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PROGRESS REPORT
ON
GEOCHEMICAL SURVEY
"McLEESE CLAIMS"

FOR
SHERIDAN COPPER MINES LTD.'

BY
WILLIAM MEYER
WESTERN GEOLOGICAL SERVICES LTD.

Vancouver, B.C.,

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GENERAL:

During April 1971, a field programme including line cutting and soil geochemistry was completed on the "McLeese" claims. The "McLeese" claims are the "key" claims of a larger block held in the "McLeese Lake-Gibraltar" area under joint venture agreement with Argonaut Mines Ltd. (N.P.L.).

The first part of the programme involved establishing an east-west base line and cross-line at 400 foot intervals. The cross-lines are blazed and picketed chain and compass lines. Near the end of the survey, nine intermediate fill-in lines were completed to check anomalous values in the north-east portion of the group.

The second phase of the programme involved taking soil samples at 100 foot intervals along all the cross-lines. Samples were collected from the "B" horizon where possible using a soil auger. The depth of the samples varied, averaging approximately 8 inches. Notes were made on depth of sample, type of soil and slope as an aid to interpretation.

The field survey was carried out by four men under the supervision of H. Naylor, geologist and under the direction of the writer. The statistical treatment of the data and interpretation was made by D. Arscott, P. Eng., based on the "raw" data and discussions of geology, sampling technique and sampling problems with the writer.

DISCUSSION OF RESULTS:

The copper analyses were treated statistically in order to distinguish the different types of copper distribution in the soil. Four statistical graphs have been drawn up and are incorporated in figures 1 and 2.

The curves in figure 2 show two main inflection points, a lower one at 35 ppm (parts per million) copper, and a higher one at 70 ppm. The indication is that any values below 35 ppm represent background copper values of no special significance, and that any values in excess of 70 ppm are definitely anomalous. The curves are linear between 35 and 70 ppm, suggesting a third major type of copper distribution, rather than just mixed background and anomalous values. All such values then, between these limits, have been designated "possibly anomalous". The three major distributions, "background", "definitely anomalous", and "possibly anomalous" have been contoured in figure 3.

The areas enclosed by the 35 and 70 ppm contours are very large, and include respectively about 25% and 8% of all the samples taken. This fact, and the relatively slow fluctuation of values from station to station, make it probable that the anomalies represent low grade, widespread copper mineralization.

There are a number of trenches and some moderate copper grades within the copper anomalies, providing proof that the geochemical method is valid and useful on this property.

Terrain slopes were noted during the soil sampling. In some cases steep-sided geochemical anomalies lie on topographic highs (e.g. at 4E/16S and 4E/8N), with no obvious sign of downslope movement away from their source. In two or three instances (12W/5N, 16W/21S, 6E/12N) anomalies appear to sit on steps in the topographic slope. However, this may merely reflect the erosion characteristics of the bedrock within which the mineralization lies. Generally speaking, the anomalies seem to be unaffected by topographic changes, and therefore probably positioned very

