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Geophysical Report

93 N3

Induced Polarization Survey.

Night Hawk Group, Tchentlo Lake, Omineca M.D.

55 10' North- 124 50' West.

by J.P. Jemmett, Ph. D. and

H. Veerman, P.Eng, Supervisor.

Owner D.L. Moore

Field Work August 11-17, 1966.

DOMINION OF CANADA:  
PROVINCE OF BRITISH COLUMBIA.

In the Matter of

Induced Polarization Survey

To WIT:

on the Night Hawk Group of Mineral Claims in the  
Omineca Mining Division

I, Heinz Veerman, P.Eng.

of Vancouver, B.C.

in the Province of British Columbia, do solemnly declare that

The following is an accurate statement of the expenses incurred in relation to the the Induced Polarization Survey carried out on the Night Hawk Group of claims in the Omineca M.D. from August 11, 1966 to August 18, 1966.

|  |               |
|--|---------------|
| H. Veerman, P. Eng. Supervisor, 6 days at \$100.- per day,     | Total \$600.- |
| Dr. J.F. Jennett, Geophysicist, 6 days at \$100.- per day,     | Total \$600.- |
| W.G. Botel, Surveyor, 6 days at \$25.- per day                 | Total \$150.- |
| John Nordlund, Transmitter Operator, 6 days at \$25.- per day, | Total \$150.- |
| David Moore, Potman, 6 days at \$25.- per day,                 | Total \$150.- |
| <hr/>  |               |
| Total Salaries and Wages                                       | \$1650.-      |
| Mobilization ( amortization )                                  | \$ 340.-      |
| Helicopter rental  | \$1318.-      |
| Camp supplies  | \$ 150.-      |
| Equipment rental (6days at \$100.-/day)                        | \$ 600.-      |
| <hr/>  |               |
| Total Expenditures   | \$4058.-      |

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the  
of \_\_\_\_\_, in the  
Province of British Columbia, this  
day of \_\_\_\_\_, A.D.



GEOPHYSICAL REPORT  
INDUCED POLARIZATION SURVEY

J.P. Jemmett, Ph.D. and H. Veerman, P.Eng. Supervisor.

on the

NIGHT HAWK GROUP of CLAIMS

Tehentlo Lake, Omineca M.D.  
55 10' North - 124 50' West

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Report. J.P. Jammett, Ph.D.

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Okanagan Helicopters Invoices No. 8/352 and 8/581

Map Envelope.

Containing

Claim Location Map

Induced Polarization Survey Location Map.

INTRODUCTION TO THE GEOPHYSICAL REPORT BY J.P.JEMMETT.  
BY H. VEERMAN, P.Eng.

The field work for the Induced Potential Survey described in the following pages was carried out under the direction of Heinz Veerman, a Registered Professional Engineer (Geological) in the Province of B.C.

The Geophysical Survey covering the S.K. No's 1, 2 and 4 Mineral Claims, and part of the R.T. No 22 Mineral Claim was completed during August 1966. These claims form part of the Night Hawk Group of 39 claims.

The following report was filed with the Mining Recorder for assessment work purposes as Geophysical Work.

The claims are registered in the name of David L. Moore acting on behalf of a syndicate called "West Coast Mining & Exploration" in which the J.R. Simplot Company of Boise, Idaho has a 25% interest. Mr. J.P. Jemmett is the geophysicist for the J.R. Simplot Company.

The Survey was carried out in the period from August 11, 1966 to August 17th, 1966. The crew was lifted in by helicopter on August 11th, and moved out again on August 18th.

The property is at an elevation of over 4500 feet. A helicopter was essential to lift men and equipment to the area to be surveyed.

The maps included with this report:

1. Claim Map, Nation Copper Property, and
2. Induced Polarization Survey, Nation Copper Property,

were prepared by H. Veerman, P. Eng. from tape and compass surveys and from the information contained in the report by J.P. Jemmett.

November 11th, 1966.



