

5364

GEOLOGICAL AND GEOCHEMICAL REPORT

on the

92J/15W

GOLDEN AND MINTO CLAIM GROUPS

Golden Tr 1+2
Omega #2 (L-5602)

50°55'N

122°40'W

Lillooet M.D., B.C.

NTS 92 J/15W

by

Charles K. Ikona, P.Eng.

for

Empire Metals Corporation.

January, 1975.

Department of Mines and Technical Resources ASSESSMENT REPORT NO. 5364	MAP
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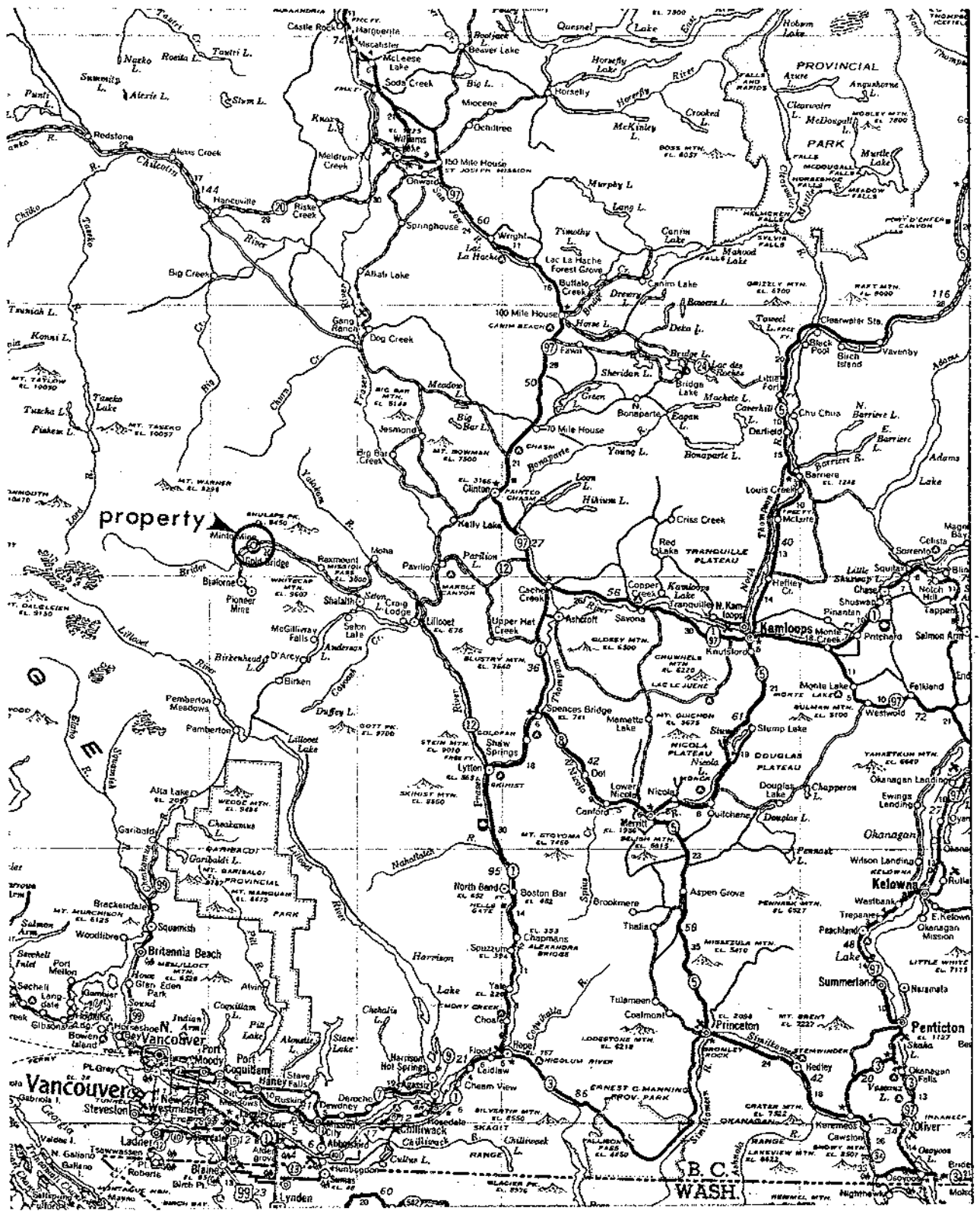
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Analysis Certificate # 3535 - Acem Analytical Laboratories Ltd.

Analysis Certificate # 3691 - Acme Analytical Laboratories Ltd.

Certificate of Assay # 23752 - Chemex Laboratories Ltd.



EMPIRE METALS CORP. LTD. (n.p.l.)

Department of location map
 Mines and Petroleum GOLDEN & MINTO properties
 ASSESSMENT REPORT
 NO. 5364 MAP #5

scale 1 in. = 31 miles

5364
 MAP 5

INTRODUCTION

The Golden claim group, consisting of four contiguous located claims is owned by Empire Metals Corporation. The Minto claim group, consisting of 6 Crown granted claims and contiguous to the Golden group on the east is at present being acquired by Empire Metals. For the purpose of this report both groups are considered as an entity.

