

GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE  
OAKE CLAIM GROUP

WATSON LAKE MINING DISTRICT  
WOLF LAKE AREA, YUKON TERRITORY  
N.T.S. 105 B/7  
(60°16'N; 130°37'W)

FOR

AMAX MINERALS EXPLORATION

By

C. G. Verley, B.Sc., Geologist

SUPERVISED BY: J. W. Stollery, P.Eng.

CORDILLERAN ENGINEERING  
1418 - 355 Burrard Street  
Vancouver, B.C. V6C 2G8

DECEMBER, 1980

CLAIMS: Oake Mineral Claims. Numbers 1-16 inclusive

LOCATION: 109 air-km (68 air-mi) Northwest of Watson Lake

DATE: July 22 to August 2, 1980

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representing work in the amount of



090675

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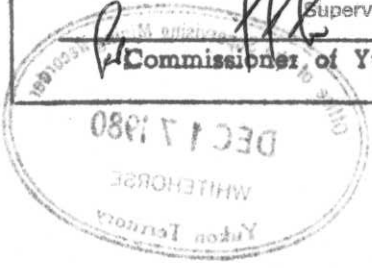
\$ 6,400.00

Resident Geologist of  
Resident Mining Engineer

Considered as representation work under  
Section 53 (4) Yukon Quartz Mining Act.

B. R. BAXTER  
Supervising Mining Recorder

Commissioner of Yukon Territory



AMAX MINERAL EXPLORATION

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Geologist

CORDILLERAN ENGINEERING  
1418 - 350 BURNHAMTHORPE ST.  
VANCOUVER, B.C. V6C 2K8

DECEMBER 1980

CLAIM: Oake Mineral Claims - Number 1-10  
LOC: 70000 (100 km E-W 100 km N-S) (100 km E-W 100 km N-S)  
DATE: 1979-80 to August 1, 1980

020075

## TABLE OF CONTENTS

	PAGE
INTRODUCTION .....	3
GEOLOGY .....	5
GEOCHEMISTRY .....	7
SUMMARY AND CONCLUSIONS .....	11

## LIST OF FIGURES

<u>FIGURE 1</u>	Property Location Map .....	1
<u>FIGURE 2</u>	Photo: Oake Property Looking SE .....	2
<u>FIGURE 3</u>	Claim Map .....	4
<u>FIGURE 4</u>	Cumulative Frequency Distribution .....	9

## LIST OF TABLES

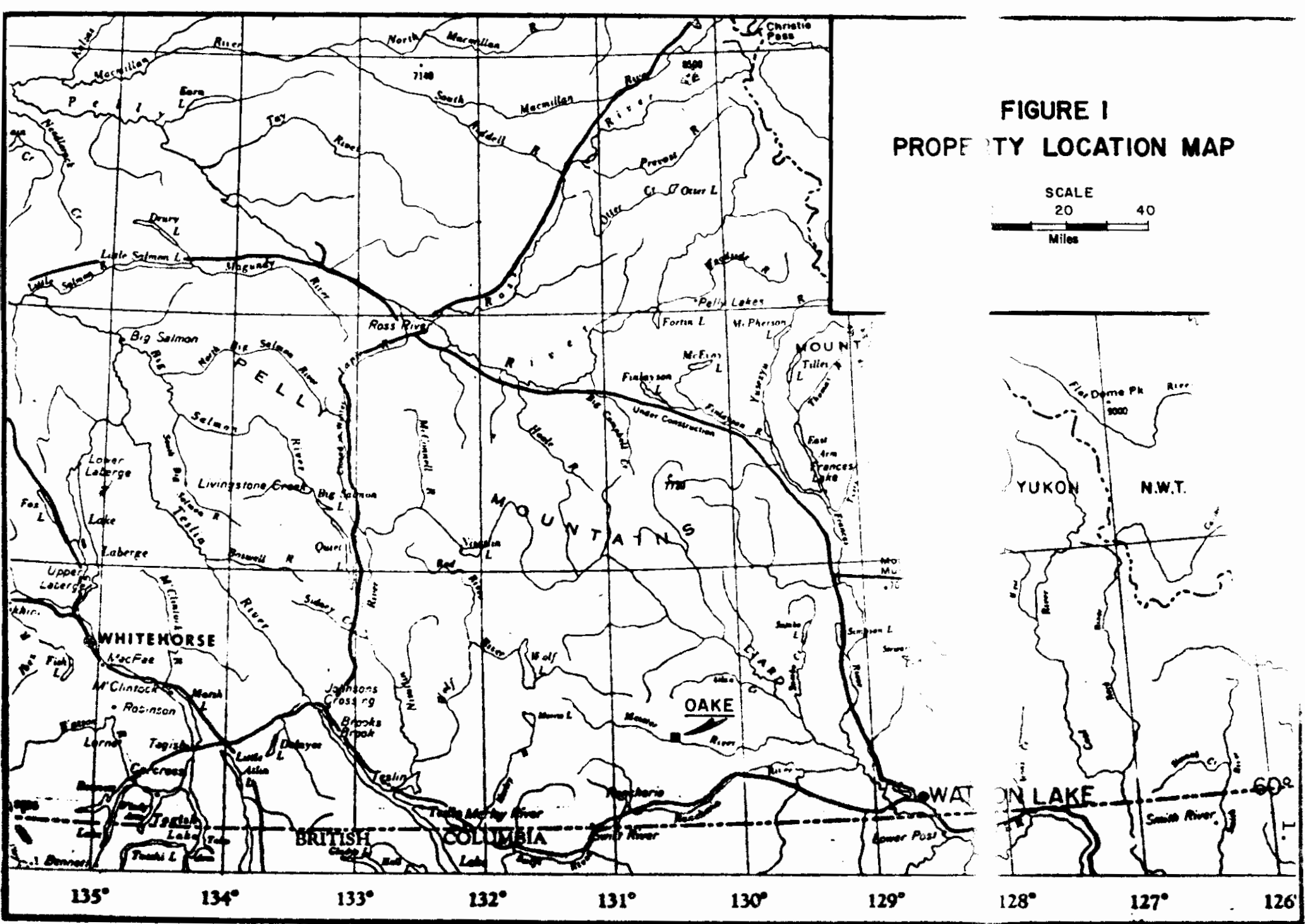
<u>TABLE I</u>	Rock Chip Geochemistry .....	8
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## APPENDICES

