used, data processing and magnetic survey methodology is given in Appendix 1. Appendix 2 details the survey location information and Appendix 3 describes the composition and location of the site archive. Data processing details are presented in Appendix 4. A copy of the OASIS entry (Online Access to the Index of Archaeological Investigations) is reproduced in Appendix 5.

The survey methodology, report and any recommendations comply with the Written Scheme of Investigation (Harrison 2020), guidelines outlined by Europae Archaeologia Consilium (EAC 2016) and by the Chartered Institute for Archaeologists (CIfA 2014). All illustrations from Ordnance Survey (OS) mapping are reproduced with the permission of the controller of Her Majesty's Stationery Office (© Crown copyright).

The illustrations in this report have been produced following analysis of the data in 'raw' and processed formats and over a range of different display levels. All illustrations are presented to most suitably display and interpret the data from this site based on the experience and knowledge of management and reporting staff.

4 RESULTS AND DISCUSSION

Ground conditions were very good at areas 602, 603, and the greater part of 604 contributing to a high standard of data collection. Part of the latter area was deemed unsuitable for survey as detailed above, and the necessity to survey the hard-core farm track has resulted in a narrow band of magnetic noise crossing the survey. The surveys have detected a moderate level of background magnetic variation which is characterised by frequent, evenly dispersed, discrete low magnitude anomalies. This is likely due to the depth and composition of the topsoil and the superficial deposits from which they derive. Against this background several anomalies have been identified and cross-referenced to specific examples on the interpretation figures (Illus 8, 11, & 14), where appropriate.

4.1 FERROUS AND MODERN ANOMALIES

Ferrous anomalies, characterised as individual 'spikes', are typically caused by ferrous (magnetic) material, either on the ground surface or in the plough-soil. Little importance is normally given to such anomalies, unless there is any supporting evidence for an archaeological interpretation, as modern ferrous debris is common on most sites, often being present as a result of manuring or tipping/infilling. There is no obvious clustering to these ferrous anomalies which might indicate an archaeological origin. Far more probable is that the 'spike' responses are likely caused by the random distribution of ferrous debris in the upper soil horizons.

In areas 602 and 603, magnetic disturbances around the field edges are due to ferrous material within, or adjacent to the boundaries, and road or track verges, and are of no archaeological interest. In Area 604 there are similar disturbances along the hardcore track (HT1

ILLUS 4 Area 604 showing area unsuitable for survey, looking south-east

Illus 14), and at the edges of the field boundary separating the two sections of the survey.

Very strong responses in the south-eastern corner of Area 603 correspond to a pylon base (PB1 Illus 10). A high magnitude dipolar linear anomaly aligned east–north-east/west–south–west across the northern section of Area 604 (SP1 Illus 14) locates a buried service pipe.

A group of magnetic dipoles in the centre of Area 603 are roughly aligned with boundary features in fields to the east and west, although there is no record of a boundary here as far back as an OS map of 1886. Nevertheless, the anomalies could represent a back-filled, former boundary or water-course. (PFB1 Illus 10).

4.2 AGRICULTURAL ANOMALIES

Low magnitude parallel linear trend anomalies, often parallel with the surrounding field boundaries, are typical of ploughing patterns. There are linear trends of this type in Area 603 running parallel to the ditch marking the north-eastern boundary of the field.

A single linear anomaly in Area 604 has been marked as of probable agricultural origin.

4.3 GEOLOGICAL ANOMALIES

A group of strong magnetic anomalies in Area 603, mostly to the south of the survey, have been interpreted as being of geological origin. The soil in this area is described as being shallow over limestone (Cranfield University 2020) and the bedrock as Cornbrash Formation – limestone (NERC 2020). Sparse areas of soil cover might easily cause magnetic responses from the local bedrock geology to be detected.

4.4 POSSIBLE ARCHAEOLOGICAL ANOMALIES

A small, localised cluster of high magnitude anomalies (relative to the magnetic background) have been identified in the north of Area 602. These consist of three sub-parallel linear features with a group of rounded anomalies that might be characteristic of silted-up pits. The stronger magnetic responses seen here may be due to spreads of enhanced material. A further two discrete pit-like anomalies have been detected to the south of the area.

There are, however, no coherent patterns to any of these anomalies, and in the absence of any other supporting evidence, they are assessed as of low archaeological potential. A geological or cultivation origin might be considered equally plausible.

5 CONCLUSION

The survey has successfully evaluated the geophysical survey area and has not identified any anomalies of clear archaeological potential. Several dipolar anomalies have been detected which are consistent with modern activity including a twentieth century farm track, a buried service pipes and a pylon base. Two small and

localised areas of high magnitude anomalies have been identified in Area 602 which may be due to archaeological activity such as pits, and spreads of enhanced material but, in the absence of any coherent archaeological pattern, these are assessed as of low archaeological potential. A possible, former, field boundary, or water-course has been tentatively identified in Area 603. Elsewhere, on the basis of the geophysical survey, the site is assessed as of low archaeological potential.

6 REFERENCES

Chartered Institute for Archaeologists (ClfA) 2014 ***Standard and guidance for archaeological geophysical survey*** (Reading) http://www.archaeologists.net/sites/default/files/ClfAS%26GGeophysics_2.pdf accessed 21 May 2020

Cranfield University 2019 ***Cranfield Soil and Agrifood Institute Soilscapes*** http://www.landis.org.uk/soilscapes/ accessed 21 May 2020

Europae Archaeologia Consillium (EAC) 2016 EAC ***Guidelines for the Use of Geophysics in Archaeology: Question to Ask and Points to Consider*** (Namur, Belgium) http://www.old.european-archaeological-council.org/files/eac_guidelines_2_final.pdf accessed 21 May 2020

Gaffney C & Gater J 2003 ***Revealing the Buried Past: Geophysics for Archaeologists*** Stroud

