

A GEOPHYSICAL REPORT

ON

AN INDUCED POLARIZATION SURVEY

Hixon Area, British Columbia

53° 11.5' N, 122° 21' W

93 G 1W

Cariboo Mining Division

Victoria  
copy.

Claims Surveyed: G-28 & 30

Survey Dates: 7th - 16th November,  
1985

FILMED

FOR

Owner/Operator: GABRIEL RESOURCES Inc.

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

BY  
**15,084**

PETER E. WALCOTT & ASSOCIATES LIMITED

Vancouver, B.C.

FEBRUARY 1986

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION .....	1
PROPERTY, LOCATION AND ACCESS .....	2
PREVIOUS WORK.....	3
PURPOSE .....	4
GEOLOGY .....	5
SURVEY SPECIFICATIONS .....	6
DISCUSSION OF RESULTS .....	7
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS .....	8
 <u>APPENDIX</u>	
COST OF SURVEY .....	i
PERSONNEL EMPLOYED ON SURVEY .....	ii
CERTIFICATION .....	iii
LOCATION MAP & I.P. PSEUDO-SECTIONS .....	iv
 <u>ACCOMPANYING MAPS - Scale 1:3333</u>	
	<u>MAP POCKET</u>
GRID LOCATION MAP .....	W-381-1

INTRODUCTION.

Between November 7th and 16th, 1985, Peter E. Walcott & Associates Limited carried out a limited induced polarization survey for Gabriel Resources Inc. over their Ahbau property, located in the Hixon area of British Columbia.

The survey was carried out over N 30° W hip chain and compass lines that were previously established by the Gabriel geological crew in 1984 over a previously discovered mineralized zone that was subsequently trenched.

Measurements (first to fourth separation) of apparent chargeability - the I.P. response parameter - and resistivity were made along the lines over and in the vicinity of the showing using the dipole - dipole method of surveying and a 25 metre dipole. In addition similar measurements were made along the baseline through the trench, and 12.5 metre dipole measurements were also made across the mineralized zone.

The progress of the survey was somewhat hampered by the two foot snow cover, making it somewhat difficult to obtain good electrical contact with the underlying outcrop in many places, and inclement weather.

The survey was discontinued when the monies of the fixed budget - the necessary assessment expenditures - were spent.

The data are presented in pseudo-section form on individual line profiles that are bound in this report.

PROPERTY, LOCATION AND ACCESS.

The claims are situated in the Cariboo Mining Division of British Columbia and consist of the following claims:

Ahbau

Name of Claim	Units	Record No.	Expiry Date
G 23	20	3230	March 16, 1986
G 24	20	3231	March 13, 1986
G 27	20	3234	March 16, 1987
G 30	20	3237	" " "
G 31	20	3238	March 13, 1987
G 25	20	3232	" " "
G 28	20	3235	" " "
G 29	20	3236	March 16, 1987
G 33	20	3240	" " "
G 34	20	3241	" 16, 1986
G 22	20	3229	" " "
G 26	20	3233	" 13, 1986
G 36	20	3239	" " "

These are situated on the east of Highway 97 some 36 kilometres north of the town of Quesnel, British Columbia.

Access was obtained by means of a logging road running on the east side of the B.C. Railway tracks and adjoining Hwy 97 at the settlement of Ahbau.

PREVIOUS WORK.

Previous work on the claims consisted of bulldozer trenching, soil geochemistry, geological mapping and ground VLF and magnetic surveying. In addition the area was flown using an Input EM and magnetometer system in 1984.

PURPOSE.

The purpose of the survey was (a) to see if the induced polarization method could detect the massive sulphide mineralization observed in the trenches - unresponsive to E.M. technique - and (b) to complete the necessary assessment requirements for the property.

GEOLOGY.

The reader is referred to reports written and/or held by the staff of Gabriel Resources Inc.

The claim area is underlain by the Navar intrusive (early Cretaceous) quartz monzonite and granodiorite, Taxla group (Upper Triassic - lower Jurassic) andesite, basalt and black phyllite, and Keza group (Paleozoic) schist and amphibolite.

SURVEY SPECIFICATIONS.

The induced polarization (I.P.) survey was carried out using a pulse type system, the principal components of which are manufactured by Hunttec Limited and Phoenix Geophysics Limited of Metropolitan Toronto, Ontario.

The system consists basically of three units, a receiver (Hunttec), a transmitter and a motor generator (Phoenix). The transmitter, which provides a maximum of 2.0 kw d.c. to the ground, obtains its power from a 2.0 kw 400 c.p.s. three phase alternator driven by a gasoline engine. The cycling rate of the transmitter is 2 seconds "current-on" and 2 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<sub>1</sub> and C<sub>2</sub>, the primary voltage (V) appearing between the two potential electrodes, P<sub>1</sub> and P<sub>2</sub>, during the "current-on" part of the cycle, and the apparent chargeability (M<sub>a</sub>) presented as a direct readout using a 100 millisecond delay and a 1000 millisecond sample window by the receiver, a digital receiver controlled by a microprocessor.

The apparent resistivity (P<sub>a</sub>) in ohm metres 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 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.

The survey was carried out using the "dipole - dipole" electrode array. This electrode configuration and the methods of presenting the results are illustrated in the appendix. Depth penetration with this array is increased by increasing or decreasing "a" and/or "n".

