

82-77-10148

GEOLOGICAL & GEOPHYSICAL REPORT

ON THE

BOBCAT & COUGAR CLAIM GROUPS

WALHACHIN AREA

KAMLOOPS MINING DIVISION 921/10W, 11E, 14E, 15W  
50°29'N, 120°59'W  
BRITISH COLUMBIA

FOR

NINJA RESOURCES LTD.

10,148

February 1, 1982

W. G. Timmins Exploration & Development Ltd.

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### MAPS AT REAR

Isomagnetic Map

Geology Map

Airborne Flightline Map

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## SUMMARY

The Bobcat-Cougar claim group is underlain by Nicola Volcanics intruded by complex intrusive bodies, and overlain unconformably by Jurassic? conglomerates which are in turn overlain by Kamloops Group volcanics. Skarn-type and disseminated copper and molybdenum mineralization is associated with some of the intrusions, which magnetic data indicate could be fairly extensive.

A reconnaissance geological-geochemical survey over the former WAL claim (roughly equivalent to Bobcat 100) by Bethlehem Copper Corp. indicated geochemical anomalous zones, and percussion drilling was recommended by the authors, Simpson and Nethery (1979). It is not known if this drill programme was carried out, however Bethlehem subsequently dropped the WAL claim.

A regional airborne VLF-EM and magnetometer survey flown in January, 1981 by Columbia Geophysical Services Ltd. indicated magnetic values correlating fairly well with the geology so far as it is known, and suggesting that the intrusives are more extensive than as mapped.

Mineralization is known to be associated with Nicola Volcanics and later intrusives on the former WAL claim and on the adjoining Geo and Chief claims. Magnetic data suggest that similar lithology may occur elsewhere in the Bobcat and Cougar claims, and therefore, a two-stage contingent exploration programme

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consisting of reconnaissance geological mapping and sampling, ground magnetometer, soil geochemical and I.P. surveys followed by diamond drilling is recommended at a total estimated cost of \$126,175.00.

February 1, 1982

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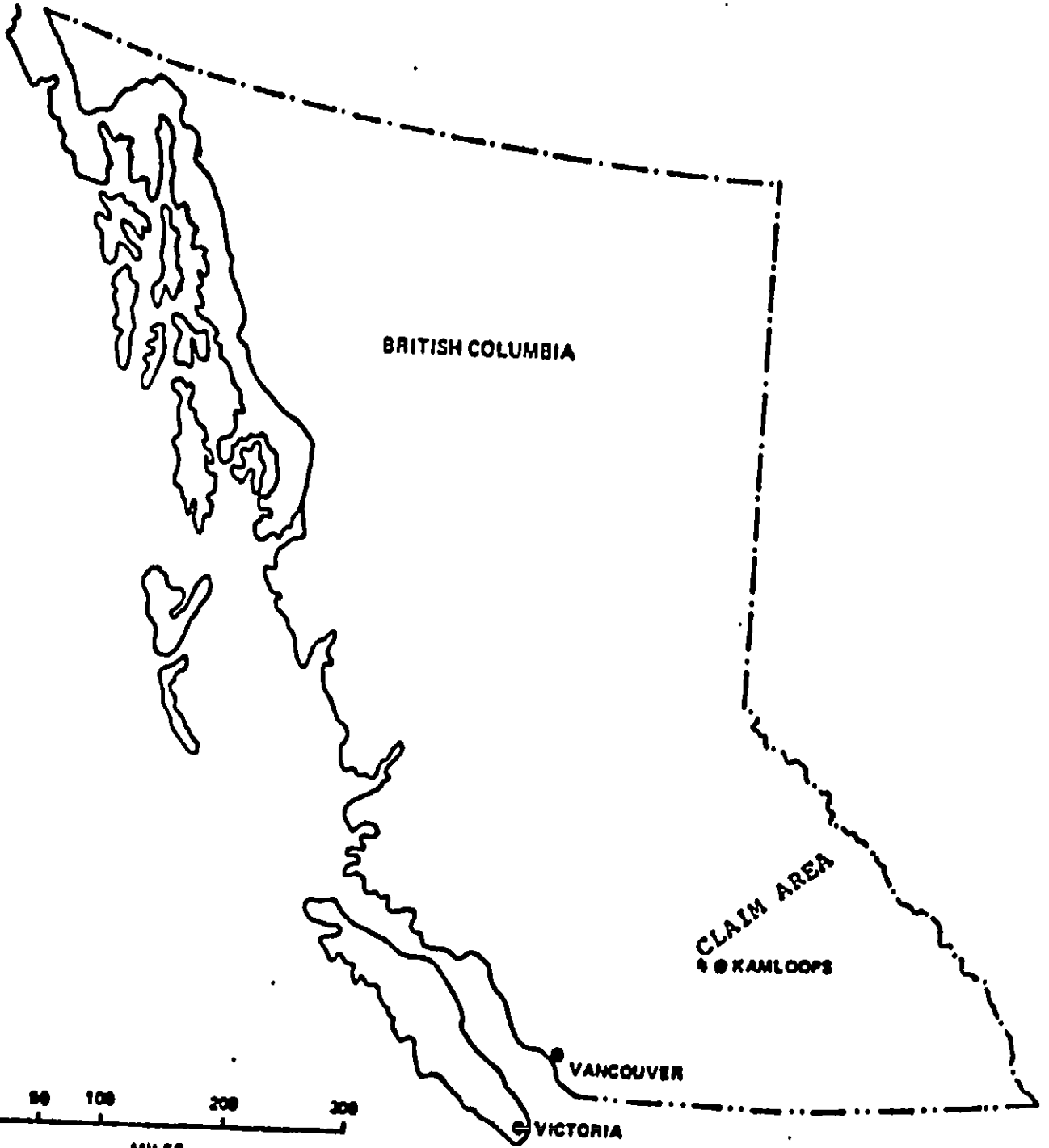
INTRODUCTION

