

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

11,556

GEOLOGICAL AND GEOCHEMICAL REPORT

on the

CARIBOO GROUP OF MINERAL CLAIMS

CARIBOO 1-4, SHORT STUFF 2-3
MOST LIKELY 3-4, UTM 1-8
SURETHING 1-8

CARIBOO MINING DIVISION

NTS 93A/12

LATITUDE 52° 41'N

LONGITUDE 121° 43'W

DATES OF WORK:

May 25 - June 8, 1983

OPERATOR:

E & B EXPLORATIONS INC.
#1440-800 West Pender Street
Vancouver, B.C.

CONTRACTOR:

JMT SERVICES CORP.
8827 Hudson Street
Vancouver, B.C.

OWNERS:

J.S. Christie
K.W. Livingstone

WRITTEN BY:

G.G. Richards, P.Eng.

SUBMITTED

September 20, 1983

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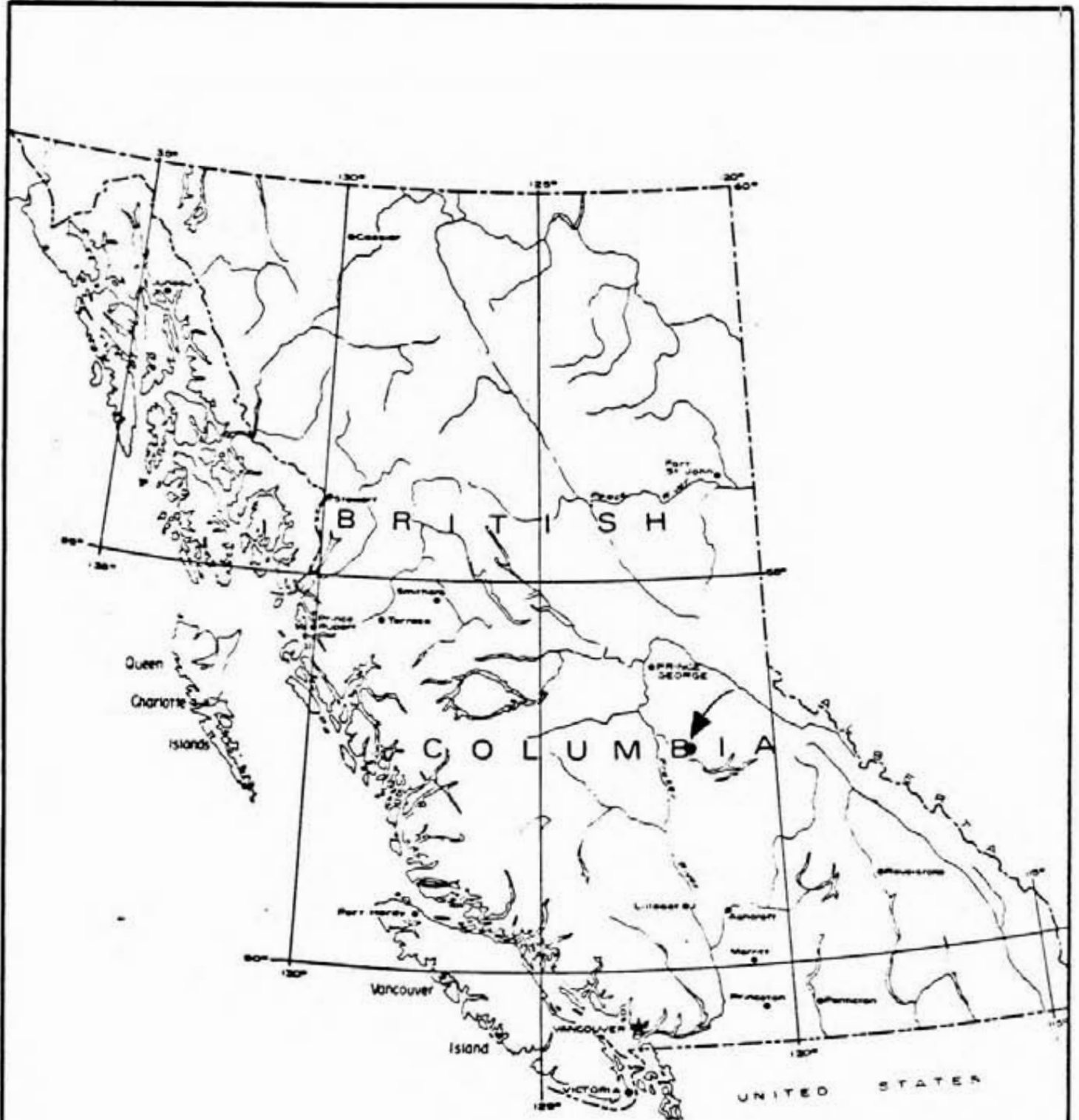
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INTRODUCTION

