YCCCART 2022/Y8

Geophysical surveys east of Kenn Road, Yatton

Crates 5 Acres and Crates 8 Acres (Mr G Burdge 10 & 11)

YATTON, CONGRESBURY, CLAVERHAM AND CLEEVE ARCHAEOLOGICAL RESEARCH TEAM (YCCCART)

General Editor: Vince Russett

The RM15 team in action

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Abstract

Geophysical surveys carried out in two fields to the east of Kenn Road,Yatton revealed largely medieval or post medieval agricultural landscapes and drainage features, but one possibly more significant archaeological feature, a potential pre ridge-and-furrow enclosure, was detected in Field 2 (the rugby ground).

Acknowledgements

A Heritage Lottery Grant enabled the purchase of a Bartington Gradiometer 601 and a Geoscan RM 15 resistivity meter without which this survey could not have been undertaken.

This survey would also not have been carried out without the willing permission of the landowner, Mr G Burdge and his agent Mr F Malton.

The authors are grateful for the hard work by the members of YCCCART in performing the surveys and Vince Russett for editing.

Introduction

Yatton, Congresbury, Claverham and Cleeve Archaeological Research Team (YCCCART) is a Community Archaeology team working across northern Somerset.

Our objective is to undertake archaeological fieldwork to enable a better understanding and management of the heritage of the area, while recording and publishing the activities and locations of the research carried out.

Site location

Fig 1: Location, fields 1 and 2 (2021)

The surveyed fields are to the east of Kenn Road (B3133) in the parish of Yatton, in North Somerset. Site 1 is centred on ST41636750, and site 2 on ST41536759. The sites today lie immediately south of the current Yatton/Kenn parish boundary, although this boundary was further north in the 19th century.

The GPS for the site is shown in the Appendix.

Land use and geology

The sites lie at the landward edge of the alluvial clays of the Northmarsh, the underlying solid geology here being the Mercia Mudstones.

The current land-use is pasture (Site 1) and rugby training pitch (Site 2). There is no public access to this land, but it can be seen from Kenn Road.

Historical & archaeological context

Fig 2: 1799 map of Yatton (SHC DD/SAS/C212/MAP/167)

The 1799 map of Yatton shows both fields, roughly in their modern conformations. A black blob in the south-east of Crates 8 acres at first appears to be a previously unrecorded building, but close inspection (and the absence of any later evidence in documentary or

Fig 3: Map blemish and Ham Farm (comparison) on 1799 map

earthwork / lidar / geophysical form) appears to show that this is simply a blemish on the original map.

The 1821 map of Yatton shows the same cartographic situation.

Fig 4: Yatton Tithe Map (1840)

The Tithe map in Fig 4 above shows no features within the fields 1464 and 1467, which are called Crates Eight Acres and Crates Five Acres on the Tithe Apportionment. Both fields are there described as pasture (although lidar shows faint traces of remaining ridge and furrow in Field 1467, not visible on the ground).

The field name 'Crate' is a known *W. Sax.* form of 'Croft' (there is a field in Kenn named 'Yawcrate', which also contains a *W. Sax.* pronunciation of 'Yeo'); the possessive 's' in this case probably rather means the land was previously associated with someone called Crate.

The area under survey lies at the interface of the slightly flatter, post-Roman alluviated Northmarsh, with the slightly higher Mercia Mudstone area around Ham Farm. Thus most of the boundaries of the two fields are ditched, and the southern boundary of field 1 (from its sinuosity and its predating the Kenn Road) appears to be semi-natural in origin.

Such areas must, before the advent of industrial farming in the 20th century have, in normal times, been mainly pastoral, arable use being probably restricted to drier periods (Oosthuizen 2016).

Which is not to say that arable did not at times successfully colonise the lower areas: this is born out to a great extent by the lidar surveys.

