

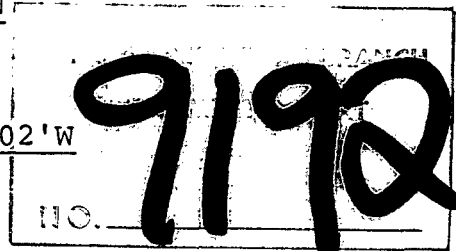
DU PONT OF CANADA EXPLORATION LIMITED

GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE BACH CLAIMS

LIARD MINING DIVISION

LAT. 56°47'N, LONG. 131°02'W



NTS: 104-B-14E

OWNER OF CLAIMS: Du Pont of Canada Exploration Limited

OPERATOR: Du Pont of Canada Exploration Limited

Author: D. M. Strain

Date Submitted: 1981 June 8

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## I

INTRODUCTION(a) Location and Access

The BACH claim group lies on the eastern flank of the Coast Range mountains, in the north-central portion of the Iskut River map sheet (104-B-14E). Mt. Verrett lies 5 km due south and Twin Glacier lies 10 km due west. The Stewart-Cassiar Highway passes within 52 km, ENE from the claims.

Helicopter offers the only reasonable access to the property.

(b) Claim Definition

The BACH group consists of 20 units staked 5W-4N from the legal corner post. The claims are within the Liard Mining Division, were recorded July 14, 1980 and are currently owned and operated by Du Pont of Canada Exploration Limited.

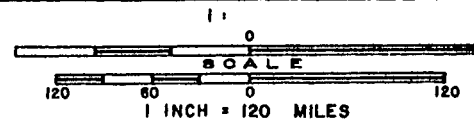
The ground was staked as a result of an anomalous 10 kg stream sediment sample and is viewed as a potential gold prospect.

(c) Summary of Work Performed

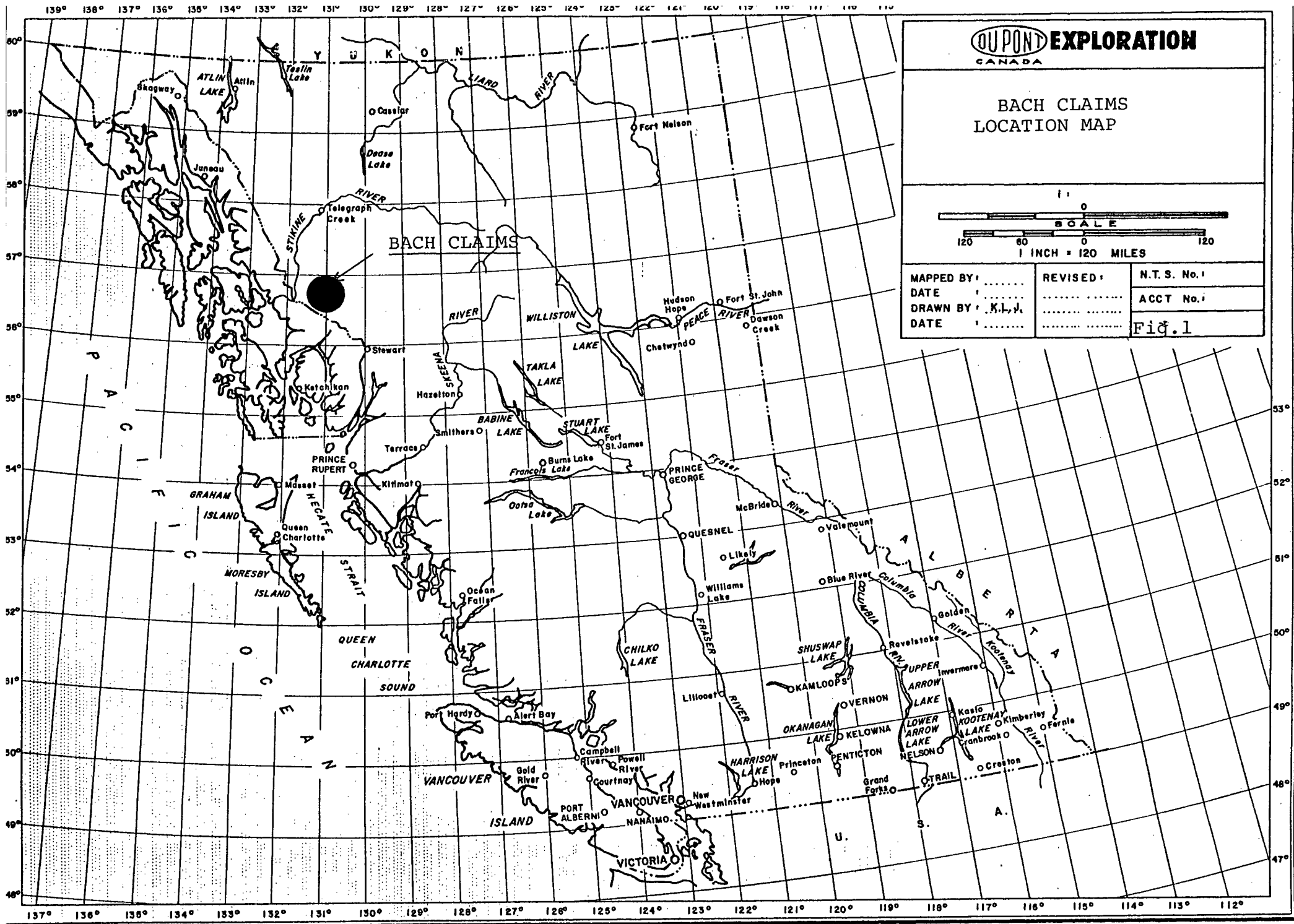
Work to date on the BACH group includes 2 person days of geologic mapping and prospecting and 2 person days of soil and stream sediment sample collection.

