A REPORT
ON
A GROUND MAGNETIC SURVEY
FOR
JERSEY CONSOLIDATED MINES LIMITED
BY
EAGLE GEOPHYSICS LIMITED
VANCOUVER, BRITISH COLUMBIA

DECEMBER, 1968
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GROUNDB MAGNETOMETER SURVEY MAP .................. E-142-1
SCALE: 1" = 200'
INTRODUCTION

Between October 24th and 31st, 1968, Eagle Geophysics Limited carried out a combined linecutting and ground magnetic survey programme on a property located in the White River Area of the Yukon Territory, held by Jersey Consolidated Mines Limited.

The survey was carried out over N 131° E handcut lines which were turned off at right angles every 400 feet from a N 41° E baseline, and which were chained and picketed at 100 foot intervals.

Readings were taken every 100 feet along the picket lines using a Sharpe M.F.1 fluxgate magnetometer.

The results are shown in contoured form on a map of the line grid, Map E-142-1, at a scale of 1 inch to 200 feet.
PROPERTY AND LOCATION

The property consists of 28 unpatented mining claims registered in Whitehorse, Yukon Territory, as follows:

<table>
<thead>
<tr>
<th>CLAIM NAME</th>
<th>GRANT NUMBER</th>
<th>EXPIRY DATE</th>
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<tbody>
<tr>
<td>KLU 1 TO 20</td>
<td>Y21718 TO Y21737</td>
<td>December 16th, 1968</td>
</tr>
<tr>
<td>KLU 41 TO 48</td>
<td>Y21758 TO Y21765</td>
<td>December 16th, 1968</td>
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</table>

The claims are situated at the junction of the White and Generc Rivers at latitude 61° 45'N and longitude 140° 42'W. They lie 15 miles to the north of the Ice Field ranges of the St. Elias Mountains and 8 miles to the east of the Alaska-Yukon border.

Access to the property can be obtained by several alternate means: (1) Directly by helicopter, 220 airmiles from Whitehorse or 15 miles from mile 1168 on the Alaska Highway. (2) By fixed wing aircraft which can land on Rifle Lake, approximately 3 miles southwest of the property. (3) By an 18 mile winter tote road, impassable in summer, from the Alaska Highway to the United Pemetex Camp and thence by a 3 mile trek from the latter to the property.

On this October survey access was obtained by helicopter.
THE PURPOSE OF THE SURVEY WAS TO LOCATE MAGNETIC FEATURES THAT COULD BE ASSOCIATED WITH ECONOMIC MINERALIZATION (MAGNETIC HIGHS ARE KNOWN TO BE ASSOCIATED WITH MINERALIZATION ON THE ADJOINING UNITED PEMETEX PROPERTY) WITH A VIEW TO DETECTING THIS MINERALIZATION BY THE INDUCED POLARIZATION TECHNIQUE DURING THE FOLLOWING SUMMER.
GEOLOGY

GENERAL

Glacial drift, a recent layer of thick volcanic ash and a vegetative cover effectively blankets most of the region with the exception of the edges of the higher hills and ridges.

Sporadic outcroppings of two rock units occur in the general vicinity of the Klu and surrounding claim groups. There are the Permian Cache Creek Group of altered andesite tuffs and breccias overlain in places by grinoideal limestone, and the Upper Triassic Mush Lake Group of porphyritic and amygdaloidal andesite.

The presence of a northwest trending thrust fault at the eastern base of Slaggard Ridge, three miles to the south, is indicated by regional geological mapping (G.S.C. Map 1177A).

ECONOMIC

Native copper and chalcocite mineralization occur in a complex fracture zone in dark green flows of the Mush Lake Group at the United Pemetex property, approximately three miles to the west of the Klu claim group. This mineralization was tested by diamond drilling with inconclusive results, with the result that magnetic and induced polarization surveys were undertaken this last Summer to define the extent of possible mineralization, and a further drilling programme, based on these later results, is now being initiated.

An occurrence of chalcopyrite mineralization is found in the Cache Creek Group on the property of Canyon City Mines Limited, nine miles to the northwest of the Klu claims.
PROPERTY

Glacial drift, volcanic ash and vegetation cover the entire property. No outcroppings were observed during the survey which was carried out with six inches of snow on the ground. However, in the writer's opinion, the geology is expected to be similar to that of the general area.
SURVEY SPECIFICATIONS

The magnetic survey was carried out using a Sharpe M.F.1 fluxgate magnetometer. This instrument measures variations in the vertical component of the Earth's magnetic field to an accuracy of \( \pm 10 \) gammas. Corrections for diurnal variations were made by trining-in to previously established base stations at intervals not exceeding two hours.

