

Substrata

Archaeological Geophysical Surveyors

An archaeological magnetometer survey

**Land at West Buckland junction
A361, Devon**

Centred on NGR: 265600,129590

Report: 1806WES-R-1

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1 Introduction

This report presents the results of an archaeological geophysical survey at the site listed in Section 4 and shown in Figure 1, hereafter referred to as the 'Survey Area'. It was commissioned by Devon County Council in support of a proposed development. The commissioning of this report was in keeping with the National Planning Policy Framework, Chapter 16, Paragraph 189 (Ministry of Housing, Communities & Local Government, 2018).

The survey and report were completed in compliance with a Survey Method Statement (Dean, 2018).

2 Client

Devon County Council, Matford Offices, County Hall, Topsham Road, Exeter EX2 4QD

3 Copyright

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4 Survey type and location

4.1 Survey

| | |
|-------------|-----------------------------------|
| Method: | shallow depth magnetometer survey |
| Instrument: | twin-sensor fluxgate gradiometer |
| Date: | 18 and 20 July 2018 |
| Area: | 2.4ha |

4.2 Location

| | |
|-----------------------------------|--------------------------------------|
| Location: | Land at West Buckland junction, A361 |
| Civil Parish: | East and West Buckland |
| District: | North Devon |
| County: | Devon |
| Nearest postcode: | EX32 0SB |
| Survey centre NGR: | SS 65600 29590 |
| Survey centre NGR (E/N): | 265600,129590 |
| Historic environment designation: | None |
| OASIS ID: | substrat1-325628 |

5 Summary

A magnetometer survey was selected to provide a relatively fast and cost-effective evaluation of any buried archaeology across the Survey Area (see Section 14). The magnetic anomaly groups pertaining to potential buried archaeology were georeferenced to the Ordnance Survey National Grid, mapped, characterised and assigned with an appropriate degree of certainty in conformance with the survey aims and objectives set out in Section 6.

The differences in magnetic responses across the Survey Area were sufficient to be able to differentiate between anomalies representing possible buried archaeology and background magnetic responses.

Fifteen magnetic anomaly groups were characterised as representing potential archaeological deposits. Of these, three groups are likely to represent field boundaries recorded on the 1840

Tithe Map but not on later historic Ordnance Survey maps. Three groups may depict linear archaeological deposits such as ditches. They are straight and on a different orientation to surrounding extant field boundaries that have likely medieval origins. They have not been recorded on historic maps dating from 1840 onwards. Three additional groups have comparable characteristics and may represent similar buried archaeology. Two groups may indicate the presence archaeological pits although natural origins cannot be ruled out. One group may represent a curvilinear deposit such as a ditch. It is not clear whether or not this group conforms to the pattern of the surrounding field boundaries but it does conform to the contours of the land within the field. Three groups may represent linear archaeological deposits of uncertain provenance.

6 Aims and objectives

6.1 Aims

1. Within the framework set out in Chartered Institute for Archaeologists (2014a), complete an archaeological geophysical survey and report which will, as far as possible, establish the presence or absence, extent and character of any buried archaeology within the Survey Area.
2. Provide sufficient information on the nature of any archaeological remains to facilitate the assessment of their interest and any implications for the proposed development.

6.2 Objectives

1. Complete a magnetometer survey across the Survey Area.
2. Identify any magnetic anomalies that may be related to buried archaeology.
3. Within the limits of the technique and dataset, archaeologically characterise any such anomalies or patterns of anomalies.
4. Accurately record the location of the identified anomalies.
5. Produce a report based on the survey that is sufficiently detailed to inform any subsequent development on the survey area about the location and possible archaeological character of the recorded anomalies.

7 Standards

The standards used to complete this survey are defined by the Chartered Institute for Archaeologists (2014a) and Historic England (2008). The codes of approved practice that were followed are those of the Chartered Institute for Archaeologists (2014b) and Archaeology Data Service (undated).

8 Methodology

The magnetometer survey was undertaken in accordance a Survey Method Statement (Dean, 2018) to achieve the aims and objectives set out in Section 6 using the standards and guidance specified in Section 7. The survey method was selected to provide a relatively fast and cost-effective evaluation of any buried archaeology across the Survey Area (see Section 14).

Data processing was undertaken using appropriate software (Table 2), with all anomalies being digitised and geo-referenced. The final report (this document) includes a graphical and textual account of the techniques undertaken, the data obtained and an archaeological interpretation of that data and conclusions about any likely archaeology. The survey and report conform to the Chartered Institute for Archaeologists standard for geophysical survey (CIfA, 2014a).

