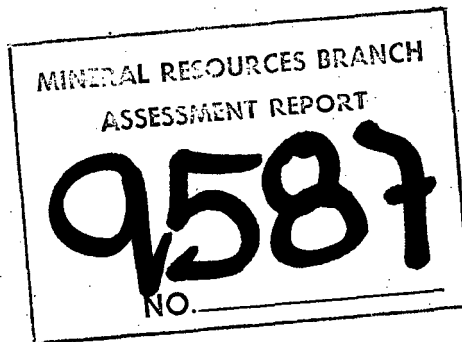


REPORT ON
GEOPHYSICAL SURVEYS
BRIAN BORU PROSPECT
KILLARNEY SHOWING - OMINECA MINING DIVISION
BRITISH COLUMBIA

part 2
of 03



BY

ASARCO Incorporated
Geophysical Office - Exploration Division
Salt Lake City, Utah

October 15, 1981

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INTRODUCTION

Geophysical surveys were conducted at the Killarney Showing in Brian Boru Claim group, Omineca Mining Division, British Columbia from June 25 to July 4, 1981. The geophysical work was primarily an IP/resistivity survey but a previous magnetic survey was extended by an additional two lines and four test VLF-EM lines were run. The work was conducted on Gam II claim by Asarco personnel for Asarco Exploration Company of Canada Ltd.

The Killarney Showing consists of several cuts which have exposed heavily mineralized float overlying the volcanics of the Brian Boru Formation. These volcanics are terminated 50 to 100 meters east of the showing by the Cap Fault which forms the contact between the Brian Boru Formation and the sediments of the Red Rose Formation to the east.

Figures 1 and 2 indicate the location, claim boundaries and grid lines. IP contours are presented on Figures 3 and 4, and resistivity contours on Figures 5 and 6. Figure 7 shows the previous magnetic results with the additional readings taken in the present survey. The VLF-EM profiles are shown on Figures 8 and 9.

SUMMARY

A moderately strong induced polarization anomaly was located in the vicinity of the old cuts. The results indicate the presence of at least disseminated sulfides over an area of about 250 meters by 150 meters.

Polarization levels in the sediments are high, ranging from about 25 Mv/volt to 40 Mv/volt, indicating the presence of polarizable minerals (either sulfide or carbonaceous disseminations).

The high polarization levels in the sediments made possible a more precise location for the fault contact between the sediments on the east and the volcanics on the west.

SURVEY AND INSTRUMENT SPECIFICATIONS

IP/Resistivity Survey

Instrument

Transmitter: Scintrex IPC-8/250 Watt

Instrument (Continued)	Receiver: Scintrex IPR-10
Instrument Accuracy	3% full scale, .1 Mv/V resolution
Electrode Configuration	Dipole-dipole, a=50 meters, n=1 and n=2.
Number of Stations & Coverage:	n=1, 82 stations (4.1 Km.) n=2, 82 stations (4.1 Km.)
Field Time Required	20 man days.
<u>Magnetic Survey</u>	
Instrument	Geometrics G826 Proton Magnetometer
Instrument Accuracy	± 1 gamma - data corrected for diurnal drift.
Number of Stations & Coverage:	104 stations (1.0 Km.)
Field Time Required	1 man day.
<u>VLF-EM Survey</u>	
Instrument	Geonics EM-16
Instrument Accuracy	± 3% in-phase and quadrature
Transmitters	Stations: NLK/NPG Jim Creek, Wash. Frequency 18.6 KHz NPM, Hawaii - Frequency 23.4 KHz.
Number of Stations & Coverage:	Jim Creek, Wash., 81 stations (1.3 Km.) Hawaii - 25 stations, (.4 Km.)
Field Time Required	1 man day.

Line Surveying:

The survey was conducted on a previously established line grid with stations flagged and labeled at 25 meter intervals. Chainages were not corrected for slope.

DISCUSSION OF RESULTS

IP/Resistivity. Chargeabilities for the volcanics range from less than 10 Mv/volt in the northern portion of the grid to about 35 Mv/volt in the south. The results indicate that there is probably fairly widespread disseminated mineralization as well as the heavier sulfide concentrations sought for in the cuts. The best sulfide concentration is indicated at about 101+00 South, 99+50 East.

Chargeabilities in the sediments are high, ranging from 25 Mv/volt to at least 40 Mv/volt. The lack of abrupt changes in polarization and resistivity

levels as well as the absence of VLF-EM conductors within the sediments suggest that the polarization source is disseminated in nature and lacks electrical continuity. It is concluded that the probable source of polarization is either disseminated sulfides or carbon or both.

The strong polarization gradient between Lines 99+00 East and 100+00 East on Figures 3 and 4 is interpreted as the contact between the sediments to the east and the volcanics to the west (the Cap Fault).

Resistivity results indicate relatively high levels within the sediments, a relative low trough west of and paralleling the Cap Fault, and increasing resistivities again on the western portion of the grid. Little can be concluded from this except to say that the results roughly parallel the local structure.

Figure 1 shows the location of an IP/resistivity depth probe over the Killarney Showing. The probe indicated a 10 to 12 meter depth to the polarization source (data not included).

Magnetics. For the previous magnetic coverage at the Killarney Showing reference is made to the memorandum prepared by J. R. Porter, "Magnetometer Survey, Brian Boru Project, Omineca M.D.", November 2, 1980.

Figure 7 is a copy of the previous results with the 1981 readings added and the contouring extended. The additional work did not change the earlier picture except that the magnetic anomaly low coincides with a resistivity low west of the Cap Fault in the volcanics rather than on the fault. The magnetic material is either not polarizable or is too deep for detection with the relatively shallow penetration of the 1981 IP/resistivity survey. Deeper penetration could be achieved with expanded electrode arrays but lateral effects from the polarizable sediments to the east and volcanics to the south would make interpretations difficult.

VLF-EM. Four VLF-EM traverses, shown on Figures 8 and 9, were run on a test basis to determine if there was electrical conductivity associated with the sulfides at Killarney Showing and to determine if the Cap Fault was conductive.

