

## 1. INTRODUCTION

The Ring River Magnetic Anomaly is a roughly circular magnetic high centred near 5,367,200mN, 374,300mE, with a peak amplitude of over 450nT and a diameter of about 1km (Fig. 1). The anomaly is associated with an irregular ring of small E.M. conductors, some of which correspond to the old Fahlore line of Cu, Ag, Pb, As, Zn workings. The only magnetic rocks known from the area are some felsic tuffs which are restricted to outcrops in the bed of the Ring River. Susceptibility measurements on samples of the tuff gave a range of 0.001 to 0.0035 c.g.s. The area is extremely rugged with rapid changes in elevation of 300m (Fig. 2).

The anomaly has been described in detail in E.Z. Reports No's 158 and 164. These Reports contain the results of mathematical modelling of the anomaly by Leaman Geophysics (L.G.). The results of the modelling exercises can be summarised as follows.

1. The most favoured source body is a near vertical cylinder of radius 400m, with its top at about 300m below ground surface and its bottom greater than 1500m, and a susceptibility contrast of 0.003 c.g.s. In geological terms this would represent a stock-like igneous intrusion. The solution is not unique. The body could be deeper with a higher susceptibility contrast.
2. A stratigraphic unit, folded into an anticlinal core, could also be source to the anomaly providing it is at least 250m thick, has a top about 250m below surface and has a susceptibility contrast of 0.005 c.g.s.
3. A magnetic body of Renison Tin Mine dimensions, with a susceptibility contrast of 0.015 c.g.s., could be a source of the magnetic anomaly if it were located at about 5,367,150mN; 374,350mE, and at a minimum depth of 200-250m.

At the time of the magnetic modelling exercises the rocks in the Ring River area were interpreted as stratigraphic equivalents of the Success Creek Group (refer E.Z. Reports No's 151 and 158). This interpretation was based on an approximate on-strike equivalence of the Ring River area with lithologically similar rocks in the Colebrook area which underlie the Crimson Creek Formation on Colebrook Ridge.