Archaeological Services
University of Durham

Wall Farm, Kynnersley, Shropshire

geophysical surveys

for
ARCUS

on behalf of
Severn Trent Water

Report 1989
July 2008

Archaeological Services
Durham University
South Road
Durham DH1 3LE
Tel: 0191 334 1121
Fax: 0191 334 1126
archaeological.services@durham.ac.uk
www.durham.ac.uk/archaeological.services

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Unit R6, Riverside Block, Sheaf Bank Business Park, Prospect Road, Sheffield S2 3EN

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Contents

1. Summary

The project

1.1 This report presents the results of geophysical surveys conducted in advance of a proposed mains renewal scheme at Wall Farm, Kynnersley in Shropshire. The works comprised the geomagnetic survey of approximately 2ha within a 20m-wide corridor.

1.2 The works were commissioned by ARCUS (Archaeological Research & Consultancy at the University of Sheffield), acting on behalf of Severn Trent Water, and conducted by Archaeological Services Durham University.

Results

1.3 Several probable soil-filled features were detected. Some of these may reflect parts of small palaeochannels whilst others may be archaeological ditches and pits.

1.4 One concentration of small intense anomalies, in survey Area 6, could possibly reflect the remains of a burnt mound, though there is no topographic suggestion of a mound nor geomagnetic evidence for an adjacent former watercourse or other features.

1.5 Interpretation of geophysical survey data from such narrow corridors is often problematic and tentative as there is context and less scope to distinguish anomalies of potential interest from the background variation.

2. Project background

Location (Figures 1 & 2)

2.1 The surveys were located along the proposed routes of two pipelines at Wall Farm, Kynnersley, just to the north of Telford in Shropshire (NGR: SJ 6809 1778). Wall Farm is located in the centre of Wall Camp, an Iron Age hillfort and Scheduled Ancient Monument (SAM). Eight surveys were undertaken in two 20m-wide corridors along the 1km of proposed pipelines, totalling approximately 2ha.

Development proposal

2.2 The development proposed by Severn Trent Water comprises the installation of a new water main and service at Wall Farm. The proposed new water main will run in an arc around the western and northern sides of Wall Camp; the new water service, largely within the SAM, will connect the main to the farm.

Objective

2.3 The principal aim of the surveys was to assess the nature and extent of any sub-surface features of potential archaeological significance within the proposed development area, so that an informed decision may be made regarding the nature and scope of any further scheme of archaeological works that may be required in advance of development.

Methods statement

2.4 The surveys have been undertaken in accordance with a Written Scheme of Investigation for Archaeological Mitigation (Appendix, this report) prepared by ARCUS and approved by the Historic Environment Countryside Officer at Shropshire County Council and by the English Heritage Inspector of Ancient Monuments for the West Midlands.

2.5 Survey of the proposed water service was undertaken in accordance with Scheduled Monument Consent granted by English Heritage under Section 42 of the Ancient Monuments and Areas Act 1979 (as amended by the National Heritage Act 1983).

Dates

2.6 Fieldwork was undertaken between the 7th and 9th July 2008. This report was prepared between the 10th and 16th July 2008.

Personnel

2.7 Fieldwork was conducted by Richard Villis (Supervisor) and Edward Davies. This report was prepared by Duncan Hale, the Project Manager, with illustrations by Janine Wilson.

Archive/OASIS

2.8 The site code is **KWF08**, for **K**ynnersley **W**all **F**arm 20**08**. The survey archive will be supplied on CD to ARCUS for deposition with the project archive in due course. Archaeological Services is registered with the **O**nline **A**cces**S** to

the **I**ndex of archaeological investigation**S** project (OASIS). The OASIS ID number for this project is **archaeol3-45534**.

3. Archaeological and historical background

3.1 Wall Camp is a well-preserved, multi-vallate Middle-Late Iron Age hillfort and a SAM (no. 34907) surrounded by the Weald Moors. Iron Age occupation of the site was confirmed in 1983 by DoE excavations prior to the construction of a slurry pit.

3.2 Numerous Middle-Late Bronze Age burnt mounds are known from the Weald Moors, frequently located on the transition from peat to mineral soils. Burnt mounds are known to the east of Wall Camp and it was considered likely that others might lie to the north and west.

4. Landuse, topography and geology

4.1 At the time of survey the proposed pipeline corridors passed through five fields of pasture and silage. A number of large bales were present in Areas 1 and 2.

4.2 The south-western and north-eastern ends of the proposed main pipeline both lie at approximately 55m OD. Wall Farm is at approximately 60m OD.

4.3 The hillfort lies on a low 'island' of sandstone and boulder clay surrounded by the Weald Moors, a wetland environment with extensive surviving peat deposits.

5. Geophysical survey

Standards

5.1 The surveys and reporting were conducted in accordance with English Heritage guidelines *Geophysical survey in archaeological field evaluation, 2nd edition* (David, Linford & Linford 2008); the Institute of Field Archaeologists Technical Paper No.6, *The use of geophysical techniques in archaeological evaluations* (Gaffney, Gater & Ovenden 2002); and the Archaeology Data Service *Geophysical Data in Archaeology: A Guide to Good Practice* (Schmidt 2002).

Technique selection

5.2 Geophysical survey enables the relatively rapid and non-invasive identification of sub-surface features of potential archaeological significance and can involve a variety of complementary techniques such as magnetometry, earth electrical resistance, ground-penetrating radar and electromagnetic survey. Some techniques are more suitable than others in particular situations, depending on a variety of site-specific factors including the nature of likely targets; depth of likely targets; ground conditions; proximity of buildings, fences or services and the local geology and drift.

5.3 In this instance, it was considered likely that cut features such as ditches and pits might be present on the site, and that other types of feature such as burnt mounds, trackways, wall foundations and fired structures (for example kilns and hearths) might also be present.