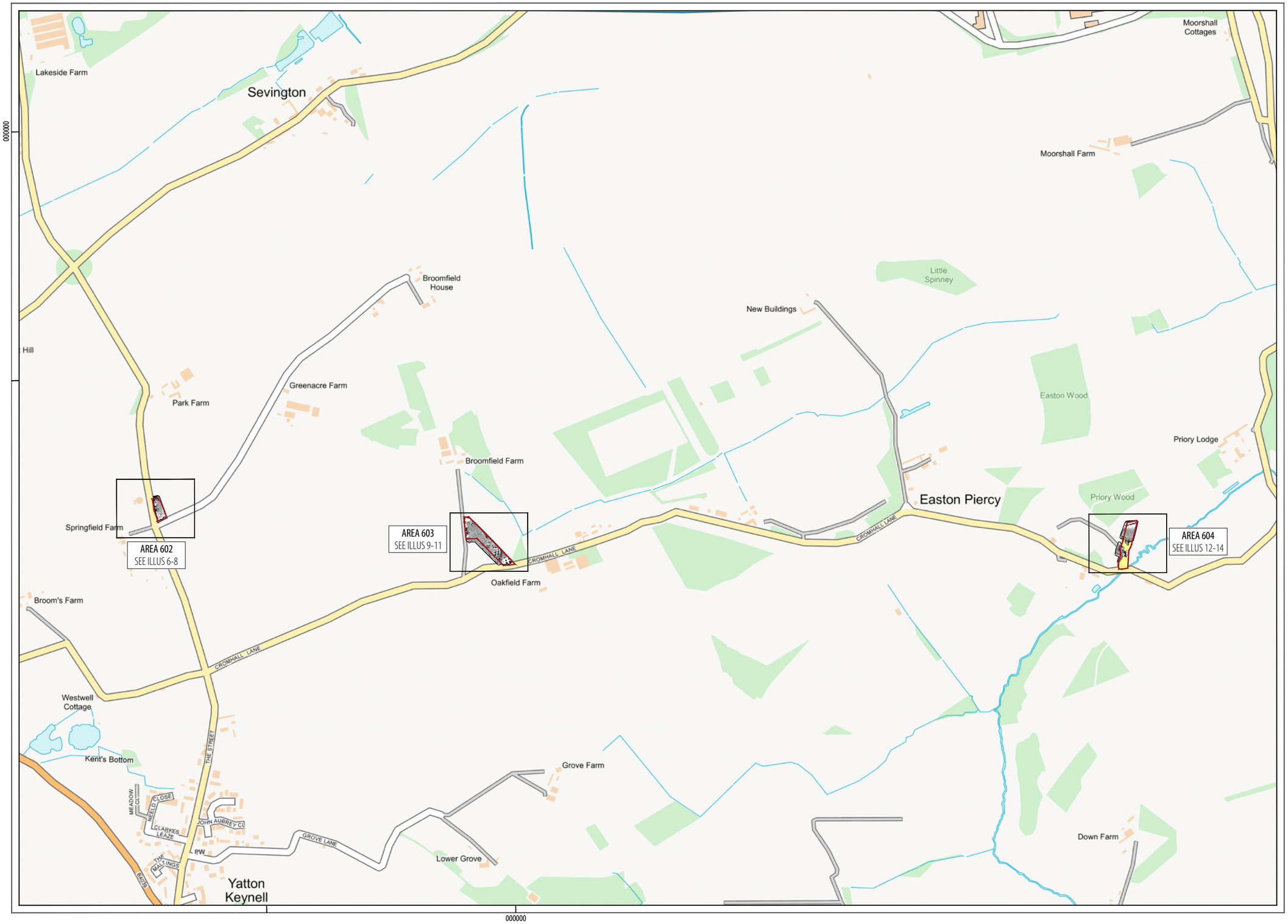
Harrison S 2020 ***Proposed Pipeline, Yatton Keynell to Kington St Michael, Wiltshire; Written Scheme of Investigation for Geophysical Survey*** [unpublished client document] Headland Archaeology Ref YTKM20

Ministry of Housing, Communities and Local Government (MHCLG) 2019 ***National Planning Policy Framework*** https://assers.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/81017/NPPF_Feb_2019_revised.pdf accessed 21 May 2020

Natural Environment Research Council (NERC) 2018 ***British Geological Survey*** http://www.bgs.ac.uk/ accessed 21 May 2020

National Library of Scotland (2020) ***OS Revised new Series One inch to the mile England and wales sheet 265 Bath*** 1898 https://maps.nls.uk/geo/explore/#zoom=15&lat=51.50119&lon=-2.18324&layers=1&b=1 accessed 21 May 2020

Old-maps.co.uk (2020) ***OS County Series 1886 Wiltshire 1:2500*** https://www.old-maps.co.uk/#/Map/387430/177540/12/100367 accessed 21 May 2020



geophysical survey area

area unsuitable for survey

nT

-1.0 2.0

0 200m

1:10,000 @ A3

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Wiltshire

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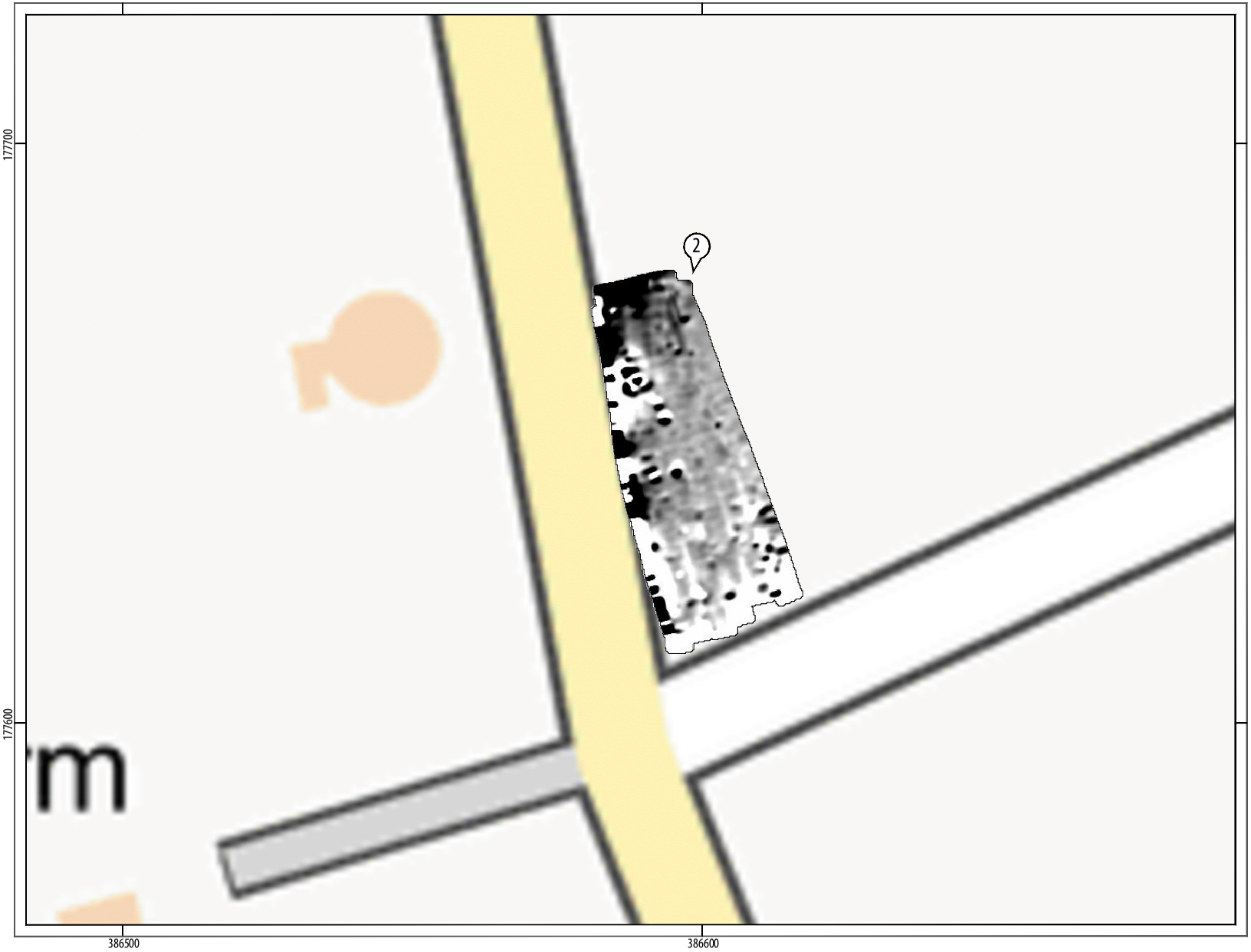
ILLUS 5 Survey location showing greyscale magnetometer data



