#### ASAMERA INC.

1984 SUMMER EXPLORATION PROGRAM

FOR

ARGONAUT, HOT #1, MARY AND MARY #2 CLAIMS

ANTOINE LAKE AREA CARIBOO MINING DIVISION

NTS 93 A/5

52° 25' N, 121° 35' W.

FILMED

GEOLOGICAL BRANCH ASSESSMENT REPORT

14,250

PART 10F3.

L. Forand, B.Sc. D.W. Hassell, B.Sc. September 13, 1984

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### SUMMARY AND RECOMMENDATIONS

The Hot property comprises four claim blocks totalling approximately 3050 acres in the Cariboo Mining Division, approximately 60 kilometers northeast of Williams Lake in south-central B.C. The Argonaut and Hot #1 claim blocks were acquired in late 1983 through an outright cash purchase agreement subject to a 7.5% NPI. The two additional blocks Mary and Mary #2 were later acquired with no overriding royalties. There are no work commitments relating to the claims and in each case ownership is 100% Asamera.

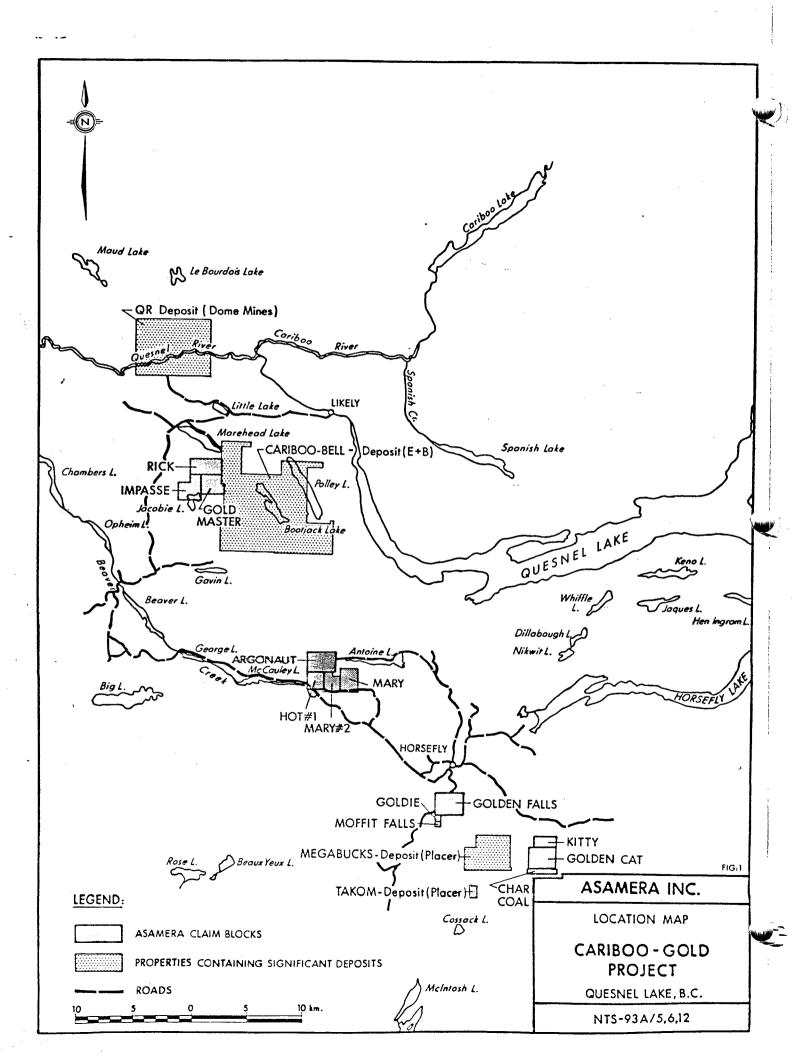
Although the copper showings in this historic gold placer mining area were probably known locally for decades, no record exists of their exploration before 1964 when Mastodon-Highland Bell Mines Limited, jointly with Leitch Gold Mines Limited, discovered copper oxides at the site of a prominent aeromagnetic anomaly indicated by newly published federal-provincial surveys.

