

Resistivity for Leachate Plume Investigation

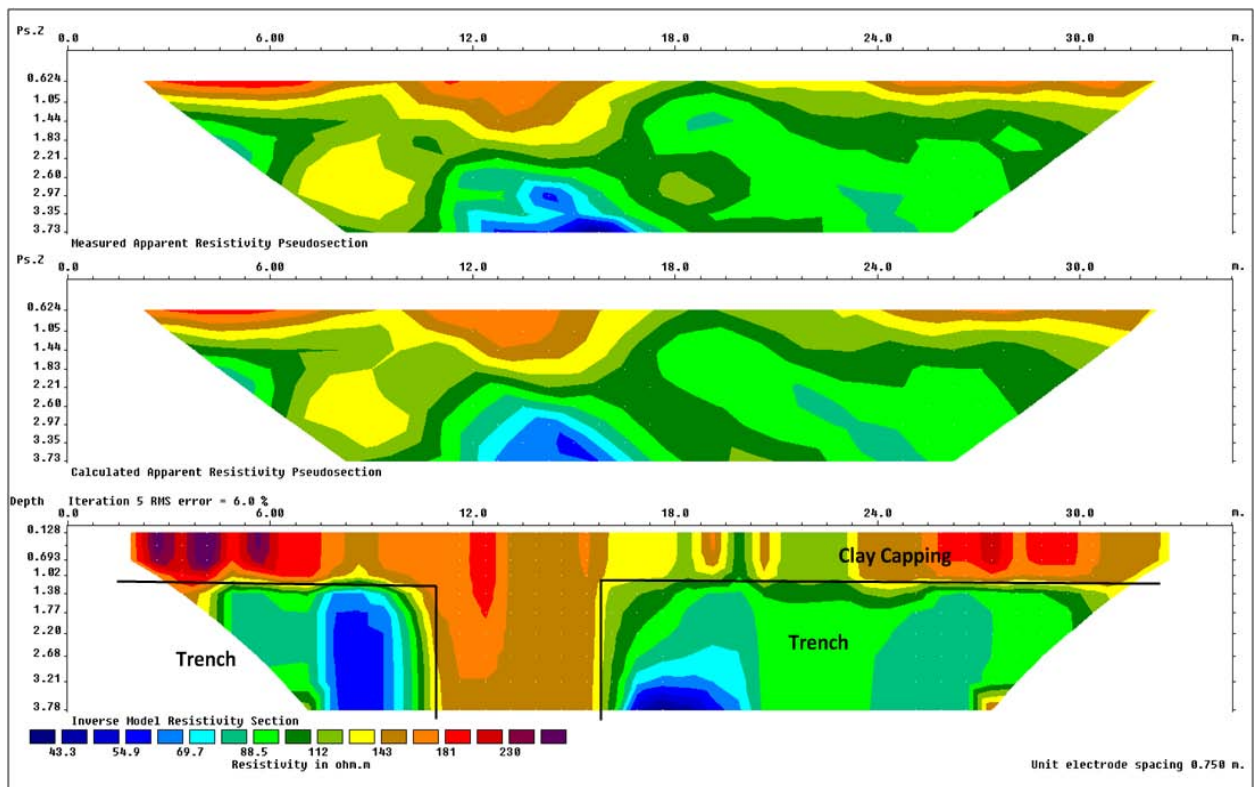
A trial was undertaken to test the resistivity technique for its ability in delineating lack of integrity of the clay capping layer above the trenches and in defining and identifying leachate plumes emanating from the buried waste material.