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ILLUS 6 Processed greyscale magnetometer data; Area 602

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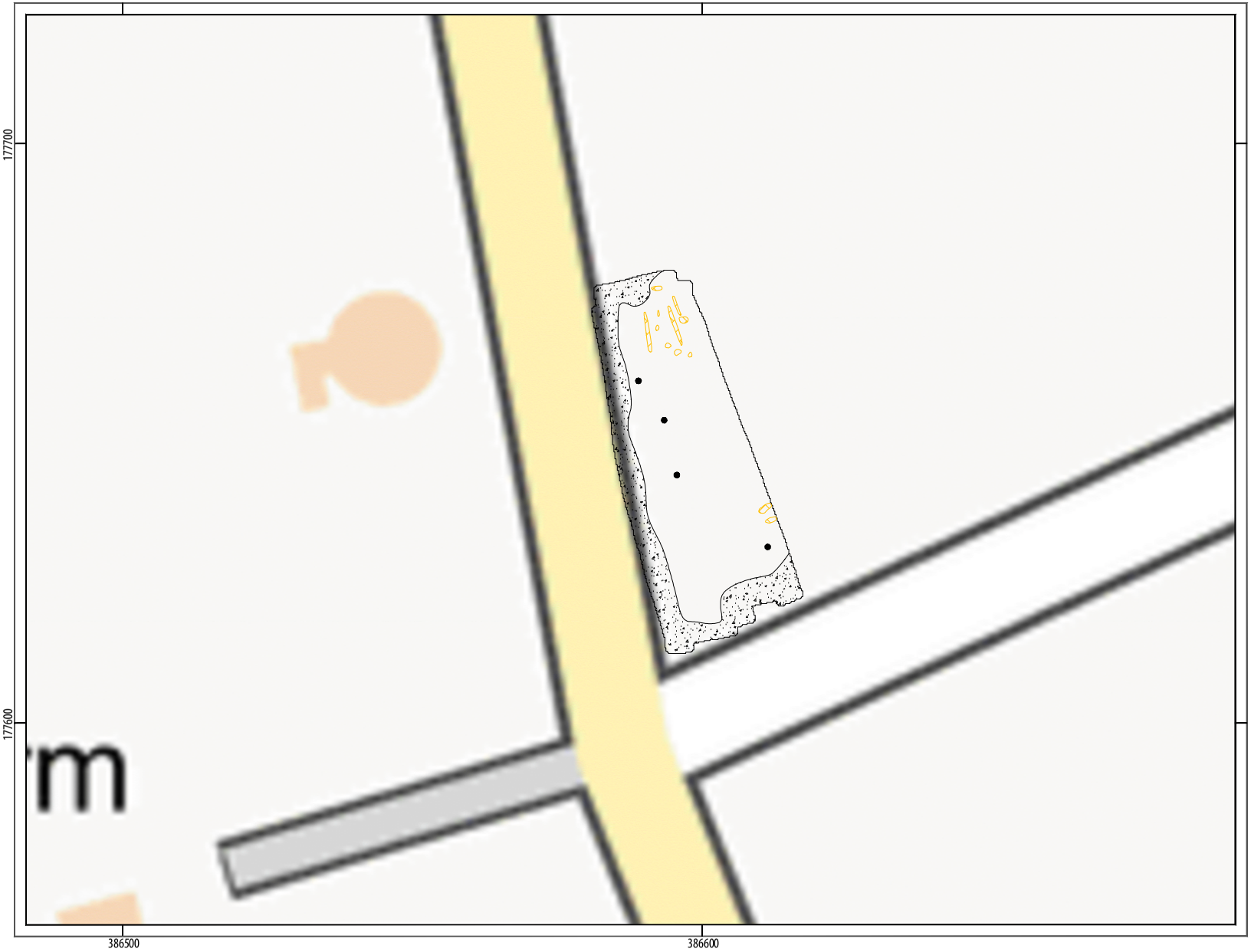
ILLUS 7 XY trace plot of minimally magnetometer data; Area 602



TYPE OF ANOMALY	INTERPRETATION
dipolar isolated	ferrous material
magnetic disturbance	ferrous material
magnetic enhancement	archaeology?/geology

