

1982 Assessment Report

82-463-10657

Geophysical Survey,

VLF-EM and Magnetometer

Title: PRINCE CLAIM GROUP

Claims: PRINCE 2, PRINCE 3

Commodity: Copper, Silver, Gold

Location: Boulder Mountain - Similkameen M.D.
92H 10W
49 36' N 120 50' W

Consultant L. Sookochoff, P.Eng.
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Author 1406-1055 West Georgia Street
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Owner and BOULDER MOUNTAIN RESOURCES LTD.
Operation 402-509 Howe street
Vancouver, B.C.

Work Dates: May 20, 1982 to June 28, 1982

Submittal Date: July 6, 1982

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT

10657

PART
2 of 2

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1982 Assessment Report

Geophysical Survey

VLF-EM and Magnetometer

PRINCE CLAIM GROUP, SIMILKAMEEN M.D.

Part A

SUMMARY AND CONCLUSIONS

The Prince Claim Group of Boulder Mountain Resources Ltd. is located seven km northwest of Tulameen in south central British Columbia.

The property is situated within a belt of volcanic and sedimentary Nicola Rocks which are flanked by and enclose stocks of intrusives with which three producing mines within this belt are associated.

The property is adjacent to claims where known intrusives occur and where significant zinc and gold values occur within a sercitic shear zone. In addition, exploration during the early 1970's on the adjacent property delineated massive sulphide occurrences in a greenstone-rhyolitic environment.

During the previous exploration a copper occurrence was discovered which is now within the northeast portion of the Prince 2 claim.

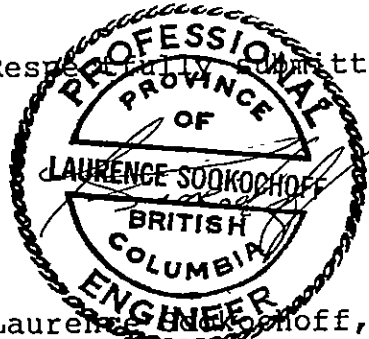
The VLF-EM and magnetometer survey indicated anomalous zones which in some cases are correlative with geochemical anomalies that were delineated in a survey performed in association with the geophysical program. In the absence of specific geological information, which would be provided in a follow-up exploration program, three prime correlative anomalous areas could reflect sulphide structurally controlled localized zones of massive sulphides.

These prime correlative areas, in addition to other correlative anomalous areas in an area as outlined on the Compilation Map (Fig. 4) warrant detailed exploration coverage.

RECOMMENDATIONS

It is recommended that detailed geophysical and geochemical surveys in addition to geological mapping be carried out to provide additional information in the selection of specific sites for trenching and sampling prior to sub-surface testing.

Respectfully submitted,



Laurence Sookhoff, P.Eng.
Consulting Geologist

The seal is circular with a double-line border. The outer ring contains the text 'PROFESSIONAL ENGINEER' at the top and 'BRITISH COLUMBIA' at the bottom. The inner circle contains 'PROVINCE OF' at the top, 'LAURENCE SOOKHOFF' in the center, and 'BRITISH COLUMBIA' at the bottom. There are handwritten initials or a signature over the seal.

July 6, 1982
Vancouver, B.C.

1982 Assessment Report

Geophysical Survey

VLF-EM and Magnetometer

PRINCE CLAIM GROUP

Part B

INTRODUCTION

During the latter part of May 1982 a geophysical survey was completed over approximately 16 units of the eastern portion of the two claim Prince claim group.

The VLF-EM and magnetometer survey was part of the first stage of the recommended exploration and development program as set out in the writer's original report on the property dated March 22, 1982.

The purpose of the survey was to delineate prime, exploration areas that would be covered in detail on a follow-up program.

Although the western portion of the claim group was not covered under the Stage I program due to snow cover, a reconnaissance survey over this area can be completed in conjunction with Stage II of the proposed exploration program.

PROPERTY

The property is comprised of two claims totaling 40 units, however Prince #2 claim contains only an effective 8 units as the southern portion of claim overstates a claim in good standing. Particulars are as follows:

<u>Claim Name</u>	<u>Record No.</u>	<u>Expiry *</u>
Prince #2	1448	July 3, 1984
Prince #3	1449	July 3, 1984

* Pending approval of two years work applied on May 28, 1982.

LOCATION AND ACCESS

The property is situated on the flanks of Boulder Mountain and Mount Spearing seven kilometers northwest of Tulameen and two km west of Otter and Frembd Lakes.

The property is accessible by a five kilometer four-wheel drive road branching off to the west at km 33 of an all weather secondary Princeton-Tulameen-Aspen Grove road.

WATER AND POWER

Water is plentiful on the property from either many tributaries at the headwaters of Elliot and Lockie Creeks, however water may be a rarity during the winter months.

Initially diesel-electric power would be required for any development purposes. Commercial power sources are within two kilometers of the property.

TOPOGRAPHY AND TIMBER

Elevations range up to 1700 meters on the property with gentle to moderate northerly slopes. Relief is in the order of 500 meters.