5.4 Given the anticipated shallowness of targets and the non-igneous geological environment of the study area a geomagnetic technique, fluxgate gradiometry, was considered appropriate for detecting the types of feature mentioned above. This technique involves the use of hand-held magnetometers to detect and record anomalies in the vertical component of the Earth's magnetic field caused by variations in soil magnetic susceptibility or permanent magnetisation; such anomalies can reflect archaeological features.

Field methods

5.5 A 20m grid was established along the pipeline corridors as specified and tied-in to known, mapped Ordnance Survey points using a Trimble Pathfinder Pro XRS global positioning system (GPS) with real-time correction providing sub-metre accuracy.

5.6 Measurements of vertical geomagnetic field gradient were determined using Bartington Grad601-2 dual fluxgate gradiometers. A zig-zag traverse scheme was employed and data were logged in 20m grid units. The instrument sensitivity was set to 0.1nT, the sample interval to 0.25m and the traverse interval to 1.0m, thus providing 1600 sample measurements per 20m grid unit.

5.7 Data were downloaded on site into a laptop computer for initial processing and storage and subsequently transferred to a desktop computer for processing, interpretation and archiving.

Data processing

5.8 Geoplot v.3 software was used to process the geophysical data and to produce both continuous tone greyscale images and trace plots of the raw (unfiltered) data. The greyscale images and interpretations are presented in Figures 2-5; the trace plots are provided in Figure 6. In the greyscale images, positive magnetic anomalies are displayed as dark grey and negative magnetic anomalies as light grey. A palette bar relates the greyscale intensities to anomaly values in nanoTesla.

6.9 The following basic processing functions have been applied to each dataset:

clip	clips, or limits data to specified maximum or minimum values; to eliminate large noise spikes; also generally makes statistical calculations more realistic.
zero mean traverse	sets the background mean of each traverse within a grid to zero; for removing striping effects in the traverse direction and removing grid edge discontinuities.
despike	locates and suppresses iron spikes in gradiometer data.

interpolate	increases the number of data points in a survey to match sample and traverse intervals. In this instance the data have been interpolated to 0.25m x 0.25m intervals.

Interpretation: anomaly types

5.10 Colour-coded geophysical interpretation plans are provided in Figure 4. Three types of geomagnetic anomaly have been distinguished in the data:

positive magnetic	regions of anomalously high or positive magnetic field gradient, which may be associated with high magnetic susceptibility soil-filled structures such as pits and ditches.
negative magnetic	regions of anomalously low or negative magnetic field gradient, which may correspond to features of low magnetic susceptibility such as wall footings and other concentrations of sedimentary rock or voids.
dipolar magnetic	paired positive-negative magnetic anomalies, which typically reflect ferrous or fired materials (including fences and service pipes) and/or fired structures such as kilns or hearths.

Interpretation: features

5.11 Colour-coded archaeological interpretation plans are provided in Figure 5.

General comments

5.12 Except where stated otherwise in the text below, positive magnetic anomalies are taken to reflect relatively high magnetic susceptibility materials, typically sediments in cut archaeological features (such as furrows, ditches or pits) whose magnetic susceptibility has been enhanced by decomposed organic matter or by burning.

5.13 Small, discrete dipolar magnetic anomalies have been detected in each survey area. These almost certainly reflect items of near-surface ferrous and/or fired debris, such as horseshoes and brick fragments, and in most cases have little or no archaeological significance. A sample of these is shown on the geophysical interpretation plans, however, they have been omitted from the archaeological interpretation plans and the following discussion.

5.14 Large dipolar magnetic anomalies at the ends of the survey areas typically reflect wire fences, often within hedgerows.

Area 1

5.15 Two broad, diffuse areas of weak positive magnetisation have been detected in the northern part of this survey corridor. Similar anomalies are also evident in the adjacent surveys of Areas 2 and 4. The anomalies could reflect possible former courses of the Strine Brook or, perhaps less likely, the remains of soil-filled ditches. A possible, small u-shaped ditch has been detected here also.

5.16 A concentration of small dipolar magnetic anomalies is likely to reflect ferrous and/or fired materials. Although individual burnt stones can be represented by such anomalies it is considered unlikely that these anomalies together represent the remains of a burnt mound for a number of reasons: distance from a water source; too few anomalies; no surface expression on ground; no geophysical evidence for associated trough or fire-pit.

Area 2

5.17 In addition to the possible small palaeochannels, several probable soil-filled features have been detected, largely towards the eastern end of this transect. Some of these could be archaeological ditches.

Area 3

5.18 Some very weak positive magnetic anomalies here could possibly reflect truncated ditch remains.

Area 4

5.19 As detected in Areas 1 and 2, a number of broad positive magnetic anomalies here could reflect soil-filled features.

5.20 A large dipolar magnetic anomaly in the central part of the survey reflects metal railings around a tree. A similar anomaly towards the western end of the transect almost certainly reflects a large, sub-surface ferrous object.

Area 5

5.21 A number of perpendicular positive and negative magnetic striations have been detected in this area, parallel to existing field boundaries. These anomalies are likely to reflect former ploughing of this field.

5.22 Additional possible soil-filled features or parts of palaeochannels have also been detected.

Area 6

5.23 The most prominent feature in this survey comprises a concentration of small dipolar magnetic anomalies. It is possible that these anomalies reflect burnt stones from a former burnt mound. The concentration is vaguely crescent-shaped but there is no geomagnetic evidence for a former water course adjacent to the feature (a stream is culverted 25m to the east of the feature) and again there is no surface expression of a former mound. The anomalies may otherwise reflect a dump of ferrous or mixed materials.

Area 7

5.24 The only anomalies detected here comprise occasional small dipoles probably reflecting near-surface ferrous litter.

Area 8

5.25 A possible soil-filled feature was detected crossing this survey.

5.26 Geomagnetic anomalies at the southern end of the transect reflect an existing ferrous pipe.

6. Conclusions

6.1 Geomagnetic surveys were undertaken over approximately 2ha of proposed pipeline corridor at Wall Farm, Kynnersley, Shropshire.