9 Survey Area

9.1 Location and description

The Survey Area is part of a single field to the north of the A361 at the West Buckland junction to the east of Barnstaple (Figure 1). The field is bounded by hedges and wire fencing.

The Survey Area was under grass at the time of the survey.

9.2 Geology

The bedrock across the Survey Area is mudstone of the Carboniferous and Devonian Pilton

Mudstone Formation. Generically, these rocks are grey mudstones and siltstones with thin- to thick-bedded, locally calcareous sandstones and beds and lenses of limestone. Sandstones are thickest and predominate in the lower half of the formation, whereas mudstones predominate in the upper half. Table 5 includes a description of the near-surface bedrock close to the Survey Area. The superficial geology is not recorded in the source used (British Geological Survey, undated).

A site-relevant example of a geotechnical log and borehole log of near-surface deposits are provided in Table 5 (ibid).

9.3 Soils

The topsoil is 'Freely draining slightly acid loamy soils' with (LandIS, undated).

10 Archaeological background

10.1 Historic landscape characterisation

'Medieval enclosures based on strip fields'

This area was probably first enclosed with hedge-banks during the later middle ages. The curving form of the hedge-banks suggests that earlier it may have been farmed as open strip-fields (Devon County Council, undated).

10.2 Statement of research

The Devon County Council Historic Environment Record was examined via the Heritage Gateway (Historic England, undated) to gain an appreciation of historic assets pertinent to the geophysical survey data within approximately 500m of the survey area perimeter. Whilst providing a useful context for the data analysis, this source is not comprehensive and detailed publication of the information in commercial reports is not permitted.

11 Results

11.1 Scope and definitions

This survey was designed to record magnetic anomalies. A magnetic anomaly is a local variation in the Earth's magnetic field. Such variations can result from variations in the magnetic properties of the underlying solid geology, superficial geology and other near-surface deposits including those altered and created by past human activities. Near-surface artefacts can also create magnetic anomalies.

The dimensions of magnetic anomalies mapped as representing potential buried archaeology do not represent the dimensions of any associated archaeology.

The analysis presented below identifies and characterises anomalies and anomaly groups that may relate to buried archaeology.

11.2 Analysis

Figure 2 shows the interpretation of the survey data and includes the anomaly groups identified as possibly relating to archaeological deposits along with their identifying numbers. Table 1 is an extract of the detailed analysis of the survey data sourced from the attribute tables of the GIS project provided in the project archive.

Figure 2 and Table 1 comprise the analysis of the survey data.

Figures 3 and 4 are plots of the processed data as specified in Table 3. Figure 5 is a plot of minimally processed data as specified in Table 4. Figure 6 shows the location of the survey grid and grid data files.

12 Discussion

12.1 General points

Scope

Not all anomalies or anomaly groups identified in Table 1 are necessarily discussed below. All identified anomaly groups are recorded in the GIS project held in the survey archive.

Data collection

Data collection along the survey area edges was restricted as shown in the figures due to the presence of magnetic materials within and adjacent to boundaries. Strong magnetic responses mapped close to the boundaries are likely to relate to these materials except where otherwise indicated in Figure 2 and Table 1.

Anomaly characterisation

There are a number of anomaly groups that could be interpreted as relating to large postholes or pits although most will have natural origins. Anomalies of this sort are mapped as potential archaeology when they are associated with other significant anomaly groups or otherwise formed recognisable patterns as listed in Table 1.

Anomalies thought to relate to natural features and recent man-made objects such as manholes, water management equipment, drains, cables and other services are only mapped where they comprise significant magnetic responses across the dataset that need clarification.

Numerous dipole magnetic anomalies are present within the dataset. These are likely to represent recent ferrous objects. They are only mapped if they could influence the analysis of anomaly groups thought to have an archaeological origin.

Data trends

An approximately north-south multiple linear trend in the data (Figures 3 and 4) is likely to relate to relatively recent ploughing.

12.2 Data relating to historic maps and other records

Referring to Figure 2, magnetic anomaly groups **1**, **2** and **11** represent field boundaries recorded on the 1840 Chittlehampton (Leary, detached) Tithe Map but not on historic Ordnance Survey maps. These groups conform to the general trends of adjacent, extant field boundaries with the exception of those related to the A361 and the earlier, now removed, Devon and Somerset Railway line (1871-3 to 1966).

