

BROMBOROUGH COURTHOUSE:

Report on a Resistivity Survey



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1. Introduction

On June 27th and 29th 2014, members of Big Heritage C.I.C undertook resistivity survey within the interior of the moated site known as Bromborough Courthouse on Wirral (NGR: SJ 34496 84189; Fig 1). Permission was granted by the land owners, the Land Trust and English Heritage. Dean Paton of Big Heritage was granted an Ancient Monuments and Archaeological Areas Act 1979 section 42 - licence to carry out a geophysical survey (Case No: SL00076890). This work was undertaken as part of the larger HLF funded 'Discovering Bromborough 2: Moats and Manors'. This is a community archaeology project managed by Big Heritage under the supervision of Project Manager, Joanne Kirton. The project will explore the history and archaeology of the monument with the aim of determining its age, phasing, character and function.

The Courthouse is an Ancient Scheduled Monument (SMR: 13428), currently on the Heritage at Risk Register due to vandalism. It is primarily comprised of bank and ditch earthworks interpreted as part of a moated manor site (see Fig. 1) (LEN: 1012503 (UID: 13428)). The bank and ditches survive fully on the western side, partially to the north and south and are completely lost to the east. The interior is currently heavily overgrown with limited access. Resistivity survey was undertaken within the interior of the site, in those areas that were accessible.

2. Site Description

2.1. Location

Bromborough Courthouse is situated on Wirral in the county of Merseyside. It is located 2km north of Bromborough Village and 1 km west of the Mersey Estuary. The area is flat and low-lying with access to the estuary to the north of the site. The surrounding area is now largely comprised of industrial buildings and hotels – a process that began in the nineteenth century. To the west of the site the A41, the main road on Wirral, runs north to south. The site of Bromborough Courthouse is adjacent to Bromborough Pool Conservation Area (www.wirral.gov.uk).

2.2. Geology

The underlying solid geology is Wilmslow Sandstone Formation and the overlying geology is Devensian Till, which is clayey with sand, gravel and pebbles (British Geological Society).

3. Background

3.1 Overview of the Documentary Evidence

The site of Bromborough Courthouse was occupied from at least the seventeenth century when records demonstrate that a building was erected on the site, which stood until 1969 (Bromborough Society 2000, 47). The architectural features suggest it was constructed around c.1680 in the Dutch style (Chitty *et al.* 1985, 8). In plan, the building was a long straight section with forward projecting wings at each end. It had three floors (Bromborough Society 2000, 48). First-hand accounts of the house's exterior and interior survive, detailing its layout, contents and decoration (Connah 1952, 10; Edwards 1995). Likewise, the house and its grounds first appear on the Estate Map of c.1755. The original map has subsequently been lost but a photograph of the map still survives in the Cheshire Record Office and a tracing survives in the Merseyside Historic Environment Record (MHER) (See Fig. 2).

However, it has long been assumed that the site was the location for previous Courthouses noted in texts referring to Bromborough. Reference has commonly been made to King Edward I staying at Bromborough in August 1277 (Bromborough Society 2000, 44). Whilst the Close Roll, Fine Roll and Patent Roll survive for that year and note Bromborough on the itinerary for the 12th and 13th of August, no reference to the Courthouse or its surrounding land are made. The first specific reference to the Courthouse is made seven years later in the *Annales Cestriensis*, which states how the building was burnt down in 1284. "Also the manor house of Bromborough in Wirral was accidentally burned down on May 5" (Chitty *et al.* 1985, 8; Bromborough Society 2000, 44). Unfortunately, no information is supplied about the location of this structure or its surrounding area. A second Courthouse was reputedly built on the same site, which stood until the seventeenth century when it was demolished (Chitty *et al.* 1985, 8).

The lack of any description regarding the location of either the first or second structures or a physical description of their appearance means that there is no way of linking the area under investigation to the Courthouse noted in these texts. That a Courthouse

existed prior to the structure built in the seventeenth century is not disputed, particularly as several references are made to the building throughout the medieval period in the Bromborough Parish Registers, Dean and Chapters Rentals and Hearth Tax Rolls. The problem lies in physically linking the earlier structures to the site currently called Bromborough Courthouse.