<u>APPENDIX "A"</u>	Certificates
<u>APPENDIX "B"</u>	Statutory Declaration
<u>APPENDIX "C"</u>	Personnel

## PLATES

<u>PLATE 1</u>	Geology
<u>PLATE 2</u>	Soil Geochemistry



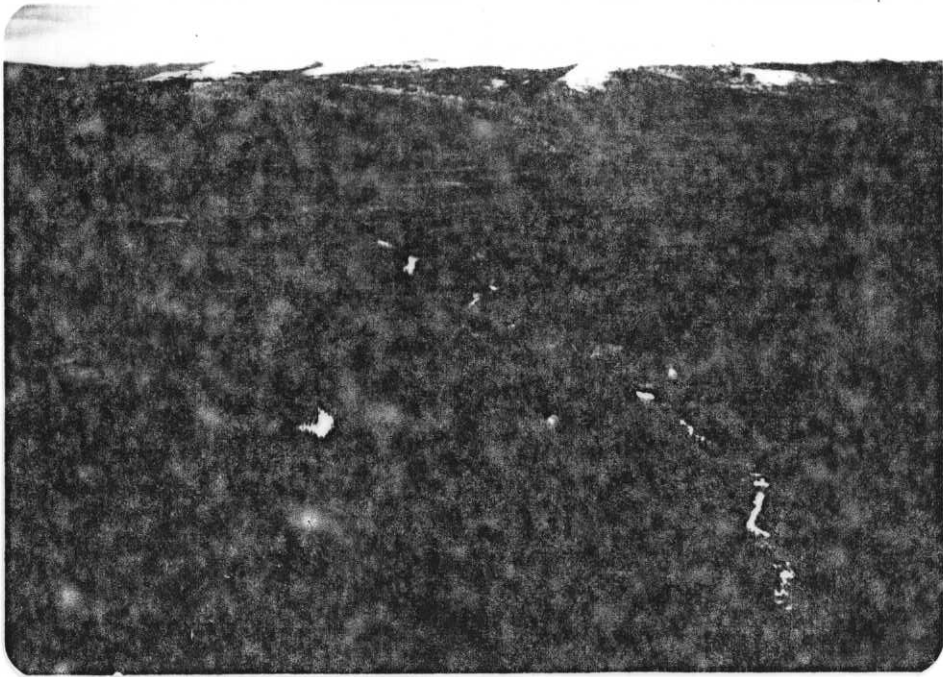


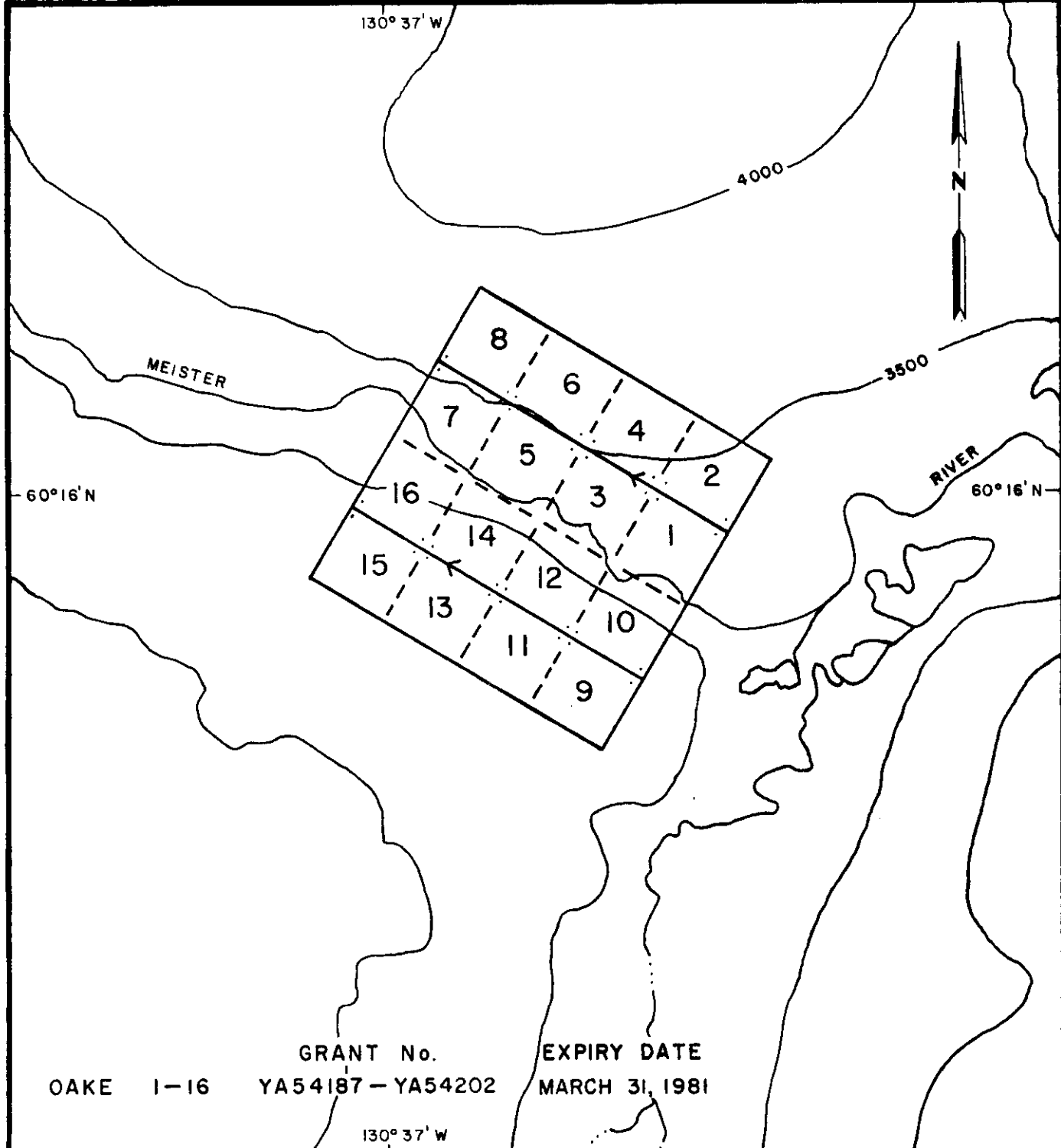
FIGURE 2: Oake Property, looking SE.

## I N T R O D C U T I O N

The Oake property consists of 16 mineral claims (Figure 3) located 109 kilometres (68 miles) northwest of Watson Lake in the Watson Lake Mining District. The claims are accessible by helicopter.

The ground was acquired by Cordilleran Engineering for Regional Resources Ltd. in March, 1980. Motivation for the acquisition was anomalous Pb, Zn soil geochemistry as determined from regional work in the area during the 1979 field season. The claims are presently under option to AMAX Minerals Exploration.

The property is underlain by a gentle, southeasterly dipping succession of Lower Cambrian metasediments. Work on the property in 1980 consisted of soil sampling and geological mapping. Subtle geochemical anomalies exist on the property, but no further work is recommended at the present time.



CLAIM MAP

**OAKE GROUP**

WATSON LAKE MINING DISTRICT, YUKON TERRITORY

N.T.S. 105B-7

SCALE: 1 inch = 1/2 mile

CONTOUR INTERVAL = 500 feet

FIGURE 3

## G E O L O G Y

Regionally, the Oake group is situated in a belt of Lower Cambrian or earlier(?) metasedimentary rocks in the Omineca Crystalline Belt, northern Cassiar Mountains. Intrusive rocks of the Cassiar batholith are located approximately 2 miles to the south of the property. Exposure on the claims is practically restricted to the Meister River. A thick blanket of glacial outwash forms a kettle and kame topography on the group.

Preliminary mapping on the Oake has resulted in the succession being subdivided into three units, described below.

### LITHOLOGIES

#### LOWER CAMBRIAN AND EARLIER(?)

##### Unit LE<sub>1</sub>: Schists

This sequence, of unknown thickness, consists of a variety of interbedded phyllites, schists and grits. Near the top

of the section pale greenish, presumably chloritic phyllites predominate. Fine-grained clastic rocks, mainly quartzites increase in abundance down section. Pelitic interbeds in the grits become more schistose down section and contain garnets. Quartz-chlorite veins (5 to 15 cm thick) are relatively common in this package. Several larger (1 m) quartz veins contain pyrite and traces of chalcopyrite.

