A GEOPHYSICAL REPORT ON
LODE CLAIM GROUP, NR. TULAMEEN, B.C.
(49° 120° NW)
FOR
COPPER MOUNTAIN CONSOLIDATED LTD.
BY
R. K. WATSON, B.A.Sc., P.Eng.

October 1967

92H/10W

HUNTEC LIMITED

1156

REPORT ON

AN INDUCED POLARIZATION (I.P.) SURVEY

LODE CLAIM GROUP

SIMILKAMEEN MINING DIVISION

BRITISH COLUMBIA

FOR

COPPER MOUNTAIN CONSOLIDATED LTD.

BY

HUNTEC LIMITED

VANCOUVER B.C.

OCTOBER 1967

TABLE OF CONTENTS

	PAGE
INTRODUCTION	1
General	1
The Property	1
SURVEY SPECIFICATIONS	2
The Equipment	2
Electrode Configuration	2
RESULTS AND INTERPRETATION	4
SUMMARY	6
APPENDIX A - Assessment Credit Data	

ACCOMPANYING MAPS

		MAP POCKET Scale
#1 Plate 1	Induced Polarization Survey with Interpretation and location map (Fig. A)	1" = 100 ft. 1" = 20 miles
#2 Fig. 1	Detail Profiles of Apparent Chargeability and Resistivity	1" = 200 ft.

INTRODUCTION

General

This report contains the results of an Induced Polarization survey carried out by Huntec Limited for Copper Mountain Consolidated Ltd. on the Lode Claim Group in the Similkameen Mining Division of British Columbia.

The purpose of the survey was to obtain a reconnaissance profile along the road to determine if mineralization in that area would respond to the I.P. method; if so, to determine the possible target areas for future exploration work.

The field work was carried out on September 22, 1967. The field party chief was Mr. Wm. Mairs, and the project was supervised by Mr. R. K. Watson.

The Property

The claims surveyed included Lode 13 and 16, located about 2½ miles north-west of Tulameen. Access to the property was by road from Tulameen. An old mining road traverses the property from south-west to north-east.

SURVEY SPECIFICATIONS

The Equipment

The Induced Polarization equipment used was a 2.5 kw pulse-type instrument manufactured in Toronto by Huntec Limited. The following specifications apply:

Type of current	Direct Current broken at periodic intervals.
Period	1.5 seconds "current on" and 0.5 seconds "current off". Alternative pulses have reverse polarity.
Integrating time	400 milliseconds
Maximum power available	2.5 kw
Maximum current available	3.0 amps

Measurements taken in the field were:

1. The current flowing through the current electrodes C_1 and C_2.
2. Primary voltage V_p between measuring electrodes during "current on" time.
3. Secondary voltage V_s between measuring electrodes during "current off" time.

The apparent chargeability (M_a) in milliseconds 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 is calculated by dividing V_p by the current and multiplying by the geometrical factor appropriate to the electrode array being used.

Electrode Configuration

The survey was carried out in the pole dipole

configuration. In this array the current electrode C_1 and the two potential electrodes P_1 and P_2 are moved in unison along the line to be surveyed. The quantity "a", or "electrode separation" is the distance between C_1 and P_1. In this array the distance between P_1 and P_2 is kept equal to one-half "a".

Since the value of "a" is a rough approximation to the depth penetration two profiles were made at 100 feet and 200 feet respectively. The additional data provides information from which depth, dip and location may more easily be calculated than from a single profile.

RESULTS AND INTERPRETATION

Presentation

Plate 1 shows the position of the road, relative to the claims, along which the profiles were determined. Station intervals are indicated and also the position of an interpreted anomalous body.

Fig. 1 shows the results of the survey in profile form, the lower profiles are of apparent chargeability and the upper profiles of apparent resistivity. The interpreted anomalous body is also indicated underneath the chargeability profile.

Interpretation

A strongly conductive piece of ground such as massive sulphides, graphite or strongly conductive overburden would show as a pronounced downward trend on the resistivity profiles. The chargeability profile would show a high response over conductive metallic sulphides and graphite, both in massive and disseminated form. However, no chargeability response would be expected from conductive overburden. It is therefore possible to distinguish massive conductors from disseminated conductors by noting whether or not a resistivity 'low' occurs with a chargeability 'high'.