6.2 Several probable soil-filled features were detected. Some of these may reflect parts of small palaeochannels whilst others may be archaeological ditches and pits.

6.3 One particular concentration of small intense anomalies, in survey Area 6, could possibly reflect the remains of a burnt mound, though there is no topographic suggestion of a mound nor geomagnetic evidence for an adjacent former watercourse or other features.

6.4 Interpretation of geophysical survey data from such narrow corridors is often problematic and tentative as there is less context and less scope to distinguish anomalies of potential interest from the background variation.

7. Sources

David, A, Linford, N, & Linford, P, 2008 *Geophysical survey in archaeological field evaluation, 2nd edition,* English Heritage

Gaffney, C, Gater, J, & Ovenden, S, 2002 *The use of geophysical techniques in archaeological evaluations*, Technical Paper **6**, Institute of Field Archaeologists

Schmidt, A, 2002 *Geophysical Data in Archaeology: A Guide to Good Practice*, Archaeology Data Service, Arts and Humanities Data Service

Appendix

Written Scheme of Investigation for Archaeological Mitigation

CONTENTS

1 INTRODUCTION

ARCUS have been commissioned by Severn Trent Water to compile a Written Scheme of Investigation (WSI) for archaeological evaluation of the proposed pipeline works ate Wall Farm Kynnersley. The route is of interest as it rounds around the Scheduled Ancient Monument of Wall Camp (SAM No. 34907).

1.1 Site Location and Land Use

The route of the proposed pipeline runs northeast to southwest in an arc around the scheduled ancient monument with a short side arm running into the scheduled area to serve Wall Farm which lies within the scheduled ancient monument. The land around and within the site is farm land.

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

The archaeological summary is based on information provided by Shropshire SMR. Wall Camp is well preserved middle to late Iron Age Hillfort surviving as earthwork remains. This is a scheduled ancient monument (SAM No. 34907). The hillfort lies on a low “island” surrounded by the Weald Moors a wetland environment with extensive surviving peat deposits. There are numerous middle to late Bronze Age burnt mounds known from the Weald Moors, these are frequently associated with the transition from peat to mineral soils. Burnt mounds are known from the eastern side of Wall Camp but other unknown burnt mounds could lie to the north and west of the site.

3 SCOPE OF WORKS

Shropshire County Council have agreed a programme of works to evaluate, preserve and record the archaeological remains along the pipeline route. These works fall into three different elements, redesign, evaluation and mitigation.

3.1 Redesign

Following discussions between Shropshire County Council, Severn Trent Water and Heartlands Pipelines it has been agreed that the main pipeline will run at leats 20m, from the scheduled area. However, the side arm of the pipeline running to wall Farm will require Scheduled Monument Consent.

3.2 Evaluation (fieldwork phase 1)

A phase of archaeological field evaluation has been agreed and this WSI describes the methodology to be employed in this stage of works. This will be discussed further below. A brief for the archaeological field evaluation has been produced by Shropshire County Council.

3.3 Mitigation (fieldwork phase 2)

Following the completion of the evaluation a programme of mitigation works will be undertaken during construction works on site to enable a record to be made of any archaeological remains or paleo-environmentally significant deposits disturbed by the pipeline construction activities. This phase of work is likely to comprise a watching brief on groundworks with sampling of archaeological and palaeonvironmental deposits as required. This WSI gives an outline of a watching brief methodology for the mitigation but this is subject to revision depending on the results of the evaluation works.

3 AIMS OF THE ARCHAEOLOGICAL MITIGATION

The aims of the archaeological evaluation are to

• to gather sufficient information to establish more accurately the presence or

absence of archaeological remains within the proposed development area,
• to determine the extent, condition, character, importance and date of any archaeological remains present,
• to assess the survival of peat deposits in the area,
• to provide information that will enable the remains to be placed with their local, regional, and national context and an assessment of the significance of the archaeology of the site to be made,
• to provide a basis on which to judge the impact of the development on the archaeology and to ensure that adequate provision is made for the mitigation stage.

4 EVALUATION METHODOLOGY

The field evaluation of the pipeline route will involve three elements of work.
• Geophysical survey
• Test pitting
• Coring

4.1 Geophysical Surevy

A magnetometry survey for the whole of the study area will be conducted to locate any archaeological features within it. The methodology for the geophysical survey has been provided by Archaeological Services of the University of Durham.

4.1.1 Introduction

This document comprises our methods statement for conducting detailed fluxgate gradiometer surveys along the proposed route of a new pipeline at Kynnersley Shropshire. The pipeline route survey will cover a corridor 20m wide The principal aim of the surveys will be to assess the nature and extent of any subsurface features of potential archaeological significance so that an informed decision may be made regarding the nature and scope of any further scheme of archaeological works that may be required. A geomagnetic technique, using fluxgate gradiometry, is considered appropriate in this instance. Archaeological Services have demonstrated the efficacy of this technique on several large surveys in the Cheltenham area in recent years, for example at Longford, Innsworth, Tewkesbury and Leckhampton (Archaeological Services Reports 1115, 1359/1386, 1486 and 1522 respectively).

4.1.2 Capability statement

Archaeological Services Durham University is geared towards both research and

Commercial projects, particularly for the environmental and development industries, and has an established record of working with English Heritage, Historic Scotland, CADW, Ministry of Defence, Highways Agency, The National Trust, National Park Authorities, County and City Councils and many private corporations, developers, architects and environmental consultants. We have considerable experience in managing and conducting projects of any scale, and have successfully completed over 1,600 projects during the last thirteen years. Archaeological Services incorporates a range of in-house specialist services and laboratories, which are regularly employed by other archaeological and environmental contractors. Geophysical surveying is one such service.

