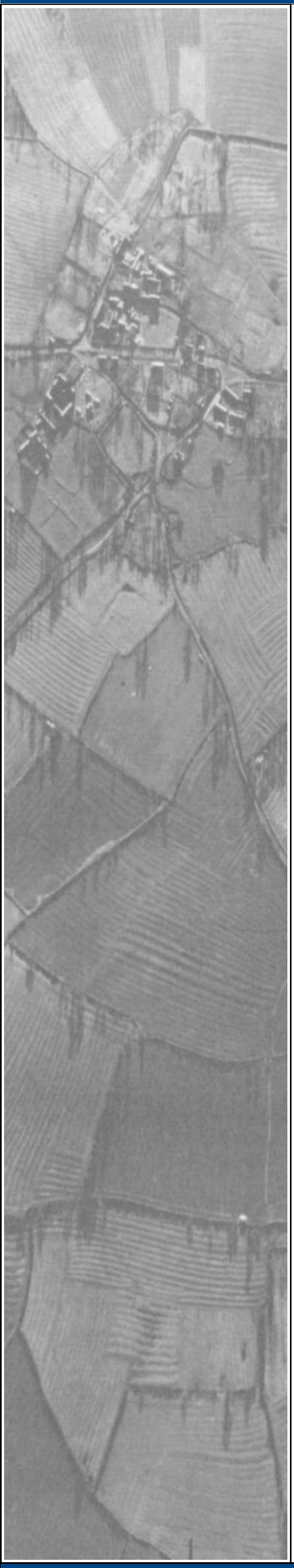

Land at Wick Farm
Lacock/Melksham
Wiltshire

MAGNETOMETER SURVEY REPORT

for

JBM Solar Projects 13 Ltd

Kerry Donaldson & David Sabin

June 2020

Ref. no. J812

ARCHAEOLOGICAL SURVEYS LTD

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Lacock/Melksham
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Report checked by David Sabin
Primary archive location - Archaeological Surveys Ltd, Yatesbury, Wiltshire

Survey dates – 23rd- 27th, 30th & 31st March, 1st- 3rd, 6th- 9th, 13th- 17th, 20th & 21st April & 3rd June 2020
Ordnance Survey Grid Reference – **ST 90335 67300**

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SUMMARY

Detailed magnetometry was carried out by Archaeological Surveys Ltd over 84.5ha ahead of an application for development of a solar farm at Wick Farm near Lacock. The central part of the site had been previously subject to archaeological investigation and a Roman settlement had been identified. The results demonstrate a continuation of this Roman settlement in the central part of the site, with two series of enclosures on different orientations. A number of Roman roadside buildings have also been identified along with a large number of pits and areas of intense burning likely to relate to former ovens/hearths. To the north of this are three further areas containing evidence for late prehistoric and/or Roman occupation, with zones of enclosures containing ring ditches and pits/areas of burning and occupational debris. A former brick kiln probably of post-medieval date has also been located.

1 INTRODUCTION

1.1 Survey background

1.1.1 Archaeological Surveys Ltd was commissioned by Pegasus Group, on behalf of JBM Solar Projects 13 Ltd, to undertake a magnetometer survey of an area of land at Wick Farm, near Lacock in Wiltshire. The site has been outlined for a proposed development of a solar farm and the survey forms part of an archaeological assessment.

1.1.2 The geophysical survey was carried out in accordance with a Written Scheme of Investigation (WSI) produced by Archaeological Surveys (2020) and approved by Rachel Foster, Assistant County Archaeologist for Wiltshire Council, prior to carrying out the fieldwork.

1.2 Survey objectives and techniques

1.2.1 The objective of the survey was to use magnetometry to locate geophysical anomalies that may be archaeological in origin so that they may be assessed prior to development of the site. The methodology is considered an efficient and effective approach to archaeological prospection.

1.2.2 Geophysical survey can provide useful information on the archaeological potential of a site; however, the outcome of any survey relies on a number of factors and as a consequence results can vary. The success in meeting the aims and objectives of a survey is, therefore, often impossible to predetermine.

1.3 Standards, guidance and recommendations for the use of this report

1.3.1 The survey and report generally follow the recommendations set out by: European Archaeological Council (2015) *Guidelines for the Use of Geophysics in Archaeology;* Institute for Archaeologists (2002) *The use of Geophysical Techniques in Archaeological Evaluations.* The work has been carried out to the Chartered Institute for Archaeologists (2014) *Standard and Guidance for Archaeological Geophysical Survey.* Note: currently Historic England (2018) no longer support the guidelines set out in English Heritage (2008) *Geophysical survey in archaeological field evaluation* and there are currently no plans to update the document.

1.3.2 Archaeological Surveys Ltd provide a detailed geophysical survey report and it is recommended that where possible the contents should be considered in full. The Summary provides a brief overview of the results with more detail available in the Discussion and/or Conclusion. The *List of anomalies* within the Results provides a detailed assessment of the anomalies within separate categories which can be useful in inferring a level of confidence to the interpretation. Quality and factors influencing the interpretation of anomalies is also set out within the results.

1.3.3 It is recommended that the full report should always be considered when using data and interpretation plots; where this is not possible, in the field for example, the abstraction and interpretation plots should retain their colour coding and be used with a corresponding legend.

1.3.4 Where targeting of anomalies by excavation is to be carried out, care should be taken to place trenches over solid lines or features visible on the abstraction and interpretation plots. Archaeological Surveys abstraction and interpretation avoids the use of dashed or dotted line formats, and broken or fragmented lines used in interpretive plots may well correspond closely with truncation of archaeological features.

1.4 Site location, description and survey conditions

1.4.1 The site is located at Wick Farm between Wick Lane within the parish of Lacock and Westlands Lane in the parish of Melksham Without in Wiltshire. It is centred on Ordnance Survey National Grid Reference (OS NGR) ST 90335 67300, see Figs 01 and 02. The geophysical survey covers approximately 84.5ha within several land parcels, named Areas 1 to 14 for the purposes of this report, with Area 1 in the north and Area 14 in the west. The grid references and ground cover along with geology and soils for each area have been outlined in Table 1 overleaf.

1.4.2 The ground conditions across the site were generally considered to be favourable for the collection of magnetometry data, although some small zones remained waterlogged and deeply rutted and could not be surveyed. Weather conditions during the survey were mainly fine.

Area no.	Grid reference	Geology	Soil Associations	Ground cover	Cart-type	Observations
1	390497, 168361	Forest marble - mudstone in north Cornbrash in centre & Kellaways Formation - sandstone, siltstone & mudstone in south.	Elmton 2 - shallow, well drained, brashy soil (brown rendzina).	Short wheat crop.	Hand-pushed.	Widespread Pennant Sandstone fragments and Roman pottery concentrated towards south east. Southern edge unsurveyable due to deep ruts.
2	390548, 168127	Kellaways Formation - sandstone, siltstone & mudstone.	Wickham 3 - slowly permeable, seasonally waterlogged, clayey soil (typical stagnogley).	Unweathered soil.	ATV-towed.	Nine poor quality, round, flint scrapers on east side of hill. One burnt core and one core/hammer stone. Majority of soil not as mapped – appears mainly as a sandy/silty loam.
3	390834, 167974	Kellaways Formation - sandstone, siltstone & mudstone Kellaways Formation - sandstone, siltstone & mudstone.	Wickham 3 - slowly permeable, seasonally waterlogged, clayey soil (typical stagnogley).	Emerging crop.	ATV-towed & hand-pushed.	Red burnt area towards north west corresponding with possible brick kiln site, two glass bottle necks c.1700AD may be associated. Roman pottery sherds noted in south eastern part of field. Soil and crop marks visible on Google Earth images e.g. Area 3. Lat 51.410488° Lon -2.132583°. **Google Earth**. Jan 1st 2006. Sandy soil, not as mapped.
4	390615, 167805	Kellaways Formation - sandstone, siltstone & mudstone.	Wickham 3 - slowly permeable, seasonally waterlogged, clayey soil (typical stagnogley).	Stubble.	ATV-towed.	Stone scatters with widespread Roman pottery, some large sherds and Pennant Sandstone roof tile in central southern part of field. One flint scraper. Soil and crop marks visible on Google Earth images e.g. Area 4. Lat 51.409098° Lon -2.136545°. **Google Earth**. May 20th 2018. Soil not typical of the mapped association.
5	390950, 167776	Kellaways Formation - sandstone, siltstone & mudstone in north west, Oxford Clay with overlying River Terrace Sands & Gravels in south west.	Badsey 2 - well drained, calcareous, fine loamy soil over limestone gravel (typical brown calcareous earth).	Unweathered soil.	ATV-towed.	Soil not typical of the mapped association, possibly more similar to Wickham 3 in areas to the north.
6	390645, 167555	Kellaways Formation - sandstone, siltstone & mudstone in north west, Oxford Clay with overlying River Terrace Sands & Gravels in south west.	Wickham 3 - slowly permeable, seasonally waterlogged, clayey soil (typical stagnogley) in north. Badsey 2 - well drained, calcareous, fine loamy soil over limestone gravel (typical brown calcareous earth) in south.	Stubble.	ATV-towed.	Waterlogged and deeply rutted.
7	390480, 167260	Oxford Clay with overlying River Terrace Sands & Gravels.	Badsey 2 - well drained, calcareous, fine loamy soil over limestone gravel (typical brown calcareous earth).	Unweathered soil.	ATV-towed.	Southern part of field contains dark soil and large quantities of Roman pottery, including Samian, Pennant Sandstone roof tile, masonry, etc. Dark soil visible on Google Earth images e.g. Area 7. Lat 51.403051° Lon -2.140081°. **Google Earth**. April 15th 2014.
8	390175, 167565	Kellaways Formation - sandstone, siltstone & mudstone.	Badsey 2 - well drained, calcareous, fine loamy soil over limestone gravel (typical brown calcareous earth).	Unweathered soil.	Hand-pushed.	
9	390322, 167397	Oxford Clay with overlying River Terrace Sands & Gravels.	Badsey 2 - well drained, calcareous, fine loamy soil over limestone gravel (typical brown calcareous earth).	Unweathered soil.	ATV-towed.	
10	390236, 167171	Oxford Clay with overlying River Terrace Sands & Gravels.	Badsey 2 - well drained, calcareous, fine loamy soil over limestone gravel (typical brown calcareous earth).	Unweathered soil.	ATV-towed.	Southern part of field contains dark soil, Roman pottery and limestone fragments.
11	390033, 166984	Oxford Clay with overlying River Terrace Sands & Gravels along eastern edge.	Badsey 2 - well drained, calcareous, fine loamy soil over limestone gravel (typical brown calcareous earth) in east. Wickham 3 - slowly permeable, seasonally waterlogged, clayey soil (typical stagnogley) in west.	Short wheat crop.	Hand-pushed.	North eastern part of field contains Roman pottery and limestone fragments. Eastern part of field contains occasional iron-working slag fragments.
12	389955, 166665	Oxford Clay with overlying River Terrace Sands & Gravels in west and south west.	Badsey 2 - well drained, calcareous, fine loamy soil over limestone gravel (typical brown calcareous earth) in east. Wickham 3 - slowly permeable, seasonally waterlogged, clayey soil (typical stagnogley) in west.	Short wheat crop.	Hand-pushed.	Occasional tap slag in north eastern part of field.
13	389723, 166685	Kellaways Formation - sandstone, siltstone & mudstone, Oxford Clay in south west corner.	Wickham 3 - slowly permeable, seasonally waterlogged, clayey soil (typical stagnogley).	Short wheat crop.	Hand-pushed.	Waterlogged and deeply rutted.
14	389710, 167085	Oxford Clay	Wickham 3 - slowly permeable, seasonally waterlogged, clayey soil (typical stagnogley)	Grass	Hand-pushed	

Table 1: Survey area information

1.5 Site history and archaeological potential

1.5.1 The following archaeological background has been taken from the draft heritage desk-based assessment currently being prepared by Pegasus Group.

1.5.2 Historic Ordnance Survey maps mark the route of a Roman road and a Saxon dyke abutting the southern boundary of the eastern half of the site and the mid-northern boundary of the western half of the site. This has been fossilised as the parish boundary between Lacock and Melksham Without.

1.5.3 Archaeological excavations carried out in 2015 for the Melksham to Thingley Cable Route by Wessex Archaeology revealed evidence of Roman roadside settlement (MWI1687 and MWI8660).Features recorded within the central part of the western half of the site included two stone altars thought to derive from a roadside shrine (MWI76646), two human burials (MWI76648 and MWI46650), a dog burial (MWI76647), a building with an iron smithing hearth (MWI75438 and MWI76649), and a stone-lined well (MWI75437). A number of Bronze Age post holes and a pit were also located in this part of the site

1.5.4 At least 41 Romano-British ovens were also recorded, dating to the 1st- early 2nd century and 3rd/4th century, but the majority dating to the 2nd- 3rd centuries. They comprised a sunken hearth, linked to an ash rake-out pit via a short flue, with a 'keyhole' or 'hourglass' shape and generally 1.5-2m long and 0.5-1.5m wide. Some were unlined and others stone-lined and many did not have a notable stratigraphic relationship with other features (Wessex Archaeology, 2015).

1.5.5 The online summary of the excavation states: "*At its maximum extent, the roadside settlement probably continued for at least 0.9 km along the road frontage and encompassed 12–20 hectares. The most concentrated zone of activity was along the main road, with further areas of less-intensive activity within enclosures set back from the road frontage*".

1.5.6 The HER also plots numerous cropmarks within the site. Most appear to represent the buried remains of ridge and furrow from historic ploughing. Discrete linears near Wick Farm and Catridge Farm, including within the north-western part of the site, may signify features associated with medieval and/or post-medieval settlement.

1.5.7 Observation of cultural material on field surfaces was possible within most of the survey areas, although conditions were less than optimum due to either some surface vegetation or lack of weathering. Brief notes relating to these observations are set out within Table 1 above. In addition, reference is made to several Google Earth images that appear to contain soil or crop marks relating to archaeological features located by the survey.

2 METHODOLOGY

2.1 Technical synopsis

2.1.1 Magnetometry survey records localised magnetic fields that can be associated with features formed by human activity. Magnetic susceptibility and magnetic thermoremnance (also known as thermoremanence) are factors associated with the formation of localised fields.

2.1.2 Iron minerals within the soil may become altered by burning and the break down of biological material; effectively the magnetic susceptibility of the soil is increased, and the iron minerals become magnetic in the presence of the Earth's magnetic field. Accumulations of magnetically enhanced soils within features, such as pits and ditches, may produce magnetic anomalies that can be mapped by magnetic prospection.

2.1.3 Magnetic thermoremnance can occur when ferrous minerals have been heated to high temperatures such as in a kiln, hearth, oven etc. On cooling, a permanent magnetisation may be acquired due to the presence of the Earth's magnetic field. Certain natural processes associated with the formation of some igneous and metamorphic rock may also result in magnetic thermoremnance.

2.1.4 The localised variations in magnetism are measured as sub-units of the Tesla, which is a SI unit of magnetic flux density. These sub-units are nano Teslas (nT), which are equivalent to 10^{-9} Tesla (T). Additional details are set out in 2.2 below and within Appendix A.

2.2 Equipment configuration, data collection and survey detail

2.2.1 The detailed magnetic survey was carried out using a SENSYS MAGNETO®MXPDA 5 channel cart-based system. The instrument has 5 fluxgate gradiometers (FGM650) spaced 0.5m apart with readings recorded at 20Hz. The cart was towed using an ATV where possible with other areas surveyed by manually pushing the cart. Each sensor is not zeroed in the field as the vertical axis alignment is precisely fixed leaving sensor offsets that are removed during data processing. The fixing of the vertical alignment ensures the sensors are not unduly influenced by localised magnetic fields and that the vertical component of a magnetic anomaly is measured. The gradiometers have a range of recording data between ±0.1nT and ±8000nT. They are linked to a Leica GS10 RTK GNSS with data recorded by SENSYS MAGNETO®MXPDA software on a rugged PDA computer system.

2.2.2 Due to the fixed offsets within the fluxgate sensors, as a result of the manufacturing and tensioning process, the survey data do not provide a visually useful dataset until a zero median traverse algorithm is applied. It is recognised that this has the potential to affect some anomalies detrimentally by removing linear features orientated parallel to survey transects. However, this has not been noted as a particular problem with the system due to the high resolution data collection,

generally long length of traverses and variability within the magnetic characteristics of a linear anomaly.

2.2.3 Data are collected along a series of parallel survey transects to achieve 100% coverage of the surveyable land. The length of each transect is variable and relates to the size of the survey area and other factors including ground conditions. A visual display allows accurate placing of transects and helps maintain the correct separation between adjacent traverses. Data are not collected within fixed grids and data points are considered to be random even though the data are collected in a systematic manner covering all accessible areas (Aspinall, Gaffney and Schmidt, 2009).

2.2.4 Fluxgate sensors are highly sensitive to temperature change and this manifests as drift during the course of a survey. This can be particularly noticeable during the morning as temperatures rise and the equipment warms or cools. Sensor drift within the course of a traverse will appear as a line trending from negative to positive after processing with a zero median traverse algorithm. To remove the potential for temperature drift, data were collected after a 20 minute stabilisation period and traverses were limited to a time of generally <150s.

2.3 Data processing and presentation

2.3.1 Magnetic data collected by the MAGNETO®MXPDA cart-based system are initially prepared using SENSYS MAGNETO®DLMGPS software. The software effectively allocates a geographic position for each data point and can compensate for fixed offsets present within the FGM650 sensors. The offsets are positive or negative values present on all fluxgate gradiometer sensors. Some systems use manual or electronic balancing to effectively zero the sensors; however, this is a short term measure that is prone to drift through temperature changes and vibration and can easily be incorrectly set due to localised magnetic fields. The FGM650 sensors are very accurately aligned to the vertical magnetic gradient and are highly stable showing negligible drift on long traverses. The offset values are removed using TerraSurveyor software.

2.3.2 Survey tracks are analysed and georeferenced raw data (UTM Z30N) are then exported in ASCII format for further analysis and display within TerraSurveyor. The removal of the offset values (compensation) of the sensors is also carried out in TerraSurveyor using a zero median traverse function. Data are then considered to be minimally processed. Note: without the zero median traverse function it is not possible to create a meaningful data plot as all sensors have a different offset value. Although a zero median traverse algorithm can remove anomalies aligned with the survey tracks, in practice this rarely occurs due to the use of long traverses, high resolution measurement and variability within the magnetic susceptibility of long linear features.

2.3.3 The minimally processed data are collected between limits of ±8000nT and clipped for display at ±3nT, ±5nT or ±10nT. Data are interpolated to a

resolution of effectively 0.5m between tracks and 0.15m along each survey track.

2.3.4 Additional data processing has been carried out in the form of high pass filtering. This effectively removes low frequency variation along a traverse that has been caused by large magnetic bodies, cultivation or rapid temperature change. Data treated to additional processing have been compared to unprocessed data to ensure that no significant anomalies have been removed.

2.3.5 Additional data processing has also been carried out for Areas 5 & 9 in the form of low pass filtering. This effectively removes high frequency variation along a traverse that has been caused by uneven ground and associated vibration. Data treated to additional processing have been compared to unprocessed data to ensure that no significant anomalies have been removed.

2.3.6 Appendix C contains metadata concerning the survey and data attributes and is derived directly from TerraSurveyor. Reference should be made to Appendix B for further information on processing.

2.3.7 A TIF file is produced by TerraSurveyor software along with an associated world file (.TFW) that allows automatic georeferencing (OSGB36 datum) when using GIS or CAD software. The main form of data display used in the report is the minimally processed greyscale plot. With regard to the Sensys MXPDA, minimally processed data are considered by the manufacturer to be data that are compensated by SENSYS MAGNETO DLMGPS software, see 2.3.1 and 2.3.2. Note: traceplots are not considered to be appropriate as they do not provide an accurate or useful assessment of the magnetic anomalies due to the very high density of data collection. In addition, traceplots cannot be meaningfully plotted against base mapping and in areas of complexity traces may be lost or highly confused. Traceplots may be used to demonstrate characteristic magnetic profiles across discrete features where it is considered beneficial.

2.3.8 The raster images are combined with base mapping using ProgeCAD Professional 2016, creating DWG (2010) file formats. All images are externally referenced to the CAD drawing in order to maintain good graphical quality. The CAD plots are effectively georeferenced facilitating relocation of features using GNSS, resection method, etc.

2.3.9 An abstraction and interpretation is drawn and plotted for all geophysical anomalies located by the survey. Anomalies are abstracted using colour coded points, lines and polygons. All plots are scaled to landscape A3 for paper printing. Appendix E sets out CAD layer names with colour and graphic content for each interpretation category, see 3.3.

2.3.10 A brief summary of each anomaly, with an appropriate reference number, is set out in list form within the results (Section 3) to allow a rapid and objective assessment of features within each survey area. Where further interpretation is possible, or where a number of possible origins should be considered, more

subjective discussion is set out in Section 4.

2.3.11 The abstraction and interpretation procedure has been supported by analysis of a digital terrain model derived from the Environment Agency's LiDAR 1m resolution data. Shaded relief plots are created using Surfer 15 (Azimuth:50, Altitude:25, Z factor:10), (Fig 44).

2.3.12 A digital archive is produced with this report, see Appendix D below. The main archive is held at the offices of Archaeological Surveys Ltd.

3 RESULTS

3.1 General assessment of survey results

3.1.1 The detailed magnetic survey was carried out over a total of 14 survey areas covering approximately 84.5ha.

3.1.2 Magnetic anomalies located can be generally classified as positive and negative responses of archaeological potential, positive and negative anomalies of an uncertain origin, linear anomalies of an agricultural origin, anomalies associated with land management, anomalies with a natural origin, areas of magnetic debris and disturbance, strong discrete dipolar anomalies relating to ferrous objects and strong multiple dipolar linear anomalies relating to buried services or pipelines.

3.1.3 Anomalies located within each survey area have been numbered and are described in 3.4 to 3.17 below, with subsequent discussion in Section 4.

3.2 Statement of data quality and factors influencing the interpretation of anomalies

3.2.1 Data are considered representative of the magnetic anomalies present within the site. There are no significant defects within the dataset. Some small zones within Areas 1, 4 – 6 and 13 were unsurveyable due to waterlogged boggy ground and/or deep ruts.

3.2.2 Steel pylons within or immediately adjacent to Areas 2, 4, 6, 7, 9, 10 – 13 were avoided and a buffer zone around each structure was not surveyed due to very high magnitude magnetic disturbance. There is some moderate level of magnetic disturbance from the overhead cables in Area 11 where they are closest to the ground. It is localised and does not appear to have obscured any significant anomalies. The site contains a number of underground services in the form of pipes and cables that have also created high magnitude magnetic anomalies; however, it is considered unlikely that they obscure significant features.

3.2.3 High voltage underground cables associated with electrification of the railway

cross through Areas 9 – 12. With the exception of Area 9, high pass filtering effectively removed magnetic disturbance from the datasets so that the abstraction and interpretation of anomalies is barely affected. Within Area 9 the orientation of survey traverses was unsuitable for effective use of filtering, although few anomalies were located within the area. The route of the cables was previously subject to archaeological evaluation and watching during topsoil stripping.

3.2.4 Other areas within the site were subject to high pass filtering in order to remove linear anomalies caused by cultivation and wheel ruts. Unfiltered data are always analysed and compared to filtered data to ensure that no significant anomalies are removed.

3.2.5 The soils across the site in general appear to support moderately enhanced levels of magnetic susceptibility. Good contrast can be seen between the fill of former cut features and the natural in areas of former settlement, although there is clearly a habitation effect where anomalies fade away from core zones. This effect may be more notable over the more damp and clayey Wickham 3 soils which are typical stagnogleys, compared to the Badsey 2 brown calcareous earths; however, as noted in Table 1 the mapped soil associations do not appear to fit well with site observations, and localised factors, such as ground water levels and topography, may be more important.

3.2.6 Disturbance and truncation of features by agricultural activity is present across most parts of the site. Modern cultivation and medieval ridge and furrow can be seen to have affected numerous anomalies of archaeological potential.

3.2.7 Magnetic anomalies associated with natural features or processes were located within Areas 3 – 6, 8 and 9. These naturally formed anomalies appear amorphous or broad linear responses that are weak to moderately magnetically enhanced. Some appear in the vicinity of anomalies of archaeological origin but they can be clearly separated. The processes involved in their formation are uncertain, although they are likely to be associated with colluvial and/or alluvial deposits and they may also form in areas subject to frequent waterlogging and drying. It is also possible that they contain soils enhanced by former anthropogenic activities. Areas 8 and 9 may contain anomalies relating to paleochannels.

3.3 Data interpretation

3.3.1 The list of sub-headings below attempts to define a number of separate categories that reflect the range and type of features located during the survey. A general explanation of the characteristics of the magnetic anomalies is set out for each category in order to justify interpretation, see Table 1.