Unit LE<sub>2</sub>: Argillaceous Limestone

This unit consists of rusty weathering, thin-bedded dark to medium grey, medium crystalline, argillaceous limestone. Thin phyllitic sections are common in the sequence which is estimated to be approximately 30 metres thick.

Unit LE<sub>3</sub>: Schist

The lithologies in this unit are very similar to those found in LE<sub>1</sub>, consisting of phyllites and interbedded grits. Approximately 30 metres of this sequence is exposed. Thickness is unknown.

## STRUCTURE

The succession on the Oake dips gently to the east. Two sets of lineations exist in the phyllites suggesting that at least two phases of deformation have taken place. No major faults appear to occur on the property.

## G E O C H E M I S T R Y

(Plate 2)

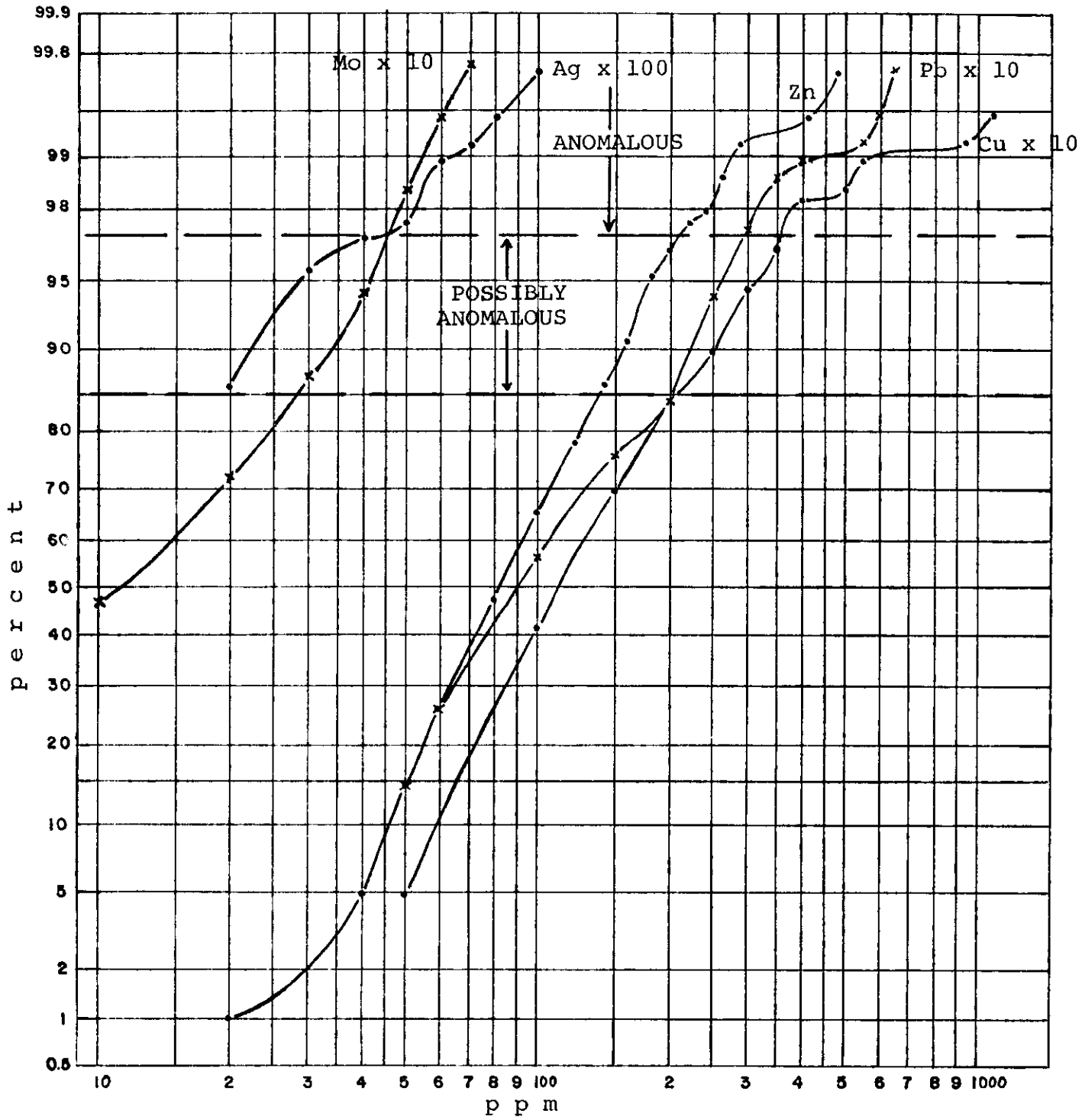
A program of soil sampling was conducted on the Oake group. A total of 374 samples were collected (337 on the property) at intervals of 50 metres on lines spaced at 200 metres apart. Soils on the property consisted of a sandy glacial outwash material. Line control was by hip-chain and compass. A limited amount of rock-chip sampling was undertaken. The results of this work are listed in Table I.

