

McPHAR GEOPHYSICS LIMITED

MEMO TO: Mr. G. A. Brand, Mine Development Associate
FROM: D. B. Sutherland
SUBJECT: I. P. Survey, Porcupine Claims, Merritt, B. C.
DATE: December 6, 1966

A program of reconnaissance and detailed IP surveying is nearing completion on the Porcupine Claims, Merritt Area, B. C. The initial coverage over the southwest part of the grid was done with 300 foot dipoles. Northeast of Line 48N, the initial work is primarily with 200 foot dipoles with some detailing near the shaft at 100 foot intervals.

The geological reports indicate that most of the claims are underlain by a series of andesitic and basaltic flows interbedded with tuffs and flow breccias. The basalts are somewhat magnetic and some IP effects can be expected from the contained magnetite.

In general, the IP results received to date show several definite anomalies, as well as a large number of weaker responses that are not as well-defined. The background IP effects are variable but are often moderately high over several hundreds of feet. The areas of high background and many of the weaker effects may be due to the reported magnetite in the basaltic flows. However, it is interesting that many of the weak anomalies improve substantially on detailing with shorter dipoles.

Most of the known mineralization occurs in the vicinity of the shaft (i. e. both NE and SW of Line 43N.) No strong anomalies were encountered

in the reconnaissance survey in the area on the regular grid. However, there are weak indications near the baseline on Lines 36N and 40N on the 300 foot data.

Line 43N

This line runs directly over the shaft and was surveyed to establish the response obtained over the known mineralization. There is a weak indication of a narrow, shallow source between 0 and 1W, that is, immediately west of the workings.

The best response on Line 43N is centred near 6E and appears to be due to a source of moderate metallic content with about 50 feet to the top of its strongest portion D. D. H. "A", collared at 7E on 43N, drilled west along the traverse line at -45° for a length of 250 feet, is suggested to establish the cause of this anomaly. The hole has been spotted on the east side of the anomaly, because the prevailing dip is reported to be east. However, the IP results could also be caused by a source dipping steeply to the west.

Four anomalous zones have been interpreted from the data received to date.

Zone A

This zone extends NE from Line 40N near 7E at least as far as Line 56N. Drill hole "A" recommended above, appears to be part of this complex zone of indicated variable metallic content.

The best response with 200 foot spreads occurs on Line 56N and is centred near 12E. The results suggest a source of moderate metallic content with about 100 feet to the top of its strongest portion. If D. D. H. "A"

is encouraging, then the following D. D. H. "B" is recommended to determine its cause:- collar at 14E, drilled west along traverse at -45° for a length of 350 feet.

Zone B

Zone B appears to be continuous from 19E on 44N at least as far as 60N. The best response to date, occurs on 60N near 20E, and the following hole is recommended on the basis of available data, D. D. H. "C" collared and 22E, drilled west along traverse at -45° , for a length of 350 feet.

Note:

Both Zones A and B have been extended across Line 52N. The data plot for this line has not yet been received but an interesting anomaly has been reported near 12E that would correlate with Zone A.

Zone C

This anomaly appears to extend across Line 40N, 44N and 48N in the vicinity of 41E. The initial surveying with 300 foot spreads on Line 40N suggested a shallow source that might be due to a narrow zone of high metallic content. The 200 foot detail confirms this anomaly but indicates a broad area (i. e. up to 1000 feet wide) that is quite complex and may contain several sources of moderately concentrated metallics. However, this zone would be worthy of drilling if the results of the previous holes are encouraging.

Zone D

Weak IP effects on the east ends of Lines 20N and 24N suggest a deep source. However, the IP effects are not strong and detailing is now being carried out to firmly establish the existence of these weak indications.

Other anomalies that appear to be isolated but are worthy of further investigation occur near 22W on 8N and also near 32W and 24W on Line 0. Additional detailing would be of value in assessing their importance.

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A handwritten signature in dark ink, appearing to read 'D. B. Sutherland', written in a cursive style.

**D. B. Sutherland,
Consulting Geophysicist.**