GAMSTON FIELDS

Archaeological Geophysical Survey

November 2020

Taylor Wimpey

BARWOOD LAND

magnitude surveys

Geophysical Survey Report

of

Land East of Gamston,

Nottingham Airport

For

RPS

Magnitude Surveys Ref: MSSK635

October 2020

magnitude surveys

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Abstract

Magnitude Surveys was commissioned to assess the subsurface archaeological potential of a c. 105 ha area of land east of Gamston, Nottingham Airport, Nottingham. A fluxgate gradiometer survey was successfully completed across the survey area. The geophysical survey has primarily detected anomalies relating to the remains and associated debris of RAF Tollerton. No anomalies suggestive of significant archaeological features were identified. Anomalies related to historical agricultural use have been detected and interpreted as ridge and furrow cultivation across the survey area, along with historic former field boundaries and trackways. Drainage systems have also been identified in all parts of the survey area. A spread relating to the location of a wharf associated with the adjacent Grantham Canal has been identified in the northwest of the survey area, and a series of possible burnt/fired anomalies have been identified across the north and southeast. Natural variations have also been identified, relating to tree throws and slope processes. The impact of modern activity on the results is generally limited to the edges of the survey area and a service running northeast to southwest in the north.

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1. Introduction

1.1. Magnitude Surveys Ltd (MS) was commissioned by RPS on behalf of Taylor Wimpey & Barwood Land to undertake a geophysical survey on a c.105 ha area of land to the east of Gamston, Nottingham Nottinghamshire (SK 6148 3636).

1.2. The geophysical survey comprised hand-pulled, cart-mounted and hand-carried GNSS-positioned fluxgate gradiometer survey. Survey was completed across the survey area with fields numbered sequentially. 'Area 4' has been omitted from the survey results as this was used to designate an area in which repeated measurements were made with the express purpose of providing a check on data quality during the survey.

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, 2014) and the European Archaeological Council (Schmidt et al., 2015).

1.4. It was conducted in line with a WSI produced by MS (2020).

1.5. The first phase of survey commenced on 16/03/2020 and took seven days to complete. The site was revisited on 05/10/2020 at which time a further three days of survey were undertaken.

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 of Archaeological Prospection).

2.2. The directors of MS are involved in the cutting edge of research and the development of guidance/policy. Specifically, Dr. Chrys Harris is the Vice-Chair of the International Society for Archaeological Prospection (ISAP); Finnegan Pope-Carter is a Fellow of the London Geological Society, as well as a member of GeoSIG (CIfA Geophysics Special Interest Group); Dr. Kayt Armstrong is the Editor of ISAP News, and is the UK Management Committee representative for the COST Action SAGA; Dr. Paul Johnson 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 have relevant degree qualifications to archaeology or geophysics. All MS field and office staff have relevant archaeology or geophysics degrees 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 c. 5.2km to the south east of Nottingham (Figure 1). Survey was undertaken across multiple arable fields. The survey area was bounded by Bassingfield to the north, the Nottinghamshire Golf and Country Club to the east, Little Lane and Cotgrave Lane to the south and the A52 to the west (Figure 2).