Samples collected were placed in numbered kraft bags. Sample sites were marked with plastic flagging. The samples were shipped to the North Vancouver laboratory of Bondar-Clegg and Co. Ltd. where they were dried, sieved to the -80 mesh fraction and analyzed for Cu, Pb, Zn, Mo and Ag. The analytical method consisted of perchloric and nitric acid digestion followed by atomic absorption analysis.

TABLE I

ROCK CHIP GEOCHEMISTRY

<u>Sample No.</u>	<u>Cu</u> <u>ppm</u>	<u>Pb</u> <u>ppm</u>	<u>Zn</u> <u>ppm</u>	<u>Mo</u> <u>ppm</u>	<u>Ag</u> <u>ppm</u>	<u>Remarks</u>
KR-1	9	3	66	1	0.2	Phyllite
4	61	6	16	1	0.3	Phyllite
5	16	3	113	1	0.2	Phyllite
8	42	3	34	<1	0.2	Quartz vein
10	40	5	47	1	0.2	Phyllite
11	28	8	83	1	0.2	Grit band
12	39	13	69	1	0.2	Phyllite
13	13	26	16	5	0.2	Limestone
14	13	14	15	4	0.2	Limestone
15	7	11	79	2	0.2	Grit band
16	13	11	48	<1	0.2	Phyllite
17	2	6	14	<1	0.2	Phyllite
18	17	5	80	1	0.2	Phyllite
19	9	6	8	2	0.5	Phyllite
20	12	4	86	<1	0.2	Grit band
21	4	6	6	2	0.2	Quartz vein
22	86	8	74	1	0.2	Garnet schist



CUMULATIVE FREQUENCY DISTRIBUTION

Cu, Pb, Zn, Ag in Soils - OAKE PROPERTY

100% = 373 samples

FIGURE 4

Results of the sampling indicate values in soils range up to 505 ppm Cu, 87 ppm Pb, 590 ppm Zn, 1.3 ppm Ag and 8 ppm Mo. Statistical categories (Figure 4 and Plate 2) were defined such that the upper 3% of the values are anomalous. Similarly, the upper 15% are considered to be possibly anomalous. On this basis it can be seen that some of the anomalous values form a cluster on line 2000N between 1650W to 2050W, but high values are also scattered across the grid. Sampling results do not appear to extend or confirm anomalies obtained by 1979 regional work. The relative intensity of anomalous values suggests that overburden may be obscuring a true response of bedrock. Soil profiling at anomalous sample sites may be a useful approach to aid in determining if high values are reflecting mineralization below overburden on the Oake.

## SUMMARY & CONCLUSIONS

The Oake property consists of 16 mineral claims on Meister River in the Watson Lake Mining District, Yukon Territory (105 B-7). Access to the claim group is by helicopter, from Watson Lake, a distance of 109 km.

The Oake was acquired in 1980 for Regional Resources Ltd. by Cordilleran Engineering and is presently under option to AMAX Minerals Exploration.

Work conducted during the 1980 field season consisted of soil sampling (374 samples) and geological mapping. Results of this work suggest that subtle Pb, Zn anomalies occur over the underlying succession of Lower Cambrian and earlier (?) metasediments.

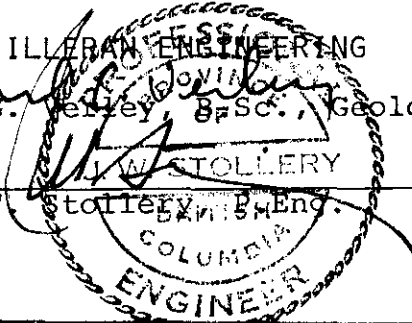
No further work is recommended at the present time.

CGV/z

SUPERVISED BY:

CORDILLERAN ENGINEERING  
 C. G. Verley, B.Sc., Geologist

J. W. Stollery, B.Eng.  
 ENGINEER



## APPENDICES

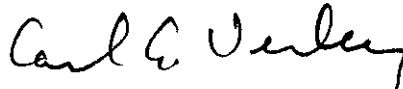
<u>APPENDIX "A"</u>	Certificates
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<u>APPENDIX "C"</u>	Personnel

WRITER'S CERTIFICATE

I, Carl G. Verley of Vancouver, British Columbia  
hereby certify that:

1. I am a geologist residing at 301-1867 West 3rd Ave.,  
and employed by Cordilleran Engineering of 1418-355  
Burrard Street, Vancouver, B.C. V6C 2G8
2. I am a graduate of the University of British Columbia,  
B.S., in 1974, and have practiced my profession since  
that time.
3. I am an Engineering Pupil with the Association of  
Professional Engineers of the Province of British  
Columbia.
4. I am the author of this report which is based on work  
conducted on the Oake #1-16 mineral claims during the  
period July 22 to August 2, 1980. This work included  
geological mapping and geochemical sampling, undertaken  
on behalf of AMAX Minerals Exploration.

