



TYPE OF REPORT/SURVEY(S) <i>GEOPHYSICAL (VLF-EM)</i>	TOTAL COST <i>\$ 440</i>
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AUTHOR(S) *DAVID G. MARK* SIGNATURE(S) *[Signature]*

DATE STATEMENT OF EXPLORATION AND DEVELOPMENT FILED *DEC. 31/84* YEAR OF WORK *'84*

PROPERTY NAME(S) *COUGAR CLAIM GROUP*

COMMODITIES PRESENT *NONE*

B.C. MINERAL INVENTORY NUMBER(S), IF KNOWN

MINING DIVISION *FORTE STAIE* NTS

LATITUDE *49° 34'* LONGITUDE *116° 01'*

NAMES and NUMBERS of all mineral tenures in good standing (when work was done) that form the property [Examples: TAX 1-4, FIRE 2 (12 units); PHOENIX (Lot 1706); Mineral Lease M 123; Mining or Certified Mining Lease ML 12 (claims involved)]:

<i>COUGAR 1 (12 units)</i>	<i>LISBON (20 units)</i>
<i>COUGAR 2 (12 units)</i>	<i>LAURIE (8 units)</i>

OWNER(S)

(1) *TRANS-ARTIC EXPLORATIONS LTD.* (2)

MAILING ADDRESS

*815-850 W. HASTINGS ST.  
VAN. B.C. V6C 1E2*

OPERATOR(S) (that is, Company paying for the work)

(1) *SAME* (2)

MAILING ADDRESS

SUMMARY GEOLOGY (lithology, age, structure, alteration, mineralization, size, and attitude):

*PROPERTY IS UNDERLAIN BY SEDIMENTS (PRINCIPALLY ARGILLITES, QUARTZITES, AND SCHISTS) OF THE CRESTON AND KITCHENER - SIVEH FORMATIONS OF PURCELL AGE AND OF THE CRANBROOK FORMATION OF LOWER CAMBRIAN AGE. MOYIE INTRUSIONS OF PURCELL OR LATER AGE ALSO OCCUR. NO KNOWN MINERALIZATION.*

REFERENCES TO PREVIOUS WORK

*NONE*

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	COST APPORTIONED
GEOLOGICAL (scale, area) Ground 1:4000 Photo	2400 m x 1200 m	COUGAR 1 AND COUGAR 2	2683
GEOPHYSICAL (line-kilometres) Ground Magnetic Electromagnetic Induced Polarization Radiometric Seismic Other Airborne	450 m x 1000 m	COUGAR 1	2147
GEOCHEMICAL (number of samples analysed for 10.) Soil Silt Rock Other	2400 m x 1200 m (along roads)	COUGAR 1 AND COUGAR 2	1610
DRILLING (total metres; number of holes, size) Core Non-core			
RELATED TECHNICAL Sampling/assaying Petrographic Mineralogic Metallurgic			
PROSPECTING (scale, area)			
PREPARATORY/PHYSICAL Legal surveys (scale, area) Topographic (scale, area) Photogrammetric (scale, area) Line/grid (kilometres) Road, local access (kilometres) Trench (metres) Underground (metres)			
			TOTAL COST

FOR MINISTRY USE ONLY	NAME OF PAC ACCOUNT	DEBIT	CREDIT	REMARKS:
Value work done (from report)				
Value of work approved				
Value claimed (from statement)				
Value credited to PAC account				
Value debited to PAC account				
Accepted . . . . . Date	Rept. No. . . . .			Information Class . . . . .

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**13,189**

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### SUMMARY

A VLF-EM survey, soil sample sluicing and preliminary geological mapping were carried out over a portion of the Cougar Claim Group during the late spring of 1984. The property is located 16 km N75°W of Cranbrook, British Columbia on Lisbon Creek. Access to the property is easily gained by a two wheel drive vehicle. The terrain consists of moderate to steep slopes covered with light to moderately dense coniferous trees. The purpose of the work was to locate probable areas of gold-sulphide mineralization as is found on the nearby Leader A Claim. Of particular interest were intrusive porphyries known to be associated with gold deposits in the area.

The property occurs on the northeasterly trending contact between the Creston Formation and the Kitchener-Siyeh Formation. Covering about half of the property northwest of the contact is the Creston Formation, which is composed mostly of argillites and quartzites. Southeast of the contact is the Kitchener-Siyeh Formation which is composed of impure magnesium limestone, argillites, and calcareous quartzites. Occurring within the Kitchener-Siyeh Formation is a relatively narrow northeasterly-trending band of the Moyie Intrusives (meta-diorite and meta-quartz diorite) and one of the Cranbrook Formation sediments (siliceous quartzite, grit, and conglomerate). A northeasterly-trending fault also strikes through the property. On the nearby Leader A Claim occurs an auriferous quartz vein returning assays up to 0.598 oz gold/ton and 10.56 oz silver/ton across 0.58 m.

The VLF-EM readings were taken every 20 meters on 50-meter separated east-west lines at the western side of the Cougar 1 claim. The data was then reduced, plotted and contoured. Soil sample sluicing and preliminary geological mapping were done as well.

### CONCLUSIONS

1. The Cougar Claim Group is located in an area of numerous gold deposits. The most well-known is the Wellington on nearby Angus Creek. Others in close proximity to the property are the Rome and Valley deposit and the Running Wolf deposit.
2. Geological mapping done to date shows the property to be underlain by a series of sediments, all probably of the Kitchener-Siyeh and Creston Formations. The rocks consist of argillites, quartzites, mica schists, and magnesite. The strike of the bedding planes was found to be northeasterly.
3. The bulk sluice sampling along the roads revealed minor amounts of gold in two samples
4. The VLF-EM survey revealed conductors striking predominantly northeasterly and also striking northwesterly. Conductors are indicative of geological structure such as fault, shear and contact zones.



### RECOMENDATIONS

- 1) The property should be soil sampled on a 50 meter by a 100 meter grid. In the laboratory, the whole soil sample should be pulverized, screened for metalics and then fire-assayed with an AA finish for gold. It would also be useful to test for lead, zinc, silver, and copper. Any anomalies discovered should then be detailed on a 10 meter by 10 meter grid and the same lab procedure followed.
- 2) The VLF-EM survey and geological mapping should be extended over the whole property.
- 3) As an aid to the geological mapping, a magnetometer survey should be carried out with stations every 25 m on the same soil sample lines. Magnetics should be able to map intrusives such as the 'miners porphyry' as well as geological structure.
- 4) Soil anomalies should be tested by resistivity-IP sections to optimize the locations and angles of diamond drill holes.

