

sumo

GeoSurveys

PROJECT DESIGN & RISK ASSESSMENT METHOD STATEMENTS FOR GEOPHYSICAL SURVEY

Land off Postland Road, Crowland

Client
Witham Archaeology

Ref. No.
SUMO-23654

OASIS Ref. No.
Sumogeop1-536320

Date
26/08/2025



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Surveyors:

	Signature
	Signature
	Signature
	Signature

Prepared By	Signature	Date	Approved By	Signature	Date
Charlotte Mawdsley		26.08.2025	Sion Haddrell		26.08.2025

1 INTRODUCTION, SITE LOCATION

- 1.1 **SUMO GeoSurveys** on behalf of **SUMO Services Ltd** has been contracted to carry out a geophysical survey.
- 1.2 This survey forms part of the programme of pre-determination archaeological works.
- 1.3 The site consists of 1.3 ha of land at Land off Postland Road, Crowland (See Figure 1).
- 1.4 The site work will take place on a date yet to be confirmed.
- 1.5 Preliminary results will be available within a couple of days after completion of fieldwork.
- 1.6 Final report is typically available 1 week after completion of fieldwork.

2 SURVEY OBJECTIVE (S)

- 2.1 To determine the presence/absence of archaeological features. The results of the survey will inform the requirement and scope for further archaeological investigation.

3 CRITERIA FOR THE SELECTION OF THE GEOPHYSICAL METHOD

- 3.1 Bedrock geology: Oxford Clay Formation – Mudstone.
Superficial geology: Abbey Sand and Gravel - Sand and gravel (BGS 2025).
- 3.2 Archaeology: An archaeological background is yet to be provided.
- 3.3 Detailed magnetic survey has been selected as the most suitable technique for this site as it can detect a wide range of features including those that may be associated with later prehistoric occupation and medieval settlement such as ditches, land boundaries and agricultural features, including ridge and furrow. It is also fast and more suited to prospection over large survey areas.
- 3.4 There are no Scheduled Monuments on the site thus Scheduled Monument Consent is not required.

4 SITE METHODOLOGY

- 4.1 A temporary grid system will be established over the site and marked out using wooden pegs or canes. The location of the grid will be set out using an RTK GPS system theoretically accurate to some 0.01m and referenced to OS co-ordinates.

Dependent upon access agreements and ground conditions, either a cart or hand-held system will be employed.

- 4.2.1 **Cart System:** Data will be collected using a cart carrying four Bartington magnetic sensors (see below) or Foerster sensors. Each data point is geographically referenced using an on-board Trimble RTK survey grade GPS system. Readings will be taken at 0.125m centres along traverses 1.0m apart.
- 4.2.2 **Hand-Held:** Data will be collected using a Bartington Grad 601-2. The instrument consists of two paired sensors (see below) and readings are logged at 0.25m centres along traverses 1.0m apart across 30m grids. The collection of data at 0.25m centres provides an appropriate methodology balancing cost and time with resolution as per Historic England guidelines.
- 4.3 **Sensors:** Four sensors mounted 1m horizontally apart and very accurately aligned to nullify the effects of the earth's magnetic field. Readings relate to the difference in localised magnetic anomalies compared with the general magnetic background.
- 4.4 **Cart System:** The readings are logged directly onto a laptop and stored on cloud based backup daily.
- 4.5 **Hand-held:** The readings are logged consecutively into the data logger which in turn is daily downloaded into a portable computer whilst on site. At the end of each job, data are transferred to the office for processing and presentation.

5 REPORTING AND ARCHIVING

- 5.1 The report for the survey will comprise a written section describing the background to the survey, the methodologies used and a discussion of the results. The text will be illustrated using plots of the results using CAD to overlay the results and interpretations over the base mapping. The format for these drawings will either be A3 or A1 depending on the size and configuration of the survey areas.
- 5.2 Processing of the data will be carried out using the specialist software **Anomaly**. This can emphasise various aspects contained within the data, but which are often not easily seen in the raw data. Basic processing of the magnetic data involves 'equalising' the background levels with respect to adjacent traverses (Zero mean traverse). 'Despiking' is very occasionally performed to remove the anomalies resulting from small iron objects often found on agricultural land but this practice is not favoured as it creates a 'false' dataset. Once the basic processing has levelled the background it is then possible to carry out further processing including de-stagger and interpolation to emphasise the archaeological or man-made anomalies.
- 5.3 The presentation of the CAD drawings will include:
- a general location plan
 - detailed site location showing the grid position
 - grey scale plots of the minimally processed and processed data

- Interpretation plot showing anomalies identified

5.4 As a minimum the report will contain;

- Non-technical summary
- Introductory statement
- Aims and purposes of the evaluation
- Methodology
- Results, including a confidence rating for the results and their interpretation
- Conclusion
- Plans/plots, including interpretive plans of the results
- References

5.5 The archaeological DBA, if provided, will be consulted, along with historic mapping of the survey area to inform the interpretation of anomalies located during the survey. The degree of uncertainty pertaining to influences drawn from the results will also be discussed.

5.6 The full report will be uploaded to the OASIS database with a 12-month release delay unless informed otherwise.

5.7 The minimally processed data, data images, XY traces and a copy of this report are stored in SUMO GeoSurveys' digital archive, on an internal RAID configured NAS drive in the Midlands Office. These data are also backed up to the Cloud for off-site storage.

5.8 **Data Management plan**

Project ID / OASIS ID

SUMO-23654 / sumogeop1-536320

Project Name

Land off Postland Road, Crowland

Project Description

Detailed magnetic survey over approx. 1.3 ha

Client

Witham Archaeology

Project Manager

Tom Cockcroft

Field Leader

TBC

Date DMP created

26/08/2025

Date DMP last updated

26/08/2025

Version

1

Technique - data

Detailed Magnetometry

Manual – cart - other

ATV/Cart Handheld magnetometers.