4.1.3 Geophysical Survey Services

We undertake geophysical surveys for a wide variety of commercial and academic clients throughout the UK and abroad. We conduct several hundred hectares of geophysical survey each year for proposed developments including utilities, mineral extraction schemes, road improvements, flood alleviation schemes, wind farms and large housing and industrial developments. The largest of these recent schemes has entailed the detailed survey of over 230ha along the A1(T) road between Dishforth and Barton in North Yorkshire. The service is managed by Duncan Hale BA AIFA (Project Manager), an expert in works of this type, who has conducted some 650 geophysical survey projects during the past sixteen years across the UK, Ireland and Egypt, with some projects involving over 100 separate surveys. Duncan is a consultant for the forthcoming revised edition of the English Heritage geophysical survey guidelines. He is assisted by Graeme Attwood BA, Lorne Elliott BSc and Natalie Swann BSc, who have been conducting surveys of this type for Archaeological Services over recent years. These project leaders are supported by qualified, experienced members of our team using state-ofthe- art field instruments and software; an additional six members of our field team are specifically trained in geophysical survey techniques, data processing and interpretation. This provides a sound resource base and enables a rapid response to clients' requirements.
The majority of our surveys have involved the use of fluxgate gradiometers (magnetic) and/or electrical resistance meters (resistivity). We can also conduct electromagnetic surveys using EM31 meters, ground-penetrating radar (GPR) surveys and electrical resistivity profiling. All our geophysical work is carried out in accordance with English Heritage Research and Professional Services Guideline No.1, Geophysical survey in archaeological field evaluation (revised edition forthcoming); the Institute of Field Archaeologists Paper No.6, The use of geophysical techniques in archaeological evaluations (Gaffney et al. 2002); and the Archaeology Data Service Geophysical Data in Archaeology: A Guide to Good Practice (Schmidt 2001). All our survey reports are available in county Historic Environment Record (HER) offices and through OASIS (the Online AccesS to the Index of archaeological investigationS project); some are also published in journals, monographs and books.

4.1.4 Methods statement

Technique selection

Geophysical surveying enables the relatively rapid and non-invasive identification of potential archaeological features and can involve a variety of complementary techniques such as magnetometry, electrical resistivity, ground-penetrating radar and electromagnetic survey. Some techniques are more suitable than others in particular situations, depending on a variety of site-specific factors including the nature of likely targets; depth of likely targets; ground conditions; proximity of buildings, fences or services and the local geology and drift. Given the anticipated depth of targets, and the non-igneous strata of the study area, a geomagnetic technique (fluxgate gradiometry) is considered appropriate in this instance. Fluxgate gradiometry involves the use of hand-held magnetometers to detect and record minute anomalies in the vertical component of the Earth's magnetic field caused by variations in soil magnetic susceptibility or permanent magnetisation; such anomalies can reflect archaeological features.

Fieldwork

The surveys will be conducted on a 20m grid, which will be established and recorded along a 20m-wide corridor using a Trimble Pathfinder Pro XRS global positioning system (GPS) with real-time correction. Measurements of vertical geomagnetic field gradient will be determined using Bartington Grad601-2 dual fluxgate gradiometers. A zig-zag traverse scheme will be employed and data logged in 20m grid units. The sample interval will be set to 0.25m and the traverse interval to 1m, thus providing 1600 measurements per 20m grid unit. Data will be downloaded on-site into laptop computers for verification, initial processing and storage and subsequently transferred to a desktop computer for further processing, interpretation and archiving. Geoplot software will be used to process and interpolate the data to form arrays of regularly-spaced values at 0.25m x 0.25m intervals and to produce continuous-tone greyscale images and trace plots of the raw (unfiltered) data, as appropriate.

4.1.5 Reporting

Interim reports can be provided during the project, on request. At the end of fieldwork a full report will be prepared suitable for submission to ARCUS, Severn Trent and the local authority. Two bound copies of the final report, together with a digital version in pdf format, will be provided to ARCUS. One hard copy and a digital version of the report will also be supplied to the county HER office and a copy will also be deposited with the English Heritage Regional Team. An OASIS form will also be submitted. The greyscales will be presented by importing the images directly into digital plans of the area, to be supplied by the client. Palette bars relating the greyscale/trace intensities to anomaly values in nanoTesla will be included with each image. Other types of plots may also be provided, if they aid presentation or interpretation. Colourcoded geophysical and archaeological interpretation plans will be provided. The survey report will also include a detailed discussion and interpretation, explaining the likely nature of the anomalies, along with their implications. Modern services and other potential hazards will be clearly distinguished. The report will be based on the following format:

1. Executive summary
1.1 The project
1.2 Results
1.3 Recommendations
2. Project background
2.1 Location
2.2 Development proposal
2.3 Objective
2.4 Specification summary
2.5 Dates
2.6 Personnel
2.7 Acknowledgements
2.8 Archive
3. Archaeological and historical background
4. Landuse, topography and geology
5. Geophysical survey
5.1 Technique selection
5.2 Field methods
5.3 Data processing

Archive
A survey archive will be produced on CD containing copies of the report, raw data files and metadata. This will be lodged with ARCUS for deposition with the project archive in due course.

4.1.6 Copyright
Copyright in this document rests with Archaeological Services Durham University. Copyright of project reports also rests with Archaeological Services Durham University unless specific arrangements are made for its assignment elsewhere.

4.2 Test Pitting
Following the geophysical survey it is proposed that a programme of archaeological test pitting will be undertaken. The scope and need for the test pitting will depend on the results of the geophysical survey. The clearer the results of the geophysical survey the smaller the scope of the test pitting. Test pits will be located to investigate features identified in the geophysical survey and confirm the reliability of the survey results. They will also be used to assess the survival of organic remains along the pipeline route particularly in areas of deeper pet deposits. The profile and location of each test pit will be accurately recorded and artifacts recovered. Section 6 and 7 outline the site recording and reporting methodologies Excavation of the test pits will cease at the top of significant archaeological deposits. The test pits will be 1m x1m and will be excavated down to the maximum safe depth. This is expected to be around 1m deep.