Moderate to heavy stands of pine cover the property which if required would provide sufficient timber for mining or exploration purposes. Finished timber is available locally.

HISTORY

The history of the immediate area stems from the adjacent Cousin Jack Group which was staked before 1901, and has been explored intermittently since. In 1967 it was reported that Nelway Mines Ltd. carried out a geochemical survey and some surface diamond drilling on the Cousin Jack Group which consisted of a total of 36 claims centered on the crown granted mineral claims.

In 1971 Gold River Mines carried out 16.25 miles of line cutting, an 800 sample geochemical survey, a VLF EM survey and an I.P. survey which included the northeast portion of the present Prince claim group.

In 1973 Gold River Mines and Enterprises Ltd. completed "5,800 feet" of diamond drilling on the Cousin Jack showings and on the two showings on the property adjacent and to the south of the northeastern portion of the present Prince claim group.

RESULTS OF PREVIOUS WORK ON CLAIM GROUP

Work completed in the area by Gold River Mines in 1971 included approximately a two unit area of the northeastern present Prince claim group. The work included a geochemical survey, an I.P. survey and a VLF-EM survey.

A number of anomalies are indicated including:

1. A VLF-EM anomaly to the east of the copper showing
2. A low chargeability anomalous zone correlating to the copper showing
3. Sub-anomalous copper values - localized and correlating with the copper showing

GENERAL GEOLOGY

A northerly trending belt of Nicola rocks ranging up to 40 km wide stretches northward from near the U.S. border to beyond Kamloops Lake. Within the Nicola Group, which is comprised of vari-colored lavas, argillite, tuffs, limestones, chlorite and sericite schists are more recent formations of sedimentary rocks as well as stocks and plugs of Coast or Copper Mountain Intrusives. Coast Intrusives are also peripheral to the belt of Nicola Rocks.

Three major ore bodies from which production is currently in progress in addition to many mineral showings occur within the Nicola rocks; The Afton deposit is associated with the Iron Mask Intrusive near Kamloops; the Craigmont deposit near Merritt is associated with a limestone of the Nicola series and adjacent to the Guichon batholith; and the Similkameen deposit near Princeton is associated with the Lost Horse Intrusive and Nicola rocks. These three deposits are intimately associated with intrusives.

The geology of the area also lends itself to volcanogenic related deposits to which an occurrence on Boulder Mountain may be attributed or Sustut type volcanic bed-stratigraphic controlled deposits which some Aspen Grove occurrences may relate to.

Structural control relationships are also significant in localizing zones of mineralization. The Similkameen or Copper Mountain ore bodies occur fifteen km south of Princeton at the projected intersection of two major faults - the Summers Fault and the Otter Lake Fault Systems. The Otter Lake Faults trends northwesterly from south of Princeton to Tulameen and through the Boulder Mountain Property.

PROPERTY GEOLOGY AND MINERALIZATION

G.S.C. Map No. 888A indicates the property covers the Nicola Group of rocks. A mapping program carried out by the writer in 1972 which included the northeastern portion of the property revealed greenstones with occasional quartz stringers, light to moderate localized disseminated pyrite zones and a copper showing. The greenstone varies as to porphyritic content, silica and general alteration. Minor structures and fractures trend northwesterly, indications of the paralleling adjacent major Otter Fault zone.

Quartz veins and stringers predominantly barren strike northwesterly and northeasterly and dip steeply. Pyrite is associated with quartz veining.

A copper showing occurs in the northeastern section of the property. The showing is of moderate chalcopyrite mineralization associated with northeasterly trending quartz veins. Brecciation and pyrite is associated with the mineralization.

In the immediate area, three zones of mineralization occur on an adjacent property. To the south two areas of copper mineralization reveal up to "5.55% Cu across 7.0 feet" "in a greenstone-rhyolite environment and within a mineralized area up to 500 meters long, 800 meters to the south in addition to 7.23% Cu across 1.8 feet" 2300 meters to the south in an area of mineralization 80 meters by 120 meters.

To the southeast a shear zone has altered the greenstone to chlorite and sericite schists.

"These schists have a general northwesterly strike and dip at various angles to the west. In them are four or more zones of more intense shearing in which irregular veins and bodies of quartz have been deposited. Both the quartz bodies and in places the schists themselves have been mineralized with pyrite, sphalerite, galena and chalcopyrite, but so irregularly that, although the zones have been traced for considerable distances, it is difficult to determine the continuity or grade of the orebodies. The principal value is in zinc, which is also accompanied by significant amounts of gold. A number of chip samples taken across widths of from 2 to 6 feet by the Resident Engineer returned from 2.3 to 19.1 per cent zinc and from a trace to 0.32 ounce a ton in gold.