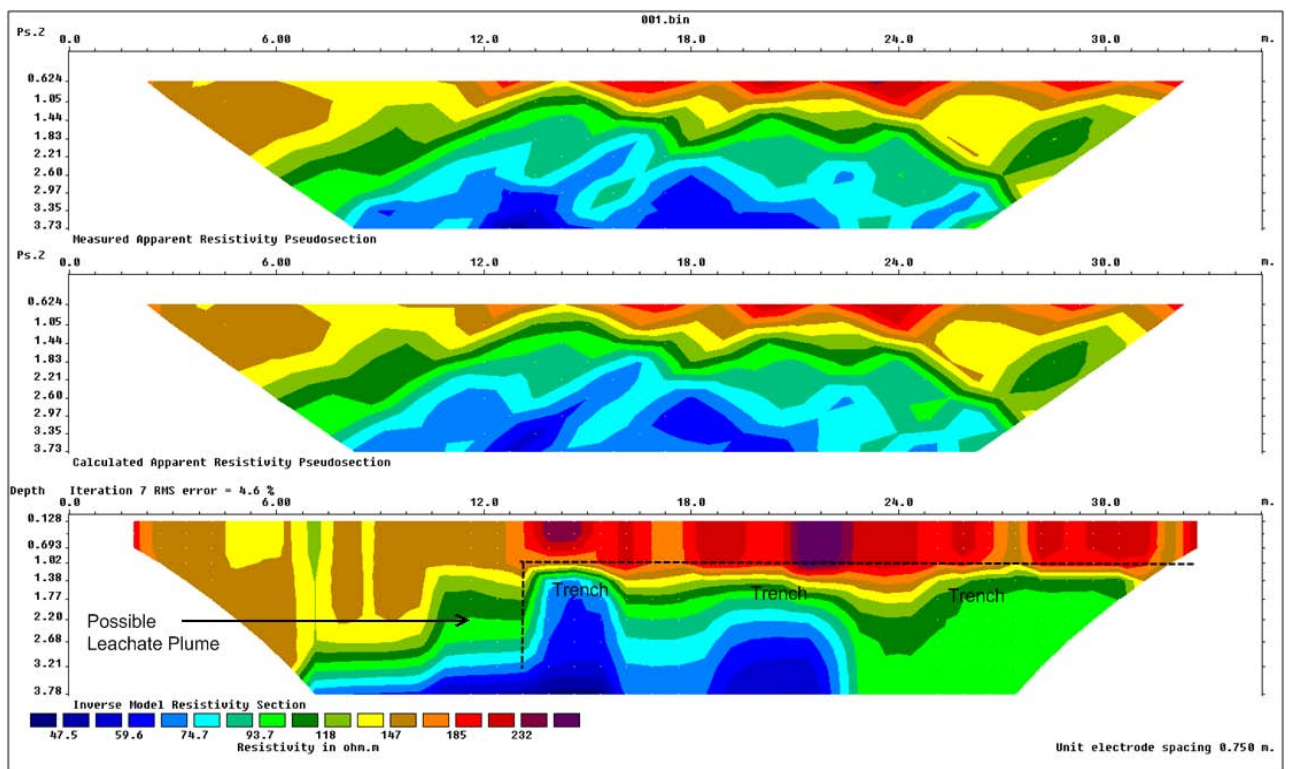
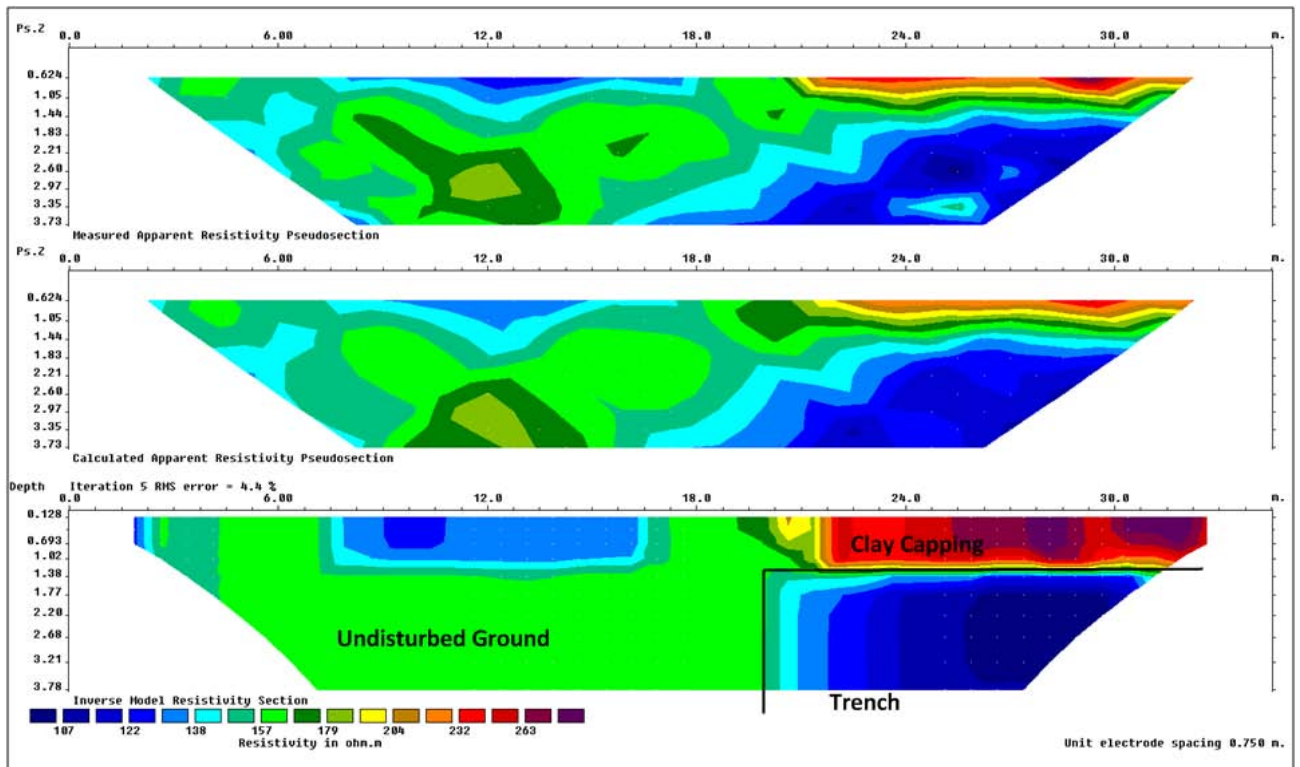
A number of Resistivity profiles were collected across a group of trenches used for the burial of industrial waste. Profile data was collected using a Syscal Kid Switch System. Each resistivity line was 36 metres long, consisting of 24 electrodes