

# **MELLOR GEOPHYSICS**

## **Final Report**

### **1. Magnetometry Survey at Shaw Cairn**

### **2. Resistivity Survey at Cow Hey Farm**



**Report by Philip Day, 28 March, 2007**

1. Work carried out by volunteer helpers on 23 & 25 March, 2007
2. Work carried out by volunteer helpers on 16 March, 2007

# Site Locations

**Acknowledgements: Google Maps & Ordnance Survey Maps**

## 1. Shaw Cairn

National Grid Reference: 98662, 87243 (National Grid Trigonometric Survey Post)





## 2. Cow Hey Farm

National Grid Reference: 97712, 90699 (NE datum point)

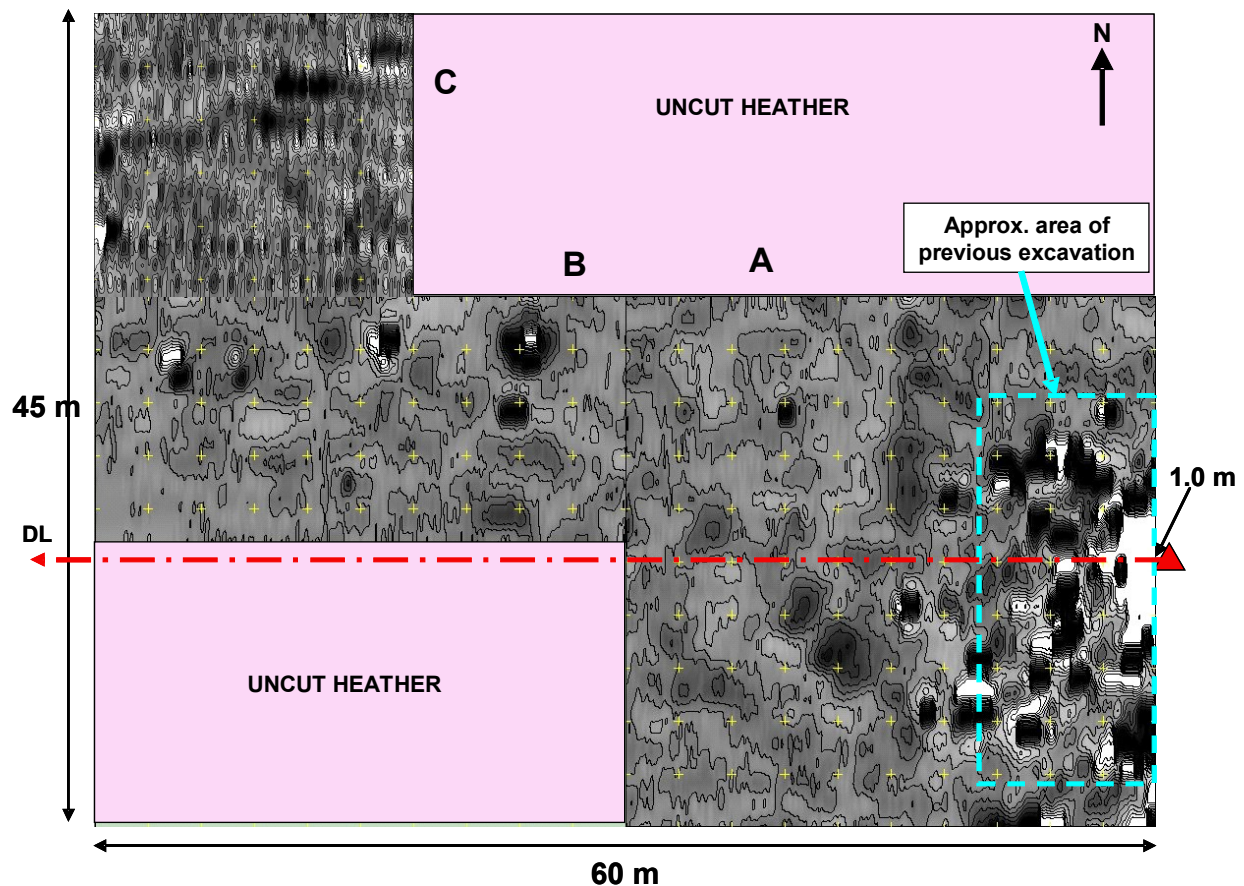


## Shaw Cairn Magnetometry Survey

A magnetometry survey was carried out at Shaw Cairn on Friday, 23 March and Sunday, 25 March by (Friday), PD, Anthony Boardman; and (Sunday), PD, Anthony Boardman, Sue Miall, Andy Coutts.