Zone No. 1, lying to the south and west of the cabin, has been traced on the surface for some 1,200 feet and is opened up by two crosscut adits and a number of open-cuts. So irregular has mineral deposition been in this zone that its limits have not been defined. Zone No. 2, immediately north of the cabin, has been traced by open-cuts for 550 feet, and much resembles the first. Zone No. 3 lies some 500 feet to the north and east of No. 2 zone, and has been traced for 350 feet by four open-cuts. These have exposed ribs of quartz and irregularly disseminated sulphides. Zone No. 4, 100 feet or so to the northeast of No. 3 zone, has been traced for some 200 feet by three open-cuts, a short adit crosscut, and a shaft. It is mineralized quite irregularly, but in places the occurrences are of good grade. Several open cuts and at least one short adit, prove the existence of other zones intermediate between the four mentioned, but as yet none of these has been explored to any extent."

Structurally, northerly trending zones predominate in addition to gentle northeasterly and northwesterly trends. The Cousin Jack zone is within a gentle concave (from the west) zone.

GEOPHYSICAL SURVEY

1. Survey Method

The grid system established for geochemical survey was utilized in the VLF-EM and magnetometer survey. The grid system was based on east-west lines at 120 meter intervals which covered most all of the eastern Prince 2 claim and westward into the eastern portion of the adjacent Prince 3 claim.

The grid lines were oriented as perpendicular as possible to the indicated structural trend in the area.

Eighteen such adjacent grid lines were traversed with readings taken at 30 meter intervals along the lines. A total of 19.2 line km of geophysical survey were thus completed.

VLF-EM SURVEY

A Sabre Model 27 VLF-EM Receiver instrument manufactured by Sabre Electronics of Vancouver was utilized in the VLF-EM survey.

The VLF-EM Receiver measures the amount of distortion produced in a primary transmitted magnetic field - in this case Seattle at a frequency of 24.6 Khz - and a secondary magnetic field which may be induced by a conductive mass such as a sulphide body. The VLF-EM unit - due to its relatively high frequency - can detect low conductive zones such as fault or shear zones, carbonaceous sediments or lithological contacts.

The major disadvantage of the VLF method, however is that the high frequency results in a multitude of anomalies from unwanted sources such as swamp edges, creeks and topographical highs.

In processing the field results, the VLF-EM readings were Fraser Filtered. This method transforms the somewhat noisy, noncontourable dip-angle data into less noisy, contourable data. The positive values are only contoured with the conductive zones represented as peaks in positive values.

MAGNETOMETER SURVEY

The magnetometer survey was carried out utilizing a Model G-10 fluxgate magnetometer manufactured by Geotronics Instruments of Vancouver.

All rocks contain some magnetite from very small fractions of a percent up to several percent, and even several tens of percent in the case of magnetic iron deposits. The distribution of magnetite or certain characteristics of its magnetic properties may be used in exploration or mapped for other purposes.

The anomalies from naturally occurring rocks and minerals are due chiefly from the presence of the most common magnetic mineral magnetite or of related minerals including ilmenite and pyrrhotite (with sulfide mineralization).

Magnetic anomalies in the earth's magnetic field are caused by two different kinds of magnetism: induced and remanent. Induced magnetization refers to the action of the field on the material wherein the ambient field is enhanced and the material itself acts as a magnet.

The proportion of magnetism is related to the magnetic susceptibility of the material. Typically, more basic igneous rocks have a higher susceptibility than the acid igneous rocks; the latter in turn have a higher susceptibility than sedimentary rocks.

The remanent magnetization is often the predominant magnetization (relative to the induced magnetization) in many igneous rocks. The remanent mineralization is important in geological mapping.

Magnetic minerals may also occur in association with sulphide zones or may be decomposed through the action of dynamic or thermal metamorphism. Thus the survey results could indicate lithology structure, alteration patterns and most significantly, mineral zones in a favorable geological environment.

From the field data, an average determined value of 57,400 gammas was subtracted from each reading and the results were contoured on 100 gamma intervals. The results over the southern portion of the surveyed area were somewhat at greater variance, however the general relative magnetometer high and low are apparent and provide useful data for ensuing surveys over specific areas.

SURVEY RESULTS

The survey results are more appropriately interpreted in association with the conjunctive exploration data - namely the geochemical survey results. The parameters of interpretation would exclude the benefit of surficial geological information, however in a general discussion, the assumption is that the anomalous areas are underlain by Nicola volcanics and that the VLF anomalies are structural with possible massive sulphide localizations (without magnetic minerals).

The prime correlative anomalous zones would thus include:

Area A (Compilation Map)

1. The northern anomaly where an indirect correlation of a magnetometer low and VLF-EM anomaly is indicated with a silver anomalous and localized copper sub-anomalous zone.

Area B

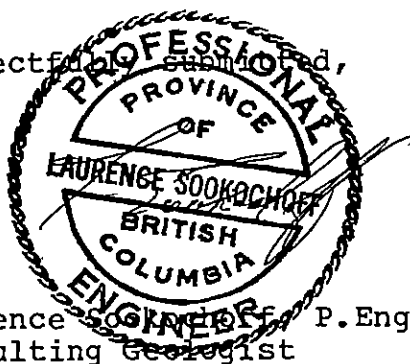
1. Anomaly a where a localized direct correlation anomalous zone is expressed. A VLF-EM, copper and zinc anomalous zone is present within a general magnetometer low area.
2. Anomaly b along the south eastward extension of a and of similar expression.