3.2. Overview of Archaeological Investigations

Limited archaeological investigation has been undertaken on the site (Connah 1955-6; Freke 1978; David and Mills 1981; Chitty 1985 and Bromborough Society 2000). No archaeological features were unearthed and no finds pre-dating the seventeenth century were recovered.

- Excavation in 1979 demonstrated that the moats ditch had either been cut or re-cut in the seventeenth century (Freke 1979, 47).
- The only anthropogenic activity to be noted within the interior was a burning horizon. However, no dating evidence was recovered from the context and its extent was not sought (Connah 1955-6).
- Topographic survey suggested that there was an elevated area within the interior but it was not possible to determine if this was natural or anthropogenic (Chitty 1985, 7-9).
- Resistivity survey was also undertaken as part of the same project. The technology was in its infancy but did suggest a concentration of weak low resistance anomalies within the interior towards the western ditch (David *et al.* 1981). Again, it was not possible to determine if this was natural or anthropogenic

Based on the evidence set out above, Big Heritage C.I.C determined to re-investigate the interior of the Courthouse site using modern non-invasive techniques. The following results are one product of this renewed investigation.

4. Survey Area (Fig. 1)

The surviving interior of Bromborough Courthouse is approximately 22,000m². However, a large proportion of this is no longer accessible due to trees and thick vegetation. The interior of the moated site, still enclosed by banks on three sides (north, south and west) is approximately 6000m² and runs approximately 94m E-W and 116m N-S. However, the tree

line and thick vegetation means that only approximately 80m is presently accessible on the N-S axis. The survey area was predominantly trimmed grass and brambles with the occasional tree sapling and numerous shallow depressions caused by bioturbation. The edges of the survey area were largely comprised of brambles, saplings and mature trees.

5. Objectives

- i. to determine if resistivity survey is possible on this site;
- ii. identify any anomalies within the fields that might indicate areas of low or high resistance;
- iii. identify which of these, if any, might be anthropogenic;
- iv. to provide targets for planned test pitting of the site.

6. Methodology

- Two areas were targeted
 - Area A: 1 20x20m² grid
 - Area B: 4 10x10m² grids and 1 10x5m² grid
- The grids were laid out using a Leica Builder 409 Total Station.
- The location of the grids were dictated by accessible areas and tied into the site grid using the Total Station.
- Readings were taken using an RM85 in a twin parallel (four probe) array.
- The sampling resolution was 1x1m in a zigzag traverse.
- The grid points were imported into QGIS 2.2
- The data processing of the geophysical results was completed using Snuffler 1.3.
The list of processes can be found at 11.1.

7. Results (Fig. 3)

7.1. Area A (Fig. 4)

Area A clearly demonstrates that resistivity is possible on this site, as a number of very clear features were evident in the results. A1 is a strong, low resistance linear feature running N-S across the grid with an apparent break (A2), which suggests an access point along the feature. This is not the eastern extent of the moat, as this survives on the 1870 1st Edition OS Map to the east of the A1 but does suggest a boundary within the interior of the moated site. In the NW corner of the grid a very clear, high resistance anomaly is evident. It appears to be a linear

feature, running N-S with two returns heading west (A3). This anomaly is very clear and angular, suggesting that it may be related to a structure, possibly a wall or a foundation. However, the clarity of the feature might indicate that it could be a recent event.

7.2. Area B (Fig. 5 and 6)

Area B was situated to partially cover two of the grids from the 1979 resistivity survey. The results from this survey are less distinctive but equally rewarding. B2 has been noted here as an area with less activity, which seems to respect the western moat and interior bank. The remainder of the area has strong high and low resistance areas, which are difficult to interpret in the greyscale (Fig. 5). However, processed in colour (Fig. 6) a number of potential linear features are clear (B1). These features are high resistance anomalies in a linear running NW-SE (See annotation 2 on Fig. 6). There also appears to be a potential second line of linear high resistance anomalies (See annotation 1 on Fig. 6). The uniformity in size and distance is suggestive of structural features. Whilst the rest of the area is more difficult to define, if B1 is anthropogenic it might suggest that the rest of the strong high and low resistance anomalies may also be anthropogenic. Notably, in the 1979 resistivity results, this area also displayed a number of weak low resistance anomalies (David *et al.* 1981).