Two traverses, 102+00 South and 98+50 East, crossed the Killarney Showing but did not detect conductors, suggesting a lack of continuity in the stronger sulfide mineralization.

Three traverses crossed the Cap Fault. Two of these, 97+00 South and 102+00 South, indicate very weak conductive responses which are within the noise level and could not be considered diagnostic without other supporting evidence. The third line, 100+00 South, indicates the fault to be distinctly conductive at 9+25 East. Whether this conductivity is due to sulfides or open fracturing at this location is speculative.

EWP:am

Edward W. Perkins

EDWARD W. PERKINS
Geologist

ASARCO

Geophysical Office — Exploration Department

October 15, 1981

E. W. Perkins
Manager

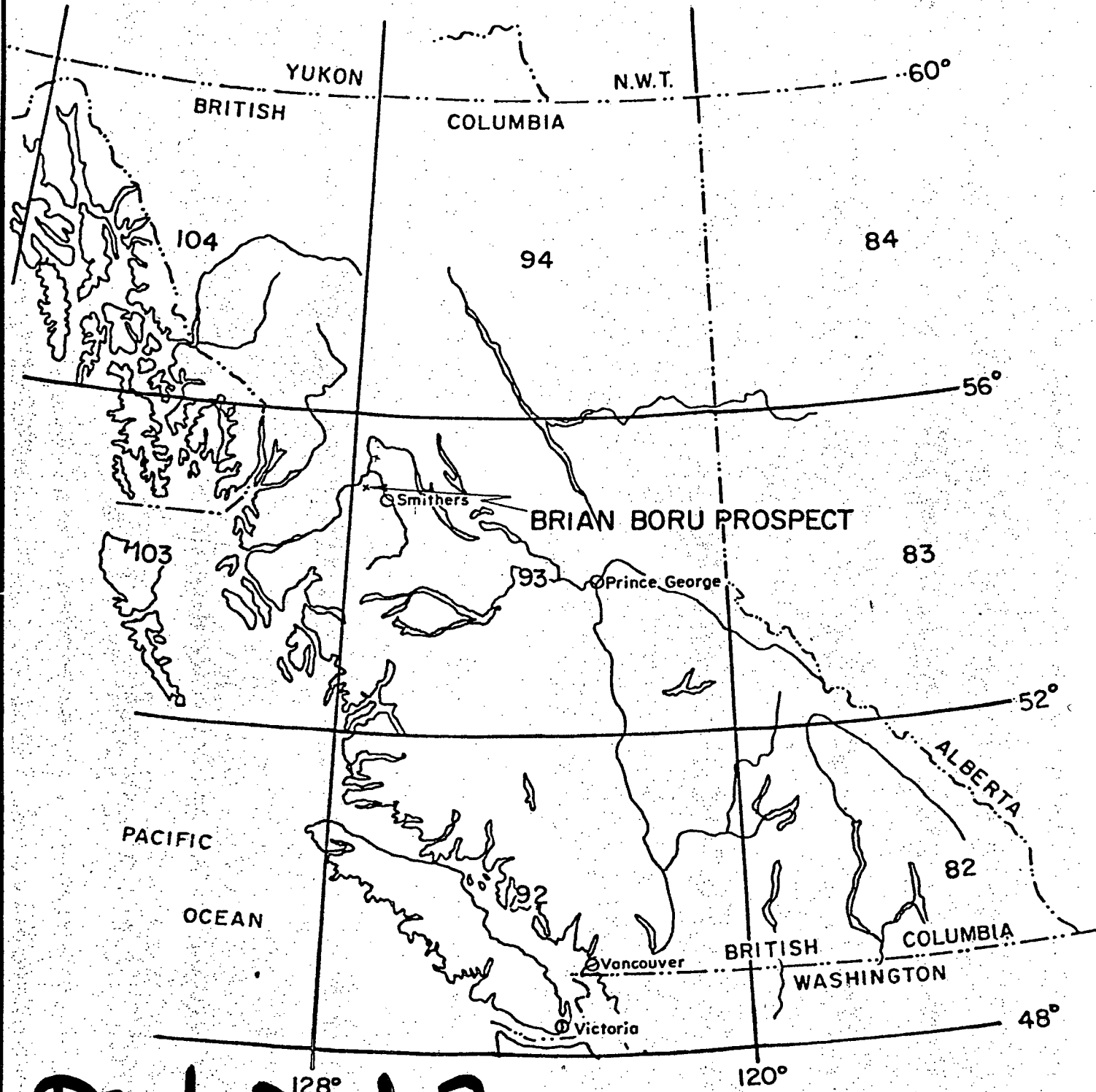
CERTIFICATION

I, Edward W. Perkins, of Salt Lake City, Utah hereby certify
that:

1. I am a graduate of the University of Maine in 1949 with a BA degree in geology.
2. I have been practising my profession of mineral exploration and exploration geophysics for thirty years.
3. I am a member of the Society of Exploration Geophysicists.

