Dark Lane, Leintwardine

Geophysical and Topographic Survey Report

Produced for Archenfield Archaeology Ltd

LEI071

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Mapping Our Heritage

Non-Technical Summary

ArchaeoPhysica was commissioned by Archenfield Archaeology Ltd to undertake a geophysical and topographic survey at the study area in Dark Lane, Leintwardine, in advance of development, on behalf of the end client.

The survey was intended to provide information on surface and subsurface features of likely archaeological interest and, therefore, to inform the client on the potential archaeological remains, in advance of a programme of trial trenching. Magnetometry and topographic survey were used in the whole available area, slightly less than one hectare.

The study area has potential to contain Roman settlement and cemetery remains given that it lies adjacent to a Roman road and close to the Roman town of Branogenium.

The use of a magnetic technique permitted the location of magnetic enhanced areas that could be identified with old field boundaries aligned with the existing boundaries in the field to the East of Dark Lane, and other magnetic single anomalies which could have an archaeological origin (pits, fires), as well as a modern origin (debris, brick).

The post-survey excavation revealed the existence of a kiln that had not generated a clear magnetic anomaly; subsequent investigation revealed that this has been obscured by coincident ferrous debris, probably associated with the site of a removed telegraph pole. There are grounds for suspecting similar structures within the evaluated area.

The DTM of the study area suggested the existence of two lynchets in the southern half of the field, one of them aligned with the field boundary in the field to the East of Dark Lane and other slight earthworks which may not have an archaeological origin.

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1 Introduction

Location

Country	England
County	Herefordshire
Nearest Town	Leintwardine
Landholding	Local landowner
Central Co-ordinates	34042 27460

Parties involved

1.1 Archenfield Archaeology Ltd commissioned ArchaeoPhysica to undertake a geophysical and topographic survey at the study area in Dark Lane, Leintwardine, on behalf of the end client.

1.2 We would like to acknowledge the support of Huw Sherlock and Graham Arnold of Archenfield Archaeology Ltd, throughout the project.

Summary of methodology

Rationale

1.3 The request of geophysical and topographic survey was made by Huw Sherlock, Archenfield Archaeology Ltd, in advance of archaeological trench location planning prior to development in the area.

1.4 The aim of the survey was to provide the client with information about potential archaeological features in the study area. These would be trenched by Archenfield Archaeology Ltd for further analysis of the archaeological remains in advance of development.

1.5 The whole of the scheduled area was surveyed using detailed magnetometry and topographic survey to discover and map surface expression of archaeological remains and buried negative features.

Set out

1.6 This was achieved independently of OS mapping through use of resection from points established with DGPS. A regular grid of 30m was set out to guide the geophysical survey and two 3D TBMs established for subsequent use during trenching. Internal precision was maintained at 0.05m.

Geophysical survey

1.7 Due to the site location – in a field with electrical fences and near a road with constant traffic - the caesium magnetometer (Geometrics MagMapper G858) was configured as a vertical gradiometer on a carrying frame, the lower sensor being approximately 0.3m from the ground and the upper 0.8m.

1.8 In gradiometer configuration, one sensor is mounted above the other and they both measure simultaneously. By subtracting the data of the upper sensor from the lower, the temporal component, common to both sensors, is removed. When sensor separation is 0.5m, the data from the higher sensor can contain a large component due to shallow and hence archaeological sources. When the data is subtracted this reduces the anomaly strength from shallow sources as well as deep.

1.9 Survey was undertaken using a Geometrics G858 MagMapper caesium magnetometer with sensors spaced 0.5m vertically and with the lower 0.3m above the ground. Data was collected at intervals of no more than 0.2m along lines 1.0m apart and subsequently interpolated by cubic splines to 0.25m.

Topographic survey

1.10 This was undertaken on OS National Grid co-ordinates and reduced to OS Datum by observation of a nearby benchmark in a secure location carved into apparently undisturbed masonry.

1.11 A total station was used to collect a mesh of spot heights at a mean interval of 8m across the site, supplemented by strings of points denoting in 3D co-ordinates individual breaks of slope across the site. All hard and soft landscape features were recorded including the positions of major trees to meet basic planning requirements. The data has been passed to Archenfield Archaeology Ltd on behalf of their client.

1.12 The topographic data was interpolated to a regular 0.5m x 0.5m mesh for imaging and contour generation. The interpolator used was point kriging without drift removal and using a linear semi-variogram, resulting in a surface model rising to a maximum of 143.43m OD and falling to 139.99m OD. Contours at 0.1m vertical interval were created from this surface model.