4.3 Coring
A soil core will be taken in the location indicated on the site plan this will be used to determine the depth of peat within the area and the nature of the underlying
substrate. The core will be taken with a hand auger and samples of all deposits identified collected. The profile of the core will be will be recorded and the deposits described. Section 6 and 7 outline the site recording and reporting methodologies

5 MITIGATION WATCHING BRIEF METHODOLOGY
Based on the results of the archaeological evaluation phase of works it is proposed that an archaeological watching brief be carried out on the topsoil and subsoil stripping of the pipeline easement and pipe trench. All removal of topsoil and subsoil deposits will be strictly monitored and controlled by qualified field archaeologists. The topsoil will be removed by a mechanical excavator using appropriate toothless ditching buckets with the surface cleanly machined, to allow high archaeological visibility. Where archaeological features are identified, time will be allocated by the contractor to allow for archaeological investigation. All archaeological features identified will be subject to sample excavation and recording. Linear features will be sample excavated along their length (each sample section to be not less than 1m). A minimum of 5% of the length of the linear will be sample excavated where the

feature is over 10m long. This will be increased to 10% where the feature is less than 10m long. The deposits at junctions of, or interruptions in, linear features will be sufficiently excavated for the relationship between components to be established. Where concentrations of artefacts are identified in sampled sections, these may be extended to increase artefact recovery. Discrete features, such as pits, post–holes and other isolated features, will initially be half-sectioned to determine and record their form. These may then be 100% excavated if necessary. Potential sunken-floored buildings, wall-settings, hearths, kilns, storage pits or other identifiable domestic, agricultural, industrial, funerary or ritual structures or buildings such as huts, barns, kilns, gateways, causeways, working hollows, floor levels, hearths will be excavated to a degree whereby their extent, nature, form, date, function and relationship to other features and deposits can be established. Built structures such as walls will be examined and sampled to a degree whereby their extent, nature, form, date, function and relationship to other features and deposits can be established. In the case of the pits along the line of the new pipe to Wall Farm, which lie within the area of the Scheduled Ancient Monument, there will be a presumption that all pits should be excavated archaeologically and recorded by trained archaeologists, unless the evaluation demonstrates this is not necessary. Such excavations will extend down to the required working depth or to natural. This will be undertaken in line with DCMS letter of 14th July.
Section 6 and 7 outline the site recording and reporting methodologies.

6 RECORDING

A full written, drawn and photographic record of all uncovered archaeological features will be made during the course of the works. Plans, sections and elevations will be drawn as appropriate, on inert materials. All drawings will adhere to accepted drawing conventions. Each context will be described in full on standardised pro forma context record sheets and each context will be given a unique number. These field records will be checked and indexes compiled. General shots, photographs of work in progress, and excavated features will be taken. General area views, features, sections etc. will also be taken. The photographic record will comprise of 35mm format colour slides and black and white prints and will include a graduated scale where appropriate. Registers for contexts, drawings, samples, photographs, levels and recorded finds will be kept.

6.1 Finds Collection Policy

Artefactual material will be collected according to an explicit sampling strategy. Material which is obviously modern in date, and derived from unstratified contexts, will not be kept unless it is of exceptional intrinsic interest. Material discarded as a result of this policy will be described and quantified in the field. This will involve basic analyses such as quantification of artefacts and assigning finds to broad categories, e.g. ceramic building material, glass, etc. All other finds will be retained. Finds of particular interest or fragility will be retrieved as Small Finds, and located three-dimensionally. All other finds from discrete contexts will be collected as Bulk Finds and bagged by material type, such as stone, ceramic, etc. Any dense/discrete deposits will have their limits defined on the appropriate plan. All retained finds will be cleaned, marked, catalogued and packed in materials suitable for long-term storage, as detailed in the Institute of Field Archaeologists guidelines for finds work (IFA 2001). Conservation, if required, will be undertaken by approved conservators. The United Kingdom Institute of Conservation (UKIC) guidelines will apply. In the event of human remains being discovered during the excavation these will be left *in situ*, covered and protected, in the first instance. The removal of human remains will only take

place under appropriate regulations, and in compliance with the *Burial Act 1857*. If human remains are identified, the SMR and Coroner will be informed immediately. Any appropriate licences will be obtained prior to the removal of the remains. All finds that fall within the purview of the Treasure Act 1996 will be reported to HM Coroner according to the procedures outlined in the Act, after discussion with the client and Shropshire County Council archaeology advisors.

6.2 Samples

A palaeo-environmental sampling strategy will take the form of both the systematic and judgement methodology, as defined in the English Heritage guidelines for Environmental Archaeology (English Heritage 2002). The systematic approach will take the form of bulk sampling (20 litre samples) from primary, sealed deposits, which will then be assessed for pollen, plant macrofossils, insects, macrofossils and diatoms. Palaeoenvironmental specialists and dendrochronologists will be consulted as necessary. The English Heritage Regional Scientific Advisor will be consulted for additional advice, as necessary. Samples will initially be assessed and where the assessment identifies that significant palaeo-environmental remains are present a programme for full analysis and dating will be designed in consultation with the English Heritage Regional Science Advisor.

6.3 Monitoring

Shropshire County Council Archaeologists will be given notice prior to the commencement of the evaluation and, as a minimum requirement, will be given the opportunity to visit the site at the beginning, during and prior to completion of the on-site works. The contractor will notify Shropshire County Council of any
discoveries of archaeological significance so that site visits can be made, as necessary. Any changes to this agreed WSI will only be made in consultation with Shropshire County Council.

6.4 Staffing

All fieldwork will be undertaken by a suitably qualified archaeologist, and will be coordinated and monitored by ARCUS. If requested, Shropshire County Council will be provided with the *curricula vitae* of key project staff, prior to the commencement of work on site, along with details of any specialist sub-contractors. All project staff will be suitably qualified and experienced for their on-site and post-excavation roles.