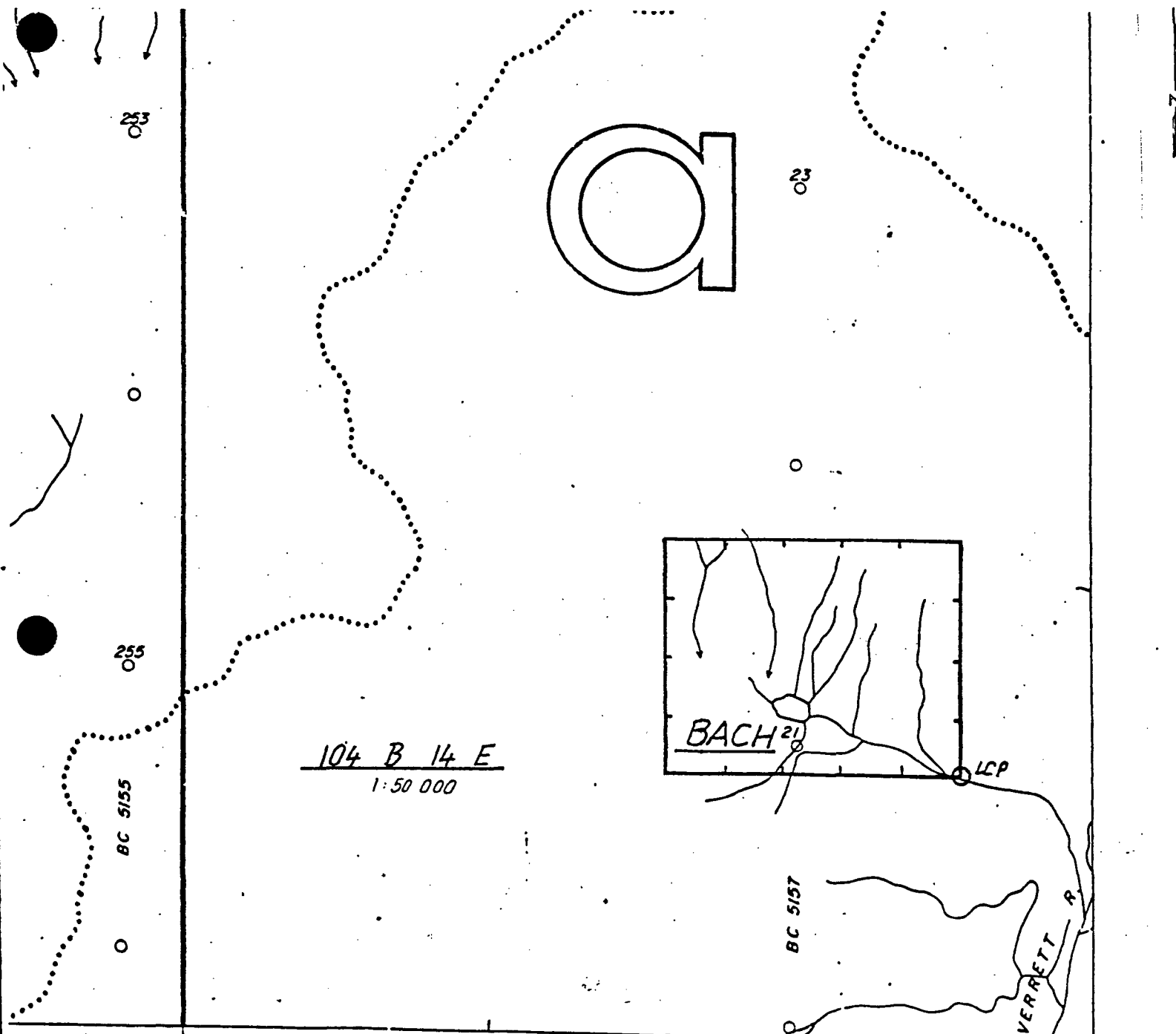
Soil samples were collected from two areas at 50 m intervals along traverses commencing at the extreme western claim boundary and progressing to the south-east. Sediment samples were collected from the small creeks draining the northern portion of the claims. A total of 26 soil samples and 12 stream sediment samples were collected from the property for analysis.