The property was staked following the release of geochemical data on NTS sheets 93A and 93B by the B.C. Department of Energy, Mines and Petroleum Resources. In particular, sample #5034 collected from a west flowing tributary to Maud Creek ran 195 As. Although gold was not analyzed on samples collected from this survey, the well known association of anomalous arsenic with gold deposits formed the basis for staking. It was also known that Dome Mines was drilling a gold prospect on ground immediately to the west and that occurrence strengthened the belief that the high arsenic result analyzed from sample #5034 might also be associated with anomalously high gold. One claim block of nine units, the RAIN claim, had been staked by Matagami Mines the day prior to the staking by the E & B crew. However a large block of claims was staked overlying the RAIN claim and adjacent to the QR claims of Dome Mines.

A broad geochemical survey in 1982 produced a few highly anomalous gold values with associated arsenic anomalies but no clearly definable target for further exploration was evident. A description of the ore body on the adjacent QR claims by P. Fox in January 1983 gave a model on which to base future exploration. In particular the basal contact of an andesite breccia unit was seen to be significant particularly in and near areas of pyrite mineralization, disseminated and fracture controlled calcite, and strong epidote replacement.



J M T SERVICES CORP.			
<i>CARIBOO</i>			
PROPERTY LOCATION MAP			
SCALE			
0		13.6 Miles	
Prepared by:	Date:	NTS MAP AREA	DRAWING No
Drawn by:	Revised:		