The purpose of this report is to review the background and potential of the Golden and Minto groups and to present the results of the recent mapping and sampling conducted on the golden mineral claims.

LIST OF CLAIMS

The "Golden Group" comprises the following mineral claims:-

Helm (Lot No. 6328)	Record No. 37048	Recorded Feb.18, 1974.
Golden 1 Fraction	" " 37049	" " 21, 1974.
Golden 2 Fraction	" " 37050	" " "
Golden 3 Fraction	" " 37051	" " "

Title to the above listed claims has been assigned to Empire Metals Corporation Ltd. (N.P.L.)

The Minto group is understood to consist of six Crown granted claims held in the name of Minto Trading and Development Co.Ltd. The lot numbers of this group are as follows:-

Lots L.3660, L.5600, L.5601, L.5602, L.5603 and L.5604.

LOCATION, ACCESS AND TOPOGRAPHY

The claims are located on the north shore of Carpenter Lake in the Bridge River valley of southwestern British Columbia at approximately 50°55'N, 122°40'W.

Access is by good gravel road from Lillooet, B.C., a distance of some 55 miles. This road passes through the south boundary of the property.

Topography on the group is moderate on the north with steep bluffs along the southern portion of the groups. Water, timber and electrical power are available locally.

HISTORY

The Bridge river mining camp dates back to the mid 19th century. Mineralization in the area is extensive with gold, mercury, tungsten, antimony, copper, lead and zinc occurrences known. Mining in the area has generally been for gold of which the area is the premier producer in British Columbia. Two major mines, the Pioneer and the Bralorne along with a number of smaller mines all contributed to the gold production. The Minto Mine, discussed in the report, was one of this group of smaller mines. During the 1930's it produced some 84,000 tons of ore which yielded a gross value of \$793,000 in gold at \$34.50/oz. At today's prices the value of this would be in excess of 4 million dollars. Reports indicate that this was produced entirely from one ore-shoot and further exploration of the properties was very limited.

The Golden group is reported as first staked in 1932. Some surface work was done on the property subsequently, and in 1935 an adit was driven in a northeasterly direction for 1035 feet. Several mineralized zones with good gold values are reported for this adit.

In/

In 1941 a shipment at 13 tons of clobbered antimony ore (stibnite) is reported to have been made from this group. No further work is known of until Empire Metals acquired the ground in 1974.

GENERAL GEOLOGY

The Golden and Minto claim groups are underlain by rock units of the Fergusson Group of probable middle Triassic age. This sequence includes pillowed basalts, cherts, brown weathering pelites, thin bedded quartzites and thick flows of altered volcanics. Numerous sills and/or dykes of feldspar porphyry and ultra-basic rocks have intruded this sequence. Regionally the Fergusson group demonstrates a northerly strike dipping steeply to the east. Strikes noted at the claim area are northwesterly with indications of a gentle warping to the north to conform with the regional trend. Local extensive folding along a northwest axis is prevalent in this area. Fig.4 shows the regional setting within which the subject properties are located.

LOCAL GEOLOGY

Geological mapping and a stadia survey was conducted by Empire under the direction of R. Darney, geologist, during the 1974 season. Results of this work are shown on Figures 2 and 3. These data together with a review of published reports and other information available to the writer form the basis of the following observations.

Two major and several smaller feldspar rich dykes have been located on the Golden-Minto groups. The first of these major dykes, known as the Minto dyke, reported on by Dolmage (1945) consists of a fine grained feldspathic rock now partly altered to quartz, ankerite, sericite and pyrite. Width is reported to vary from 2 to 20 feet with strike north-south and dip 75 to 80 degrees east.

To the west and on the golden group other feldspathic dykes are located within Fergusson andesites, cherts and sediments. The second major feldspathic dyke is located on the western half of the Golden # 1 claim, and is exposed for some 300 feet in width along a recent road cut. West of this volcanics and cherts of the Fergusson group and serpentinitized peridotite dykes were noted. Strike of this series varies from a reported N.50°W on the Minto to N.20°W/

N.20°W on the western part of the group conforming to the gentle warping of the units in this area. Dips are irregular reflecting the local folding and faulting.

MINERALIZATION AND CONTROL

Minto Mine

A strong shear zone has been traced 1500 feet north from the highway. This zone strikes about northerly at an acute angle across the bedding and dips 75 to 80 degrees easterly. The Minto dyke conforms with and occupies part of this shear zone. Intense shearing has occurred within the dyke and in both the hanging and footwall. The sheared and altered volcanics on the footwall of the dyke are host to the Minto ore shoot. This ore shoot consisted of veins containing lenses and narrow bands of quartz, calcite, ankerite and metallic sulphides interleaved with slabs of sheared and altered rock and segments of the Minto dyke. Similar but lower grade material is found within the dyke itself and within the sheared sediments in the hanging wall of the dyke. This was of sub-economic grade of the time of production.