In practise, the equipment is set up at a particular station of the line to be surveyed; three transmitting dipoles are laid out to the rear, measurements are made for all possible combinations of transmitting and receiving dipoles, up to the fourth separation, i.e. n = 4; the equipment is then moved 3 "a" feet along the line to the next set-up.

A 25 metre dipole was employed on this survey. In addition some 12.5 metre dipole work was carried out over the main showing.

In all some 4.6 kilometres of surveying were completed in the allotted time.



DISCUSSION OF RESULTS.

Although hand specimens of the mineralization from the trenches show nearly zero resistance when tested with an ohm-meter - i.e. exhibit very good conductivity - the mineralization does not appear to be pervasive and/or interconnected throughout the zone as evidenced by lack of response on the previously conducted E.M. test survey and the values on the 12.5 m dipole resistivity work.

In fact the resistivities on the whole were moderately high and gave no indication of the highly conductive surficial zone as interpreted from the airborne survey results.

The chargeability results from the first two lines surveyed - namely Line 0 + 00 & Line 0 + 50SW - showed both lines to be underlain by material exhibiting high chargeabilities, as illustrated by the hatched bars on the individual pseudo-sections, above which several pockets of slightly higher readings were observed - solid bars on pseudo-sections.

Higher readings were obtained on both lines across the main trench that explored the mineralization at 0 + 00 although the writer was unable to see the latter on account of the two foot snow cover.

From the overall results of these lines it appeared that the survey was being conducted along the strike of a large formational zone, and accordingly the base line was then profiled.

Here two discrete zones of similar chargeabilities were discernible, with the one as yet undefined to the north-east, and the other extending from 1 + 75 SW to 1 + 75 NE. The trench appears as a zone of high chargeability readings on the smaller separations within the latter although no resistivity contrast was observed as different from the two traverses across the trench.

Lines 2 + 00 SW and 1 + 00 NE were then traversed to complete the survey. Line 2 + 00 SW exhibited mostly background response - 20 to 30 milliseconds - except for an area around 1 + 50 SE where some mineralization was noted in outcroppings. The results from Line 1 + 00 NE were altogether different, these being the same as Lines 0 + 00 and 0 + 50 SW, as predictable from the base line traverse.

The results from the 12.5 metre work on Line 0 + 00 showed some of the highest chargeability responses on the survey to be obtained over the showings.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.

Between November 7th and 16th, 1985, Peter E. Walcott & Associates Limited undertook a limited induced polarization survey for Gabriel Resources Inc. in the area of the main showing of their Ahbau property, located in the Hixon area of British Columbia.

The results showed a large northwesterly trending complex chargeability zone to underlie the vast majority of the area surveyed.

Higher chargeability readings were obtained over the main showing contained within this broad zone. Other zones of similar magnitude were discernible although the survey in effect appeared to be conducted along the strike of the geological formation.

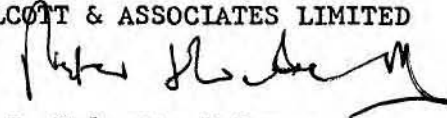
From the results it would appear to the writer that (a) the above chargeability zone could be an extension of or a parallel zone to a more conductive zone observed as anomaly 27N on the airborne survey and (b) the mineralization is contained within a local fold in the broad northwesterly trending formational zone.

He therefore suggests that this zone be traced to confirm the above hypothesis. To this end a northwest-southeast cut baseline should be established, and I.P. traverses with a 25 metre dipole and n 1 to 4 separation measurements undertaken on flagged lines 400 metres apart to define the extent of the zone. Localized anomalies within the zone should be subjected to closer spaced line coverage based on the assumption that higher chargeability readings could be attributable to sulphide mineralization as per the results over the showings.

Magnetic surveying should also be carried out on this grid even though the response to date over the mineralization has been weak, as well as mapping and soil geochemistry.

Respectfully submitted,

PETER E. WALCOTT & ASSOCIATES LIMITED

  
Peter E. Walcott, P.Eng.  
Geophysicist

Vancouver, B.C.

February 1986

PETER E. WALCOTT & ASSOC. LTD.

A P P E N D I X

=====

COST OF SURVEY.

Peter E. Walcott & Associates Limited undertook the survey on a daily basis. Mobilization, draughting & reporting costs were extra so that a breakdown of the cost is as follows:

Mobilization	\$2,300.00
Provision of senior geophysicist, operator, I.P. equipment, 2 helpers 7 truck for 7 days at \$1,445.00 per day	10,115.00
Provision of same - standby day Nov. 12th	930.00
Room and Board	1,358.42
Draughting & report preparation	566.91
Interpretation & report writing	<u>535.00</u>
TOTAL COST	\$15,805.33 =====

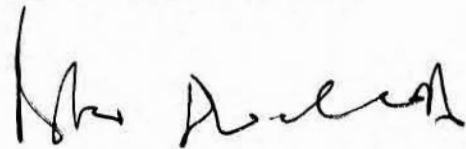
PERSONNEL EMPLOYED ON SURVEY.

Name	Occupation	Address	Dates
Peter E. Walcott	Geophysicist	Peter E. Walcott & Assoc. 605 Rutland Court, Coquitlam, B.C. V3J 3T8	Nov. 7th - 16th, 1985 Feb. 1st - 10th, 1986
D. Sloan	Geophysical Operator	"	Nov. 7th - 16th, 1985
G. Mandryk	"	"	"
F. Von Flotow	"	"	"
G. MacMillan	Draughting	"	Jan 4th - 12th, 1986
J. Walcott	Typing	"	Feb. 21st, 1986

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 twenty four years.
3. I am a member of the Association of Professional Engineers of British Columbia and Ontario.
4. I hold no interests, direct or indirect in the properties of Gabriel Resources Inc. nor do I expect to receive any.