8. Discussion

The resistivity survey within the interior of the moated site of Bromborough Courthouse has demonstrated that the technique can be successfully used on this terrain. It has proven the presence of both high and low resistance linear features in Area A, which provide clear targets for further work. Area B is harder to interpret due to the quantity of strong high and low resistance anomalies but the uniformity of a group of these features (B1) suggests they are anthropogenic. Significantly, the results from this area support the suggestion of anthropogenic activity indicated in the 1979 report and imply that the disturbance is genuine and not the result of the methodology and/or the conditions of the survey. Without further invasive investigation it is difficult to determine what the anomalies in Area B are i.e. anthropogenic or geological and it is impossible to date the features clearly identified in Area A.

In summary, the survey achieved all of its aims. The technique clearly works, providing evidence of both high and low resistance anomalies, some of which appear anthropogenic in

nature. These anomalies (A1, A2, A3 and B1) would all be suitable targets for further research, which may shed light on the character, phasing and age of the site.

The report will be sent to English Heritage as stipulated in the Ancient Monuments and Archaeological Areas Act 1979 section 42 - licence to carry out a geophysical survey. A copy will be deposited with the Merseyside Historic Environment Record [MHER] and signposted on OASIS (Online Access to the Index of archaeological investigationS). The report will also be digitally disseminated through the Archaeology Data Service [ADS] and a copy of this report will also be made available through the Big Heritage Website

9. Bibliography

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Wirral Council (accessed 07/07/2014) www.wirral.gov.uk