RECOMMENDED EXPLORATION AND DEVELOPMENT PROGRAM

The prime anomalous areas warrant detailed examination, however those in addition to the other correlative anomalous zones should be covered in the second stage of the exploration program as outlined in the writer's geological report on the property dated March 22, 1982.

The area to be covered in the follow-up program is as outlined in the Compilation Map (Fig 4) and would include detailed geochemical and geophysical surveys in addition to geological mapping.

Respectfully,
Submitted,



Laurence Sookchoof, P. Eng.
Consulting Geologist

Vancouver, B.C.
July 6, 1982

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CERTIFICATE

I, Laurence Sookochoff, of the City of Vancouver, in the Province of British Columbia, do hereby certify:

That I am a Consulting Geologist with the firm of Pan-American Consultants Ltd. of 1406-1055 West Georgia Street, Vancouver, B.C.

I further certify that:

1. I am a graduate of the University of British Columbia (1966) and hold a B.Sc. degree in Geology.
2. I have been practising my profession for the past sixteen years.
3. I am registered with the Association of Professional Engineers of British Columbia.
4. The information for the accompanying report is based on pertinent material as cited under references and from work done on the property during May 20 - May 30, 1982.
5. Neither I or Pan-American has direct or indirect interest in the property described herein, or in the securities of Boulder Mountain Resources Ltd.



Laurence Sookochoff, P.Eng.
Consulting Geologist

July 6, 1982
Vancouver, B.C.

1982 Assessment Report
 Geophysical Survey
 VLF-EM and Magnetometer
AFFIDAVIT OF EXPENSES

The geophysical survey was carried out on the Prince Claim Group, Boulder Mountain, Similkameen M.D., B.C. to the value of the following:

Field

Access expense	\$ 150.00
Fieldwork - 2 men - May 20 to May 30, 1982	1,400.00
Vehicle rental (4 X 4) 4 days @ \$65	260.00
Room and Board 2 men @ \$40/man day for 4 days	320.00
Survey Supplies	200.00
EM and Magnetometer Rental	200.00

Supervision

L. Sookochoff, P. Eng. 2 days @ \$400	800.00
Vehicle rental (4 X 4) 2 days @ \$65	130.00
Room and Board 2 days @ \$50	100.00

Data and Report

Data compilation	300.00
Rough Drafting	200.00
Final Drafting	250.00
Sepias, photocopying maps	140.00
Report	1,250.00

Office overhead - telephone - typing, photocopying report etc.	350.00
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\$ 6,050.00
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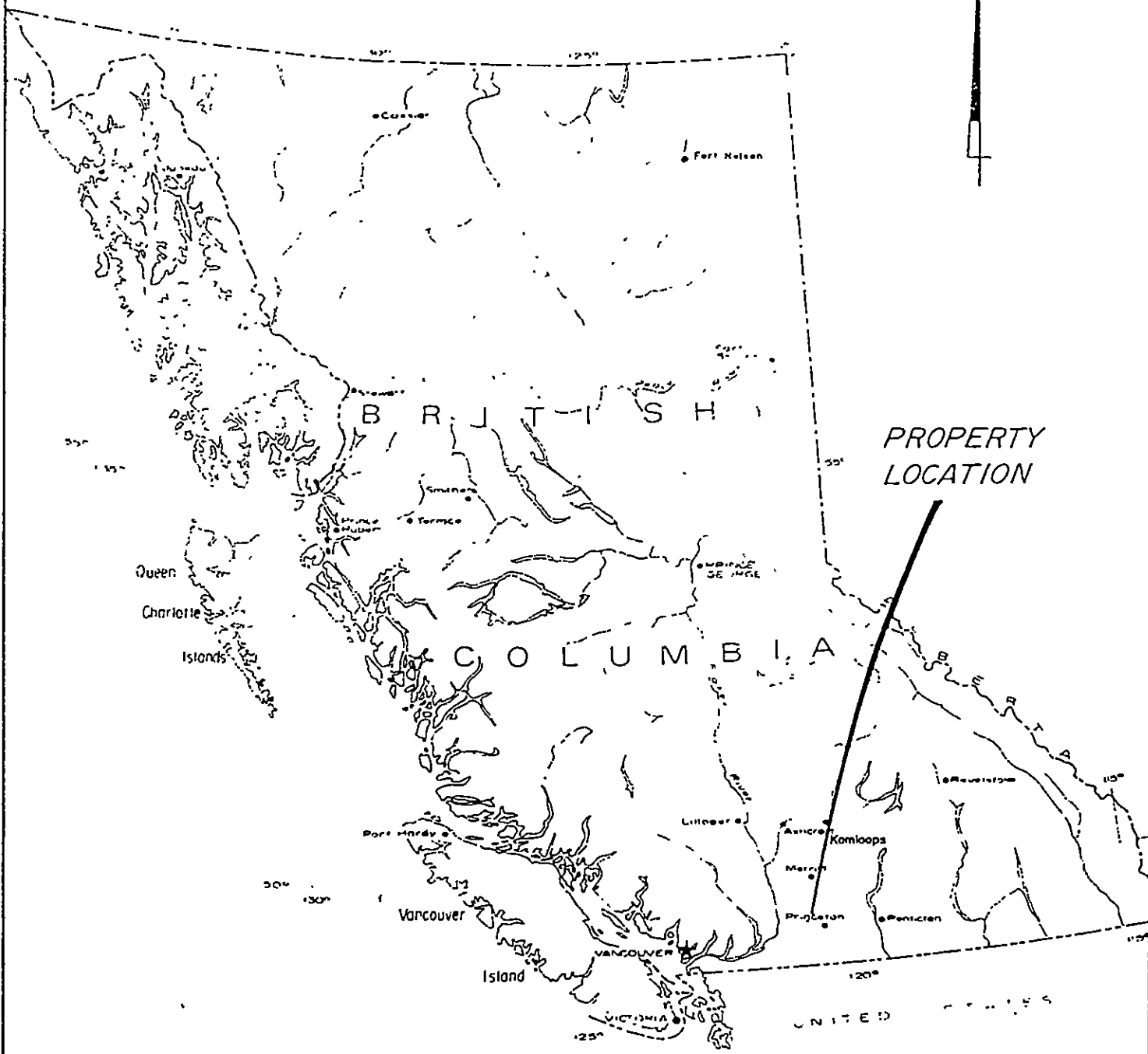


