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CORPORATION FALCONBRIDGE COPPER

MEMORANDUM

DATE: October 13, 1983
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TO: M. J. Knuckey
COPIES À
COPIES TO: D. H. Watkins, I. D. Pirie
DE
FROM: A. J. Davidson
SUJET
SUBJECT: Glen White P.E.M. data - Mt. Sicker 092B/13

Frank Hiebert recently spent two days in the Vancouver office reviewing White's 1979 and 1980 Pulse EM data from Mt. Sicker. He essentially concluded that almost none of the data could be used. (1)

White used poor loop locations for coupling, extended survey lines up to 1km from a 150m square loop (2) and did not record at constant gain. (3)

Attached please find Frank Hiebert's comments on White's survey and recommendations. These recommendations were arrived at in consultation with Ian and myself and the survey will be done in November. The loop is laid out so lines can be run off both sides to cover the Lenora-Tyee horizon and the "PF Exhalite" and will thus test both the anomalous zones mentioned in Frank's report.

Comments Re: Mt. Sicker Area,
Victoria Mining Division - British Columbia

1. AREA SOUTH OF NEW BASELINE (OLD BASELINE 26N)

The difficulty experienced in examining the 1979 PEM data from this area stems from the operating procedure used in the survey. In order to facilitate the vector plot presentation, the only restriction imposed is to maintain a constant gain setting for vertical and horizontal component measurements. The primary pulse signal was normalized to a 1000 reading level at each station with the resultant gain setting being used in taking both component measurements. Unfortunately, it appears that no record of these various gain settings was kept.

Adopting component profile plots requires that readings be taken at a constant gain setting for both components over all of the reading sttions. This is necessary so that variations in receiver sensisitivity play no part in distorting the component profiles. In the present situations had both the primary pulse level and the corresponding gain settings been available, the data could have reduced to reflect a constant gain equivalent. Consequently the present component profiles from the two 1979 PEM surveys display a lot of distortion and the data cannot be reduced. In addition, a full receiver gain (employed at large distances from the loop where insufficient receiver gain prevented normalization to 1000) has yielded very noisy results. Also, line coverage should be restricted to those lines which pass within 400ft. of the loop. It is the opinion of this writer that responses exemplified by figures 24 and 25 (March 20, 1979 report), showing profiles along L00 from loop 14 located over a quarter mile away along strike, are unreliable.

The only clearly defined anomalies are two channel responses from loop '13' along lines 00, 2E and 4E. These anomalies occur 30-60m north of the baseline and correlate quite well with VLF and high I.P. chargeability-low resistivity zones, just north of the Tyee shaft.

Anomaly #1
← North orebody
Tyee

2. AREA NORTH OF THE NEW BASELINE (OLD BASELINE 26N)

The only profiles inspected were those from lines along which transmit loops were located. Primary normalization is apparent up to distances of 300m from the side of the loop, beyond which full receiver gain was employed.

An anomalous zone is apparent in the vicinity of 0-200m north of the new baseline between lines 4W and 3E. In his September 1980 report, Glen White attributes the response to a near surface, water saturated fault or shear zone. How accurate this conclusion is remains to be seen.

Anomaly #2
Postak-Fulton
east extension

3. RECOMMENDATIONS

A high powered DEEPEM survey should be conducted for greater depth capabilities and to employ a better operating procedure amerable to component plot presentations.

A transmit loop (800 x 400m) should be laid out from L5W to L3E, between 200S and 600S on the new grid. All of these lines should be used through the entire grid, including those passing through the loop. To maximize transmitter output, #10 copper wire should be used and a 1.0m shut off ramp should be selected.

Respectfully,

per

Frank Hiebert, B.Sc.
Geophysicist