**BACH CLAIMS  
LOCATION MAP**



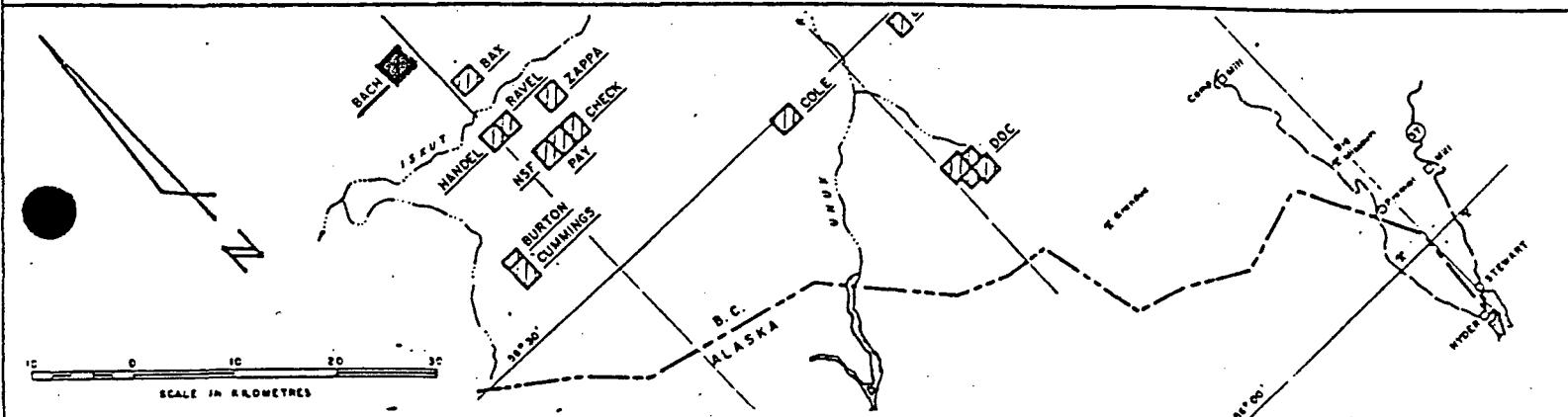
MAPPED BY: .....	REVISED: .....	N.T.S. No.:
DATE .....	.....	ACCT No.:
DRAWN BY: K.L.J.	.....	Fig. 1
DATE .....	.....	





104 B 14 E  
1:50 000

56°45'  
131°00'



SCALE IN KILOMETRES

(d) Physiography and Vegetation

The BACH claim group is situated in a small north-west-southeast trending valley. Glaciers on and around the property are fed by an expansive ice field to the north. To the south the Iskut River flows westward through a broad valley bordered by steep, rugged valley walls.

Elevation on the property ranges from approximately 490 m in the southeast to 1220 m in the northern reaches. Much of the property is below tree line with heavy growths of alders and other tangled vegetation surrounding the main creek. The main creek draining the claims is silt laden and flows rapidly and with a large volume of water throughout the summer months.

II GEOLOGY(a) Introduction

The BACH claim group is situated within the Coast Range mountains and underlain by plutonic rocks of the Coast Range batholithic complex.

The property straddles the contact between a Mesozoic dioritic intrusive body and slightly older (Triassic) volcanic rocks.

The diorite occupies the southwestern portion of the claims, and is well exposed on the steeper slopes. Gossan patches accentuate the diorite-volcanic contact but are not restricted to either rock unit.

A sequence of intermediate to mafic volcanics and a thick bed of limestone occur to the northeast of the diorite.

Float fragments of volcanic breccia and quartz porphyry were seen in a number of localities.

Detailed mapping is required along the contact between the diorite and volcanic rocks where gossans are present, immediately north of anomalous stream sediment samples #5288, 5289 and 5290, and including any brecciated zones.

(b) Lithology

The diorite is a light grey, medium grained rock. Visual examination reveals a composition of plagioclase feldspar and hornblende with minor amounts of biotite and quartz.

Light green, subtly banded volcanics were observed in contact with the diorite. This unit has an apparent thickness of about 500 m and displays varying degrees of foliation, becoming less obvious away from the diorite.