In general, the field boundaries in the vicinity were probably first enclosed with hedge-banks during the later middle ages (Section 10.1) which implies that these anomaly groups represent former field boundaries dating from the later middle ages and removed prior to the mapping completed for the 1889 Ordnance Survey 1:2500 First Edition map of the area.

12.3 Data with no previous archaeological provenance

Magnetic anomaly groups **4**, **8**, and **12**, and possibly groups **10**, **13** and **14**, are on a different orientation to the nearby extant field boundaries and are very clear in the dataset. It is unlikely that these anomaly groups represent recent ground disturbance and so they may indicate the presence of archaeological deposits such as ditches.

Groups **5** and **7** are distinct in the dataset and may represent archaeological pits although a natural origin cannot be ruled out.

Group **9** may represent a curvilinear deposit such as a ditch. It is not clear whether or not this group conforms to the pattern of the surrounding field boundaries but it does conform to the contours of the land within the field.

Groups **3**, **6** and **15** may represent linear archaeological deposits such as ditches.

13 Conclusions

The differences in magnetic responses across the Survey Area were sufficient to be able to differentiate between anomalies representing possible buried archaeology and background magnetic responses.

Fifteen magnetic anomaly groups were characterised as representing potential archaeological deposits. Of these, three groups (1, 2 and 11) are likely to represent field boundaries recorded on the 1840 Tithe Map but not on later historic Ordnance Survey maps. Three groups (4, 8, 12) may depict linear archaeological deposits such as ditches. They are straight and on a different orientation to surrounding extant field boundaries that have likely medieval origins. They have not been recorded on historic maps dating from 1840 onwards. Three additional groups (10, 13 and 14) have comparable characteristics and may represent similar buried archaeology. Two groups (5 and 7) may indicate the presence archaeological pits although natural origins cannot be ruled out. One group (9) may represent a curvilinear deposit such as a ditch. It is not clear whether or not this group conforms to the pattern of the surrounding field boundaries but it does conform to the contours of the land within the field. Three groups (3, 6 and 15) may represent linear archaeological deposits of uncertain provenance.

14 Disclaimer

The description and discussion of the results presented in this report are the authors', based on their interpretation of the survey data. Every effort has been made to provide accurate descriptions and interpretations of the geophysical data set. The nature of archaeological geophysical surveying is such that interpretations based on geophysical data, while informative, can only be provisional. Geophysical surveys are a cost-effective early step in the multi-phase process that is archaeology.

15 Archive

15.1 Online Access to the Index of archaeological investigationS (OASIS)

OASIS ID: substrat1-325628

The OASIS entry has been completed and the boundary file and report uploaded with six months delay in publication.

15.2 Substrata Limited archive

A full archive of this survey will be held by Substrata Limited on cloud and local hard drive storage as specified in Appendix 3.

15.3 Archaeological Data Service (ADS)

Depending on local authority policy, an archive may be deposited with the ADS as specified in Appendix 3.

15.4 Historic Environment Record (HER)

Subject to any contractual requirements on confidentiality, a PDF or printed copy of the report will be submitted to the appropriate HER within six months of completion.

16 Acknowledgements

Substrata would like to thank Stephen Reed, Senior Historic Environment Officer, Devon County Council, for commissioning us to complete this survey.