Several other copper showings were tested in the early seventies, however, recently the area has received much attention for its intrusive-related gold potential. As a result, at least three significant discoveries have been made with perhaps the most impressive being Dome's QR deposit with published reserves of approximately 1,000,000 tons grading 0.2 ozs./ton gold.

The property is located within the Quesnel trough, a linear belt of Upper Triassic and Lower Jurassic basic volcanics and sediments intruded by later alkaline plutons. The occurrences in the area are typically gold-rich copper deposits derived from a metal-rich, late hydrothermal stage associated with the intrusive activity.

A multi-phase program designed to assess the overall property potential included linecutting (58 km), geological mapping, geochemical sampling (approximately 550 samples) and geophysics (Mag and VLF).

The results from this program have defined one area of interest which should be further investigated for it's gold potential. This area features a cluster of coincident gold and copper soil geochem anomalies which could be reflecting bedrock mineralization. It is recommended that a limited reconnaissance I.P. survey attempt to define a conductive zone coincident with this geochemical anomaly.



## INTRODUCTION

The 1984 Hot property exploration program commenced in early May and involved a crew of four men (2 geologists, 2 geotechnicians). The program included linecutting, geological mapping, geochemical sampling and geophysical surveys (magnetometer and VLF). This report summarizes field results and provides recommendations for future work.

## PROPERTY AND OWNERSHIP

The Hot property comprises four claim blocks totalling approximately 3050 acres. The Argonaut and Hot #1 claim blocks were acquired in late 1983 through an outright cash purchase agreement subject to a 7.5% NPI. The two additional blocks Mary and Mary #2 were later acquired with no overriding royalties. There are no work commitments relating to the claims and in each case ownership is 100% Asamera. Property data is summarized in Table #1.

TABLE 1

NAME	RECORD #	RECORD DATE	UNIT *	ACREAGE	EXPIRY DATE +
Argonaut Hot #1 Mary Mary #2	5119(8) 5111(8) 5543(11) 5575(12)	Aug. 26/83 Aug. 26/83 Nov. 29/83 Dec. 9/83	20 9 12 12 (8.16)	1236 556 741 504 3037	Aug. 26/86 Aug. 26/86 Nov. 29/86 Dec. 9/86

- \* Figures in brackets indicate size of claim after originally staked claim was reduced in size as a result of prior staking.
- + Reflects the submission of the linecutting only. To be amended after the technical data has been submitted for assessment credit.

#### LOCATION AND ACCESS

The property is situated in the Cariboo Mining Division approximately 60 km northeast of Williams Lake in south-central B.C.

Good access to the claims is provided by a network of logging roads leading from the Beaver Valley Road, a well maintained secondary road (gravel) between the small villages of Horsefly and Likely. (see opposite page)

## EXPLORATION HISTORY

Although the copper showings in this historic gold placer mining area probably were known locally for decades, no record exists of their exploration before 1964 when Mastodon-Highland Bell Mines Limited, jointly with Leitch Gold Mines Limited, discovered copper oxides at the site of a prominent aeromagnetic anomaly indicated by newly published federal-provincial surveys

Results of initial work led to the formation of a new company, Cariboo-Bell Copper Mines Limited, which began drilling in 1966 and was joined subsequently by a consortium of Japanese companies that later withdrew on recognition of metallurgical difficulties resulting from the degree of oxidation of the deposit. In 1969, Teck Corporation acquired control of Cariboo-Bell Copper Mines Limited. E & B began work on the claims in 1981 and acquired control of the property in 1982. Total drilling on the property amounts to 120,940 feet including 77,662 feet of diamond drilling.