Edward W. Perkins

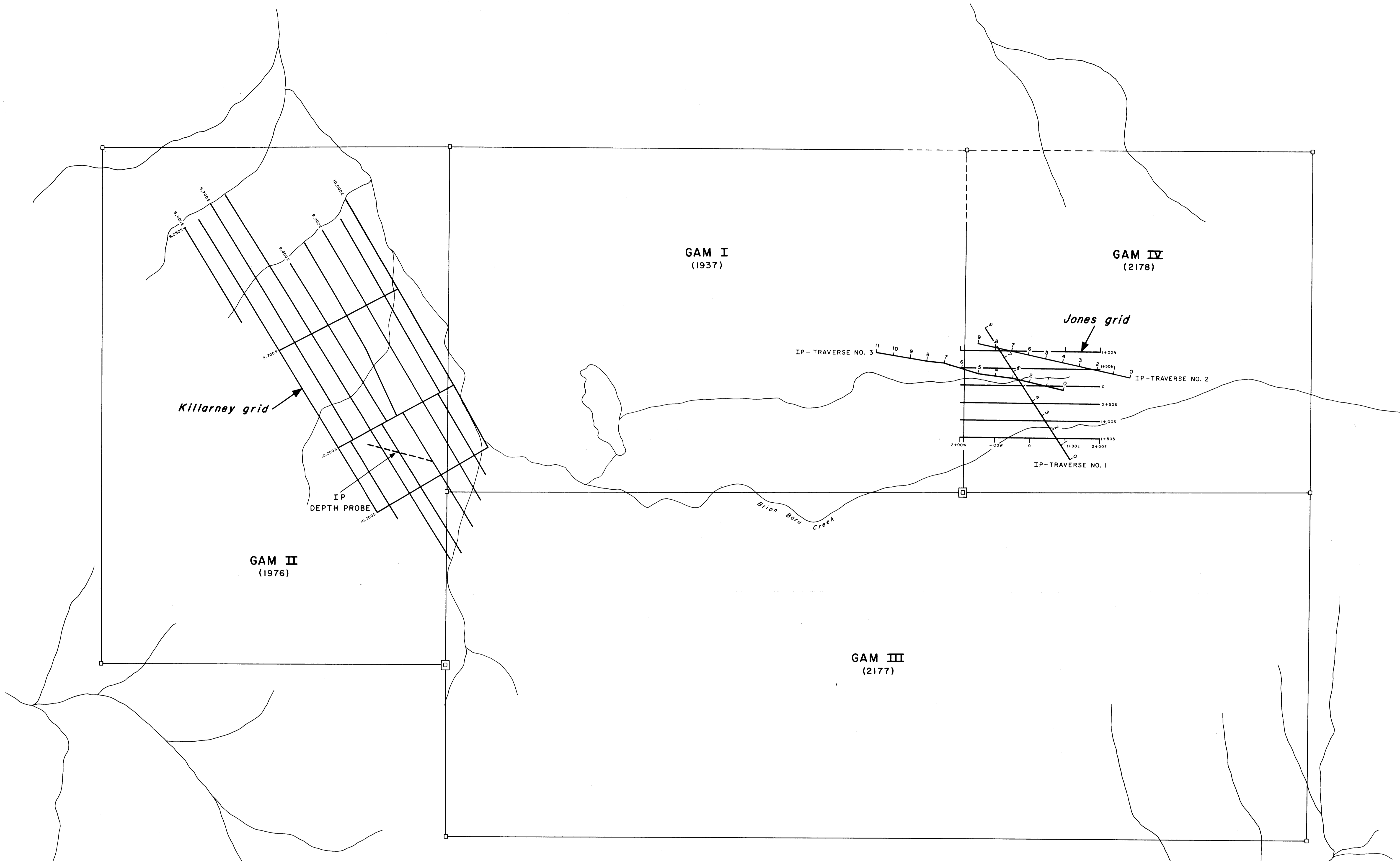
EDWARD W. PERKINS
Geologist



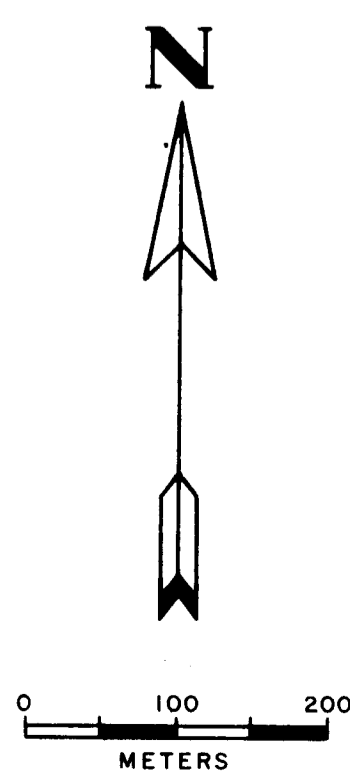
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MINERAL RESOURCES BRANCH
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ASARCO			Vancouver	
BRIAN BORU PROSPECT				
LOCATION MAP				
HAZELTON AREA			OMINECA M.D.	
Drawn by	Date	N.T.S.	Figure	
D.H.O.	SEPT/80	93M/4E	1	