4.2. Survey considerations:

Survey Area	Ground Conditions	Further Notes
1	The survey area consisted of a flat arable field of crop stubble. Sections of the north-eastern part of the field were waterlogged. Hay bales were present in the centre of the field.	The area was bounded to the north by hedgerow and a public footpath; to the east and south by hedgerows; and to the west by hedgerow and a road.
2	The survey area consisted of an arable field with a young crop. The ground sloped down from the south to the north in the north-western part of the field. The remainder of the area was flat. There were four ponds located adjacent to the northern and eastern boundaries.	The area was bounded to the north and east by hedgerows and a public footpath, and to the west by hedgerow and a housing estate; the south was open to the adjacent airfield.
3	The survey area consisted of a flat arable field of crop stubble.	The area was bounded to the north by a small ditch and bank, and to the east, west and south by hedgerows.
5	The survey area consisted of a flat heavily ploughed arable field.	The area was bounded to the north by a farm and farm tracks; to the east by hedgerows and a road; to the south by open field (different land use), and to the west by trees and a ditch.
6	The survey area consisted of a flat arable field with a young crop.	The area was bounded to the north by a ditch; to the east by open field, to the south by a farm track, and to the west by a ditch
7	The survey area consisted of a slightly sloped, heavily ploughed arable field.	The area was bounded to the north by a hedgerow and trees and field footpath; to the east by field footpath, to the south by ditch and trees, and to the west by a hedgerow and trees.
8	The survey area consisted of a slightly sloped, heavily ploughed arable field.	The area was bounded to the north and east by hedgerow and trees, to the south by housing and field ditch, and to the west by field footpath.

4.3. The underlying geology comprises of mudstone of the Edwalton Member for the entirety of Areas 1 and 3, the northern part of Area 2, the south-western corner of Area 5 and west of Area

7. Sandstone of the Arden Sandstone Formation has been recorded underlying Areas 5, 6, 8, the east of Area 7, and the central part of Area 2. Mudstone of the Branscombe Mudstone Formation has been recorded underlying the south-eastern corner of Area 2. Superficial deposits consisting of head clay, silt, sand and gravel have been recorded underlying the northern parts of Areas 1, 2 and 3. Lacustrine deposits of clay, silt and sand are recorded along the northern edges of Area 1 and 3, and the north-western and south-eastern parts of Area 2. Mid Pleistocene Diamicton till has been recorded in the south-eastern corner of Area 2. (British Geological Survey, 2020).

4.4. The soils consist of slightly acidic loamy and clayey soils with impeded drainage across the majority of the survey area with loamy and clayey floodplain soils with naturally high groundwater along the northern border of Area 1 (Soilscapes, 2020).

5. Archaeological Background

5.1. The following section summarises the archaeological background of the survey area and the surrounding area (1km radius) following a search of Heritage Gateway (2020).

5.2. Within the survey area, five Second World War pillboxes (HER: MNT26290 - 94), related to the RAF Tollerton airfield, have been recorded by field survey within in the central part of Area 2.

5.3. Activity of unknown date has been recorded in the wider environs of the survey area as a field system consisting of ridge and furrow, a bank and terraced ground (HER: L7637), recorded by ground photography c.100m north of the survey area. A ditch (HER: L1167) has been recorded to the immediate west of this field system.

5.4. Prehistoric activity has been recorded in the wider environs of the survey area as findspot of a Palaeolithic hand axe (Pastscape: SK 63 NW 25), c.70m north from the survey area. Cropmarks of an enclosure (HER: MNT787), which have been interpreted as being of probable Iron Age to Roman date, recorded c.386m to the south-west of the survey area.

5.5. Post-medieval to modern activity has been recorded in the wider environs of the survey area as 15 Second World War pillboxes across Nottingham airport and infrastructure related to RAF Tollerton, a former Second World War airfield.

6. Methodology

6.1. Data Collection

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

6.1.2. 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

6.1.3. The magnetic data were collected using MS' bespoke hand-pulled cart and hand-carried GNSS-positioned systems.

6.1.3.1. MS' cart and hand-carried systems are 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.

6.1.3.2. 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.

6.1.3.3. 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 Historic England's standards for "raw or minimally processed data" (see sect 4.2 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 the 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 at different plotting ranges have been used for data interpretation. Greyscale images should be viewed alongside the XY trace plot (Figures 9, 12, 15, 18, 21, 24, 27 30 and 33). XY trace plots visualise the magnitude and form of the geophysical response, aiding in 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, historic maps, LiDAR data, and soil and geology maps. Google Earth (2020) was consulted as well, to compare the results with recent land usages.

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 client provided mapping.