Constraints & variations

1.13 It was agreed with Archenfield Archaeology Ltd that magnetic survey would proceed with a line separation of 1.0m as stated within our specification submitted after their correspondence with Herefordshire County Council. This is regarded as a standard separation for the purposes of evaluation.

1.14 Certain parts of the study area could not be surveyed because of the presence of low tree canopy.

1.15 Vehicle traffic and fences were a source of interference, and tree canopy and broken branches were obstacles for the total coverage of the study area.

2 Context

Archaeology

2.1 Leintwardine lies in a strategic location, next to an important river crossing at the confluence of the rivers Clun and Teme. It is close to an Iron Age hill fort, Brandon Camp, to the south, and has had different types of Roman occupation: successive military establishments around the area during the 1st and 2nd centuries AD, including a cavalry fort at Jane Lane – close to the study area; a military road known as Watling Street West built in the AD 50s or 60s; another Roman road parallel to that one, called High Street in the village; a civilian settlement built alongside that road from 70s AD, which included a Mansio, or staging post for the Roman Imperial postal service. It is believed to have been the Roman fort and town called Brangogenium, which is depicted in the same location in historical documents. By mid-2nd century AD the character of the settlement changed to that of a rural settlement, and at the end of 2nd century AD a rampart was built around the settlement, and is still visible today.

2.2 The study area lies between Dark Lane, which is the northern continuation of Watling Street and the northern part of High Street (A4113), so it has potential to contain archaeological remains, such as a cemetery or settlement.

2.3 According to PJ Pikes, from Archenfield Archaeology Ltd, none of the foundation trenches of the three houses built in 1990s at the western side of the field contained archaeological remains. The cutting and digging of these trenches was observed by English Heritage archaeologists D. Brown, M. Feryok and S Hartly, who reported no features, no dating evidence and no occupation debris.

2.4 Recent maps are OS Map (1903), which shows a building on the eastern edge of the study field; OS Map (1976); and OS Map (1982), where the outline of the Roman defences is quite apparent.

2.5 No archaeological remains were found on the surface during fieldwork, but some earthworks are evident. One of them seems to be related to an old field boundary.

2.6 Post-survey trench excavation undertaken by Archenfield Archaeology Ltd discovered a kiln or hearth, buried 1m deep and thought to relate to corn-drying or a similar activity (Sherlock, *pers. com.*).

Environmental

Weather

2.7 Weather conditions were moderate and did not affect survey results.

Topography & vegetation

2.8 The field where the survey was undertaken is fairly level; in its southern part is slightly inclined to the South. It is covered with pasture and historically has had an agricultural use; currently is used as a paddock.

Hydrology

2.9 The area is relatively free-draining.

Geology and soils

2.10 The soils are described by the National Soil Resources Institute as free draining slightly acid loamy soils over fine-grained sedimentary material consisting of clay minerals, calcite, and silt (marl), with Silurian limestones underneath it.

2.11 Various sources of interference are present in the area, due to its proximity to a busy road: passing vehicle traffic and fencing.

3 Catalogue

3.1 The table below is the catalogue of anomalies found during survey for this project. The labels refer to DWG 05 and also those in green in the text of this report.

Label	Class	Type	Description
1	Linear Magnetic Fill		Moderately magnetic linear anomaly aligned with contours, orientated SE-NW, perhaps caused by deeper topsoil
2		Field Boundary?	Reduced field linear anomaly associated with adjacent anomaly 3, perhaps part of a former field boundary
3	Linear Magnetic Fill	Field Boundary?	Moderately magnetic linear anomaly, slightly curved at its western end; aligned with field boundary in the field to the E of Dark Lane; related to anomaly 2, which lies parallel to it, at its northern side. Perhaps part of a former field boundary
4	Magnetic Dipole	Kiln / Hearth & Steel	Kiln found by Archenfield Archaeology Ltd during trench excavation
5	Magnetic Debris		Delimited concentration of magnetic dipoles; probably magnetic debris and rubble associated with building works
6	Disturbance		Area with greater concentration of magnetic anomalies than the rest of the surrounding area, perhaps indicating disturbance
7	Linear Magnetic Fill	Field Boundary	Magnetic material accumulated in top of old field boundary ditch detected with topographic survey; aligned with field boundary to the E of Dark Lane
8		Modern Building	Remains of old barn depicted in OS Map (1902); no evidences in the surface
9	Magnetic Debris		Large concentration of magnetic material (debris?) accumulated in top of a possible ditch, aligned N-S, across the contours and perpendicular to anomaly 7
10	Magnetic Interference		Strong anomaly caused by the fence's magnetic field
11	Magnetic Dipole	Possible Kiln / Hearth	Suggested interpretation on the basis of form and anomaly strength
12	Magnetic Dipole	Possible Kiln / Hearth	Suggested interpretation on the basis of form and anomaly strength
20	Bank and Ditch	Lynchet	A well-defined lynchet with a narrow ditch at its base marked by 7
21	Scarp	Cultivation Headland?	A low scarp almost parallel to the adjacent boundary earthwork 20 and perhaps a cultivation headland
22	Disturbance		A low mound and adjacent hollow suggest disturbance relating to construction of the adjacent bungalow
23	Bank	Probable Lynchet	This runs parallel to 20 and is followed by the modern boundary fence