The following report has been prepared at the request of Ninja Resources Ltd. who have acquired the Bobcat and Cougar claims, which are situated south and west of Walhachin, B. C. about 50 km. west of Kamloops.

The writer visited the claim area on January 31, 1981, accompanied by Mr. T. Rolston, manager of Columbia Geophysical Services Ltd. and Mr. G. Trout of Savona, B.C. travelling by helicopter chartered out of Kamloops, B.C.

An airborne VLF-EM and magnetometer survey was carried out over the property during January, 1981, by Columbia Geophysical Services Ltd.

The purpose of this report is to assess the geologic potential for occurrences of economic mineralization and to recommend an exploration programme thereon.



KAMLOOPS AREA  
INDEX MAP (B.C.)

PROPERTY

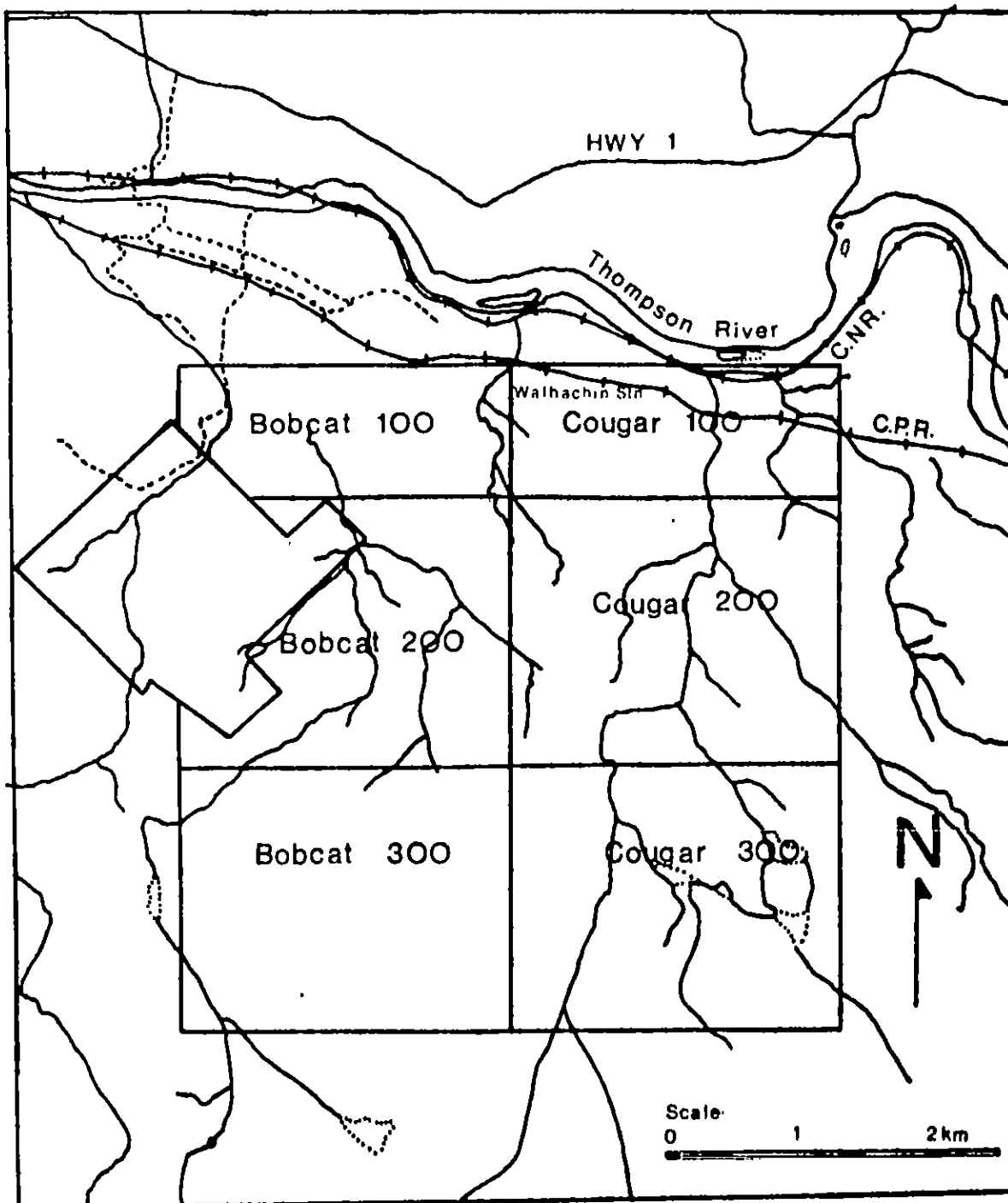
Approximate Coordinates: 50° 44' N., 121° 00' W.