Most of the accessible cleared area to the west of the Trig Point ( $\Delta$ ) was surveyed. The standard grid size was 30 x 30 m, with transects running west to east, spaced 1 m apart. The three grids are: A (30 x 30m); B (30 x 15 m); C (18 x 15 m). The grids were positioned against a datum line running from the Trig Point on Shaw Cairn ( Grid Ref. 98662, 87243) and pointing directly at the tower on Goyt Mill (95794, 87643), visible at the far side of Marple (grid bearing 278 deg). The main features of the survey are shown in the Figure (below).

SHAW CAIRN SITE: MAGNETOMETRY, MARCH 2007 (JPD)



### AREA A

The Trig Point, which lies at the mid point of the eastern edge of this grid clearly contains enough iron to dominate the magnetic fields for nearly 3 m (white area). Outside this area, extending around 9 -12 m, is an area of previous excavation, mostly unfilled. Magnetometry was difficult over this area, but the previous excavations are obvious. It would almost certainly be interesting to excavate this area more completely and to a greater depth.

Further to the west, in the lower part of area A, there are two or three darker features of lower magnetic gradient which may represent infill of some earlier excavation of unknown age. Similarly, in the northern part of area A, almost in the centre, is another similar darker area. There are also two dark black spots, which may be large buried rocks (nothing was visible on the surface).

Much of the SW corner of area A had not been cleared, and magnetometry over this area was extremely strenuous. The adjacent part of area B was not surveyed (see below).

## **AREA B**

Area B lies to the west of A, and extends 30 m westwards, but is only 15m wide, corresponding approximately to the cleared area (it was impracticable to survey the southern 15 metres strip). Several patches of varying magnetic gradient are apparent. These may or may not be interesting anomalies worthy of excavation, but no interpretation of the magnetometry will be attempted.

## **AREA C**

A 15 m wide strip to the north of area B was available for survey, but the full 30 m length had not been cleared and was inaccessible. Approximately 18 m was surveyed, as shown in the Figure.

The ground itself was characterised by patches of yellowed grass in place of heather, often in slight depressions. It was suggested that this area had been the site of a WW2 searchlight station (or similar). There are a number of magnetic anomalies in area C. Although no strong magnetic gradients corresponding to massive iron objects was detected, any excavation in this area would be advised to proceed with caution in case of unexploded munitions.

## **SUMMARY**

No obvious major features are apparent in any of these areas, apart from those relating to the earlier excavations. However, it appears that there are major magnetic anomalies over the excavated area, and there may well be considerable interest in carrying out a deeper and more extensive excavation.

