

GEOLOGICAL AND GEOCHEMICAL ASSESSMENT REPORT

ON THE

Map 1-16 MINERAL CLAIMS

YB 51910 - YB 51925

LOCATED ON

NTS CLAIM SHEET 105G-7  
WATSON LAKE MINING DISTRICT

G. MACDONALD P. GEOL

16 AUGUST 1995



This report has been examined by  
the Geological Evaluation Unit  
under Section 53 (4) Yukon Quartz  
Mining Act and is allowed as  
representation work in the amount  
of \$ 2000.



Regional Manager, Exploration and  
Geological Services for Commissioner  
of Yukon Territory.

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SUMMARY

Blake Macdonald holds the Man 1-16 mineral claims. These are unsurveyed mineral claims obtained by staking under the provisions of the Yukon Quartz Mining Act. The claims are located on NTS Claim Sheet 105G-7 and are administered by the District Mining Recorder in Watson Lake, Y.T.

A work program undertaken during 1995 included a preliminary soil geochemical survey and geological review. As a result of this exploration, several areas anomalous in zinc and lead content were located in a geological environment permissive to host massive sulphide mineralization in a "strata-bound" style.

Further work is warranted on the claim to evaluate the targets located to date.

## INTRODUCTION

The Man 1-16 claims were located in 1994 by Blake Macdonald of Vancouver, B.C., to protect potential base metal targets following discovery of a high grade multi-element massive sulphide deposit by Cominco 25 km south of Finlayson Lake, Yukon, now known as the "ABM" deposit.

During 1995 a limited exploration program was conducted on the subject claims as a preliminary review of the property's mineral potential. Work performed during 1995 included contour geochemical soil sampling and geological mapping.

## CLAIM LOCATION AND ACCESS

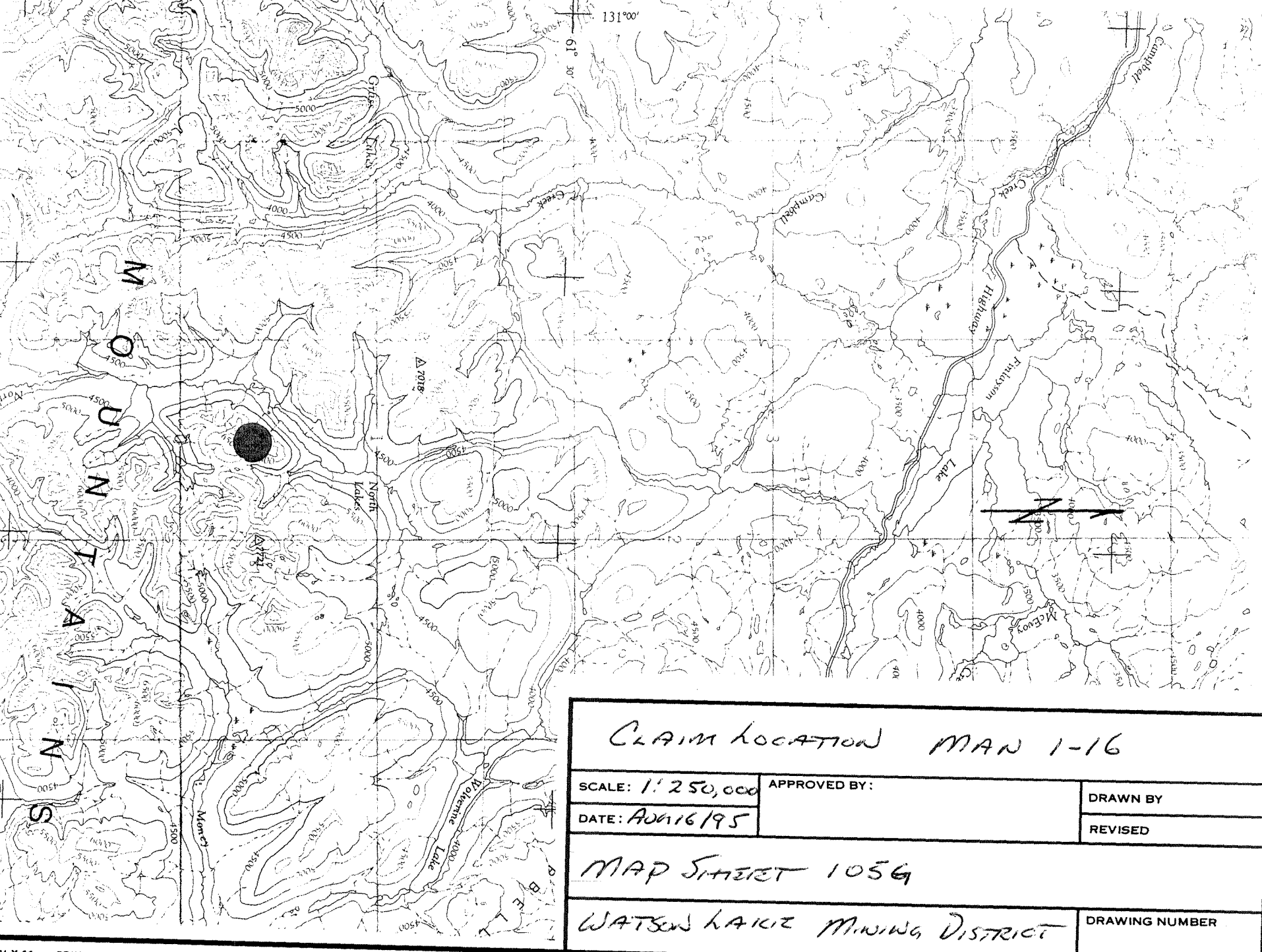
The Man 1-16 claims are located on NTS Claim Sheet 105G-7 and are centred approximately at 61 22' N / 130 37' W some 78 km south east of Ross River, Y.T.