The property consists of 6 located mineral claims totalling a nominal 100 units. The claims and record numbers are listed as follows:

<u>CLAIM NAME</u>	<u>RECORD NO. (mth)</u>	<u>EXPIRY DATE</u>
Cougar 100	3216 (1)	January, 1983
Cougar 200	3217 (1)	January, 1983
Cougar 300	3218 (1)	January, 1983
Bobcat 100	3219 (1)	January, 1983
Bobcat 200	3220 (1)	January, 1983
Bobcat 300	3221 (1)	January, 1983

Approximately ten units on the western side of the Bobcat 100 and 200 claims are in contravention of the Geo and Chief claim group, which is in good standing as of January, 1982. The Geo and Chief claims are not held by the owners of the Bobcat and Cougar claims. (See claim map on page following)

Ninja Resources Ltd.  
BOBCAT & COUGAR CLAIM MAP





### LOCATION & ACCESS

The property lies about 12 km. southwest of Savona, B.C., on the south side of the Thompson river. The Canadian Pacific and Canadian National railways pass through the northern part of the Cougar 100 claim. The claim area can be reached by dirt roads from the Walhachin turnoff on the Trans Canada Highway and from the Barnes Lake road which runs from Ashcroft to Savona. Scheduled air service is available at Kamloops, some 50 km. by road east of the claims.

### TOPOGRAPHY & VEGETATION

The topography is one of rolling hills with elevations ranging from about 350 meters to 850 meters. The region is situated within the dry belt of British Columbia with park-like forest and little underbrush.

### WATER & POWER

Sufficient water for exploration should be available from creeks running on the property, Pennie Lake, or the Thompson River which flows past the northern part of the Property.

Hydro-electric power is available at Savona or Walhachin.

HISTORY

Considerable exploration work was carried out in the area during the early 1970's sparked by the Afton Mines copper discovery located about 8 miles southwest of Kamloops, B.C.

Afton Mines Ltd., has been in continuous production since 1978 and is currently processing some 7500 tons of copper-gold-silver ore per day.

Several mercury showings occur in the area in carbonate zones usually within volcanics. The old Charbonneau property described in G.S.C. Memoir 249, pg. 86 lies within one quarter mile of Savona station. Several cuts exposed ankeritic carbonates, talc and veins and stringers of dolomite, or fragments of rock cemented by dolomite. Cinnibar was not observed at the time of examination by government geologists.

A percussion drilling programme consisting of five holes was carried out by B.P. Minerals Ltd. during 1976.

Following a regional geological reconnaissance, the Wal claim was staked in September, 1978, just west of Walhachin, B.C. in an area now substantially covered by the Bobcat 100 claim.

The Wal claim was subject of a geological, and reconnaissance geochemical survey carried out in 1978 and 1979 by Bethlehem Copper Corporation. Five E.M. lines were also completed,

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but did not locate targets.

A percussion drill programme of five or six holes was recommended to test the potential for copper mineralization adjacent to Rattlesnake Creek in geochemically anomalous areas however it is not known if these holes were drilled.

An airborne VLF-EM and magnetometer survey was conducted over the Bobcat and Cougar claims during January, 1981 by Columbia Geophysical Services Ltd., as part of a regional survey.

#### REGIONAL GEOLOGY

The area is underlain by the Triassic Nicola Group volcanics. This sequence is overlain by Kamloops Group volcanics and Tertiary sediments. The Nicola Group is intruded by Coast Intrusives consisting mainly of granodiorite and quartz-diorite and gabbro.