10. Figures

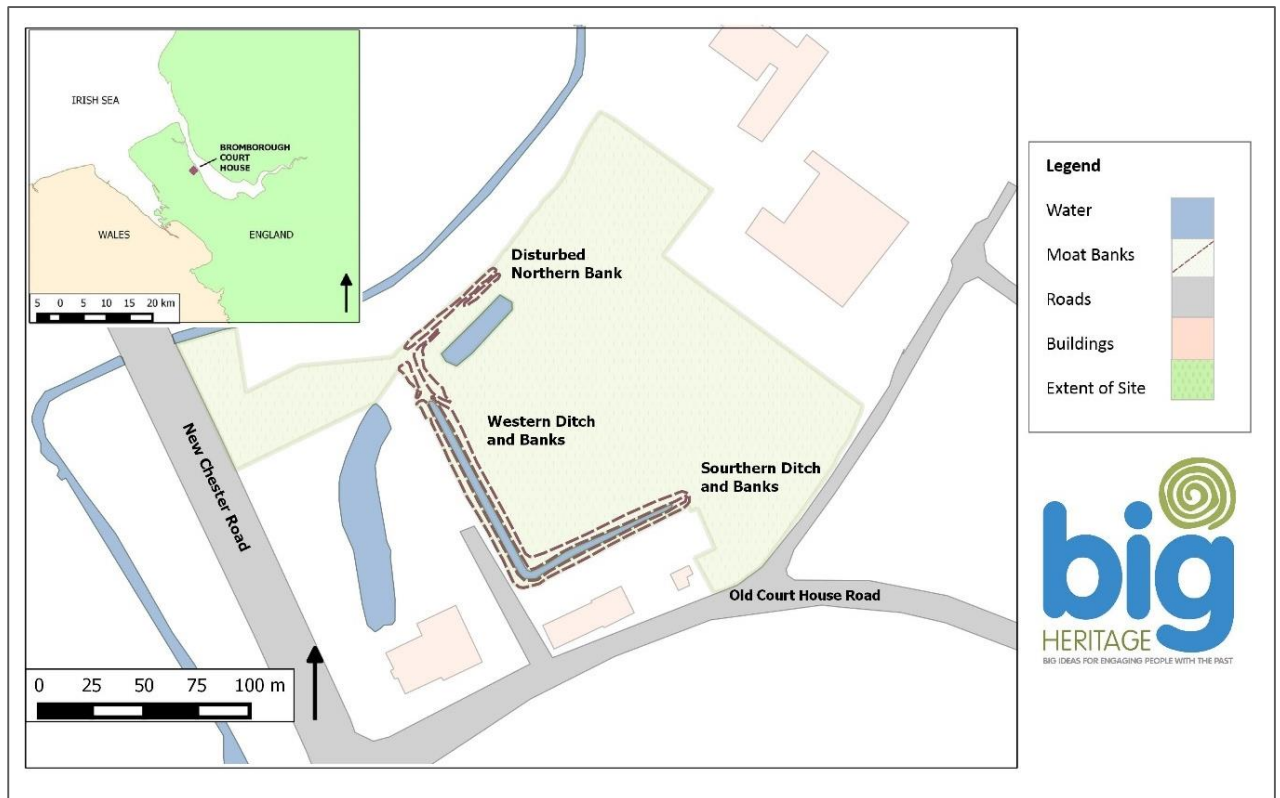


Figure 1. Bromborough Courthouse location on Wirral and pertinent features noted.

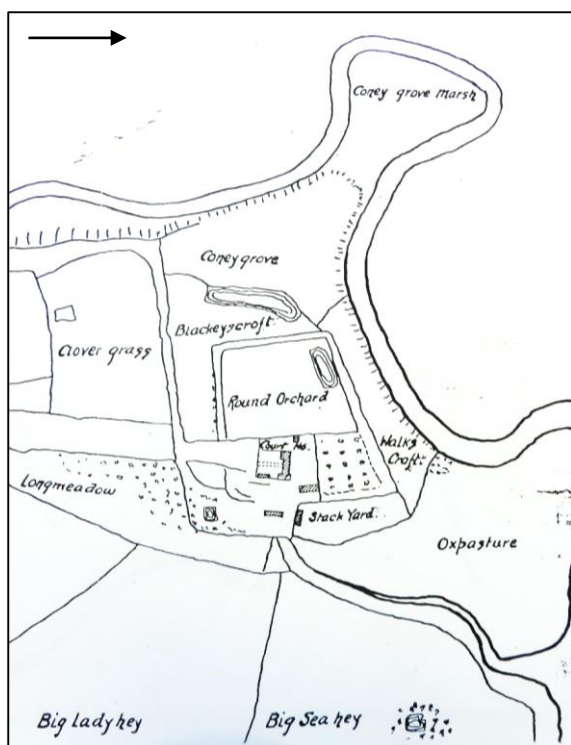


Figure 2. Tracing of the c.1755 Estate Map (MHER)