spaced 1.5m apart. The array style used was Dipole-Dipole with 9 levels, which gave an average depth of investigation of 3.8 metres with very good horizontal resolution compared to other array styles. The best possible horizontal resolution of the Dipole-Dipole array was ± 0.25 metres.

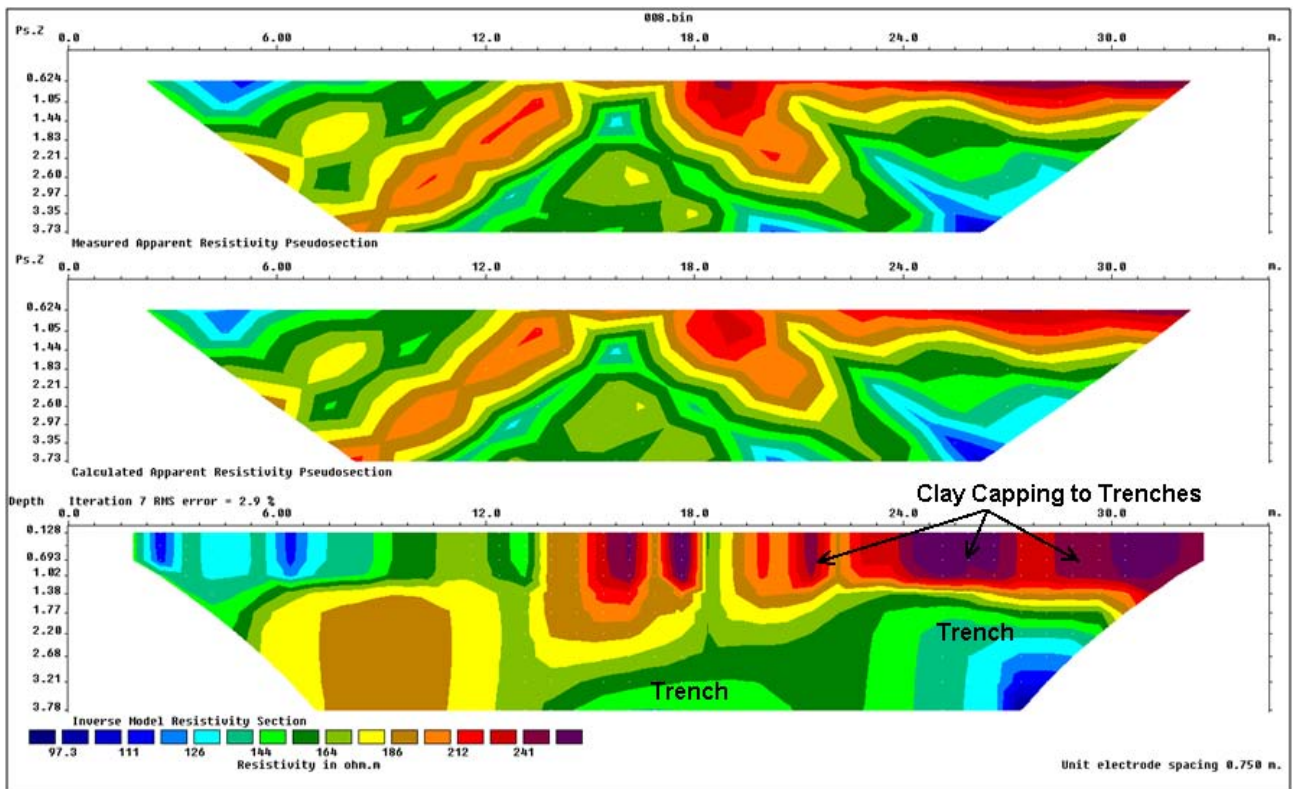