7 REPORTING

Upon completion of the fieldwork, the artefacts, ecofacts and stratigraphic information will be assessed as to their potential and significance and a report produced. Reporting will follow the guidelines in MAP2 and MoRPHE.
Separate reports will be completed for the evaluation and mitigation phases of work and a final report may be required following assessment of the evaluation and mitigation phases. Copies of all reports will be deposited with the HER and the English
Heritage Regional Team.
The post-excavation report will include the following:

- National Grid reference of the site;
- detailed location map;
- a site plan;
- date and duration of fieldwork;

• name of Project Manager and Project Officer;
• author of report, and report date;
• a non-technical summary and introductory statement;
• a detailed account of the techniques employed during the project;
• detailed plans of the position and layout of the excavated areas, related to fixed points; plans and sections of all areas containing archaeological remains, with sample sections used to illustrate the soil profile in sterile areas; selected artefact illustrations; and a selection of photographs of work in progress.
• a full record of all artefactual material recovered or recorded;
• summary analysis of all artefactual and palaeo-environmental material recovered;
• analysis of the nature and significance of material recovered or recorded;
• examination of the results of the work in a regional context;
• a phased interpretation of the site, if possible;
• a detailed context index.

8 PROJECT ARCHIVE

The archive, including any finds, will be deposited with the local depository Museum. This will be done according to the requirements for such depositions outlined by the museum. The museum will be contacted prior to the commencement of fieldwork to make arrangements for the deposition of the archive.
The project archive will be prepared by the project staff in accordance with the requirements specified in *Management of Archaeological Projects*, Appendix 3 (English Heritage 1991) and the *Guideline for the Preparation of Excavation Archives for Long Term Storage* (United Kingdom Institute of Conservation 1990).
The archive will contain the following:
• a summary of the project;
• a guide to the archive;
• the project design;
• the complete site archive, including all data, records and correspondence, produced during the programme of fieldwork;
• all artefactual and environmental material, appropriately indexed, conserved and packaged;
• an on-line OASIS form will also be completed, for inclusion in the ADS database.

9 HEALTH AND SAFETY

A project specific Risk Assessment will be prepared prior to on-site works. This will observe the recommendations of the SCAUM (Standing Conference of Archaeological Unit Managers) Health and Safety manual. All staff will be made of the hazards and any necessary measures which need to be taken with regard to those
hazards. A copy of the ARCUS Health & Safety Manual for Archaeological Excavation is
available on request.

10 COPYRIGHT

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11 DISPUTES

In the event of any dispute arising out of the project work as described in this Project Design (including any such dispute considered as such by only one of the parties), either party may forthwith give to the other notice in writing of such a dispute or difference and the same shall be and is hereby referred for decision in accordance with the rules of the Chartered Institute of Arbitrators' *Arbitration Scheme for the Institute of Field Archaeologists* applying at the date of any contract or agreement in connection with the work as described herein.

12 BIBLIOGRAPHY

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Archaeological Services
University of Durham

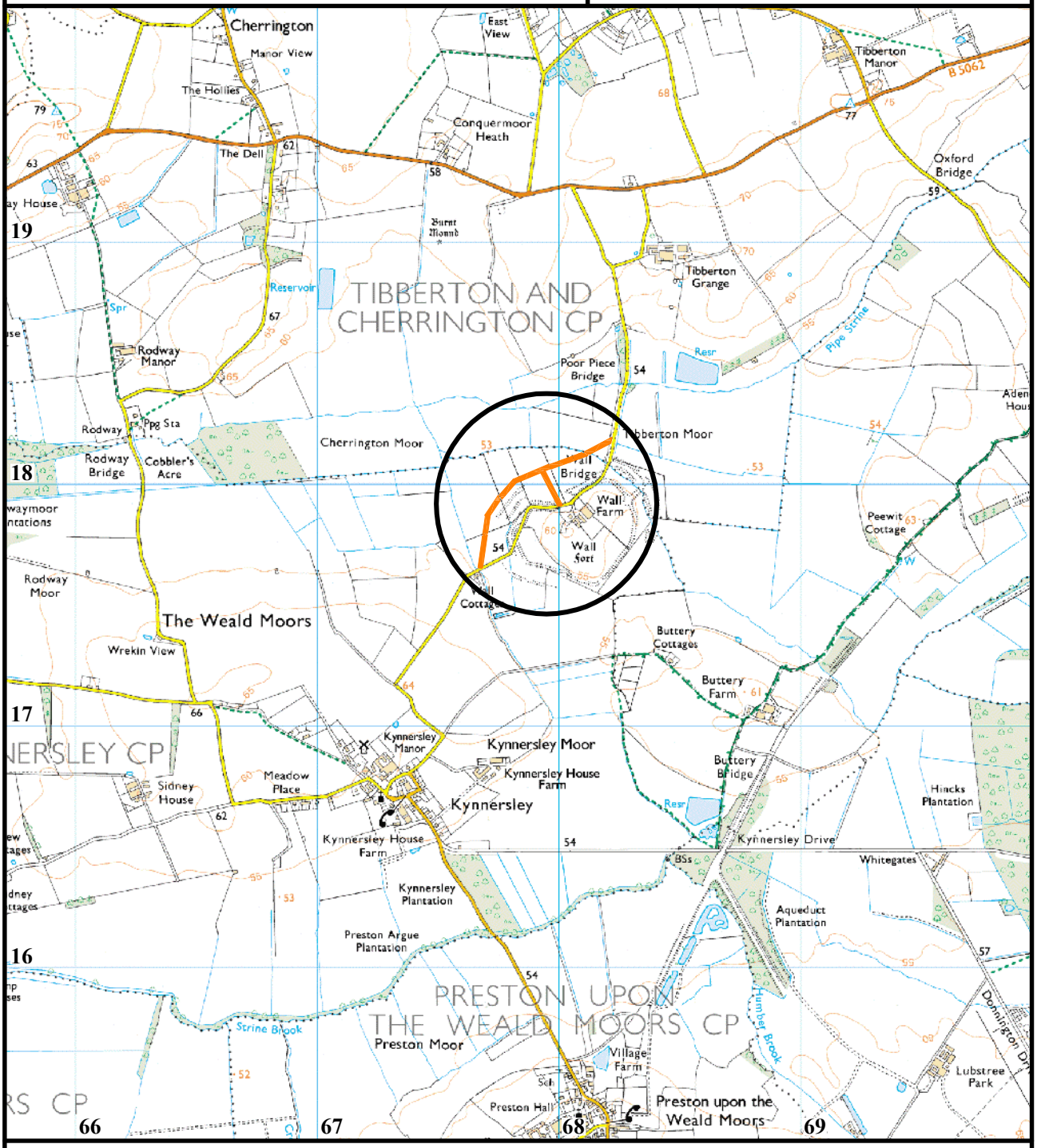
Wall Farm, Kynnersley, Shropshire
geophysical surveys