Peter E. Walcott, P.Eng.

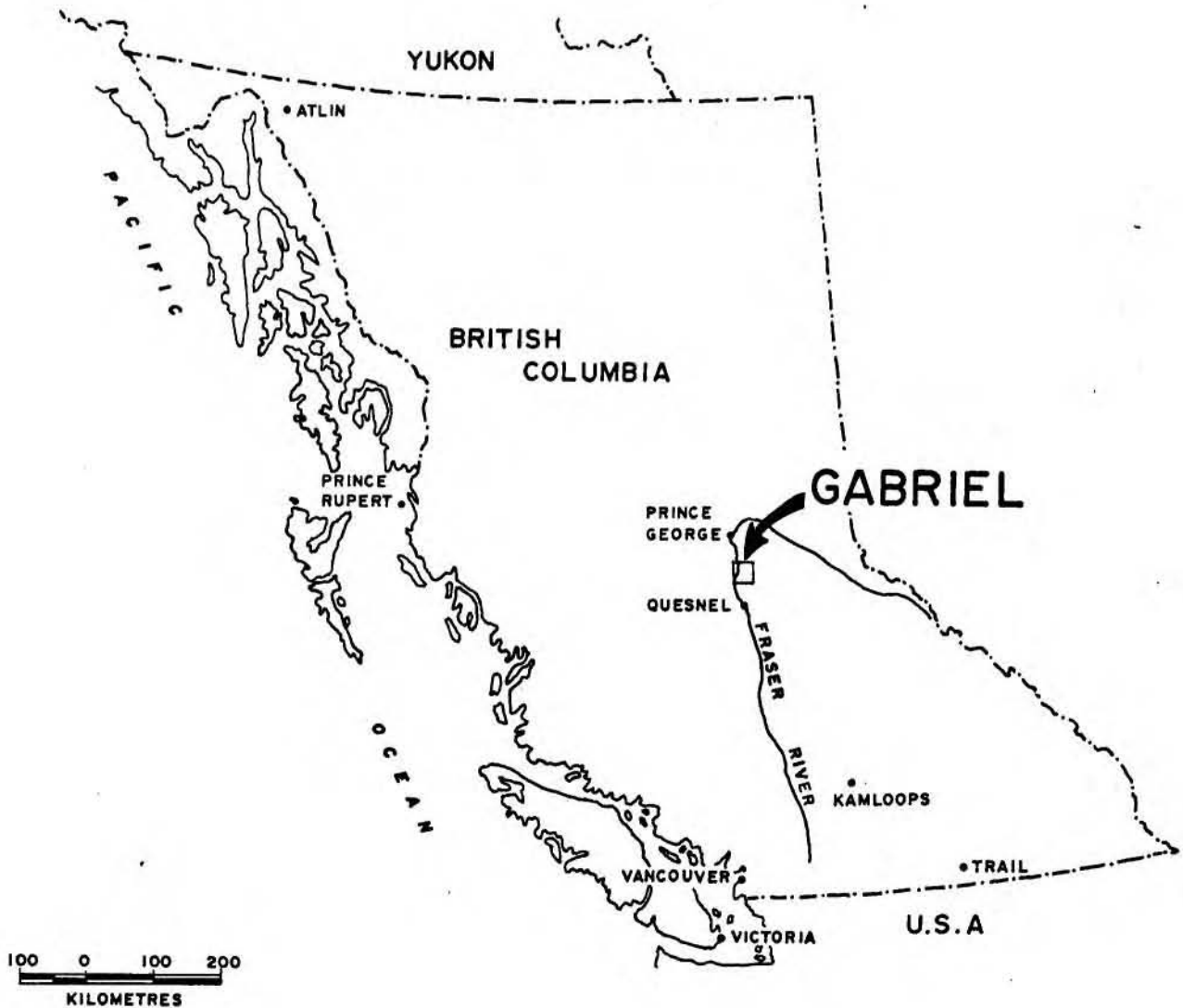
Vancouver, B.C.

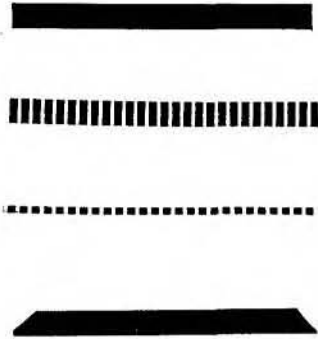
February 1986

# GABRIEL RESOURCES INC.

## LOCATION MAP

YARDLEY LAKE , GOVERNMENT CREEK , & AHBAU  
PROPERTIES





I.P. Pseudo-Sections

Anomalous Zone.