Dark, porphyritic basalt appears to overlies the light green metavolcanics. The phenocrysts are small (2-4 mm) plagioclase randomly oriented within a dark aphanitic groundmass. The banding and foliation of the metavolcanics was not observed in these rocks.

Light grey limestone occurs in contact with the basalt and appears to be part of the stratigraphy. The limestone has been slightly recrystallized which may account in part for its banded nature. No fossils were observed within this limestone bed.

(c) Structure

The group of volcanic rocks strike  $130^{\circ}$ , sub-parallel to the diorite-volcanic contact, and dip steeply to the NE.

Foliation within the metavolcanics has resulted from the intrusion of the diorite and roughly parallels the diorite-volcanic contact.

(d) Mineralization

Pyrite is ubiquitous within all the rock types observed, with the exception of the limestone, occurring as fine grained disseminations. In a number of locations near the diorite-volcanic contact higher concentrations of pyrite are common marked by brown-red gossan patches. Within the gossan zones pyrite occurs as disseminations and as fracture coatings.

No other sulphide mineralization was noted on the property.

### III GEOCHEMISTRY

#### (a) Sample Collection, Preparation and Analysis

##### i) Sample Collection

One coarse, 10 kg stream sediment sample, 11, 1 kg stream sediment and 26 soil samples were collected from the BACH group. The 10 kg sample (#1184) was collected in a heavy duty plastic sample bag, the 1 kg stream sediment and soil samples in Kraft envelopes. At each collection site the specific information pertaining to the sample was recorded on a special information tag. A flag bearing the sample number was secured adjacent to the sample site.

Stream sediment samples were collected from the main creek and those creeks draining into the main creek from the north. Samples from the main creek were difficult to obtain due to heavy runoff. Samples taken from the small creeks consisted of small angular rock fragments, gravel and sand.

Soil samples were collected along an azimuth of approximately 125°, flanking the glacier on both sides. Samples, collected at 50 m intervals, consist of colluvium and/or glacial till.

##### ii) Preparation

The 10 kg sample was wet sieved at base camp into a -20 +100 mesh coarse fraction and a -100 mesh fine fraction. At the laboratory the coarse fraction was passed through tetrabromethane and a heavy mineral concentrate was obtained.

The 1 kg stream and soil samples were dried and sieved to -80 or -40 mesh.

iii) Analyses

Samples taken from the east half of the claims, excluding the 10 kg sample, were analyzed for Au, Ag and Pb. The 10 kg sample was analyzed for Au, Ag and a host of other elements (Dwg. AR 80-~~204~~<sup>172</sup>). Samples taken from the west portion of the claims (mainly soils) were analyzed for Au and Ag.

All samples were processed by Min-En Laboratories of North Vancouver, BC.

An explanation of analytical procedures is included in Appendix A.

(b) Results and Interpretation

All sample locations and results are shown on Dwg. AR 80-~~204~~<sup>172</sup>.

Ten kg sample #1184 contained anomalous Au in the coarse fraction (450 ppb) and in the fine fraction (1350 ppb). Slightly elevated values were obtained for As, Sb, Pb, Cu and Ag in the coarse fraction, normal in the fine fraction.

Four of the stream sediment samples (5288 and 5291) show elevated to anomalous Au and slightly elevated Ag values.

The soil and stream sediment samples taken from the west portion of the claims report background Au values and some slightly elevated Ag values.

Further rock, soil and stream sediment sampling is required over a large area north and east of the central lake. All streams draining this area should be sampled with a minimum interval of 100 m. If possible, soils should be taken along the intrusive-volcanic contact and over the volcanic group, perpendicular to strike.

IV COST STATEMENT(a) Wages

	<u>Rate/ day</u>	<u>Spec. dates</u>	<u>No. days</u>	<u>Cost</u>
1 field geol.	\$ 51.88	Jul.22/80	1	\$ 51.88
1 jr. field asst.	39.18	Jul.22/80	1	39.18
1 field geol.	51.88	Oct.15/80	0.5	25.94
1 tech. asst.	39.18	Nov./80	1	39.18
1 tech. asst.	39.18	Feb./81	0.5	19.59
1 field geol.	51.88	Feb.12/81	1	51.88
1 field geol.	51.88	Apr.10,16,17	1.5	77.82
				<u>\$ 305.47</u>

(b) Room and Board

Per diem rate of \$50.41 - based on 2 person days: \$ 100.82

(c) Transportation

Costs to and from the project area during July, pertinent to these claims, are split amongst claims that had work conducted upon.

