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VANCOUVER, B.C.

LOG NO:	APR 18 1995	U
ACTION:		
FILE NO:		

Prospecting & Geochemistry

on the

Sam Property

Cariboo and Omineca Mining Divisions  
NTS: 093J/13W

Latitude: 54° 59'N  
Longitude: 123° 47'W

March 1995

Owner/Operator: Hudson Bay Exploration  
& Development Co. Ltd.  
405-470 Granville St.  
Vancouver, B.C.  
V6C 1V5

FILMED

Author: E. W. Yarrow  
**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

23,850

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## **Summary**

The Sam property is located approximately 50 km NNE of Ft. St. James, B.C. and comprises all or portions of 30 claim units, approximately 480 hectares in total.

In April, 1994 Hudson Bay Exploration and Development Co. Ltd. (HBED) personnel staked the Sam 1-11 claims during a rush to restake the lapsed Alpha claims formerly held by Noranda. Two other parties were involved in the rush. HBED acquired land peripheral to the main geochemical anomalies and IP chargeability anomalies, but did acquire most of the magnetic anomalies. The land holdings were increased by staking the Sam 12 - 19 claims along the south side of the property in July, 1994. Part of the Sam 2 claim is located in the Omineca Mining Division, while the balance of claims are in the Cariboo Mining Division.

In July, 1994 a crew of three from HBED conducted prospecting traverses and collected a few rock samples for geochemical analysis. This prospecting and rock geochemical work is the subject of this assessment report. The results indicate that altered and locally sheared volcanics, and intrusive rocks outcrop on the property. Two rock samples were taken from similar rusty weathering chlorite - hornblende schist (altered and deformed volcanics) with up to 5% pyrite. Sample LG043 assayed 169ppm Cu and 30ppb Au, with 107ppm Ni and 308ppm Cr. Lead zinc and molybdenum values were low. Sample LG044 yielded 109 ppm Cu.

## **Location, Access and Physiography**

The Sam property is located 50 km north-northeast of Ft. St. James B.C. (81 km by road), centred at Latitude 54 degrees 59 minutes north, Longitude 123 degrees 47 minutes west. (Figure 1). NTS Map 93 J/13W

Access to this property was gained by road from Fort St. James via the Germansen - Cripple Lake Road. Alternatively, the claims can be reached from Mackenzie, B.C. via the Phillips Main logging road.

Topography on the claims consists of rolling hills bisected by tributaries of the Salmon River. Elevations range from 990 m to 1128 m. Glacial features such as drumlins, eskers and outwash plains blanket much of the property.

Vegetation consists of mature stands of spruce and fir, although most of the area covered by the Sam 2 claim and those directly south have been logged over.

### Claim Information

The Sam property consists of one 4-post claim of sixteen units and eighteen two-post claims in the Cariboo and Omineca Mining Divisions. Much of the Sam 2, 5, 6 and 8 overtake other claims (Figure 2). All of the claims are owned by Hudson Bay Exploration and Development Company Ltd. Claim information is summarized below:

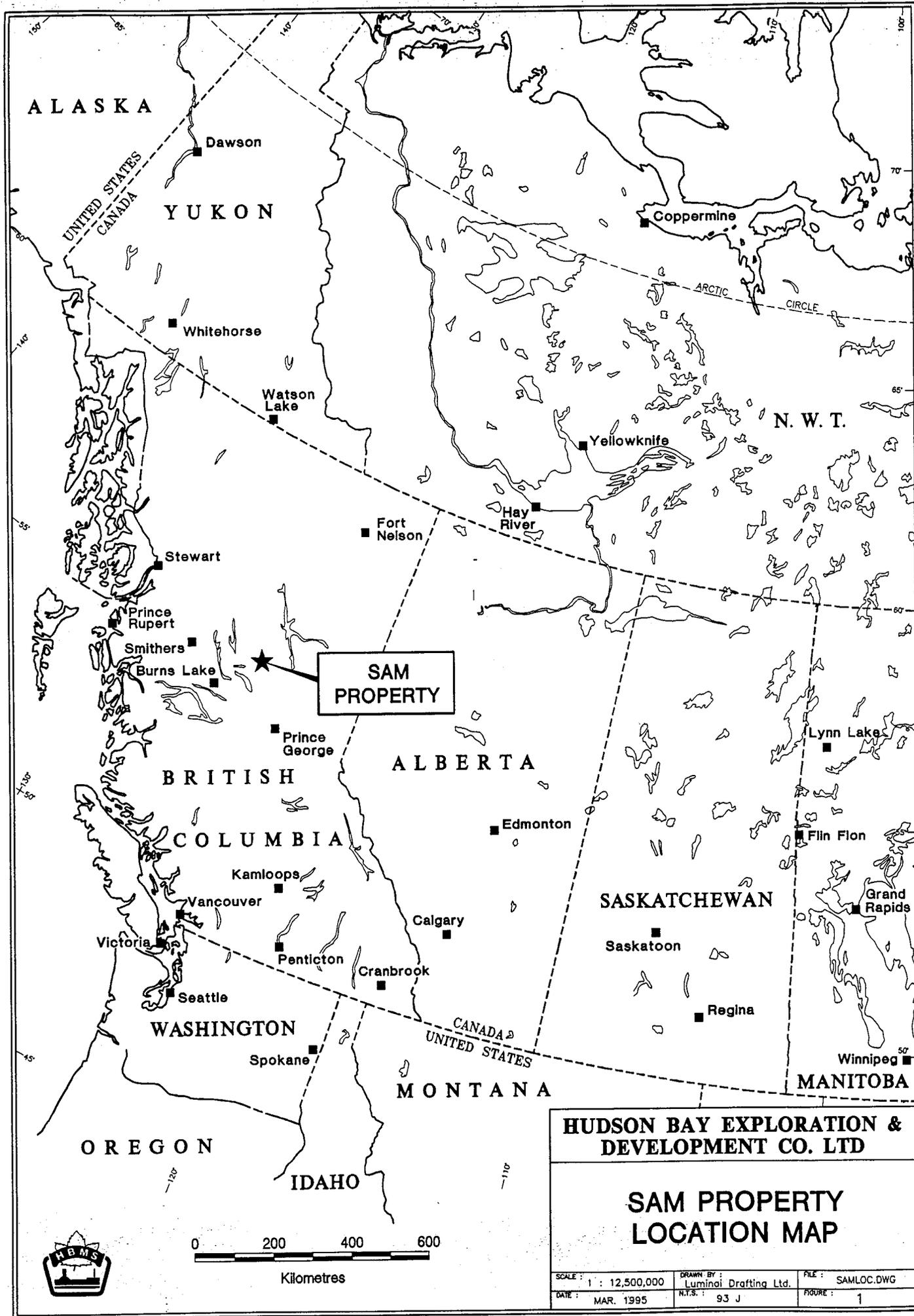
Claim Name	Units	Record Number	Expiry Date*	Owner
Sam 1	1	324365	April 4, 1996	HBED
Sam 2	16	324360	April 4, 1996	HBED
Sam 3	1	324361	April 4, 1996	HBED
Sam 4	1	324362	April 4, 1996	HBED
Sam 5	1	324363	April 4, 1996	HBED
Sam 6	1	324364	April 4, 1996	HBED
Sam 7	1	324366	April 4, 1996	HBED
Sam 8	1	324367	April 5, 1996	HBED
Sam 9	1	324368	April 5, 1996	HBED
Sam 10	1	324369	April 5, 1996	HBED
Sam 11	1	324379	April 5, 1996	HBED
Sam 12	1	328931	July 17, 1996	HBED
Sam 13	1	328932	July 17, 1996	HBED
Sam 14	1	328933	July 17, 1996	HBED
Sam 15	1	328934	July 17, 1996	HBED
Sam 16	1	328935	July 17, 1996	HBED
Sam 17	1	328936	July 17, 1996	HBED
Sam 18	1	328937	July 17, 1996	HBED
Sam 19	1	328938	July 17, 1996	HBED

34

\*If this report accepted for assessment

### Work Performed

On July 18 L. Gal, geologist, and S. Conley, prospector, prospected on the Sam property, produced a sketch map of outcrops, roads and collected two samples (Figure 3). On July 20th, M. Moore, geologist, joined the crew and the day was spent in the north part of the property examining outcrops. Figure 3 summarizes the traverse and sample locations for the work. E.W. Yarrow provided overall direction for the work and is the author of the report.

