

5.9 LEAD ISOTOPE STUDY

Twenty-five groups of samples, of C-Horizon soils, rocks and drill core from various prospects within E.L. 27/76, have been analysed for lead isotope ratios by Dr. Brian Gulson and associates, of the C.S.I.R.O. Division of Mineralogy.

There is some evidence to suggest that the massive sulphide deposits of the Mt Read Volcanics of Tasmania (such as Que River, Rosebery, Hercules and Comstock) have different lead isotopic characteristics to the low tonnage vein style deposits (such as Mt Farrell, Murchison River, Queen Hill) and that the isotopic 'signatures' can be used to discriminate geochemical anomalies of the two differing mineralization types.

Lead isotopic ratios of the massive sulphide deposits typically:

- i) exhibit limited dispersion within each deposit; the variation in Pb 208/206 and Pb 207/206 ratios is $< \pm 0.1\%$.
- ii) exhibit limit differences in their average isotopic compositions between deposits.

The massive sulphide 'target signatures' are thus given as:

Pb 208/206	2.082 - 2.085
Pb 207/206	0.8520 - 0.8544
Pb 206/204	18.27 - 18.34