Several other gold deposits in the area were originally tested for their porphyry copper potential. These include the Megabucks and Takom deposits which were staked as copper showings by Exploram in 1971. An initial program of reconnaissance I.P. and magnetic surveys, soil and rock sampling and diamond drilling outlined the two zones mentioned above which are currently being tested by Placer Development Ltd.

In addition to the above, early in 1983 Dome announced they had defined one million tons grading 0.2 ounces per ton gold on their QR deposit and that they were embarking on a major drill program. Although the results of the drilling are not yet public, Dome's initial success prompted an extensive staking rush in the area during the last half of 1983 and at least one other significant find (Eureka) was made.

#### TOPOGRAPHY

The property is characterized by gently sculptured topography. Moderate outcrop knobs and ridges (10 - 20 meters relief) were found in the southeast portion of the grid but in general bedrock exposure is very rare with glaciofluvial deposits as tills, sand and boulders covering most of the property. Moderate, mature forest cover was encountered across much of the grid with some thick secondary growth on old logged sections seen on eastern portions of the claim blocks.

### 1984 PROGRAM SUMMARY

a) Linecutting (May 20 - June 12)

The linecutting for the Hot property was contracted to Andy Dupras Exploration Ltd. of Penticton. Transited baselines were cut north-south to provide control for crosslines cut every 200 meters. All lines were chained and picketted every 25 meters. Linecutting totals for the Hot grid were as follows:

Transited Baselines 5.2 km 200 meter Spaced Crosslines 52.725 km

Total 57.925 km

b) Geological Mapping (June 7 - June 22)

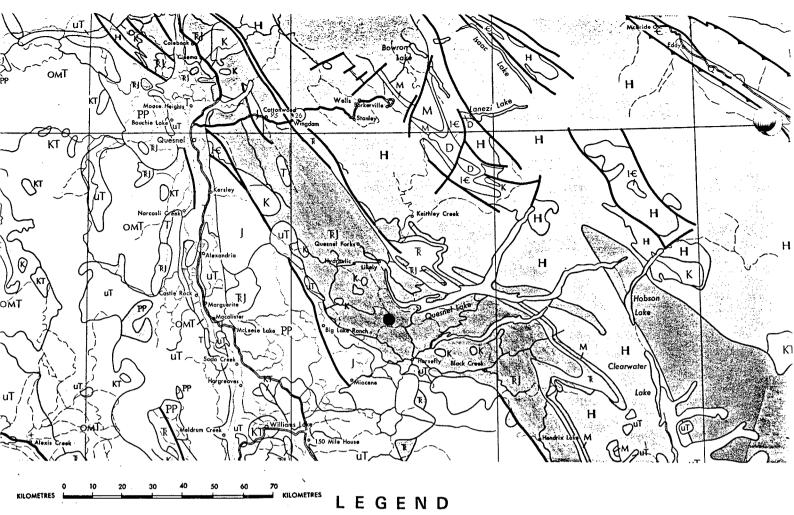
Regional outcrop mapping was performed by L. Forand and B. Johnston using the cut grid, as well as logging roads and creeks for control. This data was compiled on a 1:5000 base map.

Mapping symbols and some rock names were adopted from those established from GSC mapping (Campbell, 1961).

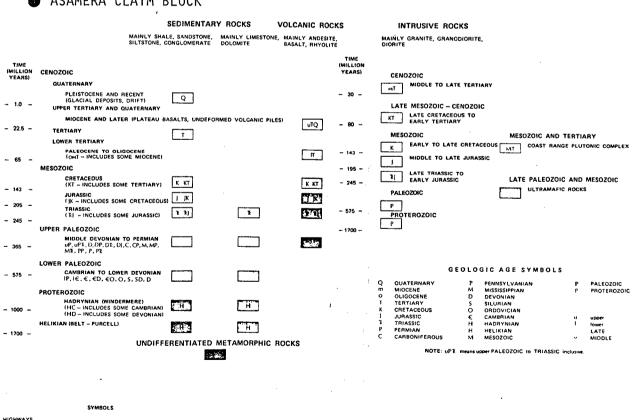
c) Geochemical Sampling (May 22 - 24, June 16 - July 1)

A systematic geochemical soil sampling program was completed on the Hot Grid by L. Dauphin and R. Macsymowich. Rock samples as well were taken from as many outcrops as could be found, however, much of the property is not covered by lithogeochemical sampling because of the scarcity of exposed bedrock.