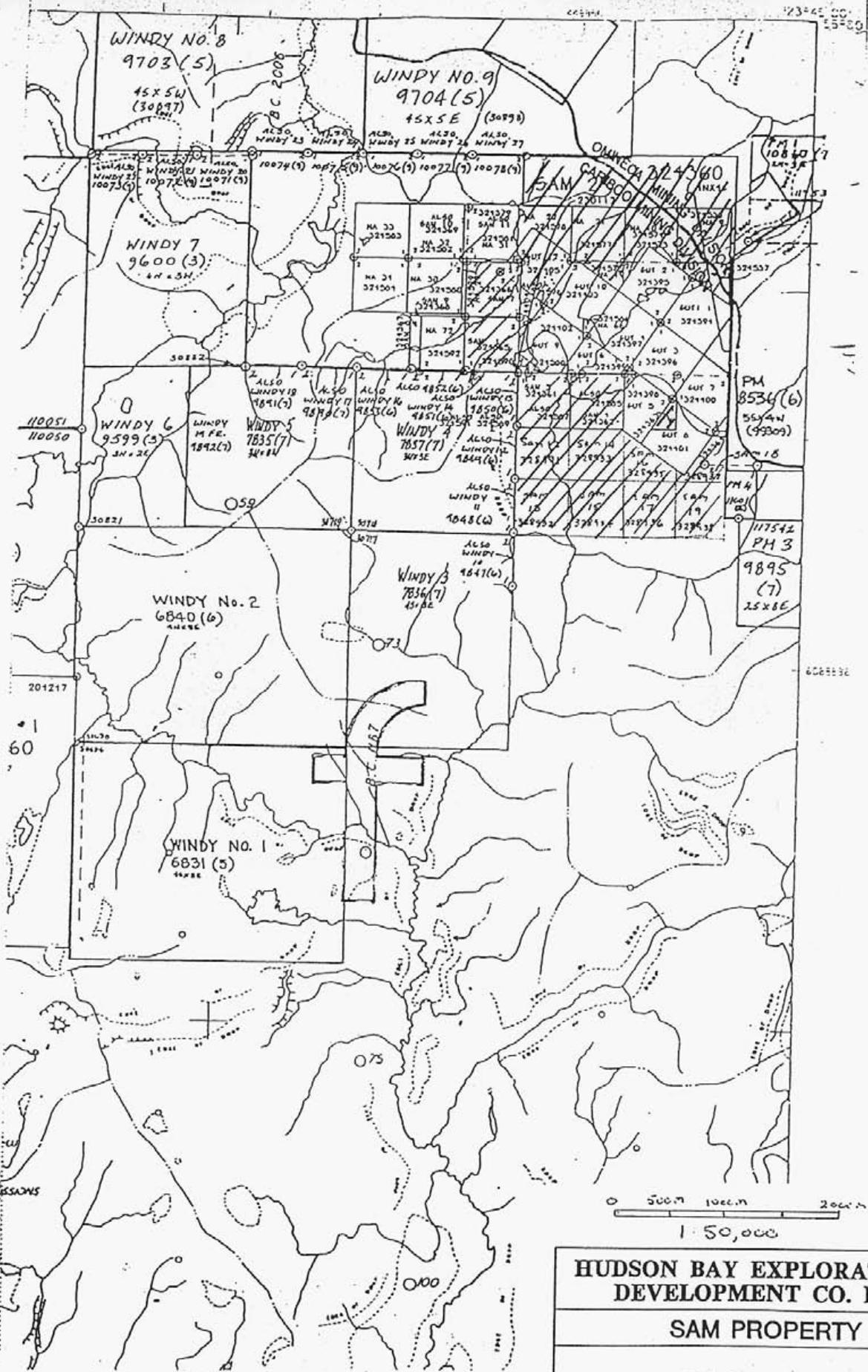


**SAM  
PROPERTY**

**HUDSON BAY EXPLORATION &  
DEVELOPMENT CO. LTD**

**SAM PROPERTY  
LOCATION MAP**

SCALE : 1 : 12,500,000	DRAWN BY : Luminai Drafting Ltd.	FILE : SAMLOC.DWG
DATE : MAR. 1995	N.T.S. : 93 J	FIGURE : 1



**HUDSON BAY EXPLORATION & DEVELOPMENT CO. LTD.**

**SAM PROPERTY**

**CLAIM MAP**

SCALE: AS SHOWN	DRAWN BY:	FILE: SAM.DWG.
DATE: MAR. 1995	HTS: 93 J'	FIGURE: 2



/// AREA ENCOMPASSED BY SAM CLAIMS  
 As per letter and map from R Campbell, Gold  
 Commissioner, APRIL 22, 1994

## **History**

Early work in the area consisted of placer gold exploration on the Salmon River. Selco Exploration flew some airborne geophysics to the south of the Sam claims and some diamond drilling took place in 1982. The first work on record in the property is in 1987.