#### GEOLOGY OF THE PROPERTY

According to Cockfield (1947), the claim area is underlain chiefly by Cretaceous or Tertiary Sediments, for the most part conglomerate, but with some sandstone and shale. Simpson and Nethery (1979), refer to this unit as the Jurassic Ashcroft Group conglomerates and associated sediments and indicate that they are subhorizontal, and unconformably

overlie both the Triassic Nicola group volcanics and later intrusive rocks.

Flat-lying Kamloops Group volcanics and local sediments overlie the earlier rocks in large areas to the south and northwest of the claims. An area roughly equivalent to the Bobcat 100 and 200 claims and extending west to Pennie Lake was mapped in late 1978 by geologists from Bethlehem Copper corporation (Simpson and Nethery, 1979) Their work indicates that areas of the claim to the east of Rattlesnake Creek are underlain by conglomerates designated as Cretaceous or Tertiary. These are probably the rocks they referred to as "Jurassic Ashcroft Group". The north western sector of the map area is underlain by Kamloops Group volcanics. Between the Kamloops group on the northwest and the conglomerate on the east is a wedge of Triassic Nicola Group volcanics, containing bodies of limestone/marble in fault contact. This package is intruded by a body of hornblende diorite, which has in turn been intruded by a small plug of quartz porphyry which is exposed in the lower reaches of Rattlesnake Creek. This body contains considerable disseminated pyrite which has weathered out forming a prominent gossan. Narrow zones of skarn mineralization occur where the intrusives contact limestone bodies of the Nicola Group. An adaptation of the Bethlehem map, showing current claim boundaries, is included as an appendix.

MINERALIZATION IN THE AREA

Various occurrences of copper mineralization have been found in Nicola rocks in widely scattered locations from the Merritt area to the Kamloops area. The Kamloops area has been known in the past as a geological environment for several small copper deposits in and adjacent to the Iron Mask Batholith. Important current production comes from the Afton Mines deposit on the fringe of the Iron Mask Batholith.

Several mercury showings are known to occur in the general area and minor placer gold mining has been carried out on a few small creeks in the past. Low gold values have been reported to occur with pyrite in acid volcanic exposures.

A body of quartz diorite porphyry with associated intrusive breccia outcrops on Rattlesnake creek about 600 m south of the plug of quartz porphyry. The breccia contains disseminated chalcopyrite, which was the target of a 1976 percussion drilling programme by B. P. Minerals Ltd. Copper values averaged .02 - .03% with the highest being .056% over 10 feet.

Soil and rock geochemistry was done by Bethlehem over an area of the former WAL claim in 1978, indicating a zone between Rattlesnake and Brassy Creeks with a number of copper values greater than twice background. As well, there were high copper and moly values associated with skarn-type mineralization on the Geo and Chief claims, and some sporadic high zinc values.

### GEOPHYSICAL SURVEYS

#### SURVEY PROCEDURE

#### *SEATTLE TRANSMITTER*

During the month of January, 1981, an airborne combined VLF-EM and magnetometer survey was carried out over the claim group as part of a regional programme, using a Sabre Electronics Airborne system consisting of proton precession magnetometer and a VLF-Electromagnetic receiver. The detecting elements are located in a 2 meter "bird" towed 15 meters below the aircraft at a mean terrain clearance of 75 meters with average flight line spacing of 200 meters. Flight lines were orientated in a west-west direction.

Flight line control was visual using a topographical map on a scale of 1:10000, correlating prominent topographical features to the map and strip charts. There are numerous visual tie points, so that flight lines are considered to be accurately plotted.

The survey was flown in January, 1981, using a Bell 206 Jet Ranger helicopter chartered from Horizon Helicopters of Kamloops, B. C.

The air survey crew consisted of a three man crew:

1. Project Geophysical Supervisor, T. Rolston
2. Operator, A. E. Dodd
3. Navigator, M. F. Maclean

The total survey mileage flown was 362 kilometers and over the property area about 150 kilometers.

All data were recorded on analog strip chart recorders and data compiled on a map scale of 1:10000.

#### RESULTS OF SURVEY DATA

No VLF-EM anomalies were detected on the property. Background magnetics of the property are on the order of 3400 to 3600 gammas.

An east-west striking linear magnetic high in the Bobcat and Cougar 100 claims is probably due to Nicola volcanics. A spot high of 4200 gammas at the west end of this zone correlates fairly well with the plug of quartz porphyry described by Simpson and Nethery (1979).