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 of further work in order to constantly improve our knowledge and service.

7.2.Discussion

7.2.1. The geophysical results are presented in consideration with satellite imagery and historic maps (Figure 6).

7.2.2. The fluxgate gradiometer survey has responded well to the environment of the survey area, although the interpretation has been limited in the north and west of Area 2 by a ferrous debris spread caused by former airfield features. The geophysical survey has primarily detected anomalies related to the airfield that was present within the survey area. Modern interference is limited to the edges of the survey area along with a service in the north of the survey area, running northeast to southwest. Natural variations are identified as possible tree throws in the north and south along with diffuse bands of natural variations, probably related to slope processes within the sandstone geology.

7.2.3. The location of the survey areas within the former RAF Tollerton has produced high levels of strong magnetic disturbance, which is to be expected considering the demolition of the airfield features. Within this debris material, various airfield related features have been identified and correlate with old maps of the survey area, dating to the mid-20th century (UK Airfield and Airports, 2014). Anomalies correlating with recorded features have been ascribed as ‘Airfield related’ and represent part of the former runway, and the perimeter track. Scattered ferrous responses likely reflect a combination of debris material and other airfield related activities, including extant Second World War pillboxes. The majority of Area 2 is dominated by high-contrast responses, but some areas have a relatively quiet background. Within these quieter areas more discrete, ephemeral linear features such as ridge and furrow cultivation are more easily identifiable.

7.2.4. Agricultural activity has been identified in the form of historic ridge and furrow across the survey area. These field systems are recorded running in multiple orientations, with various strengths and curvatures. Much of the ridge and furrow that has been detected appears to respect the historic former field boundaries identified. Mapped historic former field boundaries and trackways have been recorded across the survey area

(Figure 6), one of which appears to have been filled with fired or otherwise magnetically enhanced debris, and another former field boundary possibly being reused for drainage in the east of the survey area. Further agricultural activity has been identified in the form of a drainage system across the whole survey area, which appears to follow the course of the ridge and furrow in some places and intersect it in others. This could possibly suggest a longstanding tradition of drainage management of the landscape.

7.2.5. In the northwest of the survey area, a large spread of debris has been identified with an associated service/metal drainage pipe within that continues in the southwest part of Area 7. These anomalies correlate with the location of a wharf associated with the adjacent Grantham Canal, depicted on 2nd Edition OS Maps (Figure 6).

7.2.6. Across the north and southeast of the survey area, strong discrete isolated anomalies have been identified as 'Burnt/ Fired' and are typical of fired material.

7.2.7. In the south of the survey area, enhanced linear anomalies categorised as 'Undetermined Weak' possibly relate to the airfield, but an archaeological or agricultural origin cannot be ruled out. Given the limited archaeological context within the data and nearby magnetic disturbances, a more definitive classification cannot be given.

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. **Magnetic Disturbance** – The strong anomalies produced by extant metallic structures along the edges of the field have been classified as 'Magnetic Disturbance'. These magnetic 'haloes' will obscure the response of any weaker underlying features, should they be present, often over a greater footprint than the structure they are being caused by.

7.3.1.3. **Ferrous (Spike)** – Discrete ferrous-like, dipolar anomalies are likely to be the result of isolated modern metallic debris on or near the ground surface.

7.3.1.4. **Ferrous/Debris (Spread)** – A ferrous/debris spread refers to a concentrated deposition of discrete, dipolar ferrous anomalies and other highly magnetic material.

7.3.1.5. **Undetermined** – Anomalies are classified as Undetermined when the anomaly origin is ambiguous through the geophysical results and there is no supporting or correlative evidence to warrant 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 not ferrous in nature.

7.3.2. Magnetic Results - Specific Anomalies

7.3.2.1. **Airfield related** – In the southern part of Area 2, spreads of strongly ferrous material have been identified (Figures 11 and 14). These collocate with the former runway [**2a**] and perimeter track [**2b**] of RAF Tollerton Second World War airfield (See Section 5.5). The runway is visible on recent satellite imagery (Figure 6).