**REPORT**  
**ON A**  
**VLF-EM SURVEY AND PRELIMINARY GEOLOGICAL MAPPING**  
**WITH BULK SLUICE SAMPLING**  
**OVER THE**  
**COUGAR CLAIM GROUP**  
**LISBON CREEK, KIMBERLEY AREA**  
**FORT STEELE MINING DIVISION**  
**BRITISH COLUMBIA**

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**INTRODUCTION AND GENERAL REMARKS**

This report discusses the survey procedure, compilation of data and the interpretation of a VLF-EM survey as well as bulk sluice sampling and some geological mapping carried out over the a portion of the Cougar Claim Group during the period of May 24th to June 2nd, 1984.

The surveys were carried out by Trans-Arctic Explorations Ltd. under the field supervision of Guy Royer, geologist, with the aid of Dean Bowra. A total of 9.7 line km of VLF-EM survey were done.

The primary purpose of the exploration program was to look for gold deposits such as are common in this area, as, for example, the auriferous quartz veins containing sulphides on the nearby Leader A Claim (Wellington). Of particular interest were porphyritic intrusives (flows?) commonly known as 'miner's porphyries' which in this area frequently occur with gold deposits. The



VLF-EM survey was carried out to delineate geological structure such as fault and shear zones or sulphide deposits either of which could be related to gold deposits.

#### PROPERTY AND OWNERSHIP

The property consists of four claims totalling 52 units staked within the Fort Steele Mining Division as shown on Map 2 and as described below:

<u>Claim Name</u>	<u>No. Units</u>	<u>Record No.</u>	<u>Expiry Date</u>
Cougar 1	12	2037	Dec. 29, 1985
Cougar 2	12	2085	Feb. 21, 1986
Lisbon	20	2110	Feb. 21, 1986
Laurie	<u>8</u>	2086	Feb. 21, 1986
	52		

The expiry date shown takes into account the survey under discussion as being accepted for assessment credits.

The claims are owned by Trans-Arctic Explorations Ltd. of Vancouver, British Columbia.

#### LOCATION AND ACCESS

The property is located 9.5 km south of Kimberley and 16 km N75°W of Cranbrook on Lisbon Creek and at its intersection with Perry Creek.

The geographical coordinates for the center of the property are 49° 34' north latitude and 116° 01' west longitude.

Access is easily gained by travelling north from Cranbrook on Highway #95A for 15 km to Wycliffe. One then turns south and travels southwesterly along the Perry Creek access road to the southeast boundary of the property about 1 km past Old Town, a distance of about 10 km. Other roads that are accessed from Perry Creek run through and nearby the property. Four-wheel drive is recommended.

### PHYSIOGRAPHY

The property lies to the west of the Rocky Mountain trench within the Purcell Mountains which are physiographic divisions of the Columbia Mountain System. The terrain consists of steep, partially logged slopes throughout most of the property. It lies on the northeast side of the northeasterly-trending valley of Perry Creek.

Elevations vary from about 1,065 meters a.s.l. on Perry Creek on the eastern boundary of the Laurie claim, to 2,045 meters a.s.l. on the mountain peak within the center of the property to give an elevation difference of 980 meters.

The main water sources would be Perry Creek as well as the southeasterly-flowing Lisbon Creek. Other creeks that occur close to the claim boundaries are Pitt, Antwerp, and Sawmill creeks.

The forest cover consists of fir, spruce and hemlock(?) and varies from closely growing, immature stands to more widely spaced, mature stands.

### HISTORY OF PREVIOUS WORK

Since the four claims have been staked, no previous work has been

done.

The history of the area goes back to the 1880's when prospectors working the Perry Creek placers discovered the vein now covered by the adjoining Leader A Claim. Little ore has been shipped from this vein, even though assays have run as high as 4.8 oz/ton Au and 6.8 oz/ton Ag. There are also high values in lead, zinc and copper.

### GEOLOGY OF AREA

The following is quoted from L. Sookochoff's 1983 Geological Evaluation Report on the adjoining Leader 2 Claim:

"The general geological setting of the area is of the Proterozoic Lower Purcell Group which is divided into three Formations. In the Hellroaring Creek - Angus Creek - Perry Creek area the Creston and Kitchener Formation predominate and are lenticularly northeasterly trending, commonly in a fault contact and bounded to the north and south by the Aldridge Formation.

"The basal Aldridge Formation - the oldest formation known to occur in the area - is composed mainly of grey to brownish grey, rusty weathering argillite and argillaceous quartzite.

"The Creston Formation is transitional from the Aldridge Formation and embraces that succession of greyish argillaceous quartzites which is included between the dark rusty weathering, argillaceous quartzites of the lower Aldridge Formation and the thin bedded, calcereous rocks of the upper Kitchener Formation. In general, the Creston Formation consists of argillaceous quartzites, purer quartzites and argillites whose beds average about one foot in thickness. Narrow beds, pods, and lenses of calcereous rocks

occur in the upper part of the formation. These are more numerous toward the top of the Creston and where they are abundant, the strata are considered to belong to the overlying Kitchener Formation.

"The Creston Formation is host to gold quartz veins on Perry Creek, a northeasterly flowing tributary of the St. Mary River with the confluence 13 km northwest of Cranbrook. The deposits occur in the argillaceous quartzites which are well bedded in beds '2 inches to 2 feet' in thickness, the latter separates by thin beds of meta-argillites.

"The deposits occur as true fissure veins averaging about '8 feet' with some as wide as '20 feet'. They can be traced for long distances along strike. The gold values occur as native in the outcrops and with pyrite at depth.

"The Kitchener Formation consists predominantly of impure, magnesium limestone, argillite and calcereous quartzite. Limestone and calcereous rocks compose the bulk of the formation and serve to distinguish it from the underlying formations. The upper part is generally argillaceous. Due to the formation containing easily deformed rocks, great stretches of it have been altered to chlorite and talc-carbonate schist.

"A small stock of porphyritic granite within one km west of the property intrudes sediments of the Creston Formation. The granite contains large idiomorphic crystals of orthoclase in an isometric groundmass of plagioclase, quartz and hornblende.