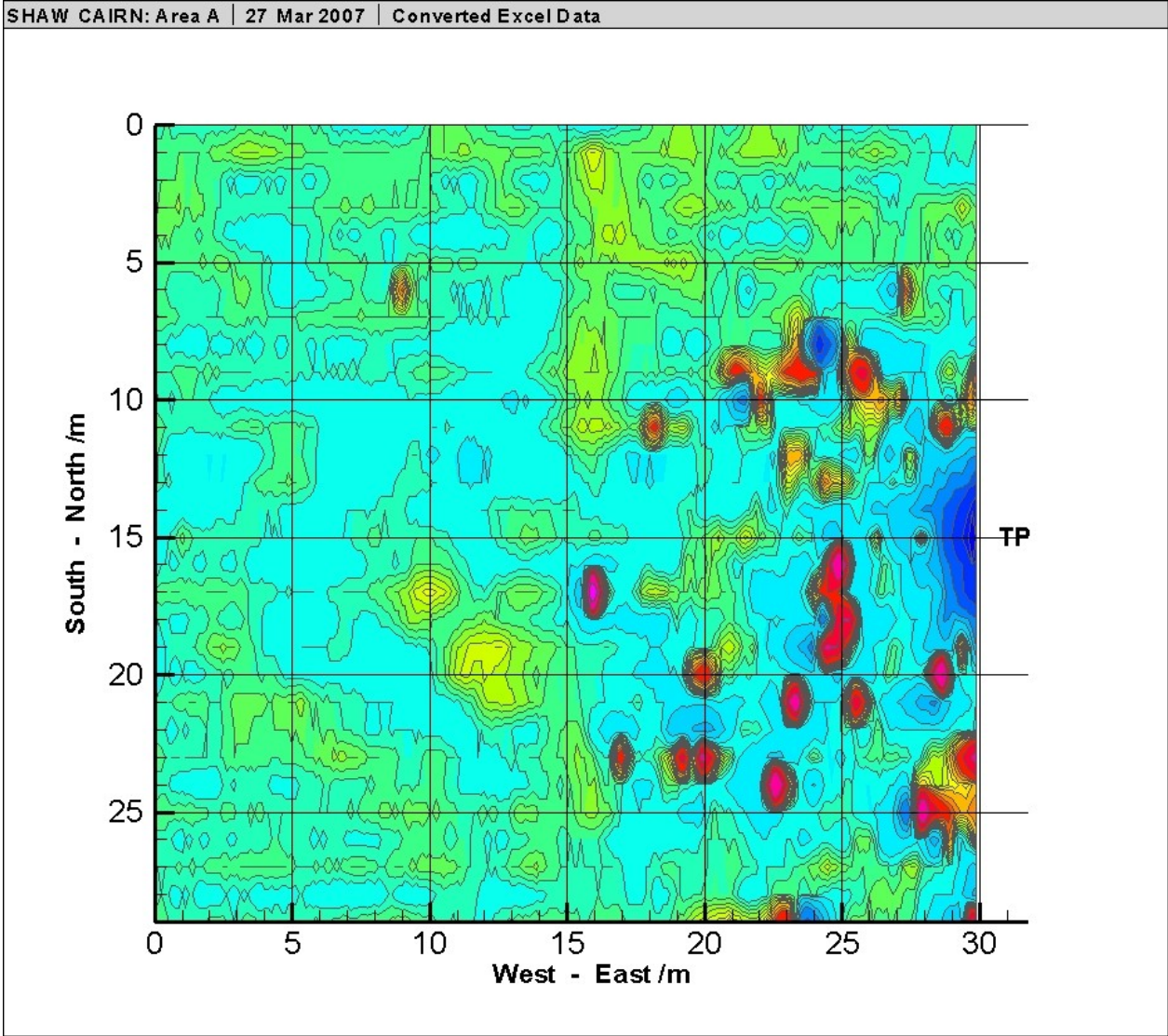
A number of minor magnetic anomalies show up in the survey. The only way to find out what these are is to excavate, but the magnetic survey gives no assurance of finding anything of interest under the ground.

It is possible that a resistivity survey of these areas would give additional information, particularly if this were carried out after a period of dry weather. The soil is largely peat, and retains water at depth, whilst the surface layers should dry out relatively quickly. Thus, a resistivity survey after a dry spell might well give information to reasonable depth, which could complement the magnetometry.