FIG. 1



BOULDER MOUNTAIN RESOURCES LTD.
BOULDER MOUNTAIN PROPERTY
SIMLKAMEEN M.D., B.C.
LOCATION MAP

CHECKED	DATE March 1982
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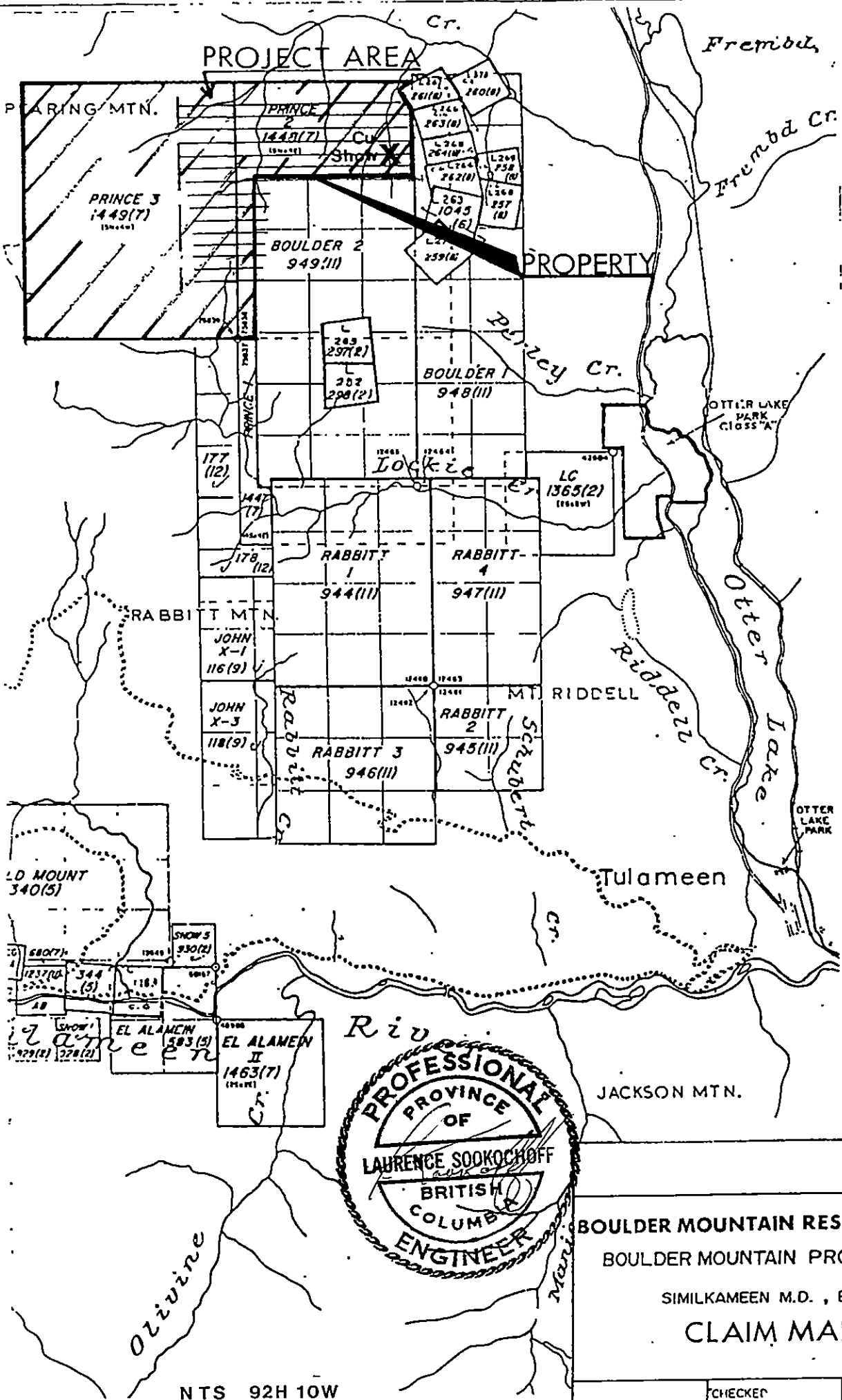