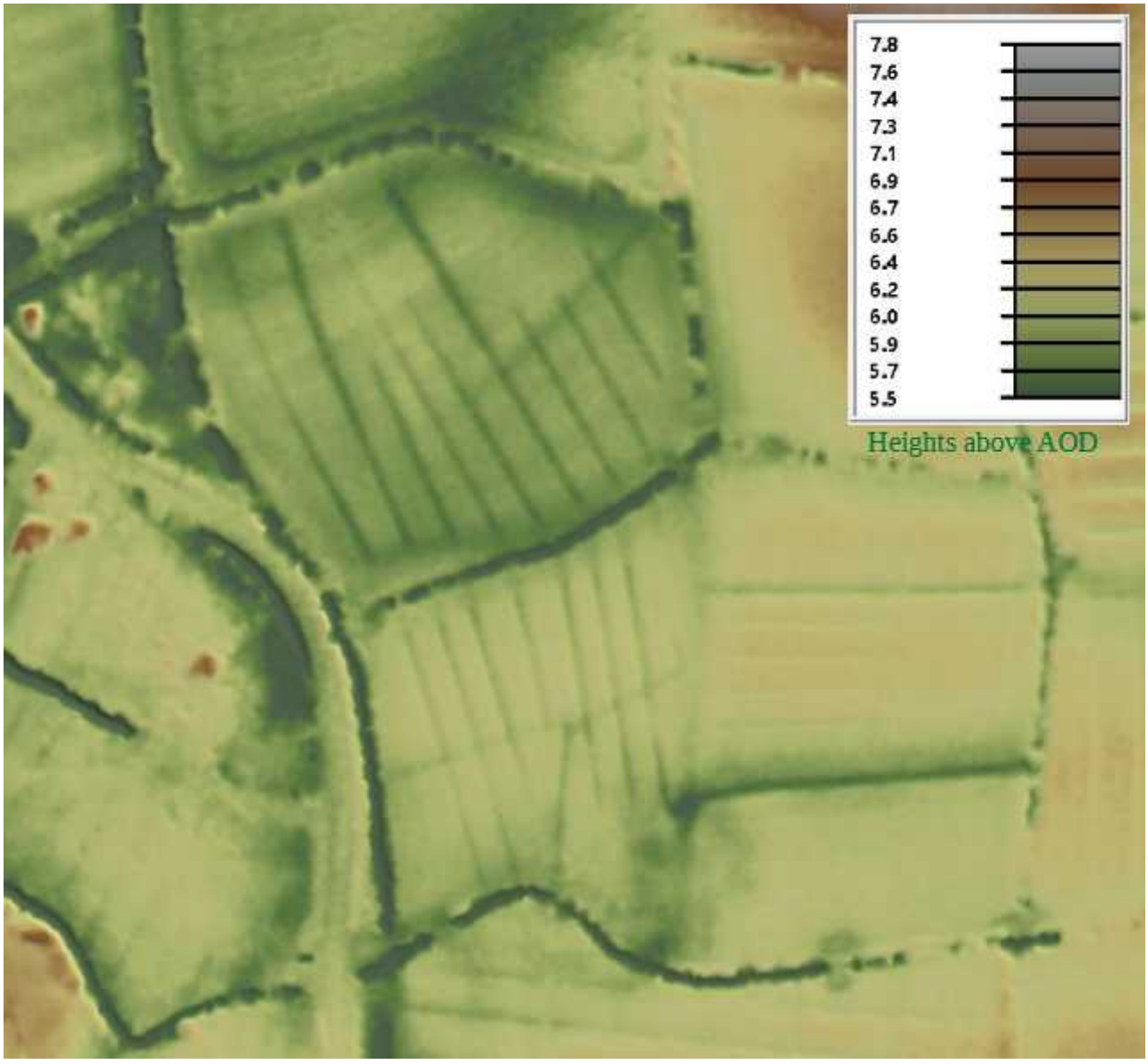


Fig 5: Lidar survey of Fields 1 and 2 (lidar palette: Earth Colours)

The Field 2 scan clearly shows the shadow of ridge-and-furrow underlying the current surface features, which largely relate to its former use as drained pasture and current use as a rugby pitch. This is despite its being around 30cm lower than field 1: this field (1) may have been dry enough, ironically, for later ploughing to have removed any traces of ridge and furrow from it.

Survey objectives

This survey was a continuation of large-scale surveys across Kenn and Yatton moors.

Methodology

The survey of the fields was undertaken during the period May to October 2022 by teams from YCCCART using a Bartington Grad 601-2 gradiometer and a Geoscan RM 15 resistivity meter.

The completed surveys were downloaded to TerraSurveyor and the resultant composite adjusted using the following filters:

Gradiometry

Colour - Red Blue Green 2
Band weight equaliser
Grad shade
Destriped
Despiked Clip
SD2

Resistivity

Colour - Red Blue Green 2
Band weight equaliser
Grad shade
Clip SD2
High pass Gaussian filter
Despiked

The report was written in Libre Office 5 Writer.

Results

Field 1 (Crates 8 Acres)