17 Bibliography

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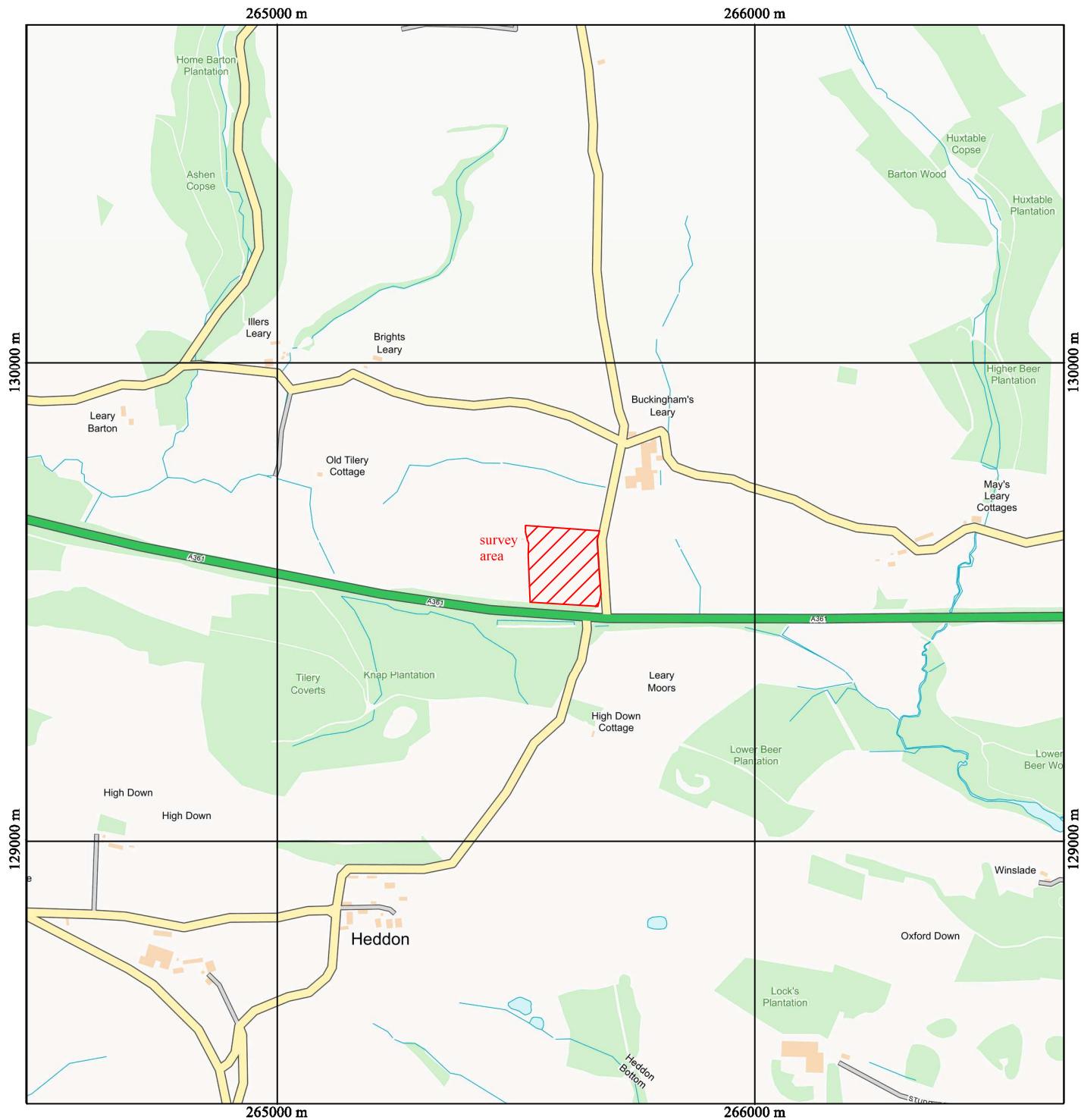
Ministry of Housing, Communities & Local Government (2018). *National Planning Policy Framework* [online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/728643/Revised_NPPF_2018.pdf [Accessed 13 Aug. 2018]

Appendix 1 Figures

General Guidance

The anomalies represented in the survey plots provided in this appendix are magnetic anomalies. The apparent size of such anomalies and anomaly patterns are unlikely to correspond exactly with the dimensions of any associated archaeological features .

A rough rule for interpreting magnetic anomalies is that the width of an anomaly at half its maximum reading is equal to the width of the buried feature, or its depth if this is greater (Clark, 2000: 83). Caution must be applied when using this rule as it depends on the anomalies being clearly identifiable and distinct from adjacent anomalies. In northern latitudes the position of the maximum of a magnetic anomaly will be displaced slightly to the south of any associated physical feature.



British Grid
 centre X: 265560.92 m, centre Y: 129578.78 m

Geophysical survey: Copyright Substrata Limited.
 Base map: Contains Ordnance Survey data
 © Crown copyright and database right 2017

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Figure 1: location map



British Grid
centre X: 265585.84 m, centre Y: 129581.24 m

Geophysical survey: Copyright Substrata Limited.
Base map: Ordnance Survey (c) Crown Copyright 2018.
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Scale: 1:800 @ A3. Spatial Units: Meter. Do not scale off this drawing

Notes:

1. All interpretations are provisional and represent potential archaeological deposits.
2. 'Anomaly type' is a description of the magnetic anomaly. See the report text or GIS for an archaeological characterisation.
3. Anomalies designated "likely archaeology" have supporting evidence e.g. historical maps and or visible earthworks.
4. Not all instances are mapped.
5. Anomalies likely to represent recent deposits or ground disturbance, or geological and other natural deposits are not mapped unless relevant to potential buried archaeology.