## A. To/From Project Area - Scheduled Carriers

<u>Date</u>	<u>From/To</u>	<u>Via</u>	<u>No. Persons</u>	
Jul.13/80	Vanc./Stewart	CP/TPA	2 @ \$150.10	\$ 300.20
Jul.14/80	Vanc./Stewart	CP/TPA	3 @ \$150.10	450.30
Jul.15-16 1980	Whitehorse/ Vanc./Stewart	CP/TPA	1 @ \$301.00	301.00
Jul.16/80	Vanc./Stewart	CP/TPA	1 @ \$150.10	150.10
Jul.21-22 1980	Whitehorse/ Vanc./Stewart	CP/TPA	1 @ \$301.00	301.00
				<u>\$1,502.60</u>

BACH portion (2/34 person days) of expenses: \$ 88.39

(c) Transportation (cont.)

Helicopter (Stewart-Camp-Stewart)

Terr-Air Rotary Ltd.

Jul.16 - Inv.#907 (5.5 hrs @ \$366/hr)	\$2,013.00
Jul.28 - Inv.#917 (8.3 hrs @ \$366/hr)	3,037.80

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\$5,050.80

Charter split with another area: \$2,525.40

BACH portion of expenses: \$ 148.55

## B. To/On Claims

Terr-Air Invoice #591 (1.18 hours) \$ 431.88

Total transportation expenses: \$ 668.82

(d) Analytical Services

Min-En Laboratories Invoice #6862 &amp; 7250

36 stream sed./soil - prep. (@ \$0.60 each)	\$ 21.60
27 stream sed./soil - Au,Ag (@ \$6.00 each)	162.00
9 stream sed./soil - Au (@ \$4.25 each)	38.25
9 stream sed./soil - Ag (@ \$0.75 each)	6.75
9 stream sed./soil - Pb (@ \$1.75 each)	15.75

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\$ 244.35(e) Report Preparation

	<u>Rate/ day</u>	<u>Spec. dates</u>	<u>No. days</u>	
Drafting	\$127.00	Mar.19,20/81	2	\$ 254.00
Typing	64.80	Apr.20/81	1	64.80
				<hr/> \$ 318.80

(f) Miscellaneous

Cooks wages @ \$86.40/day (July 16-28)	\$1,128.20
BACH portion of expenses (2/34 person days)	66.07
Room and board - pilot and cook	
Per diem rate of \$50.41	\$1,310.66
BACH portion of expenses:	<u>77.10</u>
Total miscellaneous	\$ 143.17

GRAND TOTAL \$1,781.43

V. QUALIFICATIONS

I, David M. Strain, do hereby certify that:

1. I am a geologist residing at #202-330 East 7th Avenue, Vancouver, British Columbia, and employed on a part time basis by Du Pont of Canada Exploration Limited.
2. I am a graduate of Cambrian College of Applied Arts and Technology (Sudbury, Ontario) with a Diploma in Geological Engineering Technology.
3. I am presently enrolled in the Geological Sciences programme at the University of British Columbia endeavoring to obtain a B.Sc. degree in geology.
4. I have practised my profession in geology for the past three years in Ontario and British Columbia.
5. On 1980 July 22, I executed a field programme on the BACH claims on behalf of Du Pont of Canada Exploration Limited.



David M. Strain

V. QUALIFICATIONS

I, Gerald A. Harron, do hereby certify that:

1. I am a geologist residing at 2810 Sechelt Drive, North Vancouver, British Columbia and employed by Du Pont of Canada Exploration Limited.
2. I am graduate of the University of Western Ontario with a M.Sc. degree in geology.
3. I am a registered Professional Engineer in the Province of Ontario.
4. I have practised my profession in geology continuously for the past 11 years in various provincial jurisdictions in Canada.
5. Between 1980 July 13 and 1981 April 23, I supervised/directed a field programme on the BACH claim on behalf of Du Pont of Canada Exploration Limited.

*G. A. Harron*

Gerald A. Harron

*MIN-EN Laboratories Ltd.**Specialists in Mineral Environments*

Corner 15th Street and Bewicke

705 WEST 15th STREET

NORTH VANCOUVER, B.C.

CANADA

ANALYTICAL PROCEDURE REPORTS FOR ASSESSMENT WORKPROCEDURE FOR GOLD GEOCHEMICAL ANALYSIS.

Geochemical samples for Gold processed by Min-En Laboratories Ltd., at 705 W. 15th St., North Vancouver Laboratory employing the following procedures.

After drying the samples at 95°C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed and pulverized by ceramic plated pulverizer.

A suitable sample weight 5.0 or 10.0 grams are pre-treated with  $\text{HNO}_3$  and  $\text{HClO}_4$  mixture.

After pretreatments the samples are digested with Aqua Regia solution, and after digestion the samples are taken up with 25% HCl to suitable volume.

At this stage of the procedure copper, silver and zinc can be analysed from suitable aliquote by Atomic Absorption Spectrophotometric procedure.