The results of this survey show a definite chargeability anomaly at approximately 33W and the causative body is interpreted in profile form to lie between 31W and approximately 34W as shown on the profile. The west boundary is not defined and it may stretch beyond 34W. It is believed this body comes to within at least 50 feet of

ground surface. There is no corresponding resistivity anomaly and the body is interpreted as being formed of disseminated particles of some conductive material such as graphite or metallic sulphides. Thus the possibility that economic sulphides are present is quite real, although uneconomic sulphides such as pyrite and pyrrhotite could also cause this anomaly.

Recommendations

To follow up this anomaly it is recommended that the following steps be taken:

1. The surface geology in this area be inspected by a competent geologist, both along the road and well off to the side of the road to determine if any sulphides or graphite or in fact any cause of the anomaly are present.

2. A line grid be cut around the anomaly and the I.P. survey be resumed to fully outline the anomaly.

3. A magnetometer survey be done over the anomaly. This will assist in mapping local geology and determine whether or not any magnetic minerals are present.

4. Soil samples be taken on the grid and analysed for base metal values, specifically copper, lead and zinc.

Recommendations concerning further development should probably wait until the above work is done.

SUMMARY

1. An Induced Polarization survey was carried out over part of the Lode Claim Group adjacent to the "Camp Road".

2. One anomaly was discovered lying between 31+00W and 34+00W and is interpreted as being caused by a body some 50 feet deep, probably composed of disseminated conductive particles.

3. Follow-up work, both geochemical and geophysical, after a geological insepction of the area, is recommended to determine the size and extent of the anomalous body.

HUNTEC LIMITED

R. K. Watson

R. K. Watson, B.Sc.,P.Eng.
Geophysicist

APPENDIX A

Miles Surveyed	Line-Miles
Detail Phase	0.77

Personnel Employed on Survey:

Name	Occupation	Date
Wm. Mairs	Operator/Party Chief	Sept. 22, 1967
D. Reynolds	Operator	Sept. 22, 1967
B. Taylor	Helper	Sept. 22, 1967
D. Curyso	Helper	Sept. 22, 1967
E. Helkio	Drafting	Oct. 10 & 11, 1967
R. K. Watson	Geophysicist	Oct. 12, 1967
M. Vatcher	Typing	Oct. 13, 1967 & January 31, 1968

SUB-MINING RECORDER
RECEIVED
JUL 17 1973
M.R. # 81957 $ 850.00
VANCOUVER, B. C.

DEPARTMENT OF MINES
AND PETROLEUM RESOURCES

MINERAL ACT
(Section 51)
FORM B

TEXAL DEVELOPMENT LTD
131 Adelaide St. 5th FL.
VANC BC
FMC 120079
July 30/72

Affidavit on Application for Certificate of Work

1. I, T. Rolston (Name) Agent for Gold River Mines Ltd. (Name)

520-602 W. Hastings Street (Address)
Vancouver, B.C.

802-1433 Burnaby Street (Address)
Vancouver, B.C.

Free miner's Certificate No. 115208

Free Miner's Certificate No. 117932

Date issued May 16, 1972

Date issued July 17, 1972

make oath and say:

2. I have done, or caused to be done, work on the (Hope Group) M83, KEN 1 &2, J.M. 1 & 2
Hope 1 & 2, 3-10, 12-20, Rex 1-4 Mineral Claim(s)

Record No.(s) M83, 29030/31, 28204/5, 29022/23, 33754/61, 33768/71, 33780/83

situate at 3 miles N. of Tulameen in the Similkameen Mining Division,

to the value of at least $5900.00 dollars. Work was done from the 3 day

of November 1972, to the 10 day of February 1973

3. The following is a detailed statement of such work done in the twelve months in which such work is required to be done.

(COMPLETE APPROPRIATE SECTION(S) A, B, C, BELOW)

A. PHYSICAL (Trenching, drilling, tunnelling, and overburden removal.)
(State dimensions of trenching, open pits, etc., footage drilled, and diameter of hole for drilling.)

		COST
Diamond Drill Program		
D.D.H. # 73-4 129' @ $12.00	(JM2)	1548.00
73-5 147' @ $12.00	(JM2)	1764.00
73-6 134' @ $12.00	(JM2)	1608.00
73-7 109' @ $12.00	(JM2)	1308.00
	TOTAL	$ 6,228.00

I wish to apply $ 5900.00 of this work to the claims listed below.
(State number of years to be applied to each claim.)