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Figure 2: survey interpretation



British Grid
 centre X: 265585.84 m, centre Y: 129581.24 m

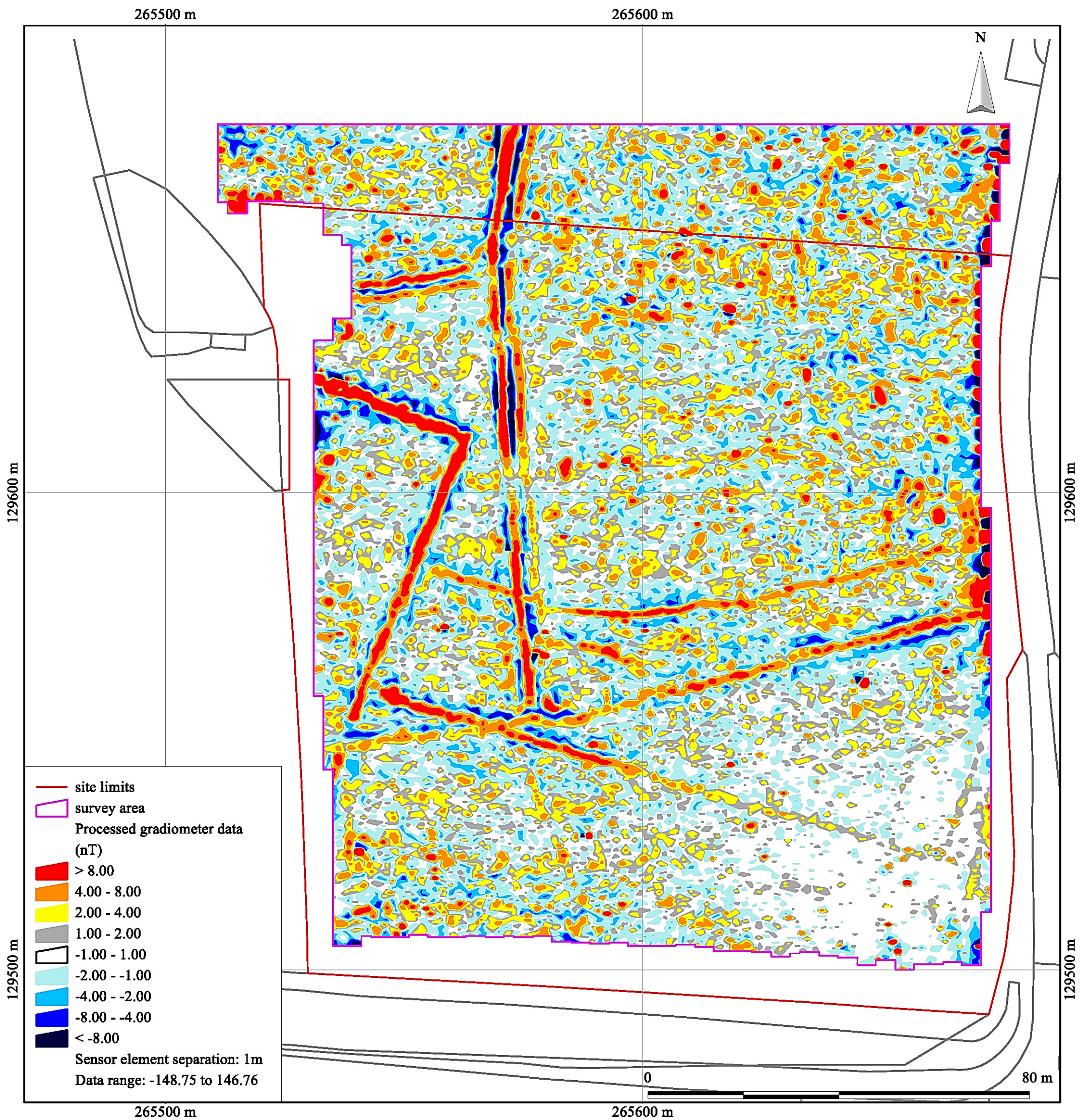
Geophysical survey: Copyright Substrata Limited.
 Base map: Ordnance Survey (c) Crown Copyright 2018.
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Scale: 1:800 @ A3. Spatial Units: Meter. Do not scale off this drawing

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Figure 3: shade plot of processed data



British Grid
 centre X: 265578.93 m, centre Y: 129585.08 m

Geophysical survey: Copyright Substrata Limited.
 Base map: Ordnance Survey (c) Crown Copyright 2018.
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Scale: 1:800 @ A3. Spatial Units: Meter. Do not scale off this drawing