Readings with the magnetometer were taken every 100 feet along the picket line for a total of 15.7 miles of magnetic surveying.
DISCUSSION OF RESULTS

The results of the magnetometer survey show the property surveyed to exhibit very little magnetic relief (Map E-142-1), with the exception of a low-intensity magnetic gradient in the northwest section.

They indicate, in the writer's opinion, that the property is underlain by one magnetic rock type and covered by a fairly uniform layer of overburden.

The low intensity magnetic high is thought to be caused by a gradual diminishing thickness of the overburden cover, but could be caused by an increase in the magnetic content of the supposedly underlying volcanics. However, as the feature is open on two sides, the cause would be best determined if and when further magnetic measurements are made.

No shearing and/or magnetic highs of the type associated with mineralization and I.P. anomalies at the United Pemetex property, or magnetic lows of the type associated with I.P. anomalies at the Share Syndicate property can be observed on the property to date from the magnetometer survey results. However, magnetic highs or lows, generally caused by magnetite and/or pyrrhotite, do not necessarily occur with chalcocite and/or chalcopyrite mineralization.
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Between October 24th and 31st, 1968, Eagle Geophysics Limited carried out a combined linecutting and ground magnetic survey programme over part of the Klu claim group held by Jersey Consolidated Mines Limited.

The Klu claims are located in the Whitehorse Mining Division of the Yukon Territory, and are situated at the junction of the White and Generc Rivers, 8 miles to the east of the Alaska-Yukon border.

The magnetic survey showed the property to exhibit very little magnetic relief, and is indicative of one underlying magnetic rock type with a fairly uniform thickness of overburden cover.

No shearing and/or magnetic highs or lows were observed. However, magnetic highs or lows do not necessarily occur with copper mineralization.

It is, therefore, recommended that the rest of the claim group be covered by magnetometer surveying to be followed by Induced Polarization surveying, particularly over magnetic high or lows (if any).

The estimated cost of this programme would be as follows:

Linecutting, additional 14 miles $1,750.00
Magnetic surveying 14 miles 1,050.00
I.P. surveying 28 miles (maximum) 7,000.00
Helicopter transportation: 3 trips from Whitehorse

Plus Local Flying 3,500.00

$13,300.00

The company should not commit itself to the above programme
until next Summer so that it can be amended by the results of drilling this Winter on the properties of United Pemetex Limited and the Share Syndicate.

Respectfully Submitted

Eagle Geophysics Limited

Peter E. Walcott, P.Eng.
Geophysicist

Vancouver, B.C.

December 5, 1968.
APPENDIX
COST OF SURVEYS

Eagle Geophysics Limited undertook the survey at a cost of $200.00 per line mile for linecutting and magnetometer work. Therefore, the total cost of services provided by Eagle Geophysics Limited was $3,140.00.
PERSONNEL EMPLOYED ON SURVEY

<table>
<thead>
<tr>
<th>NAME</th>
<th>OCCUPATION</th>
<th>ADDRESS</th>
<th>DATES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peter E. Walcott</td>
<td>Geophysicist</td>
<td>Eagle Geophysics Ltd. 815-736 Granville St.</td>
<td>Nov. 25, 1968</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vancouver 2, B.C.</td>
<td></td>
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<tr>
<td>G. M. MacMillan</td>
<td>Geophysical Operator</td>
<td>&quot;</td>
<td>Oct. 24-31/68</td>
</tr>
<tr>
<td>E. Scurvie</td>
<td>Helper</td>
<td>General Delivery Eagle Geophysics Ltd. 815-736</td>
<td>&quot;</td>
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<td></td>
<td></td>
<td>Granville St.</td>
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<tr>
<td></td>
<td></td>
<td>Whitehorse, Y.T.</td>
<td></td>
</tr>
<tr>
<td>S. Scurvie</td>
<td>Helper</td>
<td>&quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>P. Stewart</td>
<td>Typing</td>
<td>311-736 Granville St.</td>
<td>December 5, 1968</td>
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CERTIFICATION

I, Peter E. Walcott, of the Municipality of Coquitlam, British Columbia, hereby certify that:

1. I am a graduate of the University of Toronto in 1962 with a B.A.Sc. in Engineering Physics, Geophysics Option;

2. I have been practising my profession for the last six years;

3. I am a member of the Association of Professional Engineers of British Columbia, Ontario and the Yukon Territory.

4. I hold no interest, direct or indirect, in the securities or properties of Jersey Consolidated Mines Limited, nor do I expect to receive any.

Peter E. Walcott, P.Eng.

Vancouver, B.C.

December, 1968.
REFERENCES

Bostock, H. S. 1952: Geology of Northwest Stakwak Valley
Yukon Territory, G.S.C. Mem. 267

Cairned, D. D. 1915: Upper White River District
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Muller, J. E. 1967: Kluane Lake Map Area, Yukon Territory