0 20m
1:1,000 @ A4

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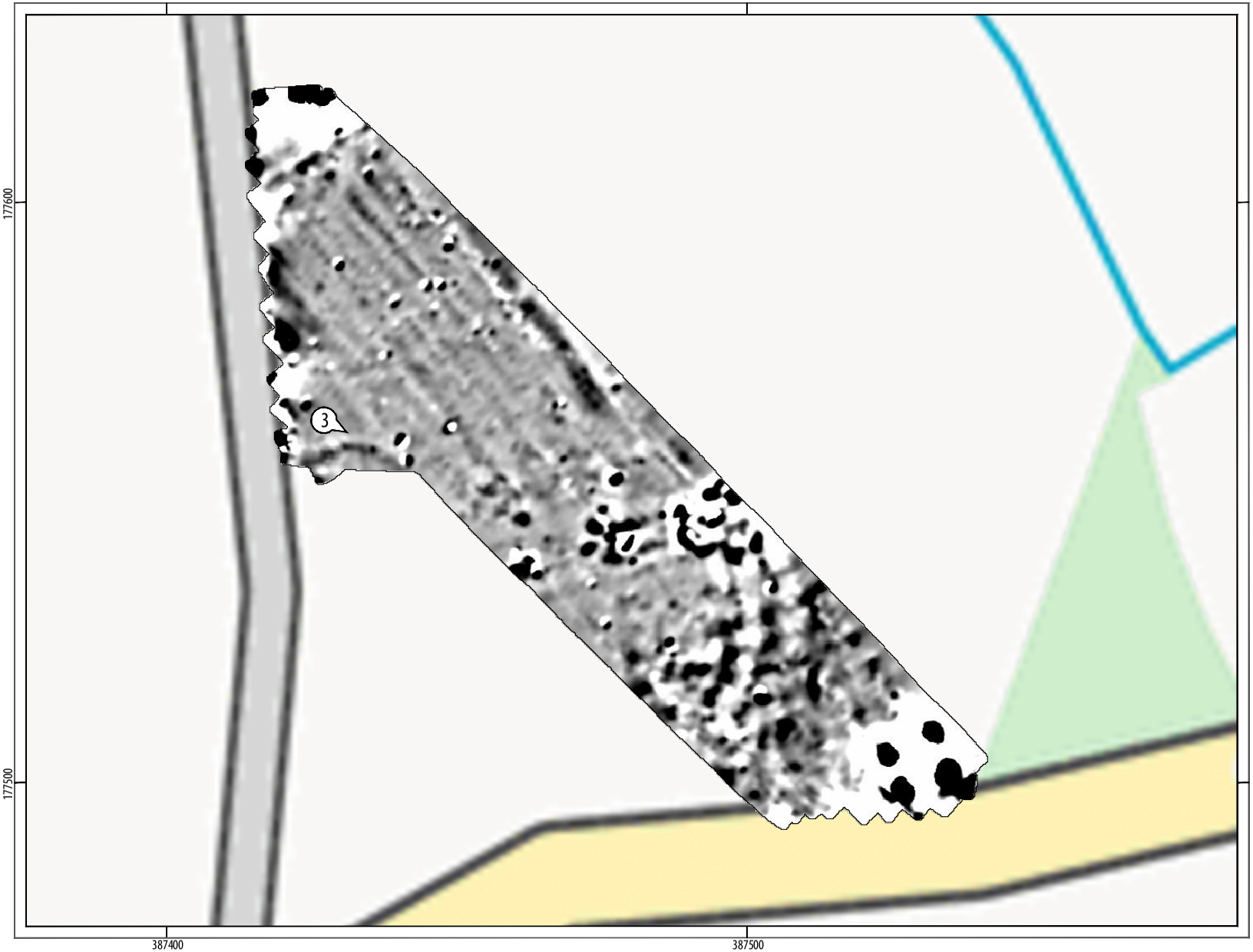
ILLUS 8 Interpretation of magnetometer data; Area 602



location and direction of ILLUS 3

nT
-1.0
2.0

0
20m
1:1,000 @ A4

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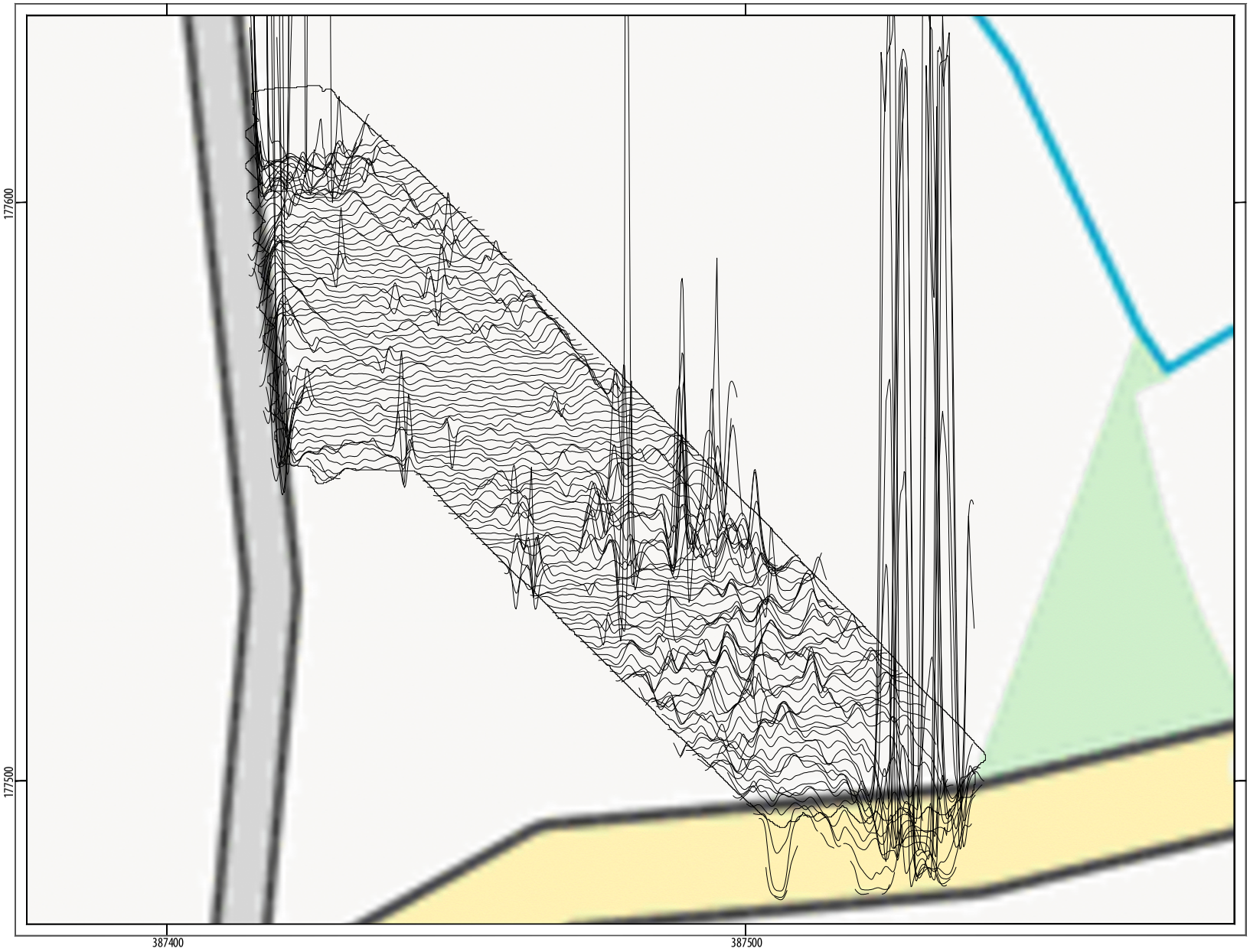
ILLUS 9 Processed greyscale magnetometer data; Area 603