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Figure 4: contour plot of processed data



British Grid
 centre X: 265585.84 m, centre Y: 129581.24 m

Geophysical survey: Copyright Substrata Limited.
 Base map: Ordnance Survey (c) Crown Copyright 2018.
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Scale: 1:800 @ A3. Spatial Units: Meter. Do not scale off this drawing

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Figure 5: shade plot of minimally processed data

Appendix 2 Tables

An archaeological magnetometer survey
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| anomaly group | anomaly characterisation certainty & class | anomaly form | additional archaeological characterisation | comments | supporting evidence |
|---------------|--|-----------------------|--|---|---|
| 1 | likely, positive/negative/positive | curvilinear | field boundary - possible Devon Bank | anomaly group coincides with, and likely represents, a field boundary recorded on the tithe map but not on later historic OS maps | 1840 Chittlehampton (Leary, detached), Ordnance Survey 1889 1:2500 and later maps |
| 2 | likely, positive/negative/positive | disrupted curvilinear | field boundary - possible Devon Bank | anomaly group coincides with, and likely represents, a field boundary recorded on the tithe map but not on later historic OS maps | 1840 Chittlehampton (Leary, detached), Ordnance Survey 1889 1:2500 and later maps |
| 3 | possible, positive | disrupted linear | archaeological deposits or recent ground disturbance | | |
| 4 | possible, positive | disrupted return | | anomaly group is well defined and does not conform with the trend of extant adjacent field boundaries which are likely to be based on medieval strip fields enclosed in the later middle ages | Devon County Council Historic Landscape Characterisation |
| 5 | possible, positive | oval | archaeological or natural deposit | there are a number of similar anomaly groups in the data, this is included in the analysis as being one of two particularly well-defined responses | |
| 6 | possible, positive | disrupted curvilinear | archaeological or natural deposits | | |
| 7 | possible, positive | oval | archaeological or natural deposit | there are a number of similar anomaly groups in the data, this is included in the analysis as being one of two particularly well-defined responses | |
| 8 | possible, positive | linear | | | |
| 9 | possible, positive | curvilinear | | | |
| 10 | possible, positive | linear | | anomaly group appears to be on a similar orientation to group 12 | |
| 11 | likely, positive | disrupted curvilinear | field boundary - possible ditch | anomaly group coincides with, and likely represents, a field boundary recorded on the tithe map but not on later historic OS maps | 1840 Chittlehampton (Leary, detached), Ordnance Survey 1889 1:2500 and later maps |
| 12 | possible, positive | disrupted linear | | anomaly group is well defined and does not conform with the trend of extant adjacent field boundaries which are likely to be based on medieval strip fields enclosed in the later middle ages | Devon County Council Historic Landscape Characterisation |
| 13 | possible, positive | disrupted linear | | anomaly group appears to be on a similar orientation to group 4 | |
| 14 | possible, positive | linear | | anomaly group appears to be on a similar orientation to group 4 | |
| 15 | possible, positive | disrupted linear | | | |

Table 1: data analysis

| | |
|--|---|
| <p>Grid <i>Method of Fixing:</i> DGPS set-out using pre-planned survey grids and Ordnance Survey coordinates. <i>Composition:</i> 30m by 30m grids <i>Recording:</i> Geo-referenced and recorded using digital map tiles. <i>DGPS used:</i> Spectra Precision PM5V2 GPS with external antenna and survey pole and DigiTerra Explorer 7 as the survey control program.</p> | |
| <p>Equipment <i>Instrument:</i> Bartington Instruments grad601-2 <i>Firmware:</i> version 6.1</p> | <p>Data Capture <i>Sample Interval:</i> 0.25m <i>Traverse Interval:</i> 1 metre <i>Traverse Method:</i> zigzag <i>Traverse Orientation:</i> GN</p> |
| <p>Data Processing, Analysis and Presentation Software IntelliCAD 8.4 DW Consulting TerraSurveyor3 Manifold System 8 GIS Microsoft Corp. Office 365: Excel, Publisher, Word Adobe Systems Inc Adobe Acrobat 9 Pro Extended</p> | |