4 Discussion

Geophysical Survey Results

4.1 For an explanation of the data processing see Process Documentation in the appendices.

Geology and environment

4.2 The magnetic character of the soil is fairly uniform as would be expected within a small area over deep soil lacking alluvial or fluvial activity. There is no direct evidence in the magnetic data of suitable contexts for palaeo-environmental study although the archaeological features could of course harbour suitable deposits.

Archaeological evidence

4.3 There is a concentration of magnetic dipoles adjacent to the northern side of the northern bungalow, which could be identified with building-works debris (5).

4.4 There is a scatter of single magnetic dipoles and positive anomalies along the whole field which could be identified with steel objects and rubble, and specially concentrated to the North of area 5 (6).

4.5 There are two thin linear magnetic enhancement anomalies which could be identified with negative archaeological features containing magnetic fill, such as ditches (1, 3).

4.6 A kiln or hearth (4) buried 1m deep was discovered by Archenfield Archaeology Ltd during trenching after geophysical survey (Figure 1). This was not initially recognised in the geophysical data as it was coincident with a strong dipole of probable ferrous origin. This has been linked with the site of a telegraph pole associated with debris in the soil. Other anomalies that may represent accumulations of burnt soil, whether as hearths or in pits, are in the northern part of the area at (11) and (12).

4.7 It is possible that others exist in the area of (4) but have been obscured magnetically by the debris (5) associated with the adjacent bungalow.

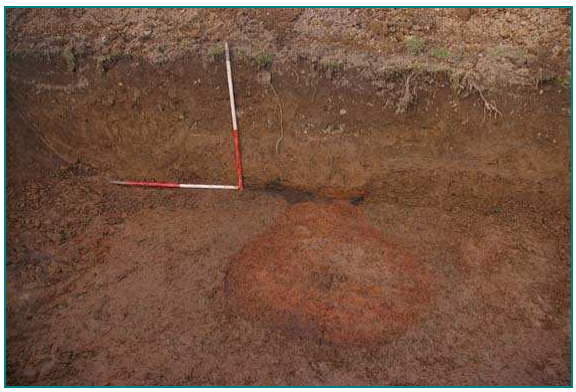

Figure 1, Prehistoric kiln excavated at Dark Lane site.

4.8 Topsoil is usually fairly magnetic relative to other soils and hence is important for magnetic survey. The topsoil here is fairly deep in places and could mask more weakly magnetic features beneath it. In addition the short gradiometer configuration that had to be used given the external magnetic interference sources the upper sensor was measuring a similar magnetic anomaly strength as the lower limiting detection of deep magnetic sources.

4.9 This evidence suggests the possibility that other archaeological features similar to that one (1m wide) buried at a similar depth (1m beneath topsoil) may exist in the survey area but have not been detected because of the reasons mentioned above.

Topographic Survey Results

4.10 A major lynchet (20) is aligned with the field boundary in the field to the East of Dark Lane and is related to magnetic enhancement (7). A second possible example is parallel to this at (23). The association of (20) with a continuation east of the site and the probable identical association between magnetic feature (2 - 3) and again a boundary east of Dark Lane is interesting. Dark Lane would appear to cut across both of these whereas the western road seems to define their western limit. How old is the lane? If it is Roman-era as has been suggested then there is evidence here to suggest elements of the field system pre-date this.

4.11 In the magnetically disturbed area to the North of the northern house (5) a small mound and other disturbance (22) was detected, most probably associated with the construction of the bungalows.

