

COMINCO LTD.

EXPLORATION
NTS 82L/4E

WESTERN DISTRICT
February 18, 1980

ASSESSMENT REPORT OF GEOLOGY

AND SOIL GEOCHEMISTRY

ON THE WIT PROPERTY

(Loch 1 to 5 Claims)

WHITEMAN CREEK, VERNON M.D.

(Work performed July 27 - August 30, 1979)

LATITUDE: 50°12'N

LONGITUDE: 119°35'W

REPORT BY:

M.J. OSATENKO

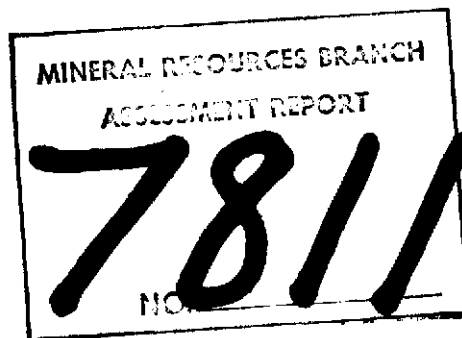


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All maps in pocket.	

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SUMMARY

The Wit property is located 25 km west-southwest of Vernon, B.C. on the westside of Okanagan Lake.

Work in 1979 on this property consisted of geological mapping, 22.6 km of grid and soil sampling. Mapping shows a Tertiary quartz latite porphyry stock (56 m.y.) that cuts argillaceous sediments, quartz monzonites of Jurassic? age and apparently its own basaltic and felsic volcanic pile. MoS_2 and pyrite occur in fractures and quartz veinlets in propylitized porphyry on the eastside of the property, while ferrimolybdate? is found in a highly sericitized, kaolinized and brecciated zone, at least 1000 x 400 m, in the northeastern corner. Coincident with the sericitized zone is a strong Mo soil anomaly and peripheral to it is a Zn soil anomaly. This system extends to the west-southwest, in part on Cominco's ground but mainly on Canadian Occidental's, to make a geochemical system at least 5.5 x 2.5 km.

Further detailed geological mapping over the whole property is recommended, along with better definition of the geochemical system through Mn and F analyses on the 1979 samples, and sampling of fill in lines between the 1979 lines. Geochemical anomalies and areas of Mo showings should then be covered with IP, followed by percussion drilling.

INTRODUCTION

The Wit property was staked in January 1979 to protect Mo stream silt anomalies coming from an altered stock. As most of the silt anomalies in the area were covered by previous staking (Canadian Occidental and Kennco) only the peripheral silt anomalies could be acquired.

Work done in 1979 included geological mapping and soil geochemistry between July 27 - August 30, 1979. The laying out of the grid and the soil sampling was done by D. Pauls, G. Hodson, D. Falkowski, J. Welton and T. Faubert while the mapping was done by T. Hodson and C. Lemas. Survey control was a 1:10,000 blow-up of a 1:50,000 topographical map.

LOCATION AND ACCESS

The property is located 25 km west-southwest of Vernon, B.C. on the south side of Whiteman Creek (Plate 1). Access to it is by truck off the Westside road and then up Whiteman and South Whiteman Creeks along a good system of logging roads. Maps of the area, at a scale of 1:15,840, were kindly provided by Crown Zellerbach in Kelowna.

TOPOGRAPHY AND VEGETATION

The property occurs at an elevation of 760-1430 m, along the north facing slope of the extremely steep Whiteman Creek valley. This area is presently being logged for spruce and pine but only on the plateau as the steep slopes of the valley do not have marketable timber. Water for drilling is available from the numerous creeks in the area and from Martin Lake.

PROPERTY AND OWNERSHIP

The Wit property consists of the following Loch claims that are 100% owned by Cominco Ltd.

<u>CLAIM</u>	<u>RECORD NUMBER</u>	<u>NUMBER OF UNITS</u>	<u>DUE DATE</u>
Loch 1	593	12	Jan. 25/82
Loch 2	594	18	Jan. 25/82
Loch 3	595	9	Jan. 25/82
Loch 4	596	3	Jan. 25/82
Loch 5	699	8	Sept. 4/82
		<u>50</u>	

PREVIOUS WORK

The first known work in the area, by Noranda in 1967, consisted of Cu-Mo soil geochemistry to follow-up a number of Mo stream silt anomalies (assessment report 1039). This work outlined an area at least 500 x 200 m of anomalous Mo soil values apparently derived from an altered syenite-quartz latite porphyry stock. Six short pack sack ? holes (total of 75 m) were then drilled but the data from this work is not available. The property lapsed and was acquired by Cominco Ltd. in 1970. They did mapping and silt and soil geochemistry but the ground was dropped in 1972 due to a lack of interest in exploration for porphyry deposits. Cominco's work verified the Noranda data.