REPORT OF GEOPHYSICAL INVESTIGATION

NATION LAKES COPPER

INDUCED POLARIZATION SURVEY

INTRODUCTION

During the period August 11 to August 18, 1966, an induced polarization survey, consisting of 8 traverses, was run over the SK group of mineral claims. The survey was made to delineate and substantiate a copper sulphide zone which had been partially mapped by surface geological and geochemical methods. This report is designed to present the details of that survey and an interpretation which is presented herein in compliance with the "Mineral Act", Chapter 244, Revised Statutes of British Columbia, 1960, setting forth the conditions governing acceptance of geological, geophysical and geochemical surveys as assessment work.

The survey was conducted by Dr. Joe P. Jemmett, a graduate geophysist and geologist, under the direct supervision of Mr. Heinz Veerman, a registered Professional Engineer in the Province of British

Columbia. Mr. John Nordlund served as transmitter operator, Mr. David Moore as potman, and Mr. Bill Botel as chainman.

#### STATEMENT OF QUALIFICATIONS

Joe P. Jemmett graduated in 1953 with a B. S. degree in geology from Idaho State College, received a M. S. degree from the University of Idaho in 1955 with a major in geology and minors in metallurgy and mining, and in 1966 received a Ph. D. degree from The University of Arizona with majors in geophysics and economic geology and minors in structural and petroleum geology. He presently holds the position of Assistant Manager of Exploration for the J. R. Simplot Company.

#### COST OF SURVEY

Six days were spent in actual surveying. This cost is in addition to amortization of men and equipment to the area. The following is a statement of costs:

|                    |           |
|--------------------|-----------|
| Amortization       | \$ 340.00 |
| Helicopter Rental  | 1,318.00  |
| Camp Supplies      | 150.00    |
| Equipment Rental   | 600.00    |
| 6 days @ \$100/day |           |



|                  |            |
|------------------|------------|
| Salaries & Labor | \$1,650.00 |
|------------------|------------|

|            |                   |
|------------|-------------------|
| Total Cost | <u>\$4,058.00</u> |
|------------|-------------------|

#### GEOPHYSICAL EQUIPMENT USED

The equipment used consisted of an induced polarization Model Mark IV receiver and transmitter powered by a 400 cycle, 3½ horsepower alternator. The equipment utilizes the frequency domain principle and has repeatable characteristics to within one percent, according to its manufacturer, Hienrichs Geoexploration Company of Tucson, Arizona.

#### METHOD OF SURVEY

Parallel lines were run on a bearing of N. 65° E. at 500 foot intervals (Note Figure No. I). The Eltran or dipole-dipole array was used with the electrodes ("A" value) at 200 foot intervals (Note Figures No's. 1 through 8). Successive potential readings were made to the 5th "A" separation on both sides of the traverse center point (Electrode No. 3) and in two instance (Line No's. 7 and 8) a 6th separation was used on the northeast side.

### METHOD OF CALCULATION

Transmission was at two frequencies: 3 C. P. S. (AC) and .05 C. P. S. (DC). The two potential redouts were then used to calculate apparent resistivities ( $\rho/2\pi$  in ohms  $\frac{ft.}{2\pi}$ ) and metal conductivity factors (MCF) which can be interpreted as measurements of polarization due to the presence of metallic conductors (Note Figures No's. 1-A through 8-B).

### METHOD OF ILLUSTRATION

The values thus calculated were then plotted upon interpretational diagrams (Note Figures No's. 1 through 8) and the interpretation shown in terms of the probable configuration and attitude of responsive zones. The traverse lines and the position of responsive elements were then plotted on Figure No. I and shown in lateral correlation.

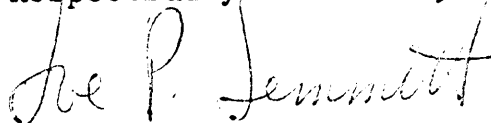
### CONCLUSIONS

A responsive body is delineated and fixed in position by lines 1, 2, 3, and 4, with its strongest development being crossed by lines 1 and 2. Lines 3 and 4 apparently record only weak remnants of the strong response recorded by lines

1 and 2. The responsive body is from 100 to 200 feet thick and dips steeply westward.

Line 6 showed an additional broad, but weak response which also dips westward, but this responsive area is apparently not correlative with any other response.

Respectfully submitted,

A handwritten signature in cursive script that reads "Joe P. Jemmett". The signature is written in dark ink and is positioned directly below the typed name.

Joe P. Jemmett