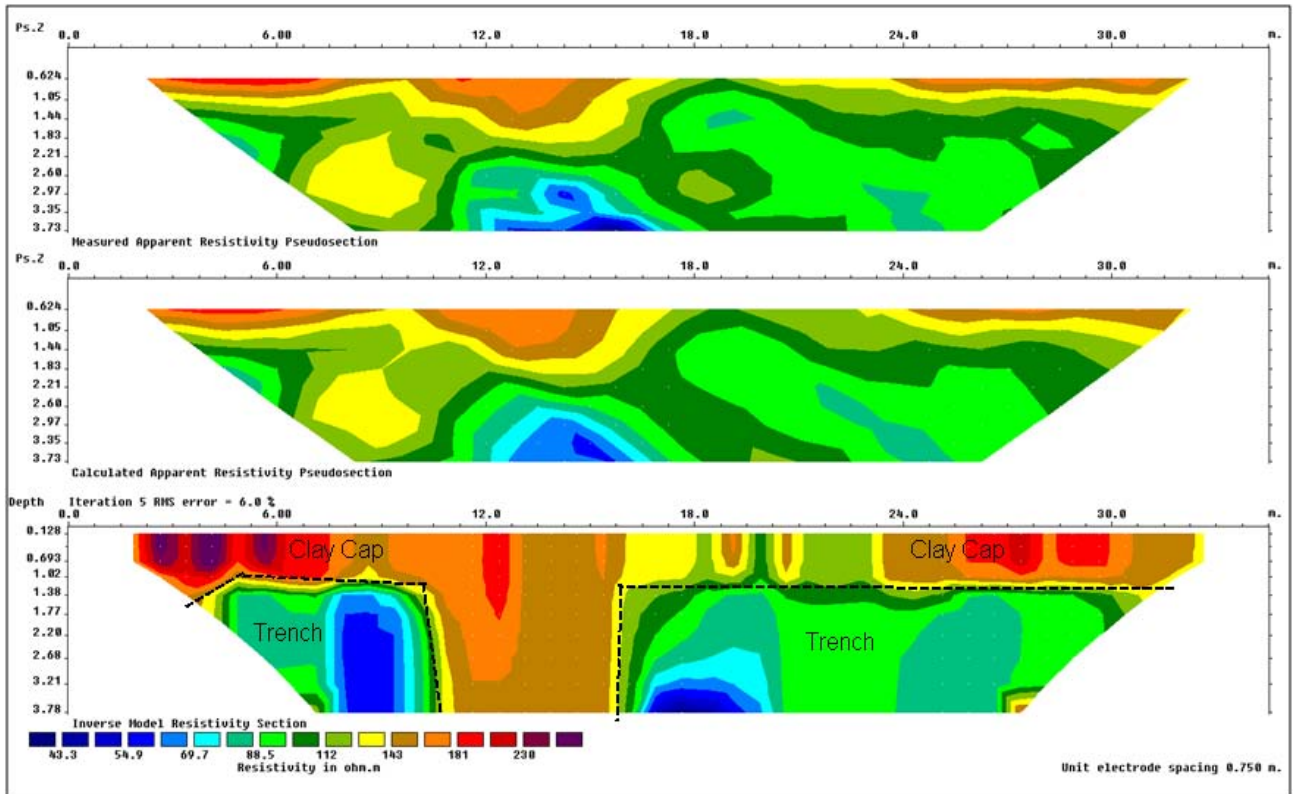
The technique proved valuable in identifying trench boundaries, clay capping extent, integrity of the capping and the existence of possible contaminate plume. Below are the modelled resistivity pseudosections from the survey. Interpretation notes are included on the pseudosections.