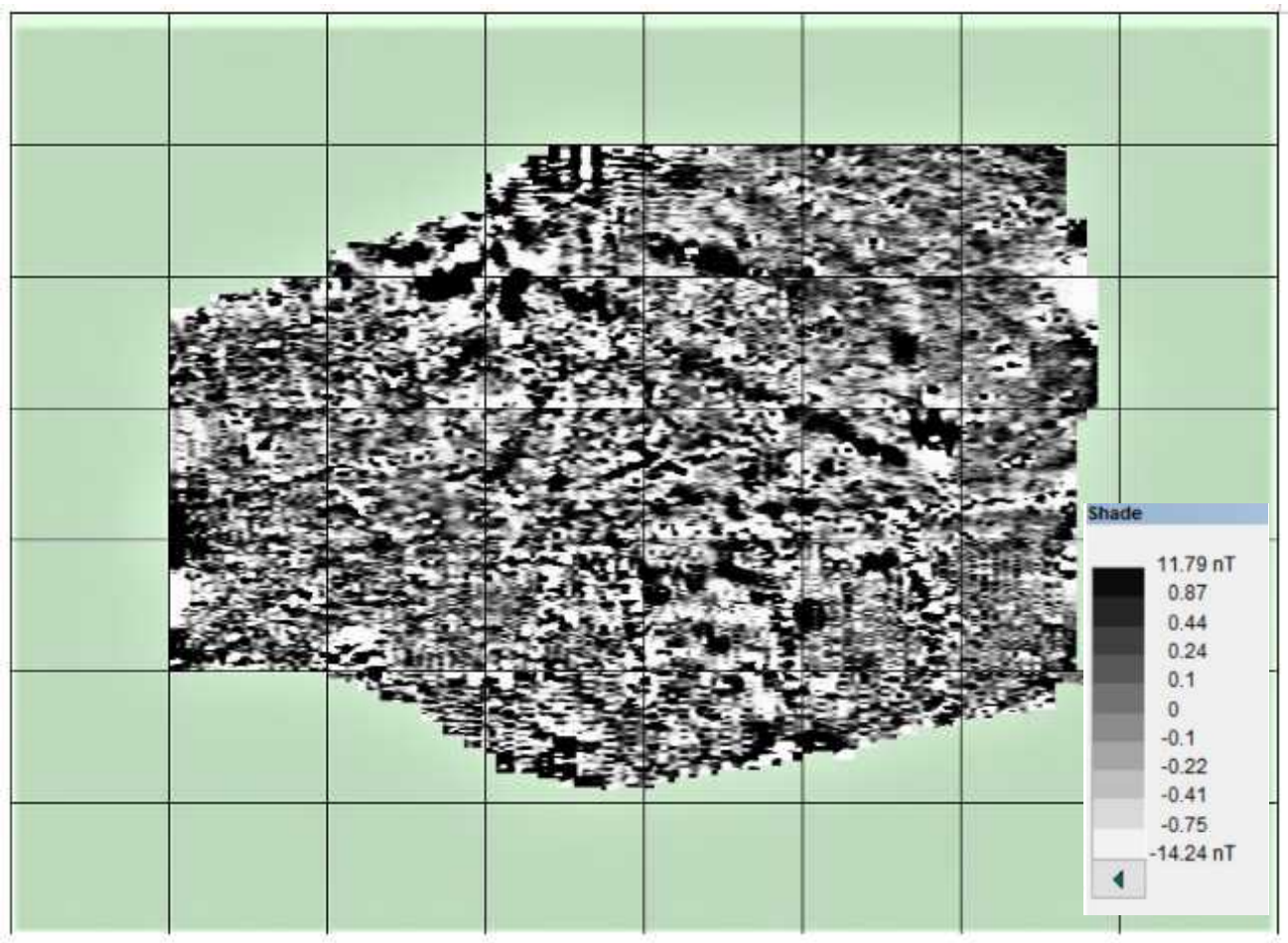


Fig 6: TerraSurveyor black & white shade view. High readings are black.

These results (Figs 6 and 7), while showing no clear signs of prolonged settlement or occupation (especially confirming that the black mark on the 1799 map (Fig 2 above) is almost certainly not the record of a standing structure), are slightly equivocal.

Few of the gripes seen clearly on the lidar scans or air photos are obvious: this difference to those around Congresbury may be because the Yatton examples lack ceramic pipes, or possibly, due to the phenomenal dryness of the summer of 2022, reducing soil contrasts.

Otherwise, a single linear feature of high magnetic status runs SE-NW across the field, while not being visible on lidar or APs. This terminates in a pattern of radiating lobes close to the hedge which in other areas, have been attributed to lightning strikes, but other possibilities should really be ruled out before turning to such a slightly esoteric explanation.

Seen in its context (Fig 8), Field 2 emerges as a standard part of a working agricultural landscape.

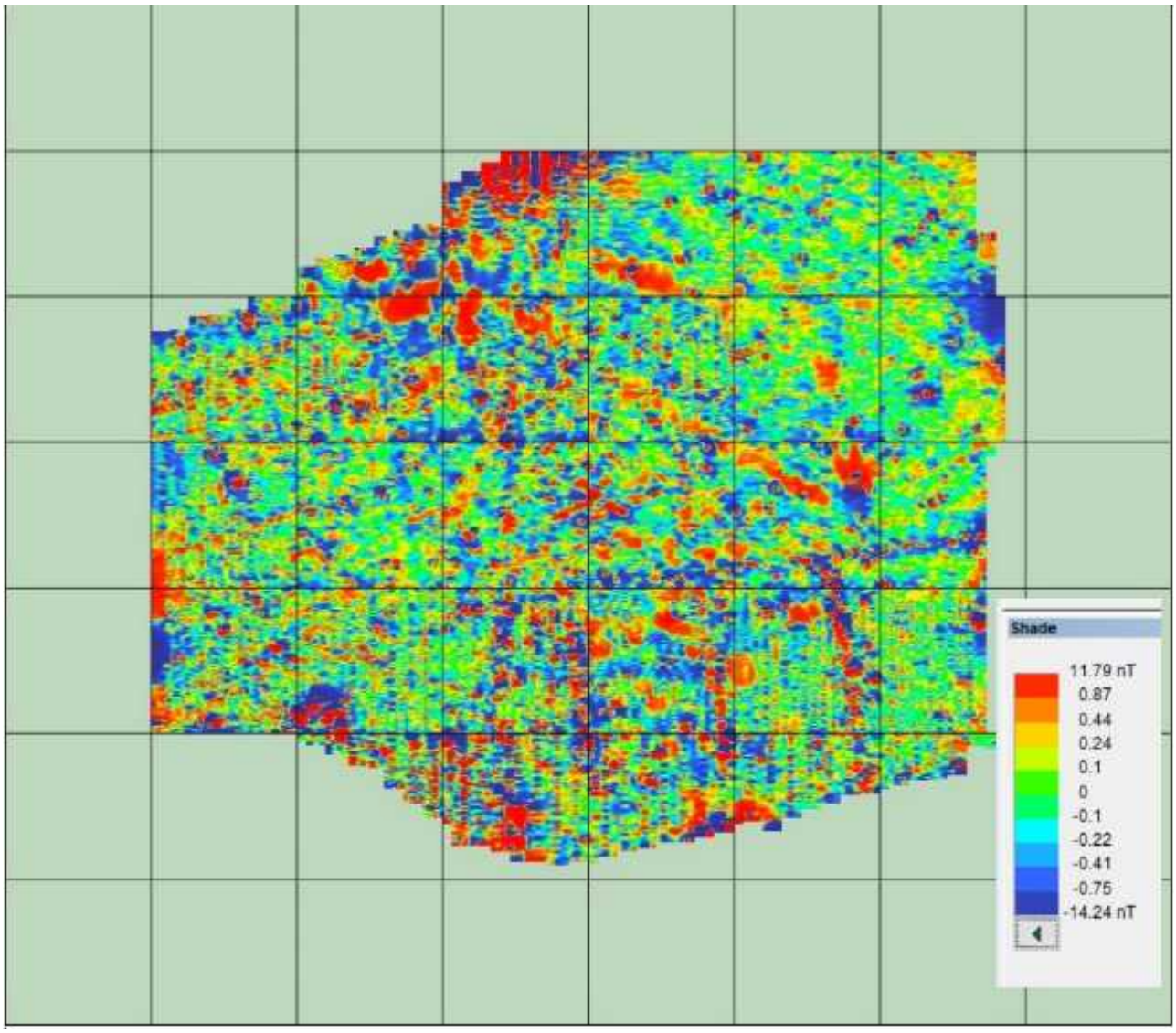


Fig 7: TerraSurveyor colour shade view. High readings are red.