In 1974, Canadian Occidental completed a regional stream silt survey in south-central B.C., and located the same Mo anomalies that Noranda did in 1967. They staked the ground and in the succeeding three years did mapping and silt and soil geochemistry, mainly after Mo and U (assessment reports 5672, 6052 and 6572). Their work showed a Mo-Zn-Pb soil anomaly, about 3 x 2 km, centered on three zones of bleached and altered latite porphyry. No drilling has been done by them to date. Following the completion of the above work, in 1977, Kennco re-evaluated some of their old data on the alteration and staked the Whiteman 1 and 2 claims, adjacent on the west to the Canadian Occidental property. Work done by them consisted of silt, rock and soil geochemistry which defined a number of F and Mo soil anomalies (assessment report 6738). Their property was optioned to U.S. Steel who did an IP survey in 1979.

REGIONAL GEOLOGY

The oldest rocks in the Wit property area are gneisses and schists of Proterozoic or possibly of early Paleozoic age. They are overlain by a sequence of argillaceous rocks with minor limestone, basalt and rhyolite (flows and tuffs) of presumed Upper Paleozoic or possibly in part of Upper Triassic age. Cutting these rocks are small ultramafic-monzonite complexes such as those found at Whiterocks Mtn., about 26 km to the southwest, and Kruger Mtn., near Keremeos. Surrounding and on the Wit property are late Jurassic granitic rocks of the Okanagan complex which just to the south have a Rb/Sr isochron of 147 ± 6 my. (unpublished Cominco dating). Following this episode was a period of early Tertiary plutonism which formed plugs and stocks of alkaline composition (monzonite, syenite) and small bodies of quartz-feldspar and quartz latite porphyry. Mo mineralization on the Wit property is related to this latter event. Coeval with the calc-alkaline Tertiary intrusive rocks are large volumes of basalt and rhyolite.

WIT PROPERTY

1. GEOLOGY

The geology of the Whiteman Creek stock and the Wit property is shown in Plate 3. Age relationships of the various principal units on the map are discussed in the Regional Geology part of this report but it is now clear, from Cominco Rb/Sr dating and K/Ar work by N. Church of the B.C. Ministry of Mines, that the quartz latite porphyry stock and the surrounding Tertiary volcanic units are of the same age (56 my and 52 my, respectively).

The sediments which trend 035° and dip about 40° to the northwest, consist of pyritic argillite and limestone with minor conglomerate. Rocks of the conglomerate unit show quartz monzonite, limestone and argillite clasts, often up to 20 cm, in a brownish, medium-coarse grained matrix. Cutting the sediments are quartz monzonites of Jurassic age?, that are greenish-grey, medium-coarse grained with 1-5% K-feldspar phenocrysts. Typically they consist of 20% quartz, 45% plagioclase, 20% K-feldspar and 15% hornblende.

Rocks of Unit 3 are quartz latite porphyries or granite porphyries. They are pinkish, fine-coarse grained rocks that have about 25% K-feldspar and 3% plagioclase phenocrysts in a quartz-K-feldspar matrix that often exhibits spherulitic and miarolitic textures. Typically, they have 20% quartz, 10% plagioclase, 68% K-feldspar and 2% chloritized biotite. Unit 3a rocks are the altered equivalents of Unit 3 and are discussed in the MINERALIZATION AND ALTERATION section of this report.

The hornblende monzonites (Unit 4) are fine grained and have 20% plagioclase, 50% K-feldspar and 30% hornblende. Of the remaining 6 units only Units 8, 9 and 10 are found on the property; the remaining are on Canadian Occidental ground and are described in assessment reports 5672 and 6572. Unit 8 is a varied unit comprising greyish basalt flows and quartz latite flows and dykes, the latter being very similar to Unit 3 rocks but finer grained and maybe its extrusive equivalent. Rocks of Unit 9 are various felsic and andesitic fragmentals while the andesite porphyry of Unit 10 is probably a dyke.

2. ALTERATION AND MINERALIZATION

In the eastern part of the property the rocks are well fractured and show a zone (Unit 3a) at least 1,000 x 400 m, of highly sericitized and kaolinized quartz latite porphyry (Plate 3). This zone is poorly exposed and is locally brecciated with rounded fragments from less than 1 to 30 mm. Enveloping the sericitized area is a pyrite-epidote-chlorite halo, the dimensions of which have not been defined. The above system extends to the west, onto the Canadian Occidental ground, to make an alteration system at least 4 x 2.5 km.

MoS₂ and pyrite occur on the property along fractures and in quartz veinlets (less than 1-5 mm) in three areas (Plate 3) outside the sericitized zone, although ferrimolybdate? was noted in one sample from this zone. No samples of the mineralization were collected due to the difficulty getting representative samples but visually the grades in grab samples would run about 0.03% Mo.