Interpretation category	Description and origin of anomalies
Anomalies with archaeological potential	Anomalies have the characteristics (mainly morphological) of a range of archaeological features such as pits, ring ditches, enclosures, etc. The category is used where there is a high level of confidence which may be due to additional supporting information where morphology is unclear or uncharacteristic.
Anomalies with an uncertain origin	The category applies to a range of anomalies where there is not enough evidence to confidently suggest an origin. Anomalies in this category may well be related to archaeologically significant features, but equally relatively modern features, geological/pedological features and agricultural features should be considered. Morphology may be unclear or uncharacteristic and there may be a lack of additional supporting information. Positive anomalies are indicative of magnetically enhanced soils that may form the fill of 'cut' features or may be produced by accumulation within layers or 'earthwork' features; soils subject to burning may also produce positive anomalies. Negative anomalies are produced by material of comparatively low magnetic susceptibility such as stone and subsoil.
Anomalies relating to land management	Anomalies are mainly linear and may be indicative of the magnetically enhanced fill of cut features (i.e. ditches). The anomalies may be long and/or form rectilinear elements and they may relate to topographic features or be visible on early mapping. Associated agricultural anomalies (e.g. headlands, plough marks and former ridge and furrow) may support the interpretation. Land drains can appear in a classic herringbone pattern of interconnected multiple dipolar linear anomalies, or as parallel linear anomalies. The multiple dipolar response indicates ceramic land drains.
Anomalies with an agricultural origin	The anomalies are often linear and form a series of parallel responses or are parallel to extant land boundaries. Where the response is broad, former ridge and furrow is likely; narrow response is often related to modern ploughing. This category does not include agricultural features of early date or considered to be of archaeological potential (e.g. animal stockades, enclosures, farmsteads, etc).
Anomalies associated with magnetic debris	Magnetic debris often appears as areas containing many small dipolar anomalies that may range from weak to very strong in magnitude. They often occur where there has been dumping or ground make-up and are related to magnetically thermoremnant materials such as brick or tile or other small fragments of ferrous material. This type of response is occasionally associated with kilns, furnace structures, hearths and nail spreads from former wooden structures or rooves and may, therefore, be archaeologically significant. It is also possible that the response may be caused by natural material such as certain gravels and fragments of igneous or metamorphic rock. Strong discrete dipolar anomalies are responses to ferrous objects within the topsoil.
Anomalies with a modern origin	The magnetic response is often strong and dipolar indicative of ferrous material and may be associated with extant above surface features such as wire fencing, cables, pylons etc. Often a significant area around these features has a strong magnetic flux which may create magnetic disturbance; such disturbance can effectively obscure low magnitude anomalies if they are present. Fluxgate sensors may respond erratically adjacent to strong magnetic sources. Buried services may produce characteristic multiple dipolar anomalies dependant upon their construction.
Anomalies with a natural origin	Naturally formed magnetic anomalies are caused by localised variability in the magnetic susceptibility of soils, subsoils and other drift or solid geologies. Anomalies may be amorphous, linear or curvilinear and may appear 'fluvial' or discrete; the latter are almost impossible to distinguish from pit-like anomalies with an anthropogenic origin. Fluvial, glacial and periglacial processes may be responsible for their formation within drift material and subsoil. Igneous and metamorphic activity can lead to anomalies within more solid geology.

Table 2: List and description of interpretation categories

3.4 List of anomalies - Area 1

Area centred on OS NGR 390497, 168361, see Figs 06 – 08.

Anomalies of archaeological potential

(1) - A series of positive rectilinear anomalies relate to enclosures containing ring ditches (2) and pits/areas of burning (3).

(2) - The remains of three ring ditches can be seen in the eastern part of the enclosures (1). There is evidence of at least two phases of construction/use. They have diameters of 13-15m and may relate to late Iron Age/early Romano-British round houses.

(3) - A number of discrete positive anomalies with a response of 20-50nT indicate an association with burning and/or pit-like features.

(4 & 5) - A large number discrete positive anomalies can be seen both within (4) and to the south of the enclosures (5). Several of the anomalies appear in a linear formation and relate to pits and/or areas of burning.

(6) - A positive curvilinear anomaly is located at the western edge of the survey area. The response is indicative of a further ring ditch with a 14m diameter, similar to, but located 120m north west of anomalies (2).

(7) - A series of parallel positive and negative linear anomalies extend across the northern part of the survey area and are associated with the original line of Wick Lane, removed during construction of the railway in the 19th century.

Anomalies with an uncertain origin

(8) - A number of pit-like responses can be seen either side of the former Wick Lane but their origin is uncertain. Pit-like responses can be seen elsewhere within the survey area; however, they are likely to have been caused by ploughing of the underlying Cornbrash which can result in soil-filled pit-like features.

(9) - Weakly positive curvilinear anomalies and discrete responses could relate to a further ring ditch, but it is weak and poorly defined.

(10) - A positive linear anomaly on the same north west to south east orientation and with a similar response (7-8nT) as the other rectilinear ditches (1) could be associated with them. However, it appears to have truncated the southern enclosure ditch and could continue to the south, although the response is very weak and poorly defined. A field boundary is mapped in the vicinity on the 1840s tithe map, but it had been removed by the 1880s 1st Edition OS map.

Anomalies with an agricultural origin

(11) - A series of parallel linear anomalies, oriented north east to south west appear to relate to former ridge and furrow.

(12) - Modern agricultural activity can be seen with two orientations, one parallel with the western field boundary and one with the eastern.

Anomalies associated with magnetic debris

(13) - Strong, discrete, dipolar anomalies are a response to ferrous and other magnetically thermoremnant objects with the topsoil. These are generally introduced through the process of manuring; however, they can relate to objects with an archaeological origin.

Anomalies with a modern origin

(14) - Magnetic disturbance from ferrous material associated with the railway adjacent to the eastern edge of the survey area.

3.5 List of anomalies - Area 2

Area centred on OS NGR 390548, 168127, see Figs 09 – 11.

Anomalies with an uncertain origin

(15) - Positive linear anomalies appear to flank a negative linear anomaly and also extend into Area 3 as anomaly (24). It is not clear if they relate to a former anthropogenic or naturally formed feature.

(16) - The survey area contains a number of weakly positive linear anomalies that are oriented north west to south east. They are generally parallel with the eastern field boundary and a former field boundary (17) and they are associated with very low linear mounds on the ground surface. They appear to relate to former land divisions; however, whether they are post medieval, medieval or relate to an earlier field system is not known.

Anomalies associated with land management

(17) - A positive linear anomaly relates to a formerly mapped field boundary.

Anomalies associated with land management

(18) - Magnetic debris is located within a small patch of land to the south west of Area 2. The land surface appears as a depression which although could be natural, could indicate an association with former clay extraction.

Anomalies with a modern origin

(19) - A strong, multiple dipolar linear anomaly relates to a buried service.

3.6 List of anomalies - Area 3

Area centred on OS NGR 390834, 167974, see Figs 12 – 17.

Anomalies of archaeological potential

(20) - A positive curvilinear anomaly relates to an enclosure. It appears to have been highly truncated on the north western side and there is no obvious southern side within the survey area. The main axis is parallel with the enclosures (30) seen 60-70m to the west in Area 4 and likely to be of similar age and function.

(21) - Positive and negative linear and rectilinear anomalies appear to relate to an enclosure feature. The easternmost negative rectilinear anomaly is -5 to -7nT and may indicate a former bank, wall or possible cut feature that is filled with sand. It surrounds a large, amorphous response.

(22) - A number of positive curvilinear anomalies relate to ring ditches associated with round houses. They are generally clustered within a small enclosure in the north eastern part of (20), although there are others to the south east. Negative linear and rectilinear anomalies appear to be associated, these could relate to structural remains.

(23) - Located towards the north west corner of the survey area is a positive linear anomaly associated with a zone of magnetically variable responses and widespread brick fragments and coal. A small amount of post-medieval cultural material was visible on the surface. The anomalies indicate an association with burning and are likely to relate to a former brick kiln given the nature of the surface debris and the site morphology.

Anomalies with an uncertain origin

(24) - A negative linear anomaly appears to be flanked by two positive responses. This is similar to and could be a continuation of anomaly (15) seen within Area 2 immediately to the north. It is not clear if it is an anthropogenic or natural feature and while there are other positive and parallel negative linear anomalies within the northern part of the survey area, the southern end does appear to be extending towards, and on the same orientation as, the positive linear anomaly (23) associated with the probable brick kiln.

(25) - The northern part of the survey area contains numerous positive linear and curvilinear anomalies, along with several negative linear anomalies. Some do have a similar north west to south east orientation as anomalies (16) and they could be a continuation of these anomalies. However, the majority lack a clearly defined and

coherent morphology preventing confident interpretation.

(26) - A series of positive linear anomalies can be seen in the vicinity of anomalies (20) & (21). While it is possible that they could relate to internal linear ditches associated with the enclosures, they are spaced between 2.5m and 6.5m apart and some appear to truncate the northern boundary ditch of the large enclosure (20). It is, therefore, not clear if they are directly associated with the enclosures or if they relate to later agricultural activity.

(27) - To the south of anomalies (21) are weak positive responses. It is not clear if they relate to natural or anthropogenically produced magnetic enhancement.

Anomalies associated with magnetic debris

(28) - The survey area contains several patches of magnetic debris. The origin of the material is uncertain.

Anomalies with a natural origin

(29) - Magnetically variable responses appear to relate to natural variations within the underlying geology or soil. Although river terrace deposits are mapped as being approximately 70-100m further south, it is possible that they are associated. The anomalies may relate to colluvial material; a significant amount of sandy soil had moved downslope into this area due to heavy Winter rain prior to the survey, thus demonstrating its potential mobility.

3.7 List of anomalies - Area 4

Area centred on OS NGR 390615, 167805, see Figs 12 – 14 & 18 – 20.

Anomalies of archaeological potential

(30) - A series of rectilinear and irregularly shaped anomalies forming a system of enclosures enclosing settlement debris and features. They are likely to relate to a late prehistoric and Romano-British settlement.

(31) - A spread of weakly, magnetically variable responses covers a large zone within and just south of the eastern enclosures. This is a response to occupation debris associated with the settlement. A number of ring ditches, pits and possible ovens are located within this zone of occupation.

(32 & 33) - The enclosures contain a number of ring ditches (32), with several clustered at the eastern end and associated with the spread of occupation material (31). At least two more can be seen further south west, including one with a 10.3m diameter and large pits at the ends of inward facing terminals. Internally there appears to be possible pit-like features and zones of magnetic enhancement. There are at least two further ring ditches to the west of the defined enclosures (33).

(34 & 35) - The enclosures contain a large number of pits and areas of burning. Some are very enhanced at 20-40nT (34) indicating that they are associated with intense burning indicative of hearths/ovens or in some cases possible industrial activity.

(36) - Positive rectilinear anomalies are a continuation of the enclosure ditches (30). They continue into Area 6 (47) and do not appear to be associated with intense occupation.

Anomalies with an uncertain origin

(37) - Patches of magnetically variable responses are likely to relate to natural features; however, there are some linear and curvilinear elements and an association also with anthropogenic activity is possible.

(38) - Negative linear anomalies could relate to sand-filled linear features but their date and function is uncertain.

Anomalies with an agricultural origin

(39) - Evidence for ridge and furrow can be seen in the south western corner of the survey area. It is parallel with the north west to south east axis of the enclosures.

Anomalies associated with magnetic debris

(40) - Magnetic debris can be seen to the north of Area 4 and while much is likely to be related to modern material, the patch close to the north eastern edge of the field is immediately adjacent to the brick kiln feature (23) seen within Area 3 immediately to the north, and an association with waste material from this kiln is possible.

Anomalies with a modern origin

(41) – A strong, multiple, dipolar linear anomaly relates to a buried service. It extends south westwards into Area 6.

Anomalies with a natural origin

(42) – A zone of magnetically variable responses extends across the southern part of the survey area. This is a continuation of similar responses (29) seen in Area 3 to the east and although unmapped, could relate to River Terrace deposits. The magnetic response may relate to colluvial soils of enhanced magnetic susceptibility derived from the archaeological features also located in this area.

3.8 List of anomalies - Area 5

Area centred on OS NGR 390950, 167776, see Figs 12 – 14.

Anomalies of archaeological potential

(43) - Three elongated pit-like anomalies are located in the northern part of the survey area. Although they are parallel with a removed field boundary (46) they do appear to be of archaeological potential. They measure 3.9m by 1.4m, 4.9m by 1.9m and 4.2m by 1.9m and oriented almost east west. Although larger than a single inhumation burial, they do have similar proportions. A cluster of more circular pits are located close to the easternmost elongated pit and an association is likely.

Anomalies with an uncertain origin

(44) - A weakly positive linear anomaly can be seen in the northern part of the survey area. It appears to have been truncated by former field boundary (46) and although there are no obvious linears extending towards it from the north west, its position and orientation could indicate that it forms the southern boundary ditch associated with the enclosure (20) located in Area 3 to the north.

(45) - A positive response is located at the southern edge of the survey area. Although it appears as a discrete magnetically enhanced anomaly, it is not clear if it relates to a cut feature or has an association with burning and there is a strong possibility that it relates to a natural feature, similar to the amorphous responses seen to the west in Area 6.

Anomalies associated with land management

(46) - A positive linear anomaly extends along the northern part of the survey area and relates to a formerly mapped field boundary.

3.9 List of anomalies - Area 6

Area centred on OS NGR 390645, 167555, see Figs 21 – 23.

Anomalies of archaeological potential

(47) - Weakly positive linear and rectilinear anomalies are a continuation of the enclosures seen within Area 4 to the north. They are generally weak, fragmented and poorly defined, and lack an association with other archaeological features. They are likely to relate to a former field system away from the main settlement focus.

Anomalies with an uncertain origin

(48) - A T-shaped negative linear anomaly appears to extend towards the line of a formerly mapped field boundary (52), which also has a negative response. It is possible that it is associated, but this is not certain.

(49 & 50) - A weakly positive possible curvilinear anomaly is located in the western part of the survey area (49) with other weakly positive linear anomalies nearby. Although they may be associated with cut features, they lie within the vicinity of a wider zone of naturally formed magnetically variable responses and an association is possible.

(51) - Two discrete positive responses are located at the north eastern corner of the survey area. They have a slightly elongated appearance and have a response of 13nT. They could relate to anomalies with an archaeological origin.

Anomalies associated with land management

(52) - A negative linear anomaly is associated with the line of a formerly mapped field boundary.

Anomalies with a natural origin

(53) - Magnetically variable responses of natural origin.

3.10 List of anomalies - Area 7

Area centred on OS NGR 390480, 167260, see Figs 24 – 26 & 36 – 38 .

Anomalies of archaeological potential

(54) - A series of rectilinear anomalies oriented parallel with and orthogonal to the Roman road that forms the southern boundary and passes through the south western corner of the survey area (60). They appear as a series of enclosures situated approximately 35-40m either side of the road containing former buildings fronting the road (56 & 57) and large number of pits and areas of burning (58). They are bounded to the north by an outer enclosure ditch, 55-60m north of the road. These outer enclosures contain less intense occupation features, and can also be seen to the south of the road.

(55) - Other positive rectilinear anomalies appear to be attached to, but at a different orientation to, anomalies (54). They extend north westwards into Area 10 (81) and have been truncated by a later field boundary (74).

(56) - Situated along the northern edge of the southern field boundary, which is the fossilised Roman road, there are a number of negative rectilinear anomalies that relate to former structural remains. The majority of these responses are associated

with positive anomalies which are likely to relate to burning. It is not clear if any of these directly relate to a hypocaust system, but this is possible. Anomaly (56) has a complex morphology including a large circular structural element enclosing an area with a diameter of approximately 6.5m. This type of anomaly could relate to a shrine.

(57) - Negative rectilinear anomalies, with curvilinear elements have truncated the enclosure/roadside ditch to the south of the Roman road. It appears as a U-shaped structure with two sets of parallel double corridor-like walls 1.6m apart, and 4.2m between the two double walls. The building is 12.6m long and there are a number of further associated structural remains to the north east but also possibly to the south, but these are not well defined. It contains a number of discrete positive responses, many of them 20-60nT which indicates intense burning. Whether this relates to a hypocaust or to ovens contemporary with the building, or perhaps a later phase of utilising the building for ovens, is not clear.

(58) - Located to the west of anomaly (57) are a number of positive and negative rectilinear anomalies. It is possible that they are associated with further building plots, with less evidence of clear masonry structural remains; however, they could relate to gardens or a courtyard.

(59) - A large number of discrete positive responses can be seen throughout the site. They relate to pits and areas of burning, with some circular, several keyhole shaped and a number associated with intense burning indicative of hearths or ovens. Some are surrounded by negative anomalies, possibly indicating that some are housed within stone structures.

(60) - A negative area between two flanking ditches relates to a Roman road. The ditches are very fragmented with at least one building appearing to have been constructed over the southern ditch. The negative response is also highly fragmented, but this could relate to a road surface. A number of discrete, pit-like responses can be seen extending along the centre of it, between 3m and 7m apart.

(61) - Located at the eastern end of the Roman settlement are a number of positive linear anomalies that appear to relate to further enclosures. They are on the same orientation as the Roman enclosures (54) but are much weaker. This could indicate that they are contemporary, but just beyond the main limits of the settlement and, therefore, not as much magnetically enhanced material has become incorporated into them, or they could be later features as they appear to be bounded by a formerly mapped field boundary (71). They have, however, been truncated by ridge and furrow, so they are likely to have archaeological potential.

(62) - Located to the north of the main Roman settlement are a number of discrete positive responses. Some appear circular, others more keyhole-shaped which could indicate further ovens.

(63) - A positive linear anomaly extends from the western boundary towards the main Roman settlement. It does not appear to extend beyond the railway line into Area 9 to the west, although a number of pit-like anomalies (79) could be

associated. Unfortunately, the area where it is likely to join the Roman enclosures could not be surveyed due to the presence of a pylon so any relationship is unknown. Although slightly curvilinear, it has a general north west to south east orientation similar to the ladder arrangement of enclosures seen in Area 10, 130-200m to the west, and an association is possible.

(64) - A weakly positive linear anomaly is located towards the north western part of the survey area. It appears to be extending towards a formerly mapped field boundary (70) and, therefore, could be associated; however, it is not present on the 1840s tithe map or later mapping.

(65) - Two fragmented positive curvilinear anomalies can be seen in the north western part of the survey area. Although incomplete, they have a strong response of over 40nT, in places, indicating an association with burning and an outer diameter of 8-9m. These ring ditch features could relate to Iron Age round houses, and although a small number of discrete positive responses are located in the vicinity, they are generally isolated from other features.

Anomalies with an uncertain origin

(66) - Two parallel positive linear anomalies extend from a formerly mapped field boundary (70) and end at the northern edge of the Roman outer enclosures (54). They appear to relate to cut features, but their age and function is uncertain.

(67) - Located between linear anomalies (63) & (64), and appearing to abut former field boundary (71), there are a number of amorphous positive responses. The anomalies have no coherent morphology and could relate to naturally formed features; however, a spread of magnetically enhanced material derived from human occupation associated with the two ring ditches to the north is possible.

(68) - A number of negative linear anomalies have truncated the Roman enclosure ditches. They do not have a regular pattern indicative of ridge and furrow, but it is possible that they relate to agricultural activity.

(69) - A number of negative linear anomalies have truncated the enclosure ditches at the western edge of the survey area. It is possible that they are associated with land drainage; however, they are on a similar orientation to parallel linear anomalies seen in Area 10, 50m to the north west, and they could relate to ridge and furrow.

Anomalies associated with land management

(70, 71 & 72) - Three broad, positive linear anomalies are associated with formerly mapped field boundaries. There is a pipe which extends towards anomaly (71) and then abruptly stops, although it could continue south eastwards as a non-magnetic pipe. The boundaries represented by anomalies (71) and (72) once joined, but this cannot be seen in the data due to the location of the pylon. Anomaly (72) appears to bound anomalies (61) and is also on the same orientation as the Roman enclosure boundaries; however, it is also parallel with the Roman road which is defined by the extant field boundary.

3.11 List of anomalies - Area 8

Area centred on OS NGR 390175, 167565, see Figs 27 – 29.

Anomalies with an uncertain origin

(73) - A small, positive curvilinear anomaly appears to surround a number of other discrete and linear responses. Some of the responses are up to 17nT, which could indicate an association with burning; however, they are generally poorly defined.

(74) - A number of positive responses can be seen primarily in the northern part of the survey area. They are weak and poorly defined, although it is possible that they relate to cut features.

Anomalies associated with land management

(75) - The survey area contains land drains.

Anomalies associated with magnetic debris

(76) - The survey area contains several patches of magnetic debris. While some are likely to relate to ground consolidation, with a patch near a former pylon base, others are weaker and are of uncertain origin.

Anomalies with a modern origin

(77) - Strong, discrete, dipolar responses with associated magnetic disturbance relate to removed pylon bases.

Anomalies with a natural origin

(78) - A broad zone of magnetically variable responses can be seen along the southern edge of the survey area. Although just north of the mapped area of River Terrace deposits, this may relate to the fill of a former palaeochannel.

3.12 List of anomalies - Area 9

Area centred on OS NGR 390322, 167397, see Figs 27 – 29.

Anomalies with an uncertain origin

(79) - The survey area contains a small number of pit-like responses and several positive and negative linear anomalies. They are weak and lack a coherent morphology.

Anomalies with a natural origin

(80) - A broad, linear magnetically variable response is associated with anomaly (78) seen within Area 8 to the north.

3.13 List of anomalies - Area 10

Area centred on OS NGR 390236, 167171, see Figs 30 – 32 & 36 – 38.

Anomalies of archaeological potential

(81) - Positive rectilinear anomalies relate to a ladder-type series of enclosures that continue from those seen within Area 7 to the south east (55). They contain a number of discrete pits and areas of burning.

(82) - Amorphous negative anomalies are enclosed by a curvilinear ditch to the north. It is possible that the response is to a former surface.

(83) - Negative rectilinear anomalies relate to a former building. Like anomaly (57) located 110m to the east, it also appears to have truncated a former enclosure/road ditch. It contains discrete positive responses, many indicative of intense burning. Other negative responses close by appear to be associated.

(84) - Negative rectilinear anomalies could relate to former structural remains on an orientation parallel with enclosures seen to the south and west, not parallel with the Roman road.

(85) - Poorly defined positive anomalies could relate to a former ditch or possible surface associated with the Roman road. To the north, negative responses appear to relate to surfaces within the road.

Anomalies associated with land management

(86) - A positive anomaly appears to relate to a former field boundary, but an association with the Roman road is also likely.

Anomalies with an agricultural origin

(87) - A series of parallel linear anomalies relate to ridge and furrow.

Anomalies with a modern origin

(88) - Two linear anomalies caused by buried high voltage cables. The response is around 3m wide with a c6m gap between and they extend south westwards into Areas 11 and 12.

3.14 List of anomalies - Area 11

Area centred on OS NGR 390033, 166984, see Figs 33 – 38.

Anomalies of archaeological potential

(89) - A series of rectilinear enclosures on a general north east to south west trend. They extend northwards into the southern edge of Area 10 and cover over 1ha in the eastern part of the field.

(90) - A large number of discrete positive responses are contained within the enclosures (80) with many of them are over 20nT and some up to 60nT. Some also appear to be surrounded by a negative anomaly which could indicate an associated structure. They relate to further pits, hearths and ovens.

(91, 92 & 93) - A small number of discrete pit-like responses can be seen in the northern part of the survey area, with two sets adjacent to the Roman road. Although relatively isolated they are magnetically enhanced and may relate to features with archaeological potential.

Anomalies with an uncertain origin

(94) - The western and southern part of the survey area contains a number of weakly positive linear anomalies. They are poorly defined and cannot be clearly characterised as cut features.

Anomalies associated with land management

(95 & 96) - Formerly mapped field boundaries. (95) has another associated boundary extending towards it from the west, while (96) bounds a series of ridge and furrow (98).

(97) - The survey area contains at least two series of land drains.

Anomalies with an agricultural origin

(98) - A series of ridge and furrow is bounded by anomaly (96) and has partly truncated the archaeology in places. Another series with a north to south orientation immediately west has also partly truncated archaeological features.

3.15 List of anomalies - Area 12

Area centred on OS NGR 389955, 166665, see Figs 39 – 41.

Anomalies with an uncertain origin

(99) - The survey area contains a number of pit-like responses, with some in clusters, and several weakly positive linear anomalies. It is not possible to determine if they relate to cut features.

Anomalies associated with land management

(100) - Two formerly mapped field boundaries can be seen within the survey area, with land drains to the north.

Anomalies with a modern origin

(101) - The two electric cables extend through the eastern part of the survey area, along with another three services, including one that extends westwards into Area 13.

3.16 List of anomalies - Area 13

Area centred on OS NGR 389723, 166685, see Figs 39 – 41.

Anomalies with an uncertain origin

(102) - The survey area contains a number of positive linear, discrete and amorphous responses. Some appear to have been truncated by ridge and furrow, but as they lack a coherent morphology, it is not clear if they relate to cut features.

Anomalies with an agricultural origin

(103) - A series of ridge and furrow in the central part of the survey area relates to a once separate field. Other, more recent agricultural activity has resulted in deep ruts.