The Sam property overlies part of the former Alpha claims which were under option to Noranda from 1989 to 1991. Airborne magnetometer and electromagnetic survey were flown in 1989. In 1990, ground work included grid placement, magnetometer and soil sampling surveys. Results of this work indicated a NW-SE trending belt of moderate to intense magnetic anomalies which are flanked, especially on the northeast side, by Cu-Au soil anomalies. The geochemical anomalies are up to 400 m wide, and 2.5 km long. Gold values are up to 1020 ppb, copper up to 1090 ppm and up to 4.8 ppm Ag and 650 ppm Zn. Moderate to strong IP chargeability anomalies occur in a NW trending belt along the NE flank of the magnetic anomalies. Propylitically altered volcanics with disseminated pyrite +/- pyrrhotite and trace chalcopyrite were identified and magnetite bearing intrusives were identified adjacent to the IP anomalies. In 1991 additional soil sample, magnetometer and IP surveys were performed to further define the anomalies. The 1991 Noranda Assessment Report recommended several drill holes, but these were apparently not drilled.

## **Regional Geology**

The Sam claims lie along the western edge of the Quesnel Trough, a fault bounded portion of the Intermontane Belt comprising Upper Triassic to Lower Jurassic rocks of Island arc and back-arc affinities. The underlying rocks belong to the Takla Group, which includes intermediate to mafic flows and volcanics, with sedimentary units consisting of conglomerates, greywacke, shales and some limestone. The Takla Group rocks have been intruded by felsic to ultramafic stocks and batholiths of Upper Triassic to Lower Cretaceous age.

The area is cut by numerous faults which trend northwest, parallel to the Pinchi Fault, which is a major structure forming the western boundary of the Quesnel Trough. The local faults include splays as well as complimentary transverse and tensional structures trending north - south to east west.

## **Property Geology**

Outcrop on the property is sparse with an extensive cover of glacial drift masking the underlying bedrock. Prospecting traverses near the perimeter of the Sam claims and the internal (to Sam claims) Gut claims located occasional outcrops of hornblende-plagioclase diorite, chloritic rich tuffs and flows. The volcanic rocks are often marked by a north-northwest trending foliation. Chlorite appears to be the dominant alteration type with small white quartz blebs and veins present. No copper bearing mineralization was observed.

301 (6)



448 E

450 E

To  
Mackenzie

Metavolcanic - siliceous and chlorite altered, north trending foliation overprinted by white alteration on weathered surface, small bull quartz blebs.

Strongly sheared volcanic - foliation weaker to west.

Chloritic plag. porphyry or plag. crystal tuff - strongly sheared quartz-rich and chlorite-rich layers.

Chlorite altered tuff cross-cutting vuggy bull quartz.

Quartz stockwork in volcanic.

SAM 2

Chlorite-hornblende schist - rusty, with diss. and local stringer pyrite and pyrrhotite.

Chloritic hornblende schist.

93N7LGR044

SAM 7

SAM 1

93N7LGR043

Chlorite-amphibole schist in subcrop: rusty, 4-5% pyrite diss. and in lenses parallel to foliation.

Chloritic hornblende schist.

To  
Ft. St. James

SAM 3

SAM 4

Strong chlorite-altered hornblende porphyry, unfoliated.

5  
SAM

SAM 6

SAM 18

SAM 12

SAM 16

SAM 14

Intrusive  
Intrusive: rusty weathered.

Chloritic volcanic.

Intrusive

Intrusive

Intrusive: hornblende -plag. tonalite/diorite.

Volcanic subcrop: green, chloritic.

SAM 13

SAM 15

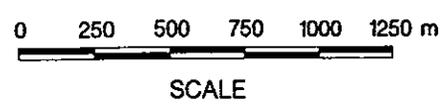
Plag. porphyry: purple, vesicular.

SAM 19

SAM 17

**LEGEND**

- ▲ 93N7LGR043 Sample location
- Outcrop
- ~ Fault
- - - Traverse route
- - - Road
- - - Stream
- Property boundary



**HUDSON BAY EXPLORATION & DEVELOPMENT CO. LTD.**

**SAM PROPERTY**

**PROSPECTING & SAMPLING**

SCALE: 1 : 25,000	DRAWN BY: Luminai Drafting Ltd.	FILE: SAMPRO.DWG
DATE: MAR. 1995	NTS: 93 J	FIGURE: 3

**Geochemistry**

Only two rock samples were taken during the brief work period on the property. Both of these samples may have been inadvertently collected from the Gut claims rather than from the Sam claim.