During production the main ore shoot was traced for over 450 feet in depth and up to 152' in length. Mining widths averaged 5 feet with the dyke acting as hanging wall and the footwall determined by assay values. This ore shoot has possibly been cut off to the south by a post mineralization fault with altitude N75W 45° to 55°N. Apparent displacement suggested by Mason is 250 feet, south block east.

For a more detailed description of mineralization, tenure and mining refer to reports by Mason and Dolmage, July 1945.

Golden Group

Within a sequence of altered volcanic and tuffaceous rocks on the Golden 1 and 2 claims a zone of shearing has been traced by prospecting and trenching/

trenching for some 700 feet in strike length. This zone occurs to the east of the major feldspar porphyry dyke reported on previously and appears to strike approximately north-south. Exposure is not sufficient to accurately determine its width although, as can be seen from the accompanying figure, veins and shears have been located in places which may indicate a width of greater than 100 feet. Assay results from this area are shown on figures 2 and 3 and reflect very interesting values in gold, silver and antimony.

A comparison of this zone with the Minto shear is invited by the presence of the feldspathic dyke, shearing of the altered andesite host, and general attitudes.

ECONOMIC POTENTIAL.

Within the Minto-Golden groups potential must be considered good for the location of one or more ore-shoots similar to that mined by the original Minto Mines. In particular, such a shoot might occur as the faulted off portion of the original shoot within the main Minto shear to the north of the developed area; or in another semi-parallel shear such as that located on the Golden group.

It should also be noted that the presence of mineralization adjacent to the original ore-shoot offers potential for larger occurrences than previously mined. Gold at \$150 to \$200 per oz. today compared with \$34.50 per oz. at the time of the original production changes, cut-off grades and the total economic picture substantially.

The possible recovery of by-products such as lead and zinc but more particularly antimony will be a factor in any detailed economic evaluation.

GEOCHEMISTRY/

GEOCHEMISTRY

Some reconnaissance geochem samples were collected on the Golden #2 claim over the northern end of sheared zone. These were taken to investigate the applicability of geochemistry as an exploration tool for the property. The first group of 16 samples were analyzed for antimony, arsenic and gold by Acme Analytical Laboratories in Burnaby, B.C. in September 1974. These showed fair correlation for all three metals with known mineralization. After study it was decided that the antimony and arsenic values were redundant and that the gold results offered the best potential for exploration.

A second group of 10 samples were collected and analyzed in November, 1974. to substantiate the results of the September sampling. These were analyzed by Acme for copper, silver and gold. Again the gold results indicated good correlation with known mineralization while the copper and silver results were indeterminate. Gold results for the second survey are shown plotted on figure 2 with analysis certificates for both sets of samples contained in the appendix.

It therefore appears that a geochemical survey employing gold values will be an appropriate exploration tool on these claim groups.

SUMMARY AND CONCLUSIONS

The Golden and Minto claim groups present some good potential for the location of a gold and antimony deposit.

Production from a very limited area of favorable geology on the Minto group yielded \$793,000 in gold at \$34.50 per oz. or in excess of four million dollars at today's prices. Little or no significant exploration has been conducted on the remainder of the property.

The/

The limited work to date on the Golden group has indicated a potential zone of shearing carrying some excellent values in gold and antimony.

Sampling to date has been directed towards small scale features which have returned some very high values. An attempt should be made to take bulk samples with a view of determining average grades over the larger scale features present on the property.

Exploration of the properties should proceed cautiously until the nature of potential targets is more fully understood. This will allow subsequent exploration budgets to be set to conform more closely with the size of expected returns.

RECOMMENDATIONS

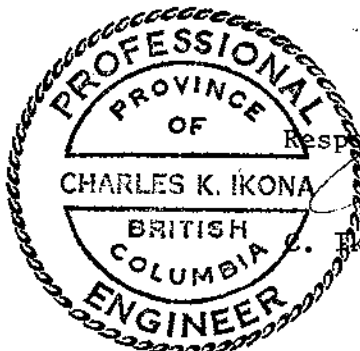
A small exploration program is warranted on the Golden and Minto groups. This program should consist of:

- 1) rehabilitation of the old trenches.
- 2) sampling of all structures including bulk sampling of larger zones:
- 3) careful geologic mapping and interpretation.
- 4) investigation of the long adit on the golden group to determine its possible rehabilitation and to allow sampling and mapping.
- 5) establishment of a grid over possible mineralized structures and their extension. As the general structural trend is almost due north it is suggested that the baseline for this grid be north-south with east-west crosslines. Stations on the crosslines should be closely spaced at perhaps 25 foot intervals while the crosslines themselves can be more widely spaced.
- 6)/

- 6) employing this grid for collection of geochem samples to be analyzed for gold.
- 7) provision to run several E-M test lines employing the grid to test the applicability of this technique on the property. Discussing with a competent geophysicist should be held prior to the decision on type of E-M unit to be employed.

RECOMMENDED BUDGET.