A broad magnetic high area in the central part of the claim area is likely due to the hornblende diorite intrusive as well as Nicola volcanics. Some of the spot highs within this zone may be due to skarn-type magnetite occurrences. Lower magnetic areas correlate fairly well with areas underlain by sediments or Kamloops Group volcanics. The 4300 gamma high off the S.W. corner of the Bobcat 300 claim may represent an intrusive body similar to that in the Bobcat 100 area, or may be reflecting another patch of Nicola outcrop. This could likely be defined by reconnaissance geological mapping.



CONCLUSIONS & RECOMMENDATIONS

Ninja Resources Ltd. has acquired the Bobcat - Cougar claim group which is underlain by Nicola Volcanics intruded by complex intrusive bodies, and overlain unconformably by Jurassic? conglomerates which are in turn overlain by Kamloops Group volcanics. Skarn-type and disseminated copper and molybdenum mineralization is associated with some of the intrusions, which magnetic data indicate could be fairly extensive.

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lithology may occur elsewhere in the Bobcat and Cougar claims and therefore a two-stage exploration programme is recommended:

STAGE I

1. Reconnaissance geological mapping and rock sampling.
2. Ground magnetometer follow-up of airborne anomalies.
3. Soil geochemistry in selected areas.
4. I.P. survey in selected areas.

STAGE II

1. Contingent upon favourable results of the first stage of work, diamond drilling.

ESTIMATED COSTS OF PROGRAMME

STAGE I:

1. Geological mapping and sampling	\$ 7,500.00
2. Ground Magnetometer survey	9,000.00
3. Soil sampling survey & analyses	12,000.00
4. Transportation, accomodation, assays, etc.	5,000.00
5. I.P. survey- 10-20 km @	16,000.00
6. Engineering, reports, maps, etc.	<u>5,000.00</u>
Subtotal:	\$ 54,500.00
Contingency @ 15%	8,175.00
Total of Stage I:	\$ 62,675.00

STAGE II:

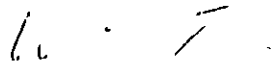
Contingent upon favourable results obtained by the first stage of work.

1. Diamond drilling est. 700 metres @\$75.00/m	\$ 52,500.00
2. Field supervision, logging, assaying, etc.	7,000.00
3. Engineering, reports, etc.	<u>4,000.00</u>
Subtotal:	\$ 63,500.00

TOTAL BOTH STAGES: \$126,175.00

Further work will be contingent upon results of the above programme of work.

Respectfully submitted,

  
W. G. Timmins, P. Eng., P. Geol.

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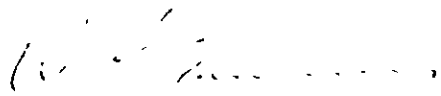
**CONSULTING GEOLOGISTS**

CERTIFICATE

I, WILLIAM G. TIMMINS, maintaining offices at 502 900 6th Avenue, S. W., Calgary, Alberta, do hereby certify that:

1. I am a geologist having been practising my profession since 1963.
2. I am a graduate of the Provincial Institute of Mining, Haileybury, Ontario, and have attended Michigan Technological University, Houghton, Michigan.
3. I am a member in good standing of the association of Professional Engineers of British Columbia, and of the Association of Professional Engineers, Geologists and Geophysicists of Alberta.
4. I have no interest direct or indirect in the property or securities of Ninja Resources Ltd., nor do I expect to receive any such interest.
5. This report is based on a study of government and private reports, an analysis of geophysical data provided by Columbia Geophysical Services Ltd., and a visit to the property on January 31, 1981.

Dated at Calgary, Alberta this 1st day of February, 1982.

  
W. G. Timmins, P. Eng., P. Geol.

REFERENCES

Cockfield, W. E., 1947, Geology and Mineral Deposits of  
Nicola Map-Area, British Columbia - G.S.C.  
Memoir 249

Nethery, R. J. and Simpson, R. G., 1979, Geological, Geophysical  
and Geochemical Report on the "WAL" CLAIM and  
General Walhachin Reconnaissance Program, Kamloops  
Mining Division. B.C. Mineral Resources Branch  
Assessment Report No. 7531, filed by Bethlehem  
Copper Corporation

C. PROSPECTING

(Details as per report submitted)

COST

I wish to apply \$ \_\_\_\_\_ of this work to the claims listed below.  
 (State number of years to be applied to each claim and its month of record)

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

Combined geophysical airborne magnetometer and

VLF electromagnetic survey,  
 365 line km. \$100.00

COST
\$ 36,500.00

TOTAL \$ 36,500.00

I wish to apply \$ **10,000.00** of this work to the claims listed below.  
 (State number of years to be applied to each claim and its month of record)

Apply one year work to Cougar 100, Record #3216(1)  
 Cougar 200, Record #3217(1)  
 Cougar 300, Record #3218(1)  
 Bobcat 100, Record #3219(1)  
 Bobcat 200, Record #3220(1)  
 Bobcat 300, Record #3221(1)

Report to follow  
 within 30 days

NOTE—Dollar value of work done under A, B, C, or D sections, totalling \$200, may be applied as one year's work.