Colour record of the survey (Fig 7 above) adds a little to the overall picture.

A group of linear features in the SE of the field are demarking specially deep gripes, dividing the area into three: other deep gripes may represent (temporary?) divisions of the fields in the course of cropping.

Fig 8: Field 1 in air photographic context

Field 2 (Crates Five Acres) (gradiometry)

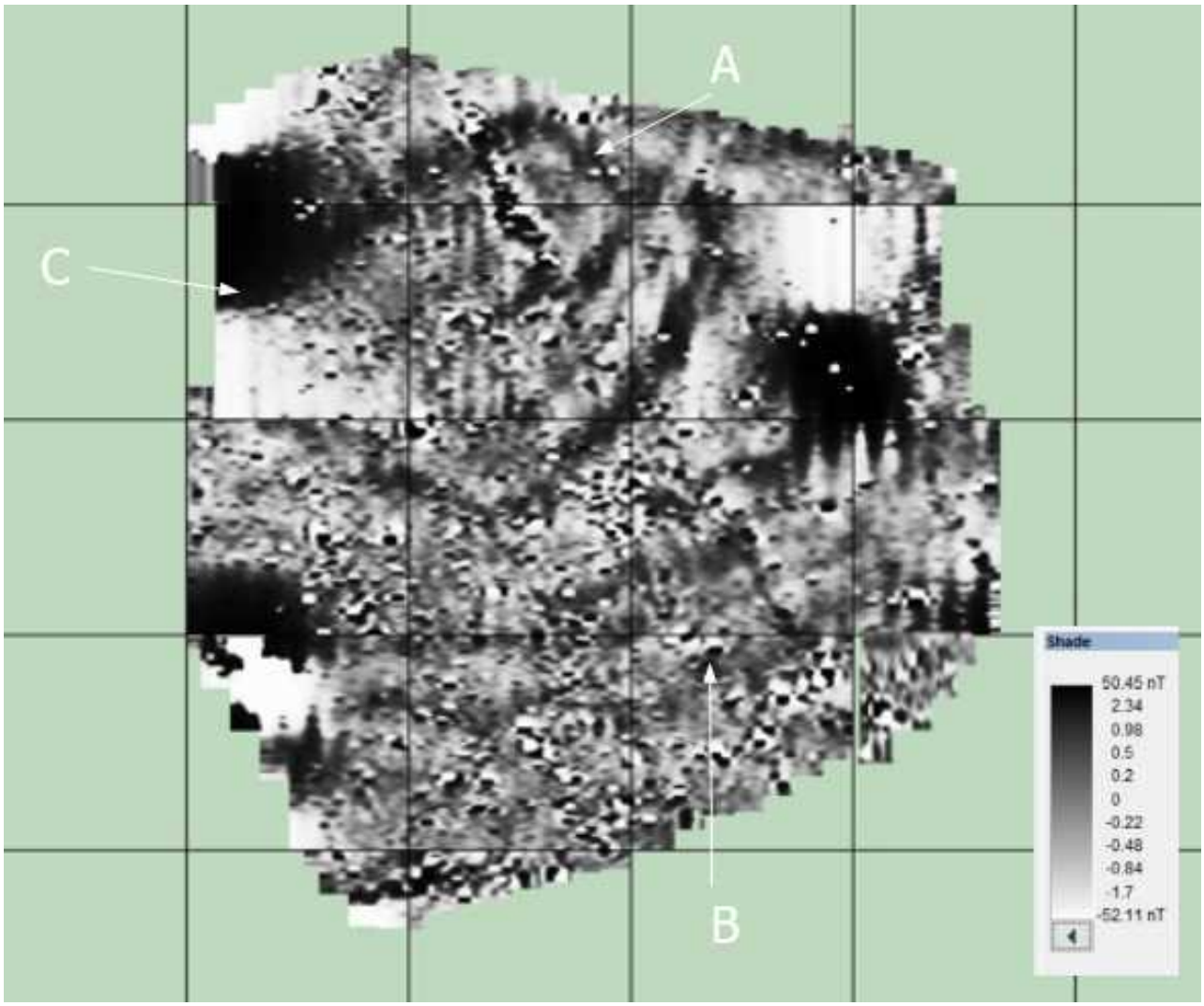


Fig 9: TerraSurveyor black & white shade view. High readings are black.

This field yielded results showing far more contrast than Field 1, probably due to the end of the prolonged drought of summer 2022.

By far the most interesting response was A (Fig 9), apparently a rectangular enclosure with magnetically enhanced ditches. The 'enclosure' (if such it be) has rounded corners and slightly bowed edges, the western corner being obscured by the magnetic intereference from a standing 1950s pylon (C). It appears to be some 70m by 45m in size, with no obvious entrance.

This feature is not visible on lidar or air photographs, and appears to underlie the vestigial ridge-and-furrow, hence may be of earlier date. Similar features have emerged on the Hinkley power route through Mendip (National Grid 2013), and have proved on excavation to be late prehistoric / early Roman in date. No internal features are immediately obvious, but the site has been heavily disturbed by agricultural activity, and subsequently by works connected to the rugby pitch.

It also lies immediately adjacent to the projected course of the palaeochannel seen in the fields immediately to the north.

Although this *may* only be an emergent pattern from other features in the survey, it is convincing enough to demand that in the event of any development proposals for the land, this feature should be a priority for archaeological evaluation.