3. STRUCTURE

No detailed structural analysis of the property and surrounding area has been made but clearly such topographic features as Whiteman, South Whiteman and Kennco Creeks represent major structural breaks. The zone showing Mo mineralization, Mo silt and soil anomalies and altered rocks generally lies within the triangular area bounded by the above faults (Plate 1). It is interesting that the White Elephant Au prospect and the Green Gables F showing occur along projections of these major faults.

4. SOIL GEOCHEMISTRY

The soil survey (346 samples) was done in two areas of the property. In the southern one samples were collected on three lines 300 m apart and at intervals of 50 and 100 m while for the eastern area they are at 50 m intervals along contours 153 m (500') apart. All samples were collected from the B horizon at a depth of from 10-20 cm and analyzed for Cu, Zn and Mo at Cominco's laboratory in Vancouver. Cu and Zn were determined by atomic absorption spectrophotometry after a 20% HNO₃ digestion while Mo analyses were obtained using a Zn dithiol colorimetric procedure after a HClO₃-HNO₃ digestion. The coefficient of variation for Cu and Zn is 10% while for Mo it is 15%. Cumulative frequency diagrams suggest that the threshold of anomaly for Cu, Zn and Mo is 15, 100 and 5 ppm respectively.

Plate 4 shows a contoured plot of the Cu values. Scattered weak anomalies are indicated over the whole of the property and tend to follow the Zn soil anomalies. The Zn soil map (plate 5) is a compilation of Cominco's data and that of Canadian Occidental (assessment report 6572). Together they define an annular anomalous zone, trending west-southwest, that is a least 5.5 x 2.5 km.

Plate 6 shows a contoured plot of Cominco's Mo values while on Plate 3 Mo soil anomalies over the whole of the stock are shown. Mo soil anomalies on our ground are found in three areas with the strongest one over the highly sericitized and brecciated zone of Unit 3a, mainly on Loch 5. Values in this area are up to 130 ppm. Over the whole of the stock the strongly anomalous Mo zones (+20 ppm) generally occur inside the annular-shaped Zn anomaly.

CONCLUSIONS

1. On this property the methods found most useful in locating areas of Mo mineralization are geological mapping and silt and soil geochemistry.
2. MoS₂ and pyrite mineralization occur in fractures and quartz veinlets cutting propylitized and pyritized quartz latite porphyry in three areas in the eastern part of the property. Ferrimolybdate? occurs in the highly sericitized and brecciated zone just to the north of this mineralized area.
3. Coincident with the sericitized zone is a strong Mo soil anomaly that in part overlaps and is enveloped by a Zn soil anomaly.

RECOMMENDATIONS

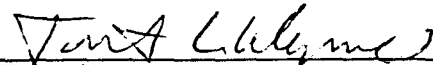
1. Further detailed geological mapping should be done over the whole property with particular reference to defining the sericitized zone, and to identifying features (dykes and alteration) that might indicate the favourable quartz latite porphyry beneath the flows in the southern part of the property.
2. Mn and F analyses should be done on the soil samples collected in 1979. Fill-in soil geochemistry is required over the whole of the property to better define the geochemical system.
3. The Mo soil anomalies and Mo showings should be covered by IP and then followed up with percussion drilling.

Report by:



M.J. Osatenko
Project Geologist

Endorsed by:



F.L. Wynne
Senior Geologist

Approved for
Release by:



G. Harden, Manager Exploration
Western District

APPENDIX "A"

STATEMENT OF EXPENDITURES

ON THE WIT PROPERTY

SALARIES

M.J. Osatenko

August 6, 11 (2 days @ \$185/day) \$ 370.
Report writing (8 days @ \$185/day) 1,480.

T. Hodson

July 27; August 6 - 12, 14, 22 (10 days @ \$87/day) 870.

C. Lemas

July 27; August 6 - 10, 14 (7 days @ \$108/day) 756.

D. Pauls

August 15,16 (2 days @ \$70/day) 140.

G. Hodson

August 15 - 17, 22 - 24 (6 days @ \$70/day) 420.

D. Falkowski

August 15 - 17, 23, 24 (5 days @ \$70/day) 350.

J. Welton

August 22 - 24, 30 (4 days @ \$80/day) 320.

T. Faubert

August 22 - 24, 30 (4 days @ \$75/day) 300.

ANALYSES

346 soil samples for Cu, Zn, Mo @ \$3.50/sample 1,211.

DOMICILE

25 man days @ \$33/day 825.

TRUCK

1 truck for 17 days @ \$35/day 595.

MISCELLANEOUS

phone calls, soil bags, flagging, survey thread,
compasses and shipping 248.

\$ 7,885.

