

CONCLUSIONS

This review was primarily based upon the aeromagnetic survey carried out by the Tasmania Department of Mines in 1982. These results formed an excellent geophysical data base which was expanded to include as many other geophysical techniques as possible. The specifications of the airborne survey were designed to test both the regional magnetic responses and where necessary, detail data over the known mineralisation. For any group exploring this region there are few areas where additional airborne magnetic surveys would be necessary. Probably the most unfortunate feature of the survey, in the author's opinion, is the omission of a radiation spectrometer. The additional information from the spectrometer results over the tin granites would have been of great benefit.

On a regional basis the magnetic results over the Mt. Read Volcanics warrant attention. Over the Eastern Sequence there is a consistent magnetic anomaly approximately 2-3 kilometres wide extending from Mt Farrell to South Darwin Peak. This anomaly correlates with the Murchison Granite and leads to a possible conclusion that there is a common granitic source. At South Darwin Peak there is also a section of granite which is magnetically similar to the Murchison Granite. The northern extent of the Eastern Sequence magnetic anomaly is terminated by the Henty Fault. The majority of the lead-zinc mineralisation is north of the Fault in non-magnetic areas compared to the copper occurrences south of the Fault which are related to the magnetic features. The majority of copper sulphides are located in chloritic alteration zones in the Central Sequence adjacent to the Eastern Sequence with the coincident magnetic anomalies usually due to quartz-hematite-magnetite veins. Elsewhere over the Mt. Read Volcanics it was not possible to distinguish between the Central and Western Sequences which had similar magnetic responses. There are a number of magnetic anomalies in the Mt. Read Volcanics which are not explained by the current mapping. The most interesting response is a feature similar to the Mt. Lyell anomaly 7.5 kilometres to the north of the mine. A second feature, Zone 30, is located in an area of glacial till with a magnetic response similar to Zone 32 which is a basic intrusive body. Zone 25 which is located over Queenstown and Lynchford, on the contact between the Mt. Read Volcanics and the Gordon Limestone also warrants investigation. The source of the magnetic anomaly 2 kilometres north of Rosebery should be identified by ground follow-up.

There are no regional gravity anomalies associated with the Mt. Read Volcanics. The only gravity feature noted is the Queenstown Lineament which is a northerly striking feature along the western boundary and is terminated to the north by the Renison Lineament. The Mt. Read Volcanics region is one of the few areas in Australia where helicopter electromagnetic methods have been used