Feature B is a group of three parallel gripes, conspicuous by the presence of assorted magnetic detritus, visible on lidar, and running across feature A.

A further feature in the east side of the field is a currently unexplained huge magnetic response to some buried feature, not dissimilar to that caused by pylon C.

Field 2 (Crates Five Acres) (resistivity)

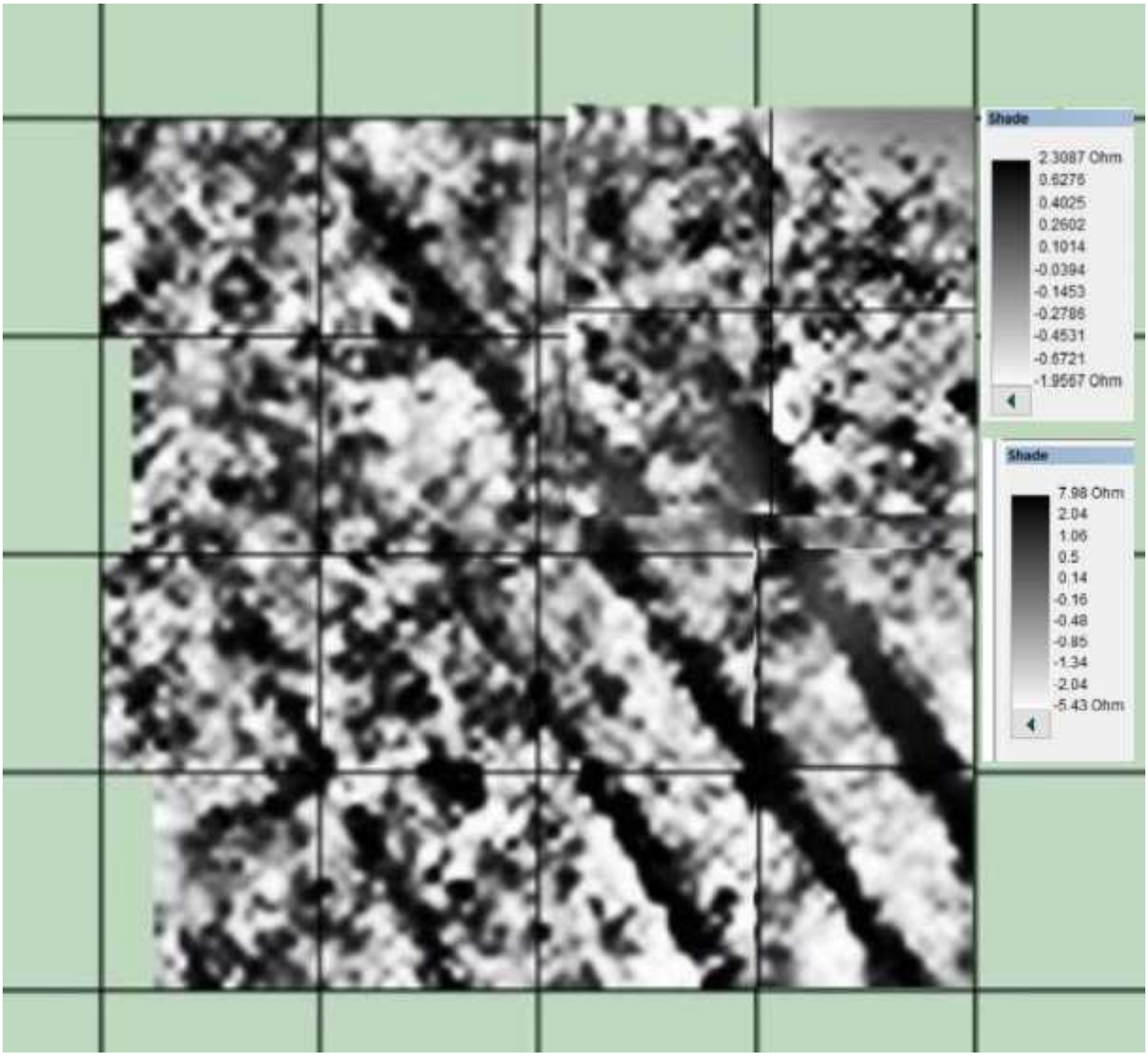


Fig 10: TerraSurveyor black & white shade view. High readings are black.

The image at Fig 10 above is a composite. The top 4 right hand grids have been built separately and overlaid in order to iron out image differences because of changing weather conditions. The charts on the right show the resistance for the 4 grids (top) and overall (below).

Most prominent in the result are the grypes shown on the lidar image in Fig 5 above.

There is also a hint in the top grid row of the southern edge of the proposed enclosure above, increasing the likelihood that this is a real feature.

Fig 11 below shows the gradiometry results from Field 1 in context.

Fig 11: Gradiometry results in context

The current surveys completed geophysical survey of a group of fields along the east side of Kenn Road (B31333), carried out at different times over three years.

These area surveys are important over and above the typical site-directed surveys related to (say) planning work, which of course, by its very nature, is tightly focused on development proposal sites.

These larger area surveys (see Fig 12 below) are not only of interest in themselves, but provide baselines for smaller-scale work.

For example, in Fig 12, the swirling patterns, typical of the post-Roman alluvium north of the Congresbury Yeo, are very visible at the northern end of the survey, whereas the higher, slightly dryer ground (Mercia Mudstones) of the area around Ham Farm is immediately identifiable by the difference in background geophysical responses.

Both areas yield archaeological results, of course, but the interpretation has to be adjusted to the nature of the overall geophysical background response.

Fig 12: Gradiometry surveys of fields immediately east of B3133, North End, Yatton

Recommendations for further work

The potential enclosure (see fig 8 above) will require further archaeological investigation if any development proposals are brought forward for the site - all other responses seem to be typical of agricultural works, and require no further works.