- LEGEND:
- STREAMS
 - LEGAL CORNER POST
 - CORNER POST

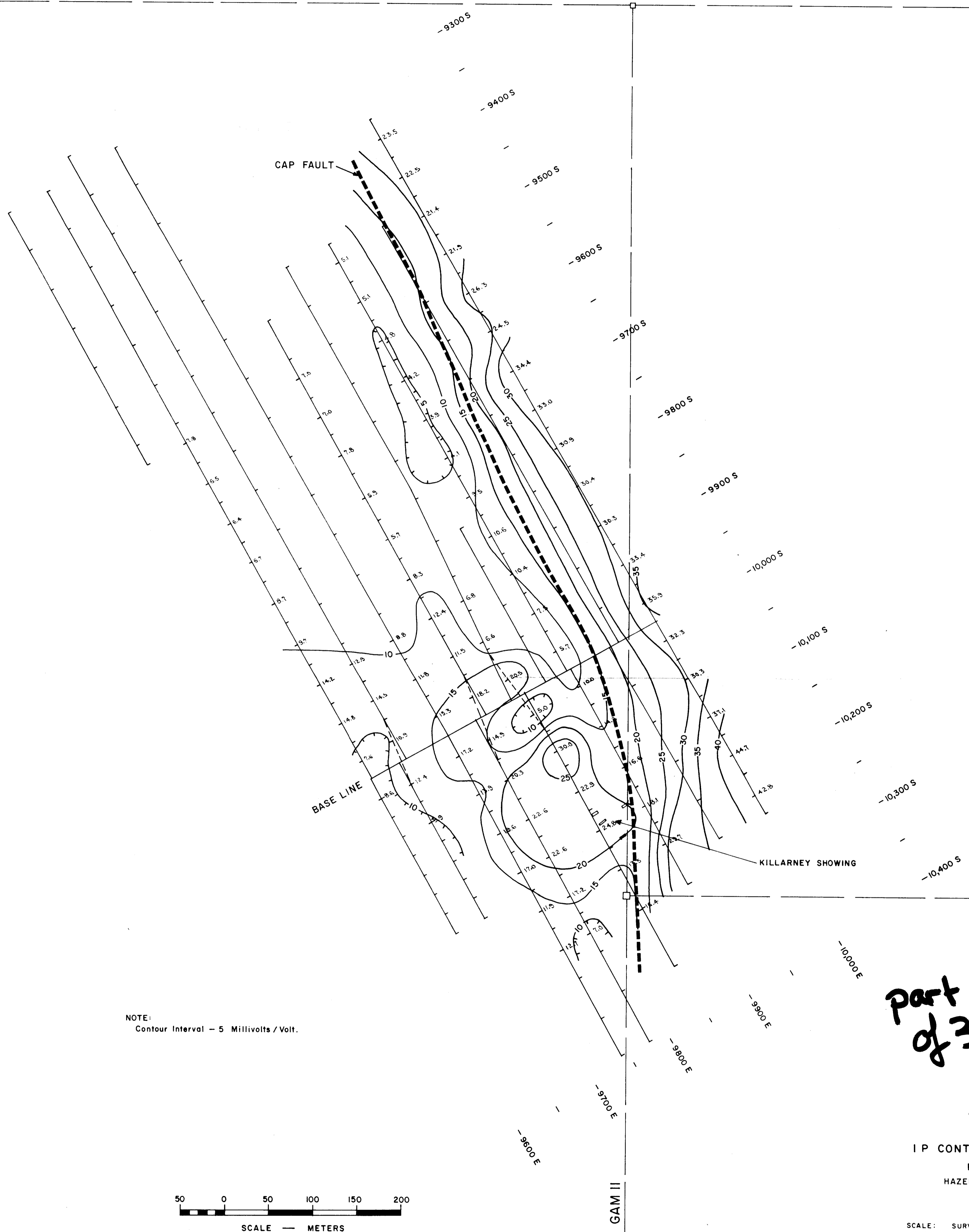


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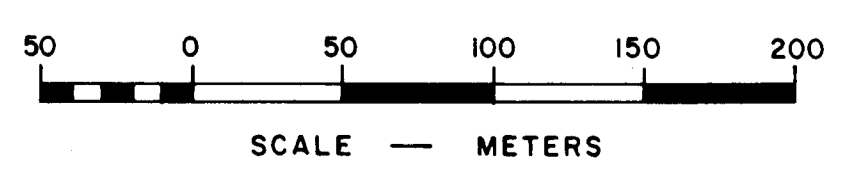
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 GEOPHYSICAL OFFICE
 SALT LAKE CITY, UTAH

Part 2 of 3

**CLAIM BOUNDARY MAP
 SHOWING KILLARNEY GRID & JONES GRID
 BRIAN BORU PROJECT
 HAZELTON AREA, B. C. - OMINCA M. D.
 JONES SHOWING**
 SCALE 1: 5000 DATE: JULY - 1981 FIG. 2
 2 of 12



NOTE:
Contour Interval - 5 Millivolts / Volt.