Report 1989

Figure 1
Site location

for
ARCUS

on behalf of
Severn Trent Water



location of geophysical surveys

0 1km

scale 1:25 000 - for A4 plot

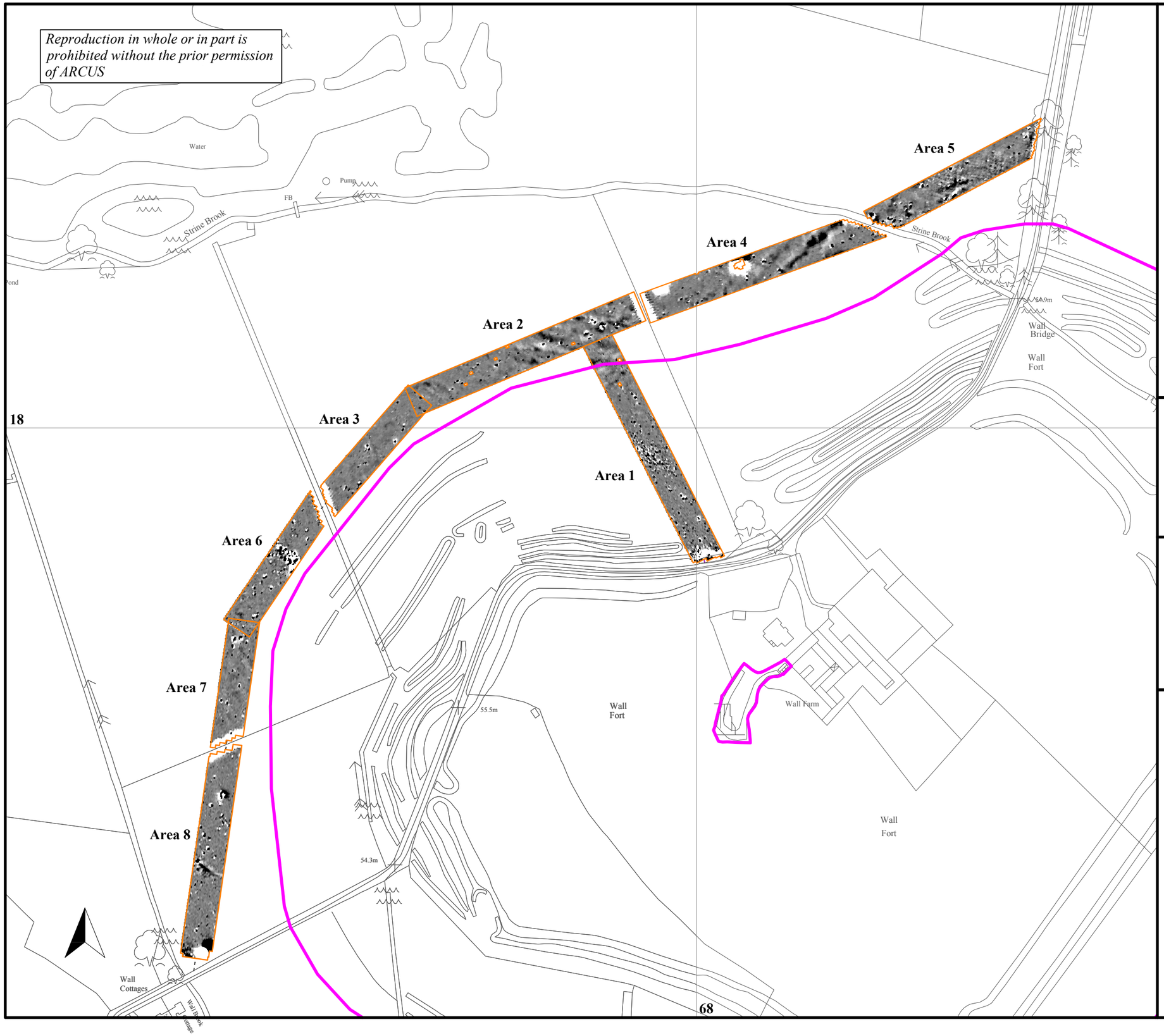


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Figure 2

Survey locations

for
ARCUS

on behalf of
Severn Trent Water

0 100m

scale 1:2500 - for A3 plot

outline of survey area

scheduled area

3.00
2.50
2.00
1.50
1.00
0.50
0
-0.50
-1.00
-1.50
-2.00
-2.50
-3.00 nT

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Area 8

Area 7

Area 6

Area 3

Area 2

Area 4

Area 5

Area 1

Area 2

Area 1

Striine Brook

Wall Farm

Wall Brook

College

Geophysical surveys

outline of survey area

3.00
2.50
2.00
1.50
1.00
0.50
0.00
-0.50
-1.00
-1.50
-2.00
-2.50
-3.00 nT

0 50m

scale 1:1000 - for A2 plot

for
ARCUS

on behalf of
Severn Trent Water

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Figure 3

Geophysical surveys

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Area 8

Area 7

Area 6

Area 3

Area 2

Area 4

Area 5

Area 1

Area 2

Area 1

Wall Brook

Strine Brook

Wall Farm

177

178

179

180

181

182

180

679

680

681

682

181

678

180

679

179

679

178

Geophysical interpretations

- outline of survey area
- proposed main
- proposed service
- positive magnetic anomalies
- negative magnetic anomalies
- dipolar magnetic anomalies