1)	rehabilitation of trenches 2 men for 1 month and support.....	\$ 2,000
2)	sampling and assaying.....	1,500
3)	geologic mapping and interpretation.....	2,000
4)	additional invest. dewatering and sampling.....	1,000
5)	grid - 20,000' @ \$150/mile.....	500
6)	geochem survey 500 samples @ \$5.00/ for collection and analysis.....	2,500
7)	geophysical surveys (investigation and trial surveys).....	2,000
8)	general support.....	2,000
9)	engineering and reports	1,500
	Overhead @ 10%.....	1,500
	Contingency @ 20%.....	<u>3,000</u>
		\$19,500
		<u>Say \$20,000</u>



Respectfully Submitted

CHARLES K. IKONA

C. Ikona, P.Eng.

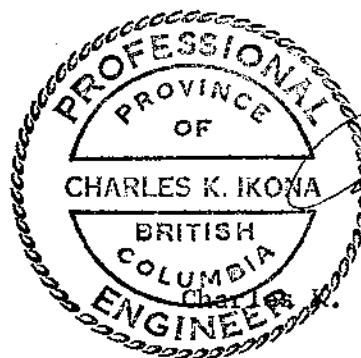
January 29, 1975.

CERTIFICATE

I, Charles K. Ikona of 2614 St. John's Street, Port Moody,
in the Province of British Columbia, do hereby certify that:

1. I am a consulting Mining Engineer with offices at 609-850
West Hastings Street, Vancouver, B.C.
2. I am a graduate of the University of British Columbia with a
degree in Mining Engineering.
3. I am a member in good standing of the Association of Professional
Engineers of the Province of British Columbia.
4. I have not personally visited the property but have reviewed all
available literature on the property and have been associated with
Mr. R. Darney, under whose supervision the work on the Golden group
was conducted, and have every confidence in his work.

I have also had personal communication with Mr. E. E. Mason, P. Eng.
with respect to the Minto group.



Charles K. Ikona, P. Eng.

29th January, 1975.

STATEMENT OF COSTS

I certify that the costs incurred and the personnel employed in a program of geological and geochemical work on the Helm and Golden claims were as follows:-

H.S. Aikins, Sr. Engineering Technician.

Sept. 5th to 7th incl., November 8th to 11th incl.
January 27th and 28th.

9 Days @ \$80 per day - \$ 720.00

R. Darney, Geologist (Mapping & Report Preparation)

Nov. 8th to 11th, 1974.

4 Days @ \$100 per day - 400.00

J. Robinson, Sampler & Survey Assistant.

Nov. 8th to 11th, 1974.

4 Days @ \$20.00 per day. - 80.00

C. Ikona, P. Eng. (Report Preparation)

Jan. 22nd to 29th, 1975 (part)

2 Days @ \$150 per day - 300.00

Assaying; Chemex Labs Ltd. (8 samples) - 75.00

Acme Analytical Laboratories (27 samples) - 143.00

Truck Rental - 114.00

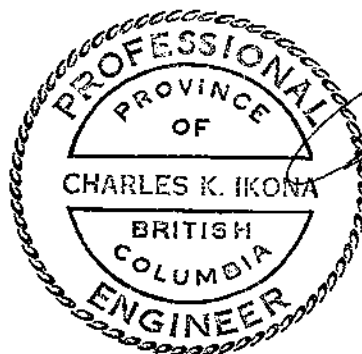
Accommodation, Meals - 188.00

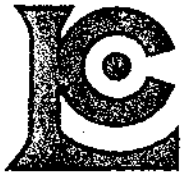
Equipment, Rental and Supplies - 15.00

TOTAL \$2015.00

C. Ikona, P. Eng.
Vancouver, B.C.

January 30, 1975.





CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA
TELEPHONE: 985-0648
AREA CODE: 604

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 23752
INVOICE NO. 13033
RECEIVED Nov. 12/74
ANALYSED Nov. 18/74

TO: Empire Metals
5th flr. 134 Abbot St.,
Vancouver, B. C.

ATTN:

SAMPLE NO. :	Oz/Ton Silver	Oz/Ton Gold	% Antimony	(Fire assay)
0052	0.26	0.010		
0053	0.01	0.003		
0054	0.06	0.005		
0055	0.17	0.154		
0056	1.51	0.470	3.32	
0057	0.26	0.018		
0058	0.90	0.098	10.5	
Gossan A/+50	2.47	3.01		



MEMBER
CANADIAN TESTING
ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

ACME ANALYTICAL LABORATORIES LTD.

