

81-1182-9952

GEOLOGICAL AND GEOCHEMICAL REPORT

- ON THE -

BIG CLAIM  
LILLOOET MINING DIVISION, BRITISH COLUMBIA

- FOR -

DUPONT OF CANADA EXPLORATION LTD.,

#102, 1550 ALBERNI ST.,

VANCOUVER, B. C. V6G 1A5

COVERING: BIG CLAIM (20 UNITS)

WORK PERFORMED: JULY 1, 1981 TO NOVEMBER 21, 1981

LOCATION: (1). 51°02'N; 122°39'W  
(2). N.T.S. MAP 92 0/2E  
(3). 30 KM. NNE OF BRALO

PREPARED BY

**KERR, DAWSON & ASSOCIATES LTD.**

#6 Nicola Place, 310 Nicola Street  
Kamloops, B.C.

J. M. DAWSON, P. ENG.

NOVEMBER 21, 1981



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(2). N.T.S. Map 92 O/2E  
(3). 30 km. NNE of Bralorne, B. C.

Prepared by;

KERR, DAWSON & ASSOCIATES LTD.,

#206 - 310 Nicola St.,

Kamloops, B. C.

J. M. Dawson, P. Eng.

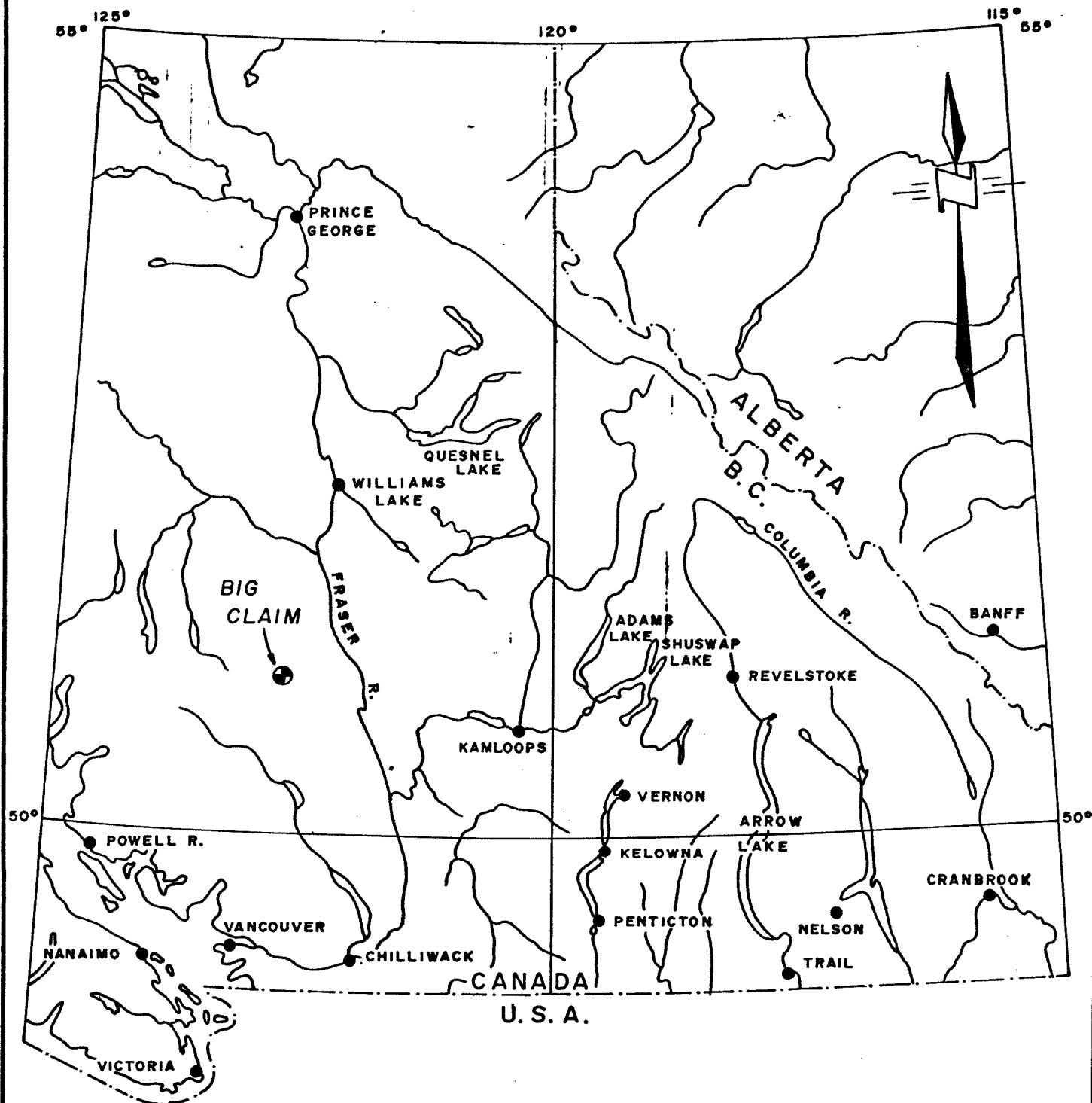
November 21, 1981

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DUPONT OF CANADA EXPLORATION LTD.	
LOCATION MAP <b>BIG CLAIM</b> LILLOOET MINING DIVISION BRITISH COLUMBIA	
Date: Oct. 1981.	Scale: 1" = 64 Miles
Dwn by: W.G.	Dwg no. 241C-1

## INTRODUCTION

This report describes a preliminary exploration programme on the Big claim, Lillooet Mining Division, British Columbia.

The property was acquired as a result of regional prospecting by Dupont during the 1970's.

Geological and geochemical surveys were performed during the 1981 field season and the results were interpreted and are detailed on a series of maps accompanying this report.