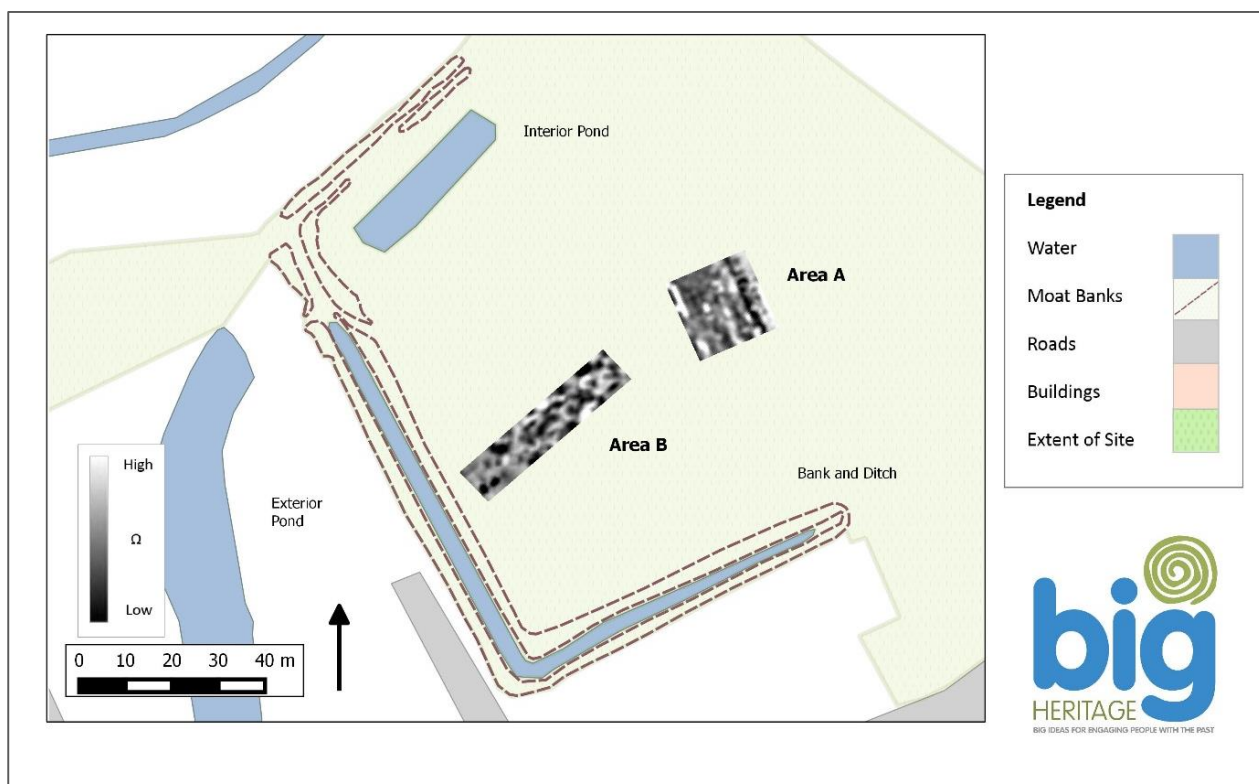


Figure 3. Resistivity Grids: Area A and Area B in relation to ditch and bank

Resistivity Survey Results from Area A

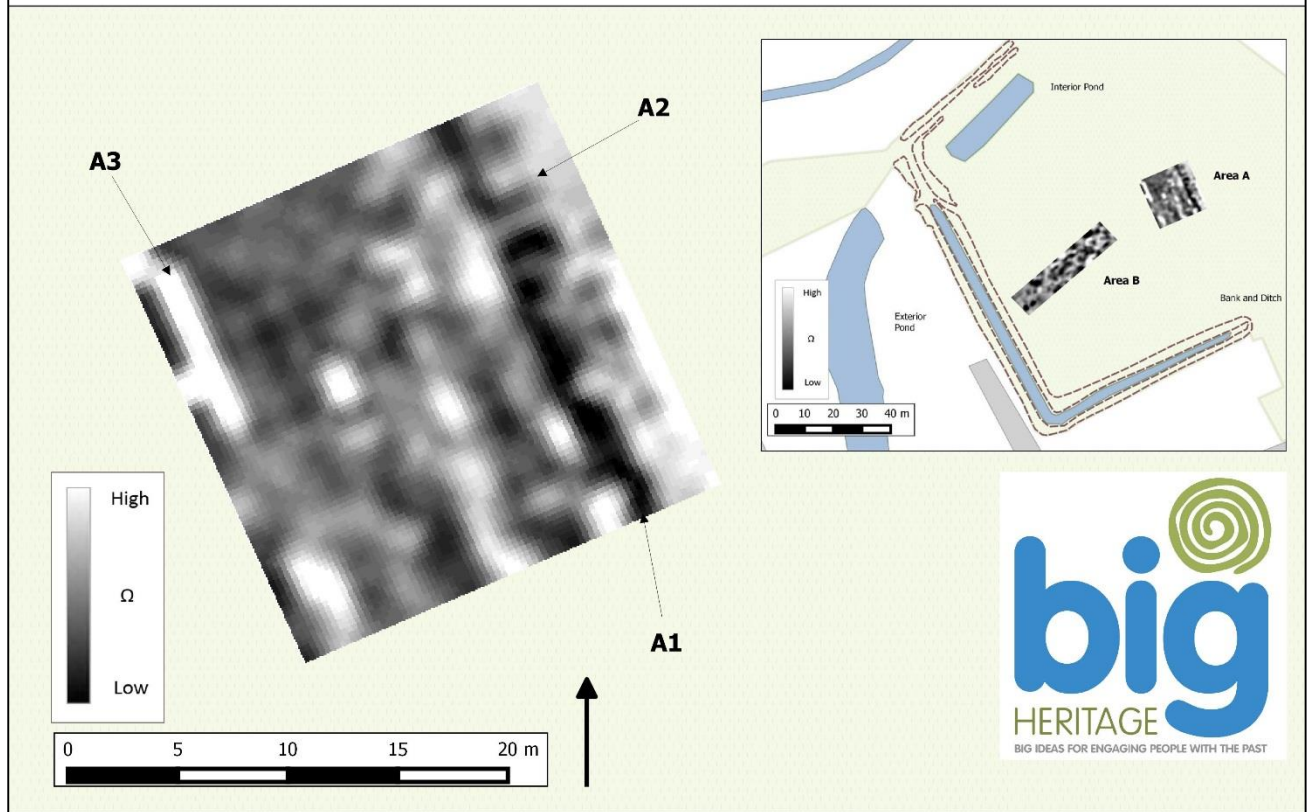