#### STRUCTURE

"The general structure of the area is of a broad, northerly striking anticline exposing the core of the Proterozoic rocks with

younger rocks to the west and east. The regional St. Mary's fault trends east northeast to the north of the property area and creates a fault contact with the Aldridge and younger formations.

"Faults extending from the south generally terminate or trend into the St. Mary's fault and commonly indicate contacts between the Creston and Kitchener formations.

"One of the fault contacts referred to as the Sawmill Creek Fault determines a Creston-Kirchener Formation contact which trends through the Leader A Claim. The St. Mary's fault is within two km north.

#### MINERALIZATION

"On the adjacent Leader A Claim a mineralized quartz vein follows a strong fissure with varying strike from nearly north-south to north 35-50° with a dip of from 68° to 80° east. The vein varying from 'a few inches to three feet wide' can be traced along a length of '2,000 feet'. The vein is composed of white banded quartz containing galena, pyrite and locally chalcopyrite with tungsten reported in the adit at the southernmost extension of the vein.

"Assays from the Leader A vein reportedly returned up to .598 oz Au/ton and 10.56 oz Ag/ton across '1.9 feet' with a reported assay of 4.80 oz Au/ton. A reported 1720 tons of possible ore were calculated on the vein."

#### PROPERTY GEOLOGY

Rice's G.S.C. map shows the Cougar Claim Group is almost entirely underlain by both the Creston and the Kitchener-Siyeh formations.



The contact trends northeasterly through the property with the Creston Formation occurring to the northwest and the Kitchener-Siyeh Formation occurring to the southeast. A northeasterly-trending band of Moyie Intrusives occurs within the Kitchener-Siyeh Formation. It is of Purcell or (?) Later age and consists of meta-diorite and meta-quartz diorite. The southeast contact is a fault.

A few hundred meters to the south occurs a northeasterly band of sediments of the Cranbrook Formation. It is of Lower Cambrian in age and consists of siliceous quartzite, grit, and conglomerate.

Guy Royer, geologist, has done preliminary geological mapping over portions of the Cougar 1 and 2 claims. The geology is shown on Map 3 and is described as follows by Royer.

"Almost all of the rock found outcropping on these claims is sedimentary. Most of the rocks noted were mainly transitional quartzites and argillites. Overburden covers most of the claims, and particularly on the northern half, outcrops are quite sparse. Most of the sediments including the quartzites are very micaceous.

"Besides containing large amounts of mica, the quartzites frequently contain much hematite and a little diopside. The pinkish stain of some quartzites is due to iron staining from hematite. Within a couple of meters the quartzites often grade into quartz-mica schists. The presence of diopside probably indicates that calcareous material is also present. The presence of schistose rocks and diopside indicate that a little metamorphism has occurred.

"An outcropping of magnesite with prominent quartz veining was noted east of the quartzite. The distinctive buff coloured magnesite varies from being well-bedded to massive.



Rocks more argillaceous are found to the northeast. Many beds of these rocks are very cherty, though in places they grade into slate. They are usually dark grey to dark green in colour. Many of these argillites have very schistose foliation and have obviously undergone metamorphism. A twenty foot wide sill of green, medium-grained diorite with prominent hornblende crystals was noted. The thickness of the argillites usually varies from 5 to 10 cm, though it can be quite variable.

"The sediments are generally quite fine-grained with the grains averaging 1 mm or less. The magnesite, however, is often coarse-grained with some crystals 1 cm long. Traces of pyrite were noted in some of the boulders nearby.

"The predominant strike of the bedding is northeasterly with steep dips of 60° to 80° in both directions. Some argilite on Lisbon Creek was noted to strike northwesterly and dipping 25° southwest and also 70° northeast."

As shown on Map 3, six rock samples were assayed for copper, lead, zinc, silver and gold, but none returned values of any significance. The results are given on Map 3.

#### MINERAL DEPOSITS IN CLOSE PROXIMITY

The following is a description of two deposits occurring along the Old Baldy Fault and is taken from Rice's Memoir 228, dated 1941. The Rome and Valley group occurs within the claim boundaries but may be occurring within 2-post claims located on the property but owned by others. The Running Wolf deposit occurs to the immediate south.

### Rome and Valley Group

"The Rome and Valley group consists of twenty-three claims held by location, controlled by J.M. Baird and associates of Cranbrook, B.C. It is located near the head of Rome Creek, a tributary of Perry Creek, about a mile from the Perry Creek road near Sawmill Creek.

"The deposits consist of two or more large and persistent quartz veins apparently occupying fissures in a fault zone. In a few places the contain small amounts of pyrite and galena. Crystals of pyromorphite (lead phosphate) were seen in one open-cut. Assays from samples taken by the owners are reported to range from \$1.10 to \$19.95 a ton in gold (gold at \$35 an ounce).

"The main workings consist of thirteen open-cuts, ten of which expose a vein striking north 15 degrees east and dipping 35 degrees to 50 degrees southeast. The vein has been traced for 1,550 feet and probably continues for at least another 1,000 feet to the north. It varies in width from 2 to 25 feet and averages about 9 feet. The remaining open-cuts are located on a parallel vein of the same type and apparently comparable in size with the first described.

### Running Wolf Group

"The Running Wolf group is located on French Creek, a tributary of Perry Creek, and is reached by a trail about a mile long from the Perry Creek road.

"The deposit consists of a number of quartz veins occupying fissures in greatly altered Creston argillaceous quartzite. The workings consist of five adits, three of which are now caved. The main adit exposes three veins, each about 30 feet wide. Two of

these veins occupy fissures striking in the same direction as the fault zone on the Rome and Valley group and approximately in line with it. The third vein is in a cross fracture. A few hundred feet down the hill another adit has been driven along a vein that parallels the main veins above. The veins are composed of massive quartz with occasional specks of pyrite and are reported to carry gold. They have been fractured by post-mineral movements along the original faults.

"The Rome and Valley and the Running Wolf groups are apparently on the same zone of fracturing and faulting, and this zone probably continues south across the ridge between Perry Creek and Moyie River at Old Baldy Mountain. Exposed on the Ridge at this point is a strong fracture zone that is occupied by a large quartz vein."