**Conclusions & Recommendations**

No significant copper mineralization was observed, however, the propylitically altered volcanics, presence of intrusive rocks and past workers' successful efforts in locating Cu-Au soil geochemical anomalies and I.P. anomalies in and around the Sam claims leads this writer to conclude additional work is required. This work should include sub-surface investigation of the anomalous areas. This work is predicated on the ability to consolidate all claims (Sam, Gut and NA) under one ownership.

**References**

Energy Mines and Petroleum Resources Assessment Reports #17216, 20102, 21470, 22022

Armstrong, J.E. 1949: G.S.C. Memoir 252, Fort St. James Map Area

**APPENDIX 1**

**STATEMENT OF QUALIFICATIONS**

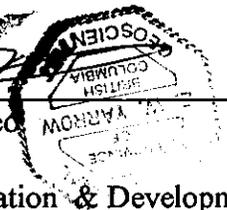
## **STATEMENT OF QUALIFICATIONS**

I, Edward W. Yarrow, of White Rock, British Columbia hereby certify that:

- 1) I am a graduate of the University of British Columbia, with a B.Sc. in Geology (1970) and an M.B.A. (1990) from Simon Fraser University.
- 2) I have practised my profession continuously since 1970.
- 3) I am currently employed as a Senior Geologist for Hudson Bay Exploration & Development Co. Ltd.
- 4) I am a Fellow of the Geological Association of Canada.
- 5) I am a member in good standing of the Association of Professional Engineers & Geoscientists of British Columbia.
- 6) I provided overall supervision and guidance in compiling and interpreting the results of the fieldwork on the Sam claims.

Signed this day 27 of March, 1995:

  
E. W. Yarrow, P. Geoscientist  
Senior Geologist  
Hudson Bay Exploration & Development Co. Ltd.



APPENDIX 2

STATEMENT OF EXPENDITURES

STATEMENT OF EXPENDITURES  
SAM PROPERTY

JULY 18 - JULY 24, 1994

Personnel

2 Geologists & 1 Prospector  
10 person days @ \$250/person (includes mob/demob to Vancouver) 2500.00

Analytical Charges

2 rock samples (32 element ICP) 40.00

Miscellaneous

Room & board 500.00  
Geological supplies 100.00  
Truck rental (incl. fuel) 525.00

Report Preparation

1 day @ 250/day 250.00  
Drafting, Secretarial 100.00

**TOTAL EXPENDITURES \$4,015.00**

**APPENDIX 3**

**ANALYTICAL RESULTS**



# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers  
212 Brooksbank Ave., North Vancouver  
British Columbia, Canada V7J 2C1  
PHONE: 604-984-0221

To: HUDSON BAY EXPLORATION & DEVELOPMENT CO. LTD.

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Project: KL  
Comments: ATTN: ED YARROW

Page Number :1-B  
Total Pages :1  
Certificate Date:04-AUG-94  
Invoice No. :I9421172  
P.O. Number :  
Account :T

## CERTIFICATE OF ANALYSIS

### A9421172

SAMPLE	PREP CODE		Mo	Na	Ni	P	Pb	Sb	Sc	Sr	Ti	Tl	U	V	W	Zn
			ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
[REDACTED]	205	294	[REDACTED]													
LGO43	205	294	< 1	0.01	107	1180	6	< 2	8	521	0.29	10	< 10	103	10	24
LGO44	205	294	9	0.04	36	1250	< 2	< 2	4	93	0.17	10	< 10	98	< 10	28

CERTIFICATION:

*Hart Bichler*



# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers  
212 Brooksbank Ave., North Vancouver  
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Page Number : 1-A  
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Invoice No. : I9421172  
P.O. Number :  
Account : T

## CERTIFICATE OF ANALYSIS

### A9421172

SAMPLE	PREP CODE		Au ppb	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	
	FA+AA																					
LGO43	205	294																				
	205	294																				
	205	294																				
	205	294	30	< 0.2	1.50	28	70	< 0.5	< 2	0.88	< 0.5	16	308	169	10.45	20	< 1	0.21	< 10	1.28	410	
LGO44	205	294	< 5	< 0.2	1.89	< 2	380	< 0.5	< 2	0.84	< 0.5	15	150	109	3.84	10	< 1	0.37	< 10	1.89	375	

CERTIFICATION: *Hart Bichler*