**ADDITIONAL PICTURES: Shaw Cairn**

AREA A



**Volunteers At Work at Shaw Cairn (Pictures by Anthony Boardman)**

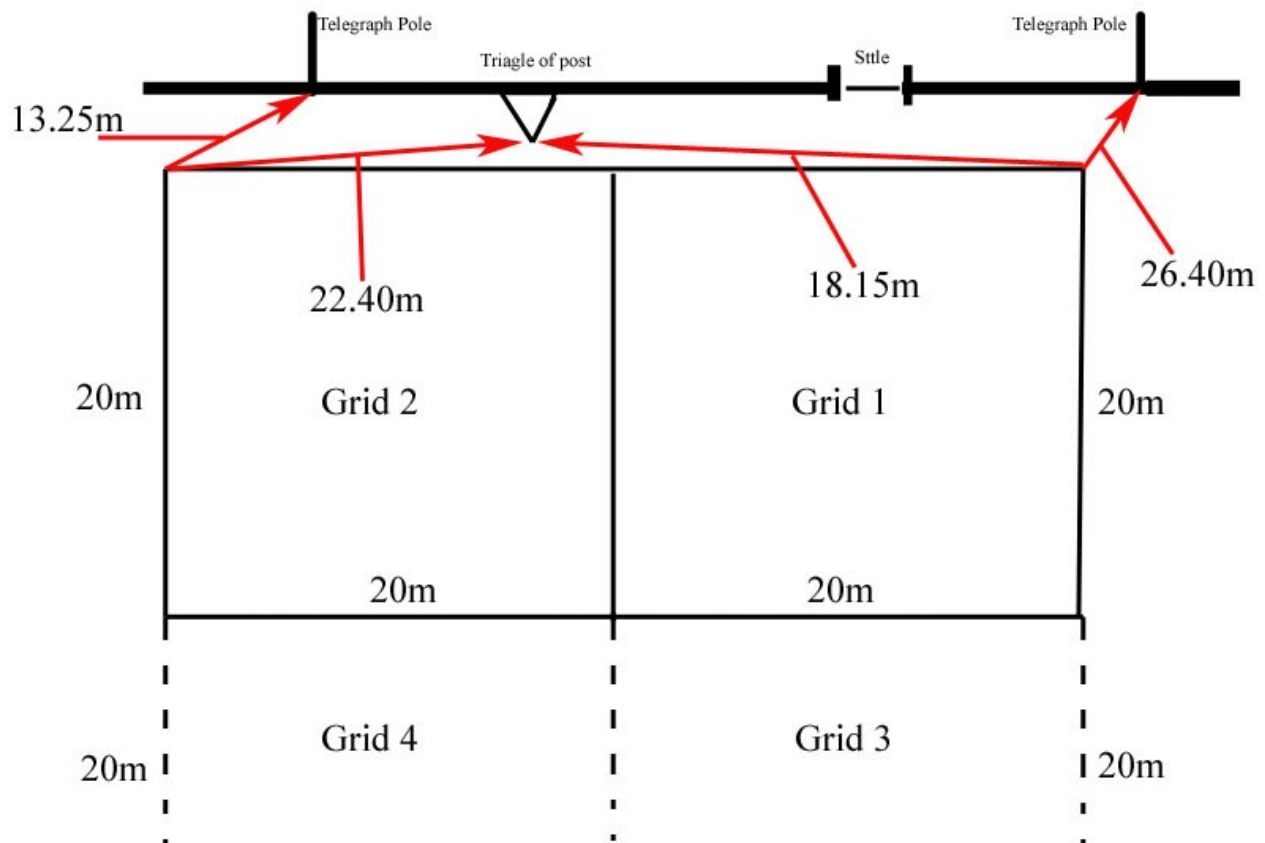


## Cow Hey Farm Resistivity Survey

A resistivity survey was carried out at Cow Hey Farm on Friday, 16 March, 2007, under the supervision of Brian Grimsditch, UMAU, Peter Noble, Donald Reid (MAT), and with the assistance of Steven Milne (TAS), Chris Smith, and Philip Day.

A 40 m baseline was established, and four 20 x 20 m grids set out (see Figure below). Grids 1 & 3 were surveyed by one pair, grids 2 & 4 by the other pair, using two different sets of resistivity equipment (each with 2 moving probes with 2 distant fixed point probes). Readings were taken and recorded manually, at 1 m intervals on 20 m transects set 1 m apart, starting at the NE corner of each grid. Data were entered into an Excel spreadsheet, and processed using ArcheoSurveyor software (v2.1.2.2, DW Consulting, Netherlands).