KEN 1-2 2 years each $400.00 $ 30.00
JM 1-2 2 " " $400.00 30.00
Hope 1-2 2 " " $400.00 30.00
Hope 3-10, 12-20 1 year each $1700.00 85.00 170.00
~~Rex 1-4~~ ~~1~~ ~~$400.00~~
Mineral Lease 83 3 years $3000.00 150.00 10.00
$5900 295 180.00

(For B and C Sections please turn over)

B. ROAD or TRAIL WORK (Give length and average width of road or trail.)

	COST
TOTAL	

I wish to apply $_____ of this work to the claims listed below.
(One year only to each claim and within the first three years of its life.) (Sec. 51 (3) M.A.)

C. GEOLOGICAL, GEOCHEMICAL, GEOPHYSICAL (Includes line cutting)
(State type of work)

	COST
TOTAL	

I wish to apply $_____ of this work to the claims listed below.
(State number of years to be applied to each claim.)

NOTE—Dollar value of work done under A, B, or C sections, totalling $100, may be applied to a certificate of work.

Make a sketch of claims showing location of work declared in A or B above
(if insufficient space, attach a sketch).

See attached reports and map

4. That I have not and will not use the work declared herein in any way for the purposes of obtaining tax exemption on a Crown-granted mineral claim under the terms of the *Taxation Act*.

SWORN and subscribed to at VANCOUVER, B. C.

this _____ day of _____

19____, before me—

JUL 17 1973

M. P. Phillips
Sub-Mining Recorder

* This affidavit may be taken by a person empowered to take affidavits by the *Evidence Act* of British Columbia.

SUB-MINING RECORDER
RECEIVED
JUL 17 1973
M.R. # 81956 $ 6.59.00
VANCOUVER, B. C.

DEPARTMENT OF MINES
AND PETROLEUM RESOURCES

MINERAL ACT
(Section 51)
FORM B

TEXAL DEVELORMENT LTD
131 Abbott St. 5th Fl Vanc
FMC 120079
Aug 30/72

Affidavit on Application for Certificate of Work

1. I, T. Rolston (Name) Agent for Gold River Mines Ltd. (Name)
520-602 W. Hastings Street (Address) 802-1433 Burnaby Street (Address)
Vancouver, B.C. Vancouver, B.C.

Free miner's Certificate No. 115208 Free Miner's Certificate No. 117932

Date issued May 16, 1972 Date issued July 17, 1972

make oath and say:

2. I have done, or caused to be done, work on the (HAWK GROUP) Hawk 1-4, Pitt 1-2, Pitt 3-6, Hope 11, 21-24, M82, M84 & M87 Mineral Claim(s)

Record No.(s) 29026/29, 29024/25, 33776/79, 33762, 33772/75, M82, M84, M87

situate at 3 miles N. of Tulameen in the Similkameen Mining Division,

to the value of at least ~~$2716.00~~ $4716.00 dollars. Work was done from the 3 day of November 1972, to the 10 day of February 1973

3. The following is a detailed statement of such work done in the twelve months in which such work is required to be done.

(COMPLETE APPROPRIATE SECTION(S) A, B, C, BELOW)

A. PHYSICAL (Trenching, drilling, tunnelling, and overburden removal.)
(State dimensions of trenching, open pits, etc., footage drilled, and diameter of hole for drilling.)

DIAMOND DRILL PROGRAM

				COST
D.D.H.# 72-1	110' @	$12.00	(L282)	$ 1320.00
72-4	452' @	$12.00	(HOPE 21)	5424.00
73-1	200' @	$12.00	(L282)	2400.00
73-2	163' @	$12.00	(L283)	1956.00
73-3	171' @	$12.00	(L283)	2052.00
73-8	297' @	$12.00	(L283)	3564.00
73-10	564' @	$12.00	(L283)	6768.00
73-12	253' @	$12.00	(L282)	3036.00
73-13	357' @	$12.00	(Hope 11)	4284.00
73-14	366' @	$12.00	(Hope 21)	4392.00
~~$2716.00~~ $4716.00			TOTAL	$35,196.00

I wish to apply $~~2716.00~~ of this work to the claims listed below.
(State number of years to be applied to each claim.)

HAWK 1-4	2 years	~~$800.00~~	40.00
PIT 1-2	2 years	400.00	20.00
Mineral Lease 84	3 years	624.00	45.00 + 10.00 per
Mineral Lease 87	3 years	~~$1092.00~~	60.00
PIT 3-6	2 years	~~$776.00~~ 800.00	40.00 + 80.00 per
HOPE 11, 21-24	2 years	1000.00	30.00 + 100.00 per

(For B and C Sections please turn over)

255 + 190

ROAD or TRAIL WORK (Give length and average width of road or trail.)