CORDILLERAN ENGINEERING



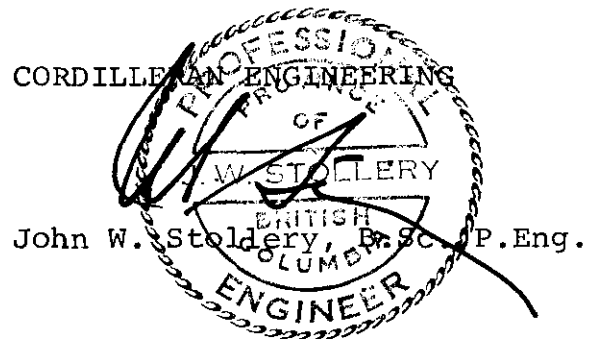
Carl G. Verley, B.Sc.,  
Geologist

December, 1980  
Vancouver, B.C.

SUPERVISOR'S CERTIFICATE

I, John W. Stollery of Vancouver, British Columbia hereby certify that:

1. I am a geologist residing at 4423 Patterdale Drive North Vancouver, British Columbia and employed by Cordilleran Engineering of 1418-355 Burrard Street, Vancouver, B.C., V6C 2G8.
2. I am a graduate of the Michigan Technological University, B.S., in 1961 and have practiced my profession since that time.
3. I am a member of the Association of Professional Engineers of the Province of British Columbia and Ontario.
4. I supervised the writing of this report which is based on the results of a field program conducted by Cordilleran Engineering during the period June 1 to September 15, 1980.



December, 1980  
Vancouver, B.C.

CANADA ) In the matter of a geological and geochemical  
 ) Report on behalf of AMAX Minerals Exploration  
 TO WIT : )

I, Carl G. Verley, Agent for Cordilleran Engineering  
of 1418-355 Burrard Street, Vancouver, B.C. V6C 2G8

do solemnly declare, - that geological mapping and geochemical sampling were conducted on the Oake #1-16 (inclusive) mineral claims, Watson Lake Mining District, Y.T., during the period July 22 to August 2, 1980. Expenditures for this work include:

Salaries, Management Fees and Consulting ..	\$ 4,928.00
Helicopter .....	1,414.50
Analyses and Sample Shipping .....	2,347.99
Food .....	423.96
Rentals .....	<u>312.50</u>
TOTAL:	<u>\$9,426.95</u>

And I make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath and by virtue of the Canada Evidence Act.

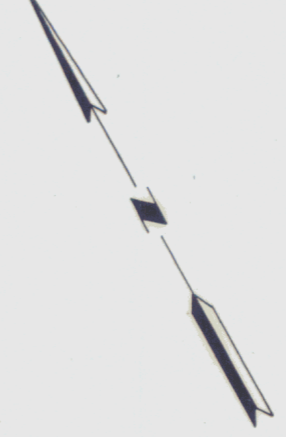
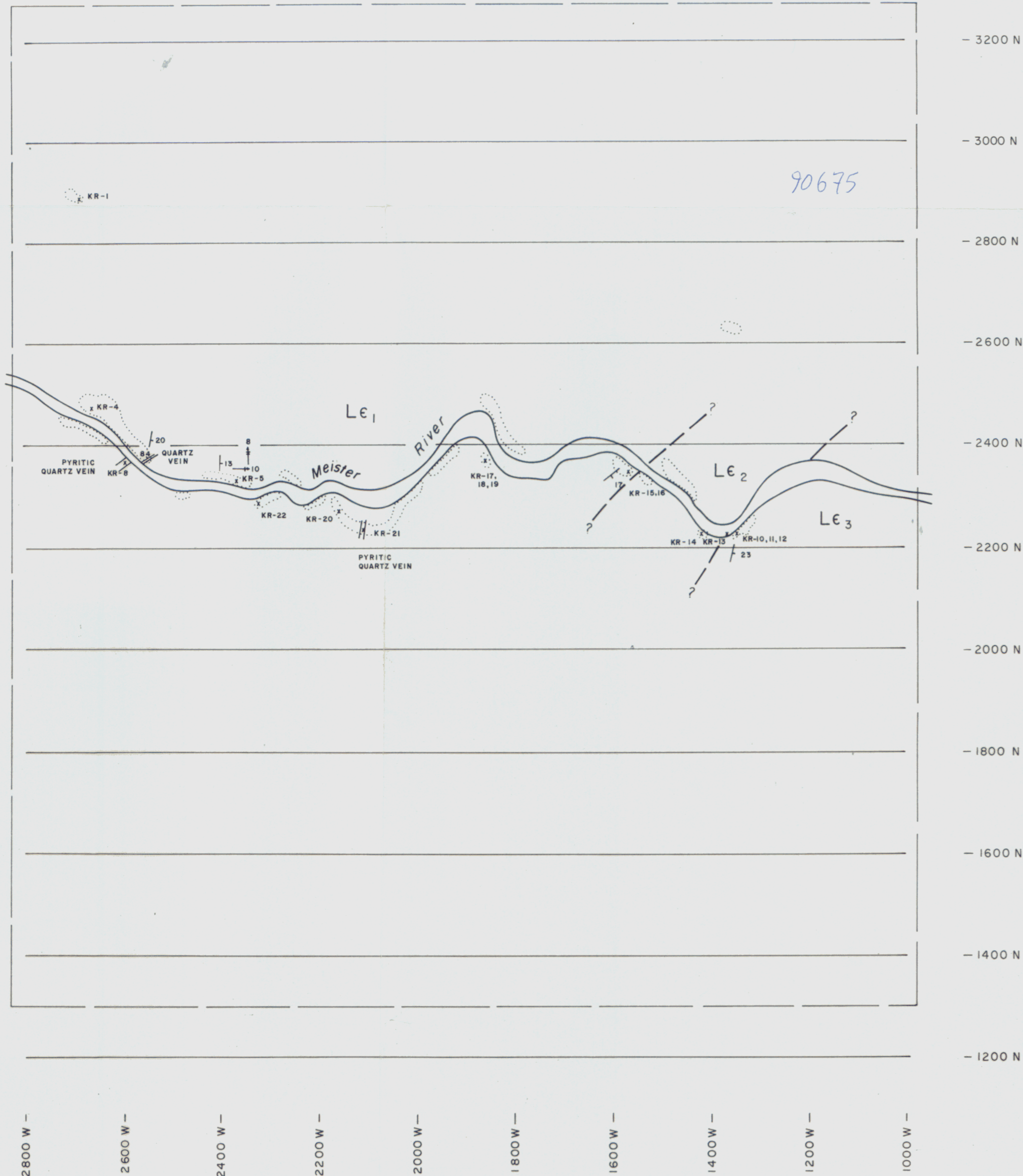
Declared before me at Vancouver  
 in the Province of B.C. this  
28 day of November 1980