APPENDIX "B"

COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

STATEMENT OF QUALIFICATIONS

I, MYRON J. OSATENKO, OF THE CITY OF VERNON, BRITISH COLUMBIA, HEREBY CERTIFY:

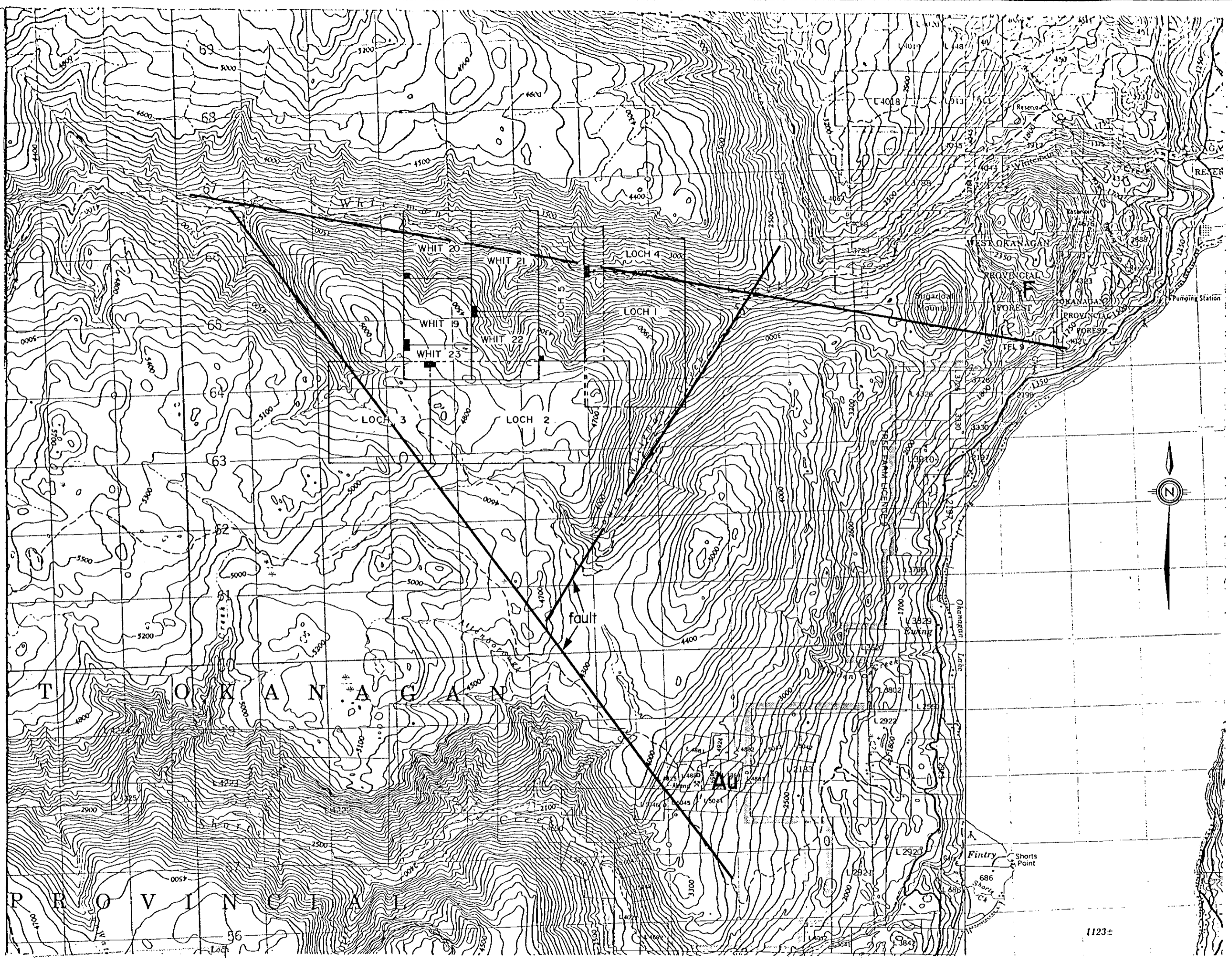
1. THAT I AM A GEOLOGIST, RESIDING AT 7702 SAGE DR., VERNON, BRITISH COLUMBIA WITH A BUSINESS ADDRESS AT 4405 - 28th STREET, VERNON, BRITISH COLUMBIA.
2. THAT I GRADUATED WITH B. SC. AND M. SC. DEGREES IN GEOLOGY FROM THE UNIVERSITY OF BRITISH COLUMBIA IN 1965 AND 1967 RESPECTIVELY.
3. THAT I HAVE PRACTISED GEOLOGY WITH COMINCO LTD. FROM 1967 TO PRESENT.

DATED THIS 18th day of February 1980 at Vernon, British Columbia.