Caveats

4.12 Geophysical survey is literally that, a systematic measurement of some physical property related to the earth. There are numerous sources of disturbance of this property, some due to archaeological features, some due to the measuring method, and others that relate to the environment in which the measurement is made. No disturbance, or 'anomaly', is capable of providing an unambiguous and comprehensive description of a feature, in particular in archaeological contexts where there are a myriad of factors involved.

4.13 The measured anomaly is generated by the presence or absence of certain materials within a feature, not by the feature itself. Not all archaeological features produce disturbances that can be detected by a particular instrument or methodology. For this reason, the absence of an anomaly must never be taken to mean the absence of an archaeological feature. The best surveys are those which use a variety of techniques over the same ground at resolutions adequate for the detection of a range of different features.

4.14 Where the specification is by a third party ArchaeoPhysica will always endeavour to produce the best possible result within any imposed constraints and any perceived failure of the specification remains the responsibility of that third party.

4.15 Where third party sources are used in interpretation or analysis ArchaeoPhysica will endeavour to verify their accuracy within reasonable limits but responsibility for any errors or omissions remains with the originator.

4.16 Any recommendations are made based upon the skills and experience of staff at ArchaeoPhysica and the information available to them at the time. ArchaeoPhysica is not responsible for the manner in which these may or may not be carried out, or for any matters arising from the same.

Bibliography

Brown, D.: "Leintwardine", in "Historic Herefordshire Online", (http://www.smr.herefordshire.gov.uk/roman/leintwardine_db2.htm)

The National Soil Resources Institute at www.landis.org/soilscapes

5 Appendices

Magnetic Field Survey

Geomagnetism

5.1 The geomagnetic field is at any location the four-dimensional (space and time) vector sum of several discrete components. The temporal component has categories separated by the time over which any variation in their intensity becomes noticeable. Archaeological surveys are concerned with the two most rapidly changing categories, micropulsations and the diurnal field. The former may only last a few seconds and have amplitudes comparable with anomalies from archaeological sources, e.g., 2-5nT. The second is the daily fluctuation in the regional field that is broadly predictable and varies by some 30-40nT per day. This can be complicated by magnetic storms which can contribute field variations of well over 100nT, frequently associated with intense bursts of magnetic noise within the spread of amplitudes associated with archaeological sources. A third temporal variation is due to variations in the distribution of magnetic sources within the Earth's core. Unlike the other two, these occur over years, influence both the amplitude and direction of the regional field and for archaeological purposes can be safely ignored.

5.2 The stationary (non-temporal) component of the magnetic field is the sum of the myriad of magnetic sources within the Earth's crust. These range from deeply buried magnetic minerals through to changes in soil structure and properties due to environmental, agricultural and of course archaeological sources. To provide a sense of scale, the deeply buried sources can contribute anomalies of a few thousand nT across many kilometres of landscape, though visible as changes of only a few nT across the sizes of areas associated with many archaeological projects. In contrast, the environmental and archaeological sources may contribute just 10nT or so, detectable at distances of no more than perhaps 3m for the larger anomalies.

5.3 Where anomalies exist of a larger spatial extent than the survey area they form part of the *regional* field and are caused by the deepest magnetic components of the ground. The remaining field is called the *residual* and represents roughly the sum of the magnetic sources present within the survey area, whatever their depth of burial. In basic terms, the more sensitive the instrument used to generate this data and the less cluttered the soil, the deeper the source that can be imaged magnetically, perhaps ditch fills or settlement sites concealed beneath marginal peat for example. A branch of geophysical processing called *potential field analysis* allows the geophysicist to further subdivide these sources, allowing the very shallowest ones, indicative of archaeological sources, to dominate the deeper.

The burial environment

5.4 Topsoil is usually fairly magnetic relative to other soils and hence is important for magnetic survey. If a topsoil is exceptionally deep it can mask more weakly magnetic features beneath it. Alternatively, regions where the topsoil is locally deeper than elsewhere are usually associated with enhanced magnetic field strength. Archaeological features that incorporate relict topsoil tend to enhance the magnetic field around them.