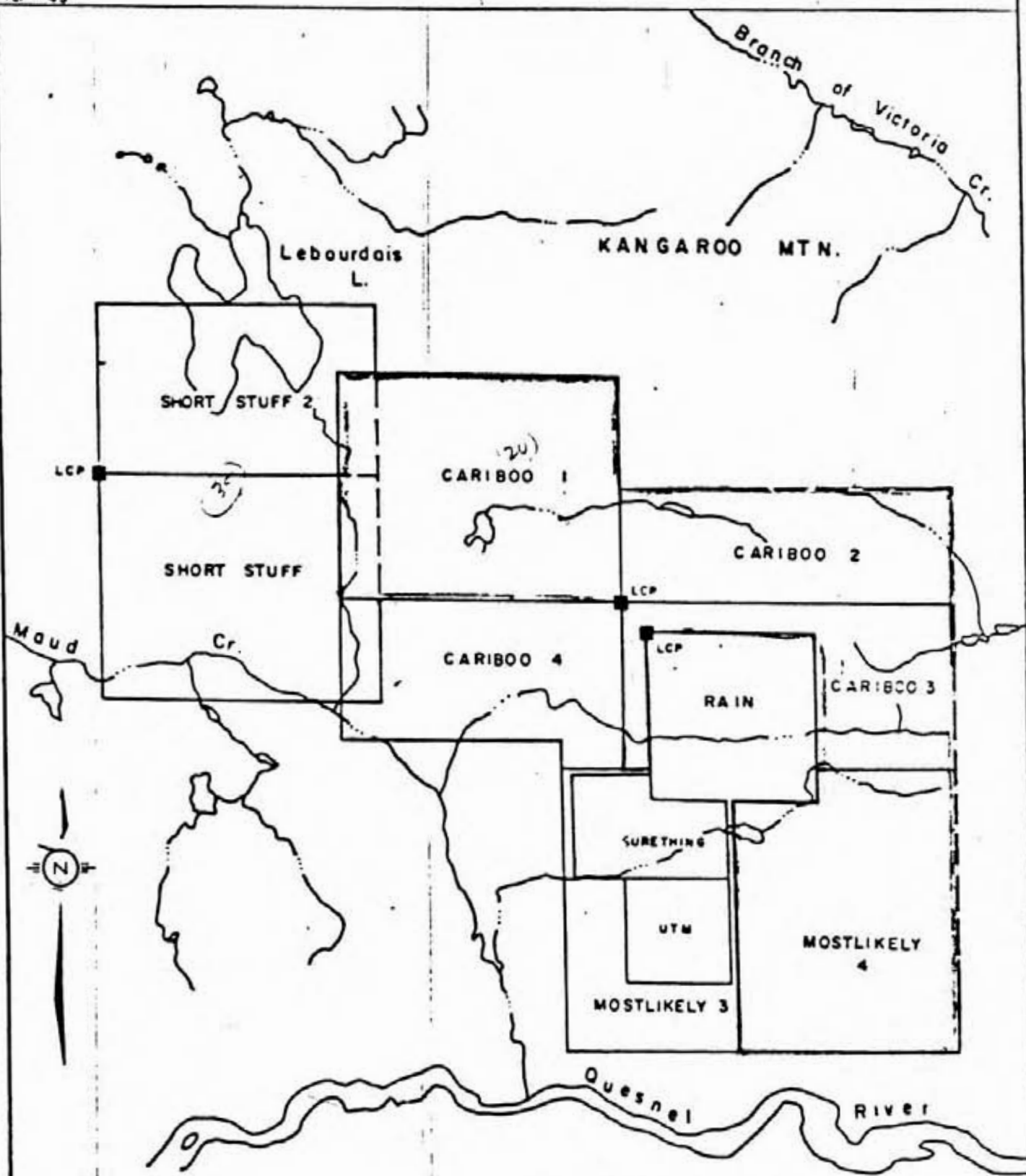
The claims were re-examined in May 1983 and particular attention was paid to the basal contact of a similar, if not the same, andesite breccia unit as found on the QR claims. 182 samples were collected, of which 15 were stream sediments, 91 were soil samples, and 76 were rock chip samples. Strong gold geochemistry was found in three areas along the basal andesite contact over a strike length of 1500 metres and open in both directions along strike. Two of these areas contained outcrops and these were locally altered and mineralized. Calcilte veining was particularly abundant in the westernmost exposures with local areas of 1%-5% pyrite mineralization with some associated epidote along fractures and as replacement of the andesite matrix. The easternmost exposures contained local zones of 2-5% pyrite mineralization. Much sand to silt size glacial outwash and till deposits cover the intervening ground between the three gold anomalous zones.

The basal contact appears to dip shallowly to the north and it is this contact that provides the target for economic mineralization on the property. An induced polarization survey should be conducted along this contact on lines spaced 100 m apart using two or more separations. With the strongly anomalous gold geochemistry and associated pyrite mineralization it is felt that this survey will produce drill targets.

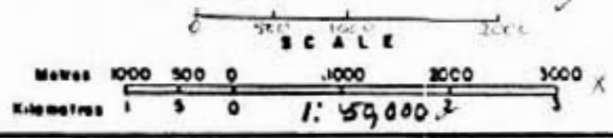
LOCATION AND ACCESS

The CARIBOO property is situated north of the Quesnel River, about 5-10 km northwest of Quesnel Forks. Access is by helicopter from Williams Lake or Quesnel. The nearest logging road lies about 10 km

121° 43'



CARIBOO PROPERTY
CLAIM MAP



NTS 93 A/12

FIG.10

east of the property and a rough access road suitable for 4 x 4 vehicles provides access to the QR claims base camp, two km southwest of the main geochemical target described in this report. A good horse trail heads northwest across the property from Quesnel Forks and would provide good access by foot through the proposed induced polarization survey area.