Figures 1 and 2 of this report demonstrate the claim locations and a claim summary is presented as Table 1 below.

TABLE 1 CLAIM SUMMARY

<u>Name</u>	<u>Grant No.</u>	<u>Current Expiry</u>
Man 1-16	YB 51910 - YB 51925	August 31, 1995

The property was accessible by helicopter chartered from Ross River, Y.T.



CLAIM LOCATION MAN 1-16

SCALE: 1:250,000

APPROVED BY:

DATE: AUG 16 195

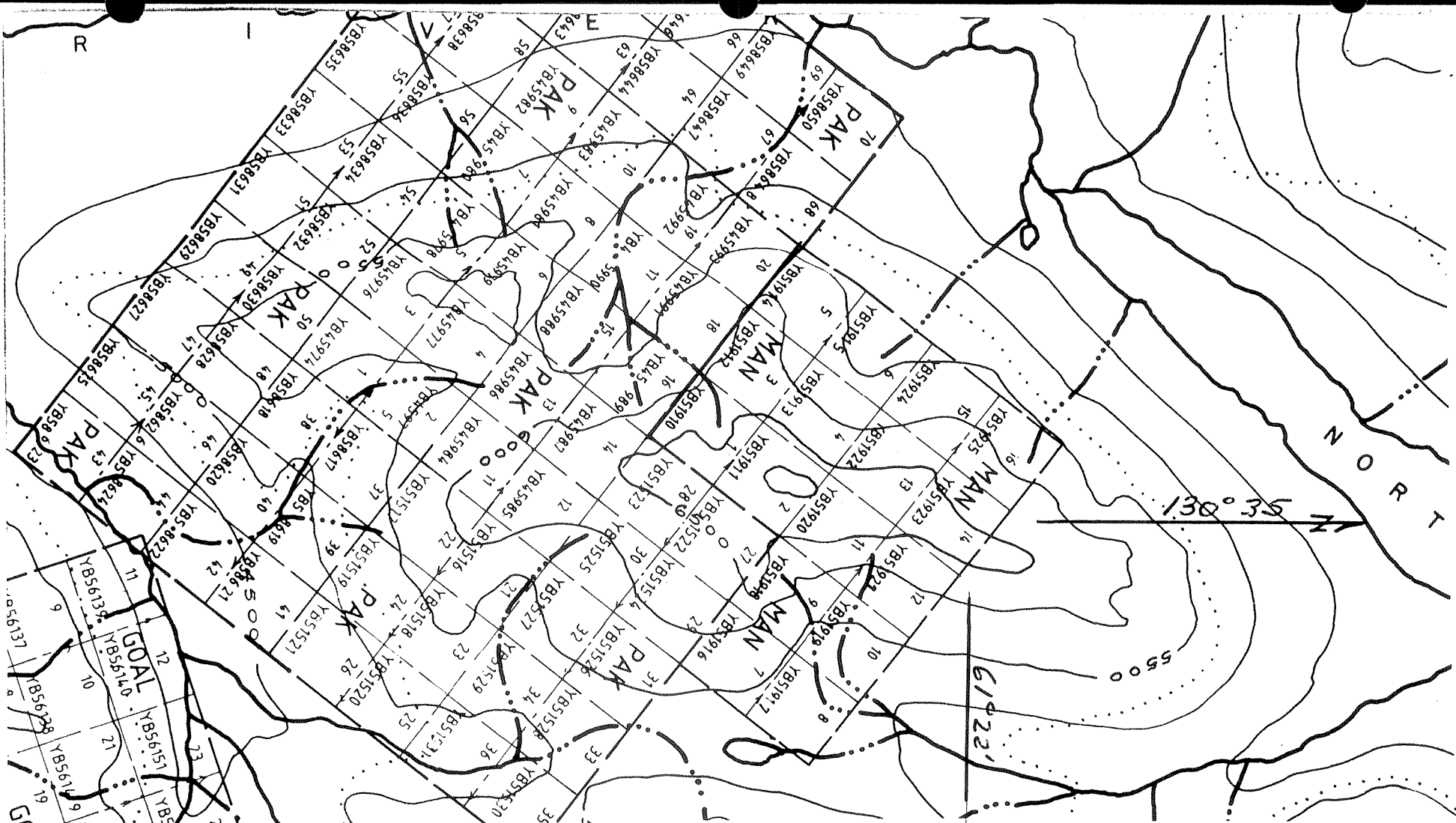
DRAWN BY

REVISED

MAP SHEET 1056

WATSON LAKE MINING DISTRICT

DRAWING NUMBER



<h1>MAN 1-16 CLAIMS</h1>			
SCALE: $\frac{1}{2}$ MILE TO INCH	APPROVED BY:	DRAWN BY	
DATE: AUG 16/95		REVISED	
<h2>MAP SHEET 105G-7</h2>			
<h3>WATSON LAKE MINING DISTRICT</h3>			DRAWING NUMBER

GEOLOGY AND MINERALIZATION

The Man 1-16 mineral claims are underlain by a complex series of highly metamorphosed stratified rock lithologies. These units belong to a package of allochthonous rocks referred to as "Yukon-Tanana Terraine".

In the area local to the property, the rocks commonly are flat-lying schists with occasional interbedded meta-quartzite lithologies. Relationships between the various schist units are generally drift-covered and are complicated by both low-angle (thrust) faults and steeply-dipping normal faults. Since the property lies approximately 8 km north-east of the Tintina Fault, it is likely that some of the normal faulting is related to this major structure. A summary of local geology is presented as Table 2 of this report. These are units underlying or in the vicinity of the property.

Sulphide mineralization was located in two environments on the property. Minor pyrite and galena were observed in quartz veins (with occasional barite) on ridge tops. These veins occupy steeply-dipping fracture zones, are discontinuous and average less than 0.5 meters in width.

Pyrite was located in quartz-biotite schist float at several locations in talus slopes. The re-crystallized pyrite is apparently parallel to the schistosity and has a "strata"-bound appearance. Traces of chalcopyrite are present in the pyritic sulphide beds.

TABLE 2: TABLE OF FORMATIONS

Cretaceous	Vqm	Homogeneous, medium-grained biotite quartz monzonite
Mississippian(?)	P_Pk5	Metaquartzite; has schisty partings
	P_Pk4	Buff-weathering biotite-quartz schist; quartz-chlorite amphibole (?) schist. Unit is often pyritic.
Cambrian(?)	P_n	Quartz-biotite-feldspar gneiss.

note: unit symbols are those used by the G.S.C.