7.3.2.2. **Ferrous Debris (Spread) –** Characterised by a collection of magnetic material covering an area, these spread disturbances can be related to the WW2 airfield and modern activities. Areas 2, 6 and 8 show the most widespread disturbances across the full survey area. This concentration of debris spread is typical of modern land use, initially as an airfield and subsequent more-contemporary agricultural working of the land. To the west of Area 2, more concentrated areas of this disturbance are noted, corresponding with mapped features relating to the former airfield (Figure 8, 11, 14 and 17).

7.3.2.3. **Magnetic Disturbance** – Across the central part of Area 2, five strong magnetic haloes [**2c**] have been identified (Figure 11 and 14), which correspond to extant Second World War pillboxes (See Section 5.2).

7.3.2.4. **Ridge and Furrow (Trend)** – Across much of the survey area, many linear and curvilinear anomalies have been identified, spaced between c. 4m and c. 10m apart, indicative of a more historic (possibly medieval) form of agricultural practice. These features are more explicit in the total field data, and have been recorded on multiple orientations. Many of these appear to respect the former field boundaries, suggesting they are comparable in age. It is possible that the ridge and furrow may have been reutilised as drainage, especially in the south of Area 2, where the magnetic signal becomes more dipolar where the drains have possibly been placed (Figure 11 and 14).

7.3.2.5. **Agricultural (Strong, Weak & Spread)** – Across Areas 2 and 3, a series of strong and weak linear anomalies have been identified which correspond with the former field boundaries identified on 2nd Edition OS Maps (Figure 6). In the east of Area 2, a strong linear anomaly [**2d**] has been recorded, running for c. 250m approximately east to west. At the western end of this anomaly, the magnetic signal becomes more dipolar, suggesting that the former field boundary was reutilised for drainage purposes. Across the north of Area 2, more diffuse linear and curvilinear spreads of altered magnetic characteristics [**2e**] have been recorded. These align with either trackways or former field boundaries on the 2nd Edition OS Maps (Figure 6). The diffuse nature of these spreads is possibly due to the ploughing out of the feature over time, leaving a spread of material in the topsoil. In the centre of Area 3, a strong linear anomaly [**3a**] has been identified, running for c. 190m. It exhibits a more dipolar magnetic signal than the other former field boundaries, most explicit in the XYs (Figure 24). This

dipolar magnetic signal may be caused by the field boundary being filled with some fired or magnetic debris. Groups of straight linear anomalies have been detected, across Areas 3, 5, 6, 7, and 8. These anomalies have been identified as agricultural trends reflecting modern ploughing regimes that respect the current field system.

7.3.2.6. **Ferrous/Debris (Spread)** – In the eastern part of Area 2, a linear spread of ferrous material [**2f**] has been identified (Figures 8 and 11) running on an approximate north-south alignment. This corresponds with a modern agricultural track. Further amorphous spreads of ferrous material have been identified in the north-eastern corner of Area 2 [**2g**] and the south-western corner of Area 5 [**5a**], which collocate with ponds depicted on historic mapping (Figure 6). In the north of Area 8 a rectangular block of debris material is noted (Figures 31 and 32) – although this anomaly does not co-locate with mapped features (Figure 6) it may identify a former, un-mapped structure possibly relating to either the airfield or agricultural buildings.

7.3.2.7. **Drainage Feature** – Across Areas 1, 2, 3, 7 and 8 a large number of dipolar linear anomalies indicative of ceramic drainage features have been identified. Many of these appear to run in similar orientations to the ridge and furrow identified, especially in the south of Area 2 (Figures 11 and 14) and east of Area 3 (Figure 23). It is possible that the previous ridge and furrow may have been reused for the drainage systems. The drainage in Area 2 is likely to be related to the canal immediately to the north (Figure 20).