Further oxidation and treatment of at least 75% of the original sample solutions are made suitable for extraction of gold with Methyl Iso-Butyl Ketone.

With a set of suitable standard solution gold is analysed by Atomic Absorption instruments. The obtained detection limit is 5 ppb.

*MIN-EN Laboratories Ltd.**Specialists in Mineral Environments*Corner 15th Street and Bewicke  
705 WEST 15th STREET  
NORTH VANCOUVER, B.C.  
CANADAANALYTICAL PROCEDURE REPORTS FOR ASSESSMENT WORKPROCEDURES FOR Mo, Cu, Cd, Pb, Mn, Ni, Ag, Zn, As, F

Samples are processed by Min-En Laboratories Ltd., at 705 W. 15th St., North Vancouver Laboratory employing the following procedures.

After drying the samples at 95°C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed by a jaw crusher and pulverized by ceramic plated pulverizer.

1.0 gram of the samples are digested for 6 hours with HNO<sub>3</sub> and HClO<sub>4</sub> mixture.

After cooling samples are diluted to standard volume. The solutions are analyzed by Atomic Absorption Spectrophotometers.

Copper, Lead, Zinc, Silver, Cadmium, Cobalt, Nickel and Manganese are analysed using the CH<sub>2</sub>H<sub>2</sub>-Air flame combination but the Molybdenum determination is carried out by C<sub>2</sub>H<sub>2</sub>-N<sub>2</sub>O gas mixture directly or indirectly (depending on the sensitivity and detection limit required) on these sample solutions.

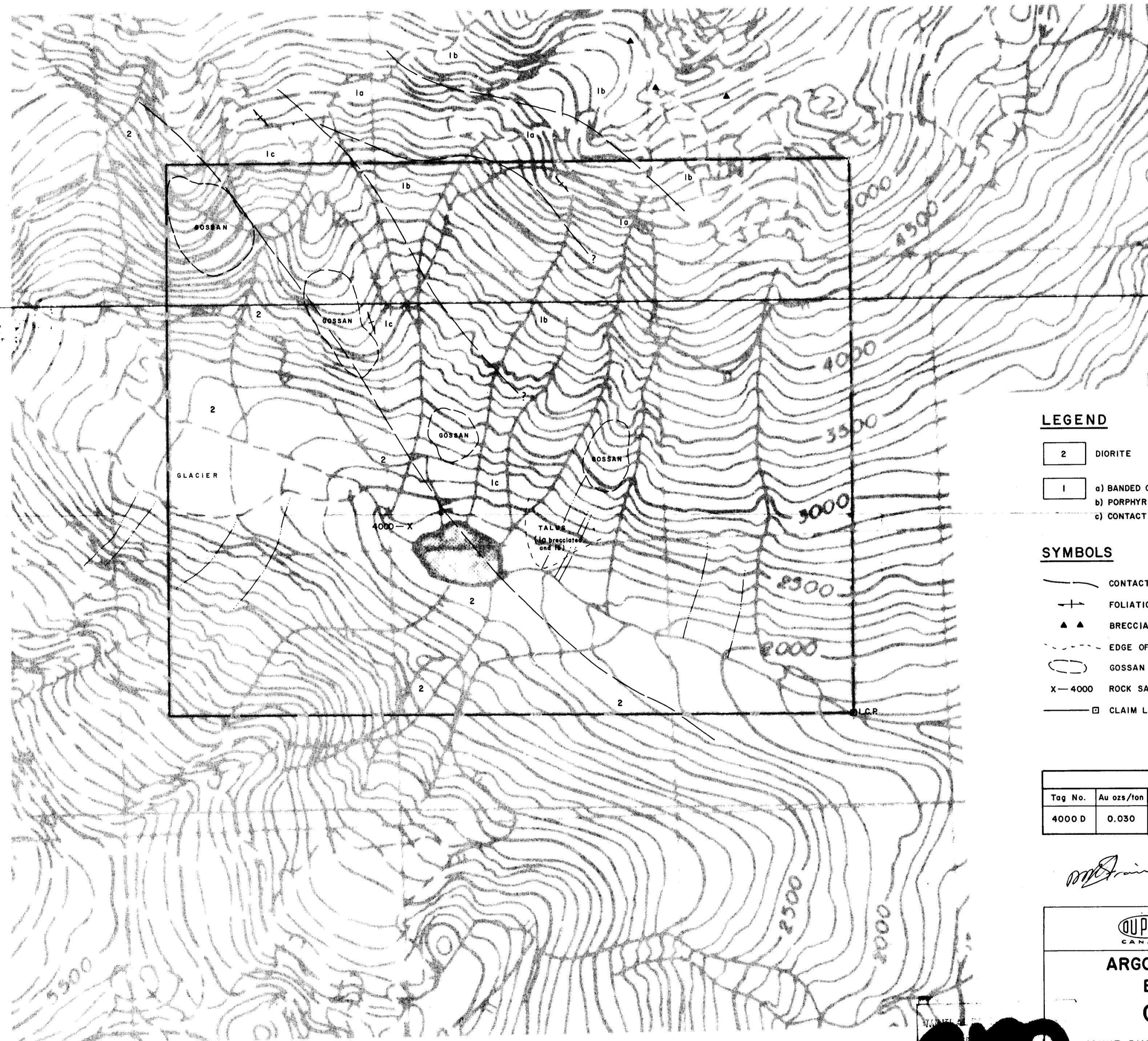
For Arsenic analysis a suitable aliquote is taken from the above 1 gram sample solution and the test is carried out by Gutzeit method using Ag CS<sub>2</sub>N (C<sub>2</sub>H<sub>5</sub>)<sub>2</sub> as a reagent. The detection limit obtained is 1. ppm.