Initially, in April, a brief (two day) geochemical orientation survey was conducted by J. Hajek - geochemical consultant from Vancouver. This was followed by a more extensive ten day period at the start up of the field program during which Hajek trained the crew in the most effective sampling procedures as well as supervising the initial phase of the sampling program. A variety of sampling techniques and media were tried. In addition to soil and tills, seeps, waters, humus, stream sediments and pan concentrates were also collected. Additionally, analyses by two different laboratories for several path finder elements, multi ICP and gold were done. From this preliminary work it was determined that the most efficient and cost effective geochemical sampling program involved taking systematic soil samples (B2 horizon preferred but also enriched tills) every 100 meters along cut grid lines. Samples were then analysed for Au, Cu, Mo.



## ASAMERA CLAIM BLOCK



REGIONAL GEOLOGY MAP

In all 449 soil samples were sent for analysis to Barringer Magenta in Calgary with an additional 44 humus samples and eight panned concentrated stream samples going to Vangeochem in Vancouver. The lithogeochemical sampling resulted in 52 rock samples being sent to Barringer Magenta and also analysed for Au, Cu and Mo. A brief description of the analytical methods employed by Barringer Magenta is summarized in the Appendix.

## d) Geophysics (July 2 - July 8)

Ground VLF and proton magnetometer surveys were contracted to Hardy Associates (1978) Ltd.of Calgary. The VLF survey used a Geonics EM-16 tuned to NSS (Seattle, Wash.). Readings were taken every 25 meters and, in order to apply a topographic correction to the VLF Dip angle, slope measurements were also taken. Results were then Fraser filtered and contoured on a 1:5000 map.

The magnetic survey was performed using an EDA PPM 350 total field magnetometer in conjunction with an EDA PPM 375 recording base station magnetometer. Readings were again taken every 25 meters, then plotted and contoured on a 1:5000 scale magnetic map.

#### REGIONAL GEOLOGY

The Hot claim group is located within the Quesnel trough, a linear belt of Upper Triassic and Lower Jurassic basic volcanics and sediments extending 2000 km from the U.S. border to the Stikine River (see opposite page). The volcanic lithofacies consist of calc-alkaline and alkaline basalts and andesites. These lavas are subaqueous fissure eruptions associated with regional faults. At a late stage in the volcanic cycle large, sub-aerial volcanic centers developed. These features consisted largely of pyroclastic and epiclastic rocks, complex intrusive breccias, and small plutons or necks of diorite, monzonite and syenite. These plutons are intrusive into the overlying volcanic material which is, in part, of common parentage. Commonly associated with these plutons is a late fumarolic or hydrothermal stage in which large volumes of volcanic rocks are extensively altered to albite, K-feldspar, biotite, chlorite, epidote and various sulphides. The late metasomatic period involves the introduction of volatiles and various metals into the vent areas and is a typical and important feature of the final stages of the volcanic cycle. The Copper Mountain, Afton, Cariboo Bell, Quesnel River (QR) deposits and many other prospects are directly associated with this late fumarolic stage.

## PROPERTY GEOLOGY

Interpretation of any detailed geology is severely restricted by the lack of bedrock exposure encountered over most of the grid.

The property appears to be underlain by a complex sequence of basaltic flows, flow breccias, tuff breccias, and coarse bedded volcaniclastics intercalated with finer grained lithic wackes to siltstones. Ground magnetometer and VLF surveys suggest a northerly strike direction roughly paralleling the regional trend of the trough.