25.0nT/cm

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1:1,000 @ A4

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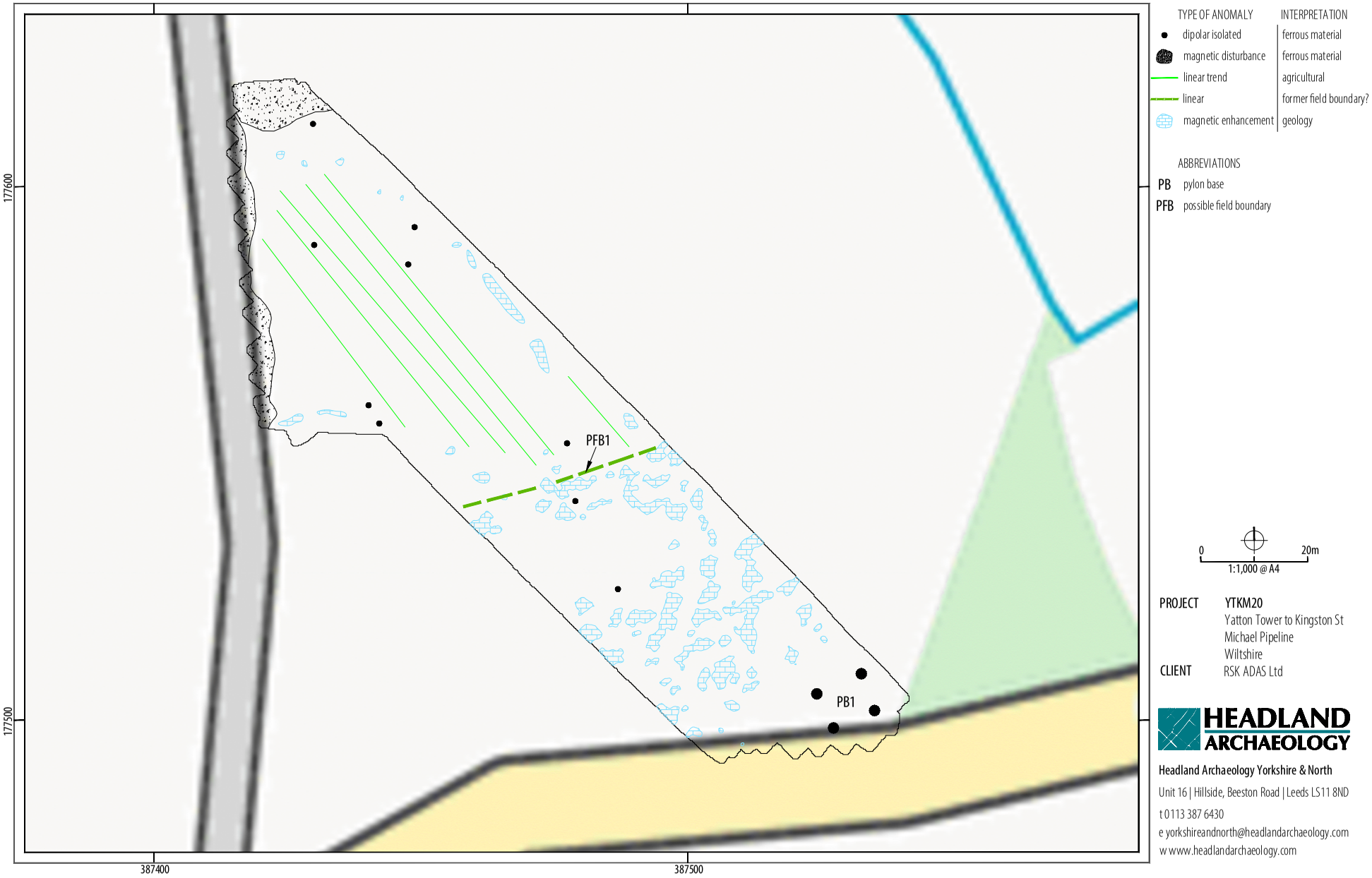
ILLUS 10 XY trace plot of minimally processed magnetometer data; Area 603



