

REPORT ON  
PROGRAM OF GEOPHYSICAL SURVEY DATA

CASINO SILVER MINES LIMITED (N. P. L.)

CANADIAN CREEK PART OF PROPERTY

CASINO CREEK

YUKON TERRITORY

This report has been examined by  
the Geological Evaluation Unit.  
Approved as to technical worth by:

*D. C. Lillay*  
RESIDENT GEOLOGIST

Approved as to cost in the amount  
of: \$

Approved as to person and work  
under Section 53(4), Yukon Quartz  
Mining Act.

COMMISSIONER OF YUKON

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Plan No. 3      Geophysical Survey Data  
                  Canadian Creek Area  
                  Scale: 1" = 200'

Plan No. 4      Geophysical Survey Data  
                  On Part of Canadian Creek Area  
                  Scale: 1" = 200'

The President and Directors,  
Casino Silver Mines Limited (N. P. L. ),  
1st Avenue and Strickland Street,  
Whitehorse, Yukon Territory

Gentlemen:

This report describes the results of a program of geophysical survey conducted at the Canadian Creek part of your property located at Casino Creek, Yukon Territory. The results are depicted on Plans Nos. 3 and 4, accompanying this report, plotted to a scale 1" = 200'.

PROPERTY, LOCATION, ACCESS, HISTORY  
AND MINERAL OCCURRENCE -

You are referred to the writer's report dated August 3, 1966, for a description of the property, location, access, history and mineral showings. The Canadian Creek part of the property is located to the north of the Bomber showing at Casino Creek, and a placer gold deposit is known and tested by previous owner at Canadian Creek.

TOPOGRAPHY AND GEOLOGY -

Topographic features, as noted by the geophysical operators, are depicted on the plans accompanying this report. Hornblende granite was observed by government geologists on the peak areas of the surrounding hills. The area is generally considered as underlain

by granitic rocks. Heavy concentrations of magnetic black sand with some ferberite and gold were observed while panning for gold.

#### SURVEY METHOD AND INSTRUMENTS -

The geophysical surveys were carried out along picket lines laid out at 400' intervals as shown on the plans. They were turned off from two base lines, one (B. L. No. 1) at N. 40° W to cover the placer gold area, and another (B. L. No. 2) at a north-south direction to check an anomalous area along the watershed of Canadian Creek to the southwest. All stations were established at 100' intervals.

A Sharpe A-2 magnetometer was used for the magnetometer survey. The sensitivity of the instrument was 21.4 gammas per scale division.

The electromagnetic check survey was carried out by using a Sharpe SE-200 unit and, later, by a Ronka E. M. 16 instrument made by Geonics Ltd. of Toronto. The Ronka E. M. 16 is a sensitive receiver covering the frequency band of new VLF - transmitting stations, with means of measuring the induced vertical field components. During the survey, Station NPG of Seattle, Washington, frequency = 18.6 kc., was used and operated with instrument facing

westerly vertical to the location of the transmitter station.

For the SE-200 unit, cross-overs are indications of electromagnetic conductors. For the Ronka E. M. 16, the slope approaching a cross-over is more indicative of the location of a conductor.

### GEOPHYSICAL SURVEY RESULTS AND INTERPRETATION

The survey outlined two anomalous zones:

- (1) East Zone - located at the north and east of Base Line No. 1, running southeasterly with maximum magnetic highs of about 2,000 to 2,400 gammas, above background readings in the order of 500 gammas. A deep structure, 400 feet to 500 feet below surface, was indicated by the Ronka E. M. 16 check survey along the south edges of this zone. The electromagnetic indications are too weak and deep to be of immediate interest.

At Line 24 S, 21 + 50' east, the survey encountered one weak conductor near the road to Casino Creek where several silt samples with anomalous contents of copper were obtained. Although this weak E. M. indication could

be an indication of a geological structure which carries no appreciable concentrations of sulphides, it is, however, of shallow origin and should be checked by surface prospecting.

The E. M. survey also encountered an indication at L 16 S, east of 26 + 00 feet east. This indication is near the source area of the Casino Creek anomalous silt samples, but has apparently not been properly covered by the survey.

- (2) West Zone - located to the southwest at the upper reaches of Canadian Creek. The magnetic highs are from 2,000 gammas to 3,700 gammas. The anomalous area is over 1/2 mile long, 1/6 to 1/4 mile wide, open to the northwest. The electromagnetic survey encountered several weak conductors. The best indication is at L 12 N, 11 + 50' west at the north boundary of the magnetic zone, but from a depth in the order of 400 feet. Within the magnetic zone, there is a weak indication located at L 12 S, 14 + 50' west. The above-said two conductors are considered choice indications in the surveyed area for the possible occurrence of ferberite found associated with placer gold down stream.

Geological prospecting, to be assisted by trenching, is considered appropriate for an initial testing of these indications.