Who paid for the above-described work?

Name **Cavican Enterprises Ltd.**  
 Address **7050 Halligan Street,  
 Burnaby, B.C., V5E 1R6**

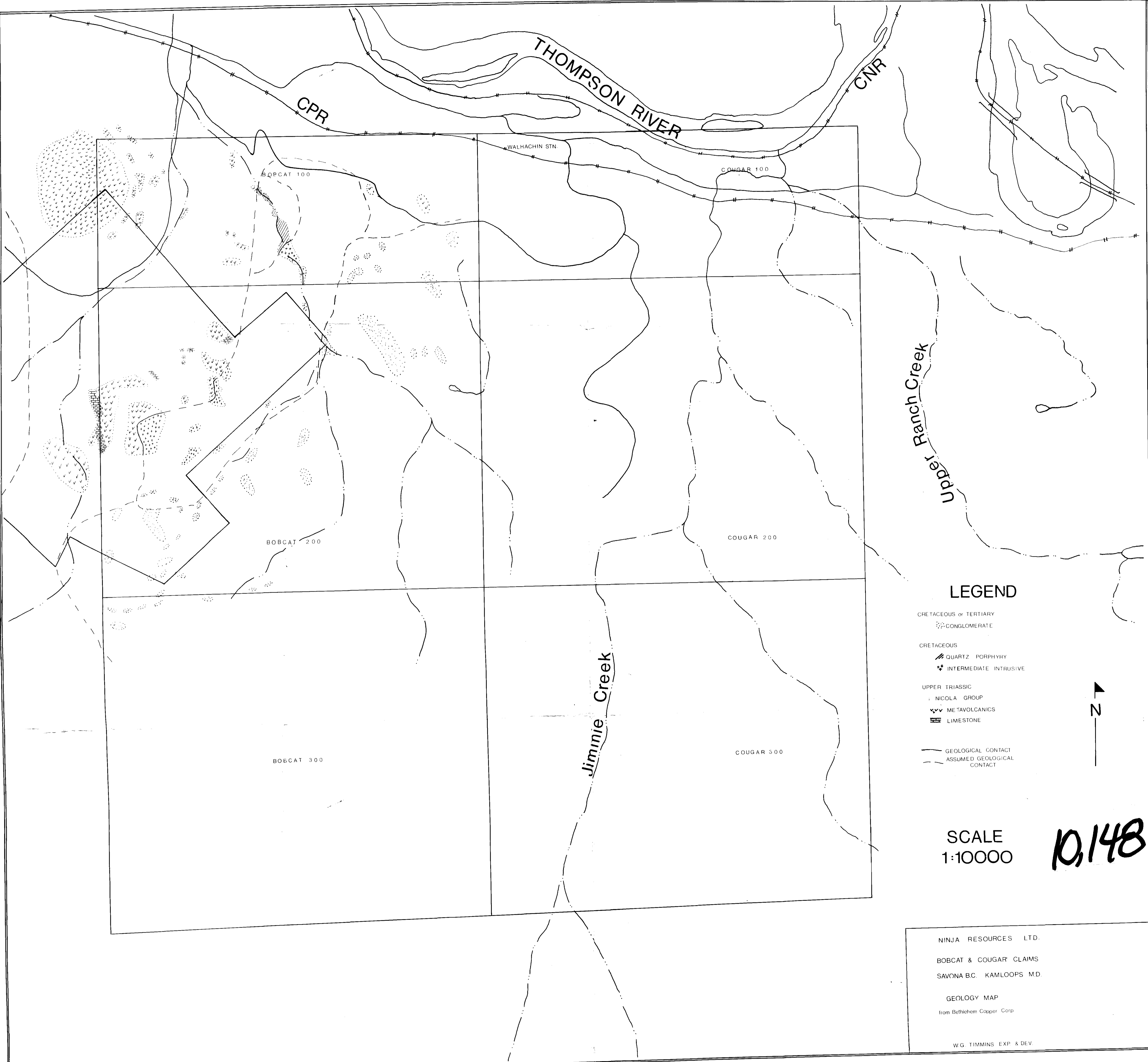
If you intend to claim a refund of cash in lieu under the provisions of the *Mineral Act*, you must make application on this affidavit under A, B, C, or D sections as applicable.

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 *Mineral Land Tax Act*.