#### **BULK SLUICE SAMPLING**

The 6 bulk samples were picked up by driving along the road with a pick-up truck. Every 30 to 60 m, two shovel-full samples of B layer from the upper side of the road were thrown into the back of the truck. This large bulk sample was then sluiced, the residual of which was then panned. The resulting sample was then placed in a plastic bag and sent to the laboratory for analysis.

The testing was done by Acme Analytical Laboratories Ltd. of Vancouver, B.C. The residual of the bulk soil sample was pulverized from which a 28.6 gram sample was taken. This was then fired, parted and the gold weighed.

The results are given on Map 3. Two samples revealed anomalous gold results, one, 0.044 oz/ton, and the other 0.050 oz/ton.

## VLF-EM SURVEY

### a) Instrumentation and Theory

A VLF-EM receiver, Model 27, manufactured by Sabre Electronic Instruments Ltd. of Burnaby, B.C. was used for the VLF-EM survey. This instrument is designed to measure the electromagnetic component of the very low frequency field (VLF-EM), which for this survey is transmitted at 24.8 KHz from Seattle, Washington.

In all electromagnetic prospecting, a transmitter produces an alternating magnetic field (primary) by a strong alternating current usually through a coil of wire. If a conductive mass such as a sulphide body is within this magnetic field, a secondary alternating current is induced within it which in turn induces a secondary magnetic field that distorts the primary magnetic field. It is this distortion that the EM receiver measures. The VLF-EM uses a frequency range from 16 to 24 KHz, whereas most EM instruments use frequencies ranging from a few hundred to a few thousand Hz. Because of its relatively high frequency, the VLF-EM can pick up bodies of a much lower conductivity and therefore is more susceptible to clay beds, electrolyte-filling fault or shear zones and porous horizons, graphite, carbonaceous sediments, lithological contacts as well as sulphide bodies of too low a conductivity for other EM methods to pick up. Consequently the VLF-EM has additional uses in mapping structure and in picking up sulphide bodies of too low a conductivity for conventional EM methods and too small for induced polarization. (In places it can be used instead of I.P.). However, its susceptibility to lower conductive bodies results in a number of anomalies, many of them difficult to explain and, thus, VLF-EM preferably should not be interpreted without a good geological knowledge of the property and/or other geophysical and geochemical surveys.

b) Survey Procedure

The survey consisted of 9.7 line km of VLF-EM survey of the property as shown on Maps 4 and 5.

The base line, on a bearing of due north, was extended for 1,020 m along the western boundary of the Cougar 1 claim, being well flagged with survey flagging. The survey lines were run perpendicular to the base line (east-west) at 50 m spacings. The instrument readings were taken every 20 m along the survey lines facing towards the transmitter at Seattle.

c) Compilation of Data

The VLF-EM field results were plotted on Map 4 at a scale of 1:4,000. They were then reduced by applying the Fraser-filter. The filtered results were subsequently plotted on Map 8, at the same scale. The filtered data were plotted between actual reading stations. The positive dip-angle readings were then contoured at an interval of 4°.

The Fraser-filter is essentially a 4-point difference operator, which transforms zero crossings into peaks, and a low pass smoothing operator which induces the inherent high frequency noise in the data. Therefore, the noisy, non-contourable data are transformed into less noisy, contourable data. Another advantage of this filter is that a conductor that does not show up as a crossover on the unfiltered data quite often shows up on the filtered data.

d) Discussion of Results

The major cause of the VLF-EM anomalies, as a rule, are geologic structures such as fault, shear and breccia zones. It is there-



fore logical to interpret VLF-EM anomalies to likely be caused by these structural zones. Of course, sulphides may also be a causative source. But when VLF-EM anomalies correlate with sulphide mineralization, the anomalies are often reflecting the structure associated with the mineralization rather than the mineralization itself.

There is some variation in intensity from one VLF-EM anomaly to the next. This is not only due to the conductivity of a causative source, but also the direction it strikes relative to the direction to the transmitter. In other words, those conductors lying parallel or sub-parallel to the direction of the transmitter (S55W in this case), can be picked up easier than those that are lying at a greater angle. Depending upon its conductivity, a conductor may not be picked up at all if it is at too great an angle.

VLF-EM highs are of particular economic interest since they may be reflecting sulphides, fracturing and/or alteration any of which could be associated with gold mineralization. The highs often are at points of intersection of two or three conductors striking in two or three different directions. If the conductors are in fact geological structures, then the points of intersection represent areas that could be amenable to mineralizing fluids.

From the Fraser-filtered data, the writer has attempted to draw in the conductors that the contouring is trying to outline. The results are plotted on Map 4 with the raw data. A word of caution is that the results may not be strictly correct since the contouring is quite complex. It was not always obvious where the conductor was situated or which direction it trended.

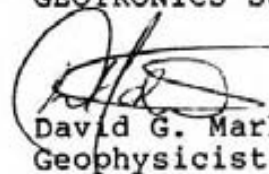
From the plot of the conductors it would appear that the primary



direction of structure on this property is northeasterly with the secondary direction being northwesterly. This agrees with the geological mapping which indicates that bedding planes strike northeasterly.

Of particular interest are those parts of the conductors which have much greater conductivity indicating, perhaps, a zone of mineralization. The greater conductivity could be due to sulphides, alteration, and/or fracturing, any of which can be associated with gold deposits.

Respectfully submitted,  
GEOTRONICS SURVEYS LTD.



David G. Mark,  
Geophysicist

April 1, 1985

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Minister of Mines Reports

1915 - p. 113,

1930 - p. 243,

1932 - p. 162,

1950 - p. 155

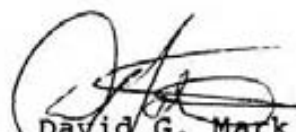
GEOPHYSICIST'S CERTIFICATE

I, DAVID G. MARK, of the City of Vancouver, in the Province of British Columbia, do hereby certify:

That I am a Consulting Geophysicist of Geotronics Surveys Ltd., with offices located at #403-750 West Pender Street, Vancouver, British Columbia.

I further certify:

1. I am a graduate of the University of British Columbia (1968) and hold a B.Sc. degree in Geophysics.
2. I have been practising my profession for the past 16 years and have been active in the mining industry for the past 19 years.
3. I am an active member of the Society of Exploration Geophysicists and a member of the European Association for Exploration Geophysicists.
4. This report is compiled from data obtained from a VLF-EM survey, bulk sluice sampling and preliminary geological mapping carried out by Trans-Arctic Explorations Ltd., under the field supervision of geologist, Guy Royer, in the period of May 24th to June 2nd, 1984.
5. I do not hold any interest in Trans-Arctic Explorations Ltd. nor in any of the claims of the Cougar Claim Group, nor will I receive any interest as a result of writing this report.