The rocks seen throughout the property were essentially fresh and unaltered. Several bedding strike and dip measurements were recorded but no folding or faulting could be interpreted due to the paucity of outcrops. Regionally though, work done on the sedimentary rocks in the immediate area have shown them to have quaquaversal dips suggesting them to be reworked water deposited equivalents of tuffs and pyroclastics. Several minor intrusive dykes and/or sills were mapped cutting through the volcanics but none proved to be mineralized or conductive nor showed any magnetic expression.

### LITHOLOGIES

### a) Volcanic and Sedimentary Rocks

## Unit #1 - Grey-Green Siltstones, Tuffaceous Wackes and Conglomerates

This unit has been divided into three distinctive sub-units but due to their interbedded nature and paucity of outcrops the sub-units were not individually mappable. Based on the abundant float seen on the western half of the property it is assumed that this unit is a widely spread rock type, underlaying a large portion of the grid. The unit was sub-divided on the basis of clast size ranging from 1) poorly bedded silstones to 2) lithic wacke composed of grit size material and 3) conglomerates. Clasts, which vary in size from less than 1 mm to greater than 10 centimeters, are sub-angular to rounded and comprise from 5 - 60% of the rocks. In general, the bedding is weakly defined except for intervals of well bedded siltstone. Minor fine grained disseminated pyrite was commonly noted as well as minor carbonate. The siltstone, wackes and conglomerates appear to be interbedded with each other and are facies equivalents with boundaries sharp to gradational. In general the fine grained siltstones become increasingly more abundant from east to west across the property.

## Unit #2 - Red-Brown Lapilli Tuff and Tuff Breccia

These rocks are relatively well exposed across the eastern edge of the grid along a series of east west trending ridges. They are typically reddish brown with subrounded to angular fragments two to ten centimeters in width comprising up to 75% of the rock. These clasts are polylithologic, composed of intrusive as well as volcanic material. This unit appears to be gradational with unit #1 but distinguished from it through a variation in colour and a lack of sorting or stratification.

## Unit #3 - Maroon Analcite Basalt and Basalt Breccia

This unit is seen at the extreme eastern edge of the property and is not as well exposed as unit #2. Two varieties of basalt were seen: 1) amygdaloidal basalts with vesicles filled with minor white calcite and white radiating ziolites? and 2) flow breccia basalts, autobrecciated with white carbonate commonly threaded around fragments. Distinctive pink trapezohedral crystals of analcite were pervasive throughout and locally very abundant.

## <u>Unit #4 - Chert Pebble Conglomerate</u>

The unit was seen only locally exposed along Antoine Creek in the southwest corner of the grid. It contains well rounded grey chert and black argillaceous pebbles up to two centimeters in an arenaceous matrix. Interbedded within this unit is a well bedded siltstone containing tree? fragments.

## Unit #5 - Tertiary Flood Basalt

This unit is poorly exposed along the extreme south west corner of the property. It is a dark grey, fine grained olivine basalt occasionally vesicular, typically weathered buff brown on surface.

## b) Intrusive Rocks

A few minor narrow dykes and/or sills were found cutting the volcanics on the east side of the grid, but typically had widths of less than three meters and were not exposed for more than a few tens of meters. The dykes were hornblende bearing monzonites generally striking east-west, with chilled aphanitic margins which often bleached or recrystallized their wall rocks.

## **GEOPHYSICS**

The ground magnetic survey indicated a generally northerly direction of the magnetics, conforming to the regional geological trend of the trough. Except for one area of relatively low magnetics in the north, the pattern of magnetic contours is erratic with high magnetic relief.