References

National Grid 2013	*National Grid Hinkley Point C connection project Preliminary Environmental Information Report* Bristol
Oosthuizen, S. 2016	*The Anglo-Saxon Fenland*, Cambridge

Authors

Vince Russett
with Chris Short

Date

2023-02-26

Appendix. Day Sheet extracts

FIELD 1

Survey area		notes		readings		
		size	walk direction	max	min	mean
Date	Grid number					
12/05/2022		Setting out base line and grids for base line and first row				
	1	30 x 30	N	+29.6	-100	-0.6
	2	30 x 30	N	+100	-73.7	-0.5
	3	30 x 30	N	+64.8	-48.9	-0.9
	4	30 x 30	N	+51.3	-13.6	+1.1
	5	30 x 30	N	+23.1	-26.1	-0.3
	6	Partial finish on tray 11	N	+89.4	-100	-0.2
	7	30 x 30	N	+28.0	-100	-0.2
19/05/2022	1	30 x 30	N	+12.1	-17.1	-0.3
	2	30 x 30	N	+29.7	-9.9	-0.2
	3	30 x 30	N	+31.4	-6.5	-0.7
	4	30 x 30	N	+100	-24.1	-0.6
	5	Partial 11 tray	N	+63.0	-29.7	-0.8
	6	Partial M&R	N	+93.7	-19.4	+1.8
	7	30 x 30	N	+100	-50.5	+1.5
	8	30 x 30	N	+53.6	-30.8	+1.3
	9	30 x 30	N	+97.7	-13.4	+1.2
26/05/2022	1	30 x 30	N	+37.6	-24.4	+0.2
	2	Partial M&R	N	+18.7	-18.1	-0.4
	3	Partial M&R	N	+99	-6.0	-0.5
	4	30 x 30 Portaloo & large steel container by hedge	N	+99.9	-100	+0.7
	5	30 x 30	N	+12.2	-22.2	+0.2
	6	30 x 30	N	+13.6	-16.7	+0.6
	7	Partial M&R	N	+4.4	-5.6	+0.7
09/06/2022	1	Partial M&R	S	+37.8	-100	-0.6
	2	Partial M&R	S	+17.0	-17.5	+0.4
	3	Partial M&R	S	+47.0	-36.1	+0.5
	4	Partial M&R	S	+50.8	-41.7	+0.8
	5	Partial M&R	S	+14.4	-9.2	+0.8
	6	Partial M&R	S	Void - long grass and nettles, very close to hedge for first 6 traverse		

Grid layout

Setting out detail

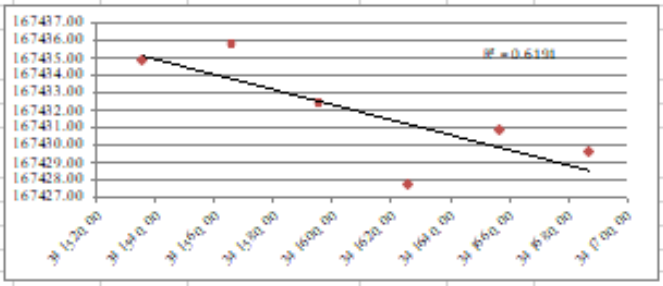
Position A – 13m from west exit post & 11.2m from east exit post
Position D – 25.4m from north gatepost entrance to next field & 26.9m from tree in hedge in entrance to next field

Position of quiet spot – 28.4m from east exit post & 32.4m from west exit post. GPS 341687.9 /167429.7

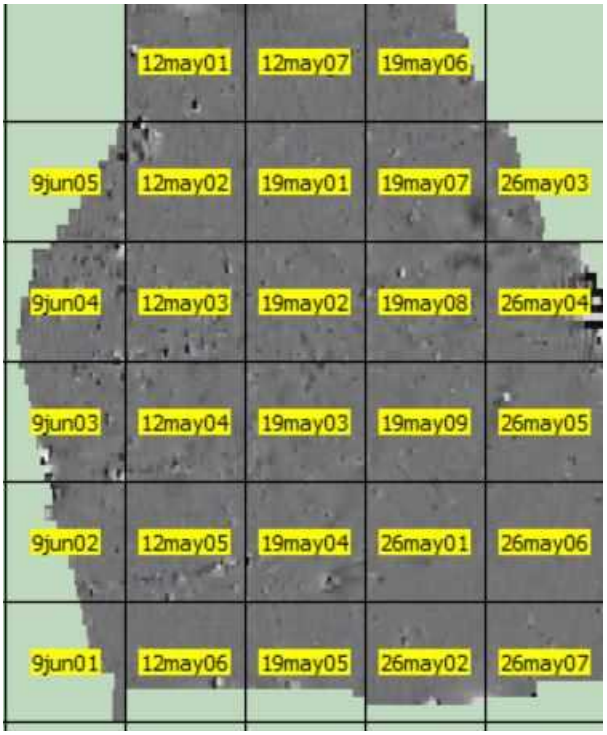
E350657.3 N159178.5

Grid Ref. All ST

	eastings	northings
A	341535.50	167434.80
B	341565.90	167435.80
C	341595.80	167432.40
D	341626.20	167427.70
E	341657.10	167430.80
F	341687.10	167429.60
G		
quiet spot	341548.9	167450.7