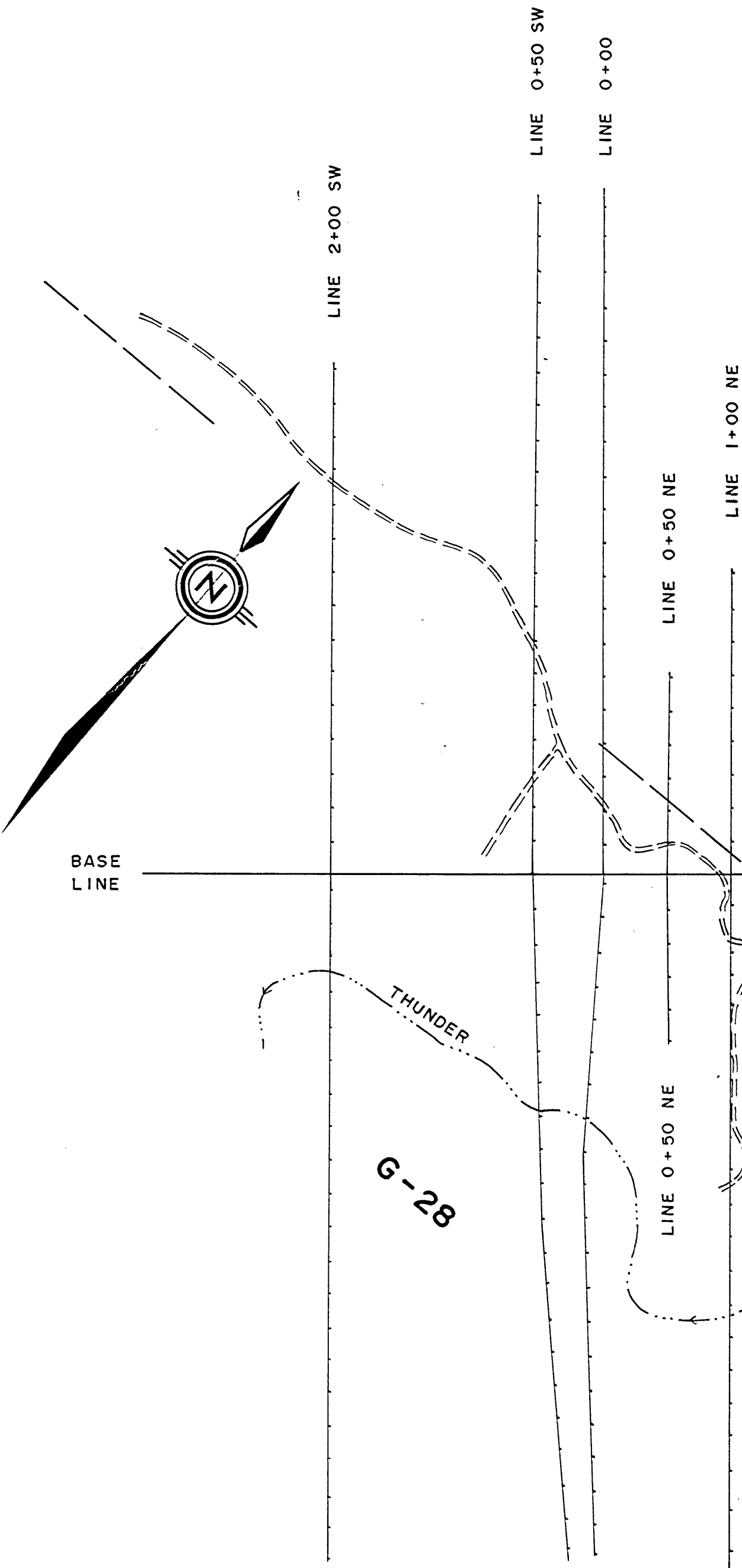
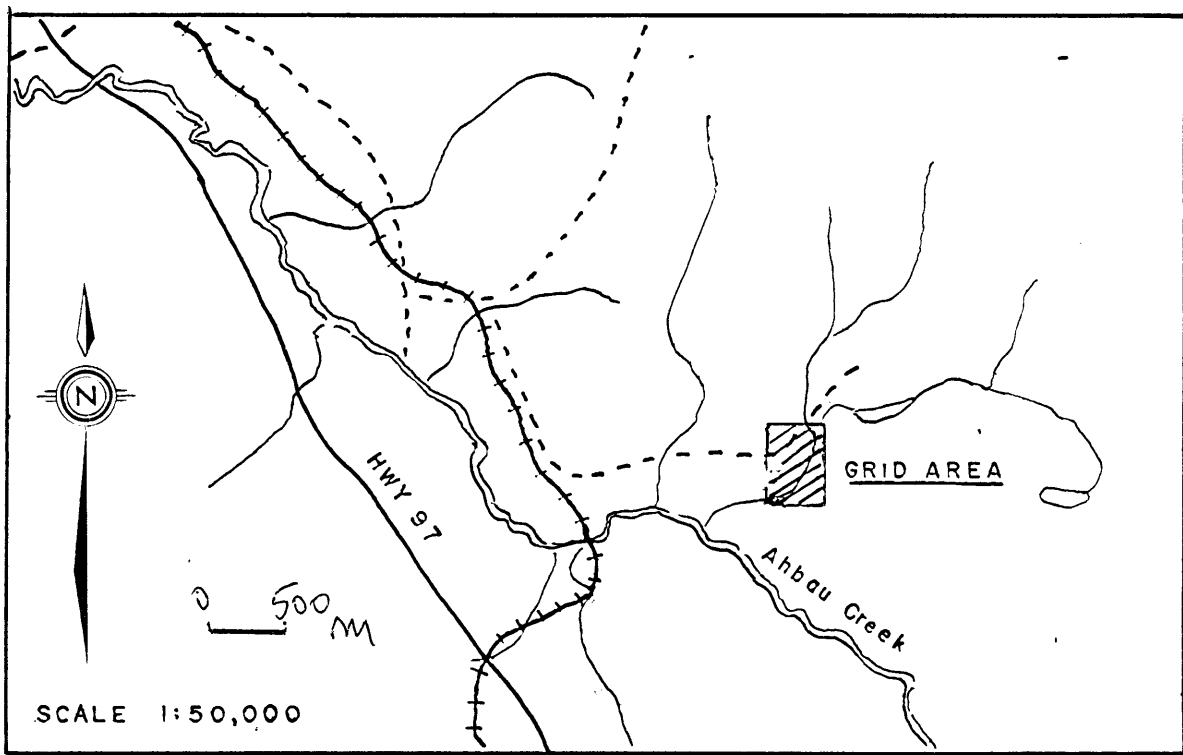
Possible Anomalous Zone.