TO

Assaying & Trace Analysis

Tel: 299-5242

Empire Metals Corporation Ltd. 6455 Laurel St., Burnaby 2, B.C.
 (NPL),
 5th Floor - 134 Abbott St.,
 Vancouver, B. C. V6B 2K4

ANALYSES CERTIFICATE

File No. 3535

Type of Samples Soils & Rocks

Disposition 1 year

No.	Sample		Sb	Au	As							No.
01	A 0+00 (T)		ND	.01	50							01
02	1+00		10	.03	40							02
03	1+50		310	42.00	12000							03
04	2+00		50	.26	150							04
05	3+00		10	.91	180							05
06	4+00		ND	.08	100							06
07	5+00		ND	.06	120							07
08	6+00		ND	ND	20							08
09	7+00		ND	.04	150							09
10	8+00		30	1.00	500							10
11	9+00		ND	.01	5							11
12	10+00		ND	.09	60							12
13	11+00		50	.24	80							13
14	12+00		ND	ND	50							14
15	12+50		70	.04	100							15
16	A13+00		10	ND	10							16
17												17
18												18
19												19
20												20
21	Rock 11+75	R	ND	ND	0							21
22	Dump	R	ND	ND	0							22
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36												36
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38												38
39												39
40												40

All reports are the confidential property of clients.

All results are in parts per million.

DATE SAMPLES RECEIVED Sept. 9, 1974
 DATE REPORTS MAILED Sept. 17, 1974
 ANALYST *[Signature]*

ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis
6455 Laurel St., Burnaby 2, B.C.

Tel: 299-5242

TO

Empire Metals Corporation
Ltd. (NPL),
5th Floor-134 Abbott St.,
Vancouver, B. C. V6B 2K4

ANALYSES CERTIFICATE

File No. 3691
Type of Samples Soils
Disposition 1 year

No.	Sample	Cu	Ag	Au								No.
01	LA-2+50	92	.2	.10								01
02	3+50	74	.3	.08								02
03	LA-4+50	70	.1	.01								03
04												04
05	LB-1+00	30	.1	ND								05
06	1+50	38	.1	.01								06
07	2+00	30	.1	.15								07
08	2+50	32	.1	.01								08
09	3+00	24	.1	ND								09
10	LB-3+80	30	.1	.06								10
11												11
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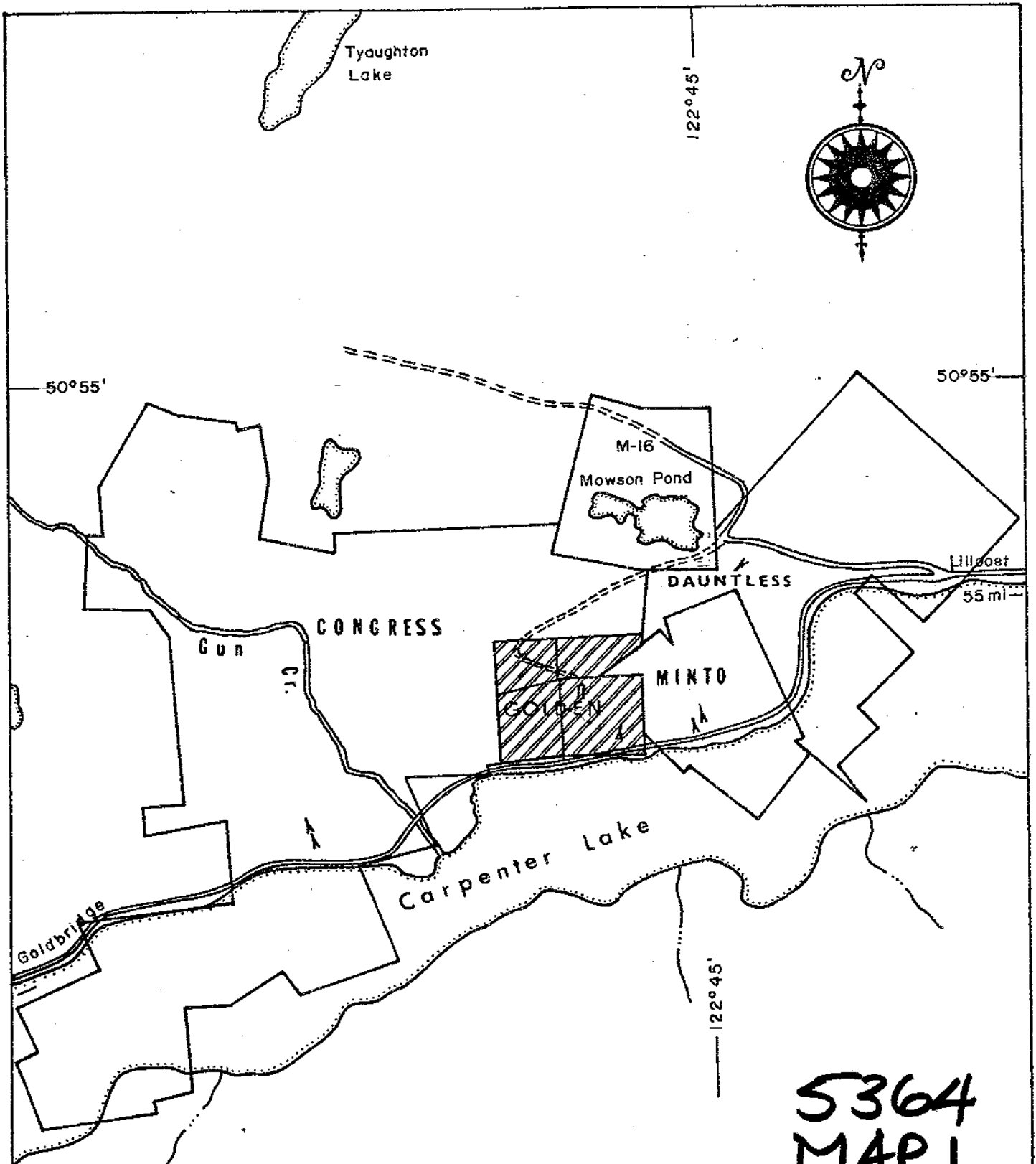
All reports are the confidential property of clients.