TOPOGRAPHY AND VEGETATION

The property lies on the eastern flanks of the interior plateau adjacent to the Quesnel highlands. Elevations on the property range from approximately 1900 feet near the southwest corner in Maud Creek to 3900 feet in the north central portion of the claims. The area is forested with pine, balsam fir and local aspen groves. Underbrush is not thick and presents little difficulty in traversing. A few swamps and old beaver ponds provide grassy meadows for good landing sites and potential camp sites. Water is restricted to a few well defined drainages.

MINERAL CLAIMS

<u>CLAIM NAME</u>	<u>UNITS</u>	<u>RECORD #</u>	<u>RECORD DATE</u>	<u>OWNER</u>
SHORT STUFF	2 15	3712(6)	June 24, 1981	K.W. Livingstone
	3 20	3713(6)	"	"
CARIBOO	1 20	3708(6)	"	J.S. Christie
	2 12	3709(6)	"	"
	3 18	3710(6)	"	"
	4 15	3711(6)	"	"
MOST LIKELY	3 20	3706(6)	"	"
	4 20	3707(6)	"	"

<u>CLAIM NAME</u>	<u>UNITS</u>	<u>RECORD #</u>	<u>RECORD DATE</u>	<u>OWNER</u>
UTM 1	1	3698(6)	"	J.S. Christie
2	1	3699(6)	"	"
3	1	3700(6)	"	"
4	1	3701(6)	"	"
5	1	3702(6)	"	"
6	1	3703(6)	"	"
7	1	3704(6)	"	"
8	1	3705(6)	"	"
SURETHING 1	1	3690(6)	"	"
2	1	3691(6)	"	"
3	1	3692(6)	"	"
4	1	3693(6)	"	"
5	1	3694(6)	"	"
6	1	3695(6)	"	"
7	1	3696(6)	"	"

GEOLOGY

General

The regional geology is depicted on Map 3-1961 published by the Geological Survey of Canada, mapped and compiled by R.B. Campbell 1959, 1960.

The best mapped geological contact is the basal contact of the andesite breccia, unit 3 of Figure 3. The andesite unit overlies a sedimentary package of conglomerate and siltstone. The conglomerate immediately underlies the andesite breccia, but appears to be absent in the northwesternmost exposures, thin (roughly 50'-100') in the next major creek to the east at R373, much thicker further east near R423 and in excess of 500' along lower Maud Creek and north of Quesnel River. Siltstone (unit 1) occurs beneath the andesite breccia unit in the easternmost exposures and beneath the conglomerate further east and

south. The andesite breccia unit is estimated from its outcrop distribution to be about 800 feet thick and overlain by siltstone, sandstone and minor conglomerate.

Much diorite float occurs north and northeast of the LCP of CARIBOO #1-#4 mineral claims and the sediments are hornfelsed in this area.

Structure

Conglomerate immediately underlying the andesite at R423 is flat lying and at R373, 1000 metres northwest, it dips 5° - 15° northeasterly. If the conglomerate-andesite breccia contact is not a major unconformity then a gentle northeasterly dip of this contact can be assumed.

A major southwesterly dipping fault of unknown magnitude is exposed on the southwest side of Maud Creek about 3 km from Quesnel River.

Mineralization

Units 1 and 2 along Maude Creek, north of Quesnel River and exposures between these areas include abundant rusty weathering sandstone, conglomerate and argillite which is caused by weak to strong pyrite-ankerite-carbonate-sericite alteration, with local silicification. Most exposures are deeply oxidized and leached.

Present interest is in attraction at the basal part of the andesite breccia unit because of its similarity to the QR gold deposit

on the adjacent ground held by Dome Mines. Exposures of andesite breccia in a south flowing tributary to Maud Creek north at R373 display abundant fracture calcite, large local zones of 1-5% pyrite mineralization as disseminations and fracture fillings, local fracture epidote and minor epidote flooding. This type of alteration is similar though weaker than that observed in a trench on the QR claims in the area of close-spaced diamond drilling. Similar though less persistent alteration of andesite breccia was observed in exposures east of R434 some 1500 metres east of the above exposures. No exposures of andesite breccia were found between these two areas nor for at least 2000 metres beyond either outcrop area.