Questionable Anomalous Zone.

Zone undefined at ends.







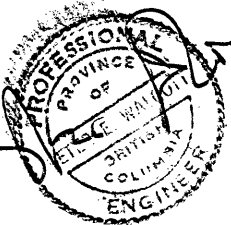
G-30

G-28

APPROXIMATE CLAIM LINE

15,084

PROFESSIONAL ENGINEER REPORT



**GABRIEL RESOURCES INC.**

AHBAU PROPERTY  
CARIBOO M.D., B.C.

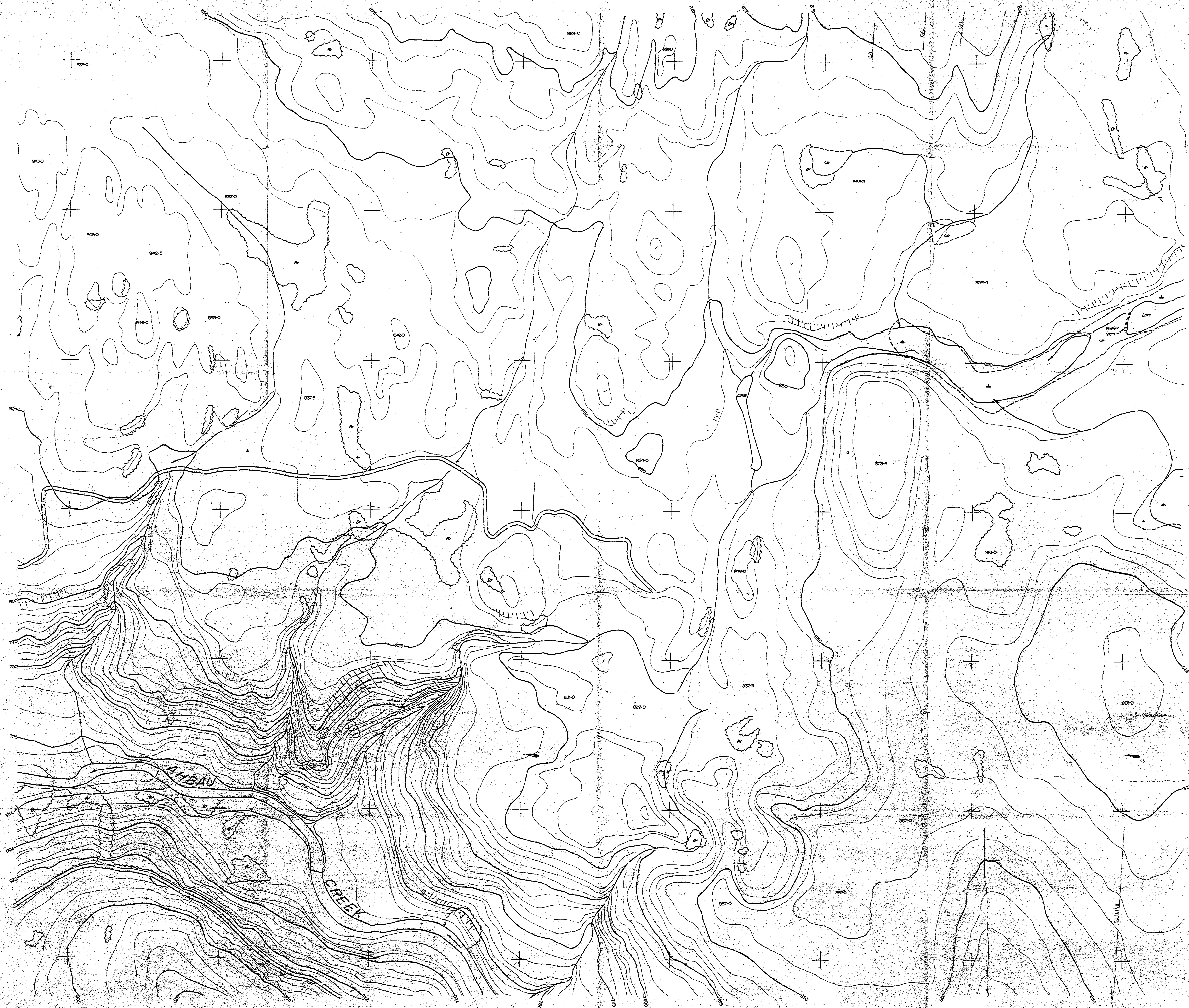
**GRID LOCATION MAP**

SCALE 1:3,333  
0 66.7 M

PETER E. WALCOTT & ASSOC. LTD.  
NOVEMBER - 1985

MAP No. W-381-1





GEOLOGICAL BRANCH  
ASSESSMENT REPORT

0 100 m



084  
EMERALD RESOURCES INC.

AHBAN CREEK

SCALE 1:2500  
CONTOUR INTERVAL 5m  
1980 - 1981 WORK  
PROJECT NO. 857

EMERALD RESOURCES INC.