SIGNED



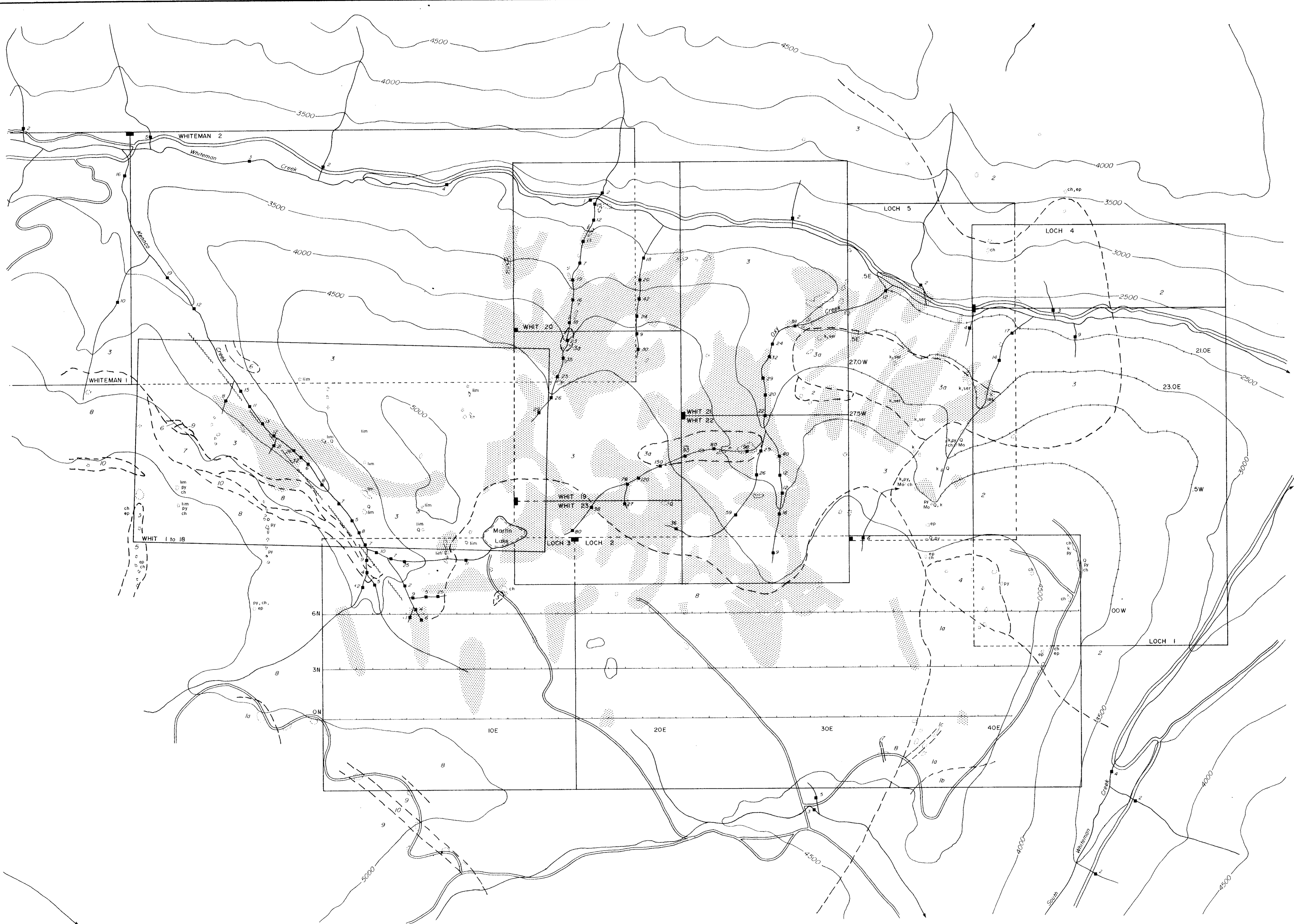
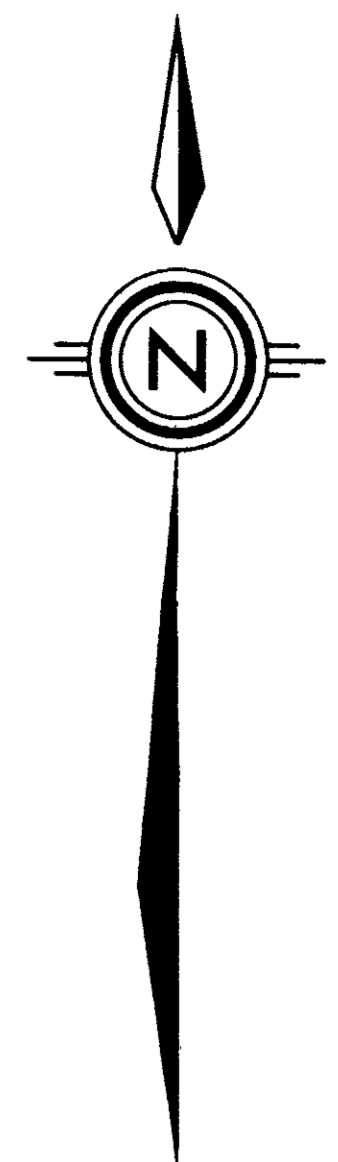
Myron J. Osatenko, M. Sc.