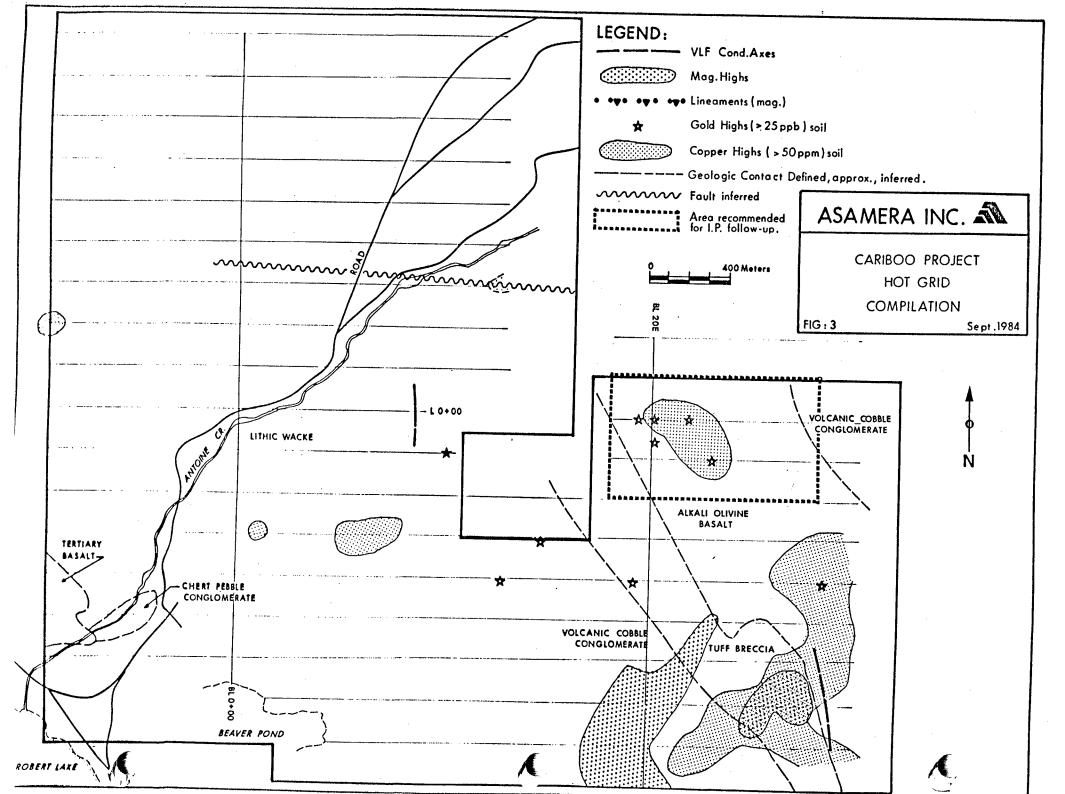
The VLF contours correspond with the north directions seen in the magnetics. The peak amplitute of the Fraser filtered anomalies range from poor to moderate, none of which are considered to be due to a sulphide conductor. The strongest anomaly is located at 8+50E on line 16+00S through 8+00S and is coincident with a magnetic high.

#### GEOCHEMICAL SURVEYS

The enclosed geochemical map at a scale of 1:5000 shows the results of analysis of the samples for gold, copper and moly.

The gold values range from non-detectable (less than 2 ppb) to a high of 224 ppb with samples greater than 25 ppb shown to be anomalous. Very few anomalous golds were indicated and except for a cluster of 5 high values in the north east part of the grid, (see accompanying compilation map) only single isolated highs were located. Additional closer spaced (50 meter) sampling was done around each high gold assay but in every case gold assays for this follow up sampling returned less than 25 ppb.

The copper content of the soils ranged from 6 ppm to 345 ppm. Values above 50 ppm were considered to be anomalous. These areas were contoured and are also shown on the compilation map. The contours appear erratic and apparently don't define any interpretable trends. A weak 50 ppm copper anomaly is coincident with the cluster of 5 high gold values and may be indicative of a mineralized shear fracture zone in the alkali olivine basalts. Humus analyses were performed from 44 locations on the grid but results indicated that this was a poor medium for carrying gold, thus further sampling was discontinued.