FIG. 1

DISTRIBUTION OF COPPER VALUES
IN
"B" HORIZON OF SOIL

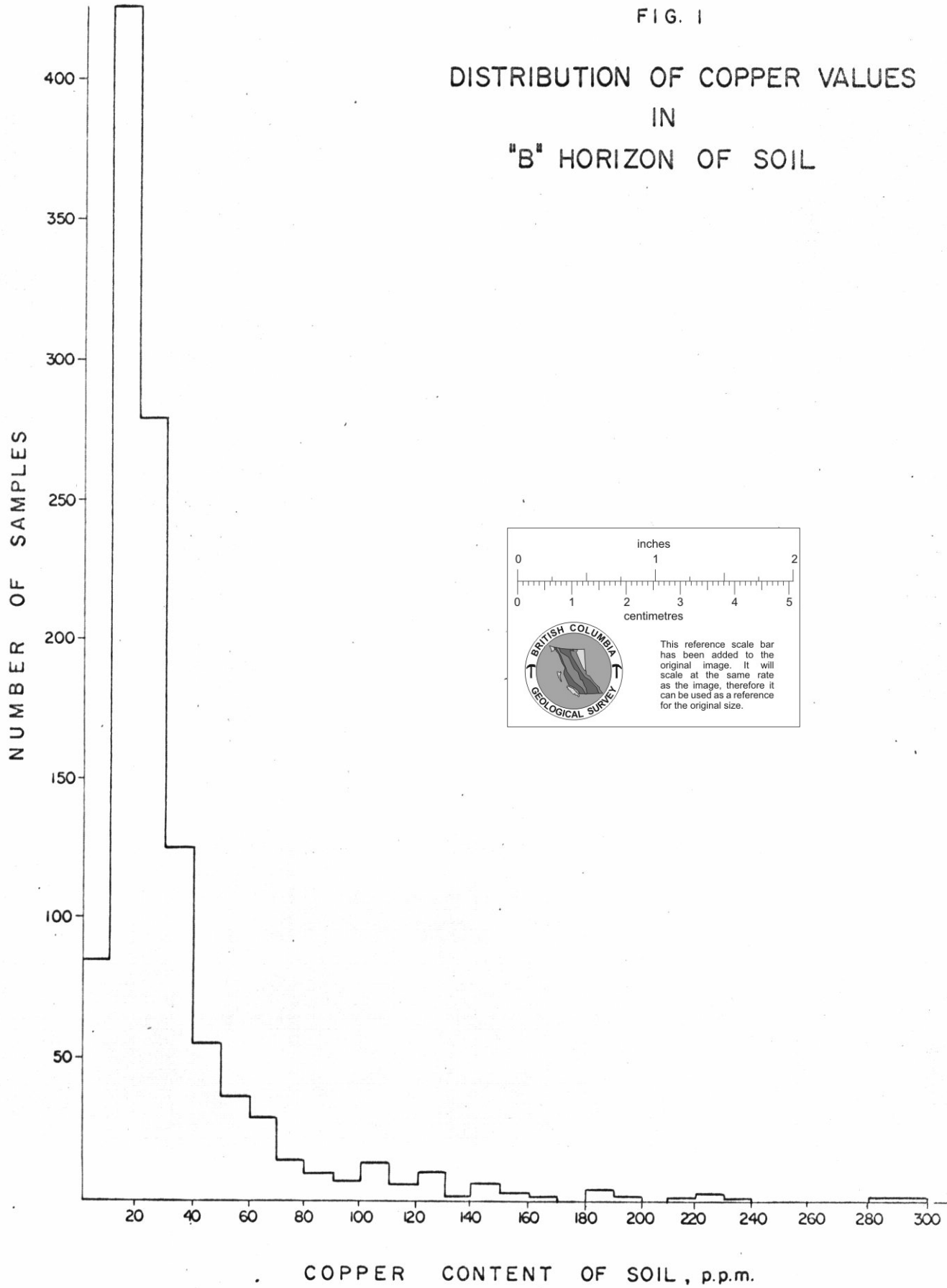
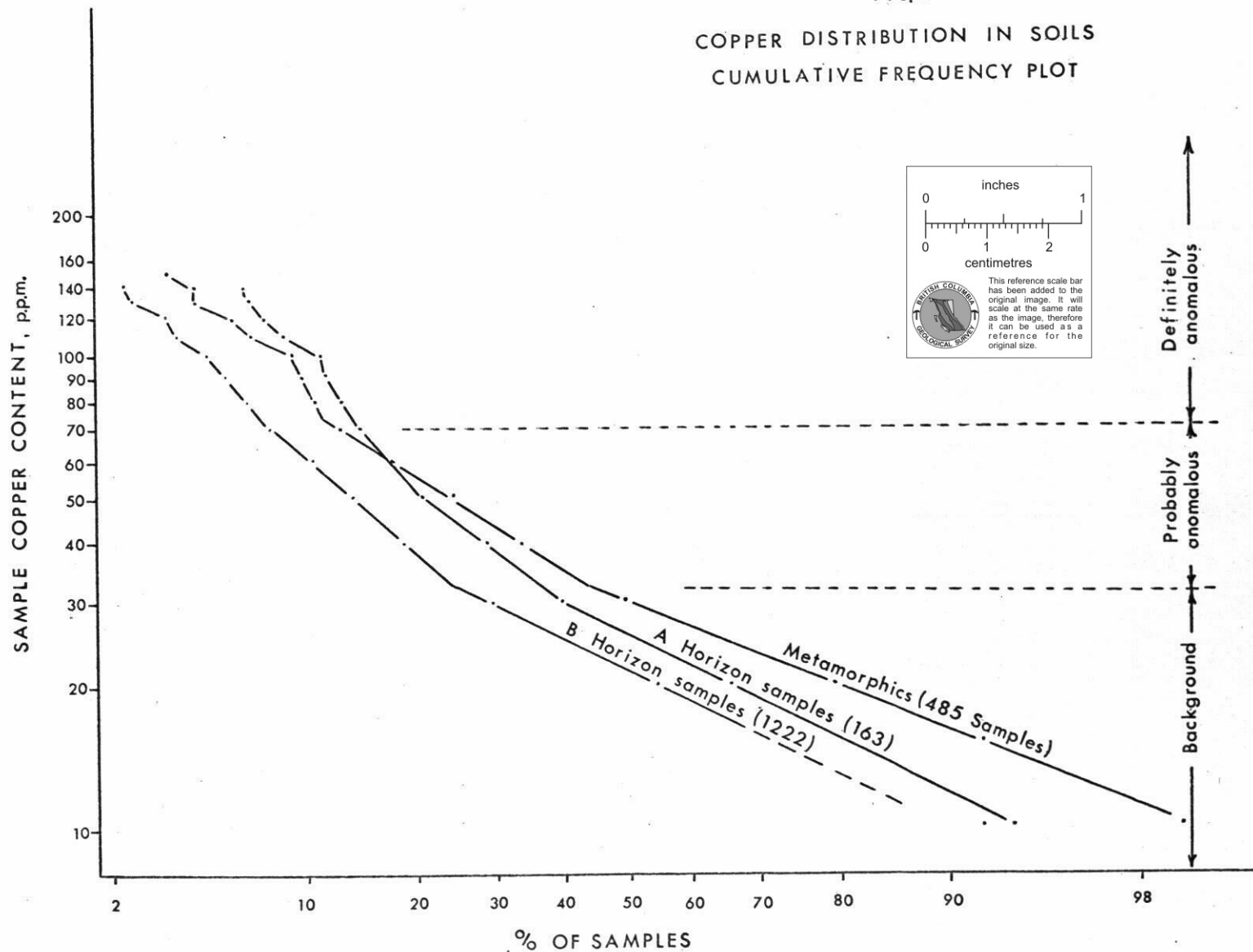