3.17 List of anomalies - Area 14

Area centred on OS NGR 389710, 167085, see Figs 42 – 43.

Anomalies with an uncertain origin

(104) - A number of discrete positive anomalies with a response of up to 20nT appear to form a line, just to the north of Daniel's Wood. The LiDAR imagery indicates that there are undulations within the ground surface and it is possible that these relate to removed trees or possible clay abstraction pits.

(105) - A number of discrete positive responses can be seen towards the south western part of the survey area. They have a response of 5-50nT, some appear to be associated with strongly magnetic anomalies. They lie within the zone of natural

responses (107) but are stronger in magnitude. It is not clear if they relate to pit-like features with an anthropogenic origin, are associated with tree removal, or if they are natural features.

(106) - A small number of weakly positive linear anomalies have been located. They do not have a well defined morphology and they appear mainly within the zone of natural features (107) and it is possible that they are associated.

(107) - A widespread zone of magnetically variable anomalies appear to relate to naturally formed features. Although no superficial deposits are mapped over the Oxford Clay geology, it is possible that these relate to shallow Quaternary features and/or are associated with tree removal.

4 DISCUSSION

4.1.1 Area 1 contains a series of rectilinear enclosures (1) that appear from morphology to relate to Romano-British features. They contain at least three ring ditches (2), which may also indicate that the settlement relates to the late-Iron Age/early Roman transition. A further ring ditch feature (6) lies some 120m to the north east, with the western half apparently truncated during construction of the railway in the 19th century. A large number of discrete positive responses relate to pits (4) and areas of intense burning (3) typical of hearths or possible ovens. Some of the pits appear to be in linear formations and some could relate to further heavily truncated ring ditches. The southern edge of the settlement is defined by an irregularly shaped ditch, and a series of large pits (5) are located at intervals of between 10m and 20m apart and approximately 10-15m to the south of the boundary ditch. During the survey, Pennant Sandstone fragments typical of Roman roof tile appeared widespread within the field, although Roman pottery fragments were noted mainly in the south eastern part.

4.1.2 Close to the northern edge of Area 1 a series of parallel linear anomalies (7) relate to the original line of Wick Lane, which was removed during alterations to the road during construction of the railway line. It is not clear exactly what the responses relate to, but it is possible that the positive anomalies relate to cut features, or the flanking ditches, with the negative responses possibly indicating a former surface in the centre and possible former flanking bank to the north, but a ditch with a stone fill could also be responsible for the negative responses. The multiple responses could indicate several phases of cutting/resurfacing.

4.1.3 Area 2 contains several very weakly positive linear anomalies (16). While they are parallel with the modern and a formerly mapped field boundary, the general north west to south east orientation reflects the similar axis seen within the archaeological features in Areas 3 and 4 to the south. They do correspond to low linear banks seen within LiDAR imagery, and while a

medieval or post-medieval origin is possible, an association with former boundaries relating to prehistoric or Roman field systems is possible.

4.1.4 A heavily truncated curvilinear enclosure (20) can be seen in Area 3 containing other smaller enclosures (21) and a number of ring ditches (22). At least four ring ditches are clustered into a small triangular enclosure in the north eastern part of the larger enclosure (20). At least three others are clustered to the south, with perhaps one or two further south. The fragmented nature of the ring ditches indicates that there are at least two or three phases of construction and use and negative anomalies within the vicinity could indicate structural remains. The triangular enclosure is separated from a rectilinear enclosure (22) by a very negative rectilinear response that may indicate a former bank or sand-filled ditch. These features do correspond to very low surface expressions seen within LiDAR imagery.

4.1.5 The southern return of the enclosure (20) is not evident within Area 3; however, a weakly positive linear anomaly (44) situated within Area 5 to the south could be associated. A small number of discrete positive responses (43) are located in northern part of Area 5. There is a circular cluster and also three elongated pit-like responses, an archaeological origin is possible.

4.1.6 Area 3 also contains anomalies that are associated with a dense spread of very fragmented brick, some heavily vitrified, along with coal fragments, two glass bottle necks c1700 and salt-glazed ware. The magnetometry has located a positive linear anomaly, 12m by 1m, and a patch of magnetically variable responses which relate to the spreads of brick. It appears to relate to the central floor or flue and stoke-pit of a brick kiln that could date to the post-medieval period. LiDAR imagery indicates that it correlates with a low circular mound in the field.

4.1.7 Area 4 contains a series of rectilinear and irregularly shaped anomalies forming a system of enclosures enclosing settlement debris and features and covering 3ha in total. While much of the response within the fill of the enclosure ditches is generally 3-5nT, some sections are very enhanced, with responses of 50-70nT indicating that very magnetic material has been incorporated into them. The enclosures form an irregular ladder shape which extends for over 265m by 135m and can be partly seen as a cropmark/soilmark on aerial photographs and also a low surface expression on LiDAR imagery. The HER lists that the faint earthworks seen on aerial photographs from 1946 were interpreted as relating to medieval or post medieval ridge and furrow, holloways and field boundaries. However, the magnetometry has shown that the enclosures contain widespread evidence for prehistoric/early Roman settlement, including spreads of magnetic responses relating to occupational debris (31), a number of ring ditches (32) and clusters of pits and features of intense burning (34). Large amounts of Roman pottery were noted during the survey as well as some iron slag, Pennant Sandstone roof tile and limestone scatters. An elongated flint scraper with a retouched end was also noted within the area of settlement debris.

4.1.8 The enclosures extend to the south into Area 6 (47) and appear to relate to a series of fairly regularly spaced linear boundaries, 80-90m apart and likely to be associated with field boundaries.

4.1.9 The main zone of archaeological features relating to a Roman settlement alongside the Roman road can be seen either side of the railway in Areas 7 to the east and 10 and 11 in the west. Although parts of Area 7 and Area 10 had been subject to previous geophysical survey by Wessex Archaeology (2015), this survey encompassed a wider area to the east and south. It shows that there were a number of Roman buildings either side of the Roman road, although there is some evidence that some of the buildings encroach over the original roadside/enclosure ditches. One of the buildings (56) contains a circular structure enclosing an area with a 6.5m diameter along with a number of smaller sub-divisions. The function of this feature is not clear, but a circular feature such as a large pool or shrine should be considered. The road itself is not clearly defined but fragmented positive responses appear to relate to the flanking ditches that also form part of the enclosures to the north and south. Negative responses in the centre (60) of the road could relate to a former surface or agger, or a levelled holloway as located within the excavations to the west. A series of pit-like anomalies extend along the centre of the road but their function is not clear.

4.1.10 The results also demonstrate the presence of another phase of enclosures on a different orientation to the east west Roman roadside settlement. A number of enclosures in Area 10 (81) had been previously located by Wessex Archaeology forming a ladder-type series. This orientation is mirrored to the south of the road (89), within the southern part of Area 10 and into Area 11, with a possible former building on a similar orientation (84). An adjacent early Roman building formed of a hollow and post holes and enclosing a space of 5.5m by 5.5m was located during the excavation (Wessex Archaeology, 2015). Anomaly (84) is larger, at 11.5m by 6.5m, but it is possible that it relates to a structure with a similar early Roman date. Within all of the enclosures are a large number of positive discrete anomalies (59 & 90), some with very strongly magnetic responses (20-40nT) and others with a keyhole shape. These appear similar to the ovens that were located during the excavations and show that these are likely to number well over 100. Similar responses can also be seen to the north of the main settlement focus within Area 7 (62).

4.1.11 Approximately 4.5ha of the Roman settlement has been surveyed and it is likely to continue south and east of the limits of the survey area and preserved underneath the railway. The enclosures are generally associated with occupation, with perhaps small paddocks to the rear, and possible gardens or courtyards (58) associated with at least one building. Anomaly (72) also appears on the same orientation with and very similar to the Roman enclosure ditches, but relates to a relatively recently removed field boundary. The response to the boundary ditches has a magnetic enhancement more similar to ditches associated with human occupation debris, and it is possible that they were earlier field boundaries that became fossilised along with the Roman road. There is evidence for two former ring ditch features (65) close to

former field boundary (70) indicating that there was an earlier phase of prehistoric occupation to the north of the Roman settlement.

5 CONCLUSION

5.1.1 The geophysical survey was carried out over 84.5ha within fourteen survey areas. At least eight of the areas contain archaeological features covering an area of approximately 22ha in total, including anomalies associated with intense occupation covering at least 10ha.

5.1.2 A number of enclosures containing ring ditches relating to late Iron Age/early Roman round houses can be seen within Areas 1, 3 and 4, with further isolated ring ditches seen within Area 7 to the south. Evidence for former buildings associated with the Roman roadside settlement has been located within a number of enclosures on two different orientations. A large number of discrete responses associated with burning are likely to relate to former ovens.

5.1.3 Although the majority of the archaeology is likely to date to the late prehistoric and Roman periods, a former brick kiln, associated with a mass of fragmented brick, some vitrified wasters and a low mound has also been located. It is likely to date to the post-medieval period.

5.1.4 Elsewhere, the survey areas contain a number of positive and negative anomalies of uncertain origin and widespread magnetically variable responses likely to relate to natural features and processes, though with the potential to contain magnetically enhanced soil from anthropogenic activity in places.

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Appendix A – basic principles of magnetic survey

Iron minerals are always present to some degree within the topsoil and enhancement associated with human activity is related to increases in the level of magnetic susceptibility and thermoremnant material. Magnetic susceptibility is an induced magnetism within a material when it is in the presence of a magnetic field. This can be thought of as effectively permanent due to the presence of the Earth's magnetic field. Thermoremnant magnetism occurs when ferrous material is heated beyond a specific temperature known as the Curie Point. Demagnetisation occurs at this temperature with re-magnetisation by the Earth's magnetic field upon cooling.

Enhancement of magnetic susceptibility can occur in areas subject to burning and complex fermentation processes on biological material; these are frequently associated with human settlement. Thermoremnant features include ovens, hearths, and kilns. In addition thermoremnant material such as tile and brick may also be associated with human activity and settlement.

Silting and deliberate infilling of ditches and pits with magnetically enhanced soil can create an area of enhancement compared with surrounding soils and subsoils into which the feature is cut. Mapping enhanced areas will produce linear and discrete anomalies allowing an assessment and characterisation of hidden subsurface features.

It should be noted that areas of negative enhancement can be produced from material having lower magnetic properties compared to the topsoil. This is common for many sedimentary bedrocks and subsoils which were often used in the construction of banks and walls etc. Mapping these 'negative' anomalies may also reveal archaeological features.

Magnetic survey or magnetometry can be carried out using a fluxgate gradiometer and may be referred to as gradiometry. The SENSYS gradiometer is a passive instrument consisting of two fluxgate sensors mounted vertically 65cm apart. The instrument is carried about 10-20cm above the ground surface and the upper sensor measures the Earth's magnetic field as does the lower sensor but this is influenced to a greater degree by any localised buried magnetic field. The difference between the two sensors will relate to the strength of the magnetic field created by the buried feature.

There are a number of factors that may affect the magnetic survey and these include soil type, local geology and previous human activity. Situations arise where magnetic disturbance associated with modern services, metal fencing, dumped waste material etc., obscures low magnitude fields associated with archaeological features.

Appendix B – data processing notes

Clipping

Minimum and maximum values are set and replace data outside of the range with those values. Extreme values are removed improving colour or greyscale contrast associated with data values that may be archaeologically significant. Different ranges are applied to data in order to determine the most suitable for anomaly abstraction and display.

Despike

Removal of data points that exceed the mean/median/threshold by selecting a window size of data points and replace by mean/median/threshold. Magnetic spikes can be caused iron objects on the surface or within the topsoil. Despike can improve the appearance of data and remove extreme readings that may affect further processing.

High Pass Filter

Removes low frequency anomalies within the data that are not considered to be archaeologically significant and may be natural in origin. A window passes over the data, the mean of all the data within the window is subtracted from the centre value. The size of the window is adjusted as is the weighting which may be uniform or Gaussian. The process is used to improve the visibility of anomalies of interest.

Low Pass Filter

Removes high frequency anomalies or 'noise' within datasets and provides a smoother output. A window passes over the data, the mean of all the data within the window is used to replace the centre value. The size of the window is adjusted as is the weighting. The process is used to improve the visibility of anomalies of interest.

Zero Median/Mean Traverse

The median (or mean) of data from each traverse is calculated ignoring data outside a threshold value, the median (or mean) is then subtracted from the traverse. The process is used to equalise differences between the offset values of the gradiometer sensors. The process can remove archaeological features that run along a traverse but with the high resolution datasets created by the Sensys FGM650 sensors and the method of data collection this has not been a notable problem. In fact, the removal of offsets using software avoids carrying out a balancing procedure on site, which inevitably can never be done in magnetically clean conditions and results in improperly aligned fluxgate sensors and/or electronic adjustment values.

Appendix C – survey and data information

Area 1 minimally processed data

Filename: J812-mag-Area1proc.xcp
Description: Imported as Composite from: J812-mag-Area1.asc/wickfm14/MX
Instrument Type: Sensys DLMGPS
Units: nT
UTM Zone: 30U
Survey corner coordinates (X/Y):OSGB36
Northwest corner: 390462.43, 168504.48 m
Southeast corner: 390618.43, 168223.68 m
Collection Method: Randomised
Sensors: 5
Dummy Value: 32702
Source GPS Points: 744800
Dimensions
Composite Size (readings): 1040 x 1872
Survey Size (meters): 156 m x 281 m
Grid Size: 156 m x 281 m
X Interval: 0.15 m
Y Interval: 0.15 m
Stats
Max: 5.53
Min: -5.50
Std Dev: 2.30
Mean: 0.04
Median: 0.02
Composite Area: 4.3805 ha
Surveyed Area: 2.3698 ha
PROGRAM
Name: TerraSurveyor
Version: 3.0.23.0
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -5.00 to 5.00 nT

Area 1 filtered data

Filename: J812-mag-Area1-proc-hpf.xcp
Stats
Max: 5.53
Min: -5.50
Std Dev: 1.91
Mean: 0.07
Median: 0.00
GPS based Proce6
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00 nT
5 High pass Uniform (median) filter: Window dia: 300
6 Clip from -5.00 to 5.00 nT

Area 2 minimally processed data

COMPOSITE
Path: C:\Business\Jobs\J812 Wick Farm, Melksham\Data\Area 2\comps\
Filename: J812-mag-Area2-proc.xcp
Description: Imported as Composite from: J812-mag-Area2.asc/wickfm7&15/MX
Northwest corner: 390484.28, 168256.50 m
Southeast corner: 390727.73, 167981.70m
Source GPS Points: 657600
Dimensions
Composite Size (readings): 1623 x 1832
Survey Size (meters): 243 m x 275 m
Grid Size: 243 m x 275 m
X Interval: 0.15 m
Y Interval: 0.15 m
Stats
Max: 3.32
Min: -3.30
Std Dev: 0.93
Mean: 0.03
Median: 0.00
Composite Area: 6.69 ha
Surveyed Area: 3.335 ha
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -3.00 to 3.00 nT

Area 2 filtered data

Filename: J812-mag-Area2-proc-hpf.xcp
Stats
Max: 3.32
Min: -3.30
Std Dev: 0.79
Mean: 0.01
Median: 0.00
GPS based Proce5
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 High pass Uniform (median) filter: Window dia: 153
5 Clip from -3.00 to 3.00 nT

Area 3 minimally processed data

Filename: J812-mag-Area3-proc.xcp
Description: Imported as Composite from: J812-mag-Area3.asc/wickfm9/MX
Northwest corner: 390535.73, 168120.31 m
Southeast corner: 391111.28, 167840.26m
Source GPS Points: 2166100
Dimensions
Composite Size (readings): 3837 x 1867
Survey Size (meters): 576 m x 280 m
Grid Size: 576 m x 280 m
X Interval: 0.15 m
Y Interval: 0.15 m
Stats
Max: 3.32
Min: -3.30
Std Dev: 0.75
Mean: 0.02
Median: 0.00
Composite Area: 16.118 ha
Surveyed Area: 8.6478 ha
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -3.00 to 3.00 nT

Area 3 filtered data

Filename: J812-mag-Area3-proc-hpf.xcp
Stats
Max: 3.32
Min: -3.30
Std Dev: 0.70
Mean: 0.02
Median: 0.00
GPS based Proce5
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 High pass Uniform (median) filter: Window dia: 250
5 Clip from -3.00 to 3.00 nT

Area 4 minimally processed data

Filename: J812-mag-Area4-proc.xcp
Description: Imported as Composite from: J812-mag-Area4.asc/wickfm1&8/MX
Northwest corner: 390461.98, 167979.98m
Southeast corner: 390825.13, 167672.78 m
Source GPS Points: 1494100
Composite Size (readings): 2421 x 2048
Survey Size (meters): 363 m x 307 m
Grid Size: 363 m x 307 m
X Interval: 0.15 m
Y Interval: 0.15 m
Stats
Max: 3.32
Min: -3.30
Std Dev: 1.11
Mean: 0.03
Median: 0.01
Composite Area: 11.156 ha
Surveyed Area: 8.0333 ha
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -3.00 to 3.00 nT

Area 4 filtered data

Filename: J812-mag-Area4-proc-hpf.xcp
Stats
Max: 3.32
Min: -3.30
Std Dev: 0.96
Mean: 0.04
Median: 0.00
GPS based Proce5
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 High pass Uniform (median) filter: Window dia: 153
5 Clip from -3.00 to 3.00 nT

Area 5 minimally processed data

Filename: J812-mag-Area5-proc.xcp
Description: Imported as Composite from: J812-mag-Area5.asc/wickfm6/MX
Northwest corner: 390823.64, 167861.49m
Southeast corner: 391077.59, 167661.99 m
Source GPS Points: 588800
Dimensions
Composite Size (readings): 1693 x 1330
Survey Size (meters): 254 m x 200 m
Grid Size: 254 m x 200 m
X Interval: 0.15 m
Y Interval: 0.15 m
Stats
Max: 3.32
Min: -3.30
Std Dev: 0.54
Mean: 0.02
Median: 0.01
Composite Area: 5.0663 ha

Surveyed Area: 3.927 ha
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -3.00 to 3.00 nT

Area 5 filtered data

Filename: J812-mag-Area5-proc-hpf-lpf.xcp
Stats
Max: 3.32
Min: -3.30
Std Dev: 0.40
Mean: 0.01
Median: 0.00
GPS based Proce6
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 High pass Uniform (median) filter: Window dia: 153
5 Lo pass Uniform (median) filter: Window dia: 8
6 Clip from -3.00 to 3.00 nT

Area 6 minimally processed data

Filename: J812-mag-Area6-proc.xcp
Description: Imported as Composite from: J812-mag-Area6.asc/wickfm2/MX
Northwest corner: 390443.09, 167716.46 m
Southeast corner: 390839.99, 167444.81 m
Source GPS Points: 1384900
Dimensions
Composite Size (readings): 2646 x 1811
Survey Size (meters): 397 m x 272 m
Grid Size: 397 m x 272 m
X Interval: 0.15 m
Y Interval: 0.15 m
Stats
Max: 3.32
Min: -3.30
Std Dev: 0.58
Mean: -0.01
Median: 0.00
Composite Area: 10.782 ha
Surveyed Area: 8.4034 ha
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -3.00 to 3.00 nT

Area 6 filtered data
Filename: J812-mag-Area6-proc-hpf-lpf.xcp
Stats
Max: 3.32
Min: -3.30
Std Dev: 0.58
Mean: -0.01
Median: 0.00
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 High pass Uniform (median) filter: Window dia: 153
5 Lo pass Uniform (median) filter: Window dia: 13
6 Clip from -3.00 to 3.00 nT

Area 7 minimally processed data

Filename: J812-mag-Area7-proc.xcp
Description: Imported as Composite from: J812-mag-Area7.asc/wickfm13/MX
Northwest corner: 390281.57, 167457.03m
Southeast corner: 390672.47, 167081.43 m
Source GPS Points: 3753200
Dimensions
Composite Size (readings): 2606 x 2504
Survey Size (meters): 391 m x 376 m
Grid Size: 391 m x 376 m
X Interval: 0.15 m
Y Interval: 0.15 m
Stats
Max: 11.05
Min: -11.00
Std Dev: 2.21
Mean: 0.13
Median: 0.01
Composite Area: 14.682 ha
Surveyed Area: 7.8659 ha
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00 nT

Area 7 filtered data

Filename: J812-mag-Area7-proc-hpf.xcp
Stats
Max: 10.00
Min: -10.00
Std Dev: 1.78
Mean: 0.07
Median: 0.01
Composite Area: 14.682 ha
Surveyed Area: 7.8659 ha
Processes: 2
1 Base Layer
2 Clip from -10.00 to 10.00 nT
GPS based Proce5
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00 nT
5 High pass Uniform (median) filter: Window dia: 203

Area 8 minimally processed data

Filename: J812-mag-Area8-proc.xcp
Description: Imported as Composite from: J812-mag-Area8.asc/wkfarm3/MX
Northwest corner: 390034.19, 167727.70 m
Southeast corner: 390341.69, 167404.45 m
Source GPS Points: 1401200
Dimensions
Composite Size (readings): 2050 x 2155
Survey Size (meters): 308 m x 323 m
Grid Size: 308 m x 323 m
X Interval: 0.15 m
Y Interval: 0.15 m
Stats
Max: 5.53
Min: -5.50
Std Dev: 1.87
Mean: -0.07
Median: 0.01
Composite Area: 9.9399 ha
Surveyed Area: 4.7163 ha
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -5.00 to 5.00 nT

Area 8 filtered data

Filename: J812-mag-Area8-proc-hpf.xcp
Stats
Max: 5.53
Min: -5.50
Std Dev: 1.49
Mean: -0.07
Median: 0.02
GPS based Proce5
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 High pass Uniform (median) filter: Window dia: 253
5 Clip from -5.00 to 5.00 nT

Area 9 minimally processed data

Filename: J812-mag-Area9-proc.xcp
Description: Imported as Composite from: J812-mag-Area9.asc/wickfm4
Northwest corner: 390265.83, 167472.62 m
Southeast corner: 390373.98, 167305.22 m
Source GPS Points: 172900
Dimensions
Composite Size (readings): 721 x 1116
Survey Size (meters): 108 m x 167 m
Grid Size: 108 m x 167 m
X Interval: 0.15 m
Y Interval: 0.15 m
Stats
Max: 11.05
Min: -11.00
Std Dev: 3.07
Mean: 0.27
Median: 0.03
Composite Area: 1.8104 ha
Surveyed Area: 1.0441 ha
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00 nT

Area 9 filtered data

Filename: J812-mag-Area9-proc-hpf-lpf.xcp
Stats
Max: 3.32
Min: -3.30
Std Dev: 1.05
Mean: 0.03
Median: 0.00
GPS based Proce6
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 High pass Uniform (median) filter: Window dia: 153
5 Lo pass Uniform (median) filter: Window dia: 10
6 Clip from -3.00 to 3.00 nT

Area 10 minimally processed data

Filename: J812-mag-Area10-proc.xcp
Description: Imported as Composite from: J812-mag-Area10.asc/wickfm5
Northwest corner: 390152.44, 167274.70 m
Southeast corner: 390306.19, 167090.95 m
Source GPS Points: 317800
Dimensions
Composite Size (readings): 1025 x 1225
Survey Size (meters): 154 m x 184 m
Grid Size: 154 m x 184 m
X Interval: 0.15 m
Y Interval: 0.15 m
Stats
Max: 11.05
Min: -11.00
Std Dev: 4.29
Mean: 0.10
Median: -0.02
Composite Area: 2.8252 ha
Surveyed Area: 1.5762 ha
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00 nT

Area 10 filtered data

Filename: J812-mag-Area10-proc-hpf.xcp
Stats
Max: 11.05
Min: -11.00
Std Dev: 3.45
Mean: 0.27
Median: 0.00
GPS based Proce5
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 High pass Uniform (median) filter: Window dia: 153
5 Clip from -10.00 to 10.00 nT

Area 11 minimally processed data

Filename: J812-mag-Area11.xcp
Description: Imported as Composite from: J812-mag-Area11.asc/wickfm11
Northwest corner: 389869.69, 167149.72 m
Southeast corner: 390237.04, 166816.27 m
Source GPS Points: 2964500
Dimensions
Composite Size (readings): 2449 x 2223
Survey Size (meters): 367 m x 333 m
Grid Size: 367 m x 333 m
X Interval: 0.15 m
Y Interval: 0.15 m
Stats
Max: 5.00
Min: -5.00
Std Dev: 1.58
Mean: 0.04
Median: 0.00
Composite Area: 12.249 ha
Surveyed Area: 8.6661 ha
Processes: 2
1 Base Layer
2 Clip from -5.00 to 5.00 nT
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00 nT

Area 11 filtered data

Filename: J812-mag-Area11-proc-hpf.xcp
Stats
Max: 5.53
Min: -5.50
Std Dev: 1.30
Mean: 0.03
Median: 0.00
Composite Area: 12.249 ha
Surveyed Area: 8.6661 ha
GPS based Proce5
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).