  
David G. Mark  
Geophysicist

April 1, 1985

AFFIDAVIT OF EXPENSES

The VLF-EM survey, bulk sluice sampling and preliminary geological mapping, were carried out during the period of May 24th to June 2nd, 1984 on the Cougar Claim Group, in the Cranbrook Area, Fort Steele Mining Division, B.C., to the value of the following:

FIELD:

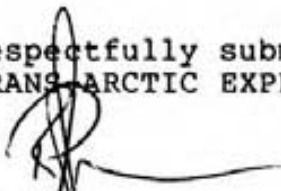
Supervisor, 3 days at \$200/day	\$ 600
Geologist/Instrument operator, 54 hours at \$30/hour	1,620
Surveyor's helper, 54 hours at \$15/hour	810
4 X 4, 3/4 ton truck, 6 days at \$110/day (includes oil and gas)	660
Room and board, 15 man-days at \$50/man/day	750
Instrument rental (VLF-EM), 6 days at \$25/day	150
Survey supplies	150
	<u>\$ 4,740</u>

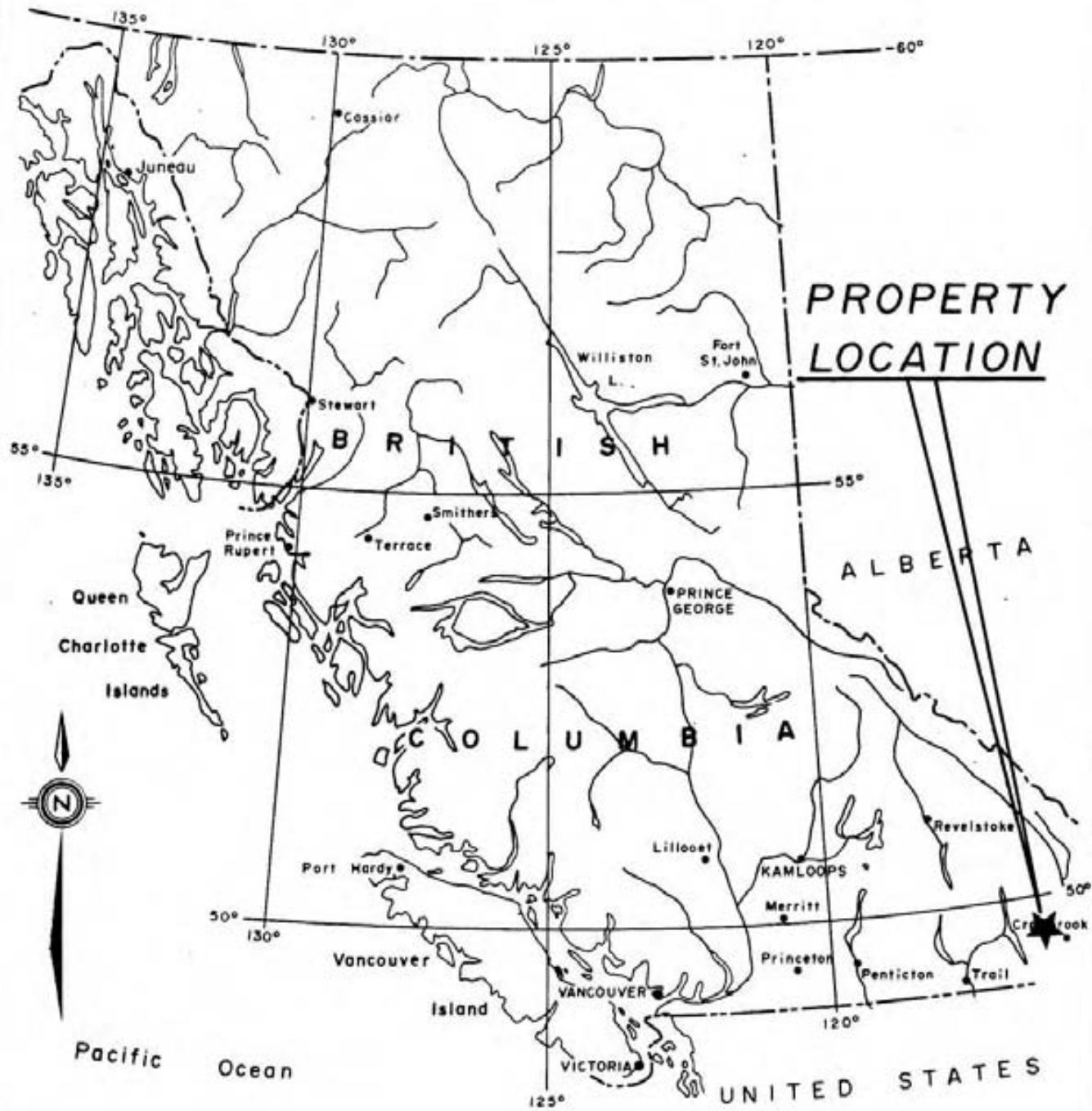
REPORT:

Geophysicist, 10 hours at \$40/hr	\$ 400
Geophysical technician, 16 hours at \$25/hr	400
Drafting and printing	750
Typing, compilation and photocopying	150
	<u>\$ 1,700</u>

GRAND TOTAL	<u>\$ 6,440</u>
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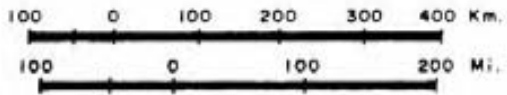
Respectfully submitted,  
TRANS ARCTIC EXPLORATIONS LTD.