5.5 In some cases, features may exist magnetically that cannot be detected during excavation. This is normal, as some soils with enhanced magnetic properties do not exhibit any visible difference from their surroundings. In addition, some features survive as shadows in the topsoil after they have been physically removed by ploughing. The converse scenario is of course also true: there are many archaeological features that have no detectable magnetic component. Finally, sometimes it will be the case that the archaeological feature itself is not magnetic but some secondary characteristic still allows its detection by magnetic survey. An example is where a ditch has been filled, perhaps soon after excavation, with the same material as its surroundings and therefore lacks magnetic contrast with the surrounding material. As this fill settles, deeper topsoil (whether contemporary or modern) can accumulate in the resulting hollow, creating a local slightly positive magnetic anomaly. An example of this is a grave site where the grave itself is usually nonmagnetic but can occasionally be located by the disturbance of the contemporary

surface. Of course if the top of the feature has been truncated by ploughing this effect will disappear.

5.6 Hearths, burnt or fired soil and clay, and similar contexts involving the application of heat to soil, tend to become strongly magnetic due to chemical changes in the soil, in particular the conversion of iron oxides to maghaemite and magnetite. Assuming there is adequate iron in the soil initially, the process results in a particularly strong enhancement that is effectively permanent (the degradation that does occur can be regarded as negligible over usual archaeological time scales). This means that hearths can usually be detected with confidence. In addition the presence of domestic fires at settlement sites tends to lead to an accumulation of magnetic soil throughout the settled area and for a distance beyond. It is possible therefore that features that are undetectable away from a settlement will become more detectable the closer survey proceeds to the inhabited area, an effect that has been observed in large surveys.

5.7 A secondary effect of the same process is that the presence of non-magnetic features may become detectable if magnetic material has accumulated in or around them. A common example is wall footings against which magnetic soil has accumulated, even in trace quantities.

Configuration & measurement

5.8 The magnetic field has a direction and intensity and hence it is possible to measure either the intensity of a directional component or the total intensity. The total intensity is measured using a total field magnetometer, e.g., a caesium magnetometer but it is common in UK archaeological surveys to measure just the vertical component, using a fluxgate gradiometer.

5.9 In addition, magnetometers can be configured in different ways, usually as single sensor magnetometers or as gradiometers. For this discussion it is assumed that the gradiometer is vertical. A single magnetic sensor measures all components of the ambient field, including the temporal which is not desired and hence needs to be removed from the data during processing. This is usually achieved either through reduction using software or by using a base station magnetometer, one that does not move and simply records the temporal variations so that they can be subtracted from the field data later.

5.10 A gradiometer avoids this by having two sensors measuring simultaneously, one sensor being mounted higher than the other. By subtracting the data from the upper sensor from the lower, the temporal component, common to both sensors, is removed. This has a disadvantage in that unless the upper sensor is quite high above the ground, e.g., 3m, the data from it can contain a large component due to shallow and hence archaeological sources. When the data is subtracted this reduces the anomaly strength from shallow sources as well as deep. For gradiometers using widely spaced sensors, e.g., the Bartington Grad601-2 (1m) or the ArchaeoPhysica wheeled instrument (1.2m), this is much less of a problem than for shorter ones, e.g., the Geoscan Research FM36 (0.5m).

5.11 One advantage of vertical gradiometers is that they provide slightly better defined edges of anomalies due to magnetic sources close to them, e.g., magnetic fills in the tops of pits and ditches. A magnetometer, however, will quite often provide slightly larger anomaly strength and the calculated vertical gradient is nearly always a good model of the measured gradient.

5.12 Conversely, magnetometers are better at imaging laminar structures and can hence differentiate between soils at the same depth but with different magnetic susceptibility. This is of particular benefit when imaging small areas or sites with complex magnetic properties, e.g., settlement remains.

Survey metadata

Project information

Project Name	Dark Lane, Leintwardine
Project Code	LEI071
Client	Archenfield Archaeology Ltd
Fieldwork Dates	21st and 22nd January 2008
Personnel - Survey	Martin Roseveare, Anne Roseveare, Maria Lafuente
Personnel - Interpretation	Martin Roseveare
Personnel - Reporting	Maria Lafuente, Martin Roseveare
Draft Report Date	5th February 2008
Final Report Date	7th February 2008

5.13

Location

Country	England
County	Herefordshire
Nearest Town	Leintwardine
Landholding	Local landowner
Central Co-ordinates	34042 27460

5.14

Environmental data

Geology – Soil	Freely draining slightly acid loamy soils
Geology – Parent	Silurian Limestones
Topography	Fairly level
Hydrology	Expected to be relatively free-draining
Current Land Use	Paddock/agricultural
Historic Land Use	Agricultural
Vegetation Cover	Pasture
Sources of Interference	Passing traffic, fencing. etc