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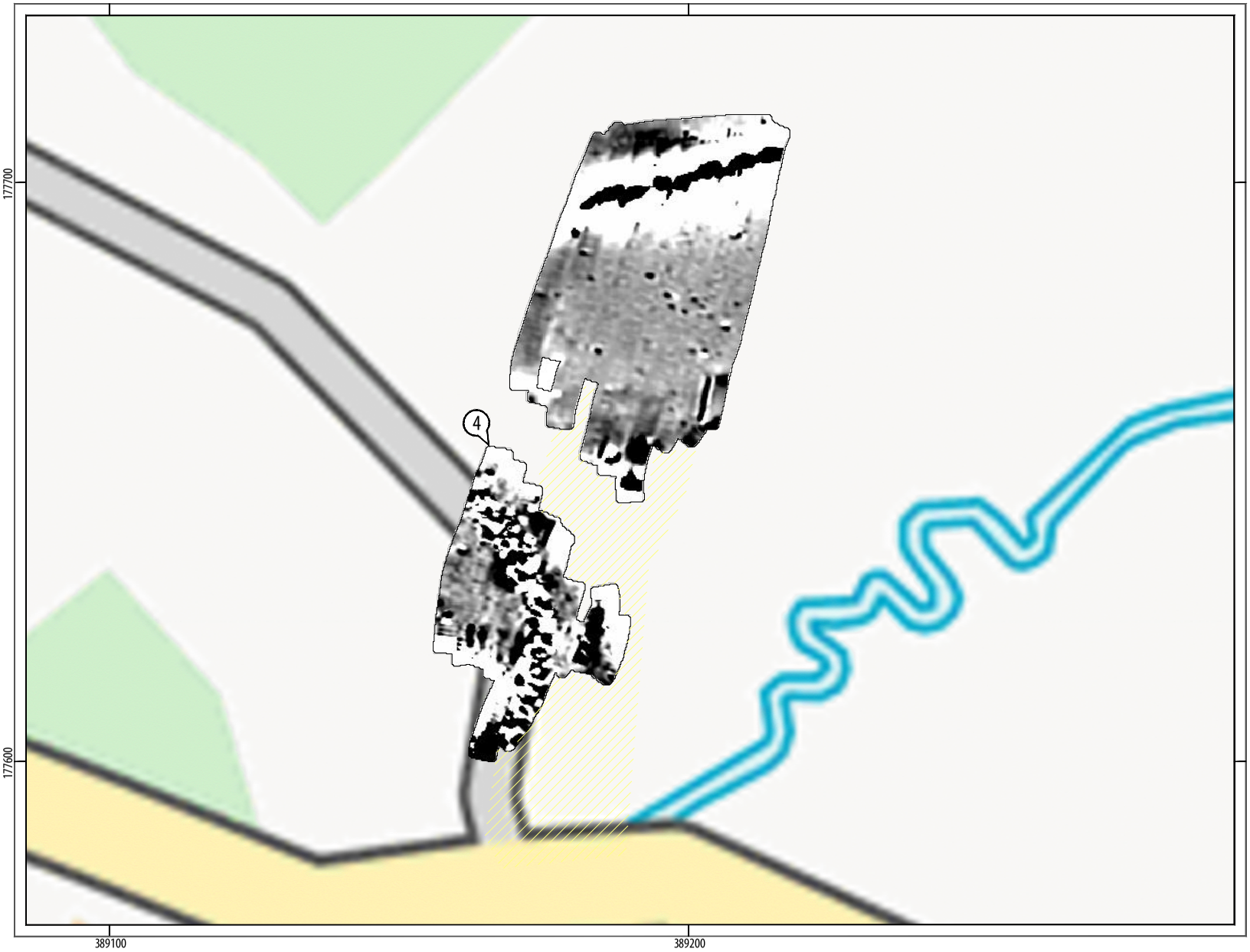
ILLUS 11 Interpretation of magnetometer data; Area 603



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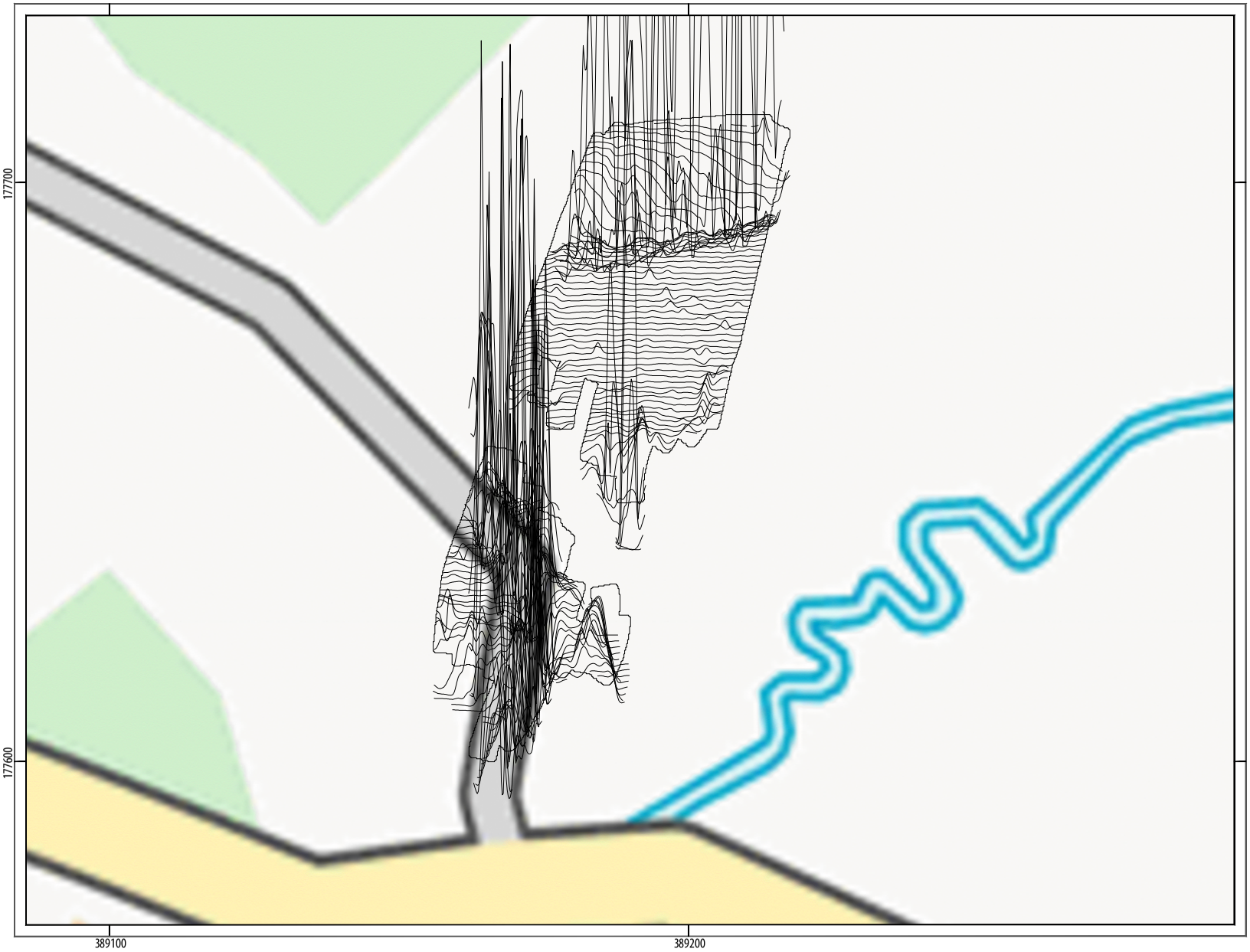
ILLUS 12 Processed greyscale magnetometer data; Area 604