The geophysical survey encountered no strong low magnetic zones for the interpretation of the possible occurrence of acidic (quartz) injections which may be associated with gold mineralization. However, the inferred northwesterly faults, located at the central part of the East Zone, particularly at L 16 S, 9 + 50' east, and that encountered at the southwest corner of the West Zone, are considered to have the best chances of being associated with such mineralization.

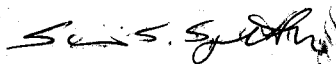
#### CONCLUSIONS AND RECOMMENDATIONS -

The geophysical survey conducted at the Canadian Creek Area has outlined two magnetic zones and several weak indications, two of which are considered to have the best chances of finding veins with ferberite, and another two inferred faults are considered to have the best chances of finding gold veins within the area covered by the survey. It is recommended to test these indications by an initial program of geological prospecting to be assisted by trenching

where required. Knowledge obtained from the prospecting is to be used for further interpretation of other indications obtained by the geophysical survey prior to possible diamond drilling.

Respectfully submitted,

CANA EXPLORATION CONSULTANTS LIMITED



S. S. Szetu, Ph. D.  
Consulting Geologist

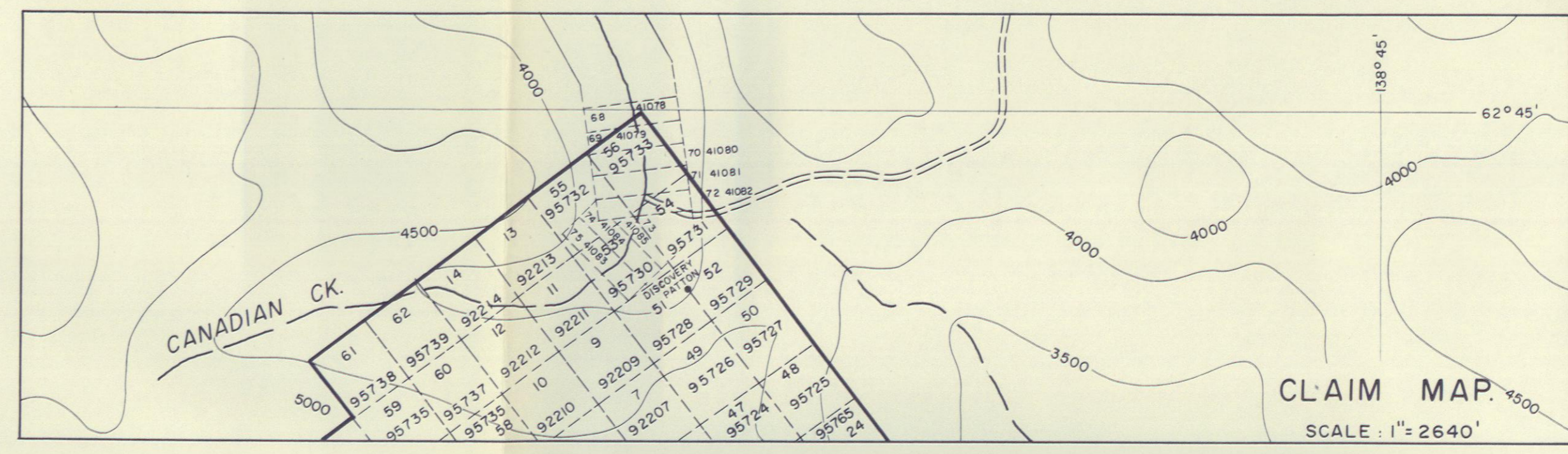
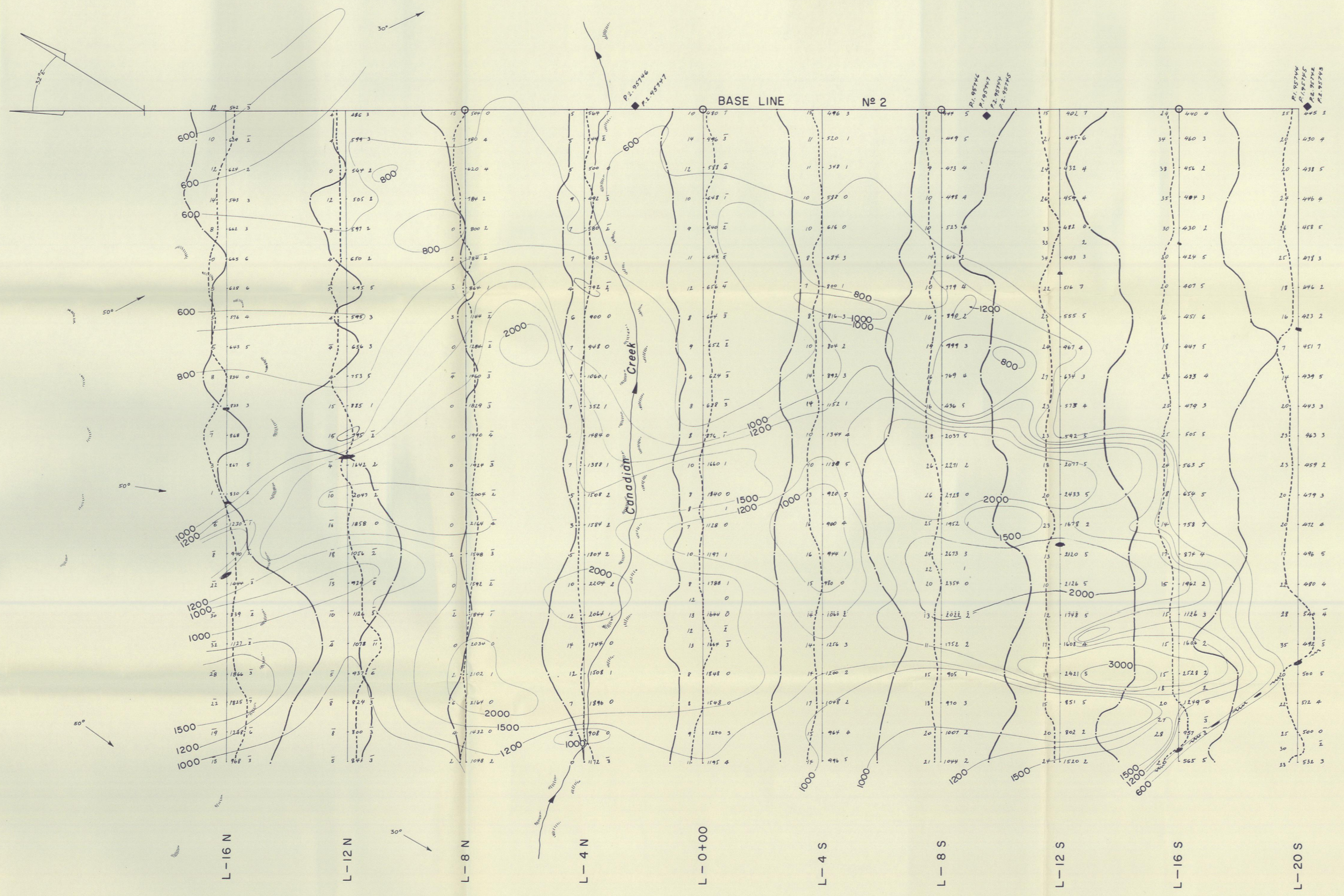
SSS:rk  
Encl.