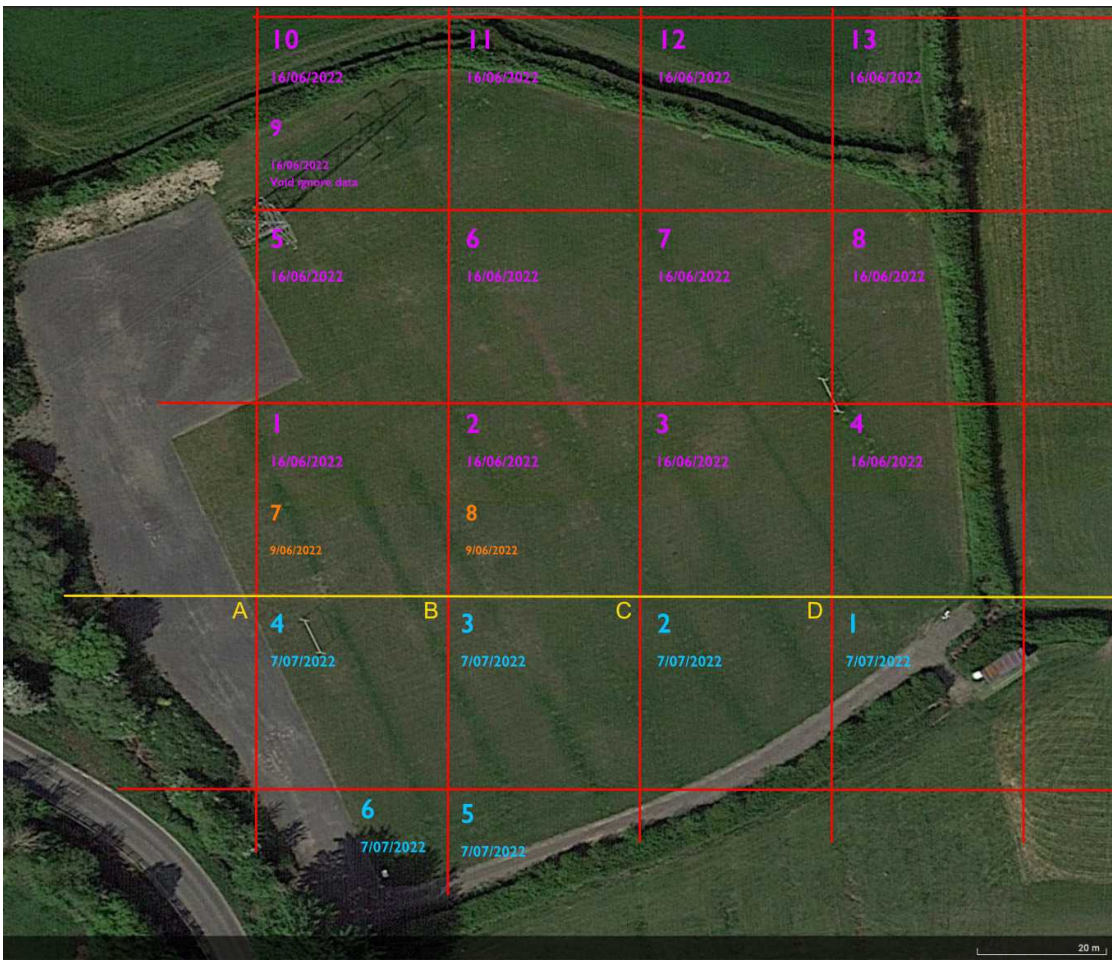


TerraSurveyor grids



FIELD 2

Survey area		notes		readings		
		size	walk direction	max	min	mean
Date	Grid number					
09/06/2022		Setting out base line and grids for base line and first row				
	(7)	30 x 30	N			
	(8)	30 x 30	N			
16/06/2022	1	30 x 30	N	+30.4	-27.9	-5.5
	2	30 x 30	N	+35.6	-82.8	-7.6
	3	30 x 30	N	+28.6	-16.1	-7.7
	4	Partial M & R Close to metal rugby posts	N	+99.3	-100	-7.9
	5	Partial M & R Pylon tray 1 & 2	N	+99.9	-41.9	+0.1
	6	30 x 30	N	+16.0	-24.8	-7.6
	7	30 x 30 rugby posts in grid	N	+100	-100	-0.2
	8	Partial M & R	N	+100	-44.4	+6.1
	9	Partial M & R	N	Void – ignore data		
	10	Partial M & R	N	+100	-43.8	+6.3
	11	Partial M & R	N	+75.7	-43.6	-8.8
	12	Partial M & R Note minus max*	N	-4.1*	-12.3	-9.2
	13	Partial M & R	N	+28.2	-12.8	-8.0
7/ 07/22	1	Partial M & R	S	+29.1	-3.6	+4.4
	2	Partial M & R	S	+99.7	-78.6	+1.5
	3	30 x 30	S	+41.5	-21.6	+2.1
	4	Partial M & R Steel rugby posts in grid	S	+39.3	-100	-4.4
	5	Partial M & R	S	+25.9	-11.0	+2.0
	6	Partial M & R	S	+8.5	-100	-3.4