  
R. Simpson  
Manager

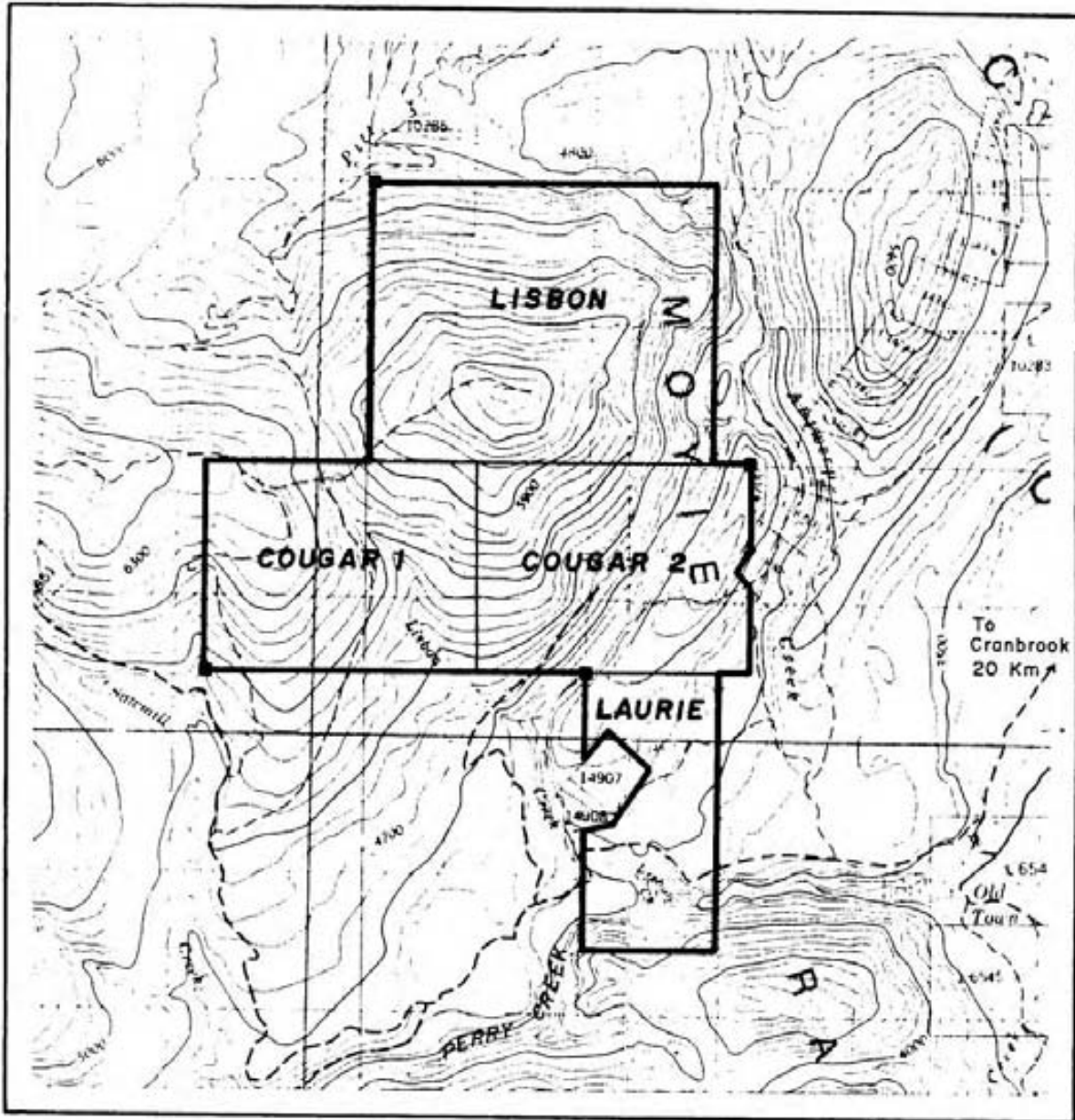


**PROPERTY  
LOCATION**

**COUGAR CLAIM GROUP**



116°00'



49° 34'



TRANS-ARCTIC EXPL. LTD.

COUGAR CLAIM GROUP

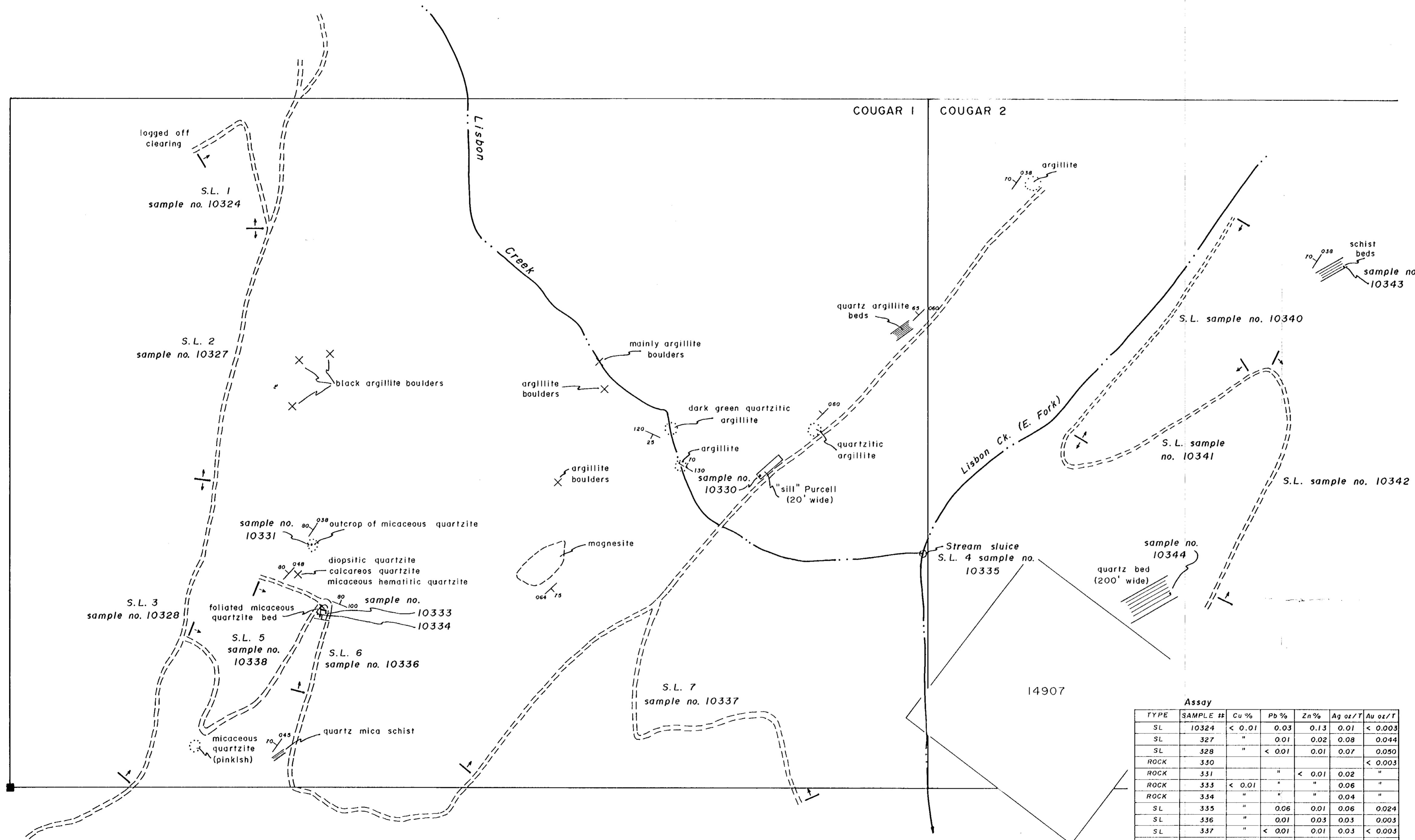
LISBON CREEK, KIMBERLEY AREA, B. C.