INTRUSIVE ROCKS  
POST- (&SYN-?) TECTONIC

- CRETACEOUS
- KTqfp Fresh, acid and intermediate, subvolcanic and volcanic rocks including two main types not differentiated, a dark weathering dacite with stubby hornblendes in a dark green aphanitic groundmass and rusty weathering rhyolite with clear quartz and white albite phenocrysts (locally pyritic)
  - Kamp Blocky, resistant, medium grey weathering, fine-grained biotite quartz monzonite with smoky quartz and white albite euhedra in a quartzo-feldspathic groundmass; gradational with Kqm
  - Kqm Resistant, blocky weathering, mainly equigranular medium-grained, but locally porphyritic (white K-feldspar), homogeneous grey biotite quartz monzonite and lesser granodiorite; contacts with En are arbitrary and based on the proportion of plutonic rock to the schist
  - Kqm+ Biotite quartz monzonite with numerous screens and pendants of schist and gneiss, mainly En; contacts with En are arbitrary
- MESOZOIC?
- Mdim Dark grey weathering equigranular medium-grained hornblende diorite; occurs as sills

? ALLOCTHONOUS?

- AGE UNKNOWN
- KLONDIKE SCHIST
- PPk5 Resistant weathering metaquartzite with minor graphitic slate
  - PPk1 Slightly rusty weathering, white to pale green, muscovite quartz blastomylonite; includes minor fine-grained amphibolite and chlorite quartz and biotite quartz blastomylonite
  - PPk3 Pale green muscovite chlorite quartz phyllite and medium green amphibole chlorite phyllite; includes minor black marble; generally strongly sheared with a well developed, slightly recrystallized, cataclastic texture
  - PPk2 Black siliceous phyllite and medium green amphibole chlorite phyllite; locally includes much interbedded gritty and pebbly greywacke containing clasts of blue quartz, white K-feldspar and slate chips; locally includes thin black marble lenses undifferentiated; for the most part the rocks are strongly sheared phyllonite
  - PPk4 Fairly resistant medium grey weathering, muscovite biotite quartzo-feldspathic gneiss with interfoliated chlorite biotite quartzite, quartz chlorite schist, amphibole chlorite schist and minor white marble; the more metamorphosed equivalent of PPK2 and PPK3; relationships between PPK2, PPK3 and PPK4 are gradational; in the southeast part of the area PPK4 and En are gradational with each other