ILLUS 13 XY trace plot of minimally processed magnetometer data; Area 604

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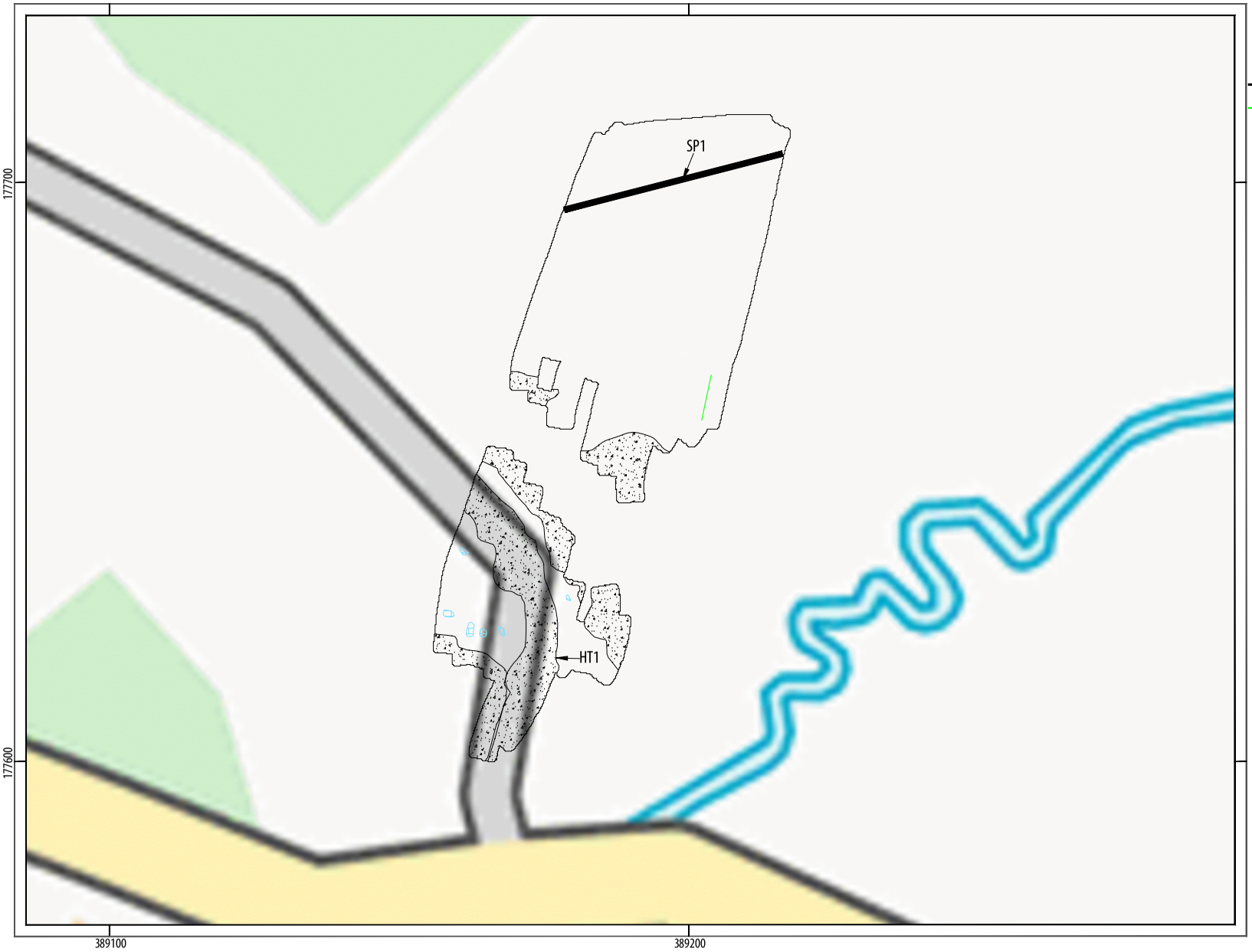

TYPE OF ANOMALY	INTERPRETATION
dipolar isolated	ferrous material
magnetic disturbance	ferrous material
dipolar linear	service pipe
linear trend	agricultural
magnetic enhancement	geology

ABBREVIATIONS

SP1 service pipe

HT1 hardcore trackway

0 20m

1:1,000 @ A4

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ILLUS 14 Interpretation of magnetometer data; Area 604

7 APPENDICES

APPENDIX 1 MAGNETOMETER SURVEY

Magnetic susceptibility and soil magnetism

Iron makes up about 6% of the earth's crust and is mostly present in soils and rocks as minerals such as maghaemite and haematite. These minerals have a weak, measurable magnetic property termed magnetic susceptibility. Human activities can redistribute these minerals and change (enhance) others into more magnetic forms so that by measuring the magnetic susceptibility of the topsoil, areas where human occupation or settlement has occurred can be identified by virtue of the attendant increase (enhancement) in magnetic susceptibility. If the enhanced material subsequently comes to fill features, such as ditches or pits, localised isolated and linear magnetic anomalies can result whose presence can be detected by a magnetometer (fluxgate gradiometer).

In general, it is the contrast between the magnetic susceptibility of deposits filling cut features, such as ditches or pits, and the magnetic susceptibility of topsoils, subsoils and rocks into which these features have been cut, which causes the most recognisable responses. This is primarily because there is a tendency for magnetic ferrous compounds to become concentrated in the topsoil, thereby making it more magnetic than the subsoil or the bedrock. Linear features cut into the subsoil or geology, such as ditches, that have been silted up or have been backfilled with topsoil will therefore usually produce a positive magnetic response relative to the background soil levels. Discrete feature, such as pits, can also be detected.

The magnetic susceptibility of a soil can also be enhanced by the application of heat. This effect can lead to the detection of features such as hearths, kilns or areas of burning.

Types of magnetic anomaly

In the majority of instances anomalies are termed 'positive'. This means that they have a positive magnetic value relative to the magnetic background on any given site. However some features can manifest themselves as 'negative' anomalies that, conversely, means that the response is negative relative to the mean magnetic background.

Where it is not possible to give a probable cause of an observed anomaly a '?' is appended.

It should be noted that anomalies interpreted as modern in origin might be caused by features that are present in the topsoil or upper layers of the subsoil. Removal of soil to an archaeological or natural layer can therefore remove the feature causing the anomaly.

The types of response mentioned above can be divided into five main categories that are used in the graphical interpretation of the magnetic data:

Isolated dipolar anomalies (iron spikes) These responses are typically caused by ferrous material either on the surface or in the topsoil. They cause a rapid variation in the magnetic response giving a characteristic 'spiky' trace. Although ferrous archaeological artefacts could produce this type of response, unless there is supporting evidence for an archaeological interpretation, little emphasis is normally given to such anomalies, as modern ferrous objects are common on rural sites, often being present as a consequence of manuring.