	COST
TOTAL	

I wish to apply $..... of this work to the claims listed below.
(One year only to each claim and within the first three years of its life.) (Sec. 51 (3) M.A.)

C. GEOLOGICAL, GEOCHEMICAL, GEOPHYSICAL (Includes line cutting)
(State type of work)

	COST
TOTAL	

I wish to apply $..... of this work to the claims listed below.
(State number of years to be applied to each claim.)

NOTE—Dollar value of work done under A, B, or C sections, totalling $100, may be applied to a certificate of work.

Make a sketch of claims showing location of work declared in A or B above
(if insufficient space, attach a sketch).

See attached report and maps

4. That I have not and will not use the work declared herein in any way for the purposes of obtaining tax exemption on a Crown-granted mineral claim under the terms of the *Taxation Act*.

SWORN and subscribed to at .....
this ..... day of .....
19....., before me—

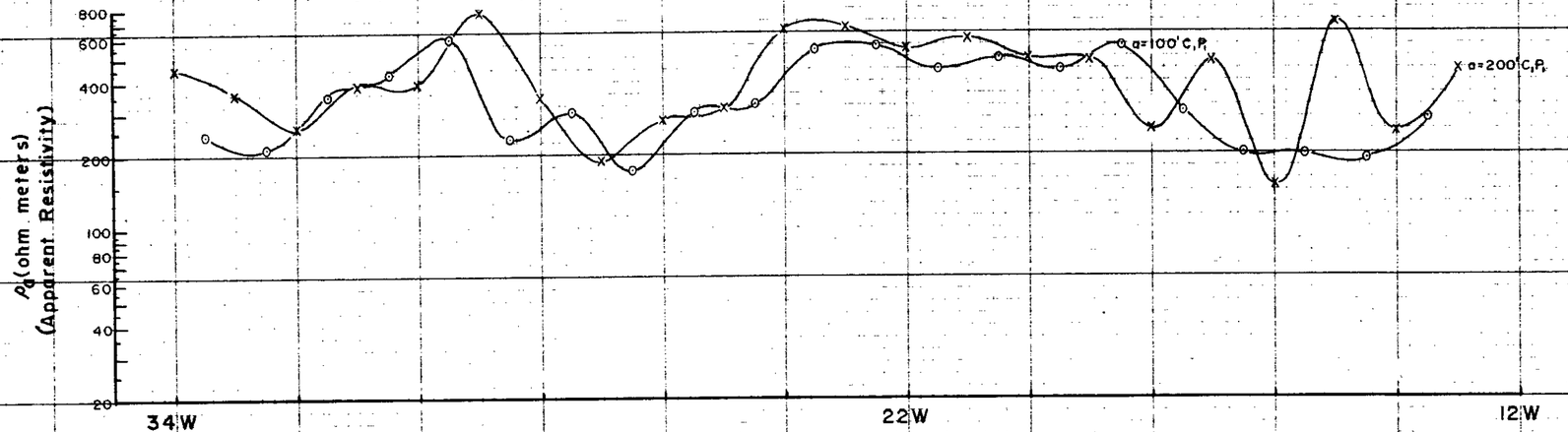
VANCOUVER, B. C.
JUL 17 1973
Sub-Mining Recorder