Figure 4. Resistivity results for Area A with potential features note

Resistivity Results from Area B

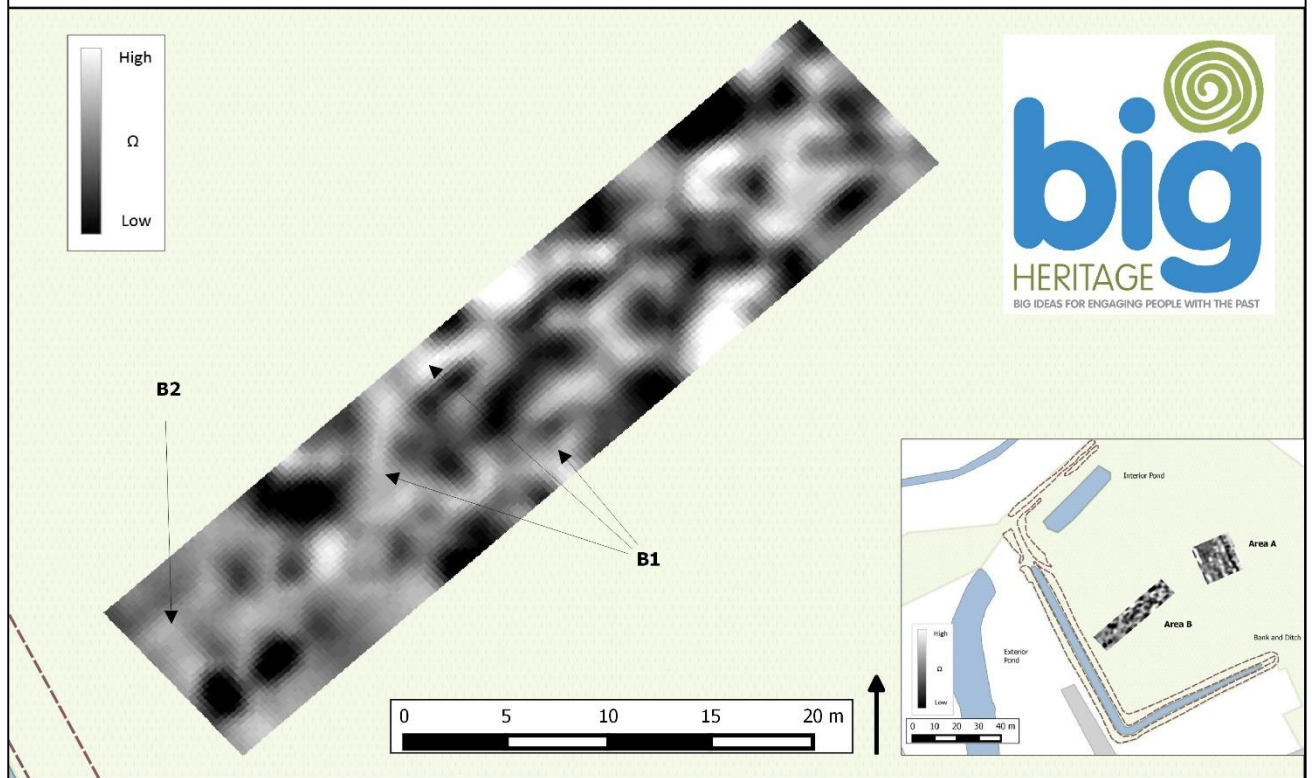