Toronto, Ontario  
October 21, 1966.



- LEGEND**
- Claim post and claim boundary.
  - Higher ground.
  - Cliff.
  - Swamp.
  - Inferred fault.
  - Picket line cut and chained.
  - Magnetic readings obtained and plotted at the NE side of picket line.
  - Magnetic control station.
  - Magnetic contour.
  - Below 400 gammas.
  - 400 - 600 "
  - 600 - 800 "
  - 800 - 1000 "
  - 1000 - 1200 "
  - 1200 - 1500 "
  - 1500 - 2000 "
  - 2000 - 3000 "
  - Above 3000 "
  - Electromagnetic readings obtained by using a Sharpe SE-200 unit. (Parallel line method) Scale of profile: 1/10" = 1° dip angle.
  - I.P. O.P.
  - Electromagnetic readings obtained by using a Ronka EM-16 instrument facing West. Transmitter station: N.R.G.
  - In-phase readings plotted at the SW, out-of-phase readings plotted at the NE side of picket line. Scale of profiles: 1/10" = 2% phase change.
  - Electromagnetic conductor.
  - Proposed diamond drill hole.

**PLAN - 3**  
 GEOPHYSICAL SURVEY DATA  
 CANADIAN CREEK AREA  
**CASINO SILVER MINES LTD.**  
 CASINO CREEK, YUKON TERRITORY  
 CANADA  
 Scale: 1" = 200' August 1966  
 CANA EXPLORATION CONSULTANTS LIMITED



- LEGEND**
- ◆ Claim post.
  - Higher ground
  - Picket line cut and chained.
  - Magnetic readings obtained and plotted at the south side of picket line.
  - Magnetic control station.
  - 800 Magnetic contour.
  - Below 600 gammas.
  - 600 - 800 "
  - 800 - 1000 "
  - 1000 - 1200 "
  - 1200 - 1500 "
  - 1500 - 2000 "
  - 2000 - 3000 "
  - Above 3000 "
  - Electromagnetic readings obtained by using a Ronka E.M. -16 instrument facing West. Transmitter station: N.P.G. Seattle. In-phase readings plotted at the north, out-of-phase readings plotted at the east side of picket line. Scale of profiles: 1/10" = 2% phase change.
  - Electromagnetic Conductor.
  - Proposed diamond drill hole.
- NOTE:** Magnetic contours correlated with PLAN No 3.

**PLAN - 4**  
 GEOPHYSICAL SURVEY DATA  
 ON PART OF CANADIAN CREEK AREA  
**CASINO SILVER MINES LTD.**  
 CASINO CREEK, YUKON TERRITORY  
 CANADA