

84-#380 - 12295

COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

NTS 93K/15

ASSESSMENT REPORT

GEOCHEMICAL AND GEOLOGICAL WORK

ON THE GROS 1-2 CLAIMS

OMINECA MINING DIVISION

BRITISH COLUMBIA

Latitude: 54°51'N  
Longitude: 124°45'W

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

12,295

I.A. PATERSON

29 MAY 1984

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COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

29 May 1984

Assessment Report

Gros 1-2 Claims

SUMMARY

The Gros claims (29 units) are located 57 kilometres northwest of Fort St. James between kilometres 24 and 29 on the Leo Creek logging road.

The claims were staked in the summer of 1983 to cover a Hg biogeochemical anomaly astride a poorly exposed section of the Pinchi Fault. "A" and "B" horizon soil sampling and bulk sampling using a sluice box concentration method failed to give any significant values for Au, As and Hg in the tills.

INTRODUCTION

The Gros claims were staked in July 1983. Gros 1 covered a biogeochemical Hg anomaly discovered in the course of a series of transects of the Pinchi Fault zone in which samples of "new growth" were taken from pine trees and analyzed for Hg, Au, Ag (H. Warren; Western Miner, Summer 1983).

Work done on the property included soil sampling, prospecting, mapping and a minor amount of heavy mineral till geochemistry. Personnel involved were I.A. Paterson, J.C. Caelles (geologists), S.B. Noakes (technician), D. O'Brien (assistant) and R.L. Mawer (assistant).

There is no record of previous staking or work on the property.

TENURE

The claims are 100% owned by Cominco.

<u>Claim</u>	<u>No. of Units</u>	<u>Record No.</u>	<u>Recorded</u>	<u>Due Date</u>
Gros 1	20	5504	July 8, 1983	July 8, 1984
2	9	5580	July 28, 1983	July 28, 1984

LOCATION AND ACCESS

The claims are located astride the Leo Creek logging road between kilometres 24 and 29. This area is 57 kilometres northwest of Fort St. James between Kazchek Lake and the Kuzkwa River (Fig. 1).

## TOPOGRAPHY AND GLACIATION

The area is relatively flat, has an average elevation of 2600 ft. and is part of the Nechako Plain. The main topographic feature in the area of the claims is a series of northwesterly trending limestone ridges which rise to an elevation of 2900 ft.

Glacial till deposits underlie much of the area of the Gros claims. In some areas, the till grades upward into stratified drift or fluvio glacial deposits. Drumlins and glacial grooves are abundant and indicate a 100° to 105° movement trend for the glaciation which formed these features. Armstrong (1965) states that most of the material comprising the tills had a westerly source, and this is substantiated by the evidence from the drumlins. However, the possibility exists that tills may have been deposited from an earlier ice sheet which may have moved in a different direction from the latest ice sheet. This possibility must be considered as detailed modern studies generally yield complex interpretations of ice sheet movements and till deposition.

## GEOLOGY

The area of the claims is transected by the Pinchi Fault Zone which juxtaposes Cache Creek group limestones and cherts of Pennsylvanian to Permian age with Takla group greywackes and volcanics of late Triassic or early Jurassic age (Plate 1). The Pinchi Fault occupies a swampy topographic low which generally is the location of an aeromagnetic anomaly.

The greywackes to the east of the fault are brown weathering thick to massive bedded rocks with blocky fracture. Volcanic rocks of the Takla group were not observed in the claim group.

The Cache Creek limestones, which form prominent ridges to the west of, and parallel to the fault are white, massive crystalline rocks which contain abundant crinoidal and fusulinid debris. The cherts and phyllites which comprise much of the low ground on either side of limestone ridges are not exposed within the claim boundaries.

## GEOCHEMISTRY

### Introduction

The object of the geochemical programme on the Gros claims was firstly to examine the soil expression of Warren's biogeochemical Hg anomaly and secondly to see if there was any expression in near surface tills of precious metal mineralization along the Pinchi Fault. It was recognized that the nature of the glacial overburden posed serious problems regarding extent of geochemical dispersion and several geochemical methods were therefore tried out ie. a) A horizon soils, b) B horizon soils, c) pan concentrates of tills and d) bulk sampling - sluice box processing of tills.

All samples were analyzed at the Exploration Research Laboratory in Vancouver using the following standard methods:

Au: DIBK solvent extraction/AA  
Hg: Cold vapour AA  
As: Calorimetric  
AgSb: Hot 20% HNO<sub>3</sub>/AA

## Results

### 1) Geochemical Traverse across Pinchi Fault A and B Horizon Soil

Soil samples were taken below the trees sampled by Harry Warren's team in 1982 at 30 metre interval. Warren's work showed highly anomalous mercury values in samples of recent growth from white spruce and mountain balsam. Values ranged between 250 and 1500 ppb Hg in the ash content of the samples: background values in areas remote from cinnabar mineralization are considered to be 10-150 ppb Hg. Figure 3 compares results of the "A" horizon soils, "B" horizon soils and Warren's tree samples in a transect across the Pinchi Fault at kilometre 27.2 on the Leo Creek logging road (Plate 1). Conclusions can be summarized as follows:

- a) All biogeochemical samples collected in the Gros transect are considered anomalous by Warren. This is presumably because of the high Hg background around the trace of the Pinchi Fault.
- b) Soil samples (A and B horizon) taken from the base of the sampled trees show only weakly anomalous or background Hg values. There is no expression in the values of the trace of the Pinchi Fault zone.
- c) Precious metal values in both ashed "A" horizon samples and "B" horizon samples showed less than detectable values.
- d) "Dry weight" Hg content of A horizon samples is similar to that of B horizon soils indicating that there is no obvious concentration of Hg in the A horizon.

### 2. Geochemical Traverse Between Kilometres 24.8 and 27.2

"A" and "B" horizon soils were collected at 200 m intervals in an effort to detect a Hg, As or Au dispersion train. The results for Hg are given in Figure 4 and Plate 1. There is no indication of Hg anomalies and Au, Sb, As and Ag values were all less than detectable or background.

### 3. Bulk Samples

Bulk samples, for concentration in a sluice box, weighed between 30 and 45 kg. The 12 samples were of boulder till and were taken at 500 metre intervals along the Leo Creek logging road on the Gros claims. Each sample took about one hour to process mainly because of the difficulty in disintegrating chunks of boulder clay in the sluice box.

Results for Au, Hg and As were very low (Plate 1). Presumably there is either no gold in the till or the gold is of fine grain size and was not recovered during the sluice box treatment.

#### 4. Pan Concentrates

Panned concentrate samples were taken using a 45 cm diameter conical fan or "superwok". Material for panning was sieved to -10 mesh. Usually between one and three panfuls were required to produce a sufficient amount of concentrate. In the laboratory, the magnetic fraction was removed from the sample and the residue pulverized prior to analysis.

The five samples of glacial till taken from the Gros claims averaged about 15 kg weight and were processed in the "superwok" by crumbling the clay particles by hand. The final concentrate obtained contained a substantial quantity of small round clay balls. Results indicated that four out of five samples contained gold in the 200 to 700 ppb range. The fifth sample contained less than 50 ppb Au.

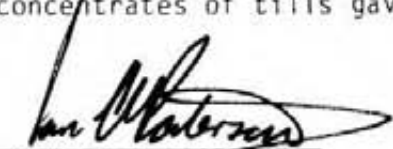
#### Summary of Geochemistry (all samples taken from tills)

1. "A" horizon soils - no interesting values for Au, As, Sb, Ag, Hg
2. "B" horizon soils - no interesting values for Au, As, Sb, Ag, Hg
3. Bulk samples - no interesting values for Au, As, Sb, Ag, Hg
4. Panned concentrates - Au values in the 200 to 700 ppb range; Hg values in the 200 to 1700 ppb range.

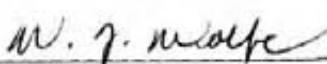
#### CONCLUSIONS

1. Conventional soil sampling and bulk sampling of glacial tills using a sluice box concentration method failed to give significant values for Au, As and Hg in the vicinity of the Pinchi Fault zone. Pan concentrates of tills gave gold values in the 200 to 700 ppb range.

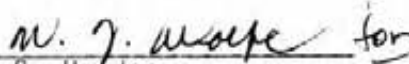
Report by:

  
I.A. Paterson  
Project Geologist

Endorsed by:

  
W.J. Wolfe  
Assistant Manager  
Exploration  
Western District

Approved for  
Release by:

 for  
G. Harden  
Manager, Exploration  
Western District

IAP/sav  
Dist.  
Mining Recorder (2)  
Western District  
IAP

APPENDIX A

IN THE MATTER OF A GEOCHEMICAL AND GEOLOGICAL SURVEY CARRIED OUT ON THE MINERAL CLAIMS OF THE GROS PROPERTY LOCATED IN THE OMINECA MINING DIVISION, BRITISH COLUMBIA, MORE PARTICULARLY NTS 93K/15.

AFFIDAVIT

I, I.A. PATERSON, OF THE CITY OF VANCOUVER IN THE PROVINCE OF BRITISH COLUMBIA, HEREBY DECLARE:

1. THAT I am employed as a geologist by Cominco Ltd., and, as such have a personal knowledge of the facts to which I hereinafter depose;
2. THAT annexed hereto and marked as "Appendix B" to this report is a true copy of expenditures incurred in connection with a geochemical and geological survey on the GROS PROPERTY;
3. THAT the said expenditures were incurred between the 10th day of June, 1983 and the 24th day of August, 1983 for the purpose of conducting a geochemical and geological survey on the GROS PROPERTY.