**GABRIEL RESOURCES INC.**

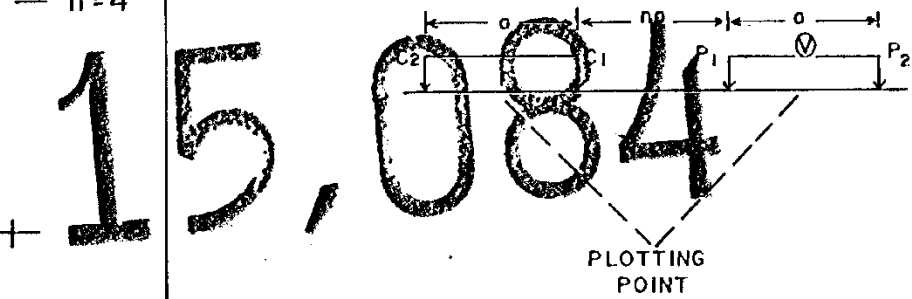
AHBAU PROPERTY  
QUESNEL AREA, B.C.

**LINE 0+50 NE**



**INDUCED POLARIZATION SURVEY**

GEOLOGICAL BRANCH  
ASSESSMENT DIPOLE  
ELECTRODE CONFIGURATION



**15,084**

CURRENT ELECTRODE S.E. OF POTENTIAL ELECTRODE  
DIPOLE SEPARATION "a" - 25 METRES  
TIME DELAY - 100 MILLI-SECONDS  
SAMPLING TIME - 1000 MILLI-SECONDS  
RECEIVER - HUNTEC MARK IV  
TRANSMITTER - PHOENIX IPT I  
CONTOUR INTERVAL  
APPARENT RESISTIVITY - 20, 30, 50, 70, 100, 200,  
300, 500, 700, 1000, etc.  
APPARENT CHARGEABILITY - 40, 50, 60, 70, 80, 90, etc.

SURVEY BY  
PETER E. WALCOTT & ASSOC. LTD.  
NOVEMBER - 1985

1+00-SE 0+50-SE 0+00 0+50-NW 1+00-NW

O/C, POOR CURRENTS

**APPARENT RESISTIVITY OHM - METRES**



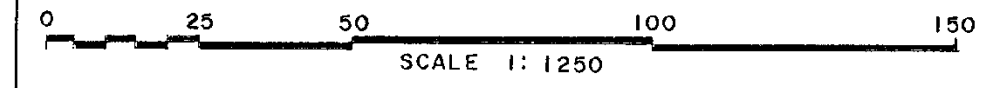
**APPARENT CHARGEABILITY MILLI-SECONDS**



**GABRIEL RESOURCES INC.**

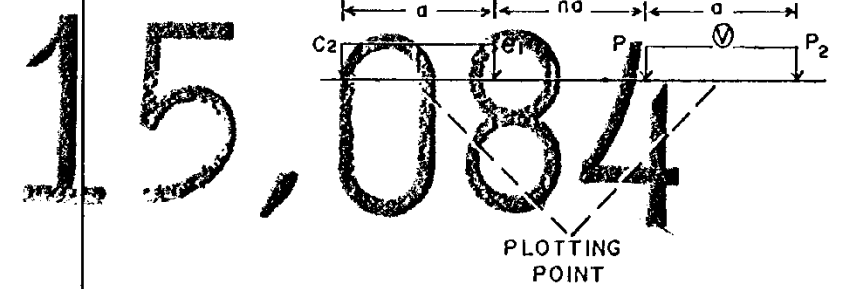
AHBAU PROPERTY  
QUESNEL AREA, B.C.

**BASE-LINE**



**INDUCED POLARIZATION SURVEY**

GEOLOGICAL BRANCH  
ASSESSMENT REPORT  
ELECTRODE CONFIGURATION



CURRENT ELECTRODE S.W. OF POTENTIAL ELECTRODE

DIPOLE SEPARATION "a" - 25 METRES

TIME DELAY - 100 MILLI-SECONDS

SAMPLING TIME - 1000 MILLI-SECONDS

RECEIVER - HUNTEC MARK IX

TRANSMITTER - PHOENIX IPT1

CONTOUR INTERVAL

APPARENT RESISTIVITY - 20, 30, 50, 70, 100, 200,  
300, 500, 700, 1000, etc.

APPARENT CHARGEABILITY - 40, 50, 60, 70, 80, 90, etc.

SURVEY BY  
PETER E. WALCOTT & ASSOC. LTD.