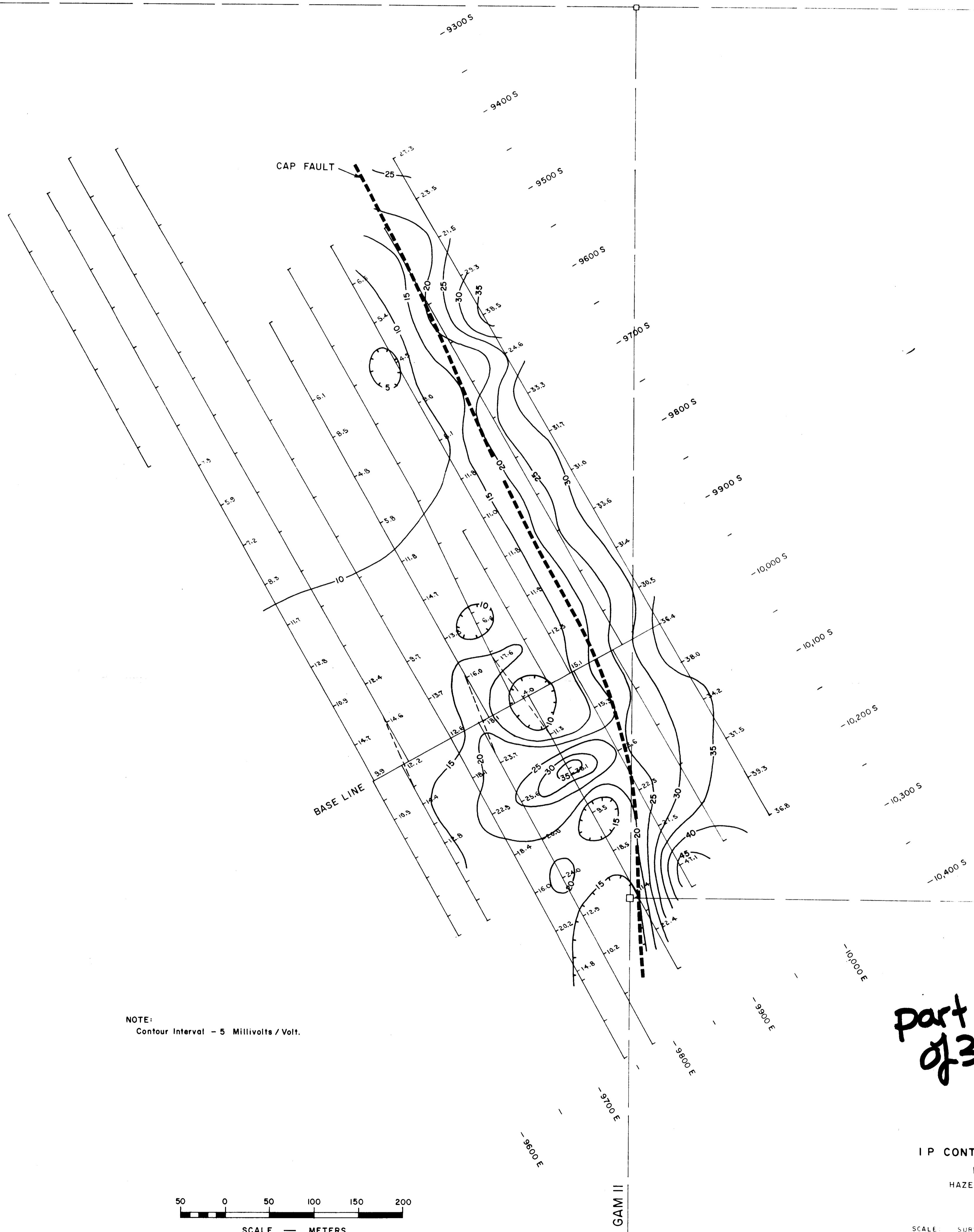


part 2
of 3

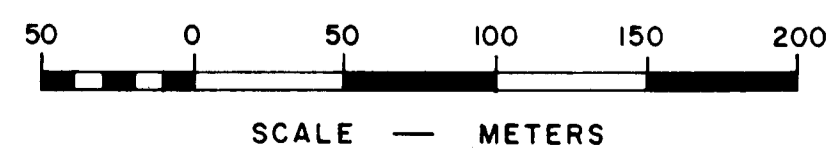
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ASSESSMENT REPORT
9587
NO.

ASARCO Incorporated
GEOPHYSICAL OFFICE
SALT LAKE CITY, UTAH
I P CONTOUR MAP (n=1, a= 50 Meters)
BRIAN BORU PROJECT
HAZELTON AREA, B.C. - OMINECA M.D.
KILLARNEY SHOWING
DATE: JULY-1981
SCALE: SURVEYED BY:FB-E.P-C.R-G.A. DRAWN BY:
1: 2500 COMPILED BY: E.W.R-FB. G. C.

FIG. 3



NOTE:
Contour Interval - 5 Millivolts / Volt.

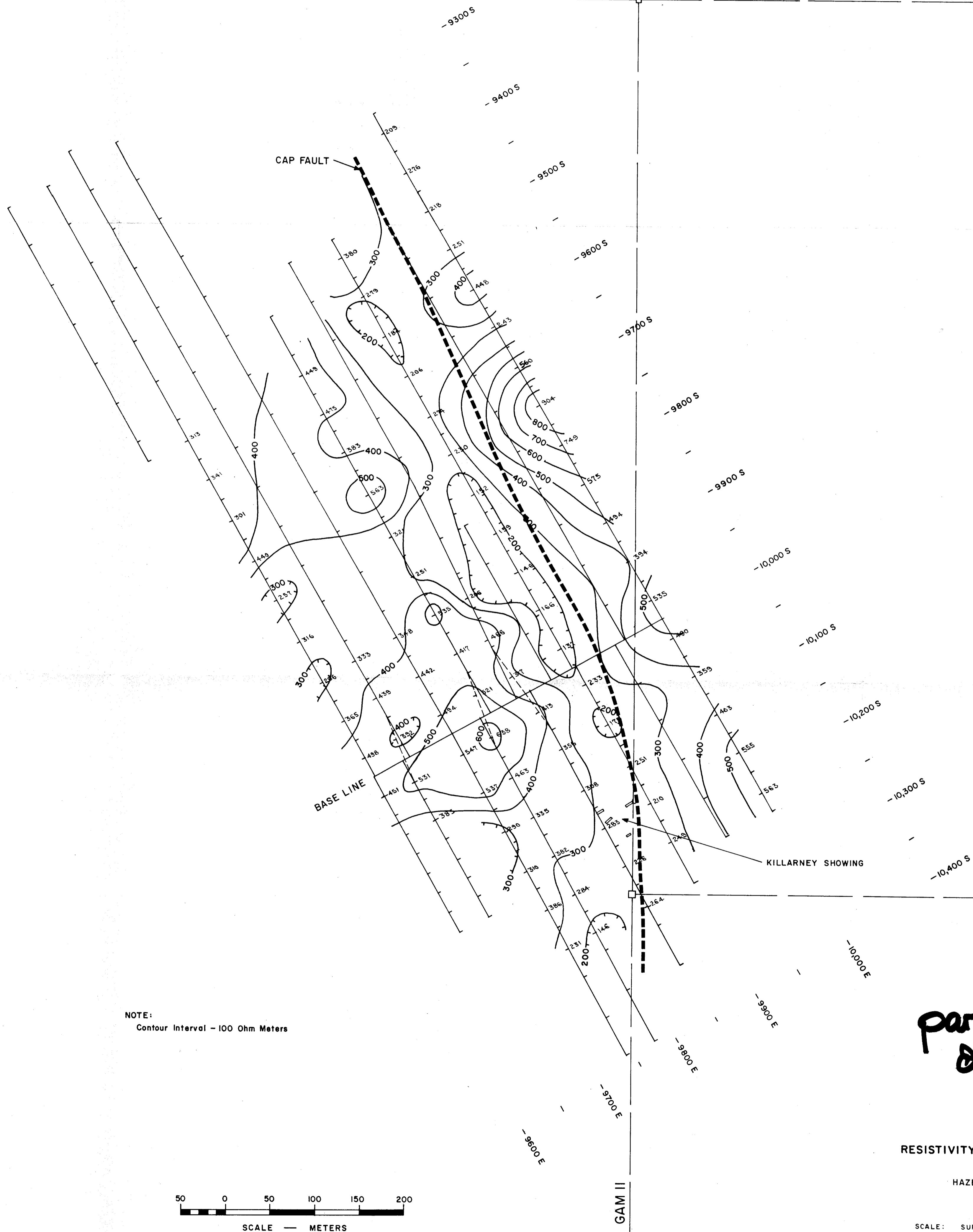


part 2
of 3

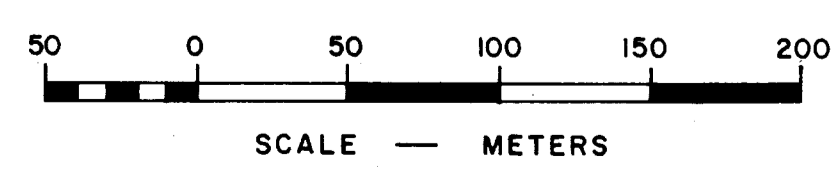
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
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ASARCO Incorporated
GEOPHYSICAL OFFICE
SALT LAKE CITY, UTAH
I P CONTOUR MAP (n=2, a = 50 Meters)
BRIAN BORU PROJECT
HAZELTON AREA, B.C. - OMEGA M.D.
KILLARNEY SHOWING
DATE JULY-1987
SCALE 1:2500 SURVEYED BY FB-EP-CR-GA DRAWN BY:
COMPILED BY E.W.P.-FB. G.C.