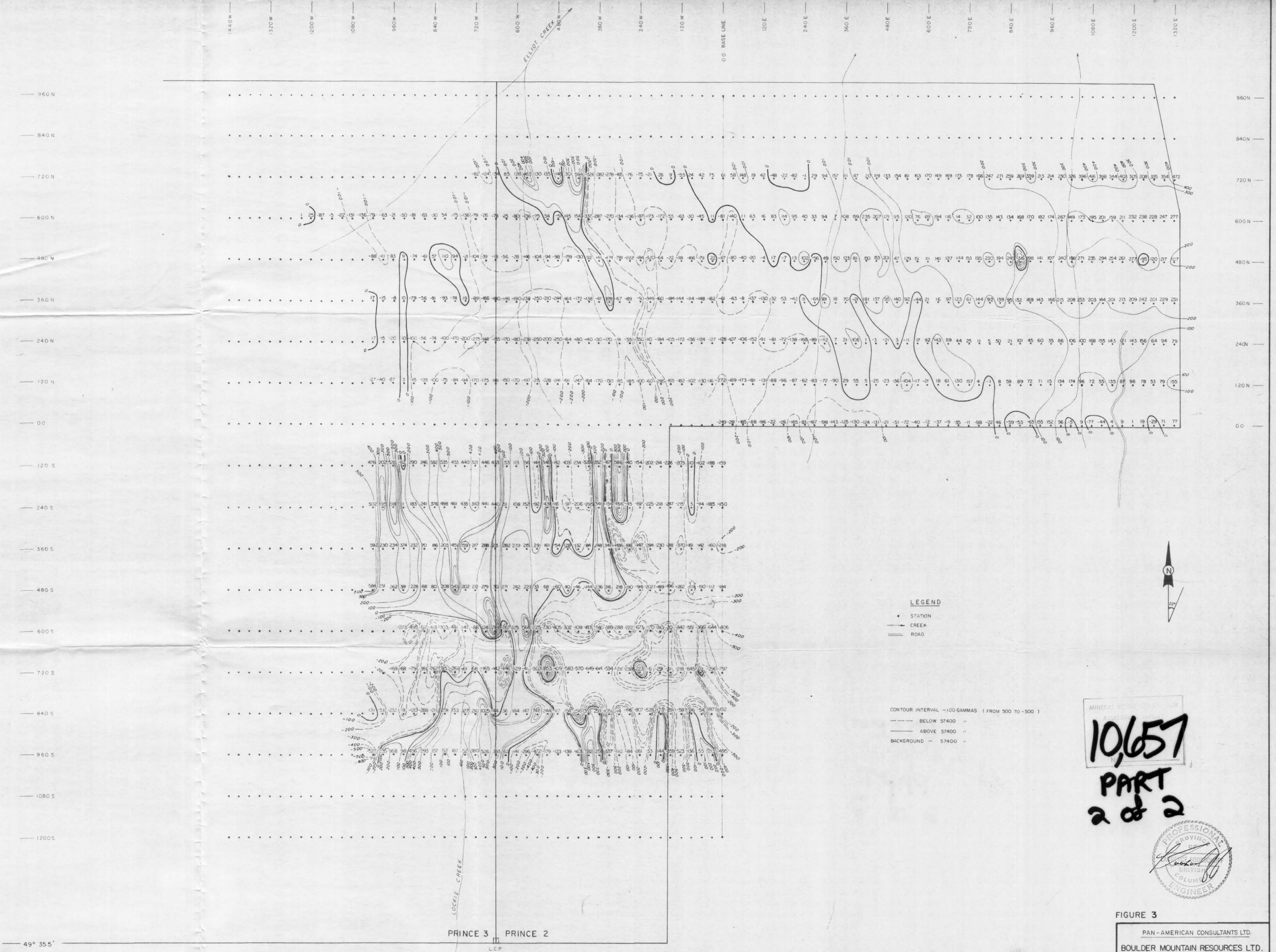
Fig. 2a



BOULDER MOUNTAIN RESOURCES LTD.
BOULDER MOUNTAIN PROPERTY
 SIMILKAMEEN M.D., B.C.
CLAIM MAP

NTS 92H 10W

CHECKED _____ DATE May - 1982

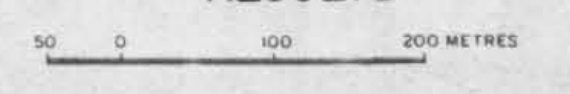


MINERAL RIGHTS
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 PART
