DU PONT OF CANADA EXPLORATION LIMITED

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ASSESSMENT REPORT OF GEOLOGICAL AND GEOCHEMICAL WORK PERFORMED ON THE

ZAPPA CLAIM

IN 1981

LIARD MINING DISTRICT

LAT. 56°40', LONG. 131°53'

NTS: 104-B-10

OWNER OF CLAIMS: Du Pont of Canada Exploration Limited : Du Pont of Canada Exploration Limited OPERATOR

BY,

J. A. Korenic 1982 May 5

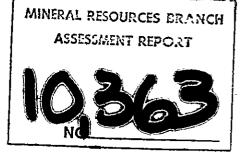


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ZAPPA CLAIM

I. INTRODUCTION

1. Location and Access

The Iskut River area is situated in Northwestern British Columbia approximately 90 kilometres north of the town of Stewart and 55 kilometres south-west of the Stewart-Cassiar Highway.

The ZAPPA property is situated immediately west of Snippaker Creek across a ridge east of Snippaker Mountain. It is centred by latitude 56°40'N and longitude 131°53'W.

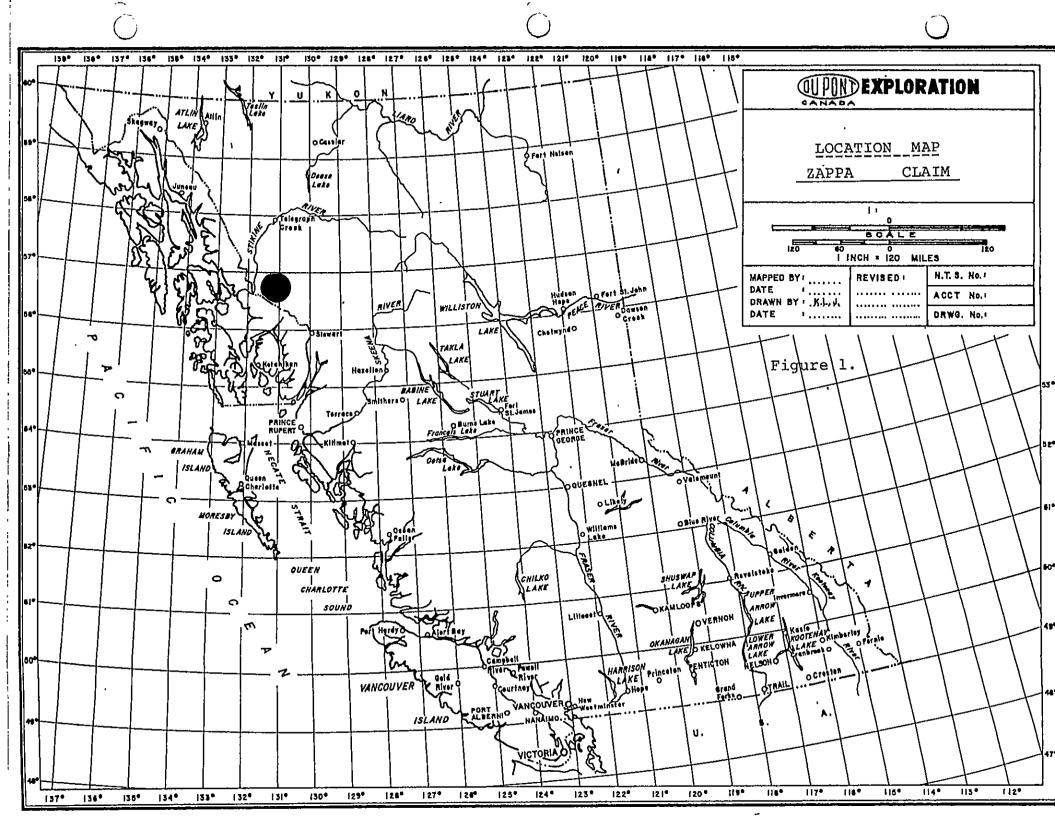
Access into the property is by means of helicopter from the Snippaker Creek airstrip (camp) 11 km to the southeast. Fixed wing service into the airstrip was conducted from either Iskut (145 km to the northeast), Terrace (260 km to the southeast) or Wrangell, Alaska (100 km to the west). Landing sites on the property are restricted to the ridge or along the tributary of Snippaker Creek upstream from the canyon.

2. Physiography

The Iskut River area claims are situated within the Boundary Ranges of the Coast Mountains. This geographic province consists of a mountainous and glaciated terrain that exhibits relief in excess of 2000 metres. Tree-line varies from 1000-1200 metres above sea level and is commonly marked by a thick, intertwined growth of one to two metre tall stunted spruce. Below this point, particularly within the lower valleys, vegetation predominantly consists of a dense growth of conifers. Devil's Club is widely distributed at lower elevations, such as the Iskut River valley. Access within these treed areas proved difficult.

Active glaciation is prevalent in the district. These occur as caps over areas of higher elevation, notably above 1500 metres, and as impressive valley glaciers such as those within the tributaries of Snippaker Creek.

Relief across the ZAPPA claim varies from 230 metres at the LCP to 1220 metres along the western claim



boundary. Almost the entire property occurs below tree-line, although the ridge within the western portion of the property exhibits a 'parkland-like' setting. The Snippaker Creek tributary below 580 metres occurs within a precipitous, gossanous canyon. Vegetation within the lower elevations includes a dense growth of spruce interspersed with devils club and alder.

3. Claim Status

The ZAPPA property comprises one claim entailing a total of 20 units. Pertinent data for the claim is outlined below:

ZAPPA (20 units)	Record No.: Tag No.:	1456 64777
	Date Recorded: Expiry Date:	1980 July 14 1982 July 14

The ZAPPA property is currently owned and operated by Du Pont of Canada Exploration Limited.

4. History and Economic Assessment of Property

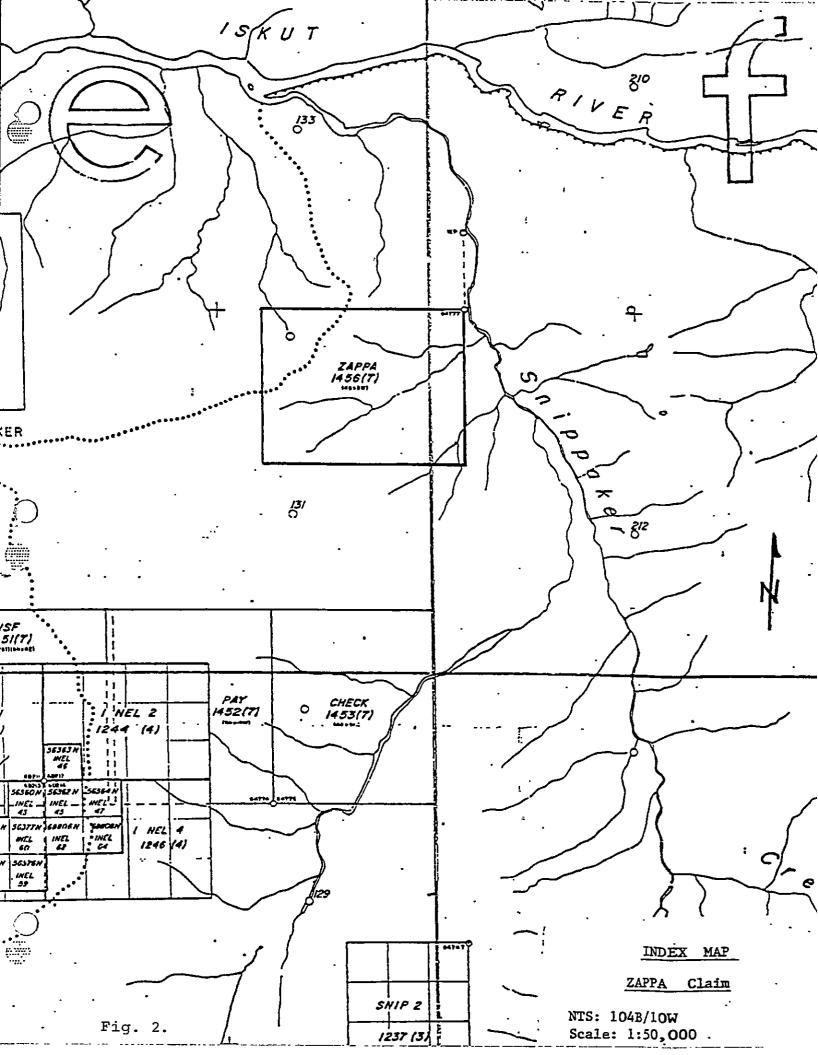
Prior to 1980, no known mineral exploration appears to have been conducted in the immediate vicinity of the ZAPPA property.

In May 1980, reconnaissance Heavy Mineral sampling returned a highly gold anomalous concentration from a tributary of Snippaker Creek (Zappa Creek). Details of this sample are as follows:

Sample Number Mesh Au As Pb <u>Cu</u> Ag W Sb Cđ HM mqq mqq mqq mqq mqq ppb 8 mqq 0141D -20 130 176 610 440 7.6 22 140 6.0 4.85 -100 7000 67 158 - 2.2 6 45 1.6

Subsequent follow-up work entailed limited stream sediment (8 samples) and rock (6 samples) sampling.

The evaluation programme undertaken in 1981 indicated a widespread area displaying anomalous base and precious metal geochemistry. A small grid outlines a narrow although strong Cu-Au geochemical response. Taking in account the extent and nature of the work conducted to date, the results and the



proximity to the HANDEL-RAVEL-CHOPIN and INEL claims the ZAPPA property appears to exhibit potential for an economic precious metal rich massive sulphide or possibly a vein-type deposit.

5. Summary of Work

Exploration within the ZAPPA property in 1981 entailed a total of 7 man-days. Work included obtaining 7 stream sediment, 9 rock and 59 soil samples. Of these, 5 stream sediment, 35 soil and 6 rock samples were obtained from within the ZAPPA claim. Across a gossanous zone, on the ridge (1000 m a.s.l.) north of Zappa Creek, a small grid was established. Thirty-five soil samples were obtained from four lines spaced 50 metres apart and 200 metres in length.

II. GEOLOGY

1. Regional

The Boundary Ranges of the Coast Mountains occur along the contact of the Intermontane and Coast Crystalline geologic provinces. The latter, the bulk of which occurs across the border in the Alaska Panhandle consists of Tertiary to Triassic foliated quartz diorite, granodiorite and migmatite associated with amphibolite gneiss, discontinuous screens of schist and lenses of marble (Souther et al, 1974). Immediately east of this crystalline complex are large, unfoliated batholiths of younger, Tertiary to Cretaceous quartz monzonite to quartz diorite.

Such plutons intrude and underlie about a third of the Iskut River area. One such batholith located immediately east of McLymont Creek and Snippaker Mountain is 55 by 20 kilometres in extent.

Carboniferous-Permian greenstone, limestone, shale, schists and gneisses underlie the western part of the district particularly in the vicinity of the Craig and Iskut Rivers (downstream from Bronson Creek).

Upper Triassic andesitic and clastic sedimentary rocks underlie much of the area, particularly east of Bronson Creek and as a wedge in the Unuk and South Unuk River areas. Mid-late Jurassic breccia, tuff, conglomerate, sandstone and greywacke, in part belonging to the Hazelton Group occurs as a peninsular like occurrence east of Snippaker Creek and more prominently east of Harrymel Creek and the South Unuk River. The edge of the Bowser Basin sedimentary package is situated 20-40 kilometres further to the east.

Recent volcanism entailing the extrusion of basalt, cinders and ash is evident along the Iskut Canyon; an east tributary of Snippaker Creek and at Hoodoo Mountain. The latter consists of an impressive 1550 metre ice-capped volcano.

2. Property

Geological Survey of Canada map #1418A (1974) indicates that the ZAPPA property is underlain by a Cretaceous-Tertiary quartz monzonite batholith to the east and by an assemblage of Upper Triassic sediments and volcanics within the western half of the claim.

During the past two field seasons mapping across the property has been confined to essentially four areas 1) Zappa Creek in the vicinity of the anomalous HM sample, 2) Grid area, 3) south of the claim boundary, and 4) along a sidehill traverse west of the property.

Andesite is the predominant unit in the area with chert, wacke and siltstone occuring as interbeds. The grid area is underlain by a variety of lithologies including andesite, chert, limestone and a quartz monzonite dyke. The area mapped south of the property comprises of limestone.

The following is a brief description of the units encountered to date.

. Diorite (Unit 1)

This unit was mapped in 1980 immediately above and north of Zappa Creek. It is described as being dull grey in colour and is composed of medium grained plagioclase and hornblende. The plagioclase has been slightly altered to clay. . Limestone (Unit 2)

The unit is grey in colour, poorly bedded, nonfossiliferous and south of the property, quite massive. In the vicinity of the grid, the limestone occurs as interbeds within the volcanics.

. Siltstone/Wackes (Units 3 & 4)

The only occurrence of these lithologies is noted west of the property and occurs as interbeds within the andesite. The units are buff brown in colour, are locally pyritic and exhibit minor carbonate veining. The siltstone is slightly argillaceous in nature.

. Andesite (Unit 5)

This lithology represents the most widespread unit on the property. The andesites are fine grained, green in colour and are commonly pyritic. Occasionally, particularly within the grid area and along Zappa Creek the volcanics are dacitic in composition. West of the property the andesites are commonly porphyritic.

. Chert (Unit 6)

This unit appears to occur as a WNW trending unit and as interbeds within the volcanics. It is greyish green in colour.

. Quartz Monzonite (Unit 7)

The unit is fine to medium grained, massive, greyish green in colour and hosts minor disseminated pyrite. It occurs within two separate outcrops in the grid area. The unit may be a coarse grained equivalent of the dacite. A general northwest strike appears to prevail within the area; however, foliation measurements that have been obtained are erratic and inconclusive. No major structural features have been outlined to date. In 1980, along Zappa Creek a pyrite bearing shear zone was noted to occur within dacitic volcanics.

3. Mineralization

No significant mineralization has been encountered on the property to date. Mineralization in the form of pyrite (trace - 1%) is widespread throughout the area occurring as disseminations and fracture fillings within the various lithologies.

Minor carbonate veins have been encountered west and south of the ZAPPA claim. In general, these veins are barren although south of ZAPPA, malachite and azurite was noted.

Eleven rock samples were obtained and assayed. No significant results were derived.

Numerous gossans occur in the area, notably in the vicinity of the grid, south and at the headwaters of Zappa Creek and quite prominently along the Zappa Creek canyon east of the original HM, sample. Many of these areas require further investigation. The source of the extensive anomalous geochemistry has yet to be determined.

4. Conclusions

The ZAPPA claim is underlain by Upper Triassic andesite which contains limestone, chert, wacke and siltstone interbeds. No significant mineralization has been noted to date. The source of the soil and stream sediment geochemistry has yet to be determined.

III. GEOCHEMISTRY

1. Procedure

Geochemical sampling in 1981 entailed 1) additional stream sediment sampling of Zappa Creek particularly to its headwaters, 2) obtaining three soil samples south of the property, 3) running a 1000 metre side hill (1400 metre level) soil sampling traverse west of the claim, where samples were obtained at 50 metre intervals, and 4) establishment of a small grid over a gossanous area. Four lines 50 metres apart and 200 metres in length were sampled at 20 metre intervals.

The stream sediment samples were obtained from various stream beds and deposited in wet strength

bags. The soil samples were, where possible, obtained from the 'B' or 'C' horizon. Each individual station was flagged revealing its appropriate sample number.

The samples were submitted to Min-En Laboratories in North Vancouver for preparation and analysis. The specific procedure is outlined in Appendix A - Procedure for Gold Geochemical Analysis.

The stream sediment samples were analyzed for Cu, Pb, Zn, Ag and Au for both the -80 and -20+80 mesh fractions. The soil samples were tested for Cu, Zn, Ag and Au in the -80 mesh.

Rock samples (11) were assayed for Cu (\$), Zn (\$), Ag (o/t) and Au (o/t).

2. Results

a. Stream Sediments

Results along Zappa Creek revealed weakly anomalous gold concentrations in the -80 mesh fraction. Sample #10394C contained 300 ppb Au. Analyses in the -20+80 mesh revealed background values of 5-10 ppb. Silver results within the -80 mesh fraction are slightly elevated (>2 ppm) however, nothing of significant is noted. Overall copper results are inconclusive. Within the fine fraction, a general increasing trend is evident downstream (73-145 ppm Cu) a similar trend is evident for zinc (152-235 ppm). Within the coarse fraction, both elements contain erratic values. Lead is weakly - highly anomalous along the entire length of Zappa Creek (excluding #10393C). Sample 10394C which contains 300 ppb Au analyzed 430 ppm Pb within the coarse fraction. The source of these anomalous results has yet to be determined.

b. Soil

The three soil samples south of the property contained no values of significance.

Along the sidehill traverse results from the various elements proved to be variable. Several isolated samples contain 35-90 ppb Au. Sample #0122E containing 1340 ppm Zn and 2.4 ppm Ag, however the remainder of samples run 63-252 ppm An and 0.8-1.7 ppm Ag. Copper concentrations are erratic and vary from 16-139 ppm. Overall, no significant results were obtained from this soil traverse.

A small grid was established over a gossanous zone along the ridge north of Zappa Creek. Α narrow (one sample wide) copper-gold-(silver) anomaly was outlined for a strike length of 130 It is open to the west. This zone metres. contains values of 185, 700 and 660 ppb Au with 305, 273 and 1470 ppm Cu. Copper within the remainder of the grid averages 34 ppm (9 - 150 ppm). Zinc values across the entire grid returned background values. Silver appears to be somewhat more erratic ranging from 0.6-3.3 ppm. The anomalous silver values are in part coincident with the Cu-Au anomaly. Mapping conducted in the vicinity of the anomaly indicates the presence of limestone and a quartz monzonite dyke/dacite. Minor pyrite is associated.

IV. CONCLUSIONS

The source of the anomalous stream sediment geochemistry obtained in 1980 and 1981 has not been adequately determined. Additional work is required near the upper reaches and north of Zappa Creek. Of significance is a very well defined Cu-Au(-Ag) soil anomaly within the grid area. The source of this zone is yet to be determined.

V. PERSONNEL

During the period 1982 August 4 - September 10, the following personnel worked on the ZAPPA Project:

Supervisors:	J. A. Korenic
	J. M. Kowalchuk
Field Geologists:	G. Price
	J. Dupas
	M. Davies
Field Assistants:	C. Hamilton
	T. Skinner

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VI. COST STATEMENT

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1. <u>Personnel</u>

	l Supervisor, 1/2 man-day 3 Field Geologists, 3 1/2 man-days 2 Field Assistants, 3 man-days	\$ 	73.46 207.52 170.48
		\$	451.46
2.	Room & Board		
	Per diem rate of \$55.46, 7 man-days	Ş	388.22
З.	Transportation		
	Costs to and from the project area (Sections A & B) during the months of July, August and September pertinent to this claim, are split amongst claims that had work conducted upon.		
	A. To/From Project Area - scheduled carriers crew departed during the period Aug.22 - Sept.18 from either Snippaker airstrip, Wrangell, Alaska, Stewart, Terrace or Smithers.		
	Total Airfares:	\$ 3	,198.18
	ZAPPA Portion: (7/185 man-days):	ş	121.01
	B. To/From Project Area - Chartered		
	July 23, TPA, Inv.#67473, (4/14 of invoice)= July 24, Air North, Inv.#9824= July 25, Viking Helicopters Ltd.,	4	,994.00 ,012.11
	Report #009263 (3.3 hrs @ \$480/hr)= Aug. 28, Viking Helicopters Ltd.,	1	,584.00
	Report #13339 (1.25 hrs)= Aug. 29, Viking Helicopters Ltd.,		600.00
	Report #13341 (1.0 hrs)= Sept. 7, Viking Helicopters Ltd.,		480.00
	Report #010321 (1.5 hrs)= Sept. 11, Viking Helicopters Ltd.,		720.00
	Report 010327 (1.5 hrs)= Sept. 7 & 11, Du Pont Twin Otter (DOX	}	720.00
	@ \$660/hr		,450.00
		\$ 15	,560.11
	ZAPPA portion $(7/185 \text{ days}) =$	\$	588.76

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C. To/On claims

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	Viking Helicopters Ltd, Report # . Aug. 4, #009277 (0.75 hrs) . Aug.12, #009294 (0.4 hrs) . Aug.25, #13336 (0.6) . Sept. 10 #010326 (0.6 hrs)	\$	360.00 192.00 288.00 288.00
		\$	1,128.00
	TOTAL Transportation:	Ş	1,837.77
4.	Analytical Services		
	Min-En Laboratories, North Vancouver, B. Invoice ‡s 8803, 8930 & 8992.	с.	
	40 stream sed/soil - Preparation		
	(@ \$0.85 ea) = 5 Stream sed. (-80 mesh): Cu, Pb, Zn,	\$	34.00
	Au, Ag, (@ \$9.70 ea) 5 Stream Sed. (-20+80 mesh): Cu, Pb,		48.50
	Zn, Au, Aq, (@ \$9.70 ea)		48.50
	35 soils, Cu, Zn, Ag & Au (@ 8.80 ea) 6 rock Preparation (@ 2.75 ea)		308.00
	6 rock - Assay: Cu, Ag, Au (0 \$23.00 ea)		16.50 138.00
		\$	593.50
5.	Report Preparation	-	
	Preparation (written), 3 1/2 days Drafting, 2.6 days Typing, 1 day	\$	514.22 417.90 `60.00
		Ş	992.12
6.	Miscellaneous		
	Cook's wages @ \$88.10 (July 24-Sept. 11)	\$	4,405.00
	ZAPPA portion (7/185 man-days)	\$	166.18
	Room & Board: Cook & Pilot - Per diem rate of \$55.46 (50 days)	\$	5,546.00
	ZAPPA portion (7/185 man-days)	<u>Ş</u>	209.85
		\$	376.53
	GRAND TOTAL:		4,639.60

VII. QUALIFICATIONS

I, John A. Korenic, do hereby certify that:

- I am a geologist residing at 11758 Wildwood Crescent, Pitt Meadows, British Columbia and employed by Du Pont of Canada Exploration Limited.
- I am a graduate of the University of Calgary with a B.Sc. degree in geology (1975).
- I am a Fellow of the Geological Association of Canada.
- 4. I am a Member of the Canadian Institute of Mining and Metallurgy.
- 5. I have practised my profession in geology continuously for the past 7 years in the Yukon, British Columbia and various other provinces in Canada.
- 6. Between August 5 and September 10, I supervised/ directed a field programme on the ZAPPA Claim on behalf of Du Pont of Canada Exploration Limited.

John A. Korenic 1982 May

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APPENDIX A

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 WORK

PROCEDURE 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 pretreated with HNO₃ and HClO₄ mixture.

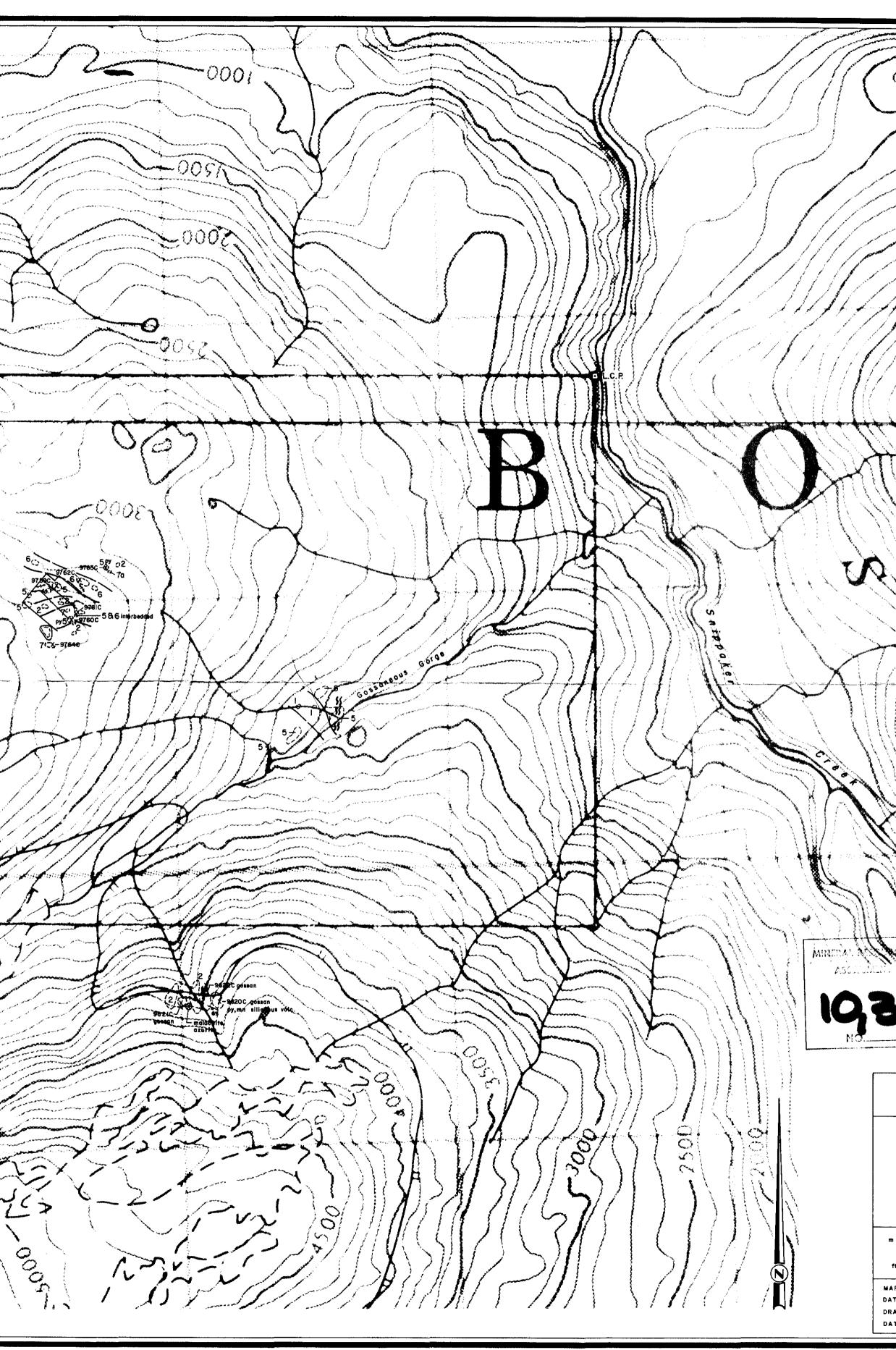
After pretreatments the samples are digested with <u>Aqua Regia</u> solution, and after digestion the samples are taken up with 25% HCl to suitable volume.

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.

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7 QUARTZ MONZONITE DYKE a) INTENSELY ALTERED		
6 CHERT	SHEAR ZONE	
5 ANDESITE a) PORPHYRITIC	FOLIATION ATTITUDE	
4 WACKE	X-9758C ROCK SAMPLE LOCATION & No.	
3 SILTSTONE	FLOAT LEGAL CORNER POST & CLAIM BDY	ALTARCE
2 LIME STONE		NE N



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