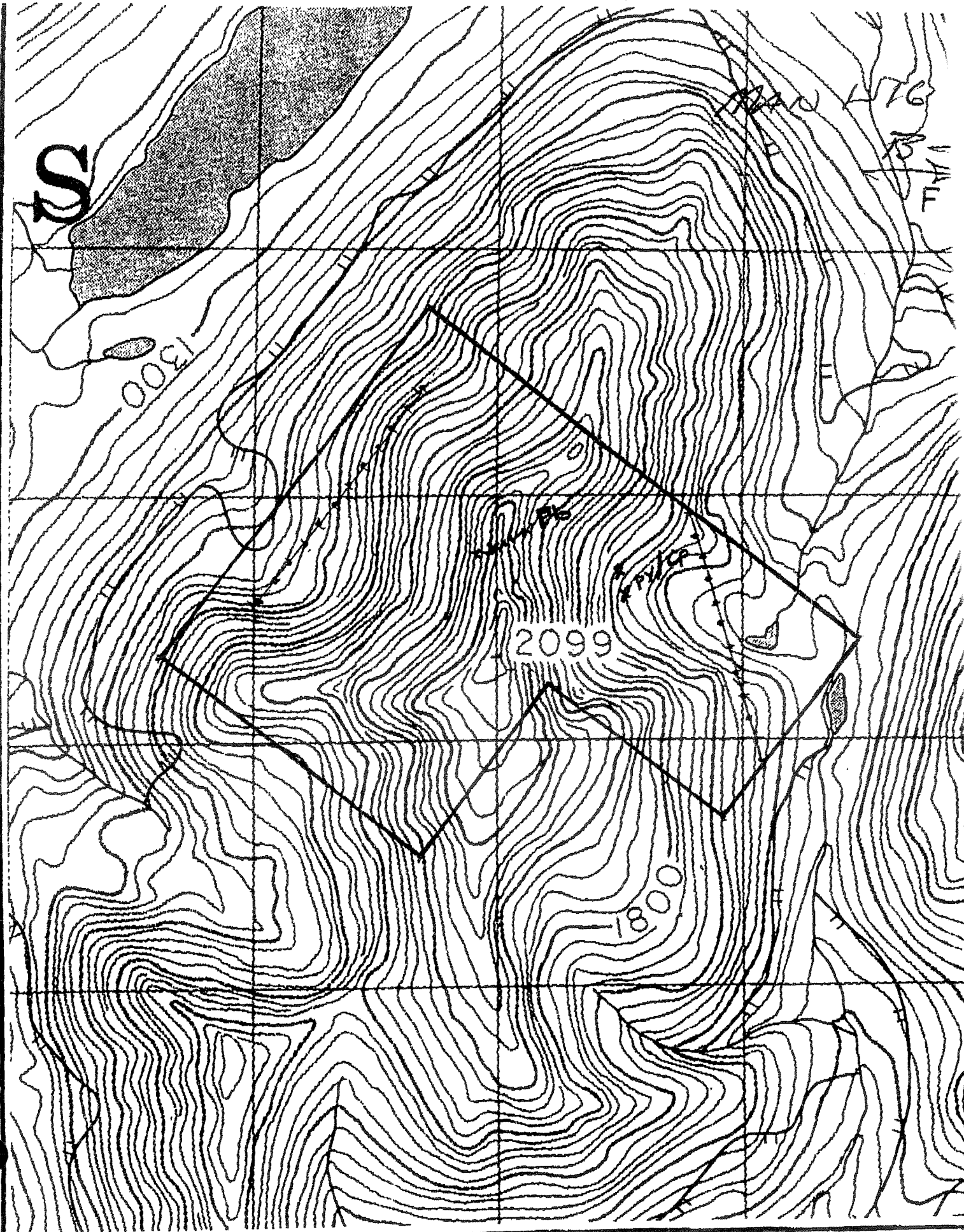
?AUTOCTHONOUS? ROCKS  
OMINECA CRYSTALLINE BELT

- ?WINDERMERE AND CAMBRIAN?
- PEsc Buff weathering biotite garnet muscovite schist with interfoliated lenses of coarsely crystalline, light grey marble; includes minor augen gneiss; structurally gradational with augen gneiss (En)
  - En Blocky, medium grey weathering, biotite muscovite quartz feldspar augen gneiss of quartz monzonite composition with minor interfoliated biotite muscovite quartz schist; laterally gradational to En+; boundaries arbitrary
  - En+ Injection migmatite consisting of sills and dykes of fine grained biotite quartz monzonite, aplite and pegmatite, in biotite muscovite augen gneiss and schist; proportion of injected plutonic rocks to the host schist varies widely. Contacts with Kqm are arbitrary, based on the proportion of plutonic rock to schist.
  - En+Kqm Augen gneiss En, injection migmatite En+ and biotite quartz monzonite Kqm, undifferentiated

<i>REGIONAL GEOLOGY 1056-7</i>		
SCALE: 1:250,000	APPROVED BY:	DRAWN BY
DATE: <i>AUG 16 1971</i>		REVISED
<i>WATSON LAKE MINING DISTRICT</i>		
		DRAWING NUMBER