SWORN and subscribed to at \_\_\_\_\_  
 this \_\_\_\_\_ day of \_\_\_\_\_  
 19 \_\_\_\_\_, before me—  
 +

*[Handwritten Signature]*

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



**LEGEND**

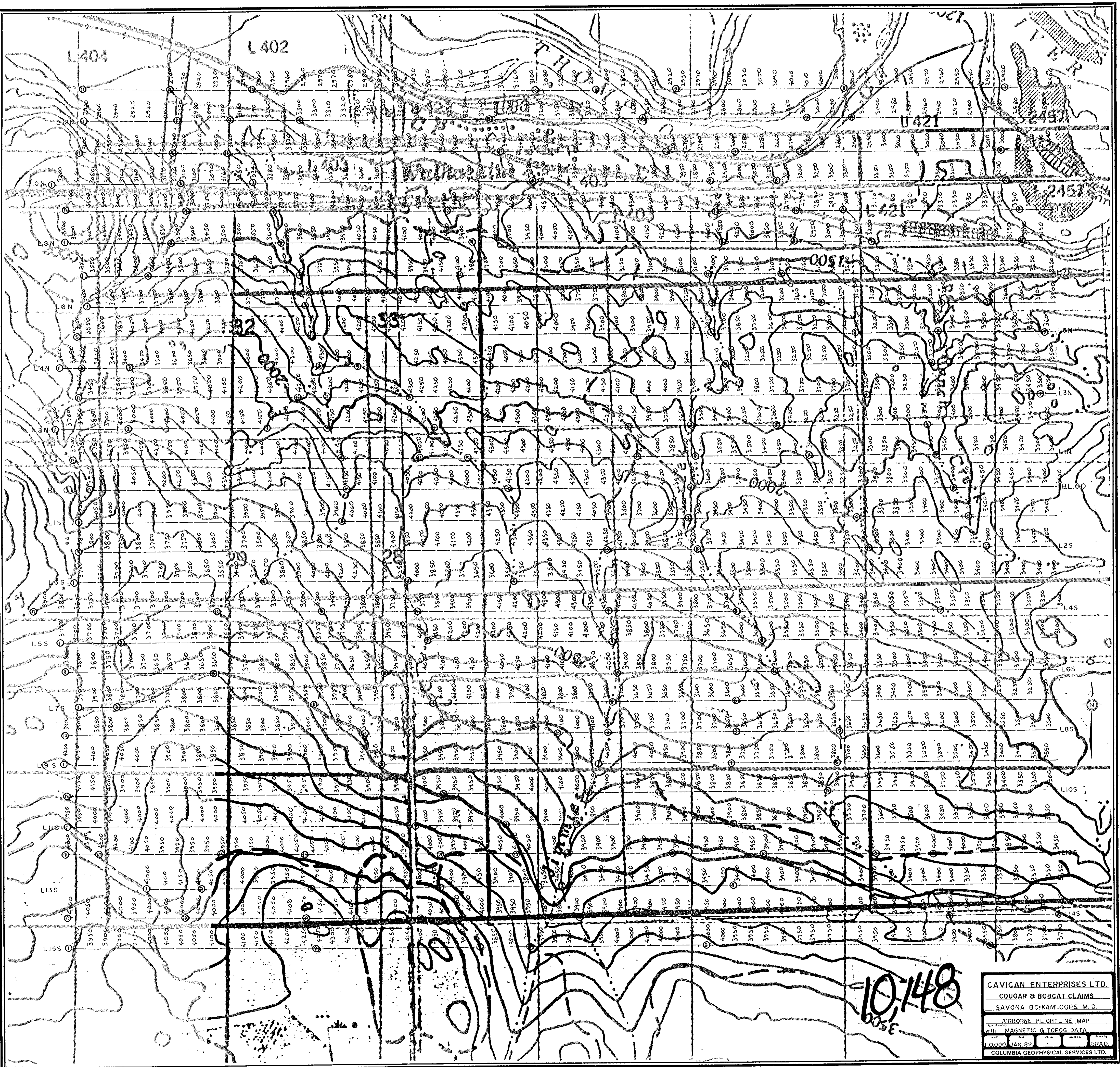
- CRETACEOUS or TERTIARY
  - CONGLOMERATE
- CRETACEOUS
  - ▨ QUARTZ PORPHYRY
  - ✦ INTERMEDIATE INTRUSIVE
- UPPER TRIASSIC
  - ▨ NICOLA GROUP
  - ✦ METAVOLCANICS
  - ▨ LIMESTONE
- GEOLOGICAL CONTACT
- - - ASSUMED GEOLOGICAL CONTACT



SCALE  
1:10000

10,148

NINJA RESOURCES LTD.  
BOBCAT & COUGAR CLAIMS  
SAVONA B.C. KAMLOOPS M.D.  
  
GEOLOGY MAP  
from Bethlehem Copper Corp.  
  
W.G. TIMMINS EXP & DEV.



