

## Assessment of Early Lead Working Sites in the Yorkshire Dales by Archaeological Prospection

Although lead was a major source of economic wealth in antiquity, there have been few studies of lead smelting sites in Britain. This study presents a geophysical characterisation of Medieval lead smelting sites (bales) in Swaledale. Sites were surveyed using aerial photography, fluxgate gradiometer surveys, earth resistance surveys, TM808 metal detector surveys and both volume and mass specific magnetic susceptibility surveys. The surveys demonstrated that sites were characterised by an area

of magnetic noise, usually situated uphill from an area of bare ground, with scatters of lead slag on the surface. The results showed that bale sites appear to have consisted of several small areas of burning, often with associated fuel stores. While some of the bales were stone lined, some consisted of a small burnt area. The results suggest that the difference between bale and blackwork oven is less clear than was previously thought.

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## The Ten Commandments of the Genuine Surveyor in Archaeology

1. Do not believe that geophysics either is able to answer all the questions or is the only way to answer them (Hesse and Renimel, 1978).
2. Never undertake so called "experiments" which are not really such things or have already been done (see 3).
3. Read the literature in order to avoid doing again stupid things that have already been described (too many to mention them!)
4. Never use one single method before checking (according to previous results or preliminary tests) that it will definitely answer the question (Hesse, 1980, fig. 6; Hesse and Doger, 1993).
5. You may use several methods together if you want, but use your brains first (Hesse, 1997 and 1999).
6. Better draw large maps than separate profiles, in order to locate *subsequent* soundings (Hesse, 1994).
7. Gather all your data, whatever the method used, on synthetic maps, juxtaposed or superimposed, with a common scale (you may call it a G.I.S. if it amuses you) (Hesse *et al.*, 1978 and in press).
8. Do not believe everything the archaeologist says (especially when he asks the wrong questions) Your answer cannot be other than wrong.
9. If you cannot answer a question, ask yourself whether you are not able to answer another question they forgot to ask you (Hesse, 1970 and 1982).
10. Forget everything I have just told you and keep your eyes open.

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