7811

WIT PROPERTY				 82 L/4E
Drawn by:		Traced by: RAR		
Revised by	Date	Revised by	Date	LOCATION MAP
Scale: 1:50,000			Date: January 17, 1960	Plate: 1

7811

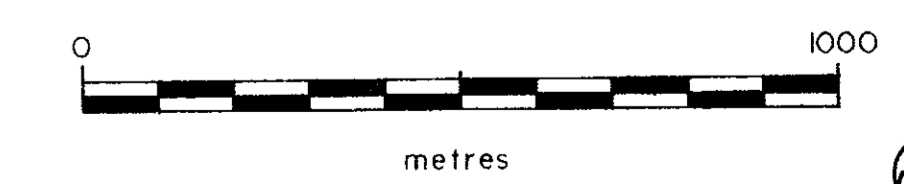


LEGEND

- EARLY TERTIARY**
- 10 Andesite porphyry.
 - 9 Felsic and andesitic agglomerates.
 - 8 Basalt.
 - 7 Rhyolite.
 - 6 Syenite.
 - 5 Diabase.
 - 4 Hornblende monzonite.
 - 3 Quartz latite porphyry.
 - 3a Quartz latite porphyry, kaolinized and sericitized.
- JURASSIC †**
- 2 Quartz monzonite.
- UPPER PALEOZOIC and/or UPPER TRIASSIC**
- 1 Sediments.
 - 1a Argillite.
 - 1b Siliceous limestone.
 - 1c Conglomerate.

SYMBOLS

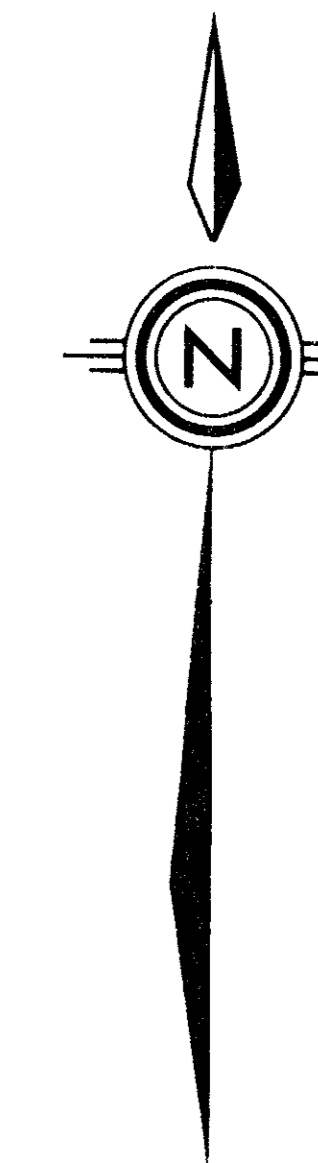
- Contact.
- Outcrop.
- py Pyrite.
- Quartz veining.
- ser Sericite.
- ch Chlorite.
- ep Epidote.
- k Kaolinite.
- Mo MoS₂ showing.
- Anomalous Mo in soils (+5 ppm).



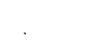
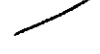