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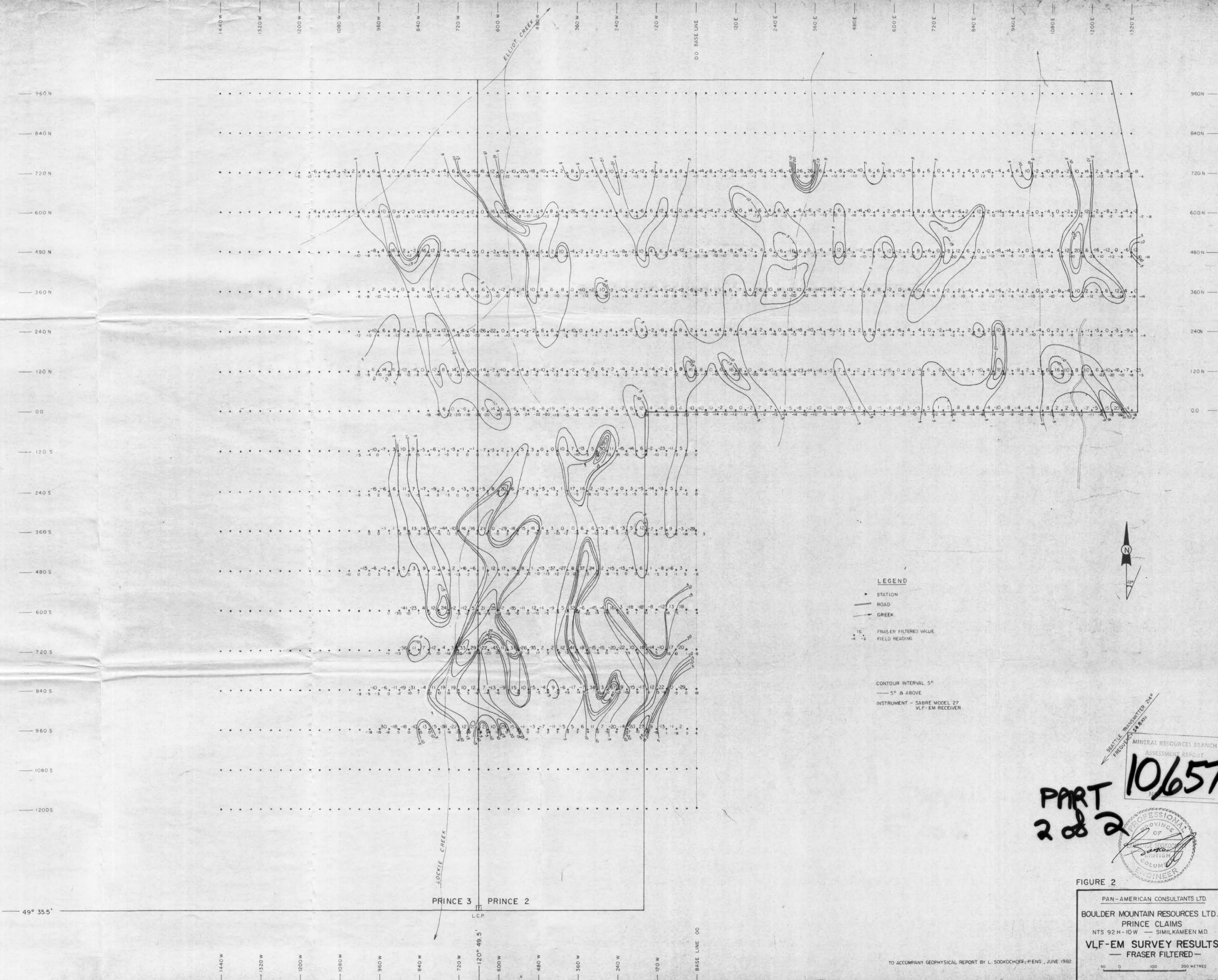
FIGURE 3

PAN-AMERICAN CONSULTANTS LTD.
 BOULDER MOUNTAIN RESOURCES LTD.
 PRINCE CLAIMS
 NTS 92 H-10 W — SIMILKAMEEN M.D.
 MAGNETOMETER SURVEY RESULTS



SCALE 1:5000 MAY 1982

TO ACCOMPANY GEOPHYSICAL REPORT BY L. SOOKCHOFF, P. ENG., JUNE 1982.