FIG. 4



NOTE:
Contour Interval - 100 Ohm Meters

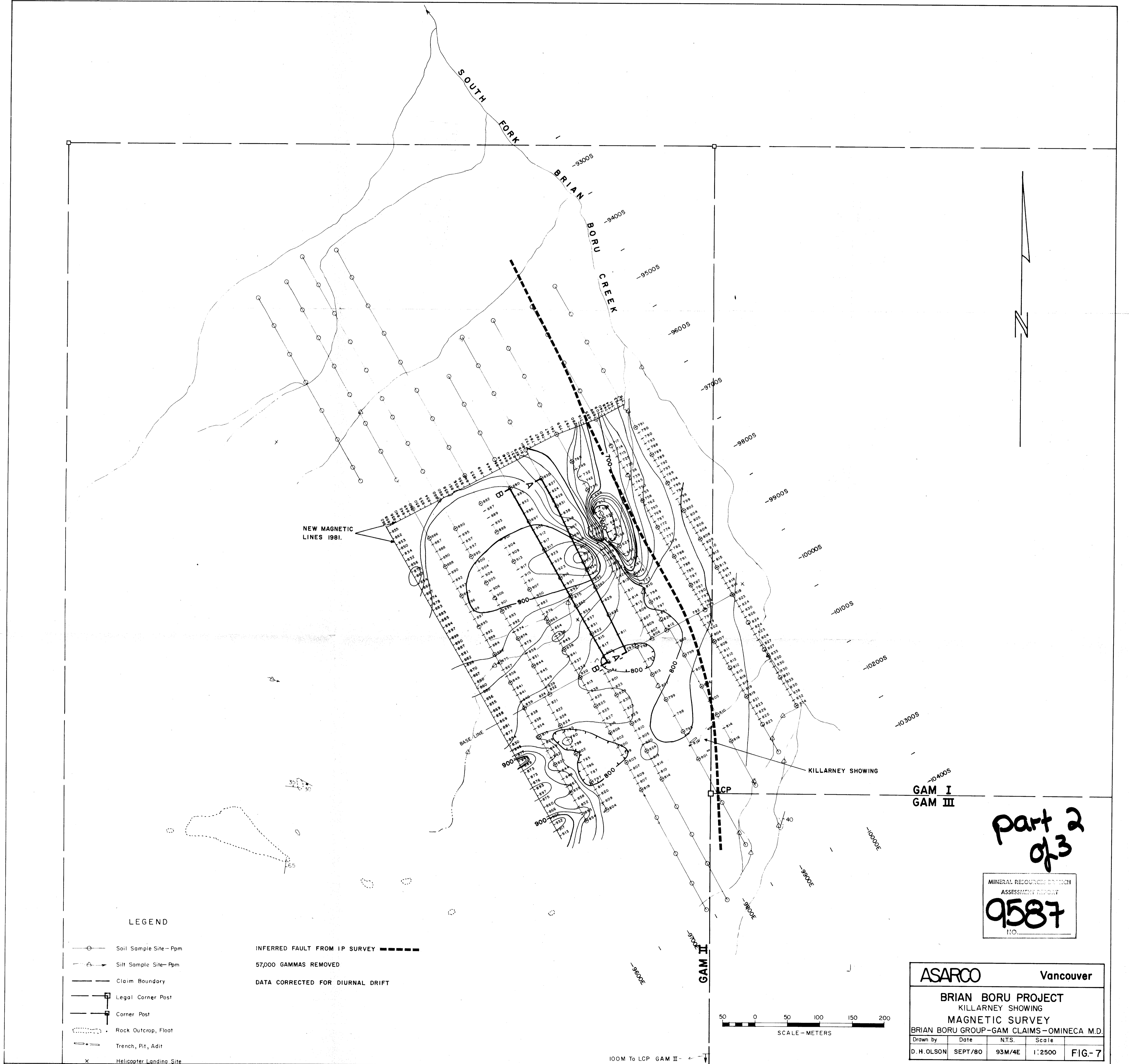


part 2
of 3

MINERAL RESOURCES BRANCH ASSESSMENT REPORT NO. 9587

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GEOPHYSICAL OFFICE
SALT LAKE CITY, UTAH
RESISTIVITY CONTOUR MAP (n=1, a=50 Meters)
BRIAN BORU PROJECT
HAZELTON AREA, B.C. - Omineca M.D.
KILLARNEY SHOWING
DATE: JULY-1981
SCALE: 1:2500 SURVEYED BY: F.B.-E.P.-C.R.-G.A. DRAWN BY: G.C.
COMPILED BY: E.W.R.-F.B.

FIG. 5



NEW MAGNETIC LINES 1981.

KILLARNEY SHOWING

GAM I
GAM III

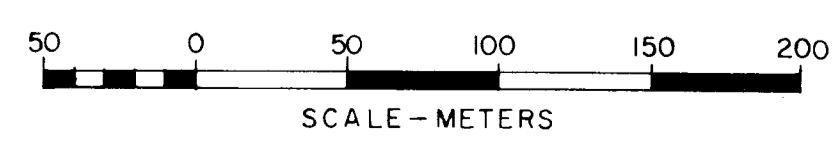
part 2
of 3

MINERAL RESOURCES DIVISION
ASSESSMENT REPORT
9587
NO.