Carl G. Verley

~~Anthony J. Jand~~  
~~A Notary Public in and for the~~  
~~Province of British Columbia~~  
 A Notary Public in and for the  
 Province of British Columbia

PERSONNEL

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D. Miller 1418-355 Burrard St. Vancouver, B.C.	Assistant
P. Power 1418-355 Burrard St. Vancouver, B.C.	Cook
P. Smith 1418-355 Burrard St. Vancouver, B.C.	Assistant

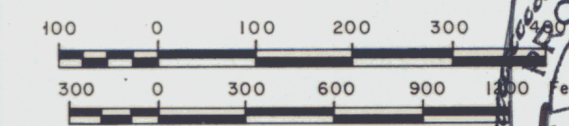


- LOWER CAMBRIAN OR EARLIER (?)
- LE<sub>3</sub>** PHYLITE  
SIMILAR TO UNIT LE<sub>1</sub>, BUT CONSISTING MAINLY OF CHLORITIC PHYLITES
  - LE<sub>2</sub>** ARGILLACEOUS LIMESTONE  
THIN-BEDDED, LAMINATED, MEDIUM CRYSTALLINE, DARK TO LIGHT GREY ARGILLACEOUS LIMESTONE
  - LE<sub>1</sub>** PHYLITE  
A MIXED SUCCESSION OF CHLORITIC PHYLITES AND GRITS.
- APPROXIMATE OUTCROP DISTRIBUTION
  - LITHOLOGIC CONTACT
  - ATTITUDE OF BEDDING
  - TREND AND PLUNGE OF LINEATIONS: YOUNGER, OLDER
  - ROCK CHIP SAMPLE LOCATION

