671905
93A/7

To: Dr. W.R. Bacon January 6, 1969

From J.C. Stephen

Re: Eureka Peak Aeromagnetics

An examination was made of the government aeromagnetic map 'Mackay River 93A/7 with particular attention to the relatively strong anomaly lying between Crooked Lake and Mackay River.

Interpretation involved the following steps:

(1) Preparation of a transparent overlay showing general topography and the geology as transferred to 1" - 1 mile scale from map 1-1963 Quesnel Lake (East Half) at a scale of 1" - 4 miles.

(2) Preparation of three profiles of the magnetic data with regional trend established by visual inspection and known geology from the overlay plotted in bar form.

(3) Visual comparison of the magnetic pattern over the Triassic volcanics involved with the pattern over the Fennel Formation to the south on the geology map for Bonaparte Lake.

No air photos of this particular area were available for this interpretation.

RESULTS

A strong aeromagnetic anomaly with an intensity of 1000 gammas over the regional trend occurs on the east flank of the ridge west of the Mackay River.

The profile of this anomaly is steep and sharp. The half width indicates the source of the anomaly to be about 1300 feet below the level flown. Assuming the flight line to be about 1000 feet above this rugged topography it may be assumed the anomaly has a surface or near surface source.

The volcanics involved appear to be normally magnetically smooth. The strong magnetic anomalies which occur in the Fennell volcanics are generally associated with granitic intrusives. It is assumed then that this anomaly is due to:

(1) a small magnetite bearing intrusive stock, or

(2) the development of pyrrhotite or magnetite in volcanic formations as the result of hydrothermal processes.

The anomaly is then an excellent prospecting target as a possible locus for copper mineralization.

After removal of the regional trend a slightly negative anomaly remains on the east side of the main anomaly. This together with the horizontal shape of the anomaly and the sharp valley on the south east side of the anomaly indicate a strong north east striking fault.

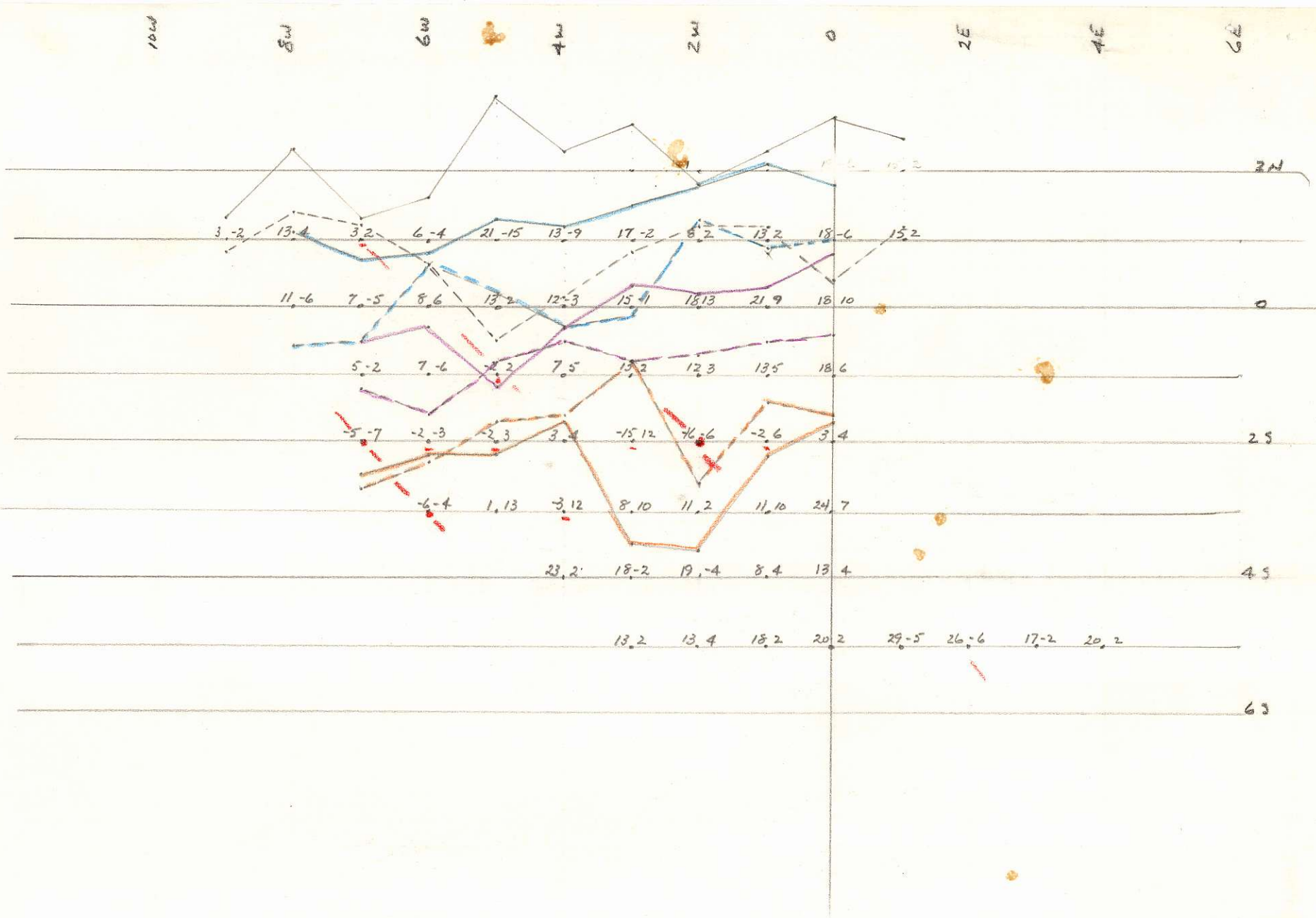
The weaker anomaly four miles to the north west and shown on Profile III is considered a worthy prospecting target. The structure is assumed to be synclinal. This anomaly may result from folded or repeated bands of magnetite or pyrrhotite bearing material near the contact of the volcanics and extending into or below the sediments.

Assuming hydrothermal activity in

the area this should be considered a good prospecting target for copper mineralization.

Some years ago the writer heard of molybdenite mineralization in this area and its presence has been confirmed by Mr. Sawyer.

The magnetic features do not indicate the type of hydrothermal alteration and silicification usually associated with molybdenite deposits. It is thought molybdenite will be a minor constituent of any mineralization which might be found associated with these positive magnetic anomalies. Checks might well be run for the possible presence of nickel or of tungsten.



EM EUREKA PEAK
SCALE 1"-200'
1"-20%