LEGEND

- Soil Sample Site-Ppm
- △ Silt Sample Site-Ppm
- Claim Boundary
- Legal Corner Post
- Corner Post
- ⋯ Rock Outcrop, Float
- Trench, Pit, Adit
- X Helicopter Landing Site

INFERRED FAULT FROM IP SURVEY - - - - -
57,000 GAMMAS REMOVED
DATA CORRECTED FOR DIURNAL DRIFT



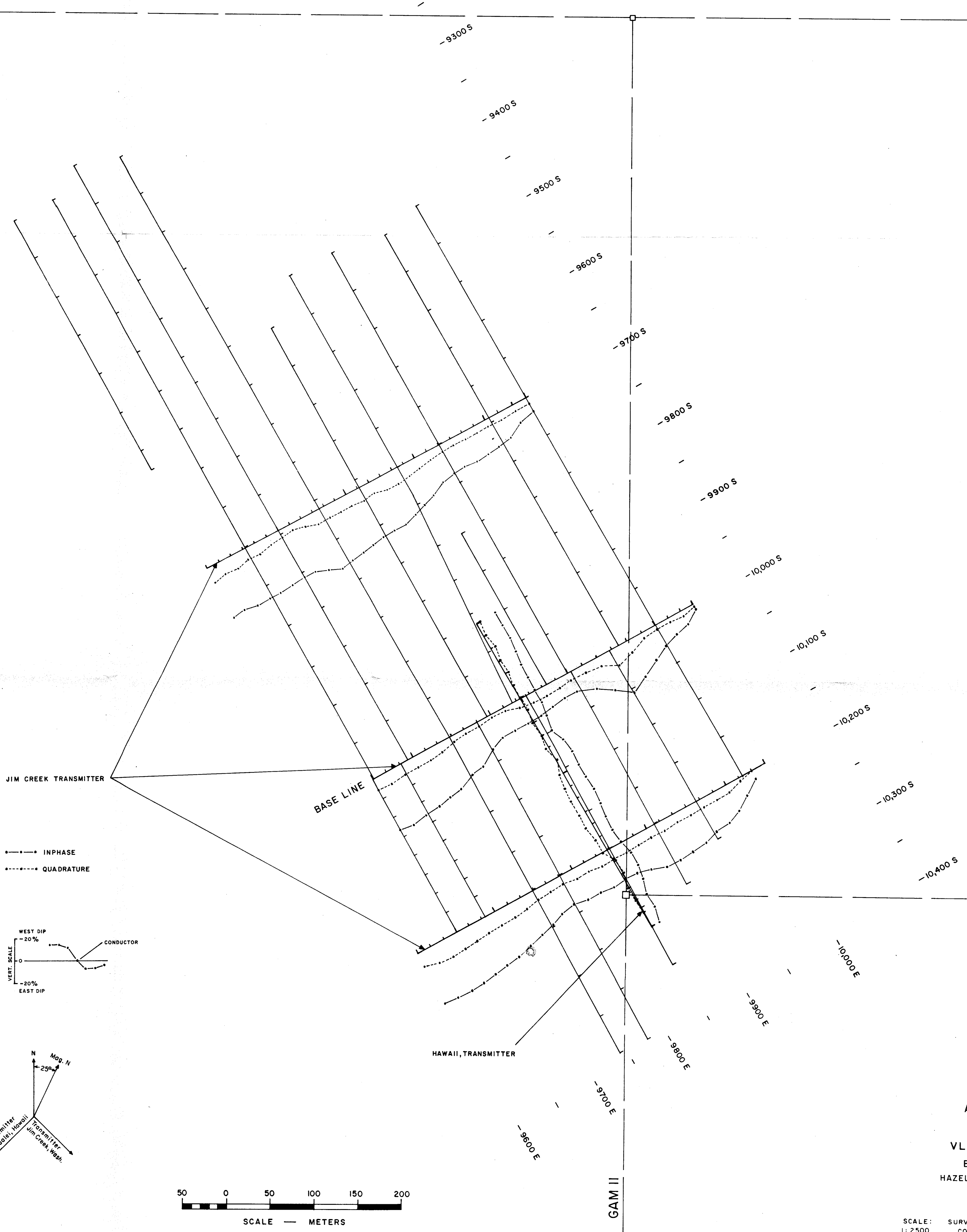
ASARCO Vancouver

BRIAN BORU PROJECT
KILLARNEY SHOWING
MAGNETIC SURVEY
BRIAN BORU GROUP-GAM CLAIMS-OMINECA M.D.

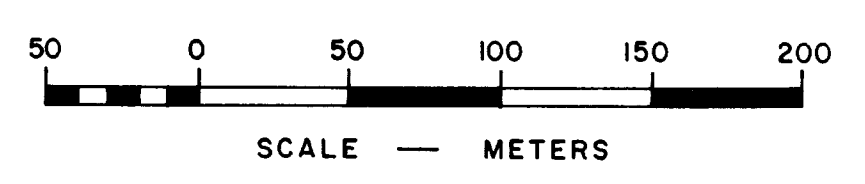
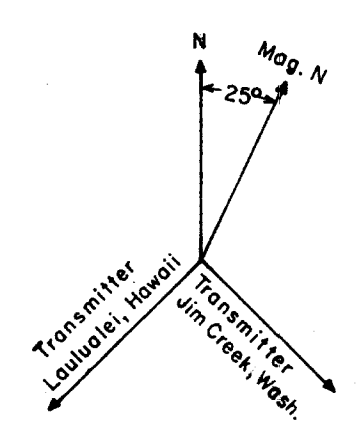
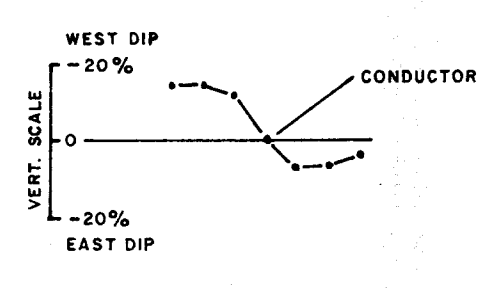
Drawn by	Date	N.T.S.	Scale
D. H. OLSON	SEPT/80	93M/4E	1:2500