7.3.2.8. **Natural** – In the western part of Area 2, several discrete anomalies [**2h**] have been identified amongst the spread of ferrous material (Figure 17). These anomalies collocate with a former area of trees, which are depicted on historic mapping and may relate to the infill of tree throw with more magnetically enhanced material (Figure 6), or to the removal of the trees. In the eastern part of Area 5 [**5b**], central part of Area 6 [**6a**] as well as eastern section of Area 7 [**7b**] diffuse bands of magnetically enhanced material have been identified, which generally follow the contours of the topography. These likely relate to formation processes within the sandstone geology (See Section 4.3).

7.3.2.9. **Former Wharf** – In the north-western corner of Area 1, a large spread of ferrous material [**1a**] has been identified (Figure 20), corresponding to an area depicted on historic mapping as a wharf related to the adjacent Grantham Canal (See Figure 6). A dipolar linear anomaly has been detected running through the ferrous disturbance, matching the position of the former boundary of the wharf and likely relates to an associated metal drainage pipe or service.

7.3.2.10. **Burnt/Fired** – In Areas 1, 2, and 3, discrete strong isolated anomalies [**1b, 2i** &**3b**] have been identified (Figures 8, 14, 17 and 20). These are non- ferrous in the XY trace plot, but more typical of fired material (Figures 9, 15, 18 and 21). There is not enough evidence to suggest a specific origin. It is likely that those

in proximity to the former airfield are of modern origin; however, an archaeological or agricultural origin cannot be ruled out.

7.3.2.11. **Undetermined** – In the north of Area 8 a spread of ferrous debris material has obscured the extend of a number of linear features [**8a**] (Figure 31 and 32). Classified as undetermined it is possible these linear anomalies relate to this spread of material, possibly as drainage or service features or internal features such as wall lines/ divisions. Given the enhancement of this zone of debris, further interpretation is difficult; however, an archaeological origin should not be ruled out.

8. Conclusions

8.1. A fluxgate gradiometer survey has successfully been undertaken across the survey area. The geophysical survey has not detected any anomalies suggestive of significant archaeological features; however, a range of different types of anomalies of agricultural, natural, and modern origin were identified. The underlying sandstone geology has contributed to the weak enhancement of the magnetic data. Natural features have been detected as tree throws and diffuse bands of enhanced materials related to geological formation processes.

8.2. Modern interference is prevalent across the central and northern parts of the survey area, as spreads of ferrous material likely associated with the former Second World War airfield (See Section 5). Runways, a perimeter track and extant pillboxes associated with the airfield were identified and may obscure weaker anomalies in these areas. In the north-western part of the survey area a former wharf associated with the Grantham Canal was identified. Further modern interference detected relates to fencing along field boundaries and buried services.

8.3. Agricultural activity has been detected across the survey area as multiple phases of ridge and furrow cultivation; former field boundaries; drainage, infilled ponds, agricultural tracks and modern ploughing features.

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 the any dictated time embargoes.