FORT STEELE M. D.

CLAIM LOCATION MAP

SCALE: 1:50,000	DATE: April 85.	MAP: 2	NTS 82 F/9E-6/12W
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**Assay**

TYPE	SAMPLE #	Cu %	Pb %	Zn %	Ag oz/T	Au oz/T
SL	10324	< 0.01	0.03	0.13	0.01	< 0.003
SL	327	"	"	0.01	0.02	0.044
SL	328	"	< 0.01	0.01	0.07	0.050
ROCK	330	"	"	"	"	< 0.003
ROCK	331	"	"	< 0.01	0.02	"
ROCK	333	< 0.01	"	"	0.06	"
ROCK	334	"	"	"	0.04	"
SL	335	"	0.06	0.01	0.06	0.024
SL	336	"	0.01	0.03	0.03	0.003
SL	337	"	< 0.01	0.01	0.03	< 0.003
SL	338	"	0.01	< 0.01	0.10	0.040
SL	340	"	0.04	"	"	0.024
SL	341	"	0.01	"	0.05	0.034
SL	342	"	< 0.01	"	0.08	0.050
ROCK	343	"	"	"	0.02	< 0.003
ROCK	10344	< 0.01	< 0.01	< 0.01	0.03	< 0.003

**GEOLOGICAL BRANCH**  
**ASSESSMENT REPORT**

13,189

LEGEND

- Road
  - Creek
  - Claim boundary
  - Legal corner post
  - Sample location
  - Strike and dip
  - Sluice
  - Sluice sample taken between these two points
  - Limit of outcrop
- Approx. 80m 0 100m 200m

TRANS-ARCTIC EXPLORATIONS LTD.

COUGAR CLAIM GROUP  
 PERRY CREEK, KIMBERLEY AREA, B.C.  
 FORT STEELE M.D.

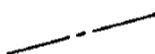
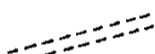



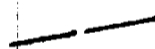
PRELIMINARY GEOLOGY  
AND  
BULK SLUICE SAMPLING

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**13,189**



**LEGEND**

-  Base line
-  Road
-  Survey station
-  Legal corner post (located)
-  Identification post (located)
-  VLF-EM Conductors

INSTRUMENT: Sabre model 27 VLF-EM unit.

80 m      0      200 m

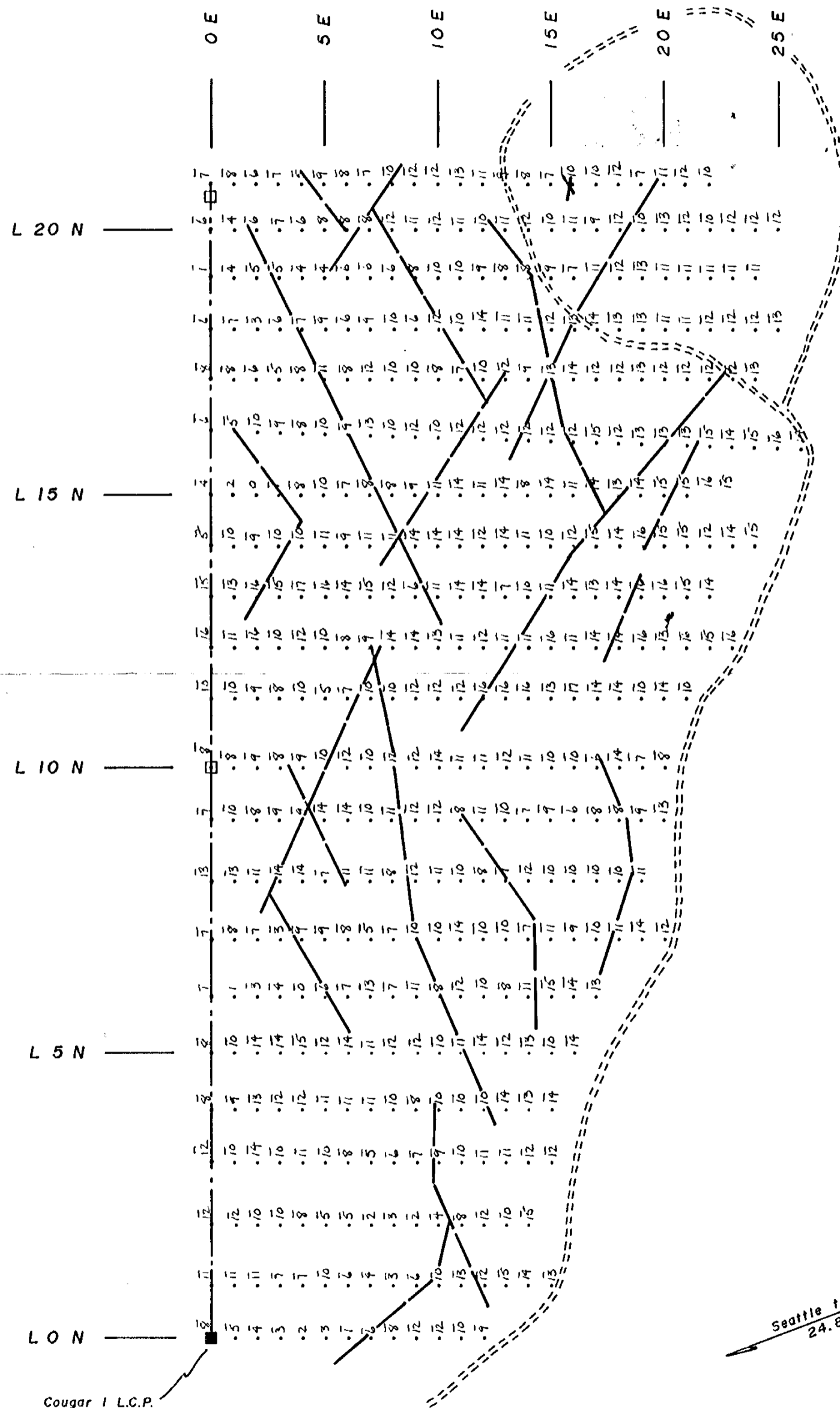
To Accompany Report By: DAVID G. Mark, Geophysicist