3 DeStripe Median Traverse:
4 High pass Uniform (median) filter: Window dia: 350
5 Clip from -5.00 to 5.00 nT

Area 12 minimally processed data

Filename: J812-mag-Area12-proc.xcp
Description: Imported as Composite from: J812-mag-Area12.asc/wickfm10
Northwest corner: 389786.99, 166829.42 m
Southeast corner: 390099.44, 166517.72 m
Source GPS Points: 1928600
Dimensions
Composite Size (readings): 2083 x 2078
Survey Size (meters): 312 m x 312 m
Grid Size: 312 m x 312 m
X Interval: 0.15 m
Y Interval: 0.15 m
Stats
Max: 3.32
Min: -3.30
Std Dev: 1.42
Mean: 0.03
Median: -0.01
Composite Area: 9.7391 ha
Surveyed Area: 6.6969 ha

GPS based Proce5
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 DeStripe Median Traverse:
5 Clip from -3.00 to 3.00 nT

Area 12 filtered data

Filename: J812-mag-Area12-proc-hpf.xcp
Stats
Max: 5.53
Min: -5.50
Std Dev: 1.48
Mean: 0.00
Median: 0.00
GPS based Proce5
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 High pass Uniform (median) filter: Window dia: 153
5 Clip from -5.00 to 5.00 nT

Area 13 minimally processed data

Filename: J812-mag-Area13-proc.xcp
Description: Imported as Composite from: J812-mag-Area13.asc/wickfm12
Northwest corner: 389533.35, 166834.17 m
Southeast corner: 389881.80, 166544.52 m
Source GPS Points: 1573400
Dimensions
Composite Size (readings): 2323 x 1931
Survey Size (meters): 348 m x 290 m
Grid Size: 348 m x 290 m
X Interval: 0.15 m
Y Interval: 0.15 m
Stats
Max: 3.32
Min: -3.30
Std Dev: 1.09
Mean: 0.01
Median: 0.01
Composite Area: 10.093 ha
Surveyed Area: 5.0151 ha
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -3.00 to 3.00 nT

Area 14 minimally processed data

Filename: J812-mag-Area14-proc.xcp
Description: Imported as Composite from: J812-mag-Area14.asc
Northwest corner: 389586.62, 167149.39 m
Southeast corner: 389867.87, 166973.59m
Source GPS Points: 734600
Dimensions
Composite Size (readings): 1875 x 1172
Survey Size (meters): 281 m x 176 m
Grid Size: 281 m x 176 m
X Interval: 0.15 m
Y Interval: 0.15 m
Stats
Max: 5.53
Min: -5.50
Std Dev: 1.14
Mean: 0.02
Median: 0.01
Composite Area: 4.9444 ha
Surveyed Area: 2.4095 ha

Appendix D – digital archive

Archaeological Surveys Ltd hold the primary digital archive at their offices in Wiltshire. Data are backed-up onto an on-site data storage drive and at the earliest opportunity data are copied to CD ROM for storage on-site and off-site.

A PDF copy will be supplied to the Wiltshire Historic Environment Record with the CAD abstraction layers available on request.. The report will also be uploaded to the Online AccesS to the Index of archaeological investigationS (OASIS).

Archive contents:

File type	Naming scheme	Description
Data	J812-mag-**[area number/name]**.asc J812-mag-**[area number/name]**.xcp J812-mag-**[area number/name]**-proc.xcp J812-mag-**[area number/name]**-proc-hpf.xcp	Raw data as ASCII CSV TerraSurveyor raw data TerraSurveyor minimally processed data TerraSurveyor filtered data
Graphics	J812-mag-**[area number/name]**-proc.tif	Image in TIF format
Drawing	J812-**[version number]**.dwg	CAD file in 2010 dwg format
Report	J812 report.odt	Report text in Open Office odt format

Table 3: Archive metadata

Appendix E – CAD layers for abstraction and interpretation plots

The table below sets out Archaeological Surveys Ltd CAD layer names with associated colours and graphical content. Where CAD files are available layers may be extracted for further CAD/GIS use. Note: hatched polygon boundaries are contained within layers with the RGB colour code 254, 255, 255 (near white) in order to prevent their visibility.

Report sub-heading and associated CAD layer names	Colour with RGB index		Layer content
Anomalies with archaeological potential			
AS-ABST MAG POS DISCRETE ARCHAEOLOGY		Red 255,0,0	Solid donut, point or polygon (solid)
AS-ABST MAG POS ARCHAEOLOGY		Red 255,0,0	Polygon (cross hatched ANSI37)
AS-ABST MAG POS CURVILINEAR RING DITCH		Magenta 255,0,255	Polyline or polygon (solid)

AS-ABST MAG NEG STRUCTURAL ARCHAEOLOGY		0,78,36	Line, polyline or polygon (solid)
AS-ABST MAG NEG LINEAR ARCHAEOLOGY		127,0,255	Line, polyline or polygon (solid)
AS-ABST MAG POS ENCLOSURE DITCH		127,0,255	Line, polyline or polygon (solid)
Anomalies with an uncertain origin			
AS-ABST MAG POS LINEAR UNCERTAIN		255,127,0	Line, polyline or polygon (solid)
AS-ABST MAG NEG LINEAR UNCERTAIN		Blue 0,0,255	Line, polyline or polygon (solid)
AS-ABST MAG POS DISCRETE UNCERTAIN		255,127,0	Solid donut, point or polygon (solid)
AS-ABST MAG POS UNCERTAIN		255,127,0	Polygon (cross hatched ANSI37)
AS-ABST MAG NEG UNCERTAIN		Blue 0,0,255	Polygon (cross hatched ANSI37)
Anomalies relating to land management			
AS-ABST MAG BOUNDARY		127,0,0	Line, polyline or polygon (solid or cross hatched ANSI37)
AS-ABST MAG LAND DRAIN		Cyan 0,255,255	Line or polyline
Anomalies with an agricultural origin			
AS-ABST MAG AGRICULTURAL		Green 0,255,0	Line or polyline
AS-ABST MAG RIDGE AND FURROW		0,127,63	Line, polyline or polygon (cross hatched ANSI37)
Anomalies associated with magnetic debris			
AS-ABST MAG DEBRIS		132, 132, 132	Polygon (cross hatched ANSI37)
AS-ABST MAG STRONG DIPOLAR		132, 132, 132	Solid donut, point or polygon (solid)
Anomalies with a modern origin			
AS-ABST MAG DISTURBANCE		132, 132, 132	Polygon (hatched ANSI31)
AS-ABST MAG SERVICE		132, 132, 132	Line or polyline
Anomalies with a natural origin			
AS-ABST MAG NATURAL FEATURES		Yellow 255,255,0	Polygon (cross hatched ANSI37)

Table 4: CAD layering

Appendix F – copyright and intellectual property

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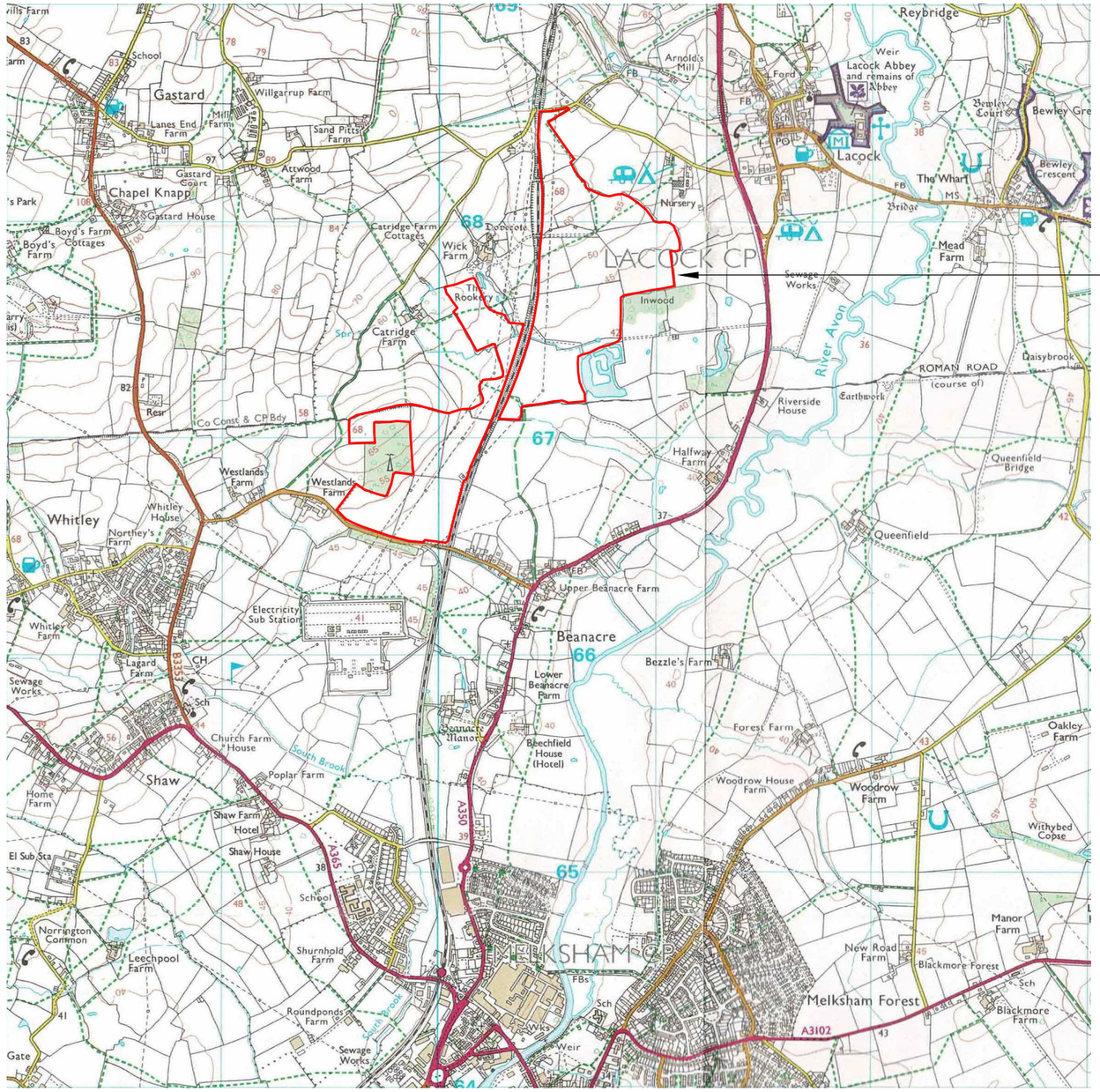
Wiltshire

Map of survey area



Site centred on OS NGR
ST 90335 67300

SCALE 1:25 000

0m 500m 1000m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 01

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Wiltshire

Referencing information

Referencing grid to OSGB36 datum at 200m intervals

389800 166600

Survey tracks

Survey track start

Survey track stop

Development boundary

SCALE 1:8000

0m 80 160 240 320 400m

KTD	DJS	FIG 02

389200 389400 389600 389800 390000 390200 390400 390600 390800 391000 391200 391400 391600

168400 168200 168000 167800 167600 167400 167200 167000 166800 166600 166400

N

Area 1 Figs 6-8

Area 2 Figs 9-11

Areas 3, 4 & 5 Figs 12-14

Area 3 Figs 15-17

Area 14 Figs 18-20

Areas 8 & 9 Figs 27-29

Area 6 Figs 21-23

Area 7 Figs 24-26

Area 10 Figs 30-32

Areas 7, 10 & 11 Figs 36-38

Area 14 Figs 42-43

Area 11 Figs 33-35

Areas 12 & 13 Figs 39-41

Area 1 Area 2 Area 3 Area 4 Area 5 Area 6 Area 7 Area 8 Area 9 Area 10 Area 11 Area 12 Area 13 Area 14

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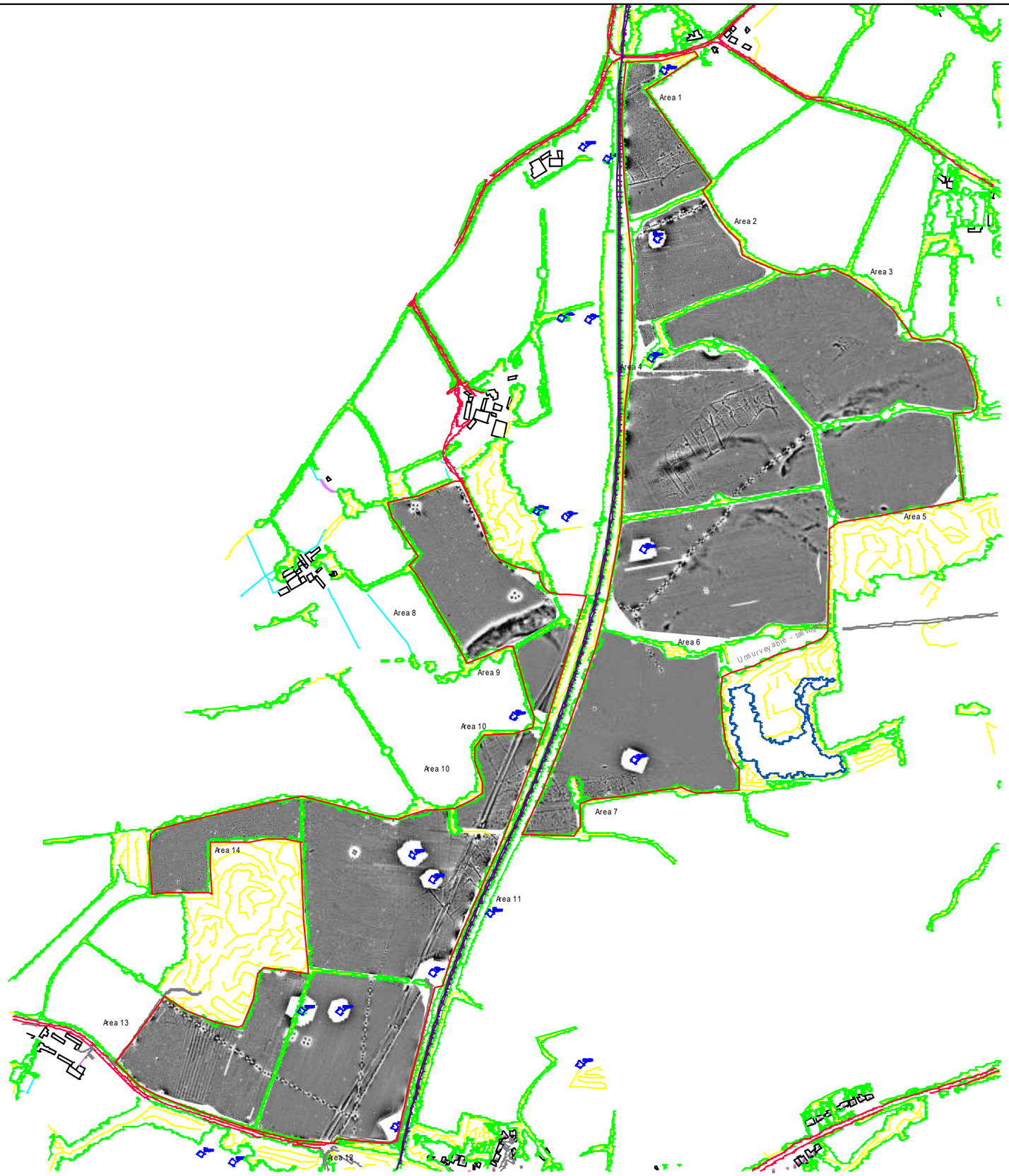
Greyscale plot of minimally processed magnetometer data



SCALE 1:8000

0m 80 160 240 320 400m

KTD	DJS	FIG 03

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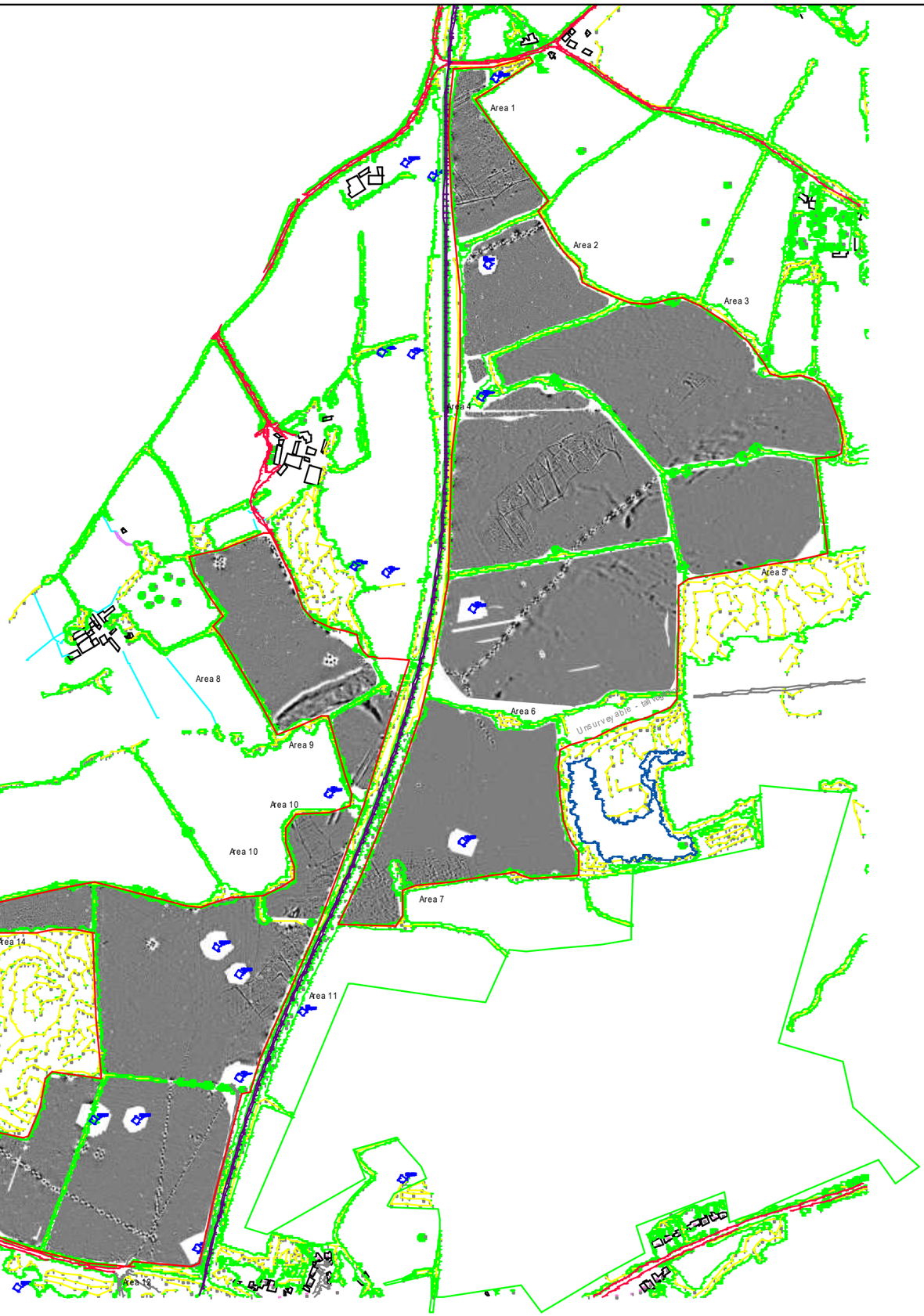
Wiltshire

Greyscale plot of filtered magnetometer data



SCALE 1:8000

0m 80 160 240 320 400m

KTD	DJS	FIG 04

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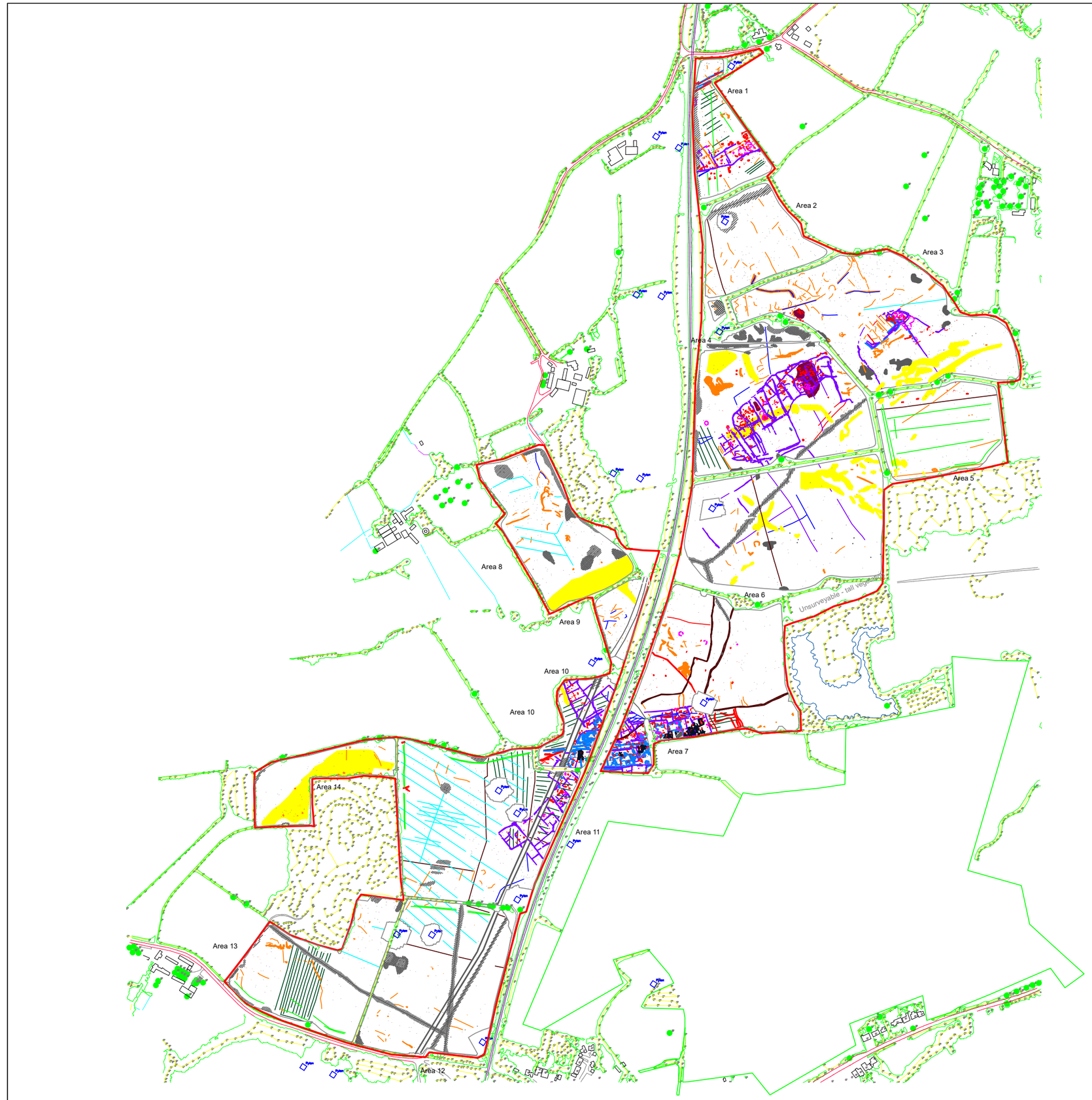
Wiltshire

Abstraction and interpretation of magnetic anomalies



- Positive linear anomaly - cut feature of archaeological potential
- Positive curvilinear anomaly - ring ditch
- Positive curvilinear/rectilinear anomaly - enclosure ditch
- Negative anomaly - of archaeological potential
- Negative anomaly - former structural remains
- Positive linear anomaly - possible ditch-like feature
- Linear anomaly - of agricultural origin
- Linear anomaly - ridge and furrow
- Positive linear anomaly - land drain
- Positive linear anomaly - former field boundary
- Negative linear anomaly - material of low magnetic susceptibility
- Discrete positive response - cut feature/area of burning of archaeological potential
- Strong discrete positive response - associated with intense burning
- Discrete positive response - possible pit-like feature
- Positive anomaly - magnetically enhanced material of archaeological potential
- Negative anomaly - possible surface
- Positive anomaly - magnetically enhanced material
- Variable magnetic response - of natural origin
- Magnetic debris - spread of archaeological magnetically thermoremnant material
- Magnetic debris - spread of magnetically thermoremnant/ferrous material
- Magnetic disturbance from ferrous material
- Strong multiple dipolar linear anomaly - pipeline / cable / service
- Strong dipolar anomaly - ferrous object

SCALE 1:8000

0m 80 160 240 320 400m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 05

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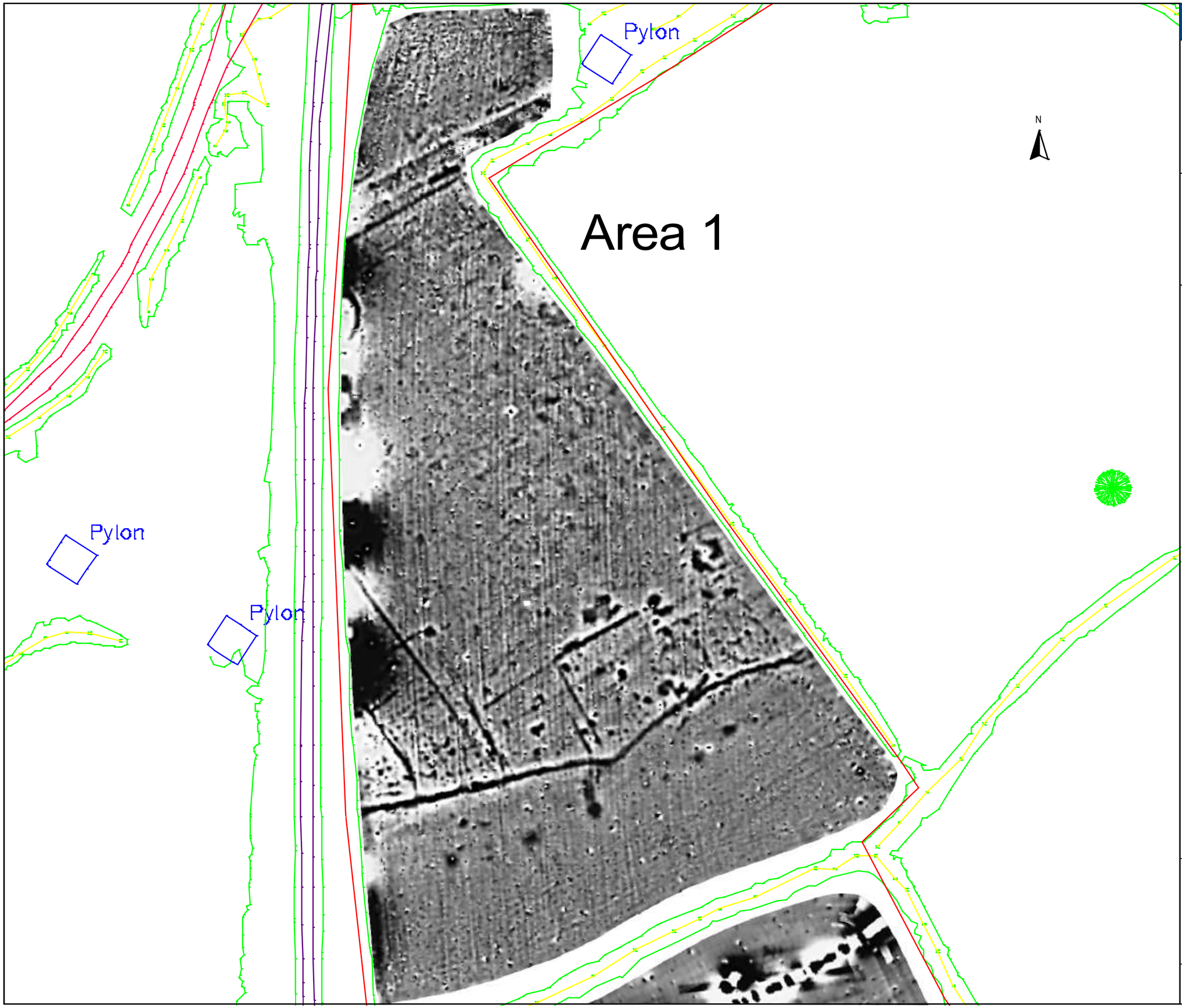
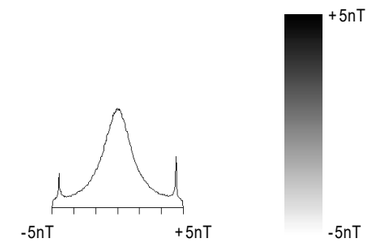
Greyscale plot of minimally processed magnetometer data - Area 1





SCALE 1:1000

0m 10 20 30 40 50m

KTD	DJS	FIG 06

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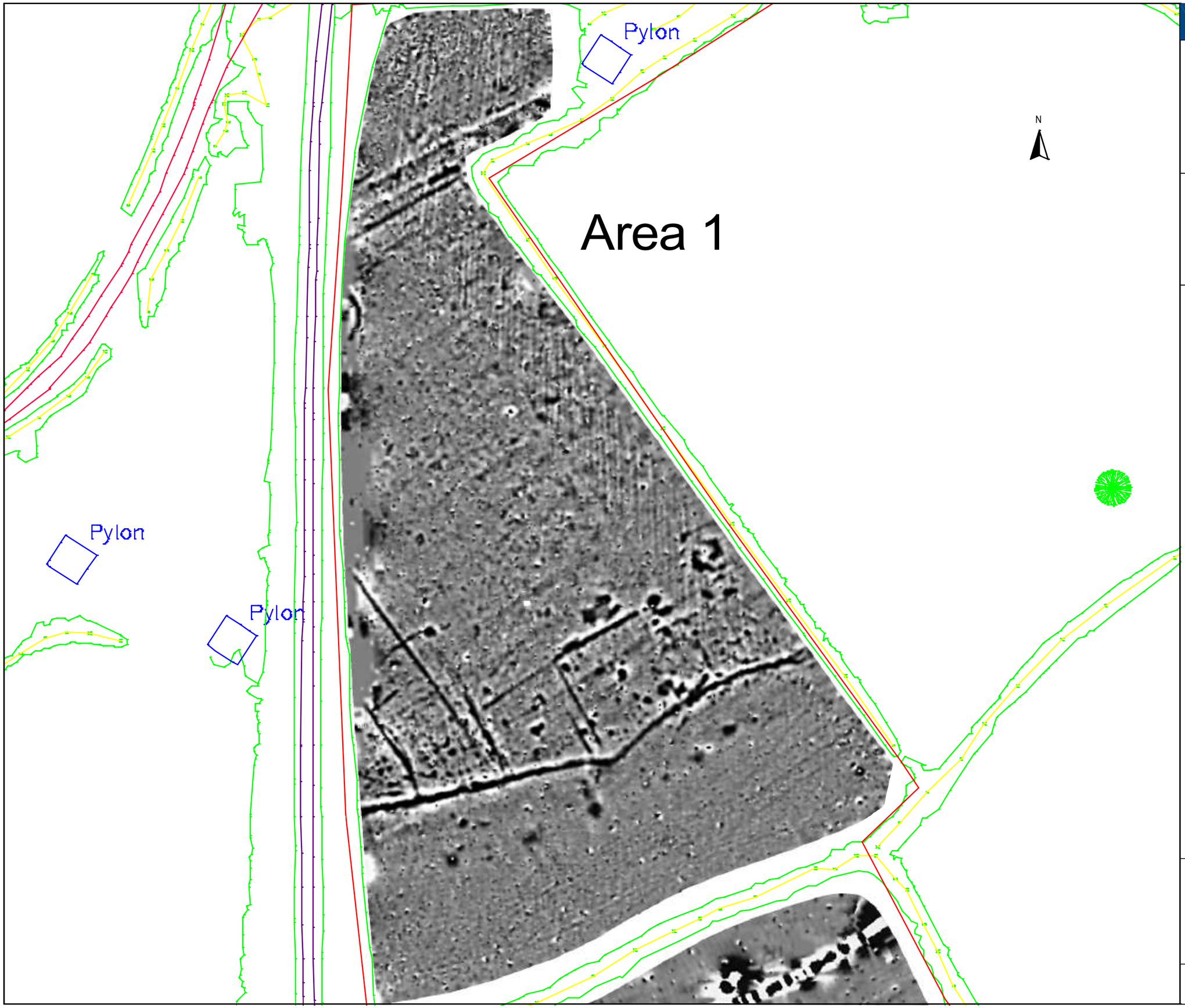
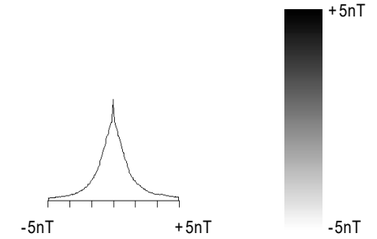
Greyscale plot of filtered magnetometer data - Area 1





SCALE 1:1000

0m 10 20 30 40 50m

KTD	DJS	FIG 07

Area 1

Pylon

Pylon

Pylon

13

8

7

12

12

6

9

14

11

10

3

2

1

4

5

19

N

73.157
TREE

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Wiltshire

Abstraction and interpretation of magnetic anomalies - Area 1

- Positive linear anomaly - cut feature of archaeological potential
- Positive curvilinear anomaly - ring ditch
- Positive rectilinear anomaly - enclosure ditch
- Negative linear anomaly - associated with former road
- Positive linear anomaly - possible ditch-like feature
- Negative linear anomaly - of uncertain origin
- Linear anomaly - of agricultural origin
- Linear anomaly - ridge and furrow
- Discrete positive response - cut feature of archaeological potential
- Strong discrete positive response - associated with intense burning
- Discrete positive response - possible pit-like feature
- Magnetic disturbance from ferrous material
- Strong dipolar anomaly - ferrous object

SCALE 1:1000

0m 10 20 30 40 50m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 08

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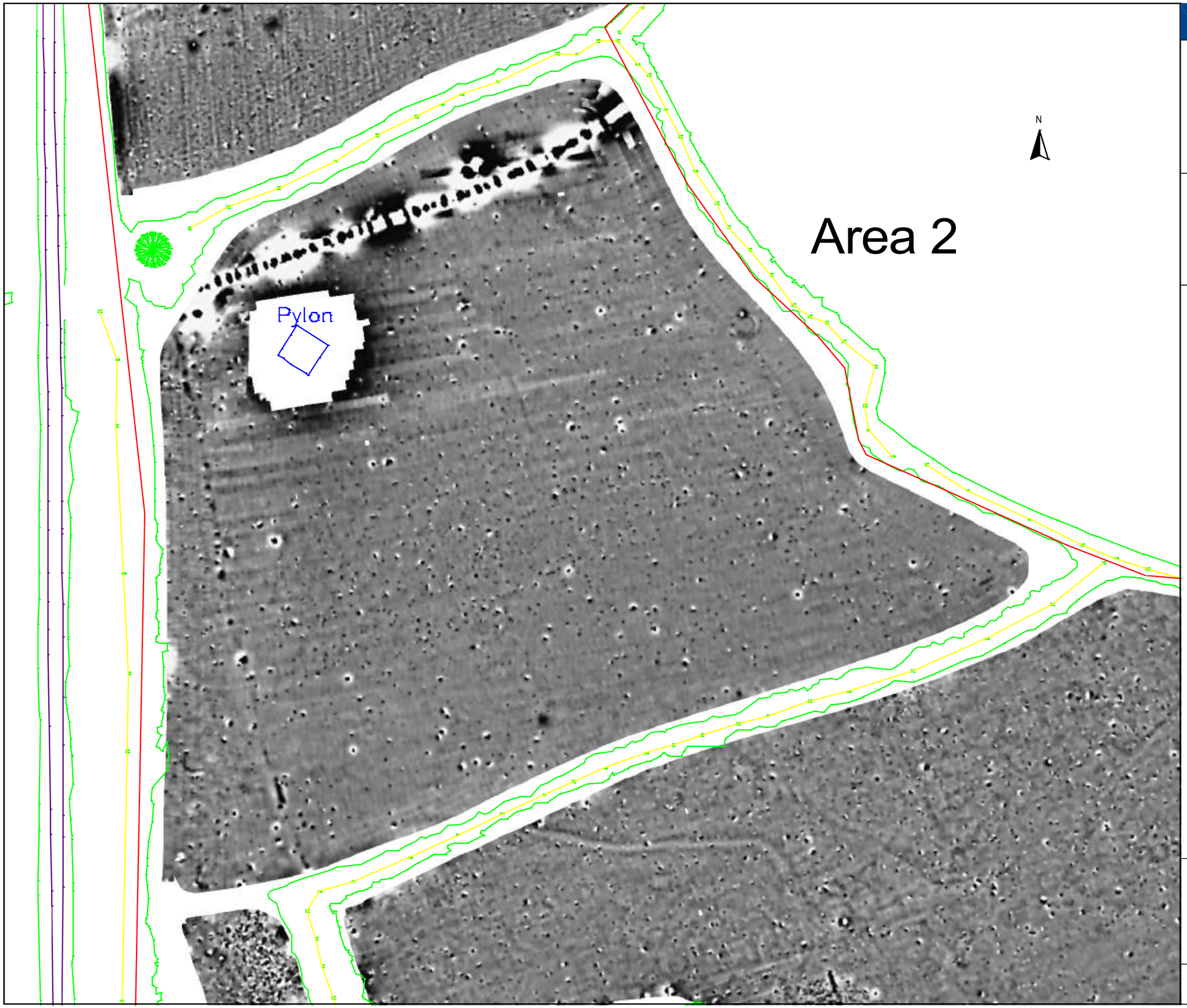
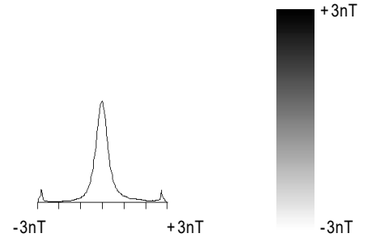
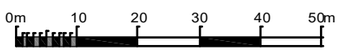
Greyscale plot of minimally processed magnetometer data - Area 2





SCALE 1:1000



KTD	DJS	FIG 09

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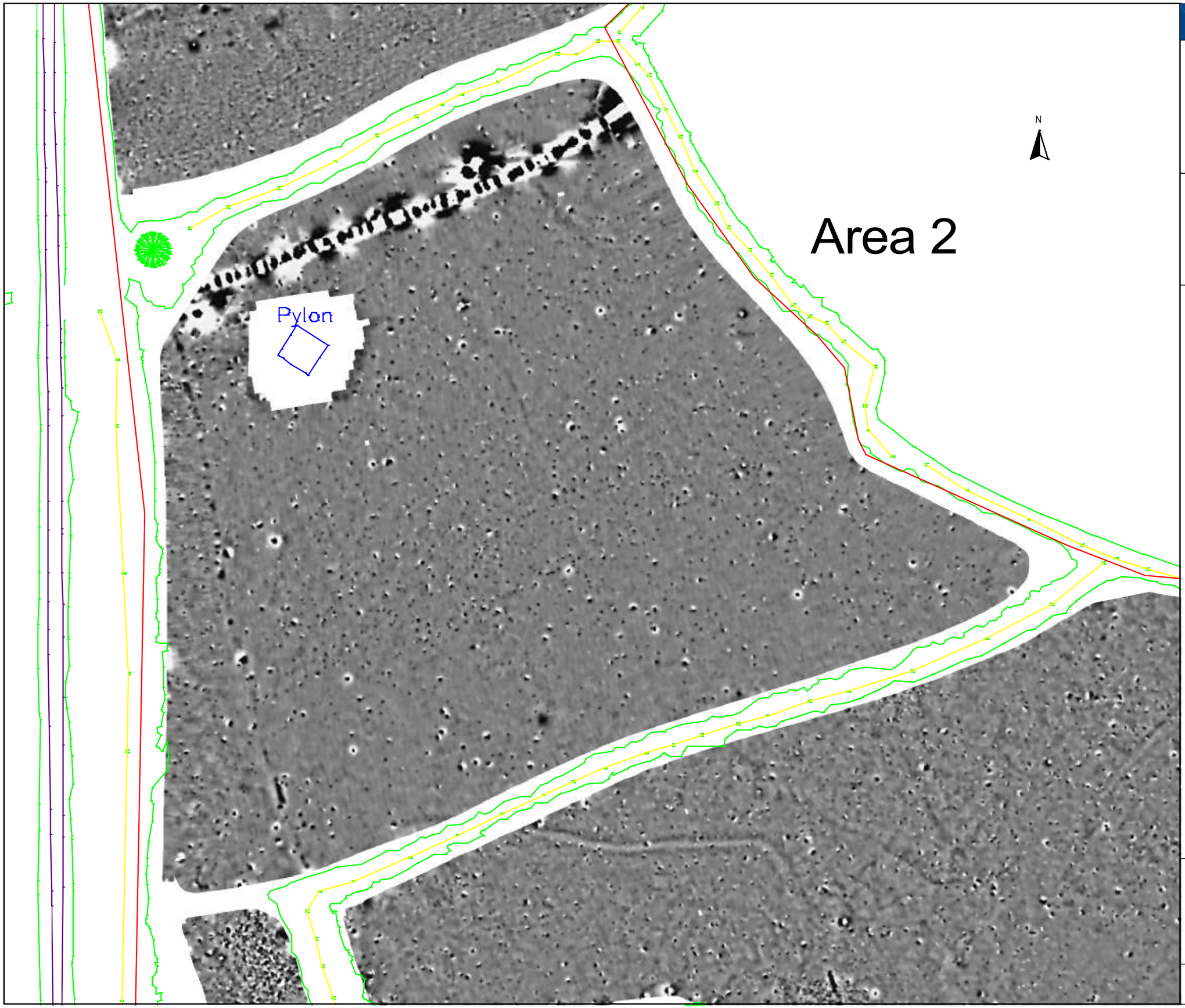
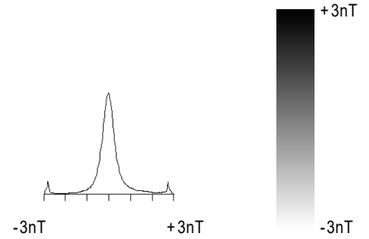
Greyscale plot of filtered magnetometer data - Area 2





SCALE 1:1000

0m 10 20 30 40 50m

KTD	DJS	FIG 10

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Wiltshire

Abstraction and interpretation of magnetic anomalies - Area 2

Area 2

N

Pylon

19

16

17

15

24

25

23

18

- Positive linear anomaly - possible ditch-like feature
- Negative linear anomaly - material of low magnetic susceptibility
- Positive linear anomaly - former field boundary
- Discrete positive response - possible pit-like feature
- Magnetic disturbance from ferrous material
- Magnetic disturbance from ferrous material
- Strong multiple dipolar linear anomaly - pipeline / cable / service
- Strong dipolar anomaly - ferrous object

SCALE 1:1000

0m 10 20 30 40 50m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 11

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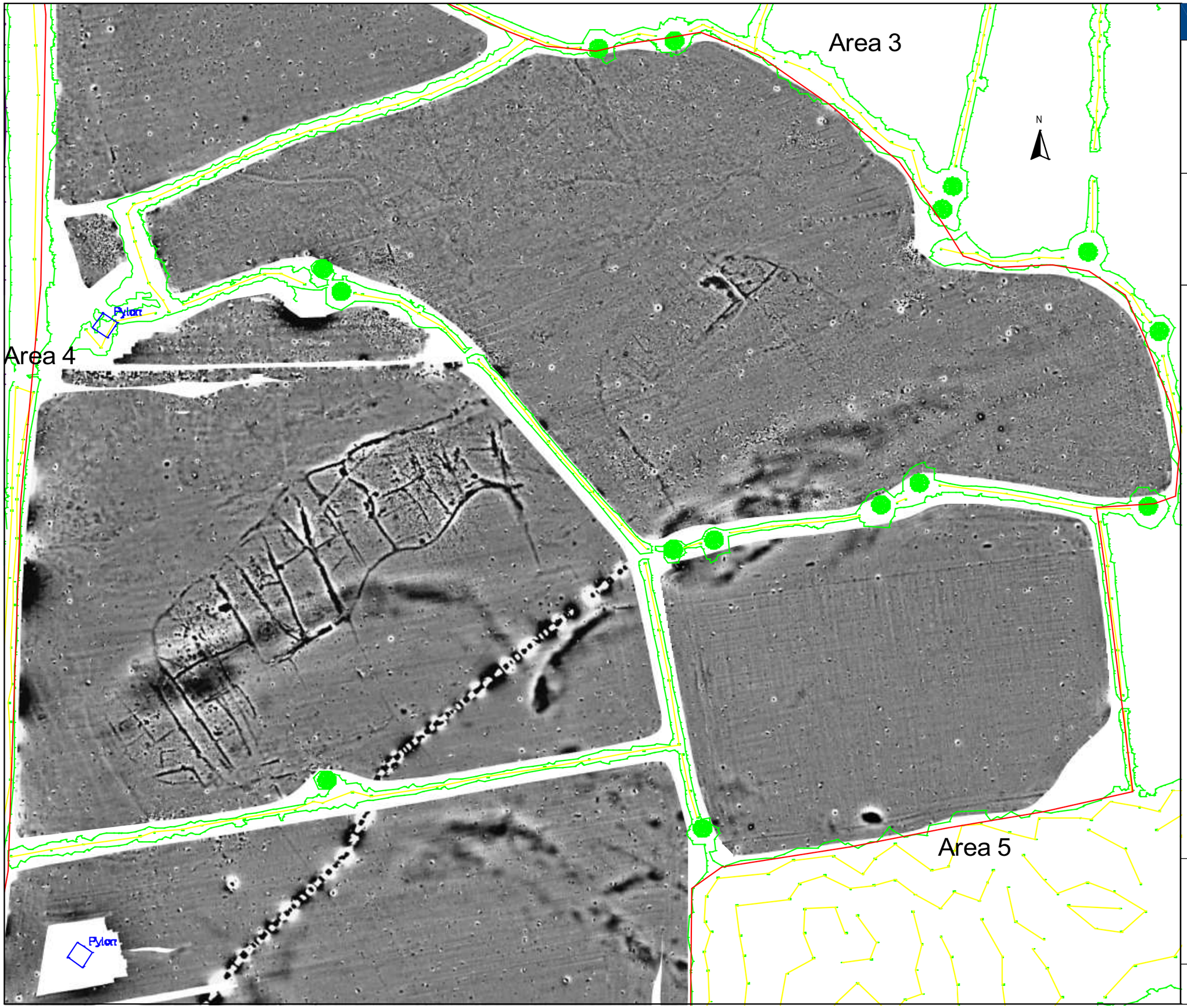
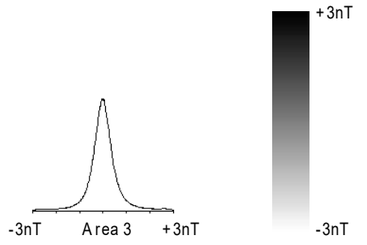
Greyscale plot of minimally processed magnetometer data - Areas 3, 4 & 5





SCALE 1:2000

0m 20 40 60 80 100m

KTD	DJS	FIG 12

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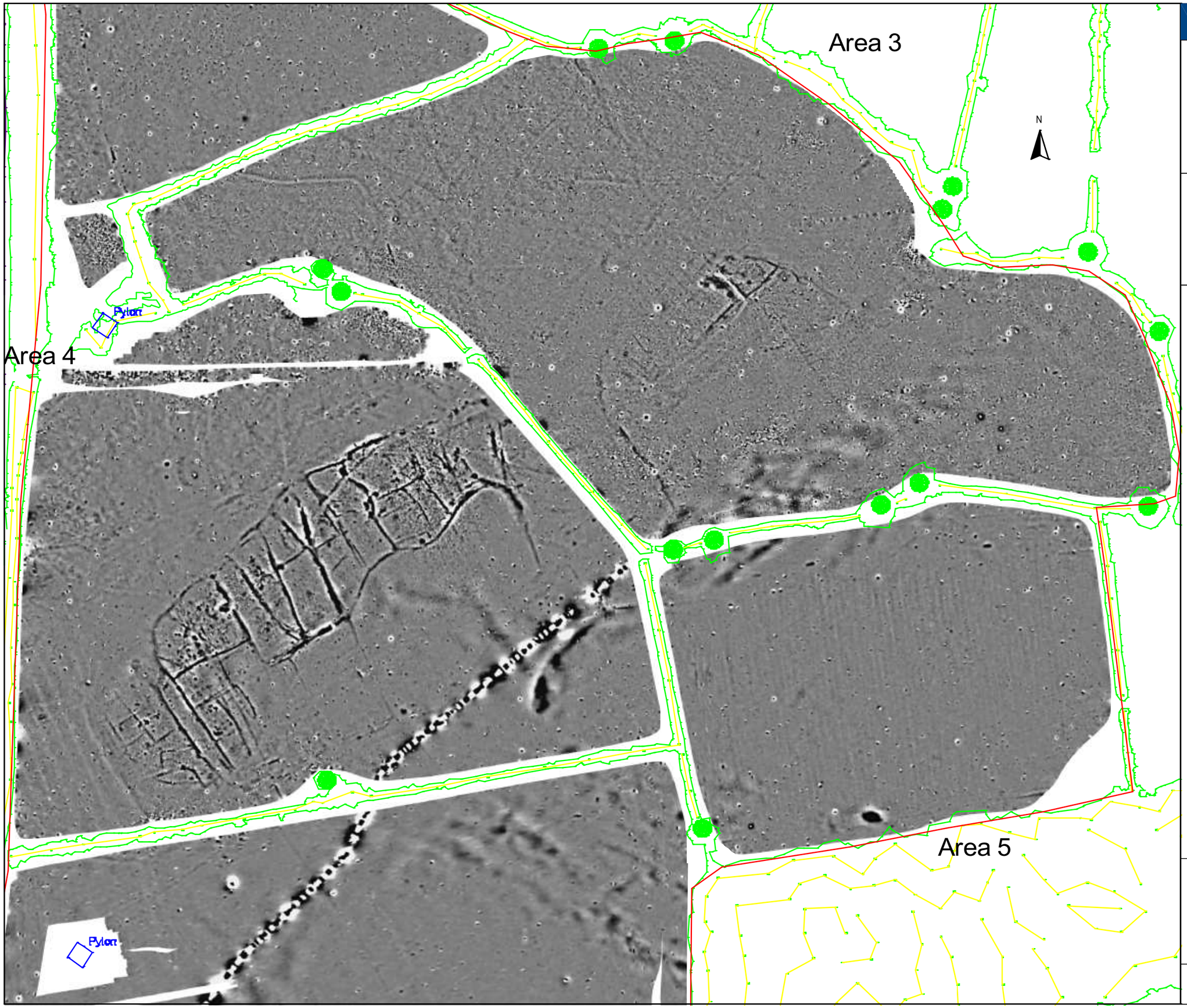
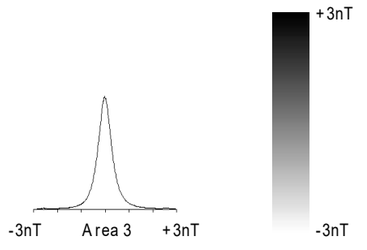
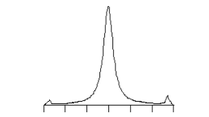
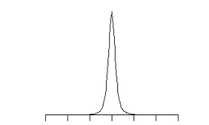
Wiltshire

Greyscale plot of filtered magnetometer data - Areas 3, 4 & 5

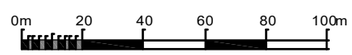








SCALE 1:2000



KTD	DJS	FIG 13

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Wiltshire

Abstraction and interpretation of magnetic anomalies - Areas 3, 4 & 5

Area 3

Area 4

Area 5

N

Pylon

Pylon

- Positive linear anomaly - cut feature of archaeological potential
- Positive curvilinear anomaly - ring ditch
- Positive curvilinear/rectilinear anomaly - enclosure ditch
- Negative anomaly - of archaeological potential
- Positive linear anomaly - possible ditch-like feature
- Linear anomaly - of agricultural origin
- Positive linear anomaly - land drain
- Positive linear anomaly - former field boundary
- Negative linear anomaly - material of low magnetic susceptibility
- Discrete positive response -pit/area of burning
- Strong discrete positive response - associated with intense burning
- Discrete positive response - possible pit-like feature
- Positive anomaly - magnetically enhanced material of archaeological potential
- Magnetic debris - spread of archaeological magnetically thermoremnant material
- Positive anomaly - magnetically enhanced material
- Variable magnetic response - of natural origin
- Magnetic debris - spread of magnetically thermoremnant/ferrous material
- Magnetic disturbance from ferrous material
- Strong multiple dipolar linear anomaly - pipeline / cable / service
- Strong dipolar anomaly - ferrous object

SCALE 1:2000

0m 20 40 60 80 100m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 14

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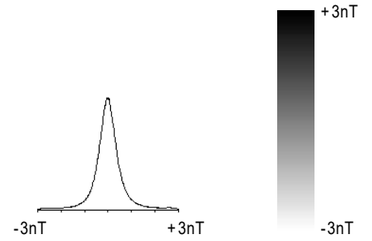
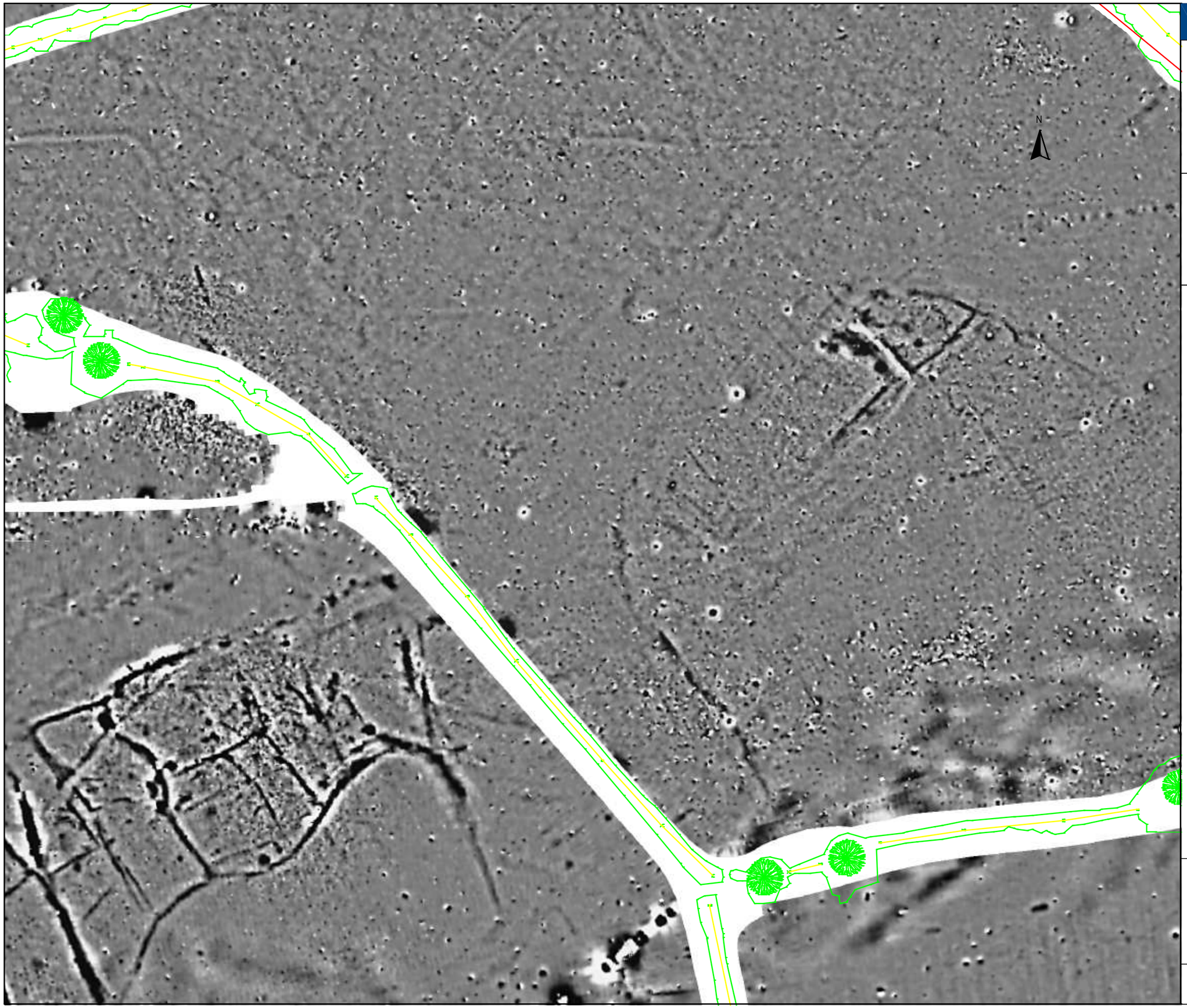
Greyscale plot of minimally processed magnetometer data - Area 3



SCALE 1:1000

0m 10 20 30 40 50m

KTD	DJS	FIG 15



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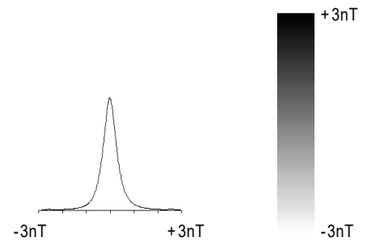
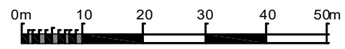
Greyscale plot of filtered magnetometer data - Area 3



SCALE 1:1000



KTD	DJS	FIG 16

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Abstraction and interpretation of magnetic anomalies - Area 3

- Positive linear anomaly - cut feature of archaeological potential
- Positive curvilinear anomaly - ring ditch
- Positive curvilinear/rectilinear anomaly - enclosure ditch
- Negative anomaly - of archaeological potential
- Positive linear anomaly - possible ditch-like feature
- Linear anomaly - of agricultural origin
- Positive linear anomaly - land drain
- Positive linear anomaly - former field boundary
- Negative linear anomaly - material of low magnetic susceptibility
- Discrete positive response -pit/area of burning
- Discrete positive response - possible pit-like feature
- Magnetic debris - magnetically thermoremnant material of archaeological origin
- Positive anomaly - magnetically enhanced material
- Variable magnetic response - of natural origin
- Magnetic debris - spread of magnetically thermoremnant/ferrous material
- Strong dipolar anomaly - ferrous object

SCALE 1:1000

0m 10 20 30 40 50m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 17

4

N

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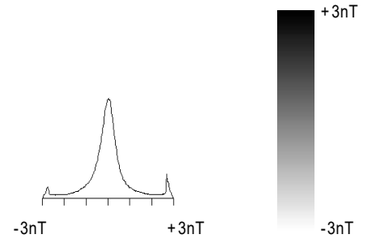
Wiltshire

Greyscale plot of minimally processed magnetometer data - Area 4



SCALE 1:1000

0m 10 20 30 40 50m

KTD	DJS	FIG 18

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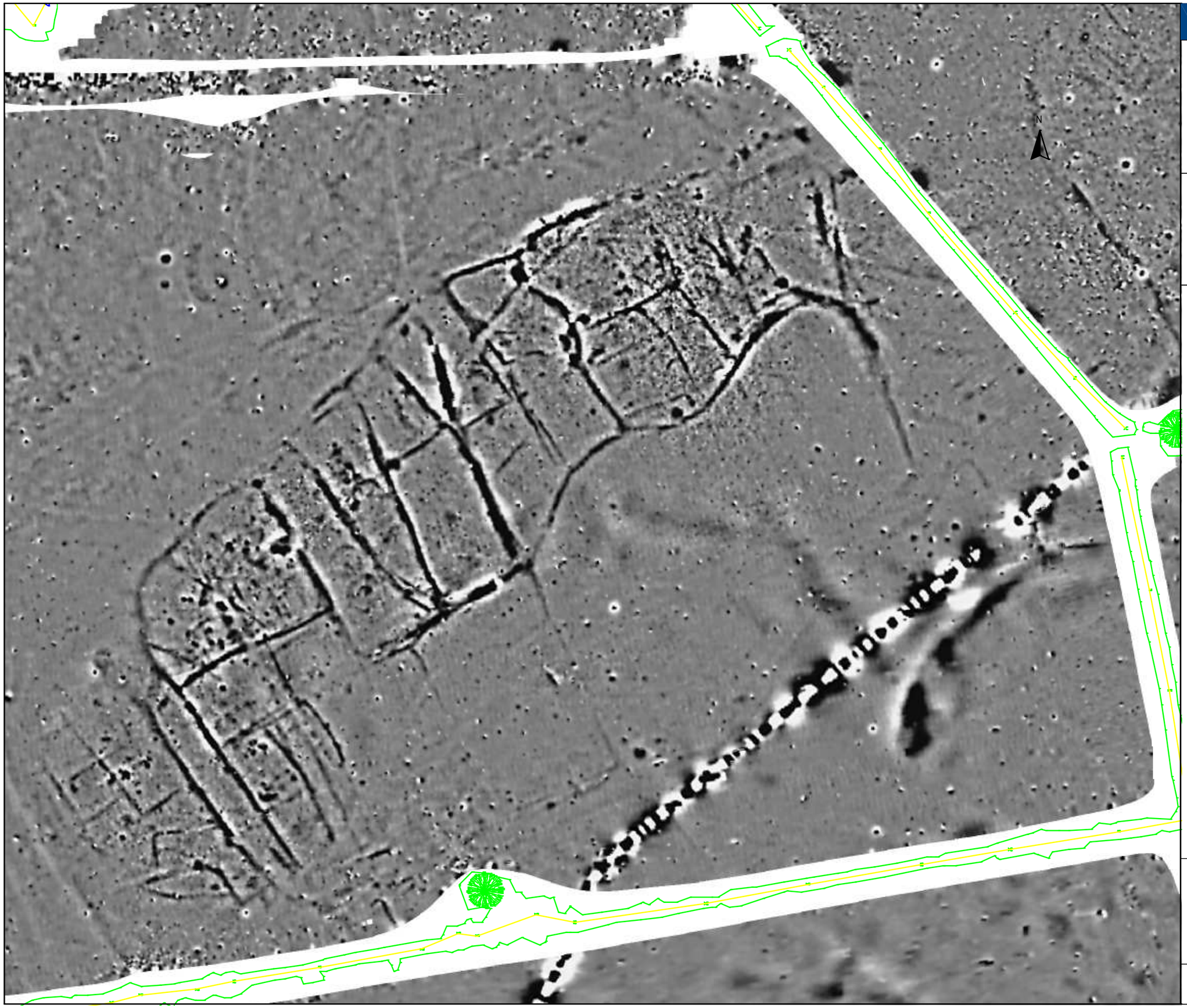
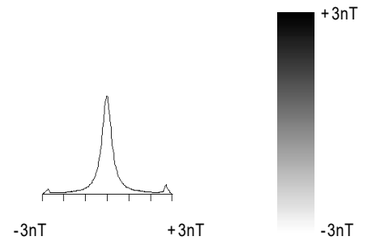
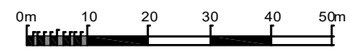
Greyscale plot of filtered magnetometer data - Area 4





SCALE 1:1000



KTD	DJS	FIG 19

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Abstraction and interpretation of magnetic anomalies - Area 4

- Positive linear anomaly - cut feature of archaeological potential
- Positive curvilinear anomaly - ring ditch
- Positive curvilinear/rectilinear anomaly - enclosure ditch
- Negative linear anomaly - of archaeological potential
- Positive linear anomaly - possible ditch-like feature
- Negative linear anomaly - material of low magnetic susceptibility
- Discrete positive response -pit/area of burning
- Strong discrete positive response - associated with intense burning
- Discrete positive response - possible pit-like feature
- Magnetic debris - spread of archaeological magnetically thermoremnant material
- Positive anomaly - magnetically enhanced material
- Variable magnetic response - of natural origin
- Magnetic debris - spread of magnetically thermoremnant/ferrous material
- Magnetic disturbance from ferrous material
- Strong multiple dipolar linear anomaly - pipeline / cable / service
- Strong dipolar anomaly - ferrous object

SCALE 1:1000

0m 10 20 30 40 50m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 20

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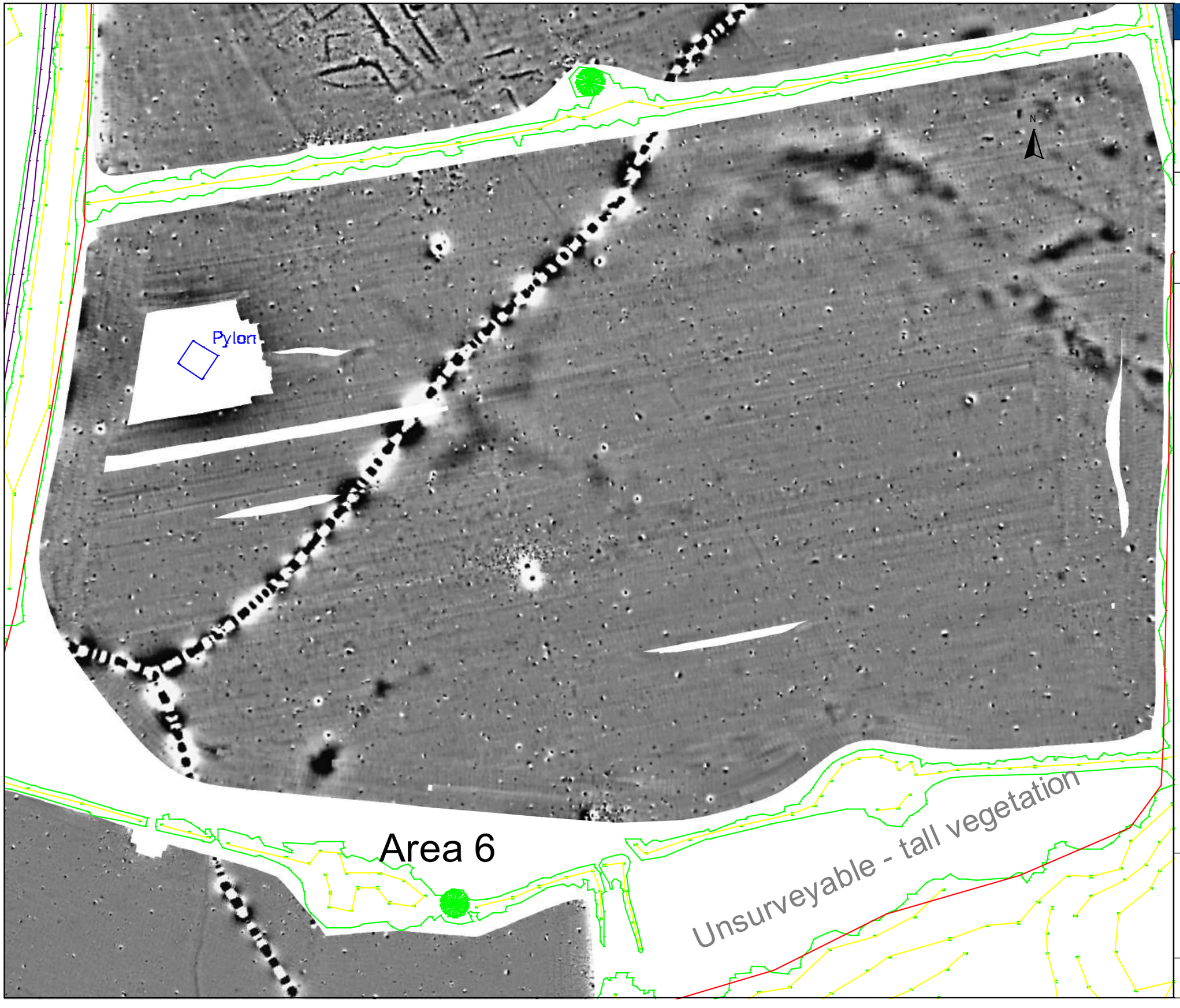
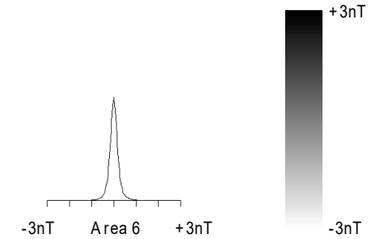
Greyscale plot of minimally processed magnetometer data - Area 6





SCALE 1:1250

0m 10 20 30 40 50m

KTD	DJS	FIG 21

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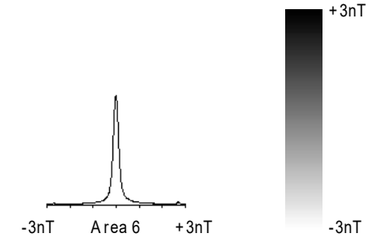
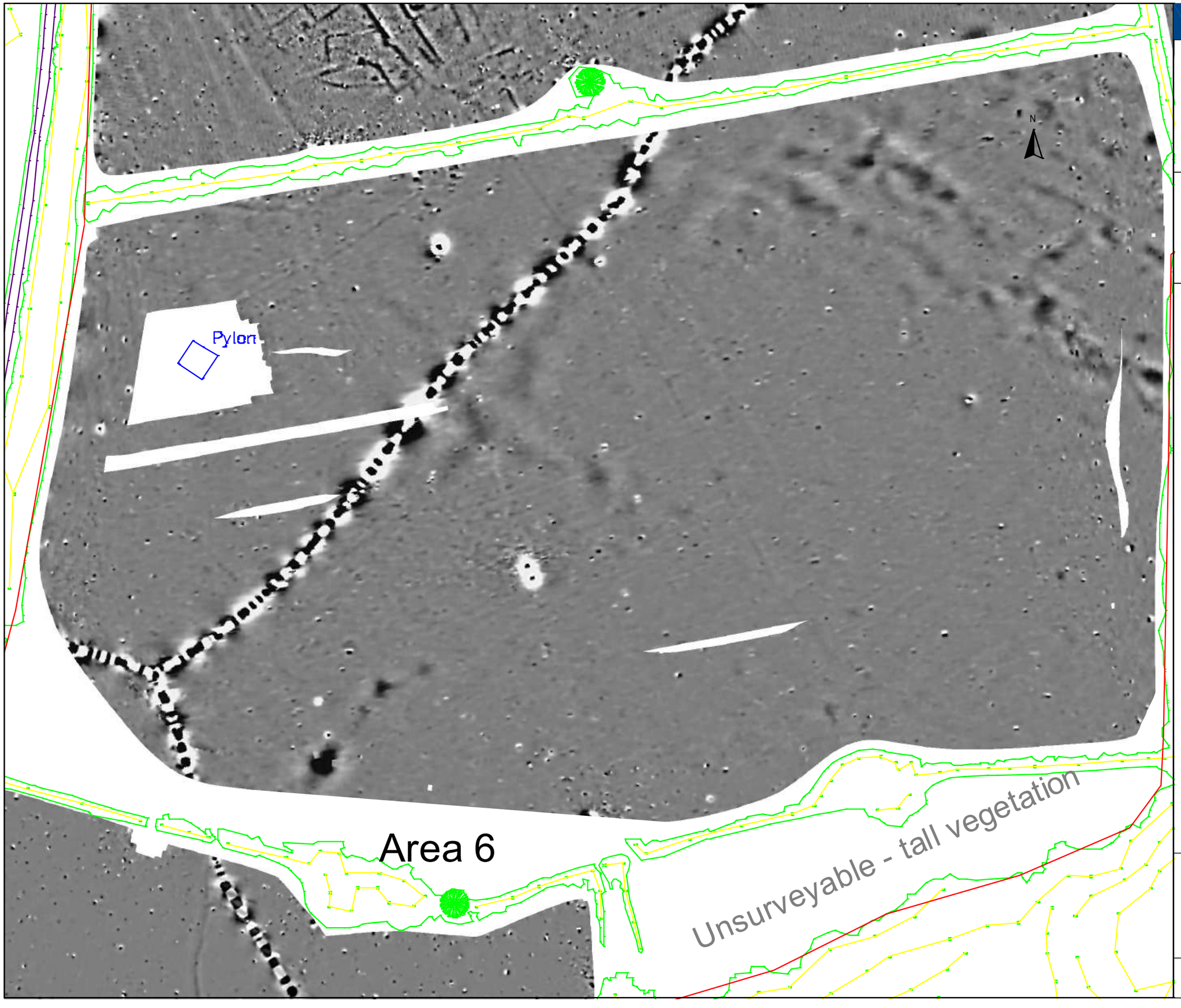
Wiltshire

Greyscale plot of filtered magnetometer data - Area 6





SCALE 1:1250

0m 10 20 30 40 50m

KTD	DJS	FIG 22

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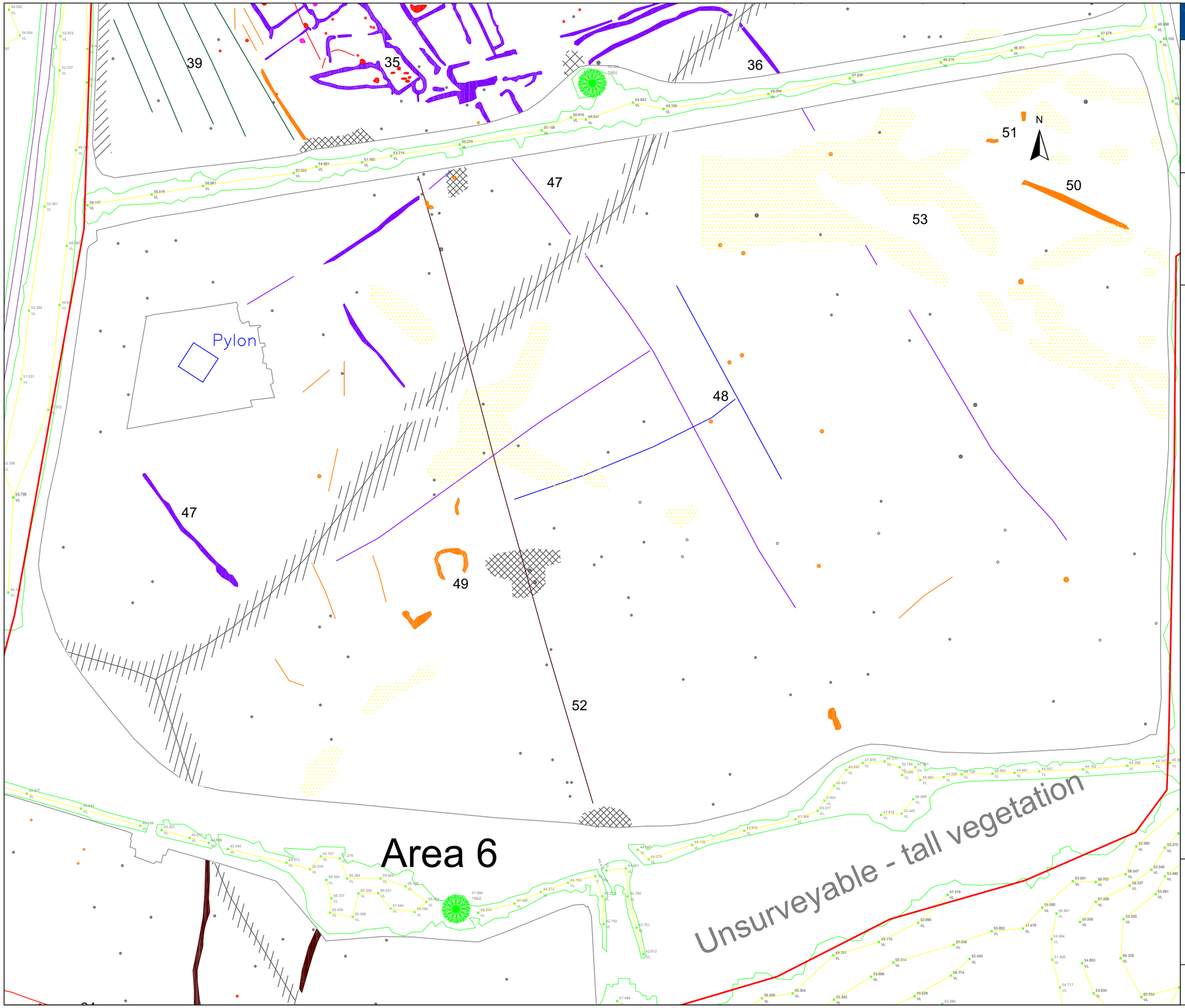
Wiltshire