10. Copyright

10.1. Copyright and the 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

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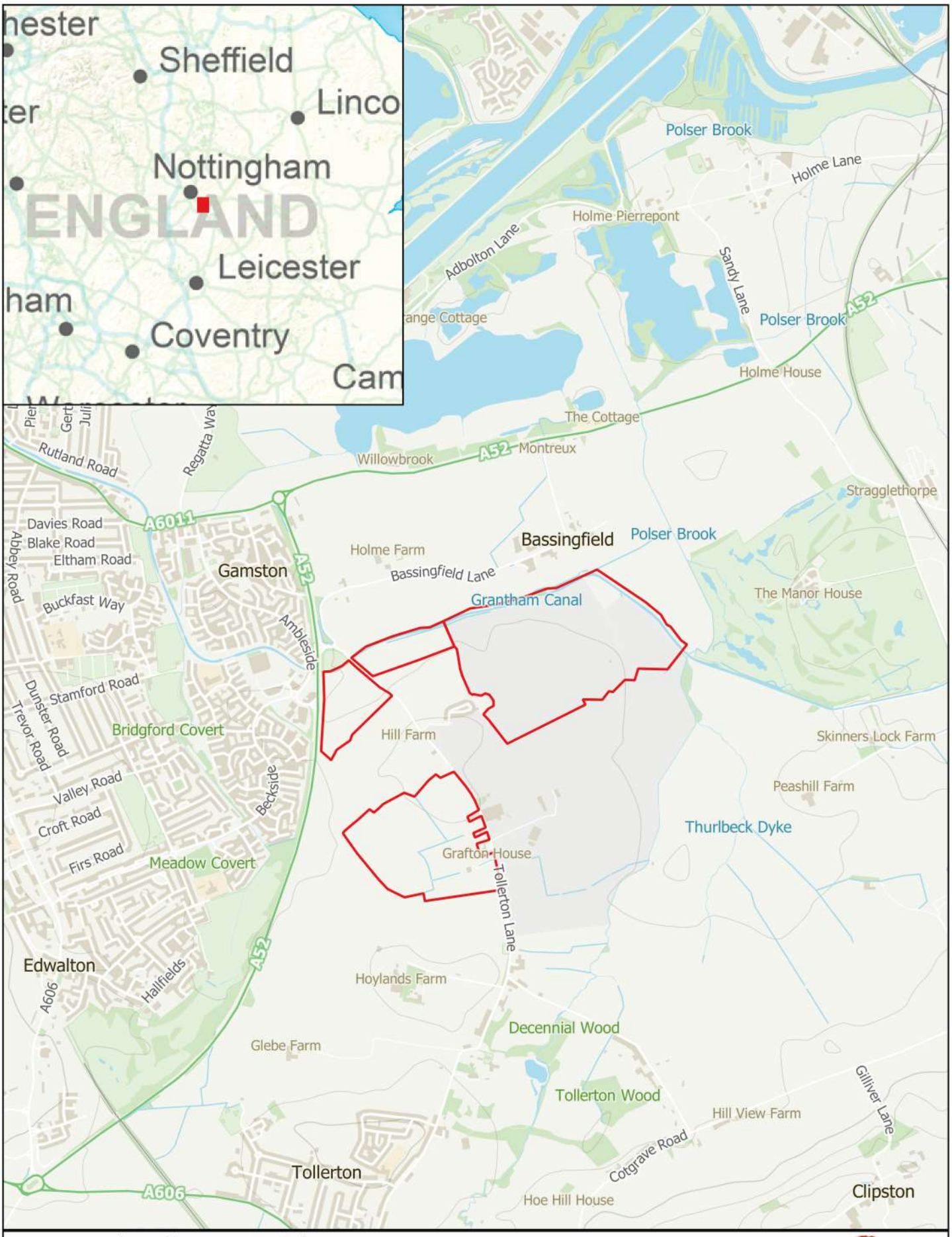
12. Project Metadata

MS Job Code	MSSK635
Project Name	Land East of Gamston, Nottingham Airport
Client	RPS
Grid Reference	SK 6148 3636
Survey Techniques	Magnetometry
Survey Size (ha)	105ha (Magnetometry)
Survey Dates	2020-03-16 -2020-03-24
Project Manager	Frederick Salmon BSc FGS ACIFA
Project Officer	Dr. Kayt Armstrong MCIFA
HER Event No	N/A
OASIS No	N/A
S42 Licence No	N/A
Report Version	Final

13. Document History

Version	Comments	Author	Checked By	Date
0.1	Initial draft for Project Officer to Review	AL, CN	FS	30 March 2020
0.2	Initial Draft for Project Manager to Review	AV, CN	KA	31 March 2020
0.3	Draft including revisited survey area	AC	FS	14 October 2020
0.4	Draft for Project Lead	FS	PJ	21 October 2020
Final	Minor corrections from client	FS	PJ	27 October 2020