GEOCHEMICAL SURVEY

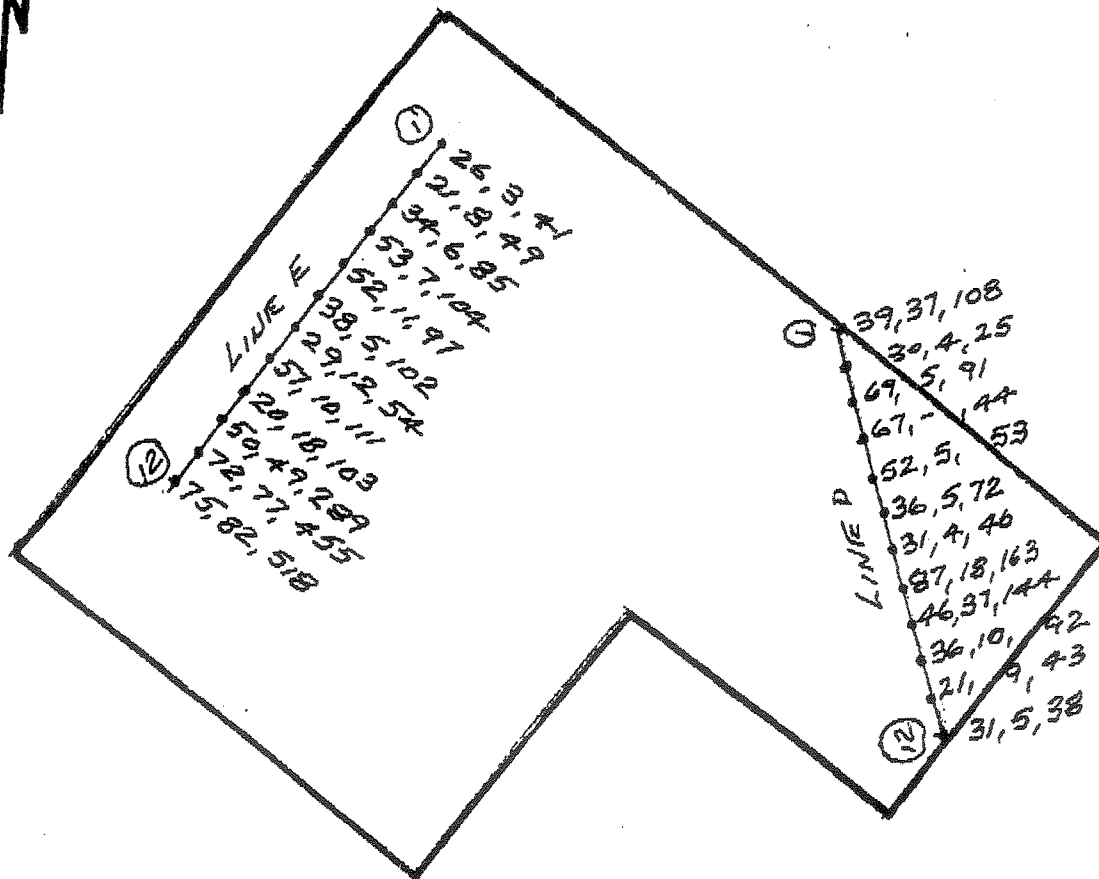
A program of contour soil sampling was undertaken at the Man 1-16 claim during 1995. Sample sites were selected by compass bearings and topofil chain control to locate stations at approximately 100 meter intervals. Soil samples were obtained by digging with a mattock to the "b" horizon and placing a representative sample into a kraft sample bag. Samples were then sent to Cantech Laboratories Inc. in Calgary, Alberta, for analysis and tested for copper, lead and zinc content. Sample analysis results are presented as Figure 4 of this report and laboratory work sheets are included as Appendix 2.



LEGEND

- XX VEIN
- X FLOAT
- Pb - GALENA
- Py - PYRITTE
- CP - CHALCOPYRITE

MAN 1-16  
ADJOINTS  
A ← B



• CU, Pb, Zn PPM  
① SAMPLE LOCATION

MAN 1-16 105G-7		
SCALE: 1=20,000	APPROVED BY:	DRAWN BY: _____
DATE: AUG 16/95		REVISED
GEOCHEM SURVEY		
		DRAWING NUMBER

DISCUSSION

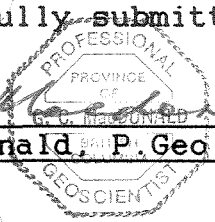
The Man 1-16 mineral claims have been explored with a preliminary geological review and soil geochemical survey. The geology underlying the claims is primarily a sequence of schists and gneisses of the Yukon-Tanana terraine, and includes occurrences of pyrite mineralization in an apparent strata bound environment.

Results of the soil geochemical survey indicate several areas with moderate to strongly anomalous content of zinc and lead. Often several contiguous sample sites are anomalous, with peak samples of 518 ppm zinc and 82 ppm lead. Backgrounds for zinc and lead are considered to be 75 ppm and 18 ppm, respectively.

CONCLUSIONS AND RECOMMENDATIONS

The soil sampling and geological investigation of the Man 1-16 mineral claims have located significantly anomalous areas of zinc and lead geochemistry in a geologic environment permissive to host massive sulphide mineralization in a "strata bound" setting. Further exploration work is warranted on the property and should include the detailed grid soil geochemical surveys to define the known anomalies, geological mapping and EM/magnetic geophysical surveys. An Induced Polarization ("IP") survey should be considered, based on the results of the first phase of exploration.

Respectfully submitted

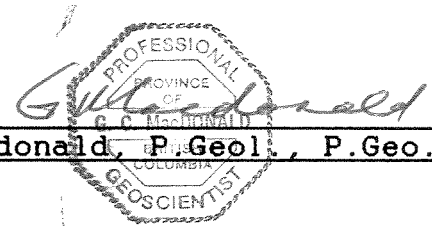
The seal is a circular emblem with a double-line border. The outer ring contains the text "PROFESSIONAL" at the top and "GEOSCIENTIST" at the bottom. The inner circle contains "PROVINCE OF" at the top and "BRITISH COLUMBIA" at the bottom. In the center, the name "G. Macdonald" is written in a cursive script.  
G. Macdonald, P. Geo., P. Geol.