Figure 5. Resistivity results for Area B with potential features note

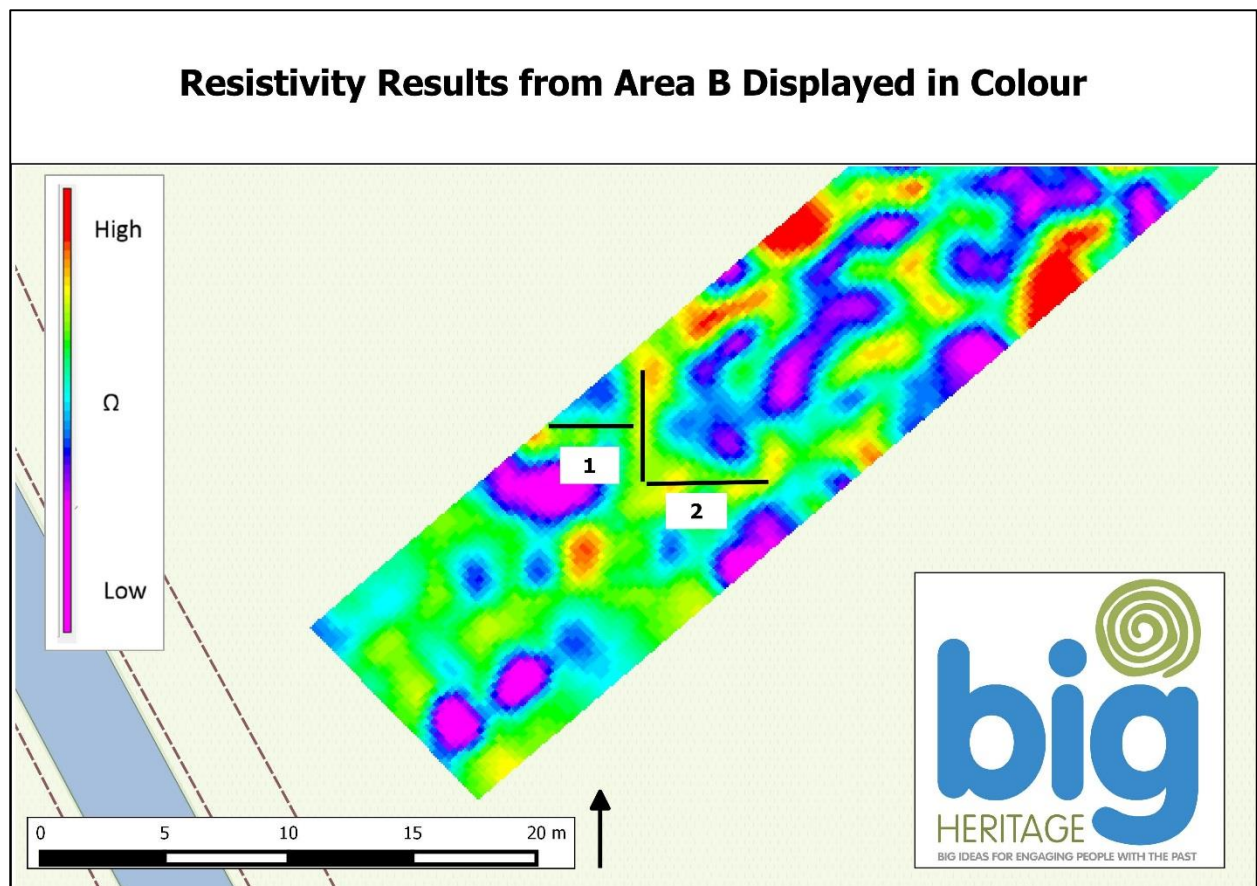


Figure 6. Resistivity results from Area B displayed in colour to highlight a potential feature