MSSK635 - Land East of Gamston, Nottingham Airport
Figure 1 - Site Location
1:25,000 @ A4

Site Boundary

N

0 0.5 1 km

magnitude surveys

461000
462000
463000
337000
336000
Area 1
Area 2
Area 3
Area 8
Area 7
Area 6
Area 5

MSSK635 - Land East of Gamston, Nottingham Airport
Figure 2 - Location of Survey Areas
1:10,000 @ A3

Mapping provided by the client

Survey Areas

N
0 100 200 300 m

magnitude surveys

461000
462000
463000
337000
336000
Area 1
Area 2
Area 3
Area 5
Area 6
Area 7
Area 8

MSSK635 - Land East of Gamston, Nottingham Airport
Figure 3 - Magnetic Total Field (Lower Sensor) (Overview)
1:7,000 @ A3

Mapping provided by the client

48,997 nT 49,005

N

0 100 200 300 m

magnitude surveys

461000
462000
463000
337000
336000
Area 1
Area 2
Area 3
Area 5
Area 6
Area 7
Area 8
-1
nT
2
N
0
100
200
300 m
magnitude surveys

MSSK635 - Land East of Gamston, Nottingham Airport
Figure 4 - Magnetic Gradient (Overview)
1:7,000 @ A3

Mapping provided by the client

461000
462000
463000
337000
336000
Area 1
Area 2
Area 3
Area 5
Area 6
Area 7
Area 8

MSSK635 - Land East of Gamston, Nottingham Airport
Figure 5 - Magnetic Interpretation (Overview)
1:7,000 @ A3

Mapping provided by the client

- Agricultural (Strong)
- Agricultural (Weak)
- Agricultural (Spread)
- Burnt/Fired
- Undetermined (Weak)
- Natural (Strong)
- Natural (Weak)
- Natural (Spread)
- Magnetic Disturbance
- Ferrous/Debris (Spread)
- Former Wharf
- Airfield related
- Agricultural (Trend)
- Service
- Ridge and Furrow (Trend)
- Drainage Feature
- Ferrous (Spike)

N

0 100 200 300 m

magnitude surveys

MSSK635 - Land East of Gamston, Nottingham Airport
Figure 6 - Magnetic Interpretation Over Historic Maps and Satellite Imagery
1:7,000 @ A3

- Agricultural (Strong)
- Agricultural (Weak)
- Agricultural (Spread)
- Burnt/Fired
- Undetermined (Weak)
- Natural (Strong)
- Natural (Weak)
- Natural (Spread)
- Magnetic Disturbance
- Ferrous/Debris (Spread)
- Former Wharf
- Airfield related
- Agricultural (Trend)
- Service
- Ridge and Furrow (Trend)
- Drainage Feature
- Ferrous (Spike)

N

0 100 200 300 m

magnitude surveys

461800

337200

462000

Area 2

337000

462200

337200

336800

MSSK635 - Land East of Gamston, Nottingham Airport
Figure 7 - Magnetic Gradient (Area 2 - North)
1:1,500 @ A3

Mapping provided by the client

-1 nT 2

A52

0 25 50 75 m

magnitude surveys

461800
337200
462000
Area 2
337000
462200
337200
2i
2e
2f
2g
2d
336800

MSSK635 - Land East of Gamston, Nottingham Airport
Figure 8 - Magnetic Interpretation (Area 2 - North)
1:1,500 @ A3

Mapping provided by the client

Agricultural (Strong)
Agricultural (Weak)
Agricultural (Spread)
Burnt/Fired
Magnetic Disturbance
Ferrous/Debris (Spread)
Agricultural (Trend)
Ridge and Furrow (Trend)
Drainage Feature
Ferrous (Spike)