Documentation and metadata

All documentation and data produced so far are stored on SUMO servers in a specific job file.

Data storage, access and back-up

- SUMO Secure server during the project life set up in a RAID configuration (a RAID configuration incorporates a level of data redundancy meaning if a single hard drive in fails data can still be restored).
- Snap shots of the data will be made at several intervals during the day to allow data to be restored for up to 30 days if changed / deleted.
- Once the final report has been completed data will be moved onto NAS drive set up in a RAID configuration.
- All data is backed up to an off-site location (Cloud storage).

ADS or other depository - Costs

ADS has not been requested, all data, reports and corresponding documentation are securely stored by SUMO.

Digital files and data to be selected for archiving

- Raw data in XYZ format .csv and .png plus .pgw world file
- Processed data as .png plus .pgw world file
- Survey written report .pdf
- Survey photos .png
- CAD and Vector graphics (interpretations) in .dwg format

Notes

6 STAFFING

- 6.1 Site work will be carried out by an appropriate number of field teams (led by an Experienced Team Leader) to complete the work within the given timescale. The Team will be co-ordinated from designated offices personnel, where the first point of contact for the client and site team will be:

Project Officer Tom Cockcroft 07736 164669 tom.cockcroft@sumoservices.com

Team Leader TBC

7 WORKING PRACTICES AND STANDARDS

- 7.1 All site work and reporting will be carried out in accordance with the latest guidance documents issued by Historic England (EH 2008) (then English Heritage), the Chartered Institute for Archaeologists (CIfA 2014, updated 2022), the European Archaeological Council (EAC 2016)
- 7.2 **SUMO GeoSurveys** is a trading name of **SUMO Geophysics Limited** which is a **Registered Organisation** and as such is committed to upholding the standards and policies set out by the **Chartered Institute for Archaeologists**.
- 7.3 **SUMO GeoSurveys** (through its parent company **SUMO Services Ltd**) is a member of the **EuroGPR Association**

8 HEALTH AND SAFETY

- 8.1 Colin Carnachan, Company Secretary is the responsible post holder for Health & Safety matters; **SUMO** also employs an external Health & Safety advisor who can be consulted if necessary.
- 8.2 All **SUMO** team leaders are first-aid trained, with all of our field operatives being part of a rolling programme of first-aid training.
- 8.3 All **SUMO** field teams are equipped with mobile phones for use in an emergency.
- 8.4 In the event of an emergency the team will immediately stop work and report the incident to the relevant emergency services and **SUMO** head office. If it is safe to do so they will administer first-aid and render assistance to any emergency teams on site.
- 8.5 **SUMO** will monitor the general safety arrangements and will communicate any further requirements / short falls to the client.
- 8.6 **SUMO** site personnel will be equipped with full Personal Protective Equipment (PPE).
- 8.7 In the event of an Accident: all **SUMO** site operatives are trained to Appointed Persons standard and all vehicles carry first aid kits. In the event of a serious injury/accident dial 999.
- 8.8 In case of minor injury, the closest **A & E Hospital** – see Figure 2.
- 8.9 **Welfare Facilities** – see Figure 3.

8.10 Emergency Contacts

In the event of an accident staff to report in accordance with Sumo Ltd's Health and Safety Policy and in accordance with RIDDOR.

Name	Company	Role	Telephone
Colin Carnachan	SUMO Services Ltd	Managing Director	02392 415020
Simon Haddrell	SUMO GeoSurveys	Operations Director	01684 592266
Tom Cockcroft	SUMO GeoSurveys	Project Officer	07736 164669
TBC	SUMO GeoSurveys	On site Team Leader	
Susan Hislop	Witham Archaeology	Client	+441529300890

9 INSURANCES

9.1 **SUMO** carries a limit of £10 million Employers liability insurance.

9.2 **SUMO** carries a limit of £10 million Public liability insurance and Products liability insurance.

9.3 **SUMO** carries a limit of £5 million Professional Indemnity insurance

10 References

BGS 2025 *Geology of Britain Viewer*, British Geological Survey, website:
(<http://www.bgs.ac.uk/opengeoscience/home.html?Accordion1=1#maps>)

CIfA 2020 *Standard and Guidance for Archaeological Geophysical Survey*. 2014 amended 2020.
CIfA Guidance note. Chartered Institute for Archaeologists, Reading
https://www.archaeologists.net/sites/default/files/CIfAS%26GGeophysics_3.pdf

CU 2025 *The Soils Guide*. www.landis.org.uk. Cranfield University, UK. website:
<http://mapapps2.bgs.ac.uk/ukso/home.html>

EAC 2016 *EAC Guidelines for the Use of Geophysics in Archaeology*, European Archaeological Council, Guidelines 2.

EH 2008 *Geophysical Survey in Archaeological Field Evaluation*. English Heritage, Swindon
(now withdrawn, but used for evaluating suitability of soil types)

Figure 1
Site Location



Figure 2
Nearest Hospital

Peterborough City Hospital Emergency Room, Peterborough PE3 9GZ
Tel: 01733 678000



Figure 3 Welfare Facilities

Surveyors will use client site facilities only with prior permission. In the event that welfare facilities are not available at the site, then staff will use local public amenities.

Hand gel / wipes / water carrier for hand washing at remote locations must be carried at all time. The team Leader is responsible for re-stocking these when away from the office.

The closest public amenities are at:
Public Toilets, West St, Crowland, Peterborough, PE6 0ED.