Fluorine analysis is carried out on a 200 milligram sample. After fusion and suitable dilutions the fluoride ion concentration in rocks or soil samples are measured quantitatively by using fluorine specific ion electrode. Detection limit of this test is 10 ppm F.

131° 00'

56° 47'

56° 47'



**LEGEND**

- 2 DIORITE
- 1 a) BANDED CRYSTALLINE LIMESTONE  
b) PORPHYRITIC BASALT  
c) CONTACT METAMORPHOSED VOLCANICS

**SYMBOLS**

- CONTACT, INFERRED
- FOLIATION, VERTICAL
- BRECCIATED
- EDGE OF TALUS
- GOSSAN
- X-4000 ROCK SAMPLE LOCATION & NUMBER
- CLAIM LINE & LEGAL CORNER POST

ROCK ASSAYS					
Tag No.	Au ozs/ton	Ag ozs/ton	Cu %	Pb %	Zn %
4000 D	0.030	0.26	0.150	0.01	0.01

*M. J. ...*

**DUPONT EXPLORATION**  
CANADA

**ARGONAUT PROJECT  
BACH CLAIM  
GEOLOGY**

ISKUT RIVER AREA, BRITISH COLUMBIA

1:10 000  
SCALE  
0 300 600 m  
0 1000 2000 ft.

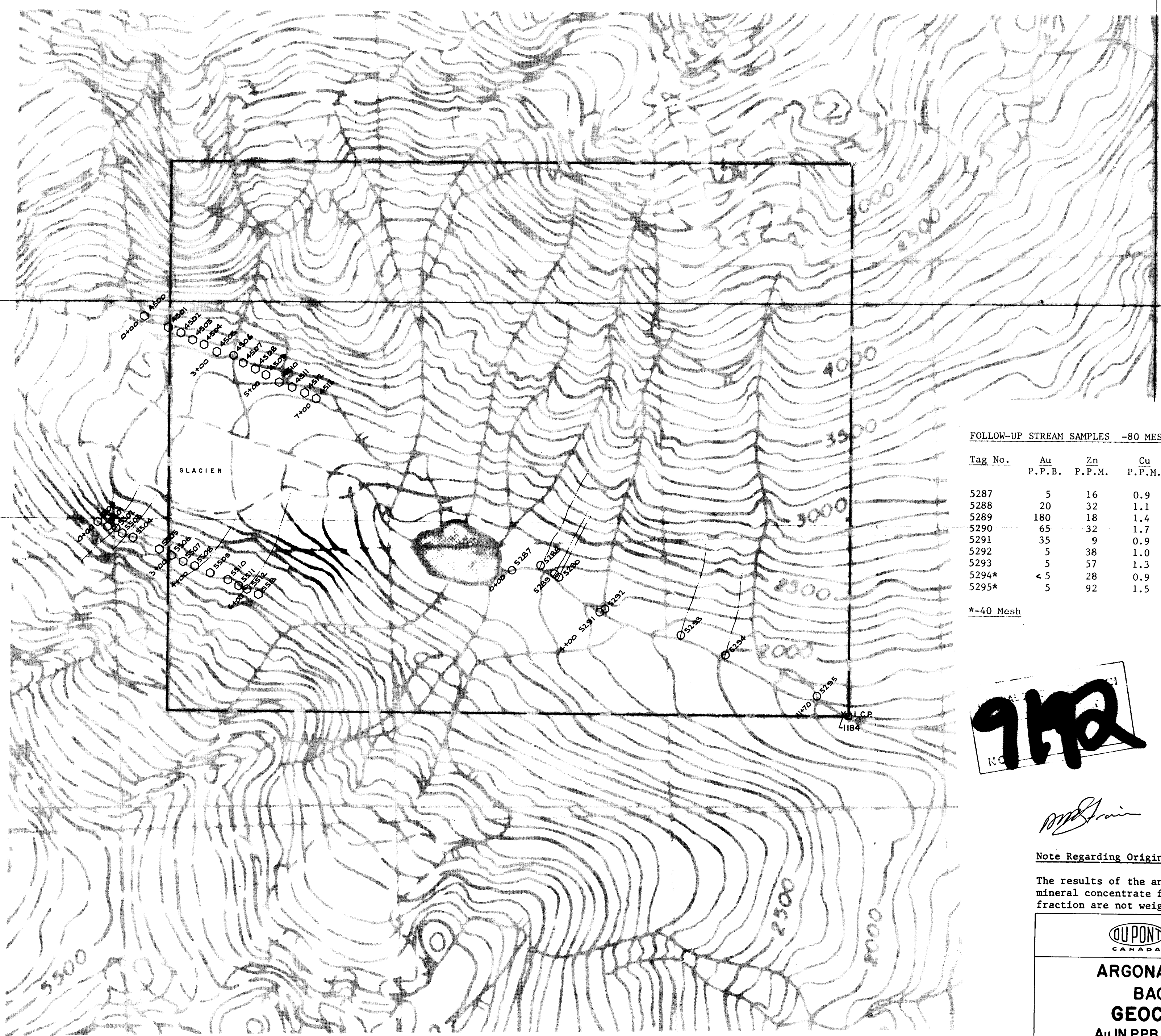
MAPPED BY: C.B.G.	REVISED:	N.T.S. No.: 104 B 14 E
DATE: 80 06 24		ACCT No.: 347-48
DRAWN BY: K.L.J.		DRWG. No.: AR. 80-171
DATE: 81.03.19		

