

MAP No.

105 D 10

ASSESSMENT REPORT
N. M. E. A. P.
CONFIDENTIAL
OPEN FILE



TYPE OF

WORK: GEOPHYSICS

REPORT FILED UNDER	ALICE LAKE MINES LTD.		DOCUMENT NO. 091729
DATE PERFORMED	1968	DATE FILED:	1968
LOCATION - LAT. LONG.	60°30'N	AREA:	WHITEHORSE COPPER BELT
	134°30'W		
CLAIM NO.	LINDA 1-4		
VALUE \$			
WORK DONE BY	J. LLOYD		
WORK DONE FOR	EAGLE GEOPHYSICS LTD.		
REMARKS	<p>A magnetometer survey was undertaken in hopes of deliniating the intrusive/sedimentary contact associated with skarn mineralization.</p> <p>An I.P. survey was also undertaken in hopes of detecting disseminated sulphides.</p>		

A REPORT
ON
A GROUND MAGNETIC
AND
INDUCED POLARIZATION SURVEY

FOR

ALICE LAKE MINES LIMITED

BY

EAGLE GEOPHYSICS LIMITED
VANCOUVER, BRITISH COLUMBIA

JANUARY 1969

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
SURVEY SPECIFICATIONS	3
DISCUSSION OF RESULTS	6
SUMMARY, CONCLUSIONS & RECOMMENDATIONS	7
 <u>APPENDIX</u>	
COST OF SURVEYS	(i)
PERSONNEL EMPLOYED ON SURVEYS	(ii)
CERTIFICATION	(iii)
 <u>ACCOMPANYING MAPS</u>	
	<u>Map Pocket</u>
a) Magnetometer Survey Scale: 1" = 200'	E130-1
b) Induced Polarization Survey Scale: 1" = 200'	E130-2

INTRODUCTION

At various times between July 10th and August 3rd, 1968, Eagle Geophysics Limited carried out a combined Line-cutting, Ground Magnetic and Induced Polarization survey programme on a property located in the Whitehorse Copper Belt area of the Yukon Territory and held by Alice Lake Mines Limited.

The property surveyed consists of 4 contiguous, unpatented mining claims, registered in the Mining Recorder's office at Whitehorse as follows:

<u>CLAIM NAME</u>	<u>GRANT NUMBER</u>	<u>EXPIRY DATE</u>
Linda 1 - 4	91815 - 91818	15th March, 1969.

The claims are situated about 13 miles east of Whitehorse and directly adjoin the Alaska Highway at about Mile 905. Their location is therefore at latitude $60^{\circ} 30'N$ and longitude $134^{\circ} 30'W$.

Access to the property can be obtained by means of a cat road running south and passing directly through the centre of the claims from about Mile 905 on the Alaska Highway.

The purpose of this survey was to establish accurately the postulated intrusive/sedimentary geological contact by means of the magnetometer survey and to test this contact by I.P. methods for the possible existence of sulphide ore deposits similar to those known to occur at this particular geological contact at numerous other

locations throughout the Whitehorse Copper Belt.

The results of both the magnetometer and the induced polarization survey are shown on two maps accompanying this report. Map No. E130-1 shows the results of the magnetometer survey in contour form; the contour interval being 100 gammas and the horizontal scale of the map being 1 inch represents 200 feet. Map No. E130-2 shows the results of the Induced Polarization Survey, that is, the apparent chargeability and apparent resistivity measurements presented in profile form. For the apparent chargeability profiles 1 inch represents 10 milliseconds. For the apparent resistivity profiles, plotted on a logarithmic scale, 2 inches represents 1 logarithmic cycle. The horizontal scale of this map is 1 inch represents 200 feet.

SURVEY SPECIFICATIONS

The line grid was laid out as follows. A baseline running $N10^{\circ}E$ was established close to the west boundary of the property. Traverse lines were turned off at right angles from this baseline at 400 foot intervals. These lines were cut, chained and picketed every 100 feet.