GEOCHEMISTRY

General

Geochemical sampling was done to test the basal contact of the andesite breccia and immediate underlying sediments. Soil silt and rock chip samples were collected and analyzed for gold and arsenic.

Soil samples were collected from pits excavated with a hand pick to a depth of 15-25 cm. The samples were dug from the pit using a stainless steel scoop or spoon and placed in a gusseted kraft sample bag. The soil samples were collected from B horizon soils, or the best approximation to B soil as possible at each location. Sample size was usually 300 to 500 grams. Silt samples were collected from active silts using a stainless steel scoop or spoon and transferred to a gusseted kraft sample bag. Silt samples commonly exceeded 500 grams in size, particularly if coarse sediments were encountered. This was to

insure an adequate quantity of fine sediment for analysis. Rock chip samples were usually composed of several (three to five) chips from an outcrop of bedrock. Three hundred to 500 grams of sample were collected and placed in a gusseted kraft sample bag.

All samples were shipped to Chemex Labs Ltd., 212 Brooksbank Avenue, North Vancouver, B.C. for preparation and analysis. Soil and silt samples were dried and sieved with the -80 mesh fraction or a suitable portion of it retained for analysis.

Gold values were determined by fire assay preconcentration followed by neutron activation analysis.

Arsenic values were determined using a perchloric-nitric acid digestion followed by standard atomic absorption hydride finish.

Gold and arsenic values are presented in map form appended to this report.

RESULTS

Soil sampling appears to be of little use except near outcrop exposures in creeks. Intervening ground between creeks and creek banks away from outcrop exposure is a mixture of glacial outwash silts and tills. Therefore a soil grid over the whole property would only be of limited use. Rock chip samples collected from the exposures in the creek about 1000 metres northwest of the 1983 camp were locally highly anomalous for gold and arsenic--up to 800 ppb Au and >1000 ppm As. Soils in this area of outcrop were also highly anomalous for gold and arsenic with four soils higher than 100 ppb Au and five soils higher than 100 ppm As. The high gold in rock chips helps to confirm the

belief that the more widespread anomalous gold in soils on the property is related to bedrock gold mineralization and not to a placer effect.

The outcrop exposures of andesite breccia 1500 metres further west are relatively low in gold and arsenic but soils collected near these exposures are anomalous for gold--six soils are higher than 20 ppb Au with a high of 165 ppb Au near the basal contact of andesite breccia.

A single south flowing creek occurs between the above two creek outcrop exposures and although no outcrop was seen in the creek or along either side, two of four silt samples collected along the creek were highly anomalous for gold--166 and 165 ppb Au. All four silts were anomalous for arsenic (30 ppb As).

CONCLUSIONS AND RECOMMENDATIONS

Andesite breccia similar to the andesite breccia of the adjacent QR gold deposit of Dome Mines has been traced across the property in a northwesterly direction. The central portion of this unit displays alteration effects characteristic of the QR deposit although somewhat weaker. In particular disseminated and fracture controlled pyrite, fracture epidote and epidote replacement, and abundant calcite veining are present coincident with highly anomalous gold geochemistry in soils, silts and locally, rocks. This alteration-Au geochemical pattern occurs over a strike length of 1500 metres open in both directions. Thus a target for bulk tonnage gold mineralization similar to the QR deposit exists on the property.

Except for near creek exposures, geochemical soil sampling would be of little use because of the extensive glacial outwash silts and till cover. An induced polarization survey is recommended over at least 2000 metres of strike length of the favorable contact followed by percussion drilling of I.P. targets. I.P. lines could be run on lines at least 1000 metres long and still read the basal andesite breccia contact because of the near flat lying nature of this contact.

Respectfully submitted,

Gordon G. Richards, M.Sc. P.Eng.