Areas of magnetic disturbance These responses can have several causes often being associated with burnt material, such as slag waste or brick rubble or other strongly magnetised/fired material. Ferrous structures such as pylons, mesh or barbed wire fencing and buried pipes can also cause the same disturbed response. A modern origin is usually assumed unless there is other supporting information.

Lightning-induced remnant magnetisation (LIRM) LIRM anomalies are thought to be caused in the near surface soil horizons by the flow of an electrical currents associated with lightning strikes. These observed anomalies have a strong bipolar signal which decreases with distance from the spike point and often appear as linear or radial in shape.

Linear trend This is usually a weak or broad linear anomaly of unknown cause or date. These anomalies are often caused by agricultural activity, either ploughing or land drains being a common cause.

Areas of magnetic enhancement/positive isolated anomalies Areas of enhanced response are characterised by a general increase in the magnetic background over a localised area whilst discrete anomalies are manifest by an increased response (sometimes only visible on an XY trace plot) on two or three successive traverses. In neither instance is there the intense dipolar response characteristic exhibited by an area of magnetic disturbance or of an 'iron spike' anomaly (see above). These anomalies can be caused by infilled discrete archaeological features such as pits or post-holes or by kilns. They can also be caused by pedological variations or by natural infilled features on certain geologies. Ferrous material in the subsoil can also give a similar response. It can often therefore be very difficult to establish an anthropogenic origin without intrusive investigation or other supporting information.

Linear and curvilinear anomalies Such anomalies have a variety of origins. They may be caused by agricultural practice (recent ploughing trends, earlier ridge and furrow regimes or land drains), natural geomorphological features such as palaeochannels or by infilled archaeological ditches.

APPENDIX 2 SURVEY LOCATION INFORMATION

An initial survey base station was established using a Trimble VRS differential Global Positioning System (dGPS). The magnetometer data was georeferenced using a Trimble RTK differential Global Positioning System (Trimble R8s model).

Temporary sight markers were laid out using a Trimble VRS differential Global Positioning System (Trimble R8s model) to guide the operator and ensure full coverage. The accuracy of this dGPS equipment is better than 0.01m.

The survey data were then super-imposed onto a base map provided by the client to produce the displayed block locations. However, it should be noted that Ordnance Survey positional accuracy for digital map data has an error of 0.5m for urban and floodplain areas, 1.0m for rural areas and 2.5m for mountain and moorland areas. This potential error must be considered if coordinates are measured off hard copies of the mapping rather than using the digital coordinates.

Headland Archaeology cannot accept responsibility for errors of fact or opinion resulting from data supplied by a third party.

APPENDIX 3 GEOPHYSICAL SURVEY ARCHIVE

The geophysical archive comprises an archive disk containing the raw data in XYZ format, a raster image of each greyscale plot with associate world file, and a PDF of the report.

The project will be archived in-house in accordance with recent good practice guidelines (http://guides.archaeologydataservice.ac.uk/g2gp/Geophysics_3). The data will be stored in an indexed archive and migrated to new formats when necessary.

APPENDIX 4 DATA PROCESSING

The gradiometer data has been presented in this report in processed greyscale and minimally processed XY trace plot format.

Data collected using RTK GPS-based methods cannot be produced without minimal processing of the data. The minimally processed data has been interpolated to project the data onto a regular grid and de-striped to correct for slight variations in instrument calibration drift and any other artificial data.

A high pass filter has been applied to the greyscale plots to remove low frequency anomalies (relating to survey tracks and modern agricultural features) in order to maximise the clarity and interpretability of the archaeological anomalies.

The data has also been clipped to remove extreme values and to improve data contrast

APPENDIX 5 OASIS DATA COLLECTION FORM: ENGLAND

OASIS ID: headland5–395087

PROJECT DETAILS	
Project name	Yatton Keynell to Kington St Michael Proposed Pipeline, Wilshire: Geophysical Survey
Short description of the project	Headland Archaeology (UK) Ltd undertook a geophysical (magnetometer) survey of 3 areas on land between Yatton Keynell and Kington St Michael, to inform planning proposals for a new pipeline. No anomalies of clear archaeological potential have been identified. Several dipolar anomalies have been detected which are consistent with modern activity including a twentieth century farm track, a buried service pipe and a pylon base. Two small and localised areas of high magnitude anomalies have been identified in Area 602 which may be due to archaeological activity such as pits, and spreads of enhanced material but, in the absence of any coherent archaeological pattern, these are assessed as of low archaeological potential. A possible, former, field boundary, or water-course has been tentatively identified in Area 603. Elsewhere, on the basis of the geophysical survey, the site is assessed as of low archaeological potential.
Project dates	Start: 11-05-2020 End: 11-05-2020
Previous/future work	Not known / Not known
Any associated project reference codes	YTKM20 – Site code
Type of project	Field evaluation
Site status	None
Current land use	Cultivated land 4 – Character undetermined
Monument type	None
Significant Finds	None
Methods & techniques	'Geophysical Survey'
Development type	Pipelines/cables (eg: gas, electric, telephone, TV cable, water, sewage, drainage etc.)
Prompt	National Planning Policy Framework - NPPF
Position in the planning process	Not known / Not recorded
Solid geology (other)	Kellaways clay member (mudstone), Cornbrash formation (limestone), Forest marble formation (mudstone)
Drift geology (other)	None
Techniques	Magnetometry
PROJECT LOCATION	
Country	England
Site location	Wiltshire North, Wiltshire Kington,St Michael, Yatton Keynell to Kington St Michael Proposed Pipeline
Study area	1 Hectares
Site coordinates	ST 8662 7766 51.497238155594 -2.192766938068 51 29 50 N 002 11 33 W Point
Site coordinates	ST 8914 7749 51.495763481349 -2.156455985882 51 29 44 N 002 09 23 W Point
PROJECT CREATORS	
Name of Organisation	Headland Archaeology
Project brief originator	RSK ADAS Ltd
Project design originator	Headland Archaeology
Project director/manager	Harrison S
Project supervisor	Vansassenbrouck O
Type of sponsor/funding body	Water Authority/Company
PROJECT ARCHIVES	
Physical Archive Exists?	No

Digital Archive recipient	In house
Digital Contents	'Other'
Digital Media available	'Geophysics', 'Text'
Paper Archive Exists?	No

PROJECT BIBLIOGRAPHY 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Yatton Keynell to Kington St Michael Proposed Pipeline, Wiltshire
Author(s)/Editor(s)	Cottrell P
Other bibliographic details	YTKM20
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Entered by	Sam Harrison (sam.harrison@headlandarchaeology.com)
Entered on	27 May 2020

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