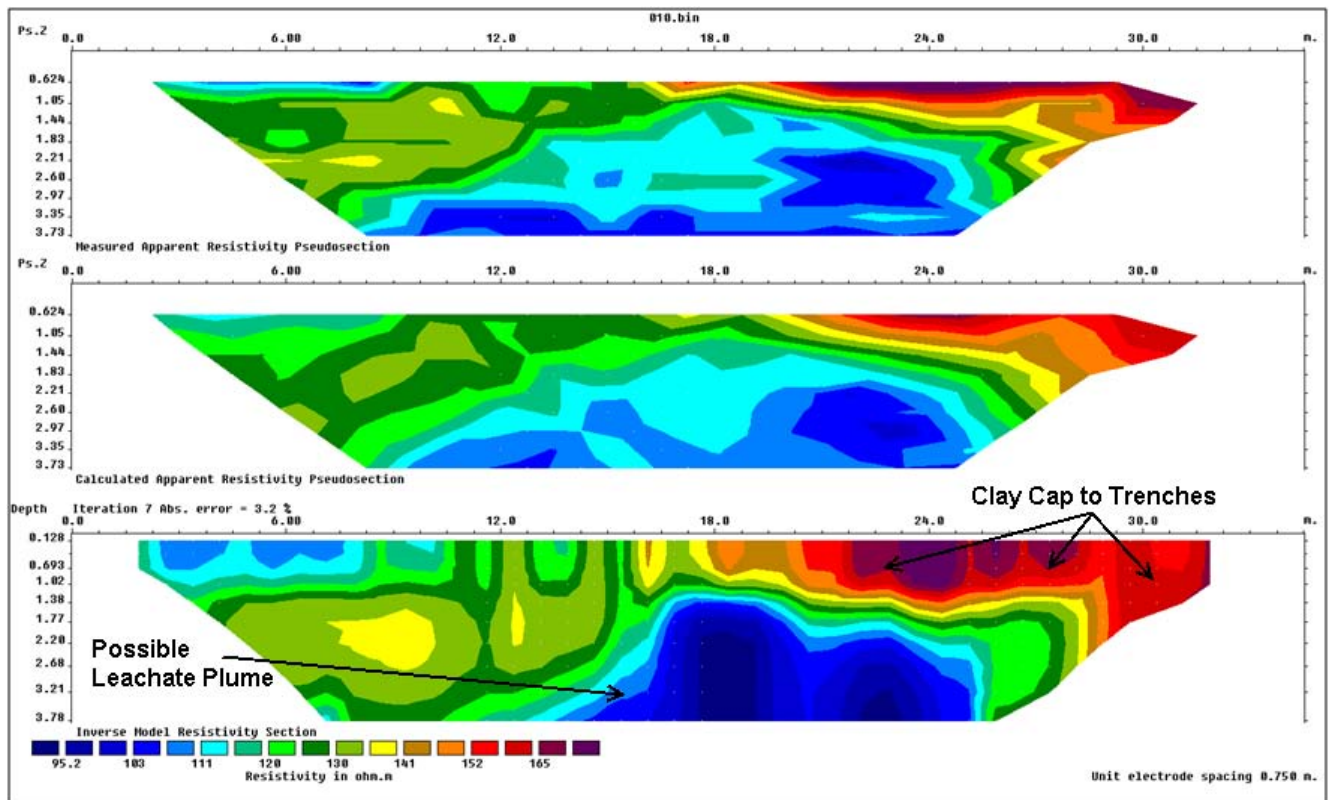
The trial of Resistivity profiling was successful. The technique is useful in delineating the extent of trenching, integrity of the clay capping layer and the presence of a leachate plume at this site. A full survey incorporating the technique should enable mapping of the extent of a contaminate plume and also enable planning of a programme of recapping of the trenches.

The following are examples of Modelled Resistivity Pseudosections from the Trial Survey.









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