The magnetic survey was carried out using a Sharpe M.F.1 fluxgate magnetometer. Readings were taken every 100 feet along the traverse lines with additional readings at 50 foot intervals when deemed necessary. The magnetometer used measures variations in the vertical component of the earth's magnetic field to an accuracy of ± 10 gammas. Corrections for diurnal variations of the earth's field were made by tying-in to previously established base stations at intervals not exceeding two hours.

The Induced Polarization survey was carried out using the "three electrode array" method of surveying, with a basic electrode separation "a" equal to 300 feet, and a station interval of 200 feet.

The I.P. system used was a pulse type system manufactured by Hunttec Limited of Toronto, Ontario. Measurements with this system are made in the time domain.

The system consists basically of three units, a receiver, a transmitter and a motor-generator. The transmitter, which provides a maximum of 7.5 kw d.c. to the ground, obtains its power from a 7.5 kw 400 cycle, three

phase generator driven by a gasoline engine. The cycling rate of the transmitter is 1.5 seconds "current on" and 0.5 seconds "current off" with the pulses reversing continuously in polarity. The data recorded in the field consists of careful measurements of the current (I) in amperes flowing through electrodes C_1 and C_2 , the primary voltage (V_p) appearing between the potential electrodes, P_1 and P_2 during the "current on" part of the cycle, and a secondary or overvoltage (V_s) appearing between P_1 and P_2 during the "current off" part of the cycle.

The apparent chargeability (M_a') is calculated by dividing the secondary voltage by the primary voltage and multiplying by 400, which is the sampling time in milliseconds of the receiver unit. The apparent resistivity (P_a) in ohm-meters is proportional to the ratio of the primary voltage and the measured current, the proportionality factor depending on the geometry of the array used. The chargeability and resistivity obtained are called apparent as they are values which that portion of the earth sampled would have if it were homogeneous. As the earth sampled is usually inhomogeneous the calculated apparent chargeability and resistivity are functions of the actual chargeability and resistivity of the rocks.

In the "three electrode array" method of surveying, the current electrode C_1 and the two potential electrodes P_1 and P_2 are moved in unison along the survey

lines. The spacing between these three electrodes is kept constant for each traverse at a distance roughly equal to the depth to be explored by that traverse. The second current electrode C_2 is kept fixed at "infinity".

Thus, in a "three electrode array" traverse with an electrode spacing of 300 feet, a body lying at a depth of 200 feet will produce a strong response, whereas the same body lying at a depth of 300 feet will only just be detected. By running subsequent traverses, over anomalous zones, at different electrode spacings, more precise estimates can be made of depth, width, thickness and percentage of sulphides of causative bodies located during the course of the survey.

DISCUSSION OF RESULTS

The magnetometer survey (see Map No. E130-1) indicated the area to be underlain by two magnetically different rock units. The northeast corner, Linda 2 and part of Linda 1, is believed to be underlain by granitic intrusive rocks having a magnetic background of about 2200 to 2500 gammas. The remainder of the area is believed to be underlain by sedimentary rocks for example arkoses, shales and limestones. These rocks have a fairly constant magnetic background of about 1700 gammas.

The Induced Polarization survey (see Map No. E130-2) shows the area is underlain by rocks of uniform chargeability background. This uniform chargeability background is approximately 4 milliseconds. There appears to be no difference between the I.P. response obtained from the interpreted sedimentary rocks and the I.P. response obtained from the interpreted intrusive rocks. Some large changes in apparent resistivities were recorded. These are believed to be caused by different thicknesses and conductivities of the material contained within the overlying overburden .

In the region of the interpreted intrusive/sedimentary contact no I.P. anomalies worthy of further investigation were detected.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Between July 10th and August 3rd, 1968, Eagle Geophysics Limited, carried out a Linecutting, Ground Magnetic and Induced Polarization survey programme on the Linda claim group in the Whitehorse Copper Belt area of the Yukon Territory for Alice Lake Mines Limited.

The magnetometer survey indicated a geological contact which is believed by the writer to be the contact between granitic intrusive rocks and younger sedimentary rocks. This is the favourable geological contact along which the majority of the iron-copper deposits of the Whitehorse Copper Belt are known to occur.

