

11. MAGNETOMETER SURVEYS.A. GENERAL.

Because wiggilite contains about 20% magnetite, magnetometer surveys are an obvious exploration tool. Our experience in North Queensland wiggilite investigations was that magnetics is the best aid to detect and delineate wiggilite occurrences.

Initially we were concerned that the overlying basalt might be significantly magnetic and either mask or confuse the signatures from wiggilite. Samples of basalt core from Mt. Lyell drill hole ML2 were sent to Geox Pty. Ltd. to determine magnetic susceptibility. This was found to be low (less than 200 c.g.s. units) in a 1 ft. 6 in. sample (see Appendix 16). Our subsequent surveys over sheets 1, 2, 3 showed that basalt throughout is relatively dead magnetically (in strong contrast to other areas in Tasmania e.g. the Highclere area).

A patchy magnetometer survey at widely spaced centres was previously carried out by Mt. Lyell. This was judged inadequate for our requirements so our surveys were carried out 'from scratch'.

All sheets were initially surveyed with fluxgate magnetometers which read the vertical component of the field; later, sheets 1 and 2 were additionally surveyed with proton precession magnetometers which read the total field with much greater precision and sensitivity.

B. SHEET 1, SHEPHERD AND MURPHY AREA.Fluxgate survey:

This survey was carried out in 1975 using Scintrex MF2 fluxgate magnetometers. Most of the area was read at 25 m centres. Data is on drawing TAS-M-75-19A and contours are on TAS-76-51.

Extremely high readings over wiggilite were obtained in places, and the extent of wiggilite was found to be very large, the bulk occurring beneath basalt. As a rule of thumb later drilling indicated that all known wiggilite is outlined by about the 500 gamma contour. A simplified contour plan showing only 500 and 1000 gamma contours is drawing TAS-75-21.