"Stellako Field" file

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April 27/66

Mr. J. R. Trepanier,
Managing Director,
Stellako Mining Co. Ltd.,
716 - 602 West Hastings Street,
Vancouver 2, B.C.

Dear Mr. Trepanier:

Re: Report - INDUCED POLARIZATION SURVEY
Roscoe Lake; McPher Geophysics Ltd.

PRELIMINARY:

This report is intended as a geological supplement to the McPher Geophysics Limited "Report on I. P. Survey in the Roscoe Lake Area, B. C. for Stellako Mining Company Limited" of April 12, 1966. In summarizing the authors note that "the Induced Polarization Survey has indicated no strong anomalies of the type normally associated with large concentrated sulphide bodies or extensive zones of 5%-10% disseminated metallic minerals. Therefore, further work does not appear to be warranted unless the nature of the mineralization being sought is such that very low concentrations can be of economic interest."

With regard to the above, the first observation would be that something less than 5% disseminated sulphides - roughly equivalent to 2-2 1/2 % copper content, taking Cu/chalcopyrite at 30% and Cu/bornite at 60% - would be adequate for the purposes of the current program.

The second observation involves geological geophysical correlations, in that there is no apparent direct relationship in the proportion of sulphide minerals in trenches and drill holes and scale of I. P. responses over corresponding sections. Some explanation of I. P. - geological relationships and/or effects is desirable for a full evaluation of the current and possible extended I. P. surveys and for some means of discrimination between "real" and "apparent" anomalies.

The writer does not attempt, as a geologist, to fully analyze the I.P. data in this report, but only to point out some apparent relationships for the general record and possible future use. In addition, this report should be considered as a

final supplement to the March 16 and April 11, 1966 reports by the writer.

OBSERVATIONS:

1. High-grade discovery zone

The shallowness of mineralization - some of it quite massive - as proved by diamond drilling precludes expectations of high I.P. responses or vertically-extensive anomalies. However, the modest m.f. values and low resistivity obtained within a narrow, shallow section on line ON, IW directly corroborates the known shallow, high-grade bornite-chalcopyrite mineralized section delimited by trenching and drilling.

In the following descriptions "m.f." and "r" denote metal-factor and resistivity interpretations respectively:

Line 11S; 2W-3W @ 100' electrode spreads; m.f. 12; r = 120, and covers D.D.H. S-13 on this same section. The resulting anomaly closely corresponds with a section containing disseminated and random fracture-filling mineralization grading from 0.34% to 0.66% copper - the strongest section of the hole. No marked talcose and/or kaolin alteration occurs. Very minor magnetite was observed. Therefore the anomaly may be taken as fairly representative of the amount of typical mineralization.

Line 10S; 4W-2E; @ 200' spreads; interpretation gives East-dipping anomaly with m.f. =9; r =145-202-178: This corresponds with sections of mineralization traversed by flanking holes S-13, S-5 and S-24. The scale of the anomaly could be proportional to the general grade (0.27% - 0.66% Cu) intersected by the drill holes. However, the general moderate to steep easterly dips of the anomalies do not correspond with the inferred steep westerly dip of mineralization at 9.5S and 11S. Talc, kaolin and sericite as alteration products are not locally conspicuous.

Line 9S; 1.5W - 5W @ 100' spreads; m.f. = 15 at surface to 5.6 to 2.6 with increasing depths; corresponding r's = 77-143-151. The inferred dip of the anomaly generally agrees with that for mineralization and the max m.f. at 15, decreasing with depth corresponds with high-grade surface mineralization decreasing to sub-marginal

grades at sub-surface horizons intersected by drilling. Wall rock alteration is not conspicuous. "Probably" - anomalous zones are indicated at 5W-4W, 2.5W - 1.5W and 2E - 3E.

Line 8S; 1E - 4W @ 200' spreads; average m.f. @ 6 and average r @ 200 not particularly significant, but more so than 'background' readings; not considered anomalous. The wide but generally weak, shallow anomaly could be a side-effect from mineralization at the section of D.D.H. S16 100' - 150' north and /or weak mineralization occurring in surface cuts across 8S.

Line 4S; 0-2W @ 200' spreads; a weak, rather flatly west-dipping anomaly is shown with m.f. = 11——6.2 - 5.3, and r = 156—— 161-152 with increasing depth. The more pronounced surface anomaly is probably due to localized disseminations of sulphides in a N.N.E.-trending fracture zone intersecting the section in this vicinity. The weakening at depth reflects the sparsity of sulphide mineralization and/or pronounced talc-sericite - MnO_2, etc. alteration within the upper half of D.D.H. #S-21.

The above are sufficient to provide general correlations of I.P. and geology along the better-known Central mineralized zone.

2S - 6S West Anomaly

I.P. responses in this section of the grid are much more pronounced than those covering the Central zone. The over-all interpretation shows a "probable" northerly-trending anomalous zone; m.f.'s range from 15 to 28 and r's from 58 to 100 approximately - or m.f.'s are relatively much higher and resistivities lower than on all Central zone sections tested. The I.P. report plan shows a small but "definite" anomaly at 6S, 38W.

In spite of the above, drill holes S-18, S-19 and S-20 bracketing the full width of the general anomalous zone intersected only very minor amounts of veining copper mineralization - indicating some other cause for the anomaly.

The conspicuous feature of the above cores is the presence of intensely

altered sections, strongly leached and containing much secondary kaolin, clay, sericite, minor talc and disseminated hematite. Locally, chloritic alteration of the Bethsaida mafics is conspicuous. In general, the local rock mass is highly and variably fractured and sheared - suggesting a pronounced fracture lineament. Also, the anomaly is centrally situated within a major geochemically anomalous area, as determined by analysis of stream sediments.

4S - 2N East Anomaly

This zone appears to be a general aggregate of a number of minor elements of differing or intersecting trends. Associated geochemically (Cu) anomalous areas, from normal soil-sampling, add to the general exploration potential.

A single drill-hole, #S-23, was put down to intersect a relatively strongly anomalous interval (m.f.=27; r=54) at 2S, 17E - 19E - an inferred "probable" anomaly. Minor copper mineralization only, averaging 0.08% over the collar +60' - 90', was disclosed. This however was slightly better than grades disclosed over the West anomaly.

As on the West I.P. zone conspicuous alteration involving clay, sericite, kaolin, talc, minor disseminated hematite, and local chlorite was present within a generally fractured and sheared zone within the Bethsaida granitic host rocks.

SUMMARY & CONCLUSIONS:

The relatively high I.P. anomalies of the inferred 'East' and 'West' zones are closely associated with highly-fractured zones within the Bethsaida granite in which normal weathering and ground-water percolation and/or apparently low-temperature hydrothermal alteration have produced concentrations of relatively more 'chargeable' and 'conductive' clay-mica-talc alteration products. The general sparsity of disseminated metallic (sulphides and oxides) minerals suggests that the above non-metallic assemblages are essentially responsible for the I.P. responses.

To date I.P. responses most directly attributable to 'dispersed' sulphide mineralization are marked by intermediate ranges of the computed values of metal factor and resistivity. These may, or may not, be due and proportional to the generally sub-commercial but significant amounts of dispersed (minor true disseminations) copper sulphides. It is possible that these intermediate responses represent a less pronounced degree of clay-sericite, etc. alteration.

Because of the current inability to analyze I.P. data in terms of actual metal content, the supplementary exploratory techniques have been recommended in the March 16 and April 11, 1966 reports.

Respectfully submitted,

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