Signed:



I.A. PATERSON

APPENDIX B  
STATEMENT OF EXPENDITURES  
GROS PROPERTY - ASSESSMENT REPORT

Work done on Gros 1, 2    10 June - 24 August

Salaries

I.A. Paterson	2 days @	\$208.57	\$417.14
J.C. Caelles	1 day @	208.57	208.57
S.B. Noakes	2 days @	112.20	224.40
R.L. Mawer	2 days @	81.84	163.68
D. O'Brien	3 days @	87.12	261.36

Geochemistry

101 soils at \$17.45 (Au, Ag, Sb, Hg, As)	1,762.45
60 soils at \$9.15 (Au, As)	549.00
12 bulk samples at \$12.65 (Au, Hg, As)	151.80
5 pan concentrates at \$17.45 (Au, Ag, Sb, Hg, As)	87.25

Domicile

10 mandays at \$25/day	250.00
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Transportation

5 days truck rental	<u>200.00</u>
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TOTAL    \$4,275.65

Signed:

  
I.A. Paterson



APPENDIX C

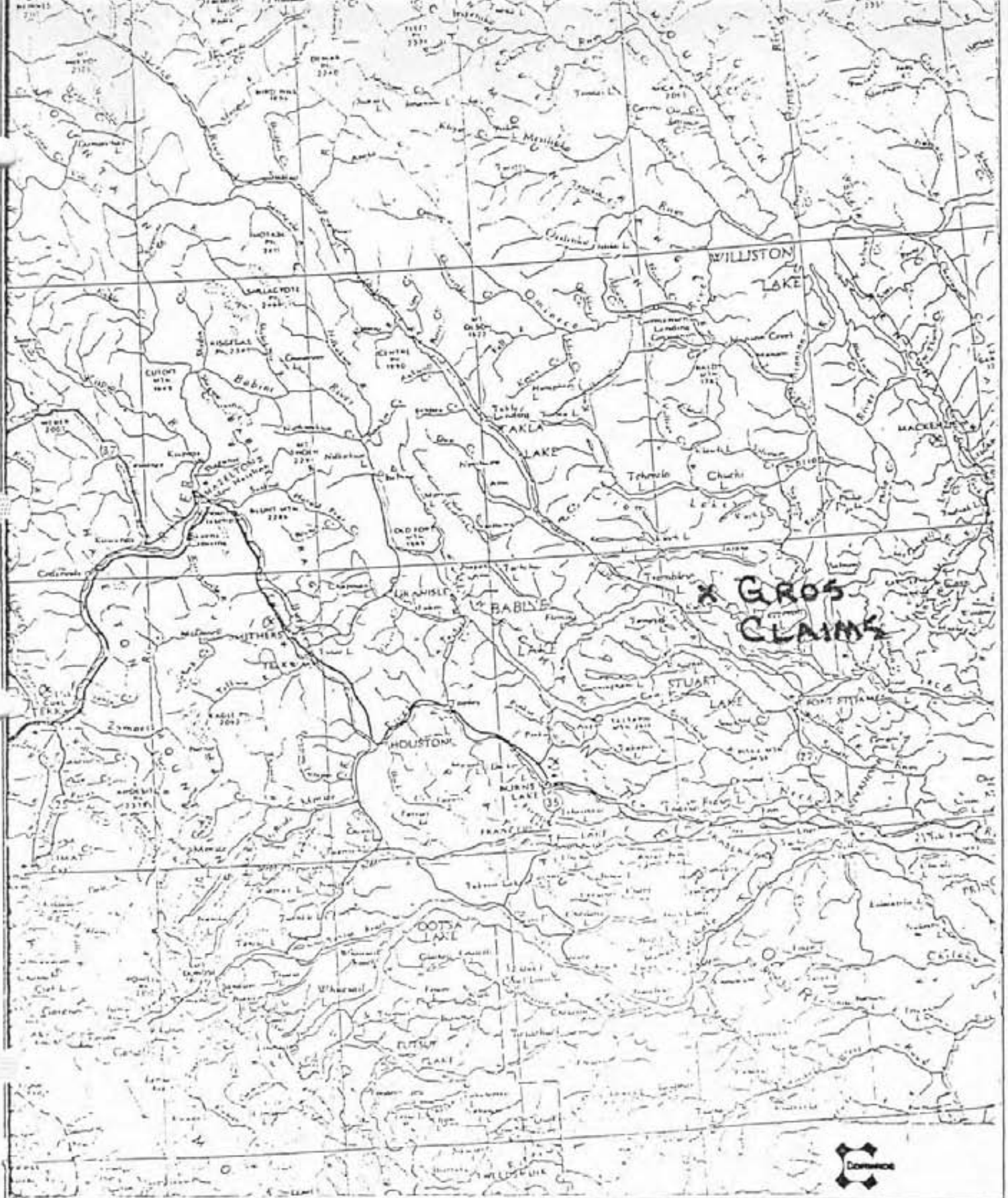
I, IAN A. PATERSON, WITH BUSINESS ADDRESS AT 700-409 GRANVILLE STREET,  
VANCOUVER, BRITISH COLUMBIA, DO HEREBY CERTIFY THAT:

1. I graduated from the University of Aberdeen, Scotland with a B.Sc. (Hons.) Degree in 1967.
2. I graduated from the University of British Columbia with a Ph.D. degree in 1973.
3. I am a registered professional engineer of the Province of British Columbia, a Fellow of the Geological Association of Canada and a member of the Canadian Institute of Mining and metallurgy.
4. I have been engaged in my profession since my graduation in 1973.
5. I have been employed by Cominco Ltd. since 1974.