STATEMENT OF QUALIFICATIONS

I, GLEN C. MACDONALD, of 3789 West Island Highway, Qualicum Beach, B.C., hereby certify that:

1. I am a graduate of U.B.C. with degrees in Economics (B.A., 1971) and Geology (B.Sc., 1973);
2. I have practised my profession as Geologist since graduating;
3. I have worked as a Geologist for Whitehorse Copper Mine and acted as District Manager for Exploration for Yukon/Western N.W.T. for Noranda Exploration;
4. I have practised Geology as an Independent Consulting Geologist since 1983;
5. I am a member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta (No. 36214);
6. I am a member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia (No. 20464);

G. Macdonald, P.Geol., P.Geo.





CanTech Laboratories Inc.

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Calgary, Alberta  
Canada T2E 6K3  
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Fax (403) 250-8265

Kleine Waterstraat 2-6  
Box 2510  
Paramaribo - Suriname  
Tel (597) 421523  
Fax (597) 421533

19-JUL-95  
PAGE: 5 OF 5  
COPY: 1 OF 2

AUTHORITY:BLAKE MACDONALD

**KETZA MINES**  
609, 475 HOWE ST.  
VANCOUVER, B.C.

WORK ORDER: 9561D-95

\*\*\* FINAL REPORT \*\*\*

**GEOCHEMICAL LABORATORY REPORT**

SAMPLE TYPE: ROCK

SAMPLE NUMBER	TOTAL ZN PPM
48426	NA
48427	NA
48428	48.0
48429	NA
48430	NA
48431	NA

SIGNED:   
C. Douglas Read,  
LABORATORY MANAGER

FOOTNOTES:  
P=QUESTIONABLE PRECISION; \*=INTERFERENCE; TR=TRACE; ND=NOT DETECTED;  
IS=INSUFFICIENT SAMPLE; NA=NOT ANALYZED; MS=MISSING SAMPLE

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SAMPLE TYPE: SOIL

SAMPLE NUMBER	TOTAL CU PPM	TOTAL PB PPM	TOTAL ZN PPM
A: 1	57.0	16.0	87.0
A: 2	14.0	25.0	85.0
A: 3	42.0	104.0	366.0
A: 4	37.0	153.0	283.0
A: 5	30.0	157.0	185.0
A: 6	49.0	44.0	154.0
A: 7	40.0	27.0	117.0
A: 8	99.0	55.0	360.0
A: 9	161.0	10.0	83.0
A: 10	98.0	43.0	502.0
A: 11	92.0	186.0	1170.0
A: 12	81.0	157.0	873.0
A: 13	46.0	11.0	111.0
A: 14	35.0	30.0	90.0
A: 15	54.0	18.0	59.0
A: 16	51.0	16.0	67.0
A: 17	29.0	9.0	186.0
A: 18	94.0	295.0	1040.0
A: 19	356.0	39.0	527.0
A: 20	27.0	12.0	83.0
B: 1	35.0	34.0	81.0
B: 2	104.0	37.0	120.0
B: 3	46.0	10.0	115.0
B: 4	53.0	23.0	92.0
B: 5	42.0	47.0	243.0
B: 6	25.0	12.0	87.0
B: 7	63.0	30.0	255.0
B: 8	93.0	5.0	158.0
B: 9	54.0	2.0	103.0
B: 10	18.0	5.0	31.0