0 25 50 75 m

magnitude surveys

461800

337200

462000

Area 2

337000

462200

337200

336800

MSSK635 - Land East of Gamston, Nottingham Airport
Figure 9 - XY Trace Plot (Area 2 - North)
30nT/cm @ 1:1,500 @ A3

Mapping provided by the client

N

0 25 50 75 m

magnitude surveys

462000

462200 337000

462400

337000

336800

Area 2

336600

336800

462000

MSSK635 - Land East of Gamston, Nottingham Airport
Figure 10 - Magnetic Gradient (Area 2 - East)
1:1,500 @ A3

Mapping provided by the client

-1 nT 2

A57

N

0 25 50 75 m

magnitude surveys

462000

462200 337000

462400

336800

337000

Area 2

2c

2c

2c

336600

462000

336800

MSSK635 - Land East of Gamston, Nottingham Airport
Figure 11 - Magnetic Interpretation (Area 2 - East)
1:1,500 @ A3

Mapping provided by the client

Agricultural (Strong)
Agricultural (Weak)
Magnetic Disturbance
Ferrous/Debris (Spread)
Airfield related
Agricultural (Trend)
Ridge and Furrow (Trend)
Drainage Feature
Ferrous (Spike)

A52

N

0 25 50 75 m

magnitude surveys

462000

462200

337000

462400

336800

Area 2

337000

336600

336800

462000

MSSK635 - Land East of Gamston, Nottingham Airport
Figure 12 - XY Trace Plot (Area 2 - East)
30nT/cm @ 1:1,500 @ A3

Mapping provided by the client

N

0 25 50 75 m

magnitude surveys

461600

336600

336800

462000

336400

Area 2

336600

MSSK635 - Land East of Gamston, Nottingham Airport
Figure 13 - Magnetic Gradient (Area 2 - South)
1:1,500 @ A3

Mapping provided by the client

-1 nT 2

A57

0 25 50 75 m

N

magnitude surveys

461600

336800461800

336600

336800

462000

336400

336600

2i

2i

2c

2c

2c

2b

2a

Area 2

MSSK635 - Land East of Gamston, Nottingham Airport
Figure 14 - Magnetic Interpretation (Area 2 - South)
1:1,500 @ A3

Mapping provided by the client

Agricultural (Strong)
Agricultural (Weak)
Burnt/Fired
Magnetic Disturbance
Ferrous/Debris (Spread)
Airfield related
Ridge and Furrow (Trend)
Drainage Feature
Ferrous (Spike)

A52

N

0 25 50 75 m

magnitude surveys

461600

336800461800

336600

336800

462000

336400

Area 2

336600

MSSK635 - Land East of Gamston, Nottingham Airport
Figure 15 - XY Trace Plot (Area 2 - South)
30nT/cm @ 1:1,500 @ A3

Mapping provided by the client

N

0 25 50 75 m

magnitude surveys

461200
461400
337000
461600
461200
336800
Area 1
461800
337000
Area 2
336600

MSSK635 - Land East of Gamston, Nottingham Airport
Figure 16 - Magnetic Gradient (Area 2 - West. Area 1 - East)
1:1,500 @ A3

Mapping provided by the client

-1 nT 2

N

0 25 50 75 m

magnitude surveys

461200
461400
337000
461600
461200
336800
1b
Area 1
2e
461800
337000
2e
2h
Area 2
336600

MSSK635 - Land East of Gamston, Nottingham Airport
Figure 17 - Magnetic Interpretation (Area 2 - West. Area 1 - East)
1:1,500 @ A3

Mapping provided by the client

Agricultural (Strong)
Agricultural (Weak)
Agricultural (Spread)
Burnt/Fired
Natural (Strong)
Natural (Weak)
Magnetic Disturbance
Ferrous/Debris (Spread)
Service
Ridge and Furrow (Trend)
Drainage Feature
Ferrous (Spike)

A57

N

0 25 50 75 m

magnitude surveys