5.15

Geodetic data

Projection	Orthographic
Co-ordinate System	British National Grid
Bearing	TBC
Precision	0.05m internal
Instrument Used	Total station
Reference Points	Autonomous
References Definition	TBC

5.16

Process documentation

Topographic survey

Instrument	Topcon 200/ 3000 series total station
Resolution	2 to 5m for landform, earthwork mapping as detailed as necessary to provide accurate forms
Accuracy	0.05m relative to local reference
QA Procedure	Re-observation of certain points following every resection

Total field vertical gradiometer

Measured Variable	Total field vertical magnetic gradient in nT/m
Instrument	Geometrics G858 MagMapper

Configuration	Vertical gradiometer in a carrying frame, sensors 0.5m apart, lower 0.3m above surface
QA Procedure	Field observations
QA Result	Normal
Data Source Format	Geometrics proprietary binary, ".BIN"

Process

5.17 The data was processed by lightly smoothing each line of raw non-interpolated data to stabilise the subsequent interpolation process which produces a regular grid of data at 0.25m intervals along lines 1.0m apart. Subsequent cross-line interpolation to 0.25m was undertaken for cosmetic purposes.

Archive data

Introduction

5.18 ArchaeoPhysica maintains an archive for all its projects, access to which is permitted for research purposes. Copyright and intellectual property rights are retained by ArchaeoPhysica on all material it has produced, the client having full licence to use such material as benefits their project.

5.19 Access is by appointment only. Some content is restricted and not available to third parties. There is no automatic right of access to this archive by members of the public. Some material retains commercial value and a charge may be made for its use. An administrative charge may be made for some enquiries, depending upon the exact nature of the request.

General description

5.20 The archive contains all survey and project data, communications, field notes, reports and other related material including copies of third party data (e.g. CAD mapping, etc) in digital form. Many are in proprietary formats while report components are available in PDF format.

5.21 In addition, there are paper elements to some project archives, usually provided by the client. Nearly all elements of the archive that are generated by ArchaeoPhysica are digital.

File types

Extension	Associated Software or Format Information	Example Content
.38b	Geomar TrackNav38b format	EM38B downloads
.823	Geomar TrackNav823 format	Magnetometer downloads
.asc	Geomar TrackNav conversion format	Data downloads
.bin	Geometrics MagMap2000 (version specific)	Magnetometer downloads
.csv	ASCII comma-separated data	Various data files
.ctm	GPR-Slice internal data format	GPR topographic corrections
.dat	Generic ASCII data (may not be human readable)	Magnetometer downloads, GPR profiles & slices
.doc	Microsoft Word document (Office 97 and newer)	Report documents
.dwg	Autodesk AutoCAD format (version specific)	Plans & digitised maps
.dxf	ASCII Drawing eXchange Format	Plans & digitised maps
.dzt	GSSI RADAN (version specific)	GPR data (profiles)
.dzt	GPR-Slice internal data format	GPR data (profiles)
.grd	Golden Software Surfer 7 binary or ASCII grid	Survey data
.html	ASCII HyperText Markup Language file	Report files, web pages
.info	APrad conversion parameter format	GPR profile metadata
.inv	RES2DINV format	ERT inversion files
.ivp	RES2DINV parameter format	ERT inversion metadata
.log	GPR-Slice log file format	GPR profile and slice metadata
.map	Manifold GIS 6.5 and newer (version specific)	Project data
.mdb	Microsoft Access document (Office 97 and newer)	Database files
.mdi	Microsoft Office Document Imaging format	Report documents
.mrk	GPR-Slice internal mark data	GPR data positioning
.pdf	Adobe Acrobat Format (version 6 and newer)	Report files
.r15	Geoscan Research RM15 download (sequential ASCII)	Data files
.shp	MapInfo vector data	Shape file output
.srf	Golden Software Surfer document (version 8)	Project data
.stn	Geometrics MagMap2000 ASCII data	Processed magnetic data
.txt	Generic human readable ASCII data	Notes etc.
.xls	Microsoft Excel document (Office 97 and newer)	Spreadsheet files
.xml	AP System or Manifold GIS	Logs, palettes, MS .NET files

5.22 The files listed above represent the usual content of digital archives held by ArchaeoPhysica.

Dissemination

5.23 It is the client's responsibility to ensure that reports are distributed to all parties with a necessary interest in the project, e.g. local government offices, including the HER where present. ArchaeoPhysica reserves the right to display data from projects on its website and in other marketing or research publications, usually with the consent of the client. Information that might locate the project is normally removed unless otherwise authorised by the client.