Respectfully submitted:

A handwritten signature in black ink, appearing to read 'Ian A. Paterson', written over a horizontal line.

IAN A. PATERSON  
PROJECT GEOLOGIST



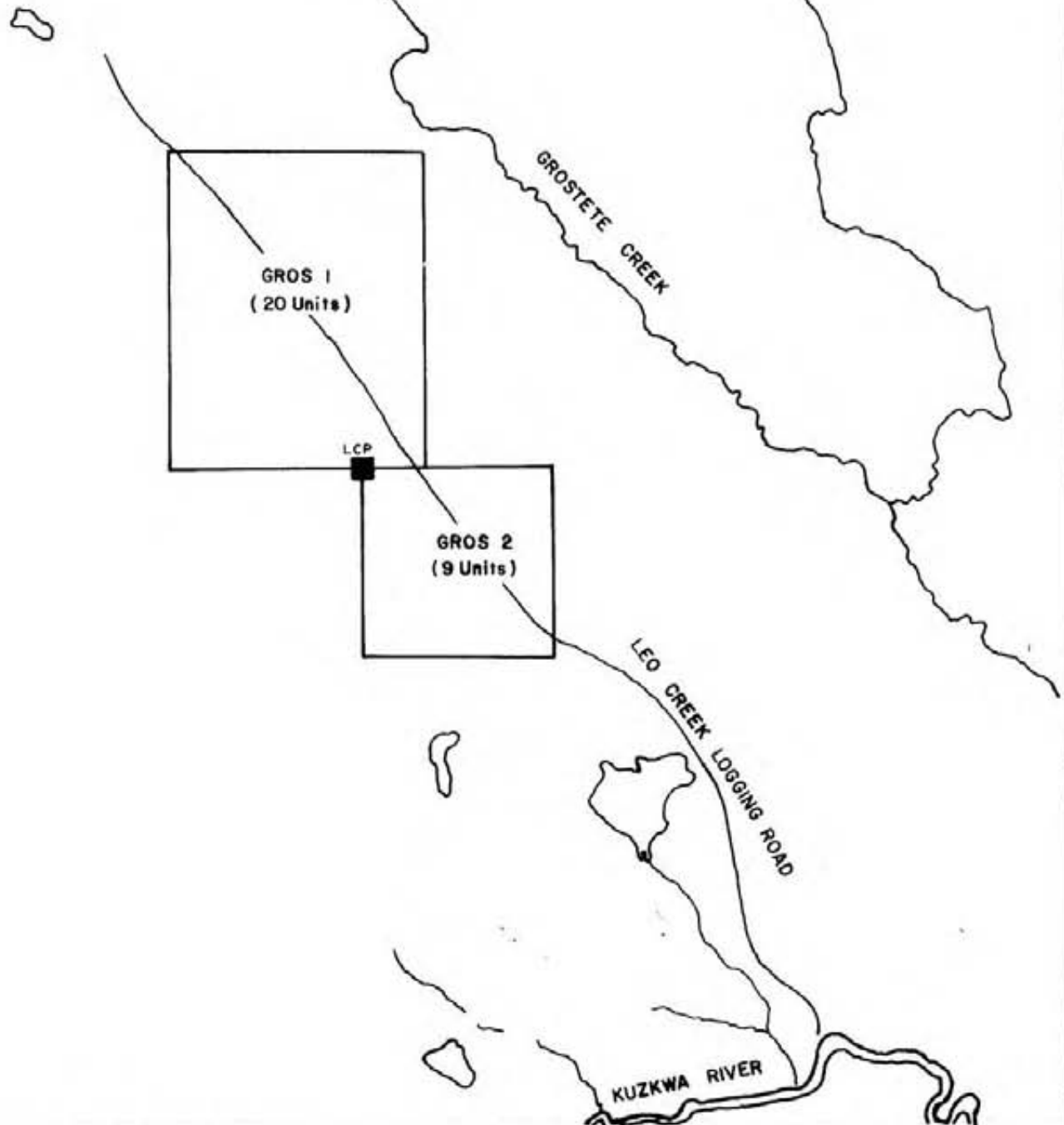
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Date	Date

# Location Map

Scale \_\_\_\_\_ Date \_\_\_\_\_ **Fig. 1**

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Drawn by:		Traced by: jsh	
Revised by	Date	Revised by	Date