**TRANS-ARCTIC EXPLORATIONS LTD.**

**COUGAR CLAIM GROUP**  
PERRY CREEK, KIMBERLEY AREA, B. C.  
FORT STEELE M.D.

**VLF-EM SURVEY**  
**RAW DATA WITH CONDUCTORS**

Scale: 1:4,000	Date: April 85	Map: 4	Drawn By: B. D. S.
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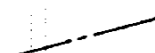
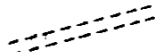



Survey Carried Out By: TRANS-ARCTIC EXPLORATIONS LTD.

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**



**13,189**



**LEGEND**

-  Base line
-  Road
-  Survey station
-  Legal corner post (located)
-  Identification post (located)

**CONTOUR INTERVAL**

-  0 degree
-  4 degree and higher

INSTRUMENT: Sabre model 27 VLF-EM unit.

Note: Only positive values contoured

80 m      0      200 m

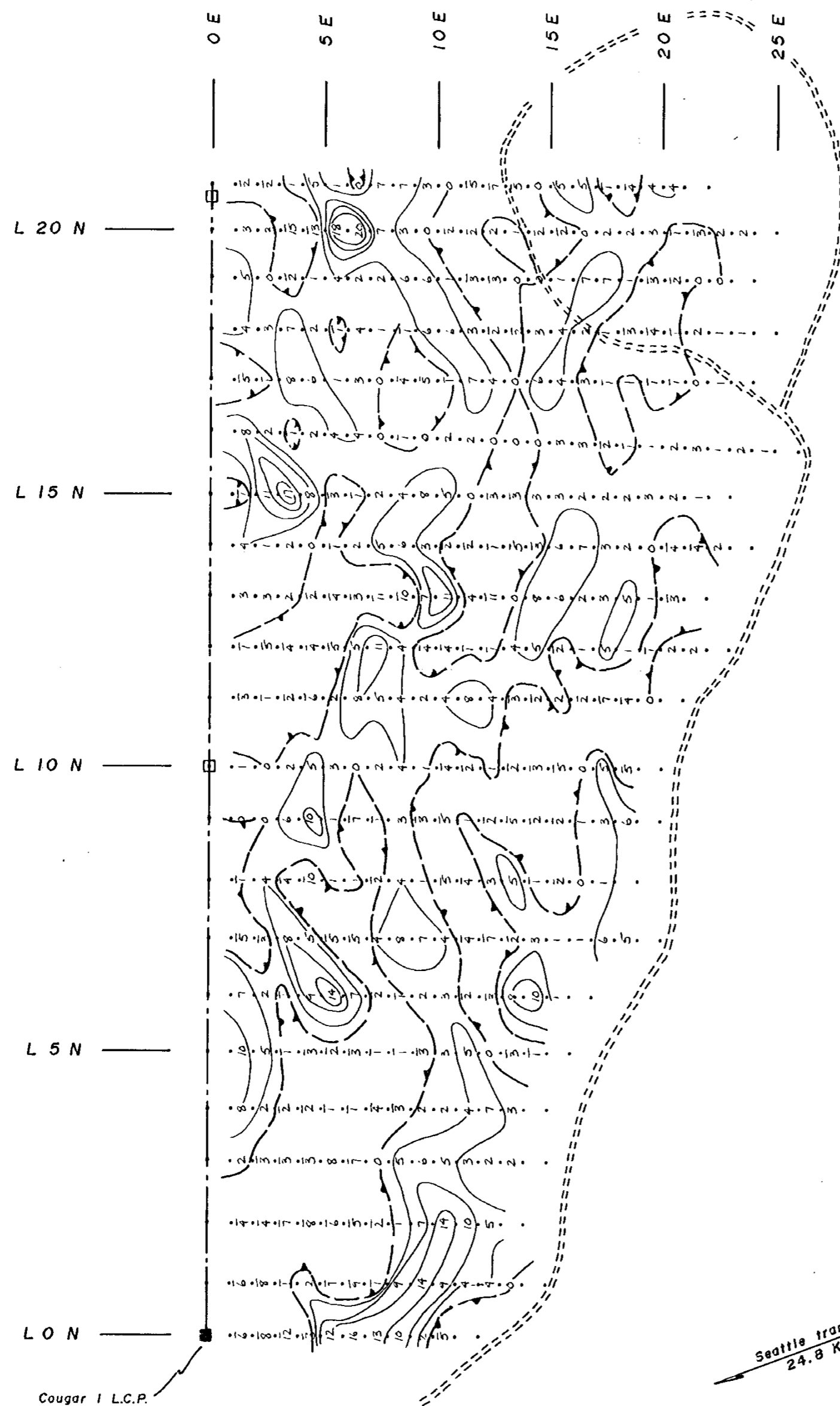
To Accompany Report By: DAVID G. Mark, Geophysicist

**TRANS-ARCTIC EXPLORATIONS LTD.**

**COUGAR CLAIM GROUP**  
PERRY CREEK, KIMBERLEY AREA, B. C.  
FORT STEELE M. D.

**VLF-EM SURVEY**  
**FRASER FILTERED DATA & CONTOURS**

Scale: 1: 4,000	Date: April 85.	Map: 5	Drawn By: B. D. S.
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Survey Carried Out By: TRANS-ARCTIC EXPLORATIONS LTD.