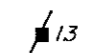
M. Porter

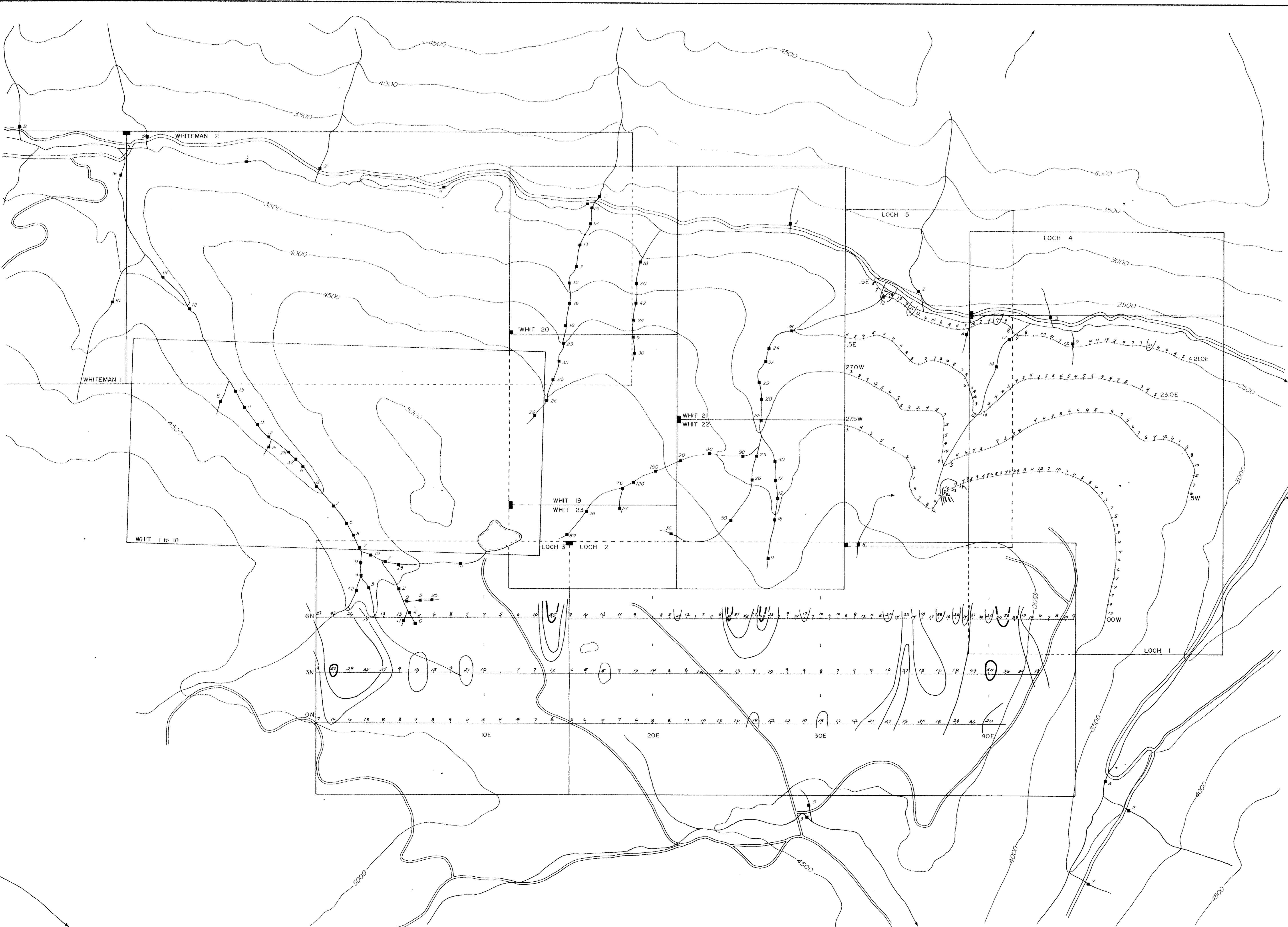
WIT PROPERTY			
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Revised by: []	Date: []	Revised by: []	Date: []
GEOLOGY		Scale: 1:10,000	Date: January 11, 1980
		Plate: 3	FORM 210 0470

Note: Geology and Soil Geochemistry of Cominco ground from assessment reports 5692 and 6572

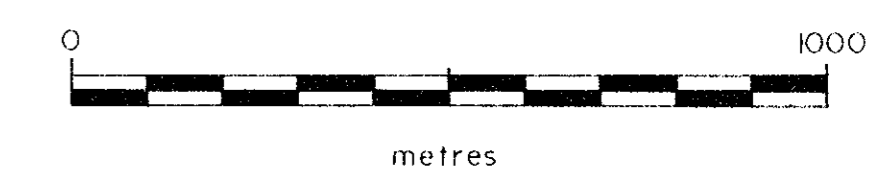


LEGEND

-  Cu soil contours.
-  15 ppm
-  25 ppm
-  50 ppm
-  Mo stream silt (ppm).