**717A**

131° 00'

56° 47'

56° 47'



FOLLOW-UP STREAM SAMPLES -80 MESH

Tag No.	Au P.P.B.	Zn P.P.M.	Cu P.P.M.
5287	5	16	0.9
5288	20	32	1.1
5289	180	18	1.4
5290	65	32	1.7
5291	35	9	0.9
5292	5	38	1.0
5293	5	57	1.3
5294*	< 5	28	0.9
5295*	5	92	1.5

FOLLOW-UP SAMPLE RESULTS SOIL SAMPLES -80 MESH

Tag No.	Au P.P.B.	Ag P.P.M.
4500	< 5	0.4
4501	20	0.7
4502	10	0.7
4503	10	0.7
4504	10	0.6
4505	10	1.1
4506 CREEK	15	0.9
4507	5	0.8
4508	5	0.7
4509	5	1.1
4510	10	1.0
4511	5	1.0
4512	5	0.9
4513	5	0.7
5500	5	0.7
5501	5	0.9
5502 CREEK	< 5	0.6
5503	5	0.8
5504	5	0.8
5505	5	0.8
5506	10	0.9
5507	5	0.7
5508	5	0.3
5509	< 5	0.6
5510	5	0.8
5511	5	0.6
5512	5	0.5
5513	5	1.1

\*-40 Mesh

**912**  
NO

*M. J. Train*

Note Regarding Original Sample Results:

The results of the analysis of the heavy mineral concentrate from the -20 (-20 +100 mesh) fraction are not weighted.

LEGEND

- 5502 ○ STREAM SEDIMENT SAMPLE LOCATION & No. ('D' SERIES)
- 5504 ○ SOIL SAMPLE LOCATION & No. ('D' SERIES)
- X-1184 ORIGINAL STREAM SEDIMENT SAMPLE LOC. & No.

ORIGINAL SAMPLE RESULTS

Tag #	Mesh	Au P.P.B.	As P.P.M.	W P.P.M.	Sb P.P.M.	Pb P.P.M.	Cu P.P.M.	Ag P.P.M.	Cd P.P.M.	%HM
1184	- 20	450	56	3	110	63	240	40	0.5	3.03
	-100	1350	16	2	5	22	-	1.2	0.8	

**DUPONT EXPLORATION**  
CANADA

**ARGONAUT PROJECT**  
**BACH CLAIM**  
**GEOCHEMISTRY**  
Au IN P.P.B. & Ag, Cu, Pb IN P.P.M.  
ISKUT RIVER AREA, BRITISH COLUMBIA

1:10,000  
SCALE  
ft. 1000 0 1000 2000 ft.  
INCH = 833 FEET

MAPPED BY: C.B.G.	REVISED:	N.T.S. No.: 104 B 14 E
DATE: 80 06 24		ACCT No.: 347-48
DRAWN BY: K.L.J.		DRWG. No.: AR. 80-172
DATE: 81 03 19		