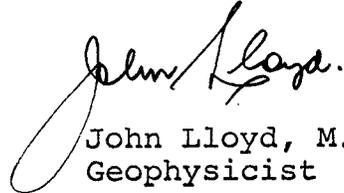
The Induced Polarization survey did not detect any anomalies, either at the intrusive/sedimentary contact or elsewhere, which could be considered worthy of further investigation. As a result the writer believes that no sulphide ore deposit of economic dimensions occurs within 200 feet of ground surface on the area over which the present surveys were carried out.

In view of the great interest being shown in the Whitehorse Copper Belt by a large number of

mining companies, the writer recommends that the present work be filed for assessment and the claims be held in good standing for the present time.

Respectfully submitted

EAGLE GEOPHYSICS LIMITED

A handwritten signature in cursive script, appearing to read "John Lloyd".

John Lloyd, M.Sc.,
Geophysicist

Vancouver, B. C.

January 1969.

A P P E N D I X

(i)

COST OF SURVEYS

Eagle Geophysics Limited supervised the Linecutting, and undertook the magnetometer survey on a mileage basis and the Induced Polarization survey on a daily basis. The drafting and report writing were extra, therefore the total cost of all services provided by Eagle Geophysics Limited was \$2,076.70.

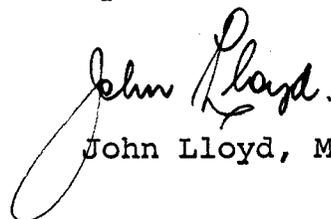
PERSONNEL EMPLOYED ON SURVEYS

<u>NAME</u>	<u>OCCUPATION</u>	<u>ADDRESS</u>	<u>DATES</u>
J. Lloyd	Geophysicist	Eagle Geophysics Ltd., 815-736 Granville St., Vancouver 2, B. C.	July 10-11/68. July 31 to Aug. 3/68. Jan. 23/69.
P. E. Walcott	Geophysicist	" "	Aug. 3/68.
V. R. Fallstrom	Geophysical Operator	" "	July 31 to Aug. 2/68.
V. Pashniak	Party Chief (Linecutting)	" "	July 10-13/68. July 15-16/68. July 21-22/68. July 25/68.
V. Pashniak	Geophysical Helper	" "	Aug. 3/68.
G. MacMillan	Linecutter	" "	July 10-13/68.
G. MacMillan	Geophysical Operator	" "	July 27/68.
G. MacMillan	Geophysical Helper	" "	Aug. 1 - 3/68.
R. Davie	Linecutter	Alice Lake Mines Ltd., 327-736 Granville St., Vancouver 2, B. C.	July 11-13/68. July 15-16/68. July 21-22/68.
J. Bill	Linecutter	" "	July 21-22/68.
R. Piper	Linecutter	" "	July 21/68.
R. Sakvayoak	Geophysical Helper	" "	Aug. 1-3/68.
R. Stephens	Typing	Eagle Geophysics Ltd., 815-736 Granville St., Vancouver 2, B. C.	Jan. 27/69.

CERTIFICATION

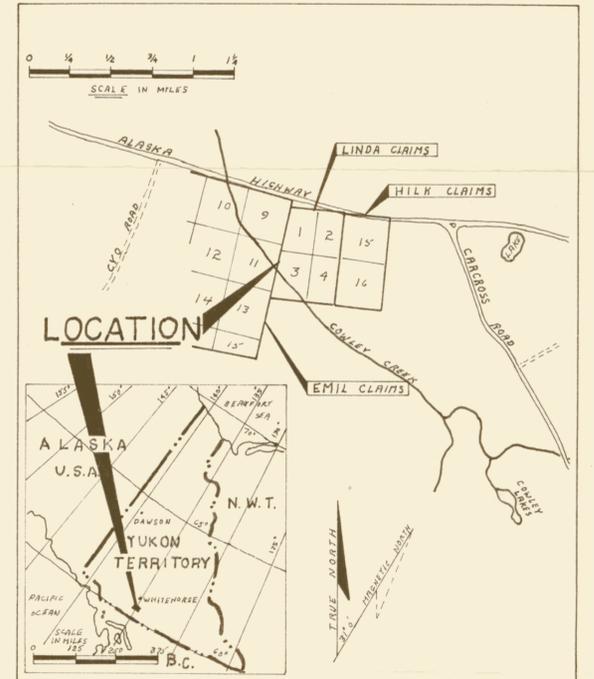
I, John Lloyd, of 1505 - 2045 Nelson Street, in the City of Vancouver, in the Province of British Columbia, hereby certify that:

1. I am a graduate of the University of Liverpool, England, in 1960 with a B.Sc. in Physics and Geology.
2. I obtained the Diploma of The Imperial College of Science and Technology (D.I.C.) at the Royal School of Mines, London University, in 1961, in Applied Geophysics.
3. I obtained the degree of M.Sc. in Geophysics from the Royal School of Mines, London University in 1962.
4. I have been practising my profession for the last eight years.
5. I have no interest or shares in any property or securities of Alice Lake Mines Limited nor do I expect to receive any.


John Lloyd, M.Sc.

Vancouver, B. C.

January 27, 1969.



LEGEND

- ~ 500 GAMMA INTERVAL CONTOURS
- ~ 100 GAMMA INTERVAL CONTOURS
- MAGNETIC LOW
- - - CAT LINE
- BEAVER DAM

MAP SYMBOLS

- CLAIM POST AND BOUNDARY
- ☼ SWAMP

ALICE LAKE MINES LTD.
 LINDA CLAIMS - M'RAE AREA - WHITEHORSE MINING DISTRICT, WHITE HORSE, YUKON TERR.

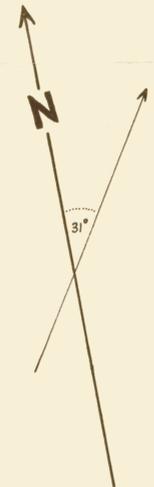
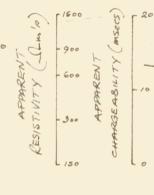
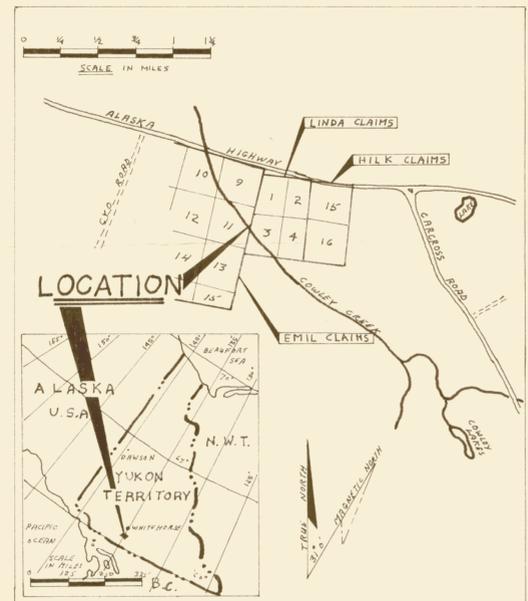
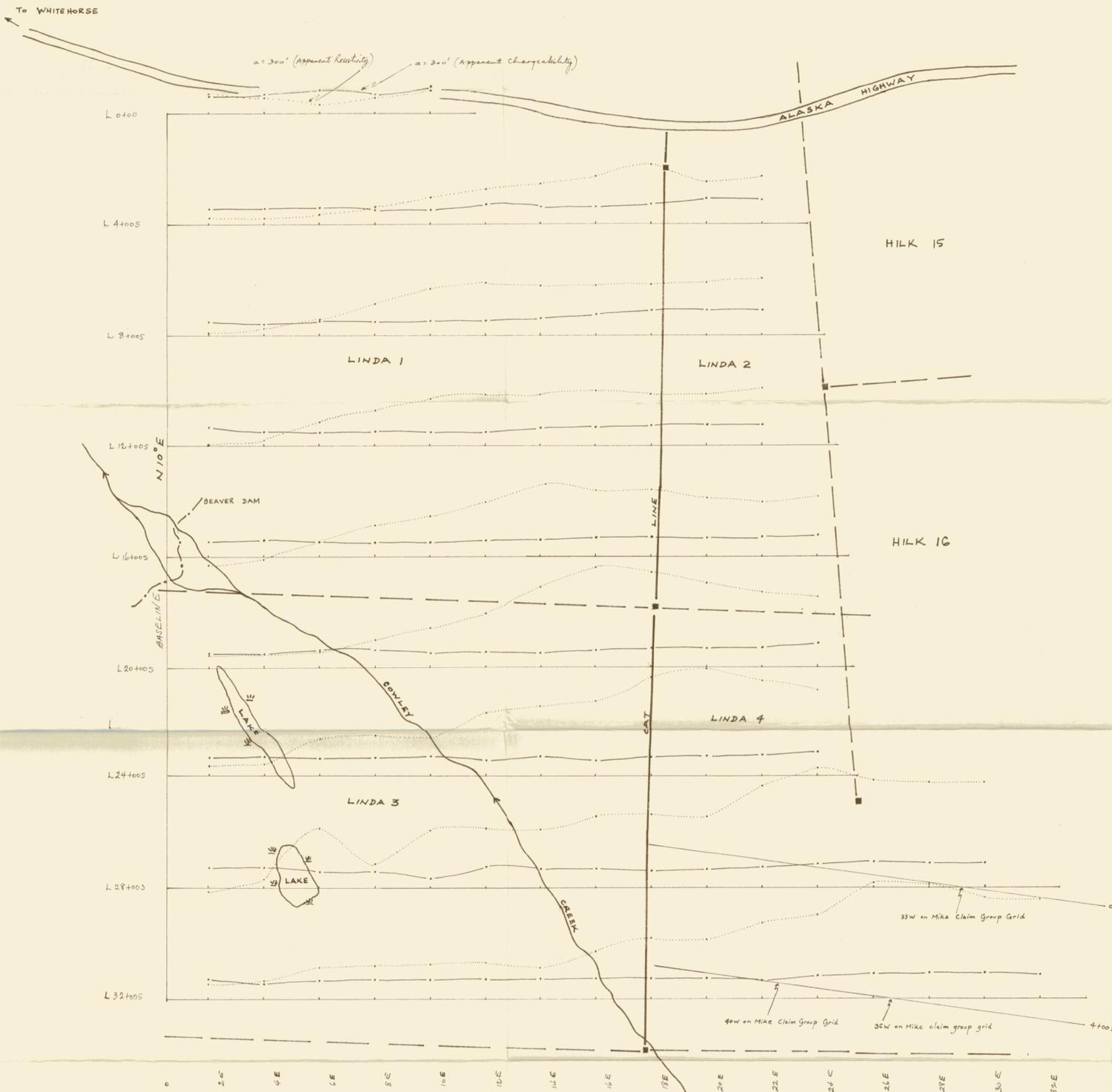
MAGNETOMETER SURVEY
 CONTOURS OF RELATIVE VERTICAL MAGNETIC INTENSITY IN GAMMAS

SCALE 1 INCH = 200 FEET

MAP No. E 130-1
 TO ACCOMPANY A REPORT BY
John Lloyd H. Sc.
 DATED DECEMBER, 1968

EAGLE GEOPHYSICS LIMITED
 JULY - 1968

1280



LEGEND

- PROFILES OF APPARENT CHARGEABILITY
a = 300 FEET
1 INCH = 10 HILLISECONDS
- PROFILES OF APPARENT RESISTIVITY
a = 300 FEET
- STATION LOCATION
- CLAIM POST AND BOUNDARY

ALICE LAKE MINES LTD.
 LINDA CLAIMS - WHITEHORSE, YUKON TERRITORY - WHITEHORSE MINING DIVISION

INDUCED POLARISATION SURVEY
 APPARENT CHARGEABILITY (Ma) AND APPARENT RESISTIVITY (Pa) PROFILES

SCALE: 1" = 200 Ft.

AUGUST 1968
 MAP NO-E/130-2

EAGLE GEOPHYSICS LIMITED
 TO ACCOMPANY REPORT BY
 J. LLOYD - M.Sc.
John Lloyd