sulphide (mostly pyrrhotite), carbonate replacement body. Such a body would be chargeable, highly conductive and strongly magnetic: density would be of the order of 4t/c.m. At Renison, steeply dipping faults have acted as 'plumbing' systems for the orebodies. Any similar faults in this area should also be mineralised (to the surface?) and might be expected to respond to EM methods (eg, VLF).

Mineralised fault zones by themselves might also be economic. At Razorback, the ore occurred in the faulted contact between the Dundas Group and the ultramafics. Since the ultramafics are (irregularly) both magnetic and conductive, such bodies are likely to prove difficult to define; particularly if, as happens at Grand Prize and Razorback, deep weathering has oxidised the sulphides to depths in excess of 200m. Other possible (though probably less likely) types of tin deposits, such as stanniferous pegmatites, quartz veins, stockworks, etc, are unlikely to be conductive or magnetic, but may have an IP response.

Some samples from drill holes in the Grand Prize area have been tested for petrophysical properties (see Table 1). This limited number of results suggests that the unmineralised and unweathered sediments should be resistive, unchargeable and non-magnetic (although this probably does not apply to the sequences of black shales). The low magnetic susceptibility of the ultramafic sample illustrates the variation within this rock type.

GEOPHYSICAL SURVEYS

This report does not evaluate any of the previous geophysics carried out in this area. A compilation of all prior surveys has been made by Bishop (1983) and an interpretation involving all of the geophysics on E.L. 42/71 is in preparation. However the regional aeromagnetic and gravity data are briefly examined here to see if their results may be used to aid exploration.

REGIONAL (AEROMAGNETICS AND GRAVITY)

The results of the Tasmanian Dept of Mines' (1981) aeromagnetic survey are shown in Figure 62. The dominating features in the area of interest are the 'highs' over the Serpentine Hill and Razorback ultramafic complexes. The extension of the former to the north east through Pine Hill is seen as a series of highs with the lows on the southern side due to the dipolar nature of the field (and not a separate body showing strong reversed remanent magnetism). A line of highs also extends to the north east from the Razorback high. Although one might postulate that these indicate a buried zone of serpentinites which line up with those further to the north east at Colebrook Hill, clearly any magnetic anomalies which cannot be explained by the surface rocks must be further investigated. The anomaly in the south eastern corner of the lease has been labelled the 'Great Northern' anomaly and it is further discussed below. The anomaly which