LEGEND

- STATION
- ROAD
- CREEK
- 16 FRASER FILTERED VALUE
- 2 FIELD READING

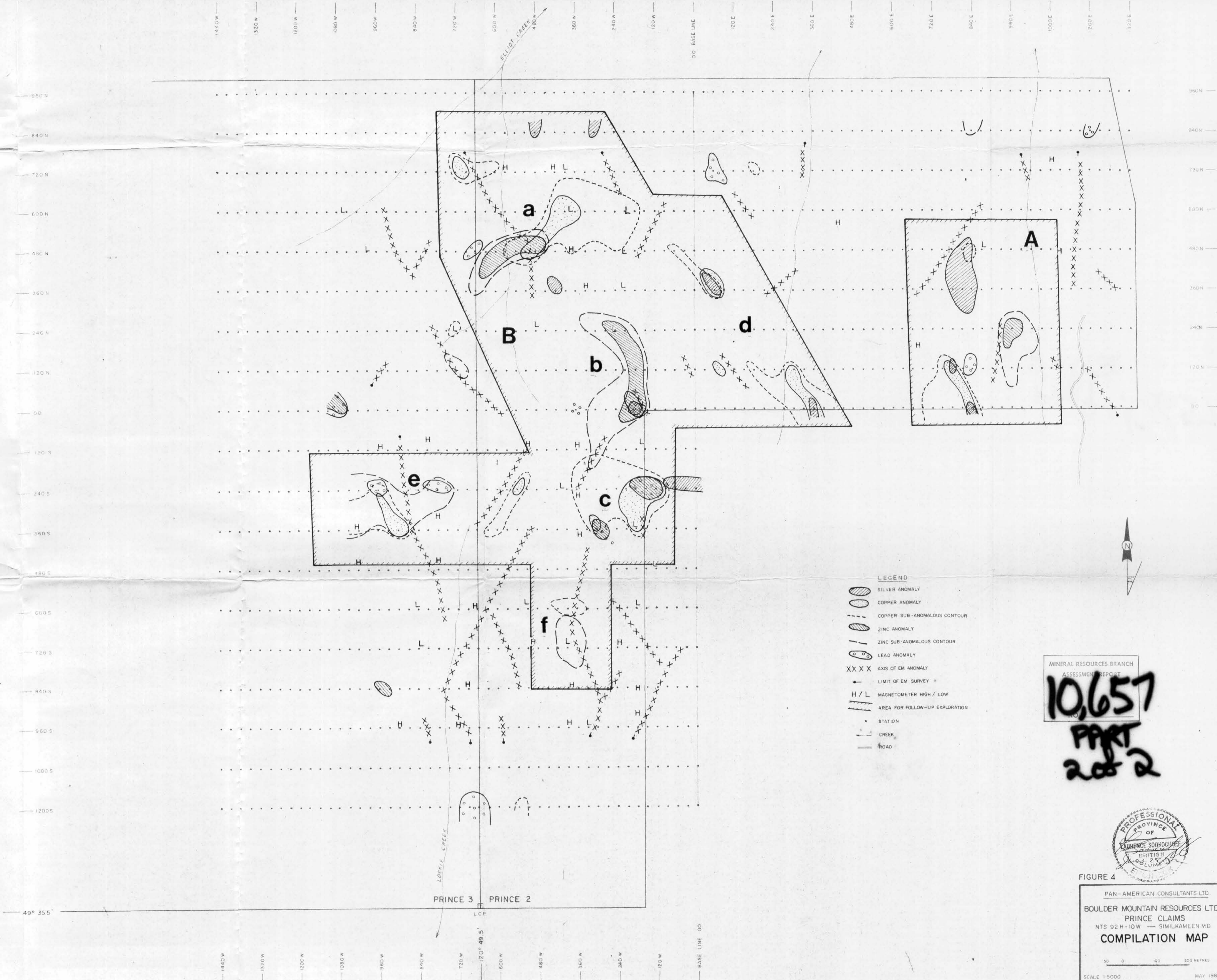
CONTOUR INTERVAL 5°
 — 5° & ABOVE
 INSTRUMENT - SABRE MODEL 27 VLF-EM RECEIVER



MINERAL RESOURCES BRANCH
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 PROFESSIONAL ENGINEER
 PROVINCE OF ALBERTA
 L. SOOKOCHOFF, P. ENG.

FIGURE 2

PAN-AMERICAN CONSULTANTS LTD.
 BOULDER MOUNTAIN RESOURCES LTD.
 PRINCE CLAIMS
 NTS 92 H-10 W — SIMILKAMEEN M.D.
VLF-EM SURVEY RESULTS
 — FRASER FILTERED —
 TO ACCOMPANY GEOPHYSICAL REPORT BY L. SOOKOCHOFF, P. ENG., JUNE 1982
 SCALE 1:5000
 MAY 1982



- LEGEND**
- SILVER ANOMALY
 - COPPER ANOMALY
 - COPPER SUB-ANOMALOUS CONTOUR
 - ZINC ANOMALY
 - ZINC SUB-ANOMALOUS CONTOUR
 - LEAD ANOMALY
 - AXIS OF EM ANOMALY
 - LIMIT OF EM SURVEY
 - MAGNETOMETER HIGH / LOW
 - AREA FOR FOLLOW-UP EXPLORATION
 - STATION
 - CREEK
 - ROAD

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FIGURE 4

PAN-AMERICAN CONSULTANTS LTD.
BOULDER MOUNTAIN RESOURCES LTD.
PRINCE CLAIMS
NTS 92H-10W — SIMILKAMEEN MD.
COMPILATION MAP

50 0 100 200 METRES
SCALE 1:5000
MAY 1982