11. Appendices

11.1 List of Processes Used

Area 2 20x20m

- Despiking: Threshold=40.1
- Remove Geology: Sample Radius 5
- Interpolate
- Interpolate

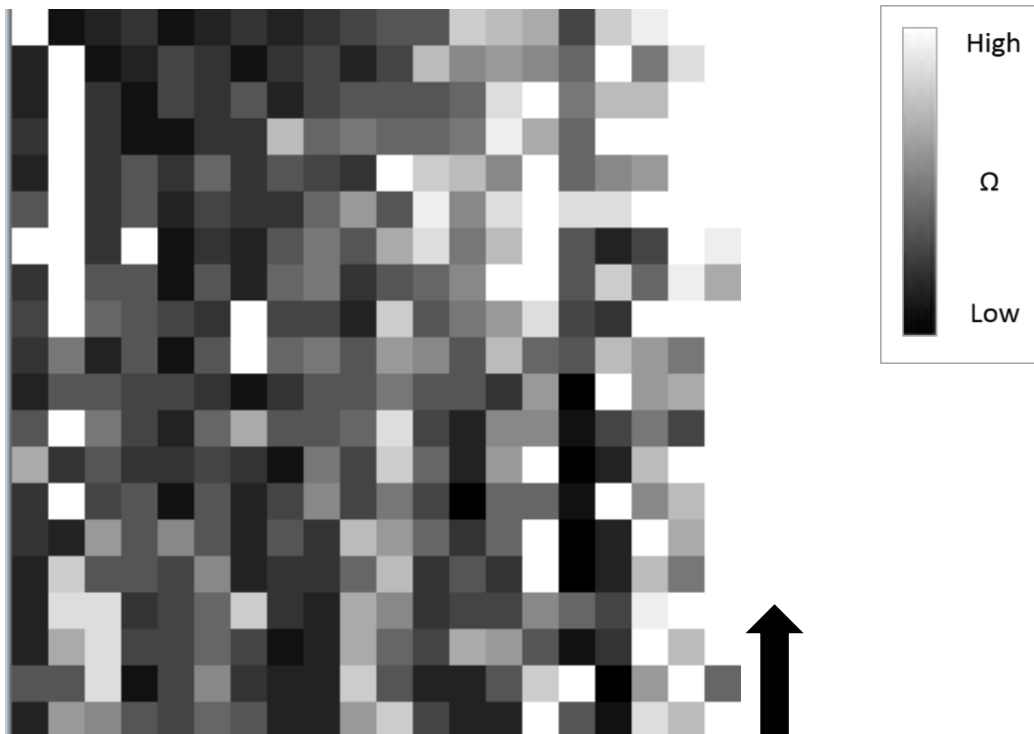
Area 2 10x45m

- Data Clip: All Data Effect: Clip To Max/Min From: 146.8 To: 204.7
- Remove Geology: Sample Radius=4
- Despiking: Threshold=15.2 Action=Normal

- Despiking: Threshold=14.6 Action=Moose
- Remove Geology: Sample Radius=5
- Interpolate
- Interpolate
- Destripe: Horizontal Affecting: Everything
- Destripe: Vertical Affecting: Everything

11.2 Unprocessed Data Images

Area 1 20x20m



Area 2 10x45m



12. Grid Location Information

AREA A

	Easting	Northing
NW	334493.49	384171.26
NE	334512.5	384179.47
SW	334501.94	384153.05
SE	334520.84	384161.28

AREA B

	Easting	Northing
NW	334444.58	384126.76
NE	334478.76	384155.81
SW	334451.42	384119.99
SE	334485.39	384148.77