## SUMMARY AND CONCLUSIONS

- (1). The Big property consists of one 20 unit metric claim located in steep terrain in the Shulaps or Yalakom District of southwestern British Columbia. Access is by helicopter from either Goldbridge or Lillooet.
- (2). There is no previous record of claims or exploration activity on the subject ground. Dupont acquired the property by staking in 1980 and did follow-up exploration in 1980 and 1981.
- (3). The property is underlain by detrital sediments of the Bridge River (Triassic or older) and Kingsvale (Cretaceous) Groups in fault contact with each other. The Bridge River sediments are intruded by a number of altered ultrabasic bodies. The Kingsvale sediments are intruded by a pipelike body of altered rhyolite porphyry as well as younger 'Bendor porphyry' sills and dikes.

- (4). Soil geochemistry has delineated coincident silver and gold anomalies which roughly correspond with the outcrop area of the rhyolite porphyry body. Rock geochemical samples indicate that the gold - silver values are associated with thin drusy quartz veins and small vugs and possibly limonite and manganese coated fractures within pervasively altered rhyolite porphyry.
- (5). The setting of this mineralization is similar to many other occurrences of Tertiary, epithermal precious metal mineralization in the western United States, particularly Round Mountain, Nevada. There is definitely potential for a bulk tonnage, 'porphyry-type' precious metal deposit in this environment and further work is required to test this model.

#### PROPERTY

The property consists of one 20 unit metric claim as follows:

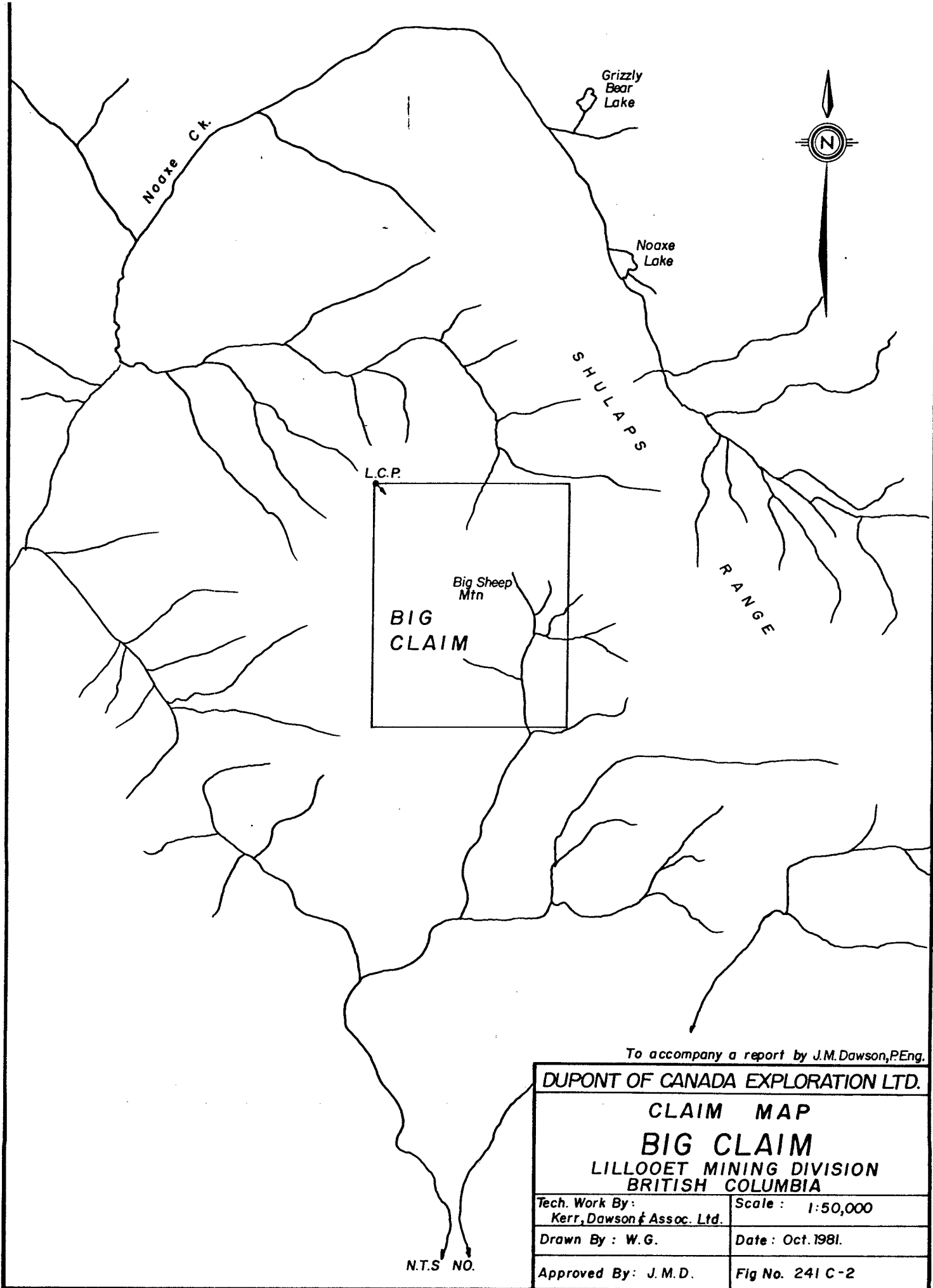
<u>Claim Name</u>	<u>Record No.</u>	<u>Tag No.</u>	<u>Expiry Date</u>
Big	1367	62586	June 11, 1982

The registered owner of this claim is Dupont of Canada Exploration Ltd.

#### LOCATION AND ACCESS

The claim is located in southwestern British Columbia, approximately 30 km. north-northeast of Bralorne and about 62 km northwest of Lillooet. Approximate geographic center of the property is at 51°02' north latitude and 122°39' west longitude.

Access is gained by helicopter from either Goldbridge or Lillooet. All weather roads exist about five miles to the west (along Relay Creek) and about five miles to the south (along Liza Creek).



To accompany a report by J.M. Dawson, P.Eng.

DUPONT OF CANADA EXPLORATION LTD.	
<b>CLAIM MAP</b> <b>BIG CLAIM</b> LILLOOET MINING DIVISION BRITISH COLUMBIA	
Tech. Work By: Kerr, Dawson & Assoc. Ltd.	Scale: 1:50,000
Drawn By: W.G.	Date: Oct. 1981.
Approved By: J.M.D.	Fig No. 241 C-2

N.T.S NO.

### PHYSIOGRAPHY AND VEGETATION

The claim encompasses the upper slopes and crest of Big Sheep Mountain. Tributaries of the headwaters of Noaxe and Liza Creeks drain several cirque-like basins below the main ridge tops. Elevations vary from 8000 feet a.s.l. at the crest down to about 6200 feet a.s.l. in the creeks at the north and south property boundaries. Slopes are steep to precipitous especially on the north side of the ridge containing the main peak.

The property is essentially barren of vegetation except for a few stands of scrubby alpine spruce at the headwaters of the creeks draining north and south. Extensive talus debris mantles most of the slopes so that most outcrops are on the ridges and cliffs facing the north cirque.

### HISTORY

There is no record or evidence of previous exploration activity.

In 1979, Dupont carried out regional geochemical prospecting in the Bralorne - Taseko Lakes district and the Big claim was staked in June, 1980. A limited follow-up programme was done in the summer of 1980.