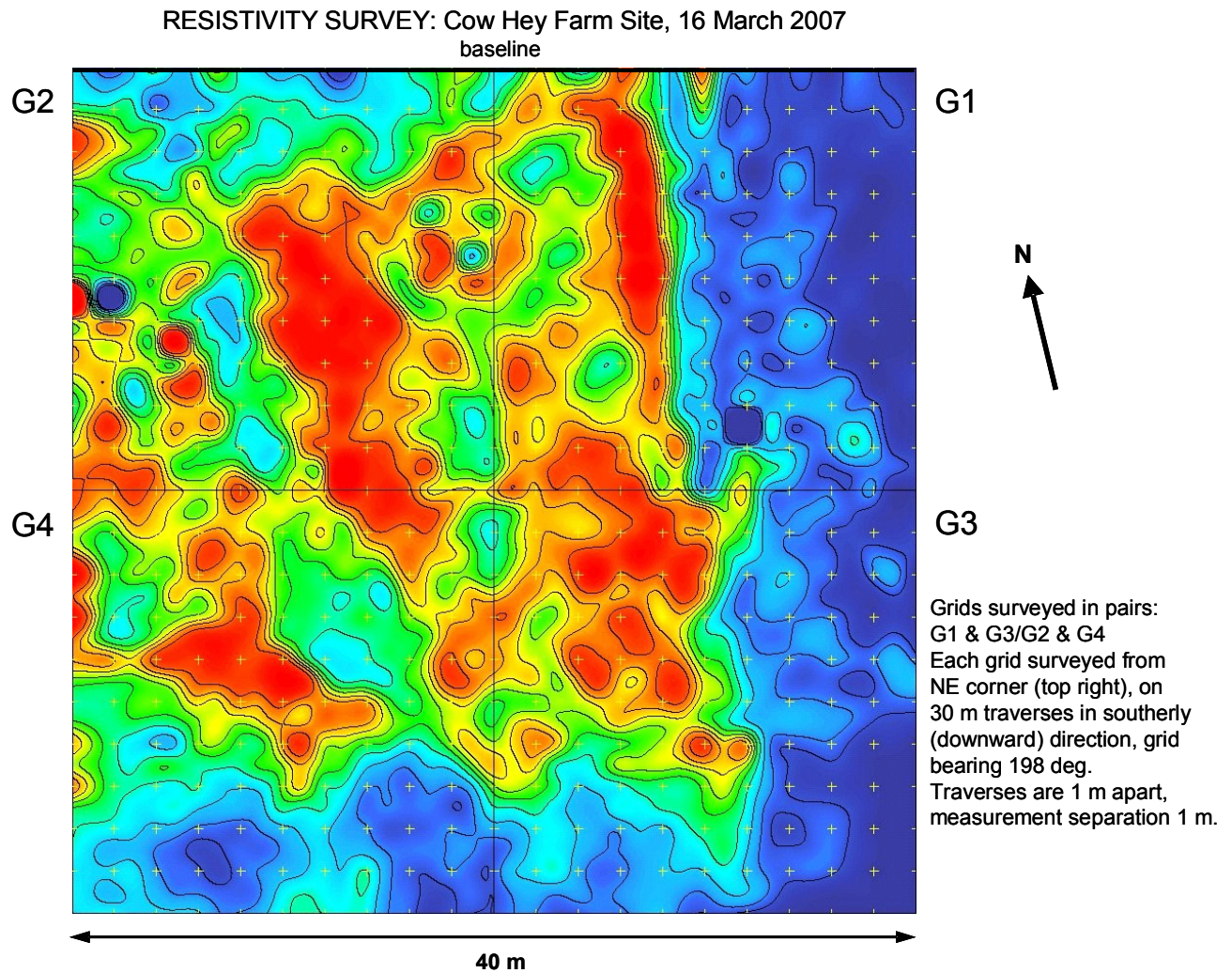
The resistivity diagram (next page) shows areas of low resistivity in blue, high resistivity in red, following a rainbow sequence.





## Commentary

Clearly, there are areas of low and high resistivity, and a consistent pattern appears to emerge, but no interpretation will be attempted.



JPD  
28 March, 2007