CLAIM MAP

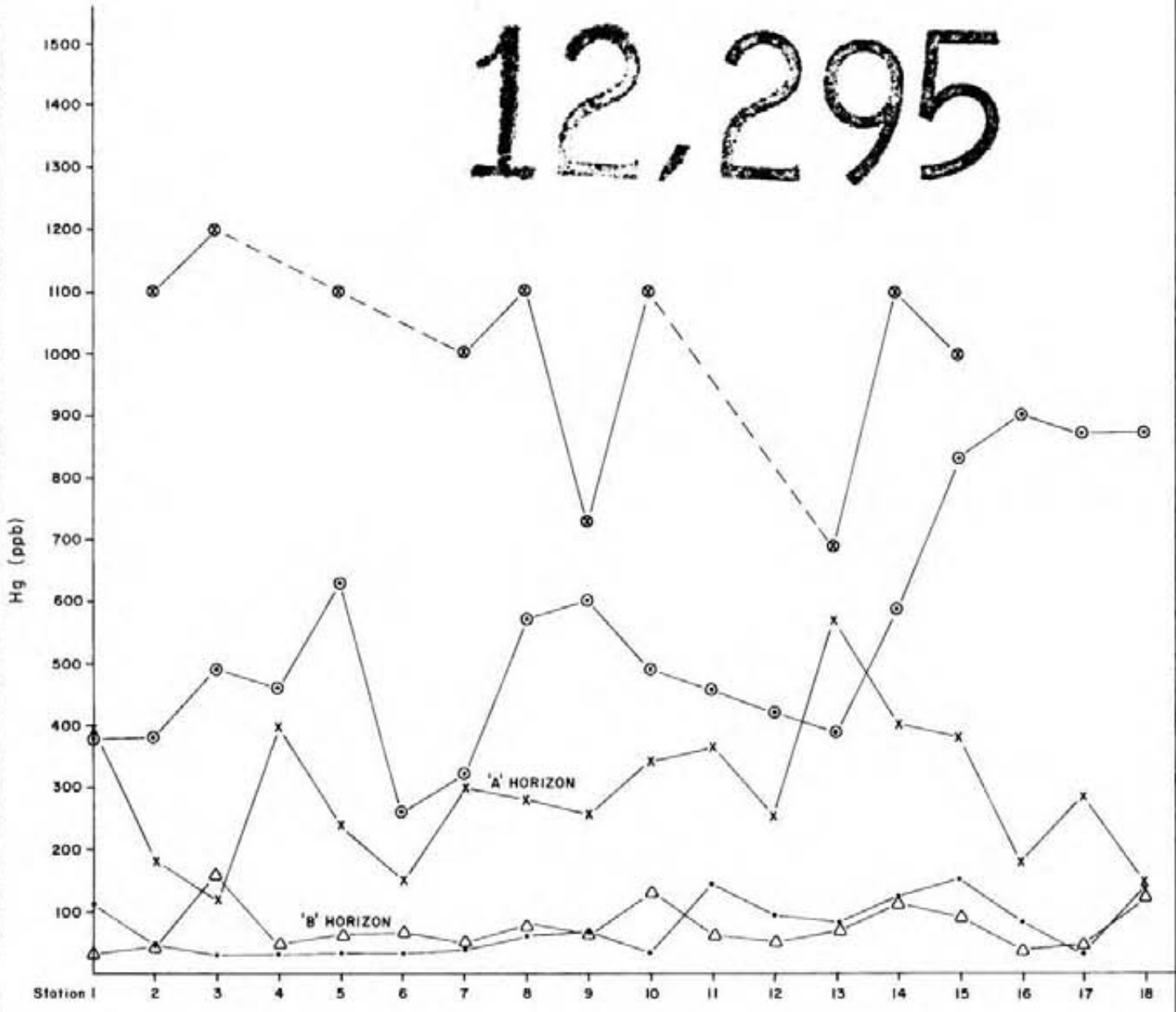
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Plate:

GEOLOGICAL BRANCH  
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NOTE: approx. 30 m. station interval

NS - 3157  
MA - 3022

Trace of  
Pinchi fault

NS - 3140  
MA - 3005

- ⊙ abies lasiocarpa } H. Warren (Western Miner, 1983)
- ⊙ picea glauca } H. Warren (Western Miner, 1983)
- 'B' horizon soil sample } Cominco Ltd., 1983
- x 'A' " " " } Cominco Ltd., 1983
- △ " " " " normalized to dry weight