All results are in parts per million.

DATE SAMPLES RECEIVED Nov. 22, 1974

DATE REPORTS MAILED Nov. 28, 1974

ANALYST *Alan [Signature]*



**5364
MAP 1**

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. **5364** MAP #1
Jan. 1975

EMPIRE METALS CORP. LTD. (N.P.L.)
Golden Claims

Lillooet M.D., B.C.

92J-15 W

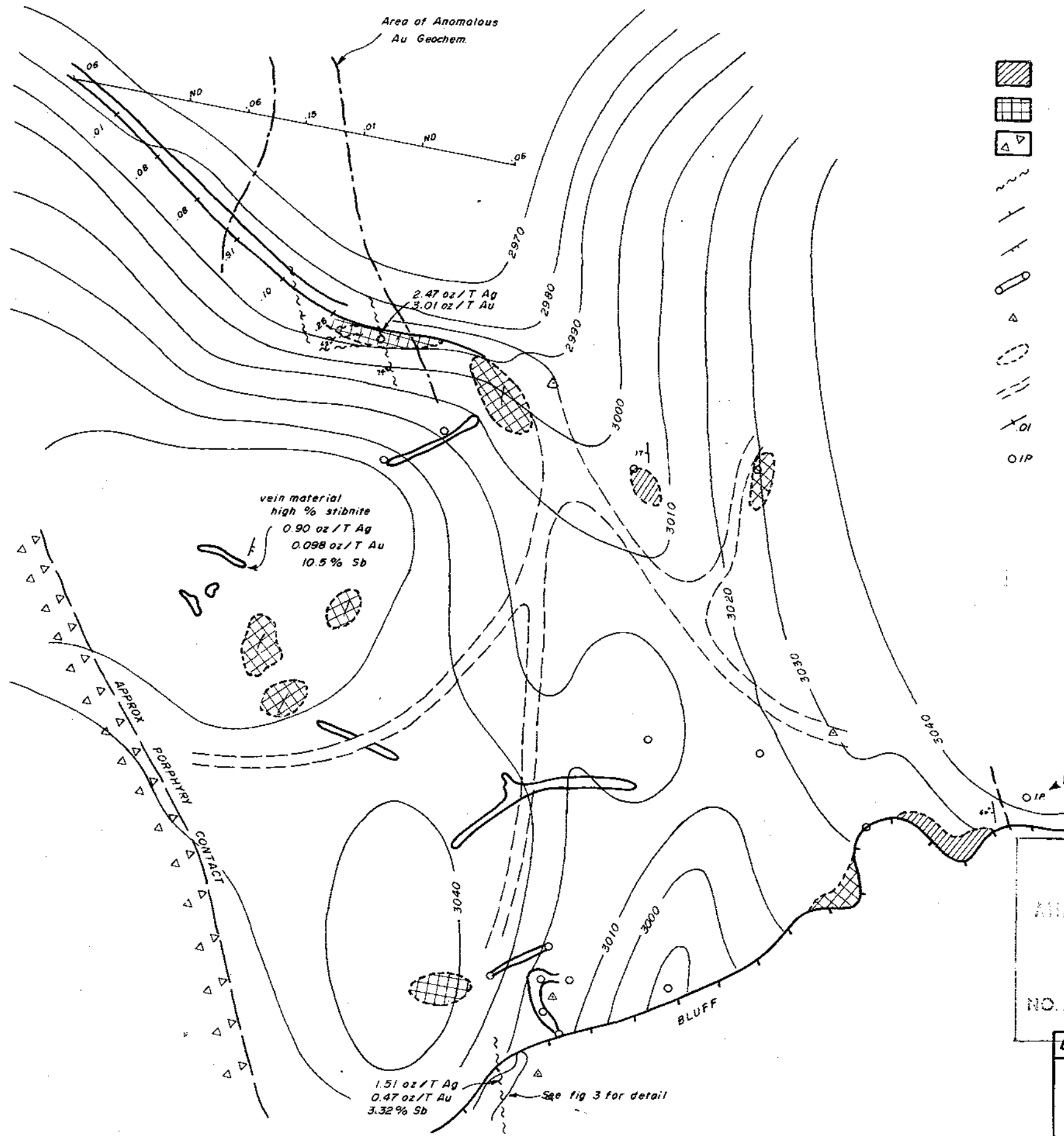
Fig. 1

λ = Adits

scale 1" = 2500'