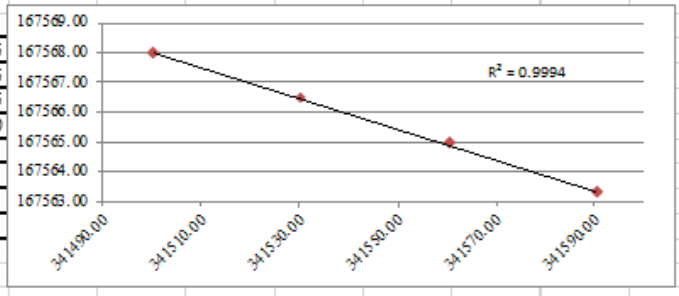
Setting out detail

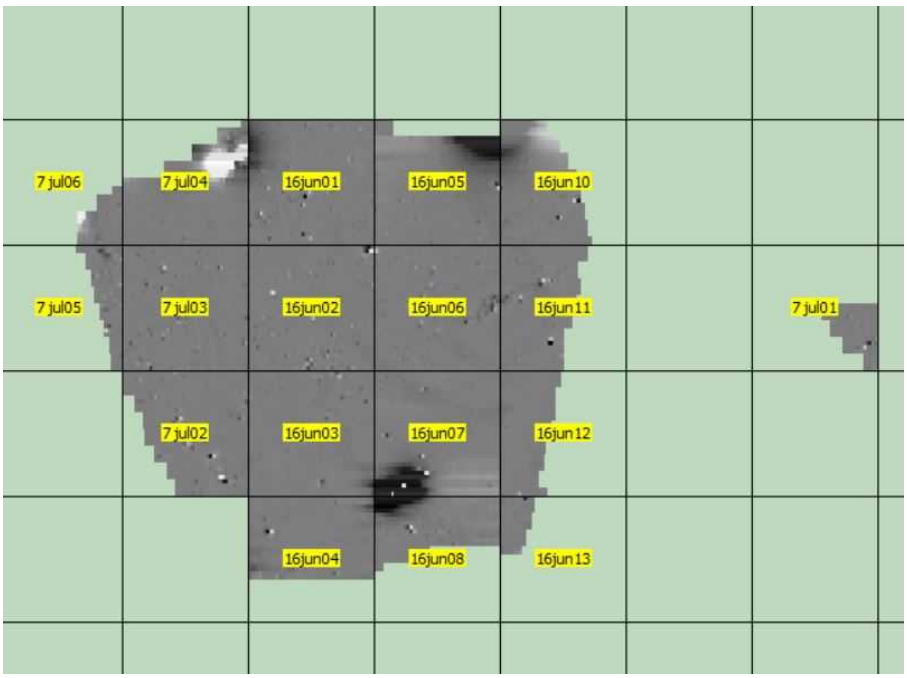
Position A –
Position D –

Position of quiet spot – 28.4m from east exit post & 32.4m from west exit post. GPS 341687.9 /167429.7 in Burdge 10/YRFC 1

E350657.3 N159178.5

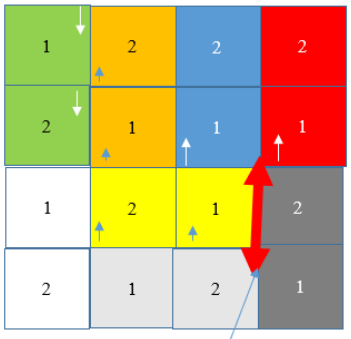
Grid Ref.	All ST	
	eastings	northings
A	341500.57	167567.95
B	341530.49	167566.45
C	341560.48	167564.95
D	341590.40	167563.30
E		
F		
G		
quiet spot	341548.9	167450.7





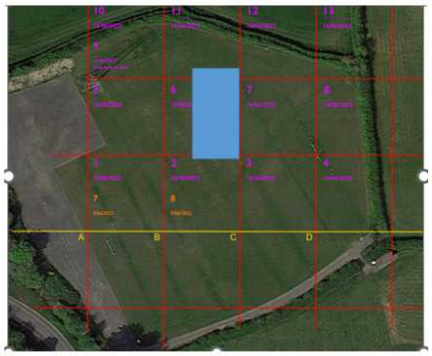
Resistivity

Date	Number of grids	Grid size	Direction of survey
30 JUNE 2022	2	20x20m	N
7 JULY 2022	2	20x20m	N
28 JULY 2022	2	20x20m	N
4 AUGUST 2022	2	20x20m	N
25 AUGUST 2022	2	20 X 20M but G2 17m wide only	S
15 SEPTEMBER 2022	2	20 X 20M but G2 15m wide only	N
22 SEPTEMBER 2022	2	20 X 20 M	N
13 OCTOBER 2022	2	20 X 20 M	N

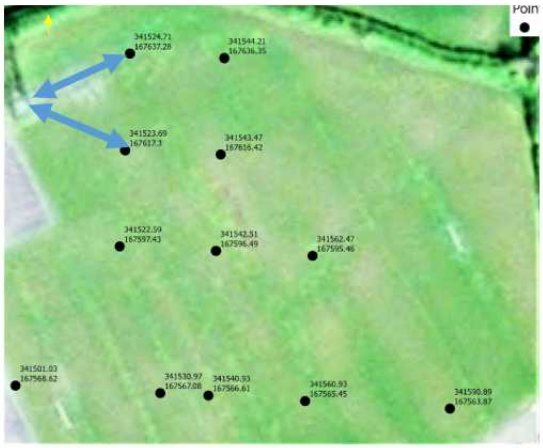


Start point is bottom left on each grid

Blue – 30 June
Red - 7 July
Yellow - 28 July
Orange – 4 August
Green – 25 August
White – 15 September
Grey – 22 September
Dark grey - 13 October

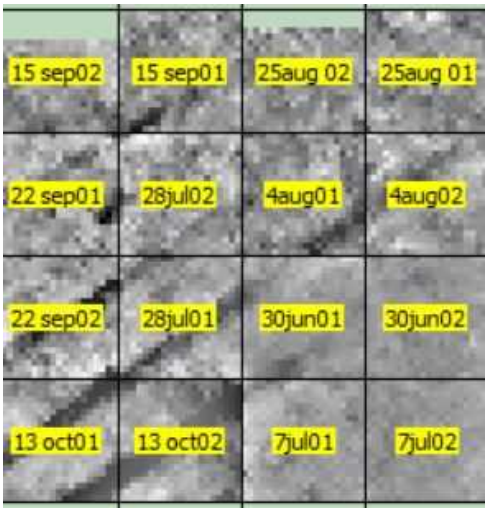


Initial position on 601 grids



Top left
To left hand side corner of concrete base to pylon
8.11 m
To right hand side – 12.2m

Second left
To left hand side corner of concrete base to pylon
6.5m
To right hand side – 8.4m



TerraSurveyor grid layout