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SAMPLE TYPE: SOIL

SAMPLE NUMBER	TOTAL CU PPM	TOTAL PB PPM	TOTAL ZN PPM
B: 11	11.0	19.0	40.0
B: 12	10.0	<2.0	12.0
B: 13	253.0	11.0	361.0
B: 14	40.0	7.0	102.0
B: 15	27.0	2.0	47.0
B: 16	141.0	36.0	363.0
B: 17	23.0	3.0	75.0
B: 18	192.0	54.0	486.0
B: 19	151.0	44.0	367.0
B: 20	24.0	5.0	36.0
C: 1	29.0	12.0	112.0
C: 2	77.0	27.0	173.0
C: 3	14.0	14.0	57.0
C: 4	26.0	11.0	88.0
C: 5	29.0	25.0	136.0
C: 6	17.0	10.0	77.0
C: 7	22.0	12.0	84.0
C: 8	34.0	8.0	70.0
C: 9	26.0	9.0	87.0
C: 10	24.0	9.0	69.0
C: 11	7.0	5.0	18.0
C: 12	26.0	10.0	72.0
C: 13	47.0	8.0	115.0
C: 14	45.0	11.0	89.0
C: 15	29.0	12.0	78.0
C: 16	38.0	10.0	72.0
C: 17	37.0	16.0	97.0
C: 18	45.0	3.0	34.0
D: 1	39.0	37.0	108.0
D: 2	30.0	4.0	25.0

AUTHORITY: BLAKE MACDONALD

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 VANCOUVER, B.C.

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**GEOCHEMICAL LABORATORY REPORT**

SAMPLE TYPE: SOIL

SAMPLE NUMBER	TOTAL CU PPM	TOTAL PB PPM	TOTAL ZN PPM
D: 3	69.0	5.0	91.0
D: 4	67.0	<2.0	44.0
D: 5	52.0	5.0	53.0
D: 6	36.0	5.0	72.0
D: 7	31.0	4.0	46.0
D: 8	87.0	18.0	163.0
D: 9	46.0	37.0	144.0
D: 10	36.0	10.0	92.0
D: 11	21.0	9.0	43.0
D: 12	31.0	5.0	38.0
E: 1	26.0	3.0	41.0
E: 2	21.0	8.0	49.0
E: 3	34.0	6.0	85.0
E: 4	53.0	7.0	104.0
E: 5	52.0	11.0	97.0
E: 6	38.0	5.0	102.0
E: 7	29.0	12.0	54.0
E: 8	57.0	10.0	111.0
E: 9	20.0	18.0	103.0
E: 10	50.0	49.0	289.0
E: 11	72.0	77.0	455.0
E: 12	75.0	82.0	518.0
19 -SILT	293.0	38.0	530.0
20 -SILT	80.0	29.0	242.0

AUTHORITY: BLAKE MACDONALD

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**GEOCHEMICAL LABORATORY REPORT**

SAMPLE TYPE: ROCK

SAMPLE NUMBER	TOTAL AU PPB	TOTAL AG PPM	TOTAL BA PPM	TOTAL PB PPM
48426	24.0	NA	NA	NA
48427	17.0	NA	NA	NA
48428	11.0	0.3	NA	7.0
48429	16.0	0.9	72.0	334.0
48430	85.0	NA	NA	NA
48431	32.0	NA	NA	NA



CanTech Laboratories Inc.

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Fax (597) 421533

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PAGE: 5 OF 5  
COPY: 1 OF 2

AUTHORITY: BLAKE MACDONALD

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WORK ORDER: 95610-95

\*\*\* FINAL REPORT \*\*\*

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**SAMPLE TYPE: ROCK**

SAMPLE NUMBER	TOTAL ZN PPM
48426	NA
48427	NA
48428	48.0
48429	NA
48430	NA
48431	NA

SIGNED: \_\_\_\_\_

C. Douglas Read,  
LABORATORY MANAGER

**FOOTNOTES:**

F=QUESTIONABLE PRECISION; \* = INTERFERENCE; TR=TRACE; ND=NOT DETECTED;  
IS=INSUFFICIENT SAMPLE; NA=NOT ANALYZED; MS=MISSING SAMPLE

Expenditures on Man 1-16  
July 1995

Accomodations and Meals	210.83	
Field Wages	1050.00	
Maps and Supplies	42.72	
Support Helicopter	851.84	
Travel and Support	415.00	
Geochem Analysis	110.00	
August 16, 1995	Total	2680.39

## APPENDIX IV

MAN 1-16

### PERSONNEL SUMMARY: July 8 - 9, 1995

**Glen Macdonald (Geologist)** 1.5 days  
303 - 1334 Cardero Street  
Vancouver, B.C. V6G 2J3

**Blake Macdonald (Assistant)** 1.5 days  
301 - 1645 West 12th Avenue  
Vancouver, B.C. V6J 2R3

**Ralf Hilebrande (Assistant)** 1.5 days  
1008 - Giroi Crescent  
Coquitlam, B.C. V3J 3T1