Nat post, Golden 2 & 3 Fr's.
280'



LEGEND

- Light-dark grey banded argillaceous chert
- Moderately altered and fractured andesites and tuffs with minor rhyolite
- Feldspar porphyry
- Shear zone
- Bedding
- Jointing
- Trench
- Survey station
- Outcrop limit
- Logging road
- Geochemical soil sample - Au value in ppm
- Iron pin (survey of C.G. claims)

5364
MAP 2

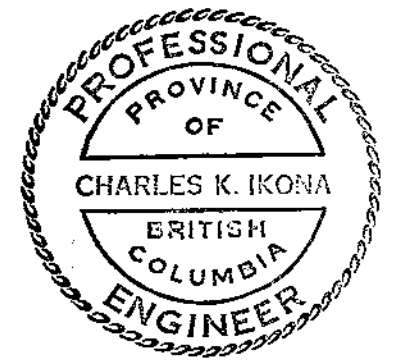
N.E. corner Golden 1 Fr.

Department of
Mines and Geoprospect Resources
ASSESSMENT REPORT
NO. 5364 MAP #2

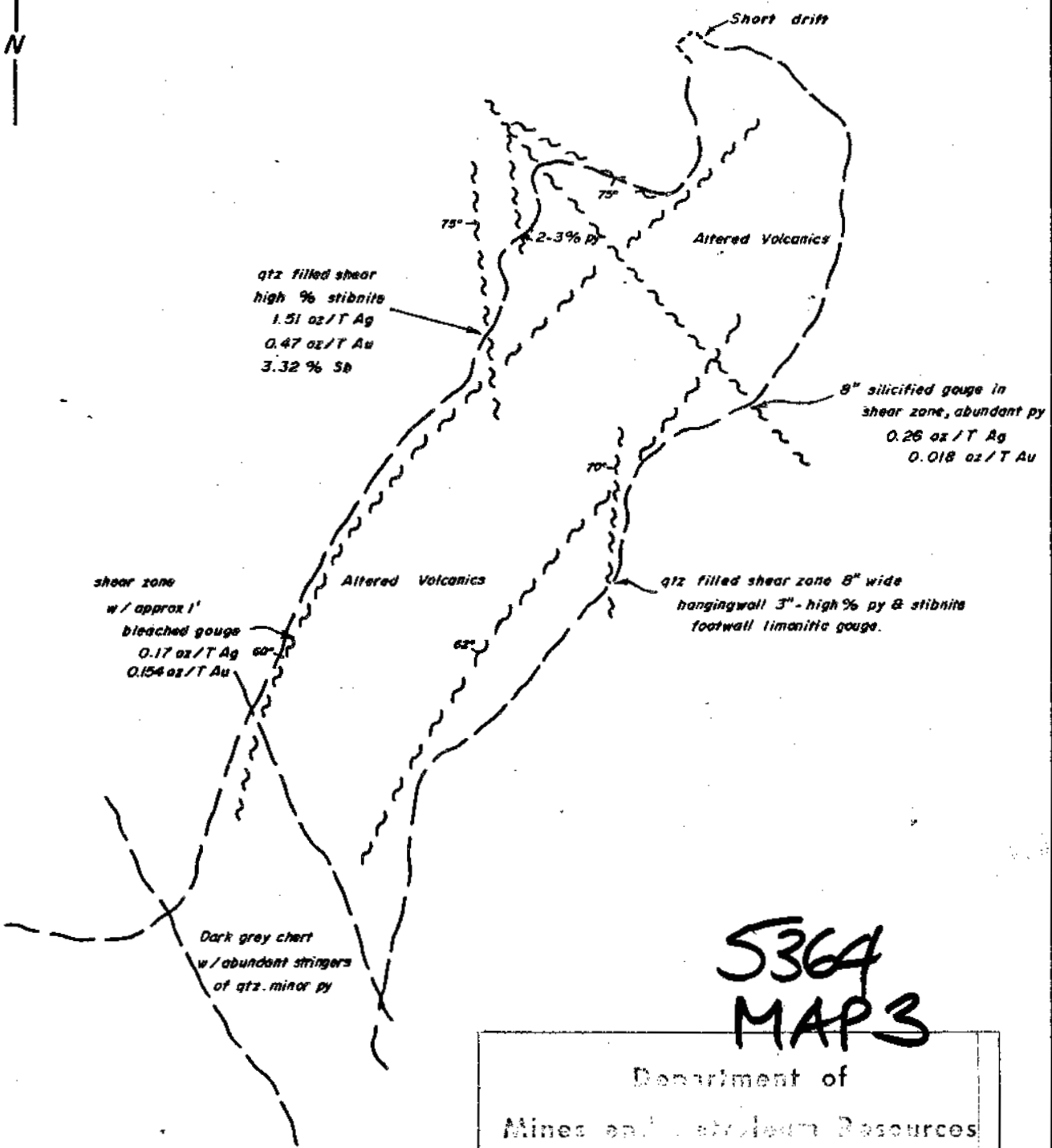
EMPIRE METALS CORP. LTD (NRL)