FIG-7

100M To LCP GAM II



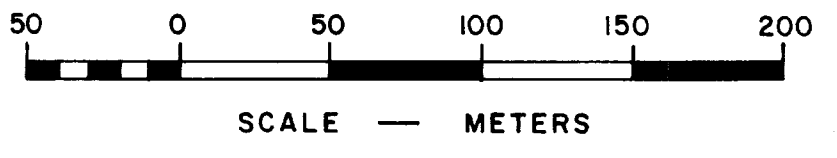
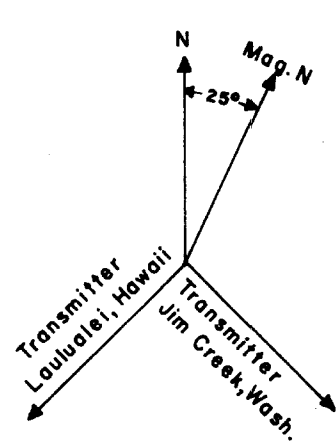
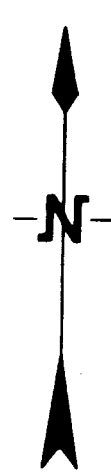
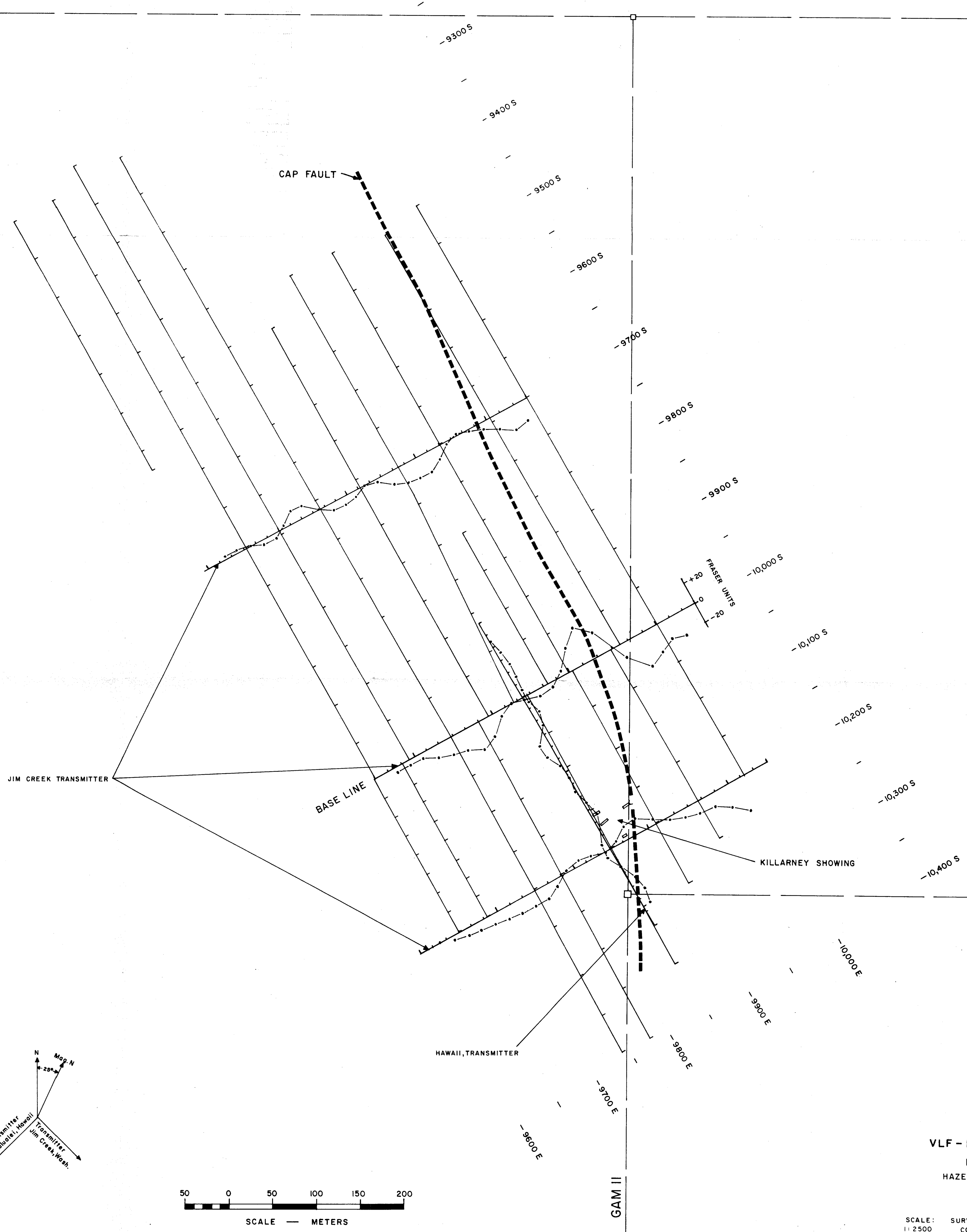
- - - - INPHASE
 - - - - QUADRATURE



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 of 3
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 SALT LAKE CITY, UTAH
VLF - E M PROFILE MAP
 BRIAN BORU PROJECT
 HAZELTON AREA, B.C. - OMINCA M.D.
 KILLARNEY SHOWING
 DATE: JULY-1981

SCALE: 1:2500 SURVEYED BY: F.B.-E.P.-C.R.-G.A. DRAWN BY:
 COMPILED BY: E.W.R. G.C.



GAM I
GAM III

part 2
of 3

MINERAL RESOURCE SEARCH
ASSESSMENT REPORT
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GEOPHYSICAL OFFICE
SALT LAKE CITY, UTAH
VLF - EM FRASER PROFILE MAP
BRIAN BORU PROJECT
HAZELTON AREA, B.C. - OMINACA M.D.
KILLARNEY SHOWING
DATE: JULY-1981

SCALE: 1:2500 SURVEYED BY: FB-EP-CR-GA. DRAWN BY: G.C.
COMPILED BY: E.W.P.