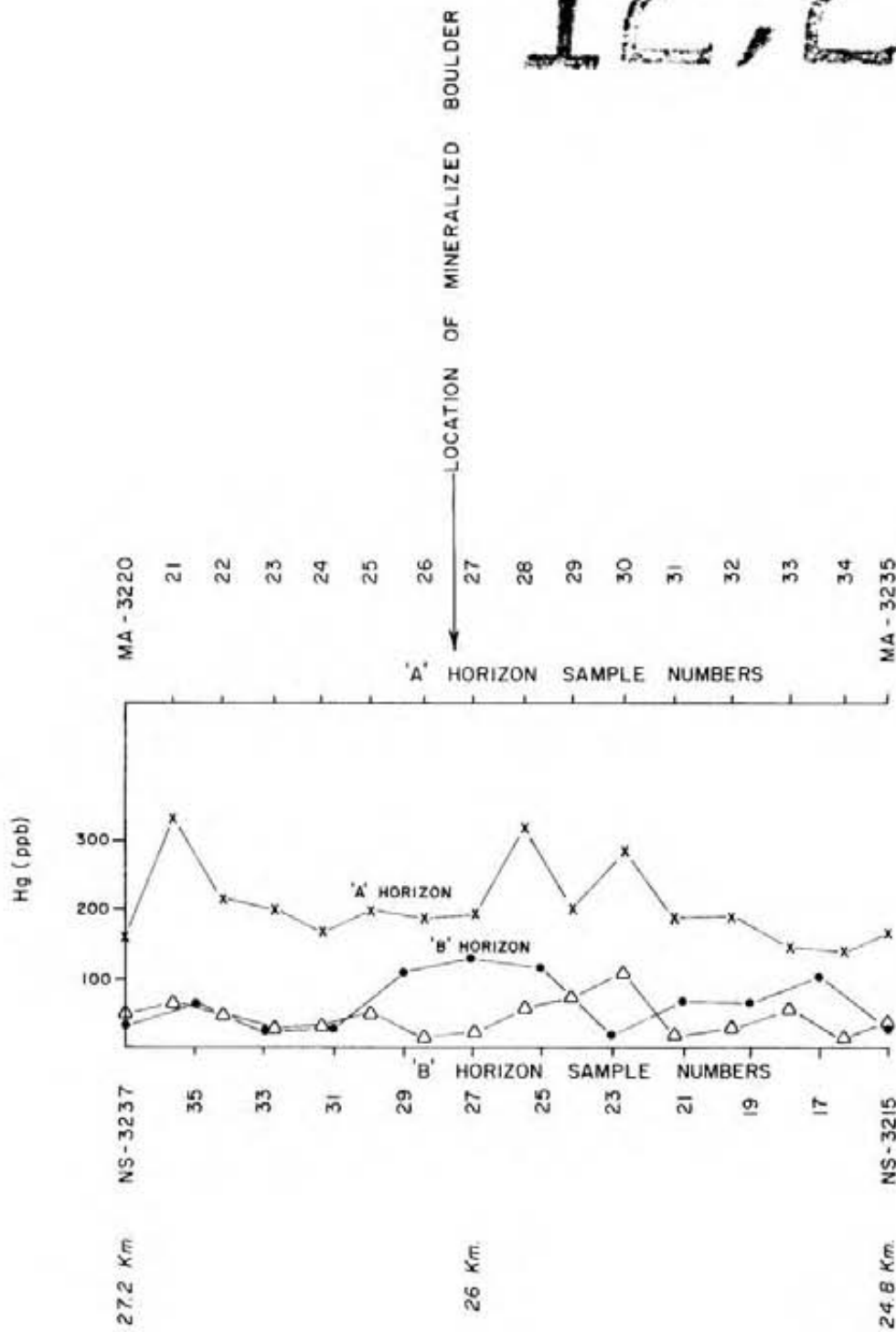
Drawn by:	I. A. P.	Traced by:	a. m. b.
Revised by:	Date	Revised by:	Date

GROS CLAIMS  
GEOCHEMICAL TRANSECT OF PINCHI FAULT  
A and B horizon soils and ashed pine needles

Scale: \_\_\_\_\_ Date: May, 1984 Plate: 3

GEOLOGICAL BRANCH  
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- 'B' horizon soil
- x 'A' " "
- Δ " " " (dry weight)

NOTE : sample line parallel to Pinchi Fault on the east side.



Drawn by: I. A. P.	Traced by: a. m. b.
Revised by: _____	Date: _____
Revised by: _____	Date: _____

**GROS CLAIMS**  
**Hg SOIL GEOCHEMISTRY**  
**COMPARISON BETWEEN 'A' AND 'B' HORIZON SAMPLES**

Scale: \_\_\_\_\_ Date: **May, 1984** Plate: **4**

**LEGEND**

UPPER TRIASSIC - LOWER JURASSIC  
Takla Group

2 massive bedded greywacke, minor laminated siltstone

PENNSYLVANIAN - PERMIAN  
Cache Creek Group

1 massive crystalline limestone

**RESULTS**

SAMPLE NUMBERS AS-3100 TO AS-3129 See Samples  
NA-3120 to NA-3125 See "B" Horizontal Samples  
CORRELATIONS TO AS-3104 THROUGH AS-3104 AT 30m INTERVALS  
NA SAMPLES START AT 4m Post 21 And Go South TO NA Post 15,  
AT 100m INTERVALS (APPROXIMATE)