GOLDEN CLAIM GROUP
LILLOET M.D. — 92 J - 15W
GEOLOGY & TOPOGRAPHY
Scale - 1" = 100'

Jan. 1975 Fig. 2



1.51 oz/T Ag
0.47 oz/T Au
3.32% Sb
See fig 3 for detail



5364
MAP 3

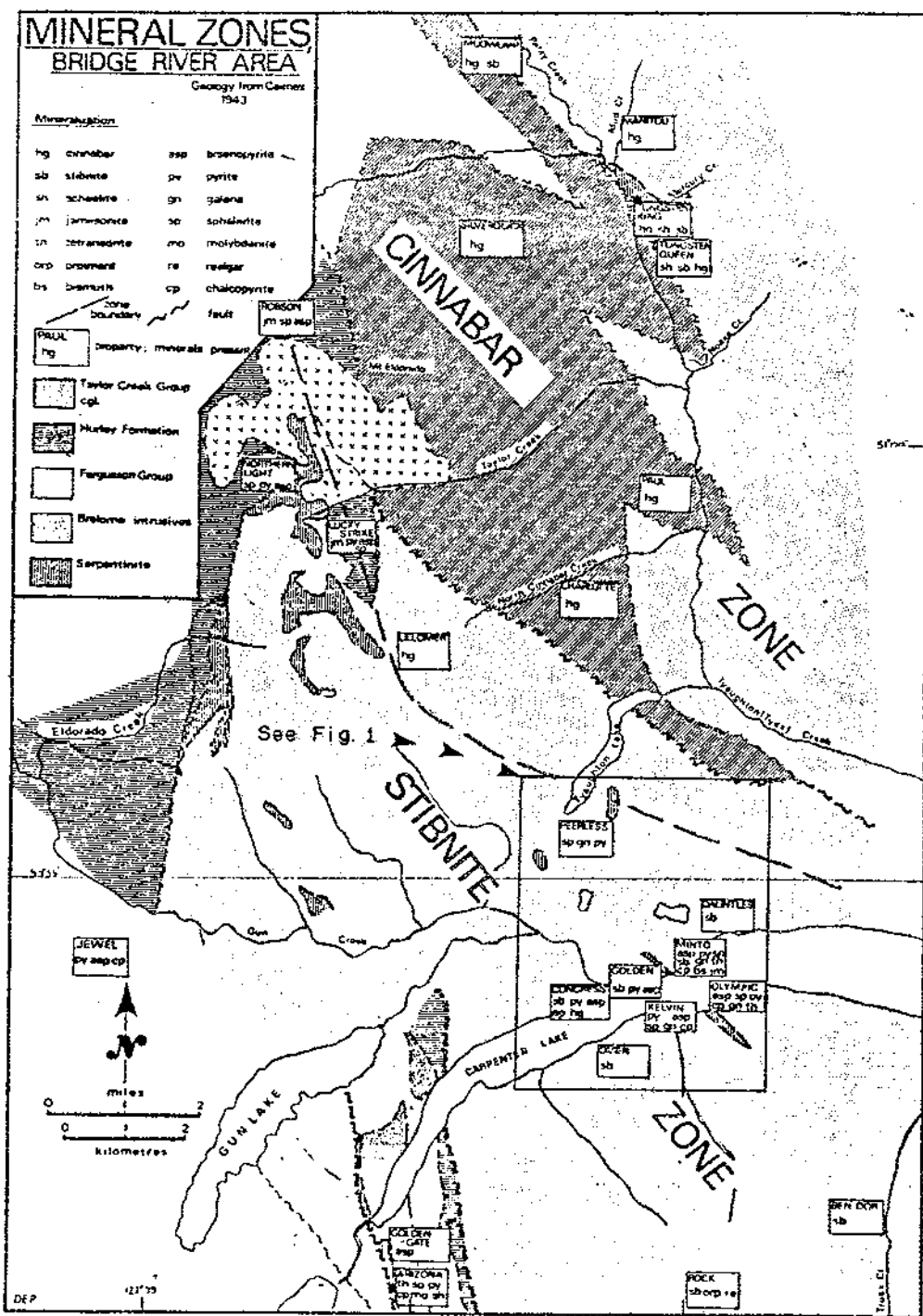
Department of
Mines and Geotechnical Resources
ANALYTICAL REPORT
NO. 5364 MAP #3



EMPIRE METALS CORP, LTD. (NPL)

GOLDEN CLAIM GROUP
SKETCH MAP OF OPEN CUT
Scale - 1" = 10'

Fig. 3



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MAP 4

Reprinted from GEOLOGICAL FIELDWORK - 1974, B.C. Dept. of Mines

EMPIRE METALS CORP. LTD. (N.P.L.) Department of
 Mines and Petroleum Resources
 Geology & