



**magnitude
surveys**

**Geophysical Survey Report
of
Land Northeast of Stevenage,
Hertfordshire**

**For
CSA Environmental**

**On Behalf Of
Picture Estates Ltd**

Magnitude Surveys Ref: MSTL1320

HER Event Number: TBC

OASIS Number: TBC

October 2022



**magnitude
surveys**

3 Captain Street

Bradford

BD1 4HA

01274 926020

info@magnitudesurveys.co.uk

Report By:

Hamza Aslam BSc, MSc

Alex Gallagher BSc (Hons)

Report Approved By:

Finnegan Pope-Carter BSc (Hons) MSc FGS

Issue Date:

28 October 2022

Abstract

Magnitude Surveys was commissioned to assess the subsurface archaeological potential of a c. 45.65ha area of land northeast of Stevenage. A fluxgate gradiometer survey was successfully carried out across the survey area. Agricultural activity has been detected across the survey area in the form of former field boundaries and modern ploughing regimes. Natural variations in the underlying geology were also detected. Anomalies of an undetermined origin were also identified across the survey area, of which a more confident classification could not be given. Magnetic disturbance due to modern pathways, debris at field edges, pylons and overhead cables may have obscured any weaker anomalies if they were present.

Contents

Abstract.....	2
List of Figures	4
1. Introduction	5
2. Quality Assurance	5
3. Objectives.....	5
4. Geographic Background.....	6
5. Archaeological Background.....	7
6. Methodology.....	7
6.1. Data Collection	7
6.2. Data Processing	8
6.3. Data Visualisation and Interpretation	8
7. Results.....	9
7.1. Qualification	9
7.2. Discussion	9
7.3. Interpretation	9
7.3.1. General Statements	9
7.3.2. Magnetic Results - Specific Anomalies.....	10
8. Conclusions	11
9. Archiving	12
10. Copyright.....	12
11. References	12
12. Project Metadata	13
13. Document History	13

List of Figures

Figure 1:	Site Location	1:25,000 @ A4
Figure 2:	Location of Survey Areas	1:10,000 @ A3
Figure 3:	Magnetic Total Field (Lower Sensor) Overview	1:4,500 @ A3
Figure 4:	Magnetic Interpretation Over Historical Maps and Satellite Imagery	1:4,500 @ A3
Figure 5:	Magnetic Gradient (Areas 3, 4, 5 & 8)	1:1,500 @ A3
Figure 6:	Magnetic Interpretation (Areas 3, 4, 5 & 8)	1:1,500 @ A3
Figure 7:	XY Trace Plot (Areas 3, 4, 5 & 8)	1:1,500 @ A3
Figure 8:	Magnetic Gradient (Areas 3, 4 & 9)	1:1,500 @ A3
Figure 9:	Magnetic Interpretation (Areas 3, 4 & 9)	1:1,500 @ A3
Figure 10:	XY Trace Plot (Areas 3, 4 & 9)	1:1,500 @ A3
Figure 11:	Magnetic Gradient (Areas 1, 3, 5, 6 & 8)	1:1,500 @ A3
Figure 12:	Magnetic Interpretation (Areas 1, 3, 5, 6 & 8)	1:1,500 @ A3
Figure 13:	XY Trace Plot (Areas 1, 3, 5, 6 & 8)	1:1,500 @ A3
Figure 14:	Magnetic Gradient (Areas 2, 5, 6 & 7)	1:1,500 @ A3
Figure 15:	Magnetic Interpretation (Areas 2, 5, 6 & 7)	1:1,500 @ A3
Figure 16:	XY Trace Plot (Areas 2, 5, 6 & 7)	1:1,500 @ A3
Figure 17:	Magnetic Gradient (Areas 1, 2 & 7)	1:1,500 @ A3
Figure 18:	Magnetic Interpretation (Areas 1, 2 & 7)	1:1,500 @ A3
Figure 19:	XY Trace Plot (Areas 1, 2 & 7)	1:1,500 @ A3

1. Introduction

- 1.1. Magnitude Surveys Ltd (MS) was commissioned by CSA Environmental on behalf of Picture Estates Ltd to undertake a geophysical survey over a c. 45.65ha area of land northeast of Stevenage, Hertfordshire (TL 25927 27783).
- 1.2. The geophysical survey comprised quad-towed and hand-carried GNSS-positioned fluxgate gradiometer survey. Magnetic survey is the standard primary geophysical method for archaeological applications in the UK due to its ability to detect a range of different features. The technique is particularly suited for detecting fired or magnetically enhanced features, such as ditches, pits, kilns, sunken featured buildings (SFBs) and industrial activity (David *et al.*, 2008).
- 1.3. The survey was conducted in line with the current best practice guidelines produced by Historic England (David *et al.*, 2008), the Chartered Institute for Archaeologists (CIfA, 2020) and the European Archaeological Council (Schmidt *et al.*, 2015).
- 1.4. It was conducted in line with a WSI produced by MS (Garst, 2022).
- 1.5. The survey commenced on 12/09/22 and took seven days to complete.

2. Quality Assurance

- 2.1. Magnitude Surveys is a Registered Organisation of the Chartered Institute for Archaeologists (CIfA), the chartered UK body for archaeologists, and a corporate member of ISAP (International Society for Archaeological Prospection).
- 2.2. The directors of MS are involved in cutting edge research and the development of guidance/policy. Specifically, Dr Chrys Harris has a PhD in archaeological geophysics from the University of Bradford, is a Member of CIfA and is the Vice-Chair of the International Society for Archaeological Prospection (ISAP); Finnegan Pope-Carter has an MSc in archaeological geophysics and is a Fellow of the London Geological Society, as well as a member of GeoSIG (CIfA Geophysics Special Interest Group); Dr Paul Johnson has a PhD in archaeology from the University of Southampton, is a Fellow of the Society of Antiquaries of London and a Member of CIfA, has been a member of the ISAP Management Committee since 2015, and is currently the nominated representative for the EAA Archaeological Prospection Community to the board of the European Archaeological Association.
- 2.3. All MS managers, field and office staff have degree qualifications relevant to archaeology or geophysics and/or field experience.

3. Objectives

- 3.1. The objective of this geophysical survey was to assess the subsurface archaeological potential of the survey area.

4. Geographic Background

4.1. The survey area was located immediately to the northeast of Stevenage (Figure 1). Gradiometer survey was undertaken across nine fields under a mixture of an arable and pasture cultivation. The survey area was bordered to the north by Bonfield's plantation along with Warren's Green, to the east by Dane End farm and Leatherwells farm, to the south by Ryders Hill, residential housing and further playing fields, and to the west by Orwell Avenue and playgrounds (Figure 2).

4.2. Survey considerations:

Survey Area	Ground Conditions	Further Notes
1	The area consisted of a harvested arable field, sloping down from northwest to southeast.	The survey area was bordered to the north by a footpath, trees and hedges, to the east by a footpath, and to the south and west by trees and hedges.
2	The area comprised of a pasture field, sloping down from north to south.	The survey area was bordered to the north, south and east by hedges and trees. The field continued to the northeast. Overhead cables were present running approximately east to west across the north of the area.
3	The area consisted of a harvested arable field, sloping down from northwest to southeast.	The survey area was bordered to the north, south, southwest and west by trees and hedges. The field continued to the northeast and east.
4	The area comprised of a harvested arable field, sloping down to the northeast.	The survey area was bordered to the north by hedges and a fence, and to the east, south and west by trees.
5	The survey area consisted of a harvested arable field, sloping gently from north to south.	The survey area was bordered on all sides by trees and hedges.
6	The area consisted of a harvested arable field, sloping down to the southeast and northeast.	The survey area was bordered on all sides by trees and hedges. A metal gate was present in the north of the area, and a pylon was located on the eastern boundary, with overhead cables running northeast to southwest across the centre.
7	The area comprised of a harvested arable field, sloping down to the east.	The survey area was bordered on all sides by trees, hedges and a footpath.
8	The area comprised of a pasture field, sloping down from the eastern border to the northwest and southwest.	The survey area was bordered on all sides by trees and hedges. Trees were present in the north of the area and were unable to be surveyed.
9	The area consisted of a flat grass field.	The survey area was on all sides by trees and hedges. Footpaths were present across the area.

4.3. The underlying geology comprises chalk of the Lewes nodular chalk and Seaford chalk formation. The superficial deposits consist of bands of clay, silt, sand and gravel across the

centre of Areas 8, 3, 6, 7 and 1. Across Areas 9 & 4 and the edges of 8, 3, 5 and 2 superficial deposits of glacial tills of Lowestoft formation dimicton. (British Geological Survey, 2022).

- 4.4. The soils consist of slightly loamy and clayey soils with impeded drainage and a band of lime rich loamy and clayey soils with impeded drainage across Areas 3 and 8 (Soilscales, 2022).

5. Archaeological Background

- 5.1. An archaeological and heritage desk-based assessment will be prepared to inform the planning application.

6. Methodology

6.1. Data Collection

6.1.1. Magnetometer surveys are generally the most cost effective and suitable geophysical technique for the detection of archaeology in England. Therefore, a magnetometer survey should be the preferred geophysical technique unless its use is precluded by any specific survey objectives or the site environment. For this site, no factors precluded the recommendation of a standard magnetometer survey. Geophysical survey therefore comprised the magnetic method as described in the following section.

6.1.2. Geophysical prospection comprised the magnetic method as described in the following table.

6.1.3. Table of survey strategies:

Method	Instrument	Traverse Interval	Sample Interval
Magnetic	Bartington Instruments Grad-13 Digital Three-Axis Gradiometer	1m	200Hz reprojected to 0.125m

6.1.4. The magnetic data were collected using MS' bespoke quad-towed cart system and hand-carried GNSS-positioned system.

6.1.4.1. MS' cart and hand-carried system was comprised of Bartington Instruments Grad 13 Digital Three-Axis Gradiometers. Positional referencing was through a multi-channel, multi-constellation GNSS Smart Antenna RTK GPS outputting in NMEA mode to ensure high positional accuracy of collected measurements. The RTK GPS is accurate to 0.008m + 1ppm in the horizontal and 0.015m + 1ppm in the vertical.

6.1.4.2. Magnetic and GPS data were stored on an SD card within MS' bespoke datalogger. The datalogger was continuously synced, via an in-field Wi-Fi unit, to servers within MS' offices. This allowed for data collection, processing and visualisation to be monitored in real-time as fieldwork was ongoing.

6.1.4.3. A navigation system was integrated with the RTK GPS, which was used to guide the surveyor. Data were collected by traversing the survey area along the longest possible lines, ensuring efficient collection and processing.

6.2.Data Processing

6.2.1. Magnetic data were processed in bespoke in-house software produced by MS. Processing steps conform to the EAC and Historic England guidelines for 'minimally enhanced data' (see Section 3.8 in Schmidt *et al.*, 2015: 33 and Section IV.2 in David *et al.*, 2008: 11).

Sensor Calibration – The sensors were calibrated using a bespoke in-house algorithm, which conforms to Olsen *et al.* (2003).

Zero Median Traverse – The median of each sensor traverse is calculated within a specified range and subtracted from the collected data. This removes striping effects caused by small variations in sensor electronics.

Projection to a Regular Grid – Data collected using RTK GPS positioning requires a uniform grid projection to visualise data. Data are rotated to best fit an orthogonal grid projection and are resampled onto the grid using an inverse distance-weighting algorithm.

Interpolation to Square Pixels – Data are interpolated using a bicubic algorithm to increase the pixel density between sensor traverses. This produces images with square pixels for ease of visualisation.

6.3.Data Visualisation and Interpretation

6.3.1. This report presents the gradient of the sensors' total field data as greyscale images, as well as the total field data from lower sensors. The gradient of the sensors minimises external interferences and reduces the blown-out responses from ferrous and other high contrast material. However, the contrast of weak or ephemeral anomalies can be reduced through the process of calculating the gradient. Consequently, some features can be clearer in the respective gradient or total field datasets. Multiple greyscale images of the gradient and total field at different plotting ranges have been used for data interpretation. Greyscale images should be viewed alongside the XY trace plot (Figures 7, 10, 13, 16 & 19). XY trace plots visualise the magnitude and form of the geophysical response, aiding anomaly interpretation.

6.3.2. Geophysical results have been interpreted using greyscale images and XY traces in a layered environment, overlaid against open street maps, satellite imagery, historical maps, LiDAR data, and soil and geology maps. Google Earth (2022) was also consulted, to compare the results with recent land use.

6.3.3. Geodetic position of results – All vector and raster data have been projected into OSGB36 (ESPG27700) and can be provided upon request in ESRI Shapefile (.SHP) and Geotiff (.TIF) respectively. Figures are provided with raster and vector data projected against OS Open Data.

7. Results

7.1. Qualification

7.1.1. Geophysical results are not a map of the ground and are instead a direct measurement of subsurface properties. Detecting and mapping features requires that said features have properties that can be measured by the chosen technique(s) and that these properties have sufficient contrast with the background to be identifiable. The interpretation of any identified anomalies is inherently subjective. While the scrutiny of the results is undertaken by qualified, experienced individuals and rigorously checked for quality and consistency, it is often not possible to classify all anomaly sources. Where possible, an anomaly source will be identified along with the certainty of the interpretation. The only way to improve the interpretation of results is through a process of comparing excavated results with the geophysical reports. MS actively seek feedback on their reports, as well as reports from further work, in order to constantly improve our knowledge and service.

7.2. Discussion

7.2.1. The geophysical results are presented in combination with satellite imagery and historical maps (Figure 4).

7.2.2. A fluxgate gradiometer survey was successfully carried out across the survey area. Anomalies of agricultural, natural and modern origins were identified across the survey area, along with anomalies of an undetermined origin. The survey has generally responded well to the local environment with interference generally limited to field edges, overhead cables and pylons, as well as magnetic disturbance surrounding the modern paths to the west (Figure 4). Natural variations were identified across the survey area, likely as a result of variation in the superficial geology (Section 4.3), or due to changes in topography.

7.2.3. Evidence of modern agricultural activity has been detected across the survey area consistent with ploughing regimes visible on satellite imagery (Figure 4). Anomalies orientated from southeast to northwest in the northwest of the survey area correspond with former field boundaries shown on historical maps (Figure 4).

7.2.4. Rectilinear, curvilinear and linear anomalies of undermined classification have been detected to the north, west, southeast and south of the survey area. Due to the lack of any further context, and the isolated location, it is not possible to give a more confident classification to these anomalies. Due to the large quantity of natural variations across the survey area, some of these may be natural in origin, but it is not possible to be certain.

7.3. Interpretation

7.3.1. General Statements

7.3.1.1. Geophysical anomalies will be discussed broadly as classification types across the survey area. Only anomalies that are distinctive or unusual will be discussed individually.

- 7.3.1.2. **Data Artefact** – Data artefacts usually occur in conjunction with anomalies with strong magnetic signals due to the way in which the sensors respond to very strong point sources. They are usually visible as minor ‘streaking’ following the line of data collection. While these artefacts can be reduced in post-processing through data filtering, this would risk removing ‘real’ anomalies. These artefacts are therefore indicated as necessary in order to preserve the data as ‘minimally processed’.
- 7.3.1.3. **Ferrous (Spike)** – Discrete dipolar anomalies are likely to be the result of isolated pieces of modern ferrous debris on or near the ground surface.
- 7.3.1.4. **Ferrous/Debris (Spread)** – A ferrous/debris spread refers to a concentration of multiple discrete, dipolar anomalies usually resulting from highly magnetic material such as rubble containing ceramic building materials and ferrous rubbish.
- 7.3.1.5. **Magnetic Disturbance** – The strong anomalies produced by extant metallic structures, typically including fencing, pylons, vehicles and service pipes, have been classified as ‘Magnetic Disturbance’. These magnetic ‘haloes’ will obscure weaker anomalies relating to nearby features, should they be present, often over a greater footprint than the structure causing them.
- 7.3.1.6. **Undetermined** – Anomalies are classified as Undetermined when the origin of the geophysical anomaly is ambiguous and there is no supporting contextual evidence to justify a more certain classification. These anomalies are likely to be the result of geological, pedological or agricultural processes, although an archaeological origin cannot be entirely ruled out. Undetermined anomalies are generally distinct from those caused by ferrous sources.

7.3.2. Magnetic Results - Specific Anomalies

- 7.3.2.1. **Agricultural (Trend)** – Across Areas 3, 6 & 7, weak parallel linear trends have been identified in varying orientations (Figures 6, 12, 15 & 18). These are indicative of ploughing regimes and appear to correspond with modern ploughing regimes identified on satellite imagery (Figure 4). Area 1 and the southeast of Area 6 show similar linear trends orientated from north to south (Figure 12) although these may be related to the underlying geology.
- 7.3.2.2. **Agricultural (Spread & Weak)** – In the centre of Area 4 a weak spread of more magnetically enhanced material has been identified (Figure 9). Orientated from northwest to southeast, it aligns with a former field boundary visible on historical maps (Figure 4). In Area 3 two weak linear anomalies (Figures 9 & 12), also orientated from northwest to southeast, in the centre of the field align with former field boundaries visible on historical maps (Figure 4).
- 7.3.2.3. **Natural (Strong, Weak & Spread)** – Across the survey area spreads of magnetically enhanced material have been identified (Figure 4), along with strong, weak and discrete anomalies within those spreads. These are likely to

have been caused by the change in superficial deposits, along with the hill-wash material from topographical changes.

7.3.2.4. **Modern (Spread)** – In the centre and north of Area 9, linear, magnetically enhanced material was detected orientated from southwest to northeast which aligns with modern pathways visible on satellite imagery (Figure 4).

7.3.2.5. **Undetermined (Weak)** – In the south of Area 3, a weak rectilinear anomaly was identified within a natural spread (Figure 9). A further series of negative linear anomalies were identified in the west of Area 2, although they may be partially obscured by the disturbance from the overhead cables (Figure 15). Further linear and curvilinear anomalies were identified across the survey area. Due to the disturbance from the natural variation, and modern interference, and the lack of any further context, these have been classified as undetermined, although a natural or archaeological origin cannot be ruled out.

8. Conclusions

- 8.1. A fluxgate gradiometer survey has been successfully undertaken across the survey area. The survey responded well to the environment of the survey area, although magnetic interference from overhead cables, pylons and other modern features within the survey area may have masked any weaker anomalies, if they were present.
- 8.2. Agricultural anomalies in the form of modern ploughing regimes and former field boundaries have been identified across the survey area as well as anomalies of a natural origin consistent with variations in the underlying geology, and topographical changes.
- 8.3. A series of linear and curvilinear anomalies were identified across the survey area, along with discrete anomalies. An undetermined classification has been given to these anomalies due to a lack of any contextual evidence, and the disturbance caused by the overhead cables and natural variation. A more conclusive classification cannot be determined using geophysics data alone, however, an archaeological, agricultural or natural origin cannot be ruled out.

9. Archiving

- 9.1. MS maintains an in-house digital archive, which is based on Schmidt and Ernenwein (2013). This stores the collected measurements, minimally processed data, georeferenced and un-georeferenced images, XY traces and a copy of the final report.
- 9.2. MS contributes reports to the ADS Grey Literature Library upon permission from the client, subject to any dictated time embargoes.

10. Copyright

- 10.1. Copyright and intellectual property pertaining to all reports, figures and datasets produced by Magnitude Services Ltd is retained by MS. The client is given full licence to use such material for their own purposes. Permission must be sought by any third party wishing to use or reproduce any IP owned by MS.

11. References

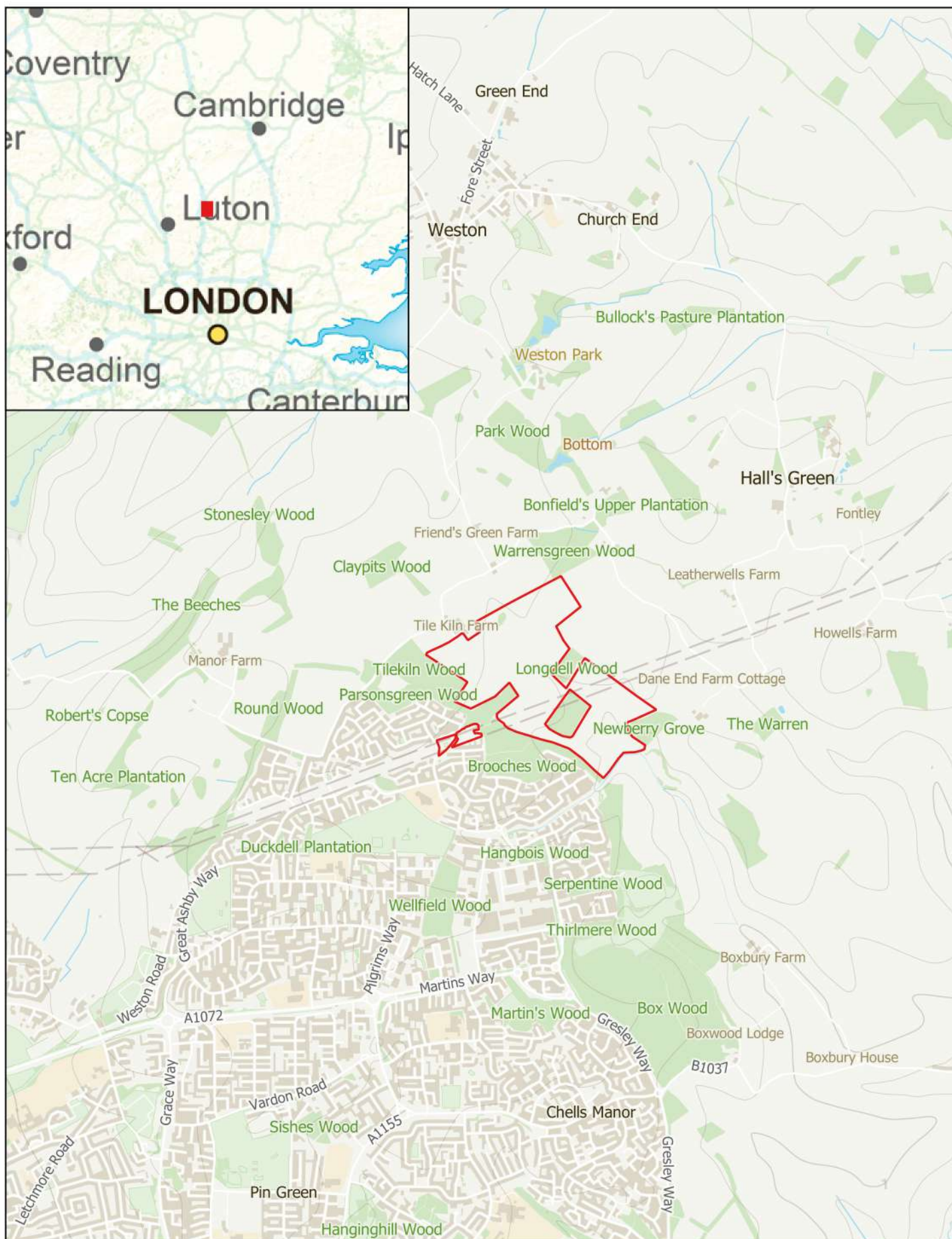
- British Geological Survey, 2022. Geology of Britain. Stevenage, Hertfordshire.
[<http://mapapps.bgs.ac.uk/geologyofbritain/home.html/>]. Accessed 7/10/2022.
- Chartered Institute for Archaeologists, 2020. Standards and guidance for archaeological geophysical survey. ClfA.
- David, A., Linford, N., Linford, P. and Martin, L., 2008. Geophysical survey in archaeological field evaluation: research and professional services guidelines (2nd edition). Historic England.
- Google Earth, 2022. Google Earth Pro V 7.1.7.2606.
- Olsen, N., Toffner-Clausen, L., Sabaka, T.J., Brauer, P., Merayo, J.M.G., Jorgensen, J.L., Leger, J.M., Nielsen, O.V., Primdahl, F., and Risbo, T., 2003. Calibration of the Orsted vector magnetometer. Earth Planets Space 55: 11-18.
- Schmidt, A. and Ernenwein, E., 2013. Guide to good practice: geophysical data in archaeology (2nd edition). Oxbow Books: Oxford.
- Schmidt, A., Linford, P., Linford, N., David, A., Gaffney, C., Sarris, A. and Fassbinder, J., 2015. Guidelines for the use of geophysics in archaeology: questions to ask and points to consider. EAC Guidelines 2. European Archaeological Council: Belgium.
- Soilscapes, 2022. Stevenage, Hertfordshire. Cranfield University, National Soil Resources Institute.
[<http://landis.org.uk>]. Accessed 7/10/2022.

12. Project Metadata

MS Job Code	MSTL1320
Project Name	Land North East of Stevenage
Client	CSA Environmental
Grid Reference	TL 25927 27783
Survey Techniques	Magnetometry
Survey Size (ha)	45.65ha (Magnetometry)
Survey Dates	2022-09-12 to 2022-09-20
Project Lead	Alison Langston BA PCIfA
Project Officer	Alison Langston BA PCIfA
HER Event No	TBC
OASIS No	TBC
S42 Licence No	N/A
Report Version	1.0

13. Document History

Version	Comments	Author	Checked By	Date
0.1	Initial draft for Project Lead to Review	AG	AL	11 October 2022
0.2	Corrections from Project Lead	AG	FPC	13 October 2022
0.3	Corrections from Director, Report issued as Draft	AL	AL	14 October 2022
0.4	Client Corrections	AL	AL	27 October 2022
1.0	Report issued as Final	N/A	AL	28 October 2022



MSTL1320 - Land Northeast of Stevenage

Figure 1 - Site Location

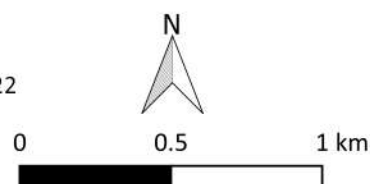
1:25,000 @ A4

Copyright Magnitude Surveys Ltd 2022

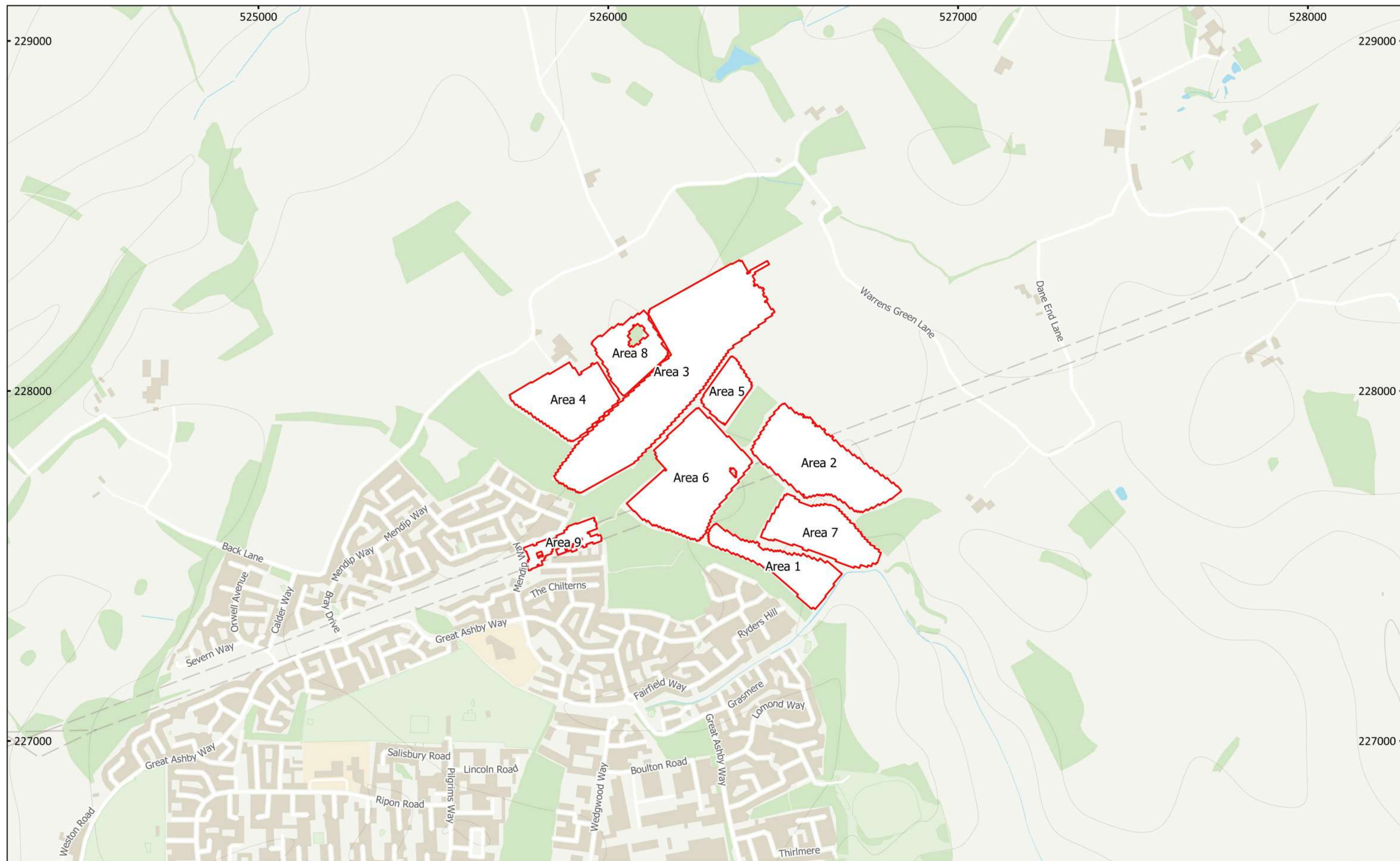
Contains Ordnance Survey data © Crown Copyright and database right 2022

Contains satellite imagery © Bing Satellite 2022

 Site Boundary

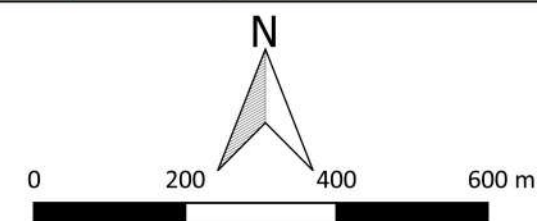


**magnitude
surveys**



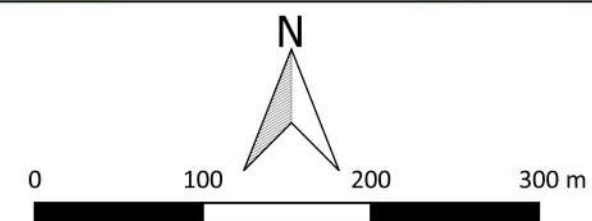
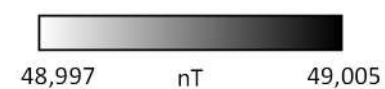
MSTL1320 - Land Northeast of Stevenage
 Figure 2 - Location of Survey Areas
 1:10,000@ A3
 Copyright Magnitude Surveys Ltd 2022
 Contains Ordnance Survey data © Crown Copyright and database right 2022

Survey Extent





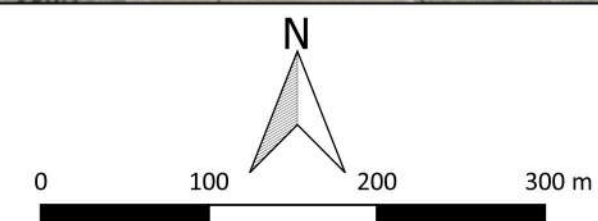
MSTL1320 - Land Northeast of Stevenage
Figure 3 - Magnetic Total Field (Lower Sensor) Overview
1:4,500 @ A3
Copyright Magnitude Surveys Ltd 2022
Contains Ordnance Survey data © Crown Copyright and database right 2022





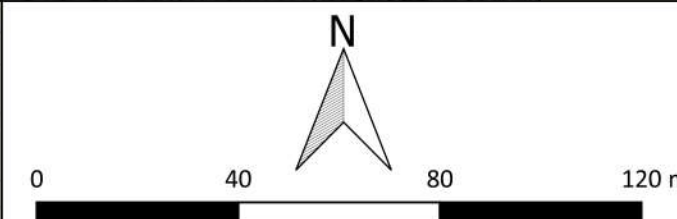
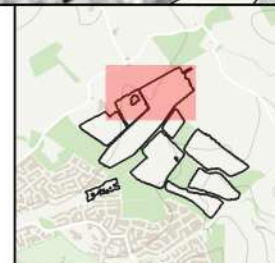
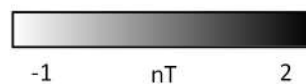
MSTL1320 - Land Northeast of Stevenage
 Figure 4 - Magnetic Interpretation Over Historical Maps and Satellite Imagery
 1:4,500 @ A3
 Copyright Magnitude Surveys Ltd 2022
 Contains historical mapping © CLS Data 2022: Ordnance Survey, 6" 2nd
 edition c. 1882-1913
 Contains satellite imagery © Bing Satellite 2022

- | | | |
|-------------------------|---------------------|----------------------|
| Agricultural (Spread) | Natural (Strong) | Agricultural (Trend) |
| Agricultural (Weak) | Natural (Weak) | Data Artefact |
| Magnetic Disturbance | Undetermined (Weak) | Ferrous (Spike) |
| Ferrous/Debris (Spread) | Modern (Spread) | |
| Natural (Spread) | Overhead Cables | |





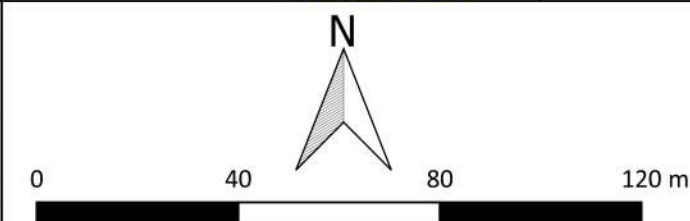
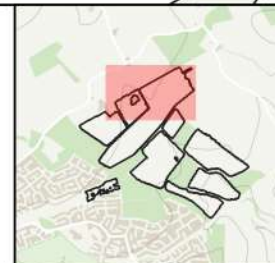
MSTL1320 - Land Northeast of Stevenage
 Figure 5 - Magnetic Gradient (Areas 3, 4, 5 & 8)
 1:1,500 @ A3
 Copyright Magnitude Surveys Ltd 2022
 Contains Ordnance Survey data © Crown Copyright and database right 2022

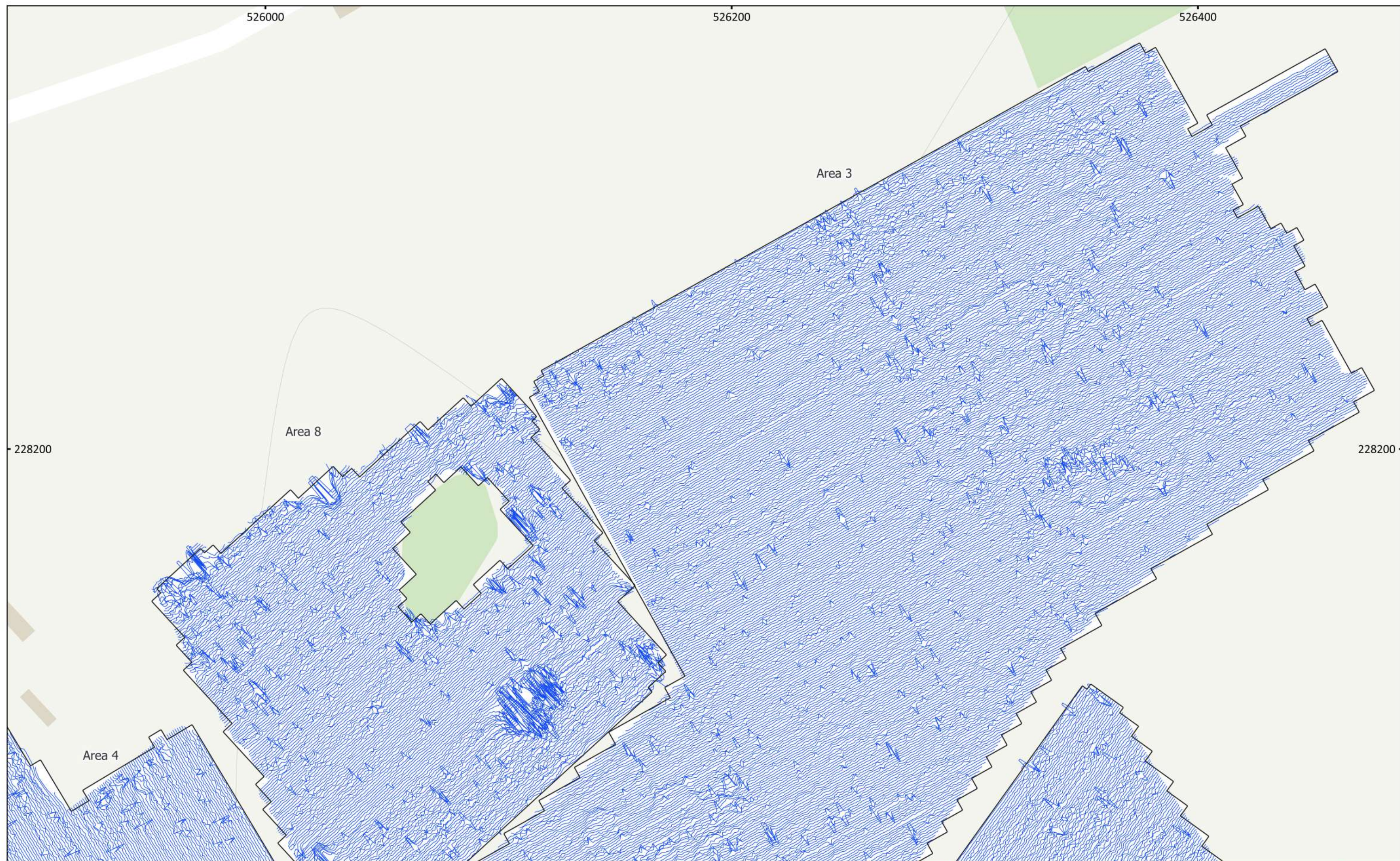




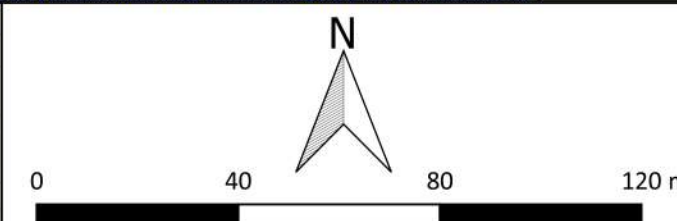
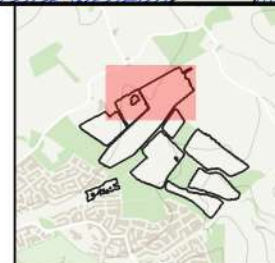
MSTL1320 - Land Northeast of Stevenage
 Figure 6 - Magnetic Interpretation (Areas 3, 4, 5 & 8)
 1:1,500 @ A3
 Copyright Magnitude Surveys Ltd 2022
 Contains Ordnance Survey data © Crown Copyright and database right 2022

- | | | |
|-------------------------|------------------|---------------------|
| Agricultural (Weak) | Natural (Spread) | Undetermined (Weak) |
| Magnetic Disturbance | Natural (Strong) | Ferrous (Spike) |
| Ferrous/Debris (Spread) | Natural (Weak) | |



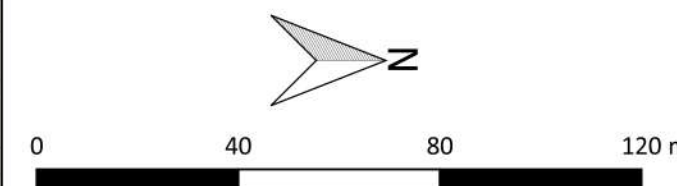
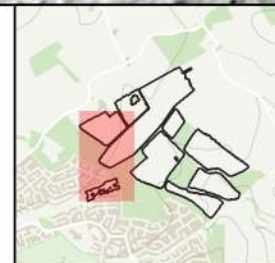
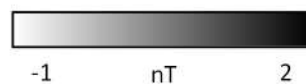


MSTL1320 - Land Northeast of Stevenage
Figure 7 - XY Trace Plot (Areas 3, 4, 5 & 8)
30nT/cm at 1:1,500 @ A3
Copyright Magnitude Surveys Ltd 2022
Contains Ordnance Survey data © Crown Copyright and database right 2022





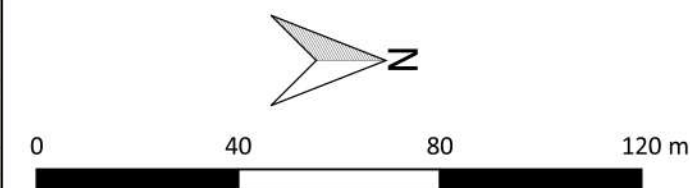
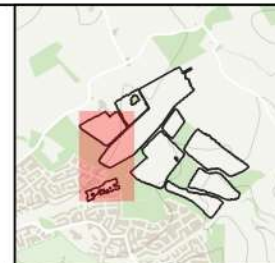
MSTL1320 - Land Northeast of Stevenage
 Figure 8 - Magnetic Gradient (Areas 3, 4 & 9)
 1:1,500 @ A3
 Copyright Magnitude Surveys Ltd 2022
 Contains Ordnance Survey data © Crown Copyright and database right 2022

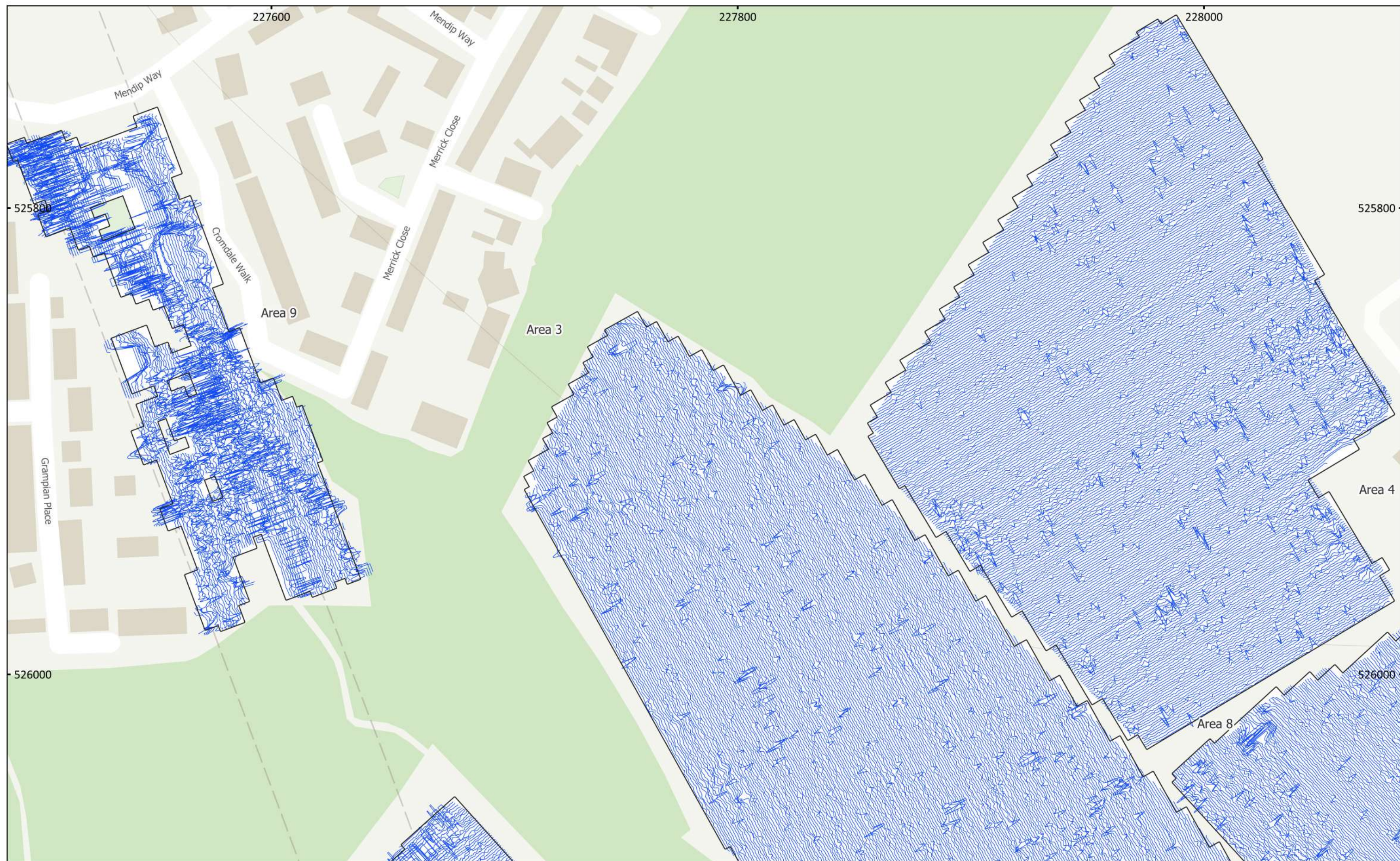




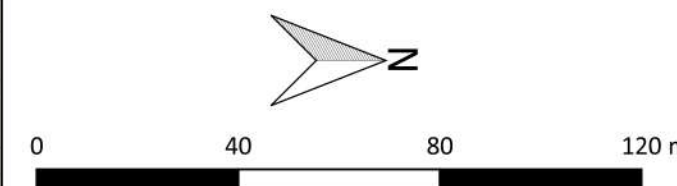
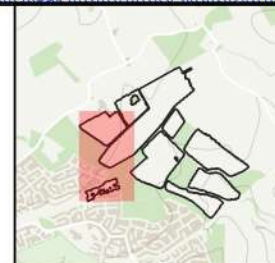
MSTL1320 - Land Northeast of Stevenage
 Figure 9 - Magnetic Interpretation (Areas 3, 4 & 9)
 1:1,500 @ A3
 Copyright Magnitude Surveys Ltd 2022
 Contains Ordnance Survey data © Crown Copyright and database right 2022

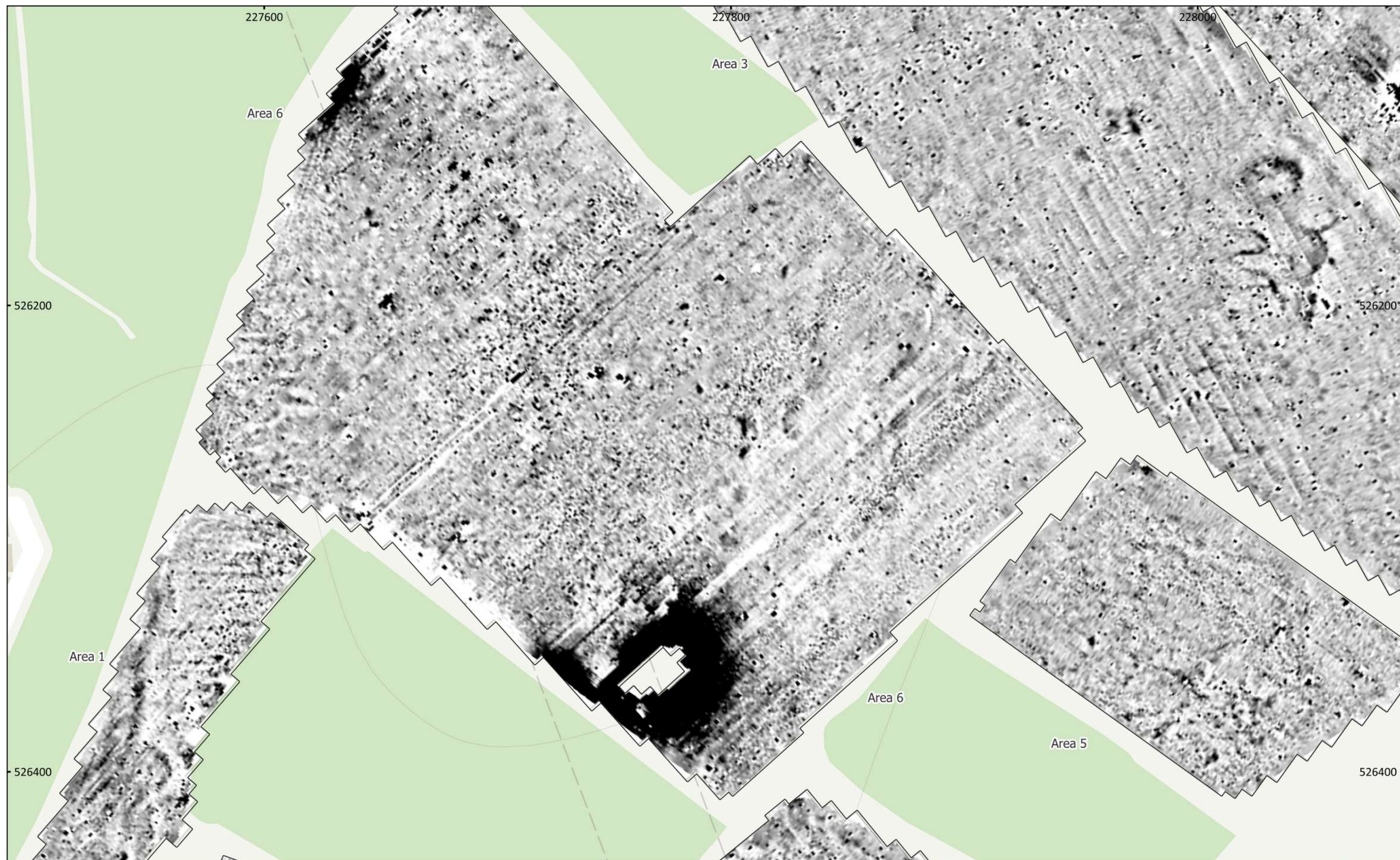
- | | | |
|-------------------------|---------------------|-----------------|
| Agricultural (Spread) | Natural (Spread) | Modern (Spread) |
| Agricultural (Weak) | Natural (Strong) | Overhead Cables |
| Magnetic Disturbance | Natural (Weak) | Data Artefact |
| Ferrous/Debris (Spread) | Undetermined (Weak) | Ferrous (Spike) |



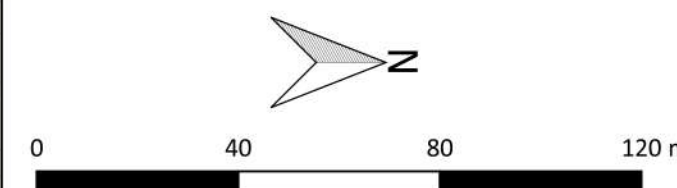
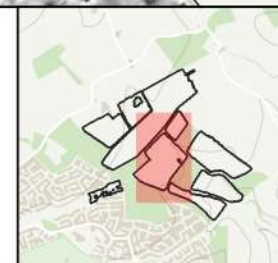
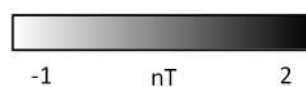


MSTL1320 - Land Northeast of Stevenage
 Figure 10 - XY Trace Plot (Areas 3, 4 & 9)
 30nT/cm at 1:1,500 @ A3
 Copyright Magnitude Surveys Ltd 2022
 Contains Ordnance Survey data © Crown Copyright and database right 2022





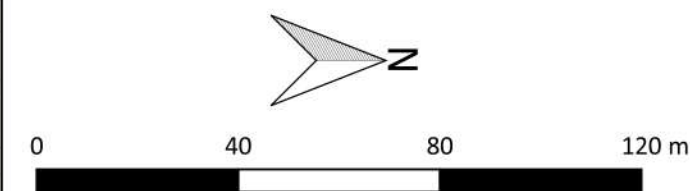
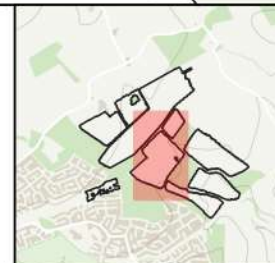
MSTL1320 - Land Northeast of Stevenage
 Figure 11 - Magnetic Gradient (Areas 1, 3, 5, 6 & 8)
 1:1,500 @ A3
 Copyright Magnitude Surveys Ltd 2022
 Contains Ordnance Survey data © Crown Copyright and database right 2022





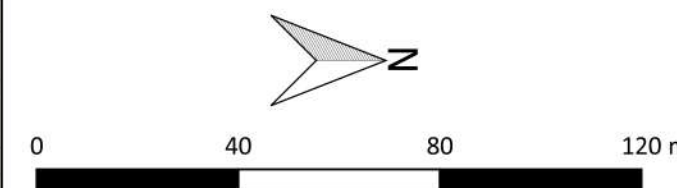
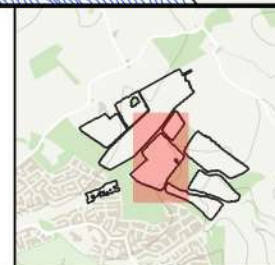
MSTL1320 - Land Northeast of Stevenage
 Figure 12 - Magnetic Interpretation (Areas 1, 3, 5, 6 & 8)
 1:1,500 @ A3
 Copyright Magnitude Surveys Ltd 2022
 Contains Ordnance Survey data © Crown Copyright and database right 2022

- | | | |
|-------------------------|---------------------|----------------------|
| Agricultural (Weak) | Natural (Strong) | Agricultural (Trend) |
| Magnetic Disturbance | Natural (Weak) | Ferrous (Spike) |
| Ferrous/Debris (Spread) | Undetermined (Weak) | |
| Natural (Spread) | Overhead Cables | |



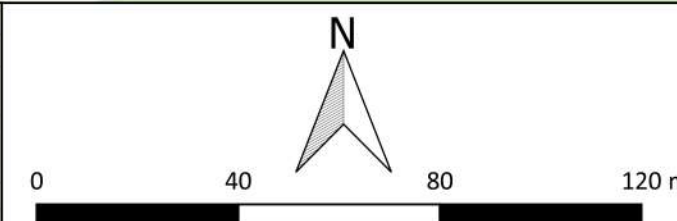
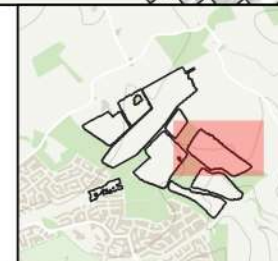
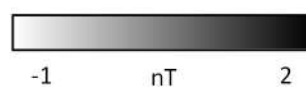


MSTL1320 - Land Northeast of Stevenage
 Figure 13 - XY Trace Plot (Areas 1, 3, 5, 6 & 8)
 30nT/cm at 1:1,500 @ A3
 Copyright Magnitude Surveys Ltd 2022
 Contains Ordnance Survey data © Crown Copyright and database right 2022





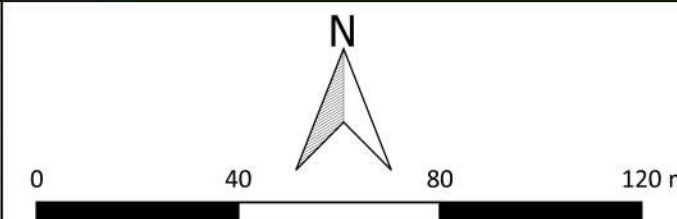
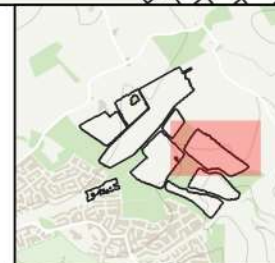
MSTL1320 - Land Northeast of Stevenage
 Figure 14 - Magnetic Gradient (Areas 2, 5, 6 & 7)
 1:1,500 @ A3
 Copyright Magnitude Surveys Ltd 2022
 Contains Ordnance Survey data © Crown Copyright and database right 2022

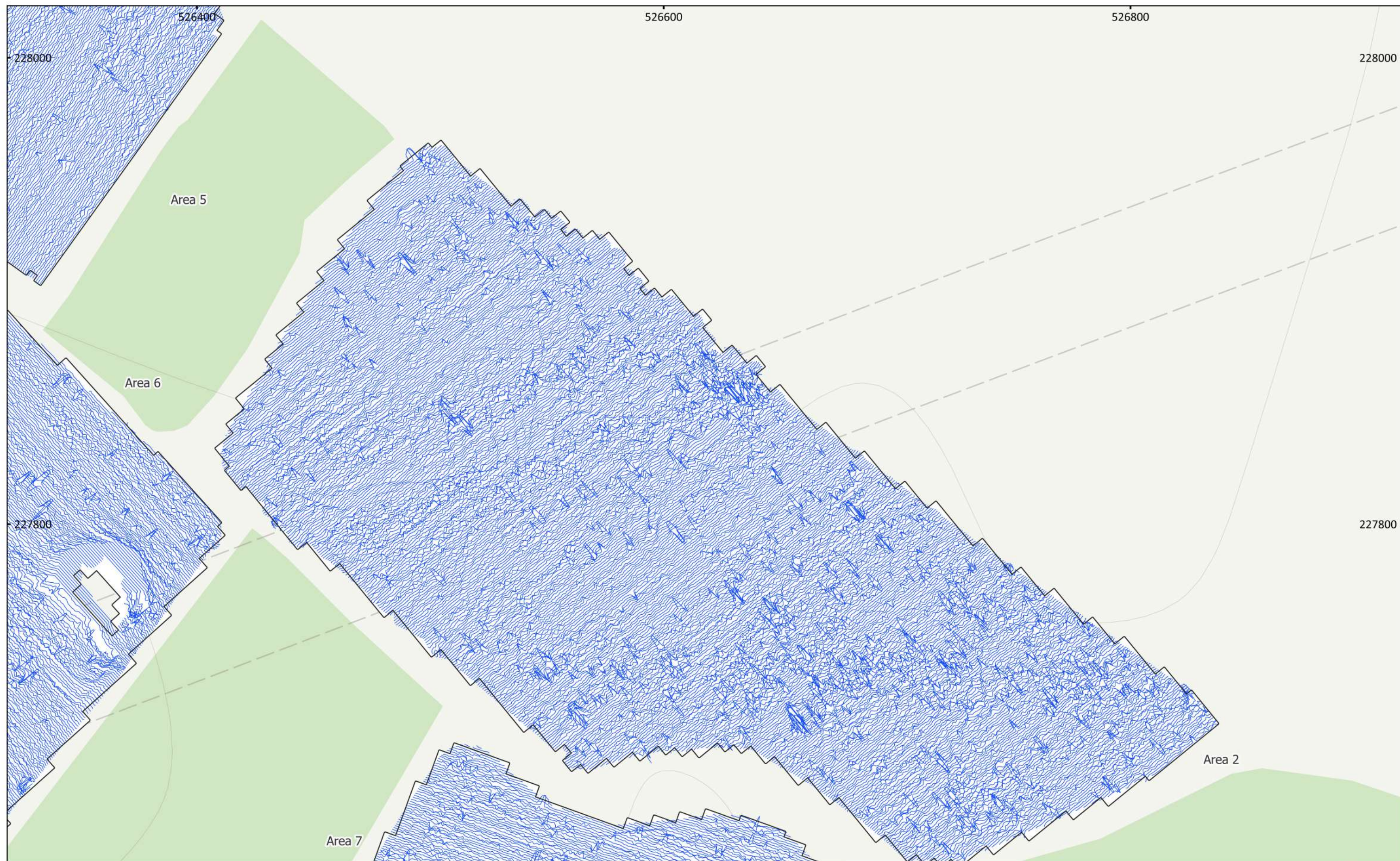




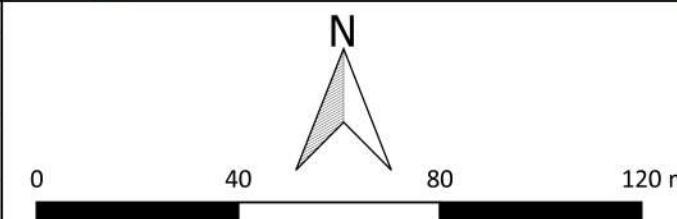
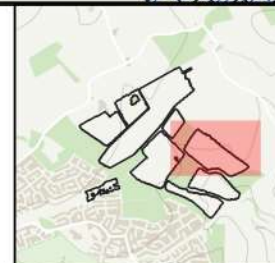
MSTL1320 - Land Northeast of Stevenage
 Figure 15 - Magnetic Interpretation (Areas 2, 5, 6 & 7)
 1:1,500 @ A3
 Copyright Magnitude Surveys Ltd 2022
 Contains Ordnance Survey data © Crown Copyright and database right 2022

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> Magnetic Disturbance Natural (Spread) Natural (Strong) | <ul style="list-style-type: none"> Natural (Weak) Undetermined (Weak) Overhead Cables | <ul style="list-style-type: none"> Agricultural (Trend) Ferrous (Spike) |
|---|---|--|



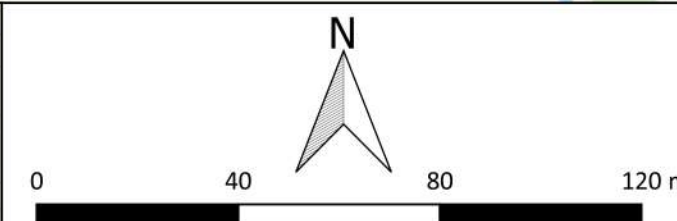
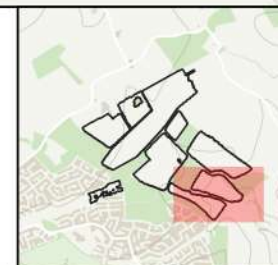
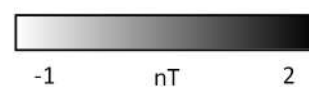


MSTL1320 - Land Northeast of Stevenage
Figure 16 - XY Trace Plot (Areas 2, 5, 6 & 7)
30nT/cm at 1:1,500 @ A3
Copyright Magnitude Surveys Ltd 2022
Contains Ordnance Survey data © Crown Copyright and database right 2022





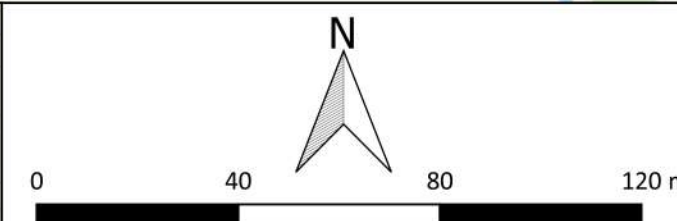
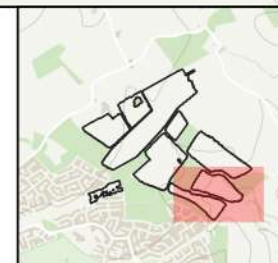
MSTL1320 - Land Northeast of Stevenage
 Figure 17 - Magnetic Gradient (Areas 1, 2 & 7)
 1:1,500 @ A3
 Copyright Magnitude Surveys Ltd 2022
 Contains Ordnance Survey data © Crown Copyright and database right 2022

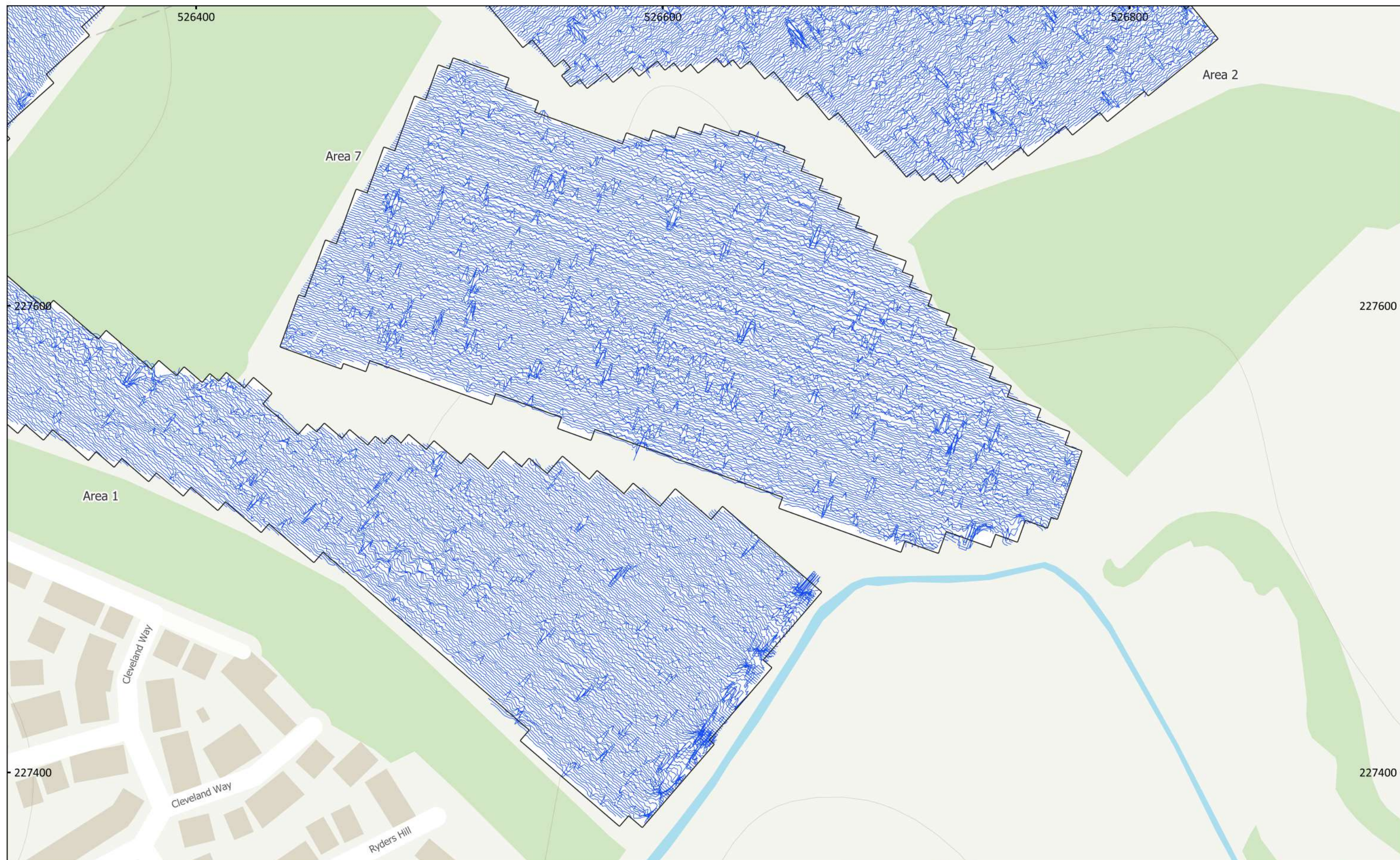




MSTL1320 - Land Northeast of Stevenage
 Figure 18 - Magnetic Interpretation (Areas 1, 2 & 7)
 1:1,500 @ A3
 Copyright Magnitude Surveys Ltd 2022
 Contains Ordnance Survey data © Crown Copyright and database right 2022

- | | | |
|----------------------|----------------------|-----------------|
| Magnetic Disturbance | Natural (Weak) | Ferrous (Spike) |
| Natural (Spread) | Undetermined (Weak) | |
| Natural (Strong) | Agricultural (Trend) | |





MSTL1320 - Land Northeast of Stevenage
Figure 19 - XY Trace Plot (Areas 1, 2 & 7)
30nT/cm at 1:1,500 @ A3
Copyright Magnitude Surveys Ltd 2022
Contains Ordnance Survey data © Crown Copyright and database right 2022