Panned concentrates were taken from ten stream locations which drained the grid and although significant gold values were detected, the inability to distinguish between a bedrock source and placer source for the gold discouraged further sampling.

## CONCLUSIONS AND RECOMMENDATIONS

Results from the regional geological mapping, geophysical surveys and geochemical sampling produced one area of interest which could be indicative of potential gold mineralization (see opposite page). The rest of the property however, has demonstrated low mineralization potential.

The area of interest is located between  $2+00\,\mathrm{N}$  to  $4+00\,\mathrm{S}$  and  $18+00\,\mathrm{E}$  to  $28+00\,\mathrm{E}$ . This area has a cluster of coincident gold and copper soil geochem anomalies which could be reflecting bedrock mineralization.

Additionally, a regional fault is interpreted to be located just north of this area (600 meters) enhancing the possibility of a mineralized shear fracture zone within the underlying volcanics. Unfortunately, no outcrop occurs in the area and depth of overburden is unknown. It is however, still recommended that a limited reconnaissance induced polarization survey attempt to define a conductive zone coincident with this geochemical anomaly.

Submitted by,

Lawson Forand

B.Se. Johnson.

Syrs. exp.

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Plad. gerlogist

LF/DWH/1m

## GEODATA SOURCES

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- Campbell, R.B. 1978, Geology of the Quesnel Lake Map Area B.C. (93 A), Geological Survey Can. Map O.F. 574
- Fox, P.E. 1983, The QR Deposit Cariboo District, B.C.
- Rebagliati, 1983, Megabuck a Synvolcanic Alkaline Intrusive Associated Gold Prospect
- Saleken, L.W., Simpson R.G. 1984, Cariboo-Quesnel Gold Belt: A Geological Overview.
- Watson, I.M. et al, 1983, The Report on the Slide Property, Slide Mountain Area, Cariboo Mining Division, B.C.

## APPENDIX

## ANALYTICAL METHODOLOGY

Following is a brief description of the analytical methods employed by Barringer Magenta for the analysis of the soils and rocks submitted during 1984.

All soils were dried and sieved through 50 and 150 mesh screens. The minus 50 plus 150 mesh fraction was pulverized to minus 200 mesh for the analyses. All rock samples were crushed and pulverized to minus 200 mesh.

For the analysis of gold in both soil and rock, a 30 gram sample of pulverized material was weighed into a cricible with the proper litharge flux. The sample was then thoroughly mixed and fused to prepared a lead button. After cupelling the button, the dore bead obtained was dissolved in aqua regia and the gold finally extracted into MIBK. This MIBK layer was then analysed for gold by direct aspiration using atomic absorption spectrophotometry (AAS).

Copper and molybdenum were analysed by atomic absorption after a 500mgm sample was digested in perchloric acid for four hours and the final volume adjusted.

## ASAMERA INC.

## CARIBOO PROJECT - HOT GRID

# EXPENDITURE STATEMENT JANUARY 1 TO DECEMBER 31, 1984

Salaries - 120 mandays @ \$110.00 per manday	\$ 13,200.00
Travel - 120 mandays @ \$ 46.50 per manday	5,580.00
Food and Accomodations - 120 mandays @ \$41.00 per manday	4,920.00
Assays	8,709.75
Drafting	774.46
Maps & Publications	176.56
Hardy Mag & VLF (\$135.00 per line km)	7,117.00
Geochemical Consultant	2,291.60
Equipment Purchase	1,084.60
Equipment Rental and Repairs	243.78
Expediting and Warehouse	201.85
Miscellaneous	299.12
Geoterrex I.P. 1st Survey	
- (\$1025.00 per day + mob-demob and report writing)	5,075.00
Geoterrex I.P. 2nd Survey	
- (1085.00 per day + mob-demob and report writing)	26,000.00

Total Expenses

\$ 75,673.72

Jan 11, 1985

Date

Signature