FIG. 2
 COPPER DISTRIBUTION IN SOILS
 CUMULATIVE FREQUENCY PLOT



close to their source. The only possible exception of importance is the anomaly at 32E/4S, which lies partly in a valley bottom.

There is a concentration of copper anomalies towards the NE corner of the claim block. This fact probably reflects a more favourable environment for mineralization (greater fracturing ?) in the vicinity of the intrusive contact which lies through this area.

Approximately a quarter of the total soil samples were analysed for molybdenum. The results of these analyses were more erratic. However, there are a number of local highs which coincide with the copper anomalies and especially with anomaly "A" at 32E/23N.

Soil acidity was measured at approximately every fifth station. Most of the pH (acidity) values lie between 5.5 and 6.6. The average is 6.2. Any pH values below 5.5 are believed to be too acid for the retention of copper in the soil. Such conditions occur on this property in a few areas and coincide with a high pyrite content in adjacent bedrock. An important example is the area between anomalies "A" and "B" (figure 3). These may actually represent a single mineralized zone, with misleading soil copper values at the centre where the pH is too low.

Specific anomaly characteristics are summarized in the following table. The anomalies are listed in order of importance.

GEOCHEMICAL ANOMALY CHARACTERISTICS

Anomaly No.	Location	Dimensions (average, in feet, at 70 ppm contour)	Peak Value (ppm)	Notes
"A"	32E/23N	1000 x 800	10,800	<p>Peak value is in the vicinity of a trench carrying samples of 0.9% Cu over 18', and 0.3% Cu over 4'.</p> <p>There are several associated and erratic molybdenum highs.</p> <p>The anomaly is centred a few hundred feet outside the theoretical position of the intrusive contact.</p> <p>The anomaly may be continuous with anomaly "B", since low soil acidity values intervene between "A" and "B".</p>
"B"	18E/25N	400 x 200	525	Some high associated Mo values.
"C"	6E/10	1500 x 200	1,060	Elongate form, but with a large area of possibly anomalous values to the north.
"D"	32E/4S	1000 x 300	370	The actual size of this anomaly is uncertain due to widespaced sampling.
"E"	28E/13N	800 x 200	195	Lies in the vicinity of known mineralization, of intersecting faults, and of the intrusive contact. Occupies a topographic low in part.
"F"	12W/5N	1000 x 200	220	
"G"	16W/21S	1000 x 150	165	
"H" (anomaly group)	2E/23N	4 co-linear anomalies over a length of 1600'	250	May represent a mineralized fault.
"I"	20E/4S to 8S	?	220	A Cu and an Mo high are separated by an area of high soil acidity. Significance uncertain.

CONCLUSIONS & RECOMMENDATIONS:

The geochemical survey outlined nine anomalous areas which require follow-up. Two of the major anomalies are related to bedrock mineralization exposed by recent trenching and appear to extend the potential area of interest.

Since the survey covered by this report is only a portion of a continuing programme, no specific cost estimate is made for the recommended follow-up to this specific data.

In the proposed reconnaissance mapping, however, special attention should be given these anomalous areas. It may be necessary to expose some of these geochemical targets by bulldozer trenches when the equipment is on the property to carry out previously proposed stripping.

Respectfully submitted,


Wm. Meyer