

ELECTROMAGNETIC AND OTHER GEOPHYSICAL SURVEYS

North-West Tasmania is one of the few areas in Australia where the depth of weathering is minimal and where electromagnetic methods can be used with some degree of confidence. The main disadvantage is the mountainous and thickly forested terrain which limits the use of conventional techniques and renders necessary either an expensive helicopter borne system or grid lines to be cut through rain forest. Most groups exploring on the west coast have selected airborne systems with detail ground follow-up surveys.

The earliest reported airborne EM survey was carried out by Scott (1957), for the Lyell - E.Z. Exploration Company. There is little in the literature describing the instrumentation used or overall result. There are however, reports in the name of Scott discussing the follow-up of specific anomalies.

R.T.A.E. and E.Z. carried out a regional exploration program using a helicopter EM system over a wide area of the west coast. This survey was reported by McCarthy (1957) and covered 32 separate areas. A total of 8 first priority anomalies, 20 second priority anomalies and 122 third priority anomalies were recorded. These excluded the anomalies recorded over the known mineralisation at Renison Bell. No details of the type of EM system used were included in the report by McCarthy other than it was an 'in phase' and 'out of phase' system. The 28 higher priority anomalies divide into five main groups.

(1) The first group is a cluster of conductors along the Sophia River alluvial flats east of Tullah and probably due to conductivity changes in the soils.

(2) The second group is a series of conductors west of Rosebery which form two linear features with a strike length of 5 kilometres. These are located on a secondary magnetic anomaly flanking a major feature associated with the Colebrook Hill serpentinite. There is no detail geological mapping in this area, however extending the coverage by Brown (1982) it would appear these anomalies are located in the Crimson Creek Formation. The follow-up of the conductors should be reviewed and if possible the source of the coincident magnetic anomaly established.

(3) The detail geological mapping over the Pine Hill Porphyry complex indicates that there are numerous intrusive bodies all of which could be expected to give some form of EM response. These conductors would be of low priority.

(4) In the area of the Wilson River serpentinite the responses are probably associated with the ultrabasic intrusive. These conductors have coincident magnetic anomalies and it is possible to trace a conductor axis to the south-east along the serpentinite.