The present programme consisted of reconnaissance geological mapping and prospecting and the collection of 21 rock geochemical samples. A grid was laid out and east west cross lines run approximately 200 meters apart where possible (see figure 241C-4 and 241C-5). Soil and talus fines samples were collected at 100 meter intervals on these cross lines as well as on the north-south base line. A total of 249 samples were collected. The data was plotted on 1:5000 scale base maps.



GEOLOGY

The property is underlain by two distinct lithological assemblages in fault contact with each other. The northeastern third of the claim is underlain by mixed clastics and minor limestone of the Bridge River group cut by a number of fault slices and elongate lenses of altered ultrabasic rocks. The remaining two thirds of the claim is underlain by a turbidite sequence of younger sediments of the Kingsvale group intruded by a pipe-like body of rhyolite porphyry. Semi-conformable dikes and sills of typical "Bendor-type" feldspar and feldspar-hornblende porphyry intrude the older rocks.

The Bridge River rocks consist of dark grey conglomerates and breccias, argillites, greenish impure cherts and minor bands of recrystallized limestone. This unit is cut by a number of northwesterly trending faults along which small irregular lenses of ultrabasics have been intruded. These vary from peridotites to serpentinites with some areas of highly silicified and carbonated rock containing mariposite.

The Kingsvale sediments consist of interbedded graywacke and black shale or argillite which strikes northwest and dips moderately to steeply southwest. Individual beds vary from 20 cm to more than 5 meters in thickness. Some horizons are weakly to moderately calcareous and occasionally there are orange brown carbonate veins and stringers.

A circular to oval, pipe-like body of rhyolite porphyry outcrops in the vicinity of the main peak of Big Sheep Mountain. The main body is about 500 meters in diameter with a few minor dikes or apophyses locally penetrating the surrounding Kingsvale sediments.

This rock type contains scattered, fine grained phenocrysts ( $\sim$  2 mm across) in a dense light grey to buff, feldspathic groundmass. In some areas there are small vuggy cavities with tiny nests of quartz crystals. Such areas usually have very narrow quartz veinlets. The rhyolite porphyry commonly displays argillic alteration which may be locally quite intense.

Limonite and manganese staining is quite common although fine grained, disseminated pyrite is only rarely seen.

The Kingsvale sediments and rhyolite porphyry package was later intruded by a number of northwesterly trending bodies of typical "Bendor-type" feldspar and feldspar hornblende porphyry. These intrusions consist of one very large semi-conformable body and 10 or more narrow sills. For the most part these rocks are relatively unaltered and consist of subhedral plagioclase laths, in a matrix of grayish feldspars, with lesser hornblende and biotite. Sometimes there may be larger hornblende needles comprising a significant portion of the phenocrysts giving rise to feldspar-hornblende porphyries. Although there may be considerable variation in texture from the larger to smaller bodies their composition is quite similar.

The rhyolite porphyry appears to be in intrusive contact with the larger body of "Bendor-type" porphyry, however it is largely a homogeneous mass. Some minor dikes which could be related to the Bendor intrusions are found near its eastern margin.

#### MINERALIZATION

Minor fine grained disseminated pyrite is seen in only a few places in the altered, rhyolite porphyry plug, even though limonite staining is quite common on fracture faces.

Along the ridge near the main peak of Big Sheep Mountain scattered, very narrow vuggy quartz veins were seen cutting typical, argillically altered rhyolite porphyry. This body is not well exposed elsewhere because of extensive talus slides, however blocks of similar material with small vugs of quartz crystals were seen in the main north cirque. The quartz veinlets vary from about 2 mm to 2 cm wide; the vugs are up to 4 cm in diameter.

For the most part there is no visible mineralization in these quartz veinlets and vugs, other than minor manganese staining. Trace amounts of a metallic gray mineral (galena?) were seen in one quartz vein near the summit of Big Sheep Mountain (Sample JDA-30).

Soil samples taken by Dupont in 1980 downslope from the rhyolite porphyry body were anomalous in gold, silver, lead and zinc and to a lesser extent in copper. Several of the 1981 rock chip samples of rhyolite porphyry with minor quartz veinlets or vugs reported anomalous to high grade (0.56 oz Au and 15.8 oz Ag) values in gold and silver (see figure 241C-3).

It is not known if the high silver and gold values are entirely related to the epithermal quartz mineralization and the extent of the quartz mineralization has not yet been outlined.