Abstraction and interpretation of magnetic anomalies - Area 6



- Positive rectilinear anomaly - enclosure boundary ditch
- Positive linear anomaly - possible ditch-like feature
- Negative linear anomaly - material of low magnetic susceptibility
- Positive linear anomaly - former field boundary
- Discrete positive response - possible pit-like feature
- Variable magnetic response - of natural origin
- Magnetic debris - spread of magnetically thermoremnant/ferrous material
- Magnetic disturbance from ferrous material
- Strong multiple dipolar linear anomaly - pipeline / cable / service
- Strong dipolar anomaly - ferrous object

SCALE 1:1250

0m 10 20 30 40 50m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 23

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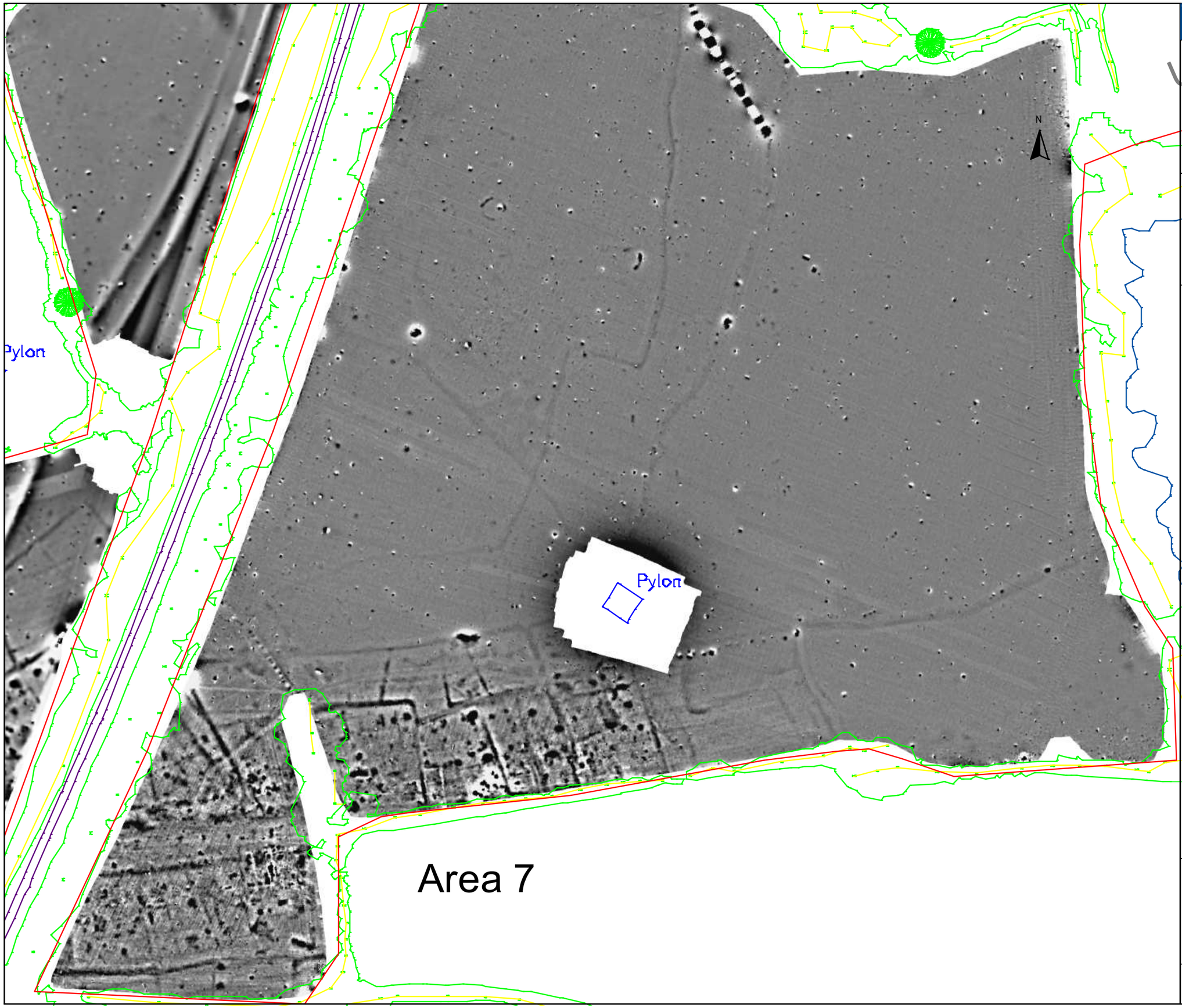
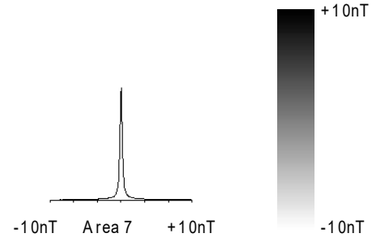
Wiltshire

Greyscale plot of minimally processed magnetometer data - Area 7





SCALE 1:1250

0m 10 20 30 40 50m

KTD	DJS	FIG 24

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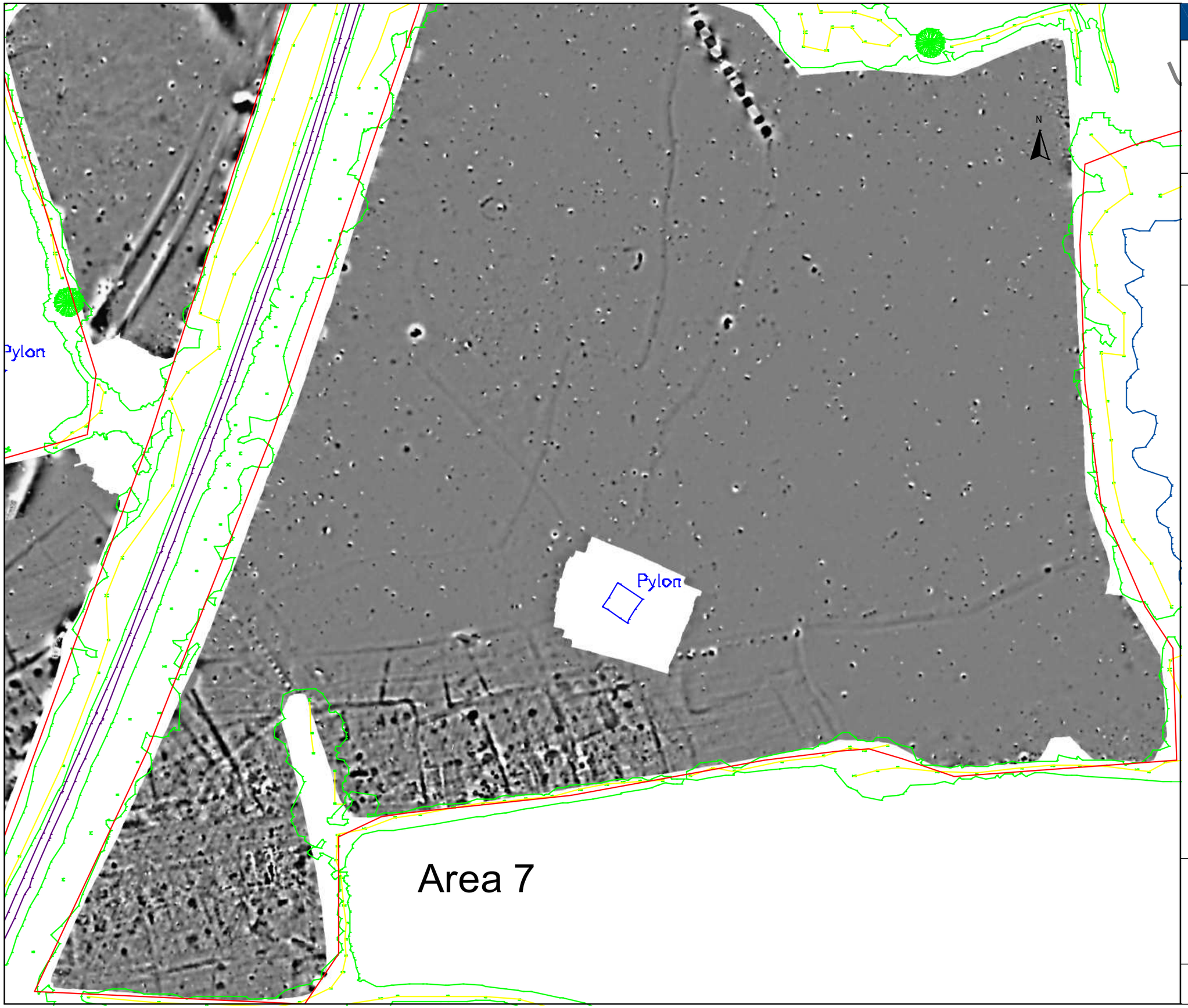
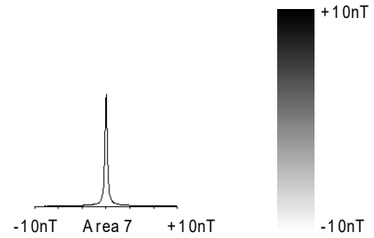
Wiltshire

Greyscale plot of filtered magnetometer data - Area 7





SCALE 1:1250

0m 10 20 30 40 50m

KTD	DJS	FIG 25

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Abstraction and interpretation of magnetic anomalies - Area 7

- Positive linear anomaly - cut feature of archaeological potential
- Positive curvilinear anomaly - ring ditch
- Positive curvilinear/rectilinear anomaly - enclosure ditch
- Negative linear anomaly - of archaeological potential
- Negative linear anomaly - structural remaina
- Positive linear anomaly - possible ditch-like feature
- Linear anomaly - former field boundary
- Linear anomaly - ridge & furrow
- Discrete positive response - pit/area of burning
- Strong discrete response - associated with intense burning
- Negative anomaly - material of low magnetic susceptibility
- Discrete positive response - possible pit-like feature
- Positive anomaly - magnetically enhanced material
- Magnetic disturbance from ferrous material
- Strong multiple dipolar linear anomaly - pipeline / cable / service
- Strong dipolar anomaly - ferrous object

SCALE 1:1250

0m 10 20 30 40 50m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 26

N

Area 7

Pylon

Pylon

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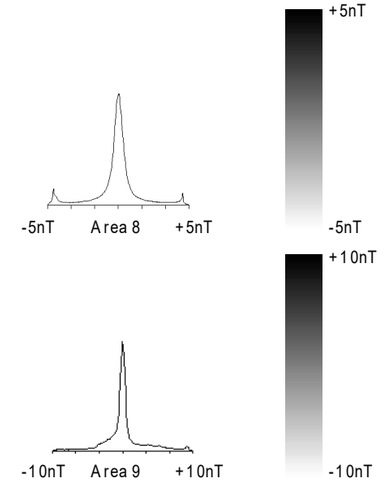
Greyscale plot of minimally processed magnetometer data - Areas 8 & 9



Area 8

Area 9

Pylon

Pylon

Pylon

N

SCALE 1:1500

0m 10 20 30 40 50m

KTD	DJS	FIG 27

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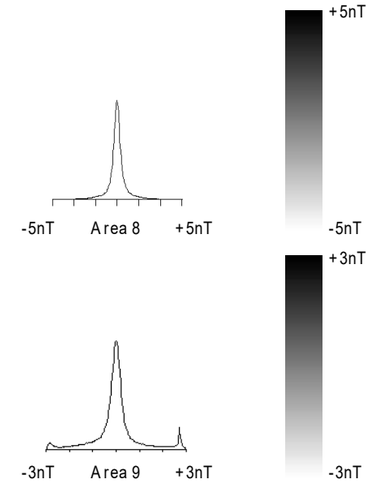
Greyscale plot of filtered magnetometer data - Areas 8 & 9



Area 8

Area 9

Pylon

Pylon

Pylon

N

SCALE 1:1500

0m 10 20 30 40 50m

KTD	DJS	FIG 28

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Abstraction and interpretation of magnetic anomalies - Areas 8 & 9

Area 8

Area 9

Pylon

Pylon

Pylon

N

77

74

73

75

76

78

80

79

64

65

- Positive linear anomaly - possible ditch-like feature
- Positive/weak multiple dipolar linear anomaly - land drain
- Negative linear anomaly - material of low magnetic susceptibility
- Discrete positive response - possible pit-like feature
- Variable magnetic response - of natural origin
- Magnetic debris - spread of magnetically thermoremnant/ferrous material
- Magnetic disturbance from ferrous material
- Strong multiple dipolar linear anomaly - pipeline / cable / service
- Strong dipolar anomaly - ferrous object

SCALE 1:1500

0m 10 20 30 40 50m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 29

Area 10

Area 7

N

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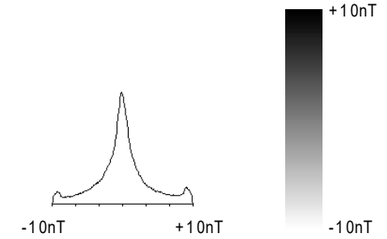
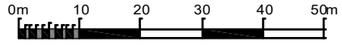
Wiltshire

Greyscale plot of minimally processed magnetometer data - Area 10



SCALE 1:1000



KTD	DJS	FIG 30

Area 10

Area 7

N

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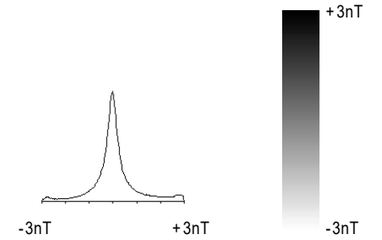
Wiltshire

Greyscale plot of filtered magnetometer data - Area 10

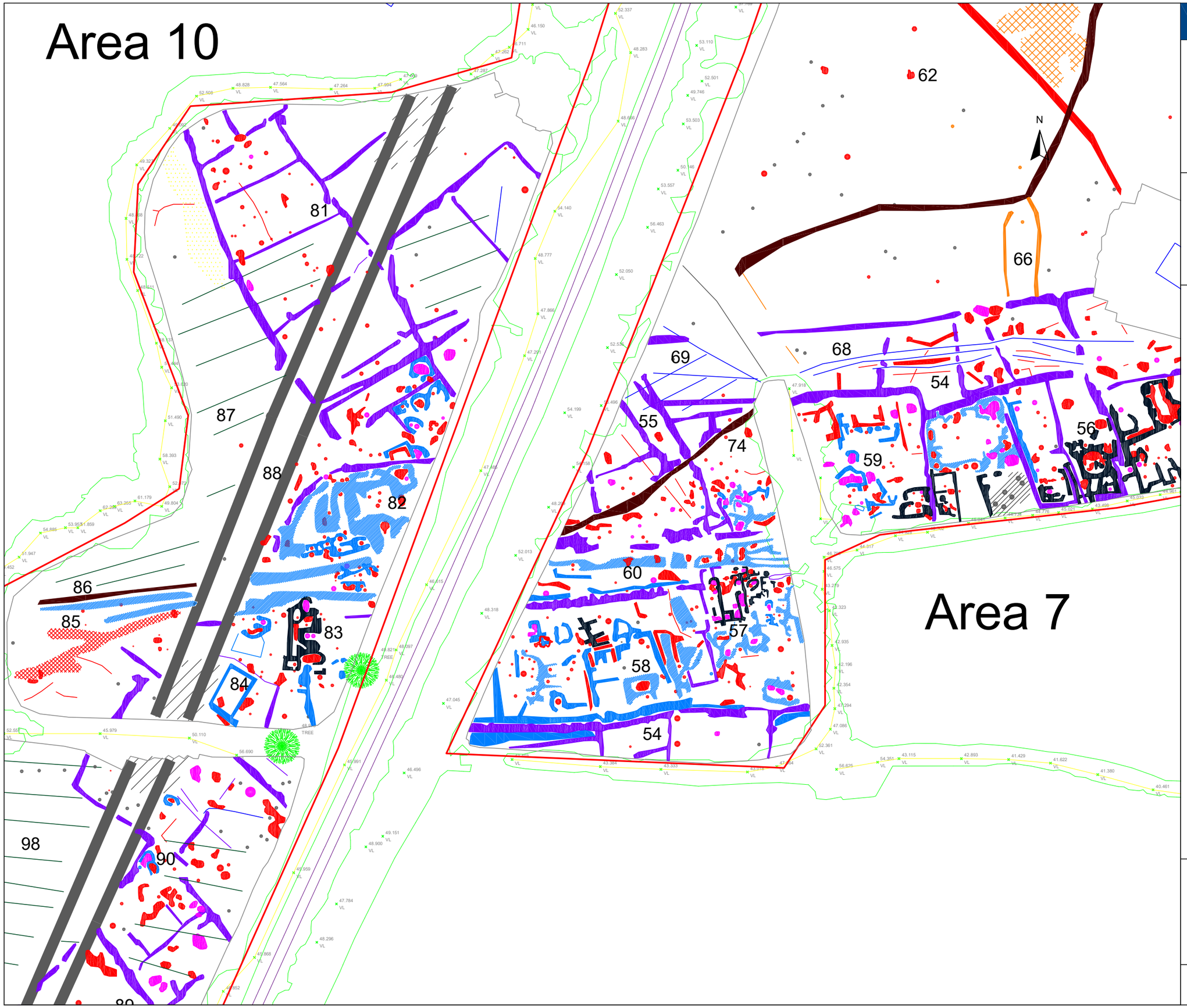


SCALE 1:1000

0m 10 20 30 40 50m

KTD	DJS	FIG 31

Area 10



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Abstraction and interpretation of magnetic anomalies - Area 10

- Positive linear anomaly - cut feature of archaeological potential
- Positive rectilinear anomaly - enclosure ditch
- Negative linear anomaly - of archaeological potential
- Negative linear anomaly - structural remaina
- Linear anomaly - ridge and furrow
- Positive linear anomaly - former field boundary
- Strong discrete response - associated with intense burning
- Discrete positive response - cut feature of archaeological potential
- Positive anomaly - magnetic enhancement of archaeological potential
- Negative anomaly - material of low magnetic susceptibility of archaeological potential
- Magnetic disturbance from ferrous material
- Strong multiple dipolar linear anomaly - pipeline / cable / service
- Strong dipolar anomaly - ferrous object

SCALE 1:1000

0m 10 20 30 40 50m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 32

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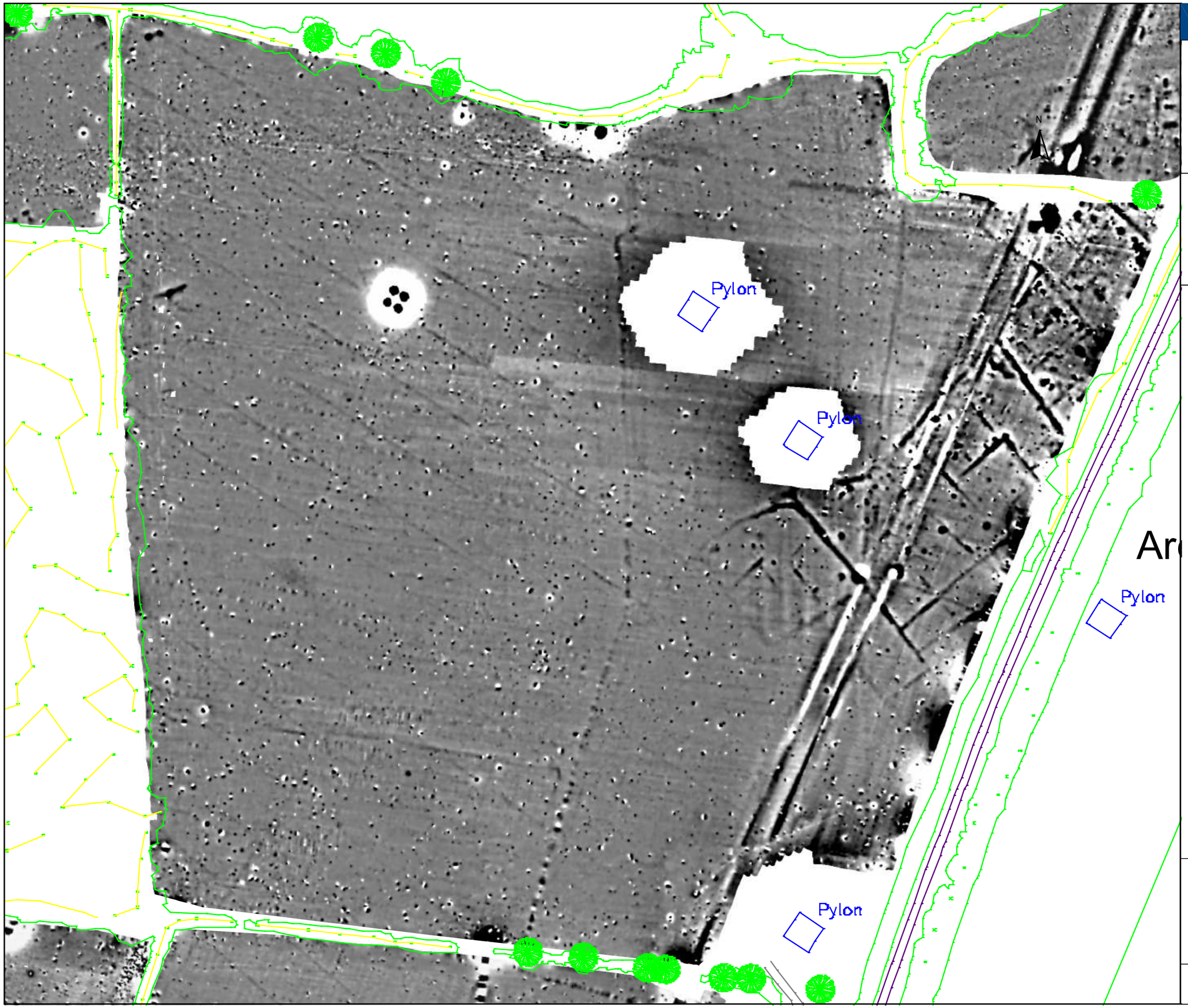
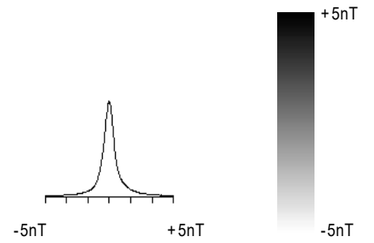
Greyscale plot of minimally processed magnetometer data - Area 11