NOVEMBER - 1985

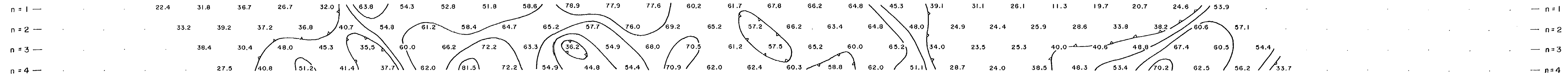
3+00-SW 2+50-SW 2+00-SW 1+50-SW 1+00-SW 0+50-SW 0+00 0+50-NE 1+00-NE 1+50-NE 2+00-NE 2+50-NE 3+00-NE 3+50-NE 4+00-NE 4+50-NE 5+00-NE

ROAD LAKE EDGE

**APPARENT RESISTIVITY OHM - METRES**



**APPARENT CHARGEABILITY MILLI-SECONDS**



**GABRIEL RESOURCES INC.**

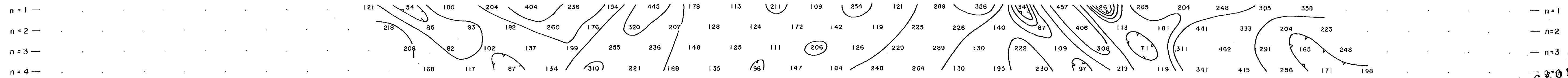
AHBAU PROPERTY  
QUESNEL AREA, B.C.

LINE 1+00 NE

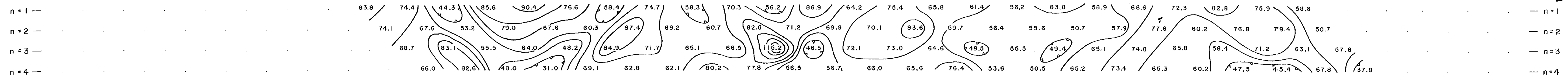


5+00-SE 4+50-SE 4+00-SE 3+50-SE 3+00-SE 2+50-SE 2+00-SE 1+50-SE 1+00-SE 0+50-SE 0+00 0+50-NW 1+00-NW 1+50-NW 2+00-NW

**APPARENT RESISTIVITY** OHM - METRES



**APPARENT CHARGEABILITY** MILLI-SECONDS



**INDUCED POLARIZATION SURVEY**



**15,084**

- n=1 CURRENT ELECTRODE S.E. OF POTENTIAL ELECTRODE
- n=2 DIPOLE SEPARATION "a" — 25 METRES
- n=3 TIME DELAY — 100 MILLI-SECONDS
- n=4 SAMPLING TIME — 1000 MILLI-SECONDS
- RECEIVER — HUNTEC MARK IX
- TRANSMITTER — PHOENIX IPT1
- CONTOUR INTERVAL
- APPARENT RESISTIVITY — 20, 30, 50, 70, 100, 200, 300, 500, 700, 1000, etc.
- APPARENT CHARGEABILITY — 40, 50, 60, 70, 80, 90, etc.

SURVEY BY  
PETER E. WALCOTT & ASSOC. LTD.  
NOVEMBER — 1985

**GABRIEL RESOURCES INC.**

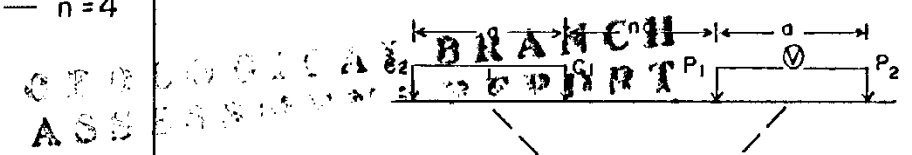
AHBAU PROPERTY  
QUESNEL AREA, B.C.

**LINE 0+00**



**INDUCED POLARIZATION SURVEY**

DIPOLE - DIPOLE  
ELECTRODE CONFIGURATION



**15,084**  
CURRENT ELECTRODE S.E. OF POTENTIAL ELECTRODE  
DIPOLE SEPARATION "a" - 12.5 METRES

TIME DELAY - 100 MILLI-SECONDS  
SAMPLING TIME - 1000 MILLI-SECONDS  
RECEIVER - HUNTEC MARK IX  
TRANSMITTER - PHOENIX IPT1

CONTOUR INTERVAL  
APPARENT RESISTIVITY - 20, 30, 50, 70, 100, 200,  
300, 500, 700, 1000, etc.  
APPARENT CHARGEABILITY - 40, 50, 60, 70, 80, 90, etc.

SURVEY BY  
PETER E. WALCOTT & ASSOC. LTD.  
NOVEMBER - 1985

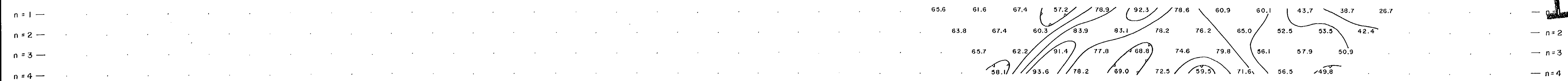
1+00-SE 0+75-SE 0+50-SE 0+25-SE 0+00 0+25-NW 0+50-NW 0+75-NW 1+00-NW

TRENCH

**APPARENT RESISTIVITY OHM - METRES**



**APPARENT CHARGEABILITY MILLI-SECONDS**



**GABRIEL RESOURCES INC.**

AHBAU PROPERTY  
QUESNEL AREA, B.C.