Table 2: methodology information

| | |
|----------------------------|---|
| Instrument | |
| Type: | Bartington Grad-601 gradiometer |
| Units: | nT |
| Direction of 1st Traverse: | see below |
| Collection Method: | ZigZag |
| Sensors: | 2 @ 1.00 m spacing, each with 1m separation |
| Dummy Value: | 32702 |
| Program | |
| Name: | TerraSurveyor |
| Version: | 3.0.33.6 |
| <u>Statistics</u> | <u>Processing</u> |
| Max: | 146.76 |
| Min: | -148.75 |
| Std Dev: | 6.16 |
| Mean: | 0.19 |
| Median: | 0.00 |
| | <ol style="list-style-type: none"> 1 Base Layer 2 Clip at 2.00 SD 3 DeStripe Median Sensors: Grids: All 4 De Stagger: Grids: b18.xgd b17.xgd By: 0 intervals, 50.00cm 5 De Stagger: Grids: b21.xgd By: 0 intervals, 25.00cm 6 De Stagger: Grids: b9.xgd By: 0 intervals, -25.00cm 7 De Stagger: Grids: SubGrid (Area: Top 64, Left 120, Bottom 75, Right 239) By: 0 intervals, -25.00cm 8 De Stagger: Grids: b6.xgd b5.xgd By: 0 intervals, 25.00cm 9 De Stagger: Grids: b3.xgd By: 0 intervals, 25.00cm 10 De Stagger: Grids: SubGrid (Area: Top 30, Left 480, Bottom 49, Right 599) By: 0 intervals, -25.00cm 11 De Stagger: Grids: SubGrid (Area: Top 32, Left 120, Bottom 53, Right 239) By: 0 intervals, 50.00cm 12 Move (Area: Top 46, Left 579, Bottom 47, Right 599) to X -2, Y 0 13 Move (Area: Top 48, Left 578, Bottom 49, Right 597) to X 2, Y 0 14 Move (Area: Top 72, Left 240, Bottom 73, Right 359) to X 2, Y 0 15 Move (Area: Top 76, Left 241, Bottom 77, Right 357) to X 4, Y 0 16 Move (Area: Top 80, Left 241, Bottom 81, Right 358) to X 2, Y 0 17 Move (Area: Top 86, Left 241, Bottom 87, Right 358) to X -1, Y 0 18 Move (Area: Top 92, Left 241, Bottom 93, Right 359) to X 2, Y 0 19 Move (Area: Top 90, Left 242, Bottom 91, Right 358) to X -1, Y 0 20 Move (Area: Top 104, Left 243, Bottom 105, Right 266) to X 2, Y 0 21 Move (Area: Top 114, Left 242, Bottom 115, Right 355) to X 2, Y 0 22 Move (Area: Top 136, Left 243, Bottom 137, Right 357) to X -2, Y 0 23 Move (Area: Top 146, Left 241, Bottom 147, Right 359) to X -2, Y 0 24 Move (Area: Top 140, Left 240, Bottom 141, Right 359) to X -2, Y 0 25 Move (Area: Top 122, Left 242, Bottom 123, Right 357) to X 4, Y 0 26 Move (Area: Top 148, Left 242, Bottom 149, Right 356) to X -2, Y 0 27 Move (Area: Top 154, Left 241, Bottom 155, Right 358) to X 2, Y 0 28 Move (Area: Top 34, Left 472, Bottom 35, Right 493) to X -4, Y 0 29 Move (Area: Top 22, Left 484, Bottom 23, Right 532) to X 4, Y 0 30 Move (Area: Top 56, Left 246, Bottom 57, Right 354) to X -2, Y 0 31 Search & Replace Dummy With: 2.24 (Area: Top 30, Left 120, Bottom 149, Right 599) 32 Search & Replace Dummy With: 2.24 (Area: Top 152, Left 240, Bottom 157, Right 249) 33 Search & Replace Dummy With: 2.24 (Area: Top 20, Left 480, Bottom 24, Right 491) <p>Interpolate match x & y double is imposed on export to the GIS</p> |

Table 3: processed data metadata

| | |
|----------------------------|--|
| Instrument | |
| Type: | Bartington Grad-601 gradiometer |
| Units: | nT |
| Direction of 1st Traverse: | see below |
| Collection Method: | ZigZag |
| Sensors: | 2 @ 1.00 m spacing, each with 1m separation |
| Dummy Value: | 32702 |
| Program | |
| Name: | TerraSurveyor |
| Version: | 3.0.33.6 |
| <u>Statistics</u> | <u>Processing</u> |
| Max: | 293.22 |
| Min: | -294.21 |
| Std Dev: | 9.27 |
| Mean: | -0.04 |
| Median: | -0.10 |
| | 1 Base Layer |
| | 2 Clip at 4.00 SD |
| | Interpolate match x & y double is imposed on export to the GIS |