Sample No.	As	W	U	U <sub>2</sub>	As	As
	ppm	ppm	ppm	ppm	ppm	ppm
AS-3100	10	10	10	10	10	10
AS-3101	10	10	10	10	10	10
AS-3102	10	10	10	10	10	10
AS-3103	10	10	10	10	10	10
AS-3104	10	10	10	10	10	10
AS-3105	10	10	10	10	10	10
AS-3106	10	10	10	10	10	10
AS-3107	10	10	10	10	10	10
AS-3108	10	10	10	10	10	10
AS-3109	10	10	10	10	10	10
AS-3110	10	10	10	10	10	10
AS-3111	10	10	10	10	10	10
AS-3112	10	10	10	10	10	10
AS-3113	10	10	10	10	10	10
AS-3114	10	10	10	10	10	10
AS-3115	10	10	10	10	10	10
AS-3116	10	10	10	10	10	10
AS-3117	10	10	10	10	10	10
AS-3118	10	10	10	10	10	10
AS-3119	10	10	10	10	10	10
AS-3120	10	10	10	10	10	10
AS-3121	10	10	10	10	10	10
AS-3122	10	10	10	10	10	10
AS-3123	10	10	10	10	10	10
AS-3124	10	10	10	10	10	10
AS-3125	10	10	10	10	10	10
AS-3126	10	10	10	10	10	10
AS-3127	10	10	10	10	10	10
AS-3128	10	10	10	10	10	10
AS-3129	10	10	10	10	10	10

SAMPLE NUMBERS NA-3120 TO NA-3125 See Samples  
CORRELATIONS TO AS-3104 THROUGH AS-3104 AT 30m INTERVALS  
NA SAMPLES START AT 4m Post 21 And Go South TO NA Post 15,  
AT 100m INTERVALS (APPROXIMATE)

Sample No.	As	W	U	U <sub>2</sub>	As	As
	ppm	ppm	ppm	ppm	ppm	ppm
NA-3120	10	10	10	10	10	10
NA-3121	10	10	10	10	10	10
NA-3122	10	10	10	10	10	10
NA-3123	10	10	10	10	10	10
NA-3124	10	10	10	10	10	10
NA-3125	10	10	10	10	10	10

SAMPLE NUMBERS PC-3100 TO PC-3104 See Samples  
CORRELATIONS TO AS-3104 THROUGH AS-3104 AT 30m INTERVALS  
PC SAMPLES START AT 4m Post 21 And Go South TO PC Post 15,  
AT 100m INTERVALS (APPROXIMATE)

Sample No.	As	W	U	U <sub>2</sub>	As	As
	ppm	ppm	ppm	ppm	ppm	ppm
PC-3100	10	10	10	10	10	10
PC-3101	10	10	10	10	10	10
PC-3102	10	10	10	10	10	10
PC-3103	10	10	10	10	10	10
PC-3104	10	10	10	10	10	10

Sample No.	As	W	U	U <sub>2</sub>	As	As
	ppm	ppm	ppm	ppm	ppm	ppm
PC-3105	10	10	10	10	10	10
PC-3106	10	10	10	10	10	10
PC-3107	10	10	10	10	10	10
PC-3108	10	10	10	10	10	10
PC-3109	10	10	10	10	10	10

SAMPLE NUMBERS PC-3105 TO PC-3109 See Samples  
CORRELATIONS TO AS-3104 THROUGH AS-3104 AT 30m INTERVALS  
PC SAMPLES START AT 4m Post 21 And Go South TO PC Post 15,  
AT 100m INTERVALS (APPROXIMATE)

Sample No.	As	W	U	U <sub>2</sub>	As	As
	ppm	ppm	ppm	ppm	ppm	ppm
PC-3110	10	10	10	10	10	10
PC-3111	10	10	10	10	10	10
PC-3112	10	10	10	10	10	10
PC-3113	10	10	10	10	10	10
PC-3114	10	10	10	10	10	10

SAMPLE NUMBERS PC-3110 TO PC-3114 See Samples  
CORRELATIONS TO AS-3104 THROUGH AS-3104 AT 30m INTERVALS  
PC SAMPLES START AT 4m Post 21 And Go South TO PC Post 15,  
AT 100m INTERVALS (APPROXIMATE)

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**12,295**

To Accompany Assessment Report entitled  
"Geochemical & Geological Work on the  
Gros 1-2 Claims"

**GROS CLAIMS**

Drawn by: J.A.P. Traced by: J.P.S.