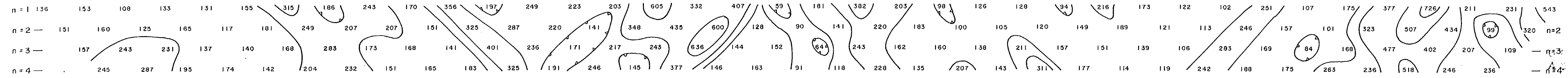
**LINE 0+00**



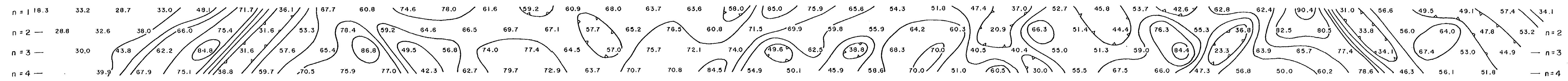
4+50-SE 4+00-SE 3+50-SE 3+00-SE 2+50-SE 2+00-SE 1+50-SE 1+00-SE 0+50-SE 0+00 0+50-NW 1+00-NW 1+50-NW 2+00-NW 2+50-NW 3+00-NW 3+50-NW 4+00-NW 4+50-NW

TRENCH  
←→

**APPARENT RESISTIVITY OHM - METRES**

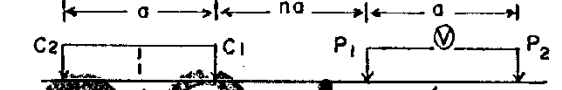


**APPARENT CHARGEABILITY MILLI-SECONDS**



**INDUCED POLARIZATION SURVEY**

DIPOLE - DIPOLE  
ELECTRODE CONFIGURATION



**15,084**  
PLOTting POINT

CURRENT ELECTRODE S.E. OF POTENTIAL ELECTRODE  
DIPOLE SEPARATION "a" - 25 METRES  
TIME DELAY - 100 MILLI-SECONDS  
SAMPLING TIME - 1000 MILLI-SECONDS  
RECEIVER - HUNTEC MARK IX  
TRANSMITTER - PHOENIX IPT1  
  
CONTOUR INTERVAL  
APPARENT RESISTIVITY - 20, 30, 50, 70, 100, 200, 300, 500, 700, 1000, etc.  
APPARENT CHARGEABILITY - 40, 50, 60, 70, 80, 90, etc.

SURVEY BY  
PETER E. WALCOTT & ASSOC. LTD.  
NOVEMBER - 1985

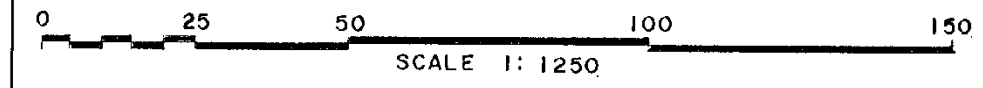




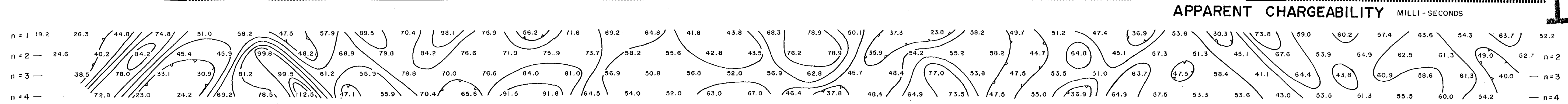
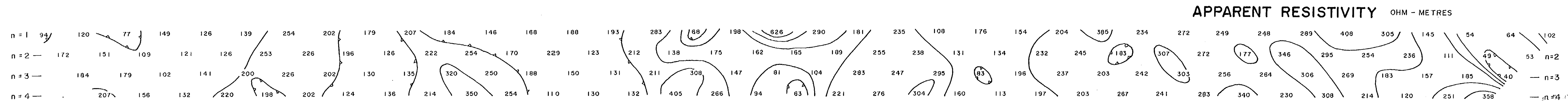
**GABRIEL RESOURCES INC.**

AHBAU PROPERTY  
QUESNEL AREA, B.C.

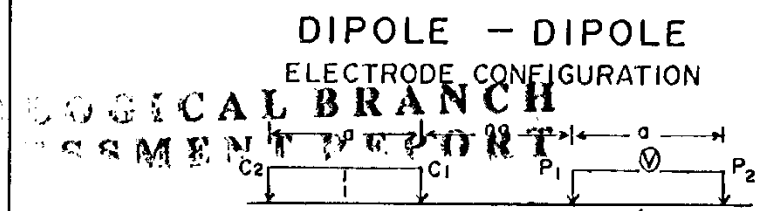
**LINE 0+50 SW**



4+50-SE 4+00-SE 3+50-SE 3+00-SE 2+50-SE 2+00-SE 1+50-SE 1+00-SE 0+50-SE 0+00 0+50-NW 1+00-NW 1+50-NW 2+00-NW 2+50-NW 3+00-NW 3+50-NW 4+00-NW 4+50-NW



**INDUCED POLARIZATION SURVEY**



15,084

ROUTING POINT

CURRENT ELECTRODE S.E. OF POTENTIAL ELECTRODE  
DIPOLE SEPARATION "a" - 25 METRES  
TIME DELAY - 100 MILLI-SECONDS  
SAMPLING TIME - 1000 MILLI-SECONDS  
RECEIVER - HUNTEC MARK IIX  
TRANSMITTER - PHOENIX IPTI

**CONTOUR INTERVAL**  
APPARENT RESISTIVITY - 20, 30, 50, 70, 100, 200, 300, 500, 700, 1000, etc.  
APPARENT CHARGEABILITY - 40, 50, 60, 70, 80, 90, etc.

SURVEY BY  
PETER E. WALCOTT & ASSOC. LTD.  
NOVEMBER - 1985