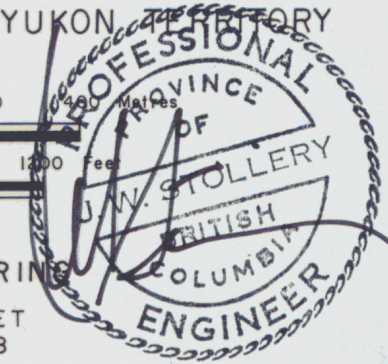
MEISTER RIVER JOINT VENTURE  
AMAX MINERALS EXPLORATION

GEOLOGICAL PLAN  
OAKE CLAIM GROUP

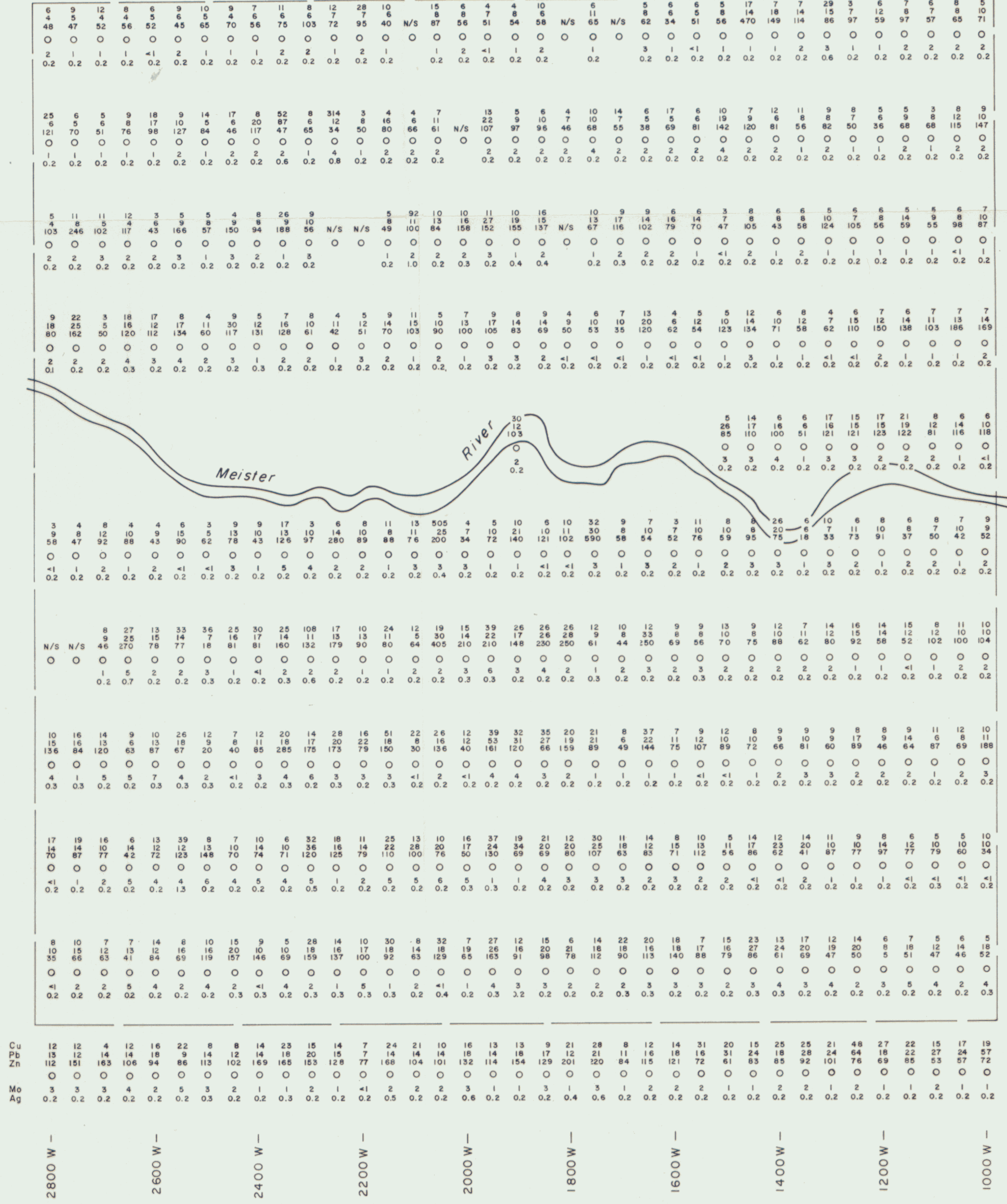
WATSON LAKE MAP SHEET, N.T.S. 105B-7  
WATSON LAKE MINING DISTRICT, YUKON TERRITORY



BY  
CORDILLERAN ENGINEERING  
1418-355 BURNARD STREET  
VANCOUVER, B.C. V6C 2G8



APPROXIMATE CLAIM BOUNDARY



EXPLANATION

Cu  
Pb  
Zn  
Mo  
Ag

SOIL SAMPLE SITE, SAMPLE INTERVAL 50 m

	BACKGROUND	POSSIBLY ANOMALOUS	ANOMALOUS
Cu	0 - 20 ppm	21 - 35 ppm	≥ 36 ppm
Pb	0 - 20	21 - 27	≥ 28
Zn	0 - 149	150 - 209	≥ 210
Ag	0 - 0.2	0.3	≥ 0.4

MEISTER RIVER JOINT VENTURE  
AMAX MINERALS EXPLORATION

Cu, Pb, Zn, Mo, Ag  
SOIL GEOCHEMISTRY  
OAKE CLAIM GROUP

WATSON LAKE MAP SHEET, N.T.S. 105B-7  
WATSON LAKE MINING DISTRICT, YUKON TERRITORY

100 0 100 200 300  
300 0 300 600 900 1200 Feet

BY  
CORDILLERAN ENGINEERING  
1418-355 BARRARD STREET  
VANCOUVER, B.C. V6C 2G8