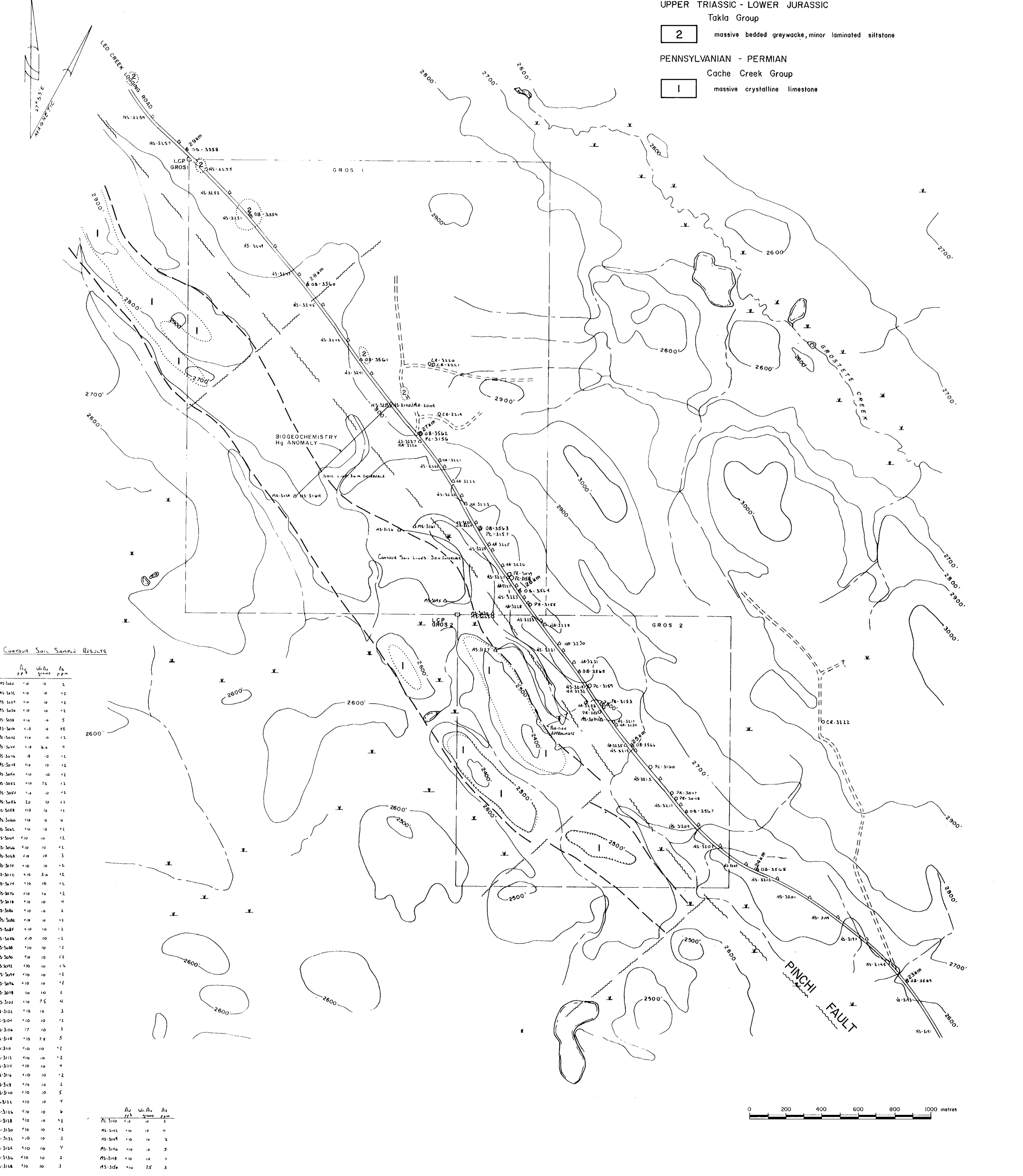
Checked by: J.A.P. Reviewed by: J.P.S.

Date: Mar. 84

**GEOLOGY AND GEOCHEMISTRY**

OMINECA M.D., B.C.

Scale: 1:10,000 Date: OCT., 1983 Plate: 1



**Contour Soil Sample Results**

Sample No.	As	W	U	U <sub>2</sub>	As	As
	ppm	ppm	ppm	ppm	ppm	ppm
AS-3100	10	10	10	10	10	10
AS-3101	10	10	10	10	10	10
AS-3102	10	10	10	10	10	10
AS-3103	10	10	10	10	10	10
AS-3104	10	10	10	10	10	10
AS-3105	10	10	10	10	10	10
AS-3106	10	10	10	10	10	10
AS-3107	10	10	10	10	10	10
AS-3108	10	10	10	10	10	10
AS-3109	10	10	10	10	10	10
AS-3110	10	10	10	10	10	10
AS-3111	10	10	10	10	10	10
AS-3112	10	10	10	10	10	10
AS-3113	10	10	10	10	10	10
AS-3114	10	10	10	10	10	10
AS-3115	10	10	10	10	10	10
AS-3116	10	10	10	10	10	10
AS-3117	10	10	10	10	10	10
AS-3118	10	10	10	10	10	10
AS-3119	10	10	10	10	10	10
AS-3120	10	10	10	10	10	10
AS-3121	10	10	10	10	10	10
AS-3122	10	10	10	10	10	10
AS-3123	10	10	10	10	10	10
AS-3124	10	10	10	10	10	10
AS-3125	10	10	10	10	10	10
AS-3126	10	10	10	10	10	10
AS-3127	10	10	10	10	10	10
AS-3128	10	10	10	10	10	10
AS-3129	10	10	10	10	10	10