CARIBOO PROPERTY
STATEMENT OF EXPENDITURES
CABIN AND HORSETRAIL GROUPS

TIME CHARGES

G.G. Richards, Geologist	May 18(1/2), 19(1/2) May 25-30, June 7(1/2)	7-1/2 days @ \$225	\$ 1,687.50
W.A. Howell, Geologist	May 24(1/2), May 25-30	6-1/2 days @ \$225	1,462.50
K.W. Livingstone, Geologist	June 7(1/2), 8(1/2)	1 day @ \$225	225.00

DISBURSEMENTS

Camp Costs- domicile	12 man days @ \$45	540.00
Hudson Building Supplies - Inv. #7393		264.88
B.C. Telephone		12.45
Chemex Labs Ltd. Inv. #1566		1,103.20
	1567	1,177.66
Okanagan Helicopters - #528089		572.40
	528090	440.16
Radio rental		50.00
Truck rental		175.95
Report preparation and reproduction		<u>1,500.00</u>

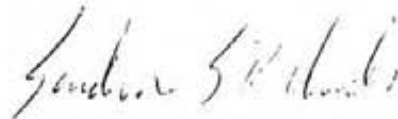
Total \$ 9,111.70

Distribution: \$ 2,310.00 apply to CABIN Group
5,775.00 apply to HORSETRAIL Group
1,026.70 apply to K.W. LIVINGSTONE P.A.C. Account

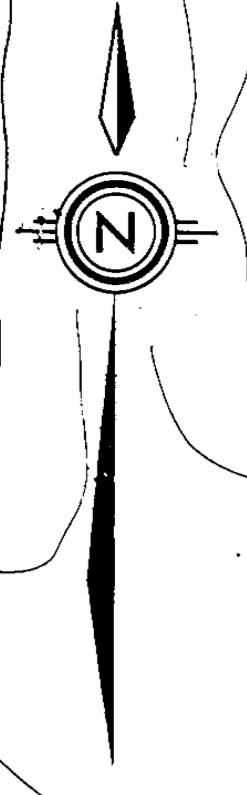
STATEMENT OF QUALIFICATIONS

I, Gordon G. Richards, of Vancouver, British Columbia, do hereby certify that,

1. I am a Professional Engineer of the Province of British Columbia, residing at 6195 Lynas Lane, Richmond, B.C., V7C 3K8.
2. I am a graduate of the University of British Columbia, B.A.Sc., 1968, M.A.Sc. 1974.
3. I have practised my profession as a mining exploration geologist, continuously since 1968.
4. This report is based on my personal knowledge of the district, and mapping of the geology at the property.



Gordon G. Richards, P.Eng.



TANGO #3

CARIBOO #1

CARIBOO #2

INTRUSIVES L.C.P. RAIN CLAIM

CARIBOO #3

ANDESITE

CARIBOO #4

"RAIN"

CONGLOMERATE

MOST LIKELY #4

"TONIATA"

"UTM"

"MOST LIKELY" #3

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,556

- LEGEND**
- 4 Intrusive rocks, mostly diorite to monzonite locally porphyritic
 - 3 Andesites, massive fine grained to hornblende augite porphyritic, brecciated
 - 2 Conglomerate, sandstone locally argillaceous rusty orange weathering
 - 1 Siltstone, soft friable unweathered, very poorly exposed
- Soil sample
 - Silt sample
 - △ Rock sample
- 672 Sample location number
25/3 Arsenic (As), Gold (Au)
ppm
- 1983 SAMPLES B 468-B 553, R 344-R 442
- ? GEOLOGICAL CONTACT (ASSUMED)
 - GEOLOGICAL CONTACT (OBSERVED)
 - ROCK OUTCROPPING AREA
 - TRAIL
 - ≡ SWAMPY TERRAIN
- SURVEY BY HIPCHAIN, BAROMETER & COMPASS ON 1:50,000 ENLARGEMENT

JMT SERVICES CORP.

CARIBOO MINERAL CLAIMS
92-H-12

**GEOLOGY &
GEOCHEMISTRY**

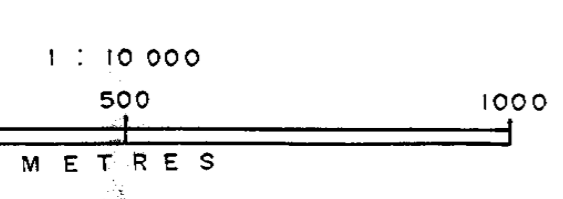


FIG. 3