Table 4: minimally processed data metadata

Site: Land at West Buckland junction, A361, Devon
 Centred on NGR 265600,129590

| BGS ID | BGS reference | NGR (E/N) | method | strata | depth (m) | level (m aOD) | thickness (m) |
|-----------------|---------------|---------------|----------------------|--|--------------|------------------|---------------|
| 706800 | SS62NE110 | 265600,129470 | mechanical excavator | dark brown TOPSOIL | | | 0.30 |
| | | | | firm to stiff orange CLAY with occasional grey patches | 0.30 to 1.00 | 114.20 to 113.50 | 0.70 |
| | | | | firm to stiff light grey/orange brown (mottled) CLAY with occasional completely decomposed SHALE and silty SHALE. Also some gravel sized fragments of highly weathered silty SHALE | 1.00 to 2.00 | 113.50 to 112.50 | 1.00 |
| | | | | highly weathered dark grey SHALE and GRAVEL in a light grey/light brown silty clay matrix 'Damp' | 2.00 to 2.70 | 112.50 to 111.80 | 0.70 |
| | | | | light grey, thickly laminated, well jointed, highly weathered SHALE, moderately weak, becoming strong below 3.20m | 2.70 to 3.65 | 111.80 to 110.25 | 0.95 |
| | | | | end of trial pit | | | |
| 706801 | SS62NE111 | 265530,129470 | borehole | brown sandy TOPSOIL | | | 0.05 |
| | | | | brown silty CLAY | 0.05 to 0.45 | 115.10 to 114.70 | 0.40 |
| | | | | brown gravelly CLAY with fragments of siltstone and shale completely weathered shale and SILTSTONE | 0.45 to 1.80 | 114.70 to 113.35 | 1.35 |
| | | | | dark grey completely to highly weathered SHALE (recovered as a shale gravel in a silty matrix) | 1.80 to 2.90 | 113.35 to 112.25 | 1.10 |
| | | | | dark grey, closely jointed, thinly cleaved, moderately to slightly weathered, fissile SHALE weak | 2.90 to 7.30 | 112.25 to 107.85 | 4.40 |
| | | | | dark grey to light grey, thickly laminated to thinly bedded fresh, SILTSTONE, moderately strong to strong | 7.30 to 8.20 | 107.85 to 106.95 | 0.90 |
| | | | | light grey stringers crosscutting bedding. | | | |
| end of borehole | | | | | | | |

Table 5: example geological test pit and borehole logs from the route of the A361 south of the Survey Area (British Geological Survey, undated).

Appendix 3 Project archive contents

A3.1 Substrata Limited archive

A full archive of this survey will be held by Substrata Limited on cloud and local hard drive storage as follows:

| | |
|---|--|
| Report: | Adobe PDF (.pdf), Microsoft Publisher (.pub) |
| Raw grid data files: | DW Consulting TerraSurveyor 3 (.xgd) and XYZ (.dat) |
| Minimally processed data composite files: | DW Consulting TerraSurveyor 3 (.xgd) and ESRI ASCII (.asc) |
| Final data processing composite files: | DW Consulting TerraSurveyor 3 (.xgd) and ESRI ASCII (.asc) |
| GIS project: | GIS project Manifold 8 (.map) |
| Survey interpretation: | ESRI shape files |
| AutoCAD version of the survey interpretation: (if generated) | AutoCAD (.dwg) |
| All project working files: | IntelliCAD 8.4 Microsoft Corp. Office 365: Excel, Publisher, Word Adobe Systems Inc Adobe Acrobat 9 Pro Extended |

A3.2 Online Access to the Index of archaeological investigationS (OASIS)

| | |
|-------------------------------------|------------------|
| Metadata: | online form |
| Georeferenced survey boundary file: | ESRI shape file |
| Report: | Adobe PDF (.pdf) |

A3.3 Archaeological Data Service

Depending on local authority policy, an archive may be deposited with the ADS as follows:

| | |
|-----------------------------|--------------------------------|
| Raw data composite file: | XYZ file |
| Processed data plot: | rendered images in TIFF format |
| Survey grid plot: | image in TIFF format |
| Details of data processing: | image in TIFF format |
| Interpretation plot: | rendered images in TIFF format |
| Metadata: | Microsoft Excel format |

A3.4 Historic Environment Record (HER)

Subject to any contractual requirements on confidentiality, a PDF copy of the report will be submitted to the appropriate HER within 6 months of the completion of this report via the OASIS process or by other means, depending on the relevant HER process.