0 50m

scale 1:1000 - for A2 plot

for
ARCUS

on behalf of
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Figure 4

Geophysical interpretations

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Area 8

Area 7

Area 6

Area 3

Area 2

Area 4

Area 5

Area 1

Area 2

Area 1

Wall Brook

Strine Brook

Wall Farm

College

677

678

679

680

681

682

178

179

180

181

182

Archaeological interpretations

- outline of survey area
- proposed main
- proposed service
- soil-filled features
- service pipes
- orientation of ridge and furrow
- possible burnt mound

0 50m

scale 1:1000 - for A2 plot

for
ARCUS

on behalf of
Severn Trent Water

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geophysical surveys

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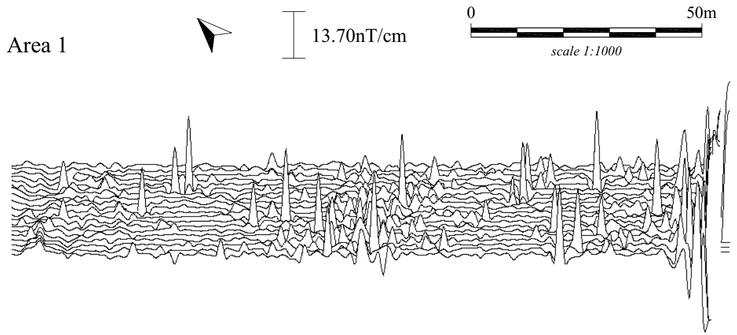
Figure 5

Archaeological interpretations

Figure 6: Trace plots of geophysical data

Area 1



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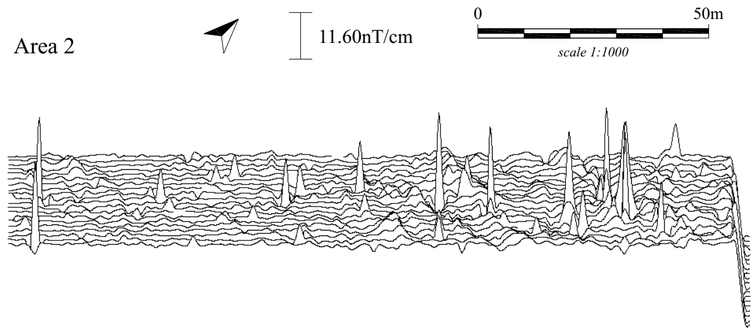

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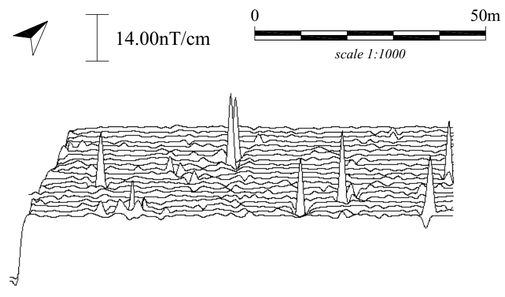

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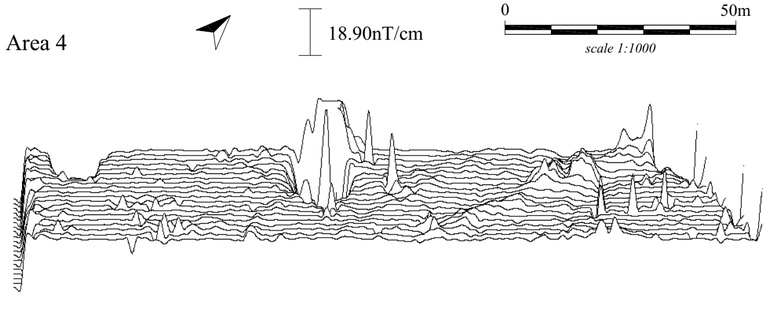

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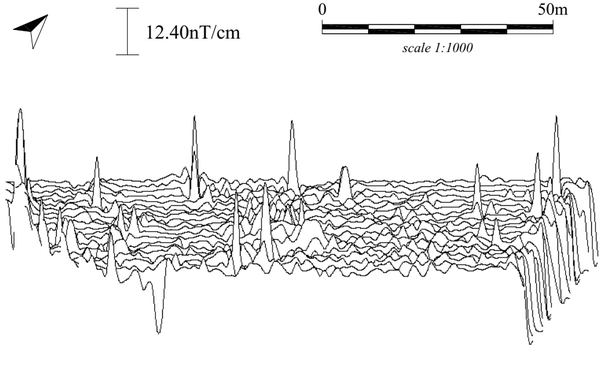

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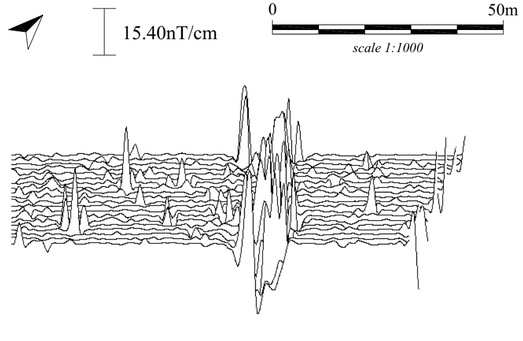
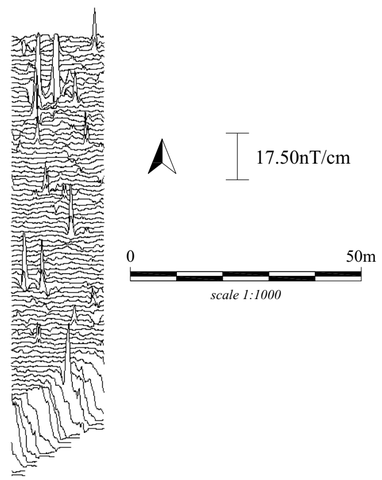


Area 7



Area 8