CAVICAN ENTERPRISES LTD.  
COUGAR & BOBCAT CLAIMS  
SAVONA BC: KAMLOOPS, M.D.

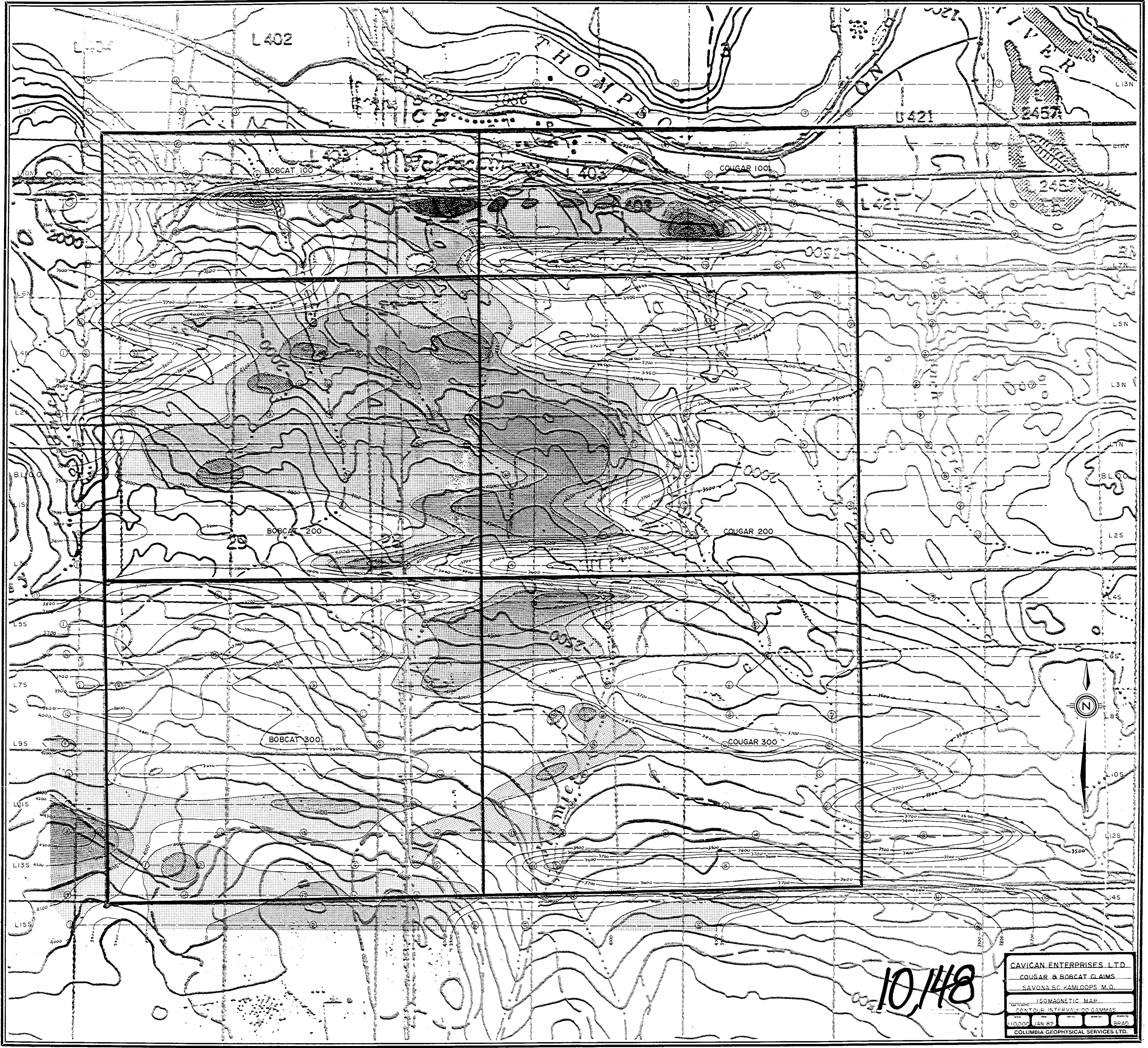
AIRBORNE FLIGHTLINE MAP  
WITH MAGNETIC & TOPOS DATA

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COLUMBIA GEOPHYSICAL SERVICES LTD.

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L 402

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BOBCAT 100

COUGAR 100

L 421

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BOBCAT 200

COUGAR 200

BOBCAT 300

COUGAR 300



10,148

CAVICAN ENTERPRISES, LTD.  
 COUGAR & BOBCAT CLAIMS  
 SAVONA B.C. KAMLOOPS M.D.

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ISOMAGNETIC MAP  
 CONTOUR INTERVAL: 100 GAMMAS

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 COLUMBIA GEOPHYSICAL SERVICES LTD.