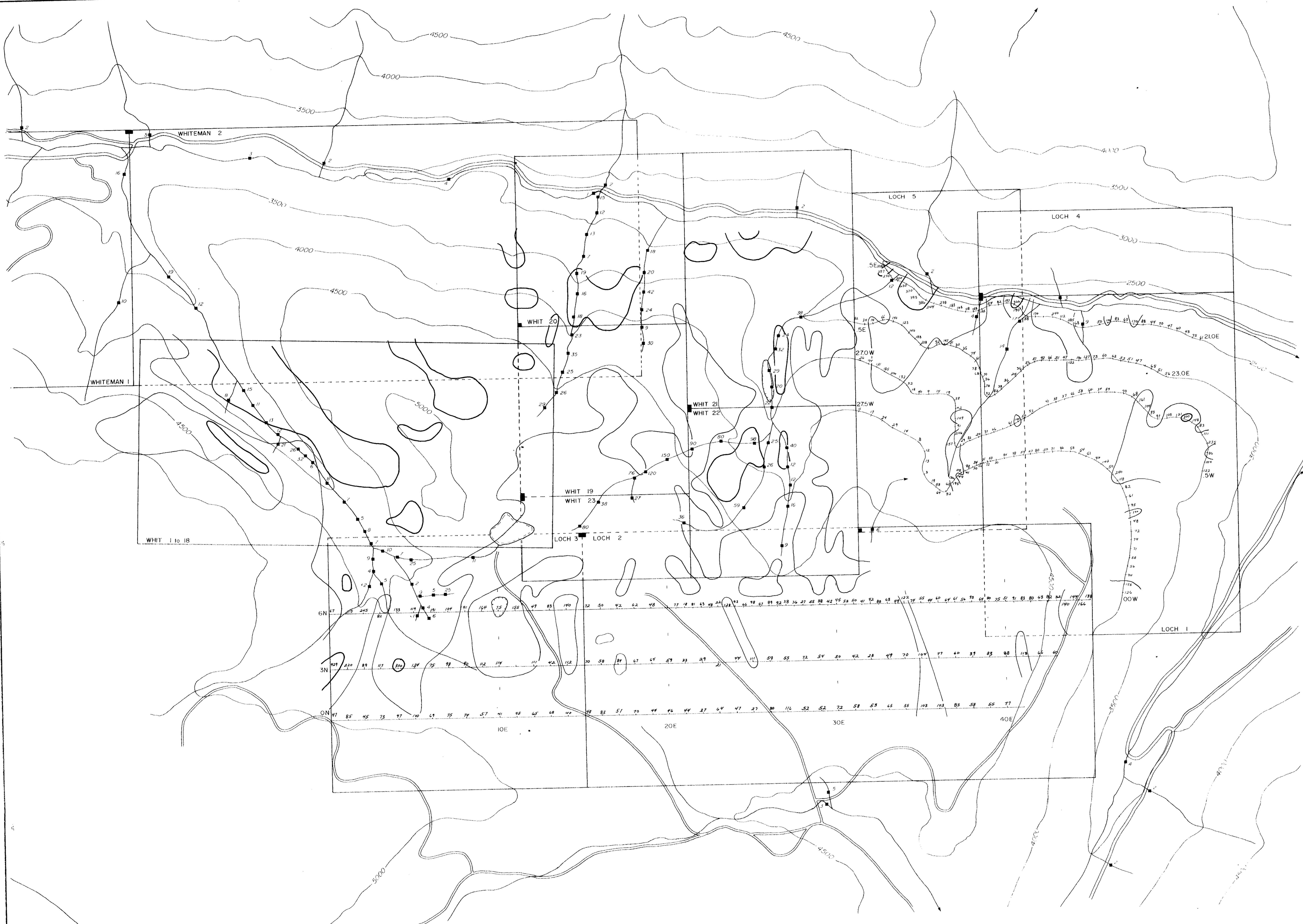
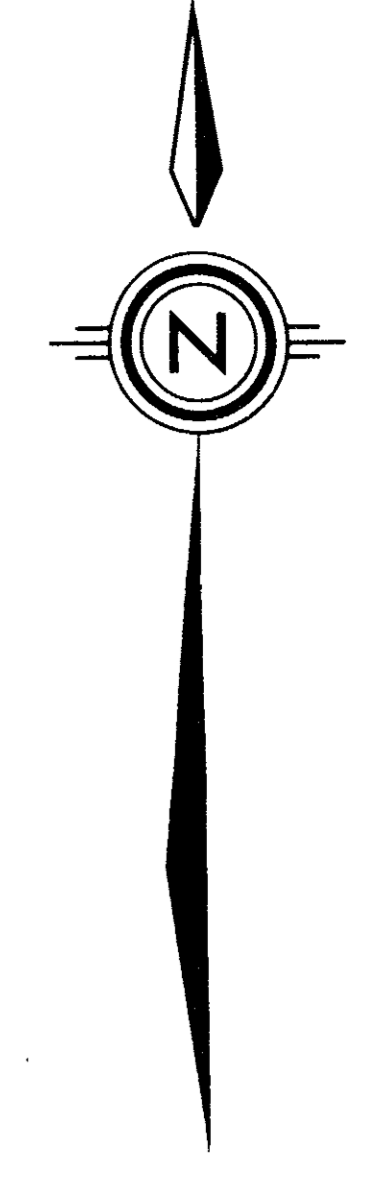


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WIT PROPERTY	
Drawn by: MJO	Traced by: RAR
Revised by: _____	Revised by: _____
Scale: 1:10,000	Date: January 11, 1980
Plate: 4	

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LEGEND

- Zn soil contours.
- 100 ppm
- 300 ppm
- Mo stream silt (ppm).



NOTE: ZINC DATA OFF COMINCO GROUND IS FROM ASSESSMENT REPORT 6572.

WIT PROPERTY		B2L/4E	
Drawn by: MJO	Traced by: RAR	Zn SOIL GEOCHEMISTRY	
Revised by: []	Revised by: []	Scale: 1:10,000	Date: January 11, 1980
			Plate: 5