SCALE 1:1250

0m 10 20 30 40 50m

KTD	DJS	FIG 33

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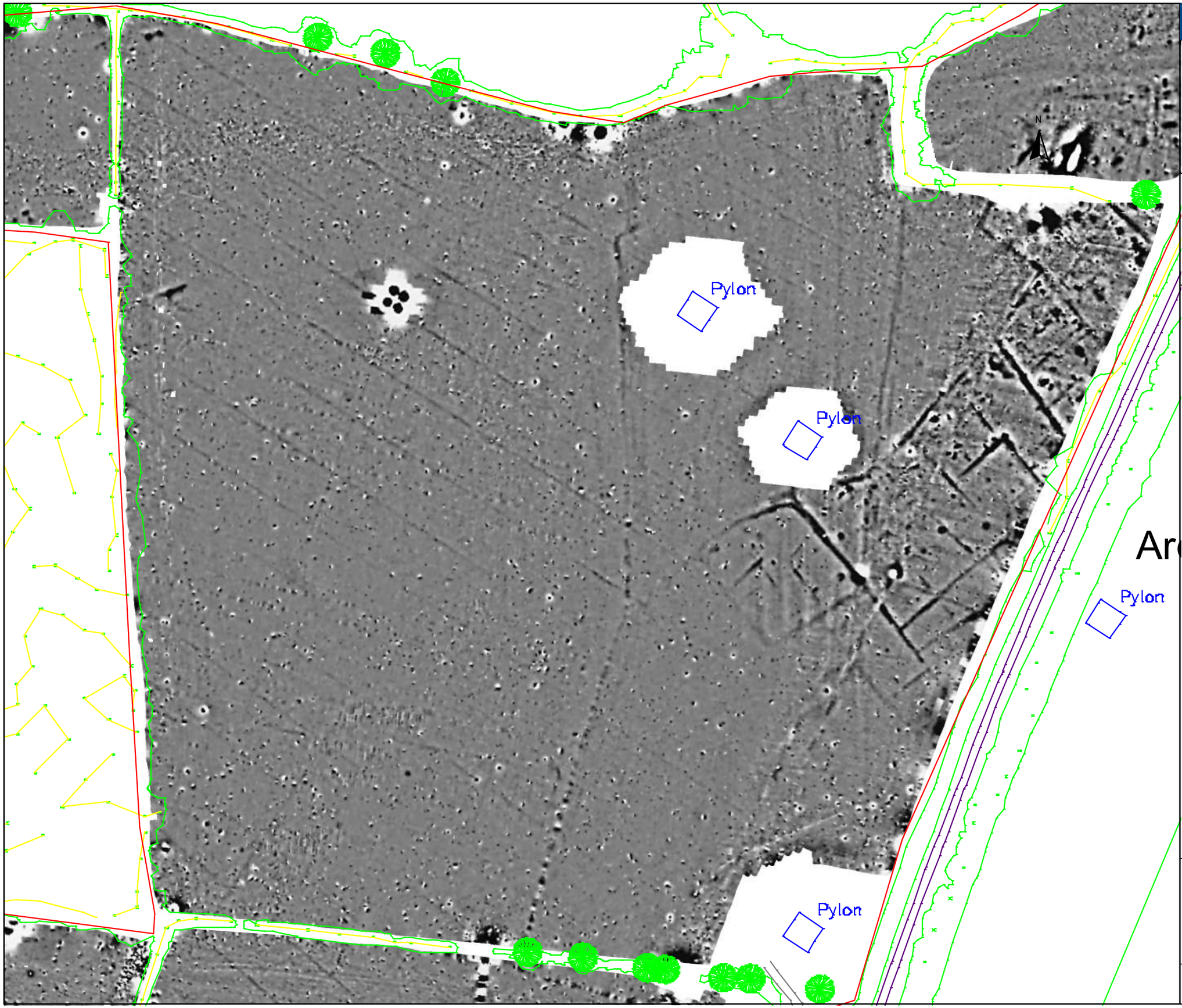
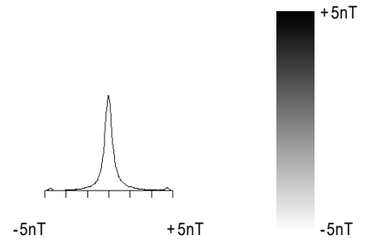
Greyscale plot of filtered magnetometer data - Area 11





SCALE 1:1250

0m 10 20 30 40 50m

KTD	DJS	FIG 34

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Abstraction and interpretation of magnetic anomalies - Area 11

- Positive linear anomaly - cut feature of archaeological potential
- Positive rectilinear anomaly - enclosure ditch
- Negative linear anomaly - of archaeological potential
- Positive linear anomaly - possible ditch-like feature
- Linear anomaly - of agricultural origin
- Linear anomaly - ridge and furrow
- Positive/weak multiple dipolar linear anomaly - land drain
- Positive linear anomaly - former field boundary
- Negative linear anomaly - material of low magnetic susceptibility
- Strong discrete response - associated with intense burning
- Discrete positive response - cut feature of archaeological potential
- Discrete positive response - possible pit-like feature
- Magnetic disturbance from ferrous material
- Strong multiple dipolar linear anomaly - pipeline / cable / service
- Strong dipolar anomaly - ferrous object

SCALE 1:1250

0m 10 20 30 40 50m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 35

Area 10

Area 7

Area 11

Pylon

Pylon

Pylon

N

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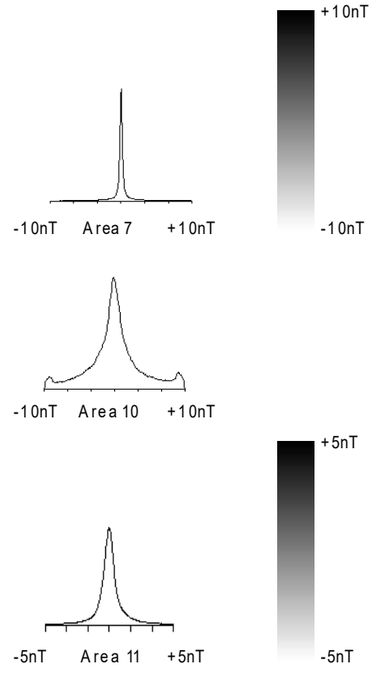
Wiltshire

Greyscale plot of minimally processed magnetometer data - Areas 7, 10 & 11



SCALE 1:1500

0m 10 20 30 40 50m

KTD	DJS	FIG 36

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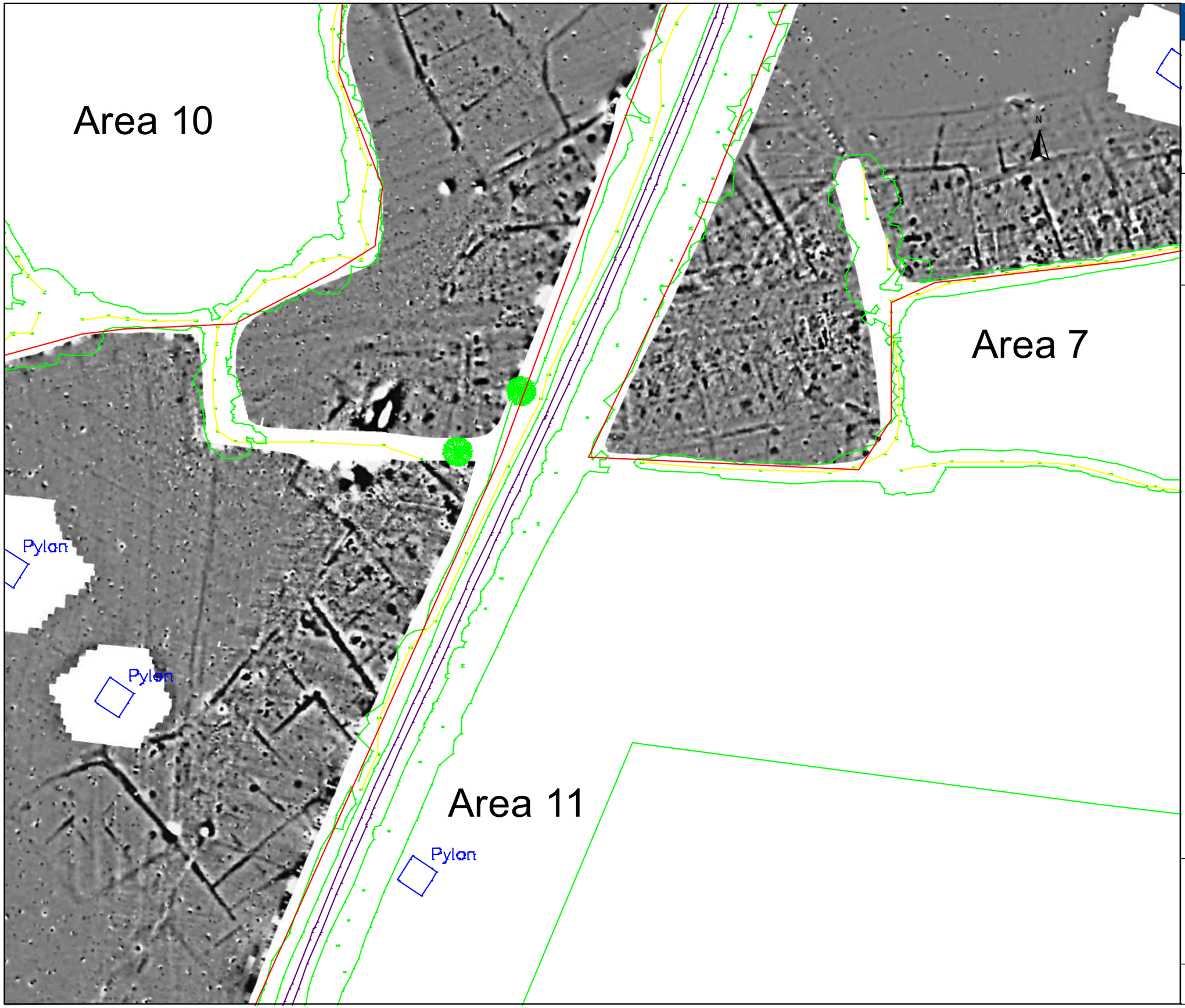
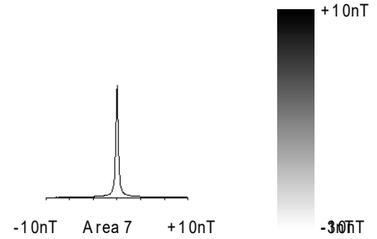
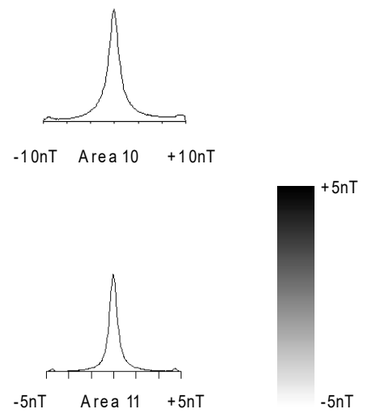
Wiltshire

Greyscale plot of filtered magnetometer data - Areas 7, 10 & 11







SCALE 1:1500

0m 10 20 30 40 50m

KTD	DJS	FIG 37

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Abstraction and interpretation of magnetic anomalies - Areas 7, 10 & 11

Area 10

Area 7

Area 11

81 87 88 82 86 85 83 84 91 98 90 96 89 Pylon Pylon Pylon

66 68 69 54 55 74 56 59 60 57 58 54

- Positive linear anomaly - cut feature of archaeological potential
- Positive rectilinear anomaly - enclosure ditch
- Negative linear anomaly - of archaeological potential
- Negative linear anomaly - structural remaina
- Linear anomaly - ridge and furrow
- Positive linear anomaly - former field boundary
- Strong discrete response - associated with intense burning
- Discrete positive response - cut feature of archaeological potential
- Positive anomaly - magnetic enhancement of archaeological potential
- Negative anomaly - material of low magnetic susceptibility of archaeological potential
- Magnetic disturbance from ferrous material
- Strong multiple dipolar linear anomaly - pipeline / cable / service
- Strong dipolar anomaly - ferrous object

SCALE 1:1500

0m 10 20 30 40 50m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 38

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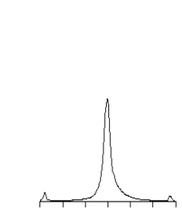
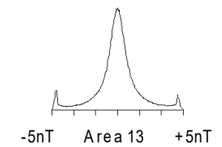
Greyscale plot of minimally processed magnetometer data - Areas 12 & 13





SCALE 1:2000

0m 20 40 60 80 100m

KTD	DJS	FIG 39

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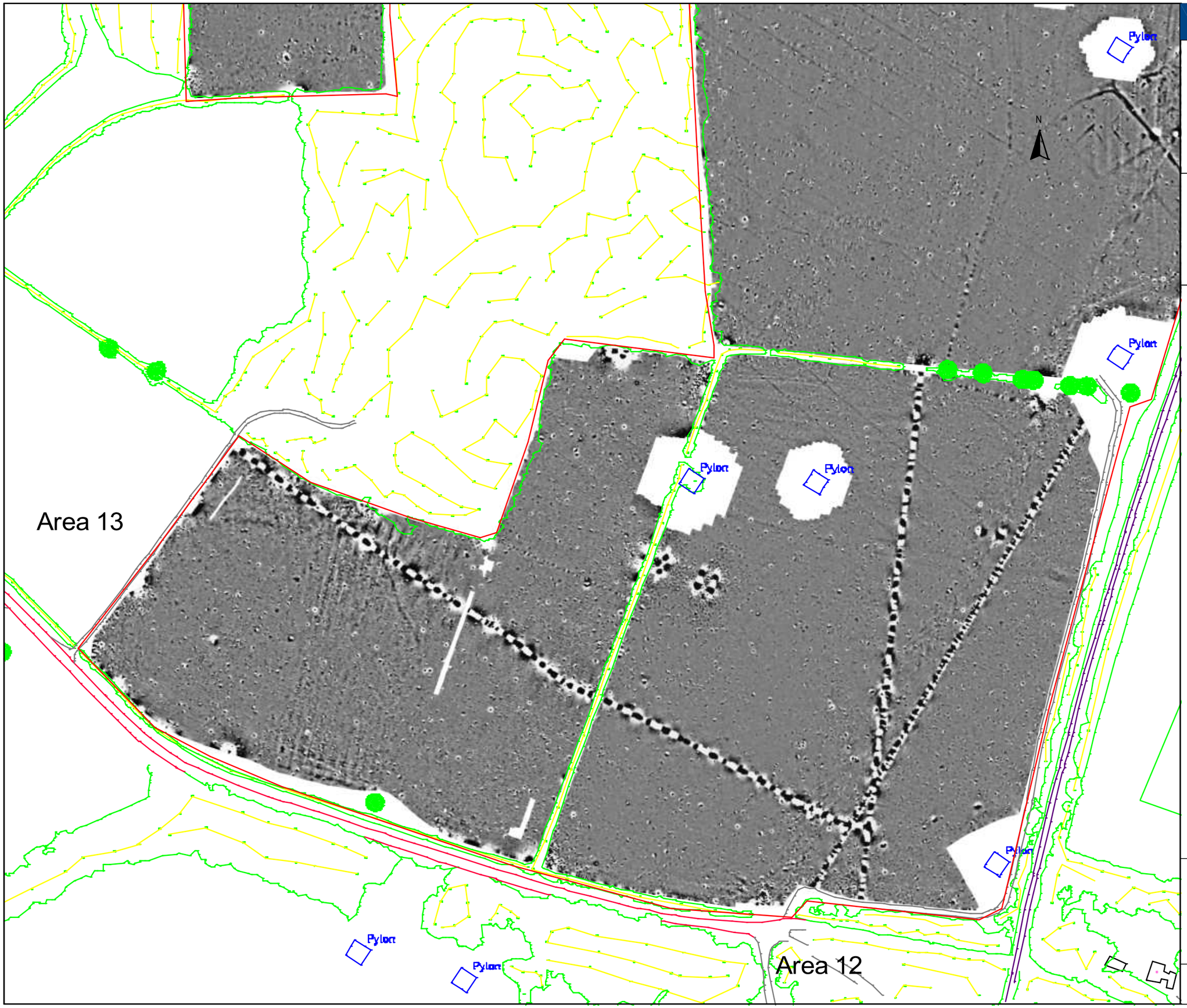
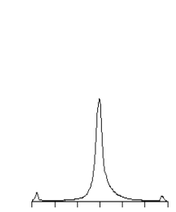
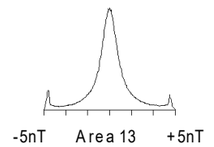
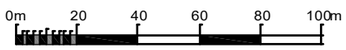
Greyscale plot of filtered magnetometer data - Areas 12 & 13







SCALE 1:2000



KTD	DJS	FIG 40

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Abstraction and interpretation of magnetic anomalies - Areas 12 & 13

- Positive linear anomaly - possible ditch-like feature
- Linear anomaly - of agricultural origin
- Linear anomaly - ridge and furrow
- Positive/weak multiple dipolar linear anomaly - land drain
- Positive linear anomaly - former field boundary
- Discrete positive response - possible pit-like feature
- Positive anomaly - magnetically enhanced material
- Magnetic debris - spread of magnetically thermoremnant material
- Magnetic disturbance from ferrous material
- Strong multiple dipolar linear anomaly - pipeline / cable / service
- Strong dipolar anomaly - ferrous object

SCALE 1:2000

0m 20 40 60 80 100m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 41

Area 13

Area 12

Pylon

N

105 96 97 95 94 100 99 102 103 101

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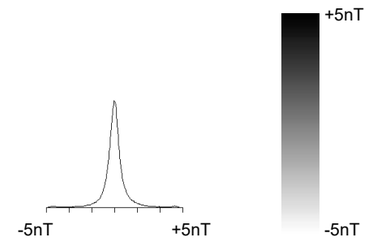
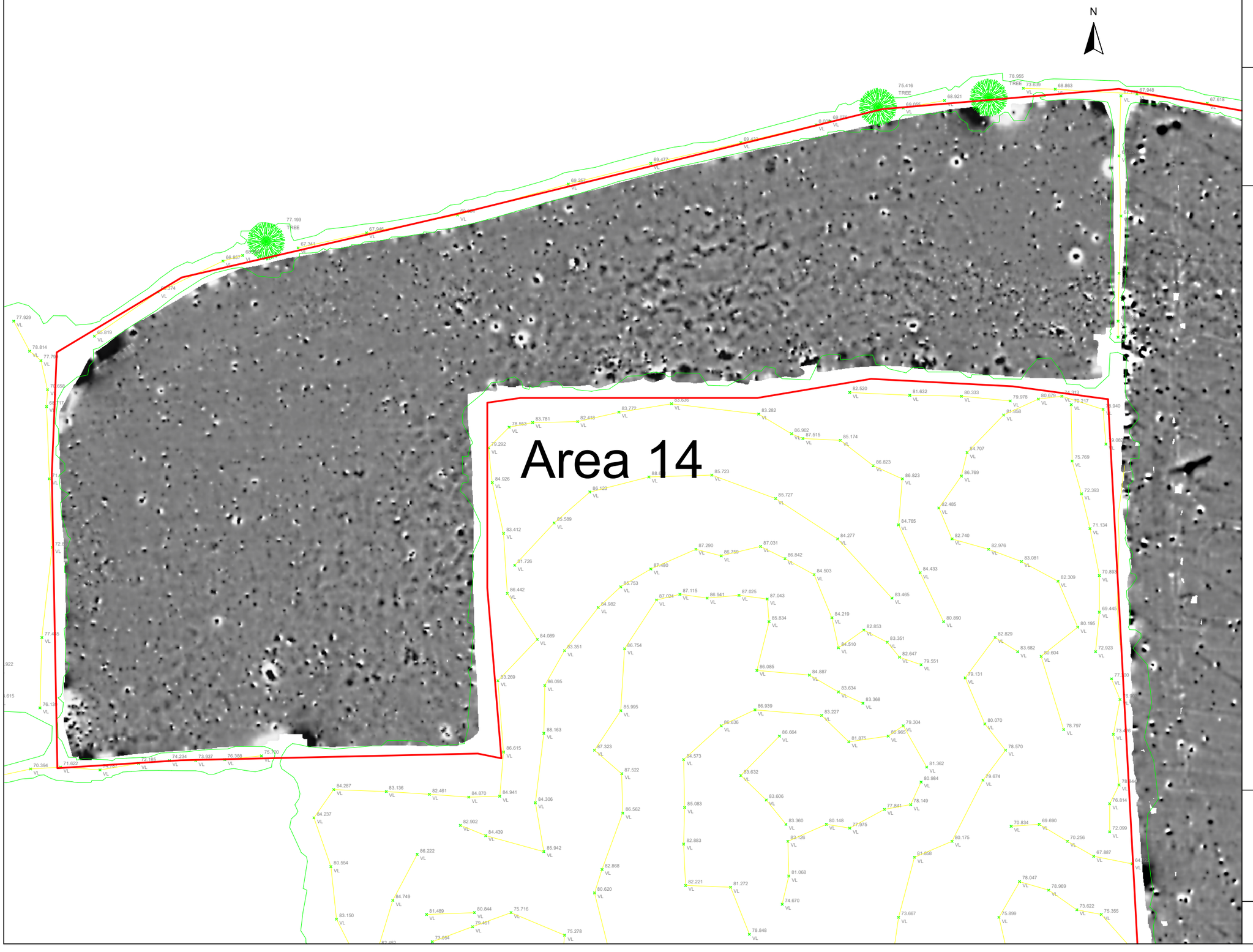
Wiltshire

Greyscale plot of minimally processed magnetometer data - Area 14





SCALE 1:1000

0m 10 20 30 40 50m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 42

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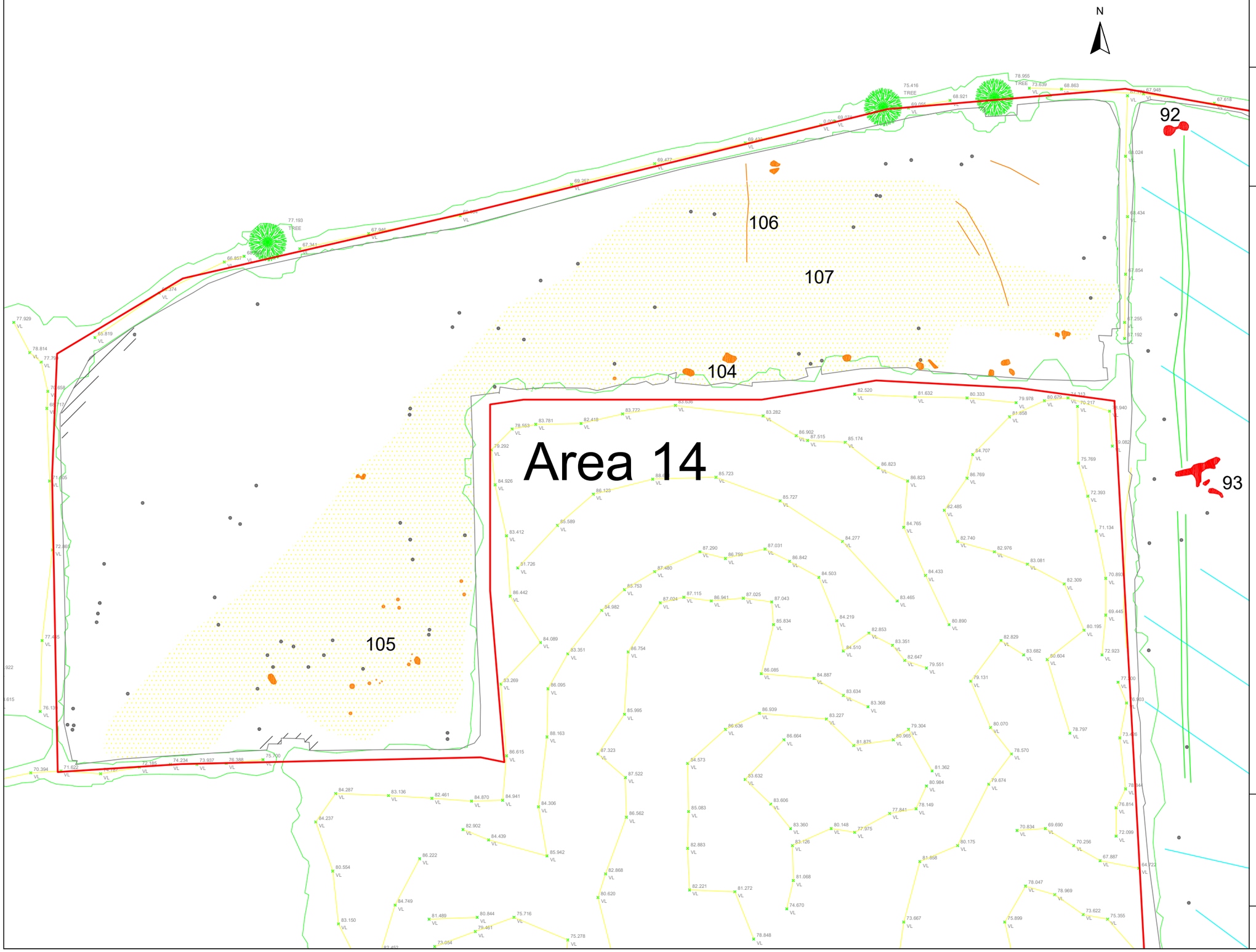
Abstraction and interpretation of magnetic anomalies - Area 14



- Positive linear anomaly - of uncertain origin
- Discrete positive response - possible pit-like feature
- Variable magnetic response - of natural origin
- Magnetic disturbance from ferrous material
- Strong dipolar anomaly - ferrous object

SCALE 1:1000

0m 10 20 30 40 50m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 43

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Digital Terrain Model

Derived from Environment Agency's LiDAR data 1m resolution

N

SCALE 1:8000

0m 80 160 240 320 400m

KTD	DJS	FIG 44