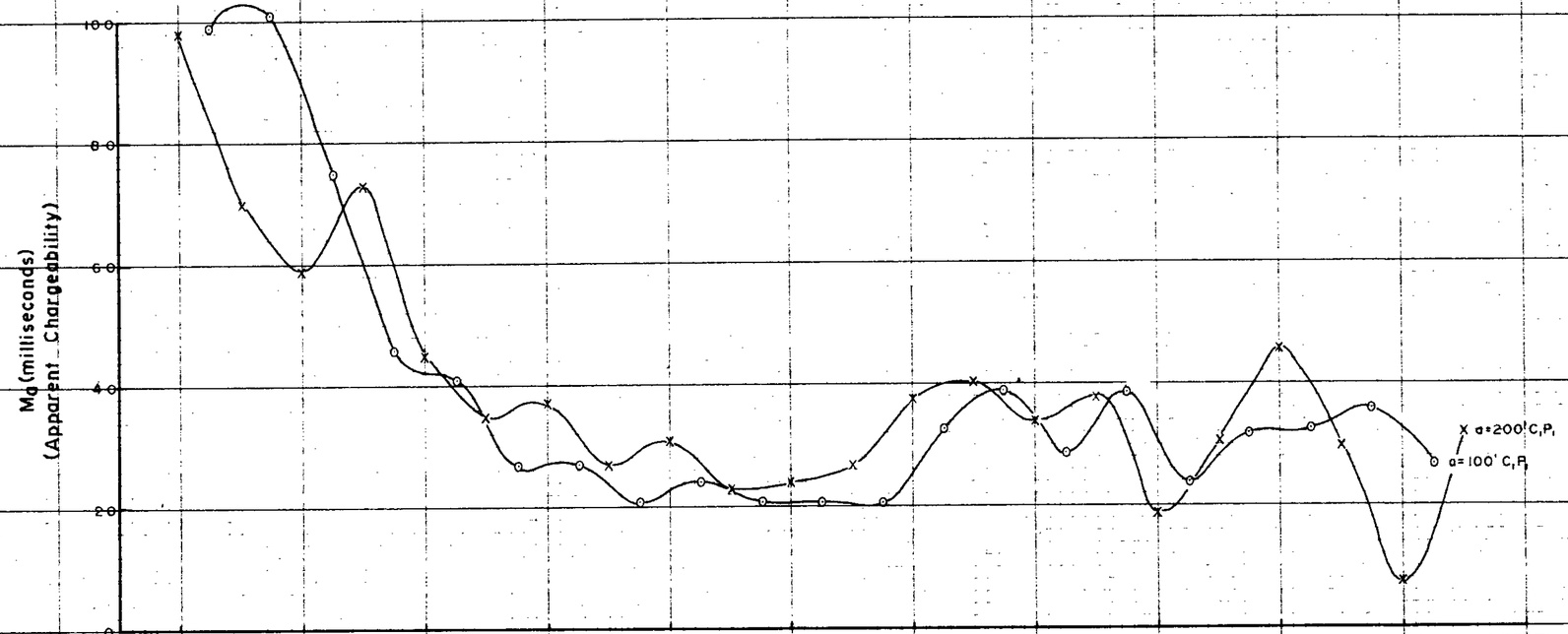
.....

* This affidavit may be taken by a person empowered to take affidavits by the *Evidence Act* of British Columbia.

INDUCED POLARIZATION SURVEY

DETAIL PROFILE: CAMP ROAD





LEGEND

ANOMALOUS ZONE.

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 1156 MAP 2

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
R. K. WATSON

1" = 200'

PH-689/67.

1156

To accompany report by W. A. Finney
for R.K.Watson, B.A.Sc., P.Eng., Geophysicist.
HUNTEC LIMITED, Vancouver, Canada - Sept., Oct., 1967.

FIG.-1

LODE 13

LODE 7

OLD "SPOKANE" SURVEYED CLAIM
~~LODE~~ earlier S HAMROCK
1913-233

CAT TRACK

14W
15W
16W
17W
18W
19W
20W
21W
22W
23W
24W
25W
26W
27W
28W
29W
30W
31W
32W
33W
34W
13W
12W

Trench

FAULT

Series of trenches at old 'Lowe' cut.

FAULT

LODE 16

LODE 5

GULLY

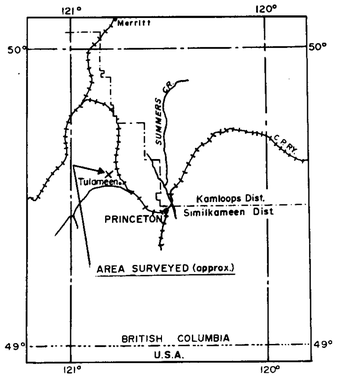
CAMP ROAD

cabin

OLD SHAFT

OLD SHAFT

CAMP ROAD



LOCATION MAP

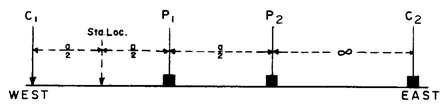
Scale: 1 inch = 20 miles.

FIG.-A

N

POLE-DIPOLE ARRAY

a = 200 feet.



1156

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1156 MAP 1

COPPER MOUNTAIN CONSOLIDATED LIMITED

TULAMEEN AREA, SIMILKAMEEN M.D.—B.C.

INDUCED POLARIZATION SURVEY

To accompany Report by R.K. WATSON

R.K. Watson, B.A.Sc., P.Eng., Geophysicist.

HUNTEC LIMITED VANCOUVER—CANADA

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

SCALE: 1"= 100'

DRAWN: D.W.

DATE: SEPT, OCT, 1967.

JOB Nº PH-689/67

LEGEND.

Interpreted Anomalous Body.

PLATE

PH.-689/67