#### GEOCHEMISTRY

In 1980 follow-up silting of the anomalous creek could not repeat the original high values. However one soil traverse along the southeastern slope of Big Sheep Mountain picked up coincident anomalous values in gold, silver, lead and zinc in about 10 samples. To better define the area and intensity of this anomaly a programme of grid soil sampling was conducted during the 1981 field season.

Soil and/or talus fines samples were collected at 100 meter intervals on grid lines located 200 or 400 meters apart. On the north-south base line samples were collected at 50 meter intervals. Sample stations were marked with flagging and the appropriate sample number. After collection samples were stored and shipped in waterproof, kraft envelopes.

Most of these 'soil' samples would have to be classified as talus fines material. Some of the samples at the base of slope or within the lower parts of the north and south cirque might be classified as 'B' horizon material.

All samples were analysed for gold and silver in the Vancouver laboratories of Acme Analytical Ltd. For gold laboratory methodology involved fire assay extraction with analysis by atomic absorption. For silver, extraction was by hot dilute aqua regia with analysis by atomic absorption.

Statistical analyses for both metals were performed similarly by calculating the mean and standard deviation and classifying the data into the following categories:

Background	0 - Mean
Possibly Anomalous	Mean - (Mean + 1 Std. Dev.)
Probably Anomalous	(Mean + 1 Std. Dev.) - (Mean + 2 Std. Dev.)
Definitely Anomalous	> (Mean + 2 Std. Dev.)

The values were plotted on 1:5000 scale basemaps and the appropriate categories of anomalous results were outlined.

The data outlines a roughly coincident area of anomalous gold and silver values which correspond approximately to the outcrop area of the rhyolite porphyry plug.

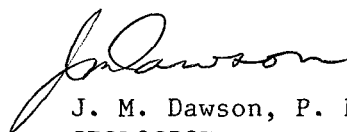
EXPLORATION POTENTIAL

Epithermal gold - silver mineralization is directly associated with narrow quartz veinlets and small vugs in an altered rhyolite porphyry. These have only been observed in outcrop along the ridge near the crest of Big Sheep Mountain. Similar veinlets and manganese coated fractures have been noted in talus material on the north slope and north cirque on the Big Claim.

The density and areal distribution of these mineralized veins and fracture coatings is not well known and will have to be mapped and sampled in detail. However the setting of this occurrence is similar to many Tertiary precious metal districts which the writer has examined in the western United States, particularly Round Mountain. In some respects it is similar to the Black Dome property which is found in early Tertiary volcanics some 35 km. to the north. There is definitely potential for delineation of a bulk tonnage, "porphyry-type" precious metal deposit and further work is warranted to evaluate this potential.

respectfully submitted:

KERR, DAWSON AND ASSOCIATES LTD.,



J. M. Dawson, P. Eng.  
GEOLOGIST

Kamloops, B. C.

November 21, 1981

APPENDIX A

Description of Rock Geochemical Samples

### Description of Rock Geochemical Samples

- BS - 1 -Limonite stained, kaolinized, rhyolite porphyry.
- BS - 2 -Altered, silicified and carbonated ultrabasic rock.
- BS - 3 -Quartz veinlets in altered ? greenstone or ? peridotite.
- BS - 4 -Fine grained gabbro ? or peridotite.
- BS - 5 -Greenish impure chert.
- BS - 6 -Tan coloured altered serpentized peridotite.
- BS - 7 -Altered ultrabasic rock now mostly quartz-carbonate-mariposite rock.
- BS - 8 -Altered rhyolite porphyry - partly kaolinized.
- BS - 9 -Chloritized, medium grained, feldspar-hornblende porphyry.
- BS - 10 -"Bendor-type" feldspar porphyry.
- BS - 11 -Limonite stained, rhyolite porphyry with argillic alteration.
- 
- JDA - 28 -Clay altered rhyolite porphyry with limonite and manganese staining; some small vugs containing quartz crystals.
- 
- JDA - 29 -Altered ultrabasic - quartz, carbonate, talc, mariposite rock.
- 
- JDA - 30 -Rhyolite porphyry with argillic alteration, limonite stained and having a few very narrow drusy quartz veinlets; trace of galena (?) in one such quartz vein.
- 
- SH - 1 -Grab sample of rhyolite porphyry; minor limonite and manganese staining; scattered very narrow, drusy quartz veinlets; no visible sulphides.
- 
- SH - 2 -Grab sample of rhyolite porphyry with minor drusy quartz veinlets; limonite and manganese coatings on fractures.
- 
- SH - 3 -Grab sample of altered rhyolite with minor thin, drusy quartz veinlets; some limonite staining.

- SH - 4 -Grab sample of bleached rhyolite porphyry with minor quartz veinlets; some limonite staining; no visible sulphides.
- SH - 5 -Rhyolite porphyry with argillic alteration; minor drusy quartz veinlets; heavy manganese staining on some fractures; no visible sulphides.
- SH - 6 -Limonite stained rhyolite porphyry; weak argillic alteration; no quartz veinlets or vugs.



APPENDIX B

PERSONNEL

PERSONNEL

J. M. Dawson, P. Eng.	Geologist	August 1, 1981 Sept. 24, 1981 Oct. 14, 1981 Nov. 19, 1981	4 days
C. Aspinall, P. Eng.	Geologist	Aug. 9, 11, 12, 23, 1981	4 days
A. Garrard	Jr. Asst.	Aug. 11, 12, 1981 Sept. 24, 1981	3 days
M. Dawson	Prospector	July 28, 1981 Aug. 1, 5, 6, 1981	4 days
B. Dawson	Jr. Asst.	July 28, 1981 Aug. 1, 5, 6, 1981	4 days
P. Murphy	Prospector	July 28, 1981 Aug. 1, 5, 6, 7, 1981	5 days
D. Adamson	Jr. Asst.	July 28, 1981 Aug. 1, 5, 6, 7, 1981	5 days

APPENDIX C

STATEMENT OF EXPENDITURES

COST STATEMENT

1. PERSONNEL:

J. M. Dawson, P. Eng. 4 days @ \$250.00/day	\$1,000.00	
C. Aspinall, P. Eng. 4 days @ \$250.00/day	1,000.00	
A. Garrard 3 days @ \$115.00/day	345.00	
M. Dawson 4 days @ \$145.00/day	580.00	
B. Dawson 4 days @ \$115.00/day	460.00	
P. Murphy 5 days @ \$115.00/day	575.00	
D. Adamson 5 days @ \$115.00/day	<u>575.00</u>	
		\$4,535.00

2. EXPENSES AND DISBURSEMENTS:

(a). Helicopter Charter, 3.4 hrs. @ \$412.00/hr	1,400.80	
(b). Truck Rental	312.50	
(c). Room and Board 24 days @ \$35.00/man/day	840.00	
(d). Geochemical analyses	1,188.00	
(e). Field equipment & Supplies	177.40	
(f). Drafting	175.00	
(g). Telephone, xerox, freight, secretarial, blueprints, etc.	<u>322.40</u>	
		<u>4,416.10</u>
	TOTAL COSTS	<u>\$8,951.10</u>

APPENDIX D

WRITER'S CERTIFICATE

**JAMES M. DAWSON, P. ENG.**

Geological Engineer

#1-219 VICTORIA STREET • KAMLOOPS, B.C. V2C 2A1 • TELEPHONE (604) 374-0544

CERTIFICATE

I, JAMES M. DAWSON OF KAMLOOPS, BRITISH COLUMBIA, DO HEREBY  
CERTIFY THAT:

1. I am a geologist employed by Kerr, Dawson & Associates Ltd. of Suite 206 - 310 Nicola Street, Kamloops, B. C.
2. I am a graduate of the Memorial University of Newfoundland - B. Sc. (1960), M. Sc. (1963), a fellow of the Geological Association of Canada and a member of the Association of Professional Engineers of British Columbia. I have practised my profession for 18 years.
3. I am the author of this report which is based on an exploration programme carried out on the Big claim under my direct supervision.



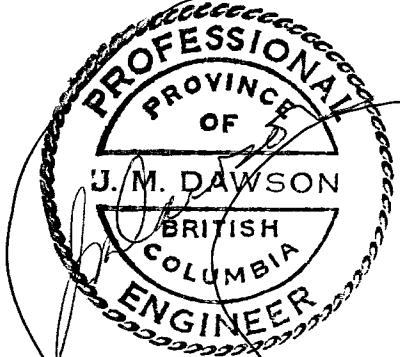
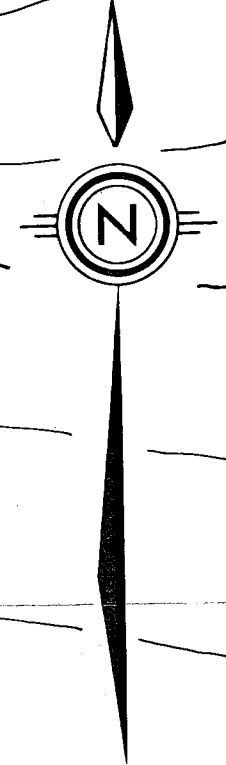
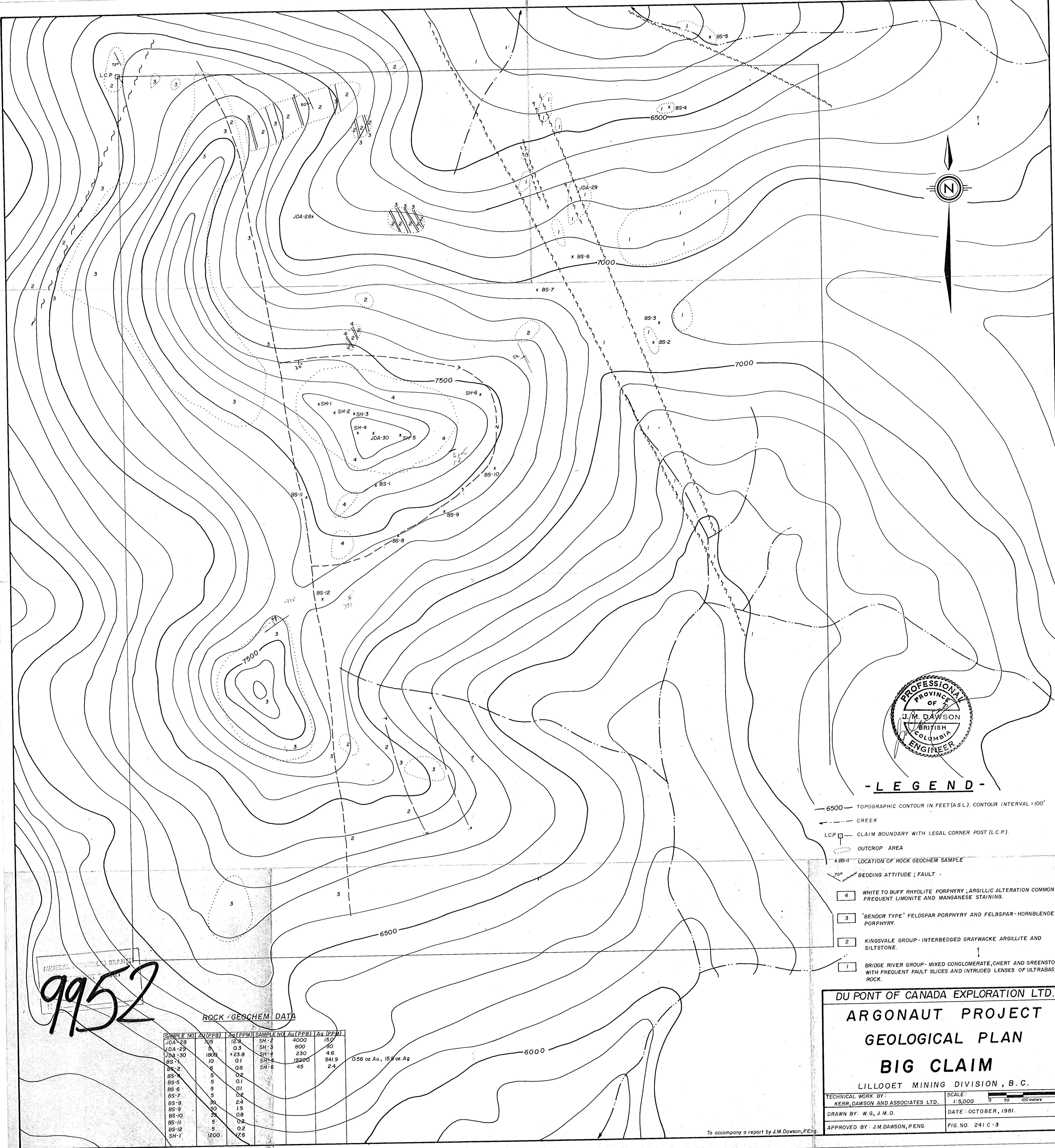
KERR, DAWSON & ASSOCIATES LTD.,

A handwritten signature in cursive script that reads "J. M. Dawson".

J. M. Dawson, P. Eng.  
GEOLOGIST

November 21, 1981

Kamloops, B. C.



**- LEGEND -**

- 6500 — TOPOGRAPHIC CONTOUR IN FEET (A.S.L.). CONTOUR INTERVAL = 100'
- CREEK
- L.C.P. □ CLAIM BOUNDARY WITH LEGAL CORNER POST (L.C.P.)
- OUTCROP AREA
- x BS-11 LOCATION OF ROCK GEOCHEM SAMPLE
- 70° BEDDING ATTITUDE ; FAULT
- 4 WHITE TO BUFF RHYOLITE PORPHYRY ; ARGILLIC ALTERATION COMMON ; FREQUENT LIMONITE AND MANGANESE STAINING.
- 3 'BENDOR TYPE' FELDSPAR PORPHYRY AND FELDSPAR-HORNBLENDE PORPHYRY.
- 2 KINGSVALE GROUP - INTERBEDDED GRAYWACKE ARGILLITE AND SILTSTONE.
- 1 BRIDGE RIVER GROUP - MIXED CONGLOMERATE, CHERT AND GREENSTONE WITH FREQUENT FAULT SLICES AND INTRUDED LENSES OF ULTRABASIC ROCK.

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**ROCK GEOCHEM DATA**

SAMPLE NO	Au (PPB)	Ag (PPM)	SAMPLE NO	Au (PPB)	Ag (PPM)
JDA-28	105	12.3	SH-2	4000	15.0
JDA-29	5	0.3	SH-3	800	5.0
JDA-30	1900	23.8	SH-4	230	4.6
BS-1	10	0.1	SH-5	19200	541.9
BS-2	8	0.6	SH-6	45	2.4
BS-3	5	0.2			
BS-4	5	0.1			
BS-5	5	0.1			
BS-6	5	0.1			
BS-7	5	0.2			
BS-8	33	2.4			
BS-9	30	1.5			
BS-10	35	0.8			
BS-11	5	0.5			
BS-12	5	0.2			
SH-1	1200	17.5			

0.56 oz Au, 15.5 oz Ag

DU PONT OF CANADA EXPLORATION LTD.

**ARGONAUT PROJECT**

**GEOLOGICAL PLAN**

**BIG CLAIM**

LILLOOET MINING DIVISION, B.C.

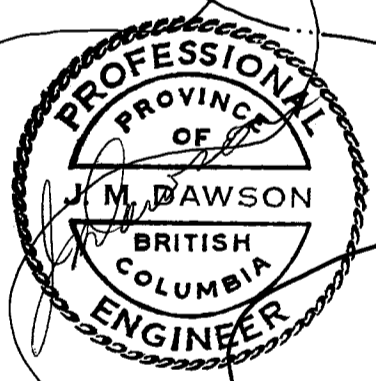
TECHNICAL WORK BY: KERR, DAWSON AND ASSOCIATES LTD. SCALE: 1:5,000

DRAWN BY: W.G., J.M.D. DATE: OCTOBER, 1981.

APPROVED BY: J.M. DAWSON, P.ENG. FIG. NO. 241 C-3

To accompany a report by J.M. Dawson, P.Eng.

L.C.P.



**- LEGEND -**

- 6500 — TOPOGRAPHIC CONTOUR IN FEET (A.S.L.). CONTOUR INTERVAL = 100'
- CREEK
- L.C.P. □ CLAIM BOUNDARY WITH LEGAL CORNER POST (L.C.P.)
- <sup>10</sup> LOCATION OF GEOCHEMICAL SOIL (TALUS FINES) SAMPLE; SILVER VALUE IN PARTS PER MILLION (PPM), GOLD VALUE IN PARTS PER BILLION (PPB)

**GEOCHEMICAL CATEGORIES**

GOLD		SILVER
< 37	NEGATIVE	< 0.8
● 37 - 134	POSSIBLY ANOMALOUS	0.8 - 2.3
● 135 - 232	PROBABLY ANOMALOUS	2.4 - 3.8
● > 232	DEFINITELY ANOMALOUS	> 3.8

DU PONT OF CANADA EXPLORATION LTD.

**ARGONAUT PROJECT  
GEOCHEMICAL PLAN  
(GOLD)**

**BIG CLAIM**

LILLOOET MINING DIVISION, B.C.

TECHNICAL WORK BY: KERR, DAWSON AND ASSOCIATES LTD.	SCALE: 1:5,000
DRAWN BY: W.G., J.M.D.	DATE: OCTOBER, 1981.
APPROVED BY: J.M. DAWSON, P.Eng.	FIG. NO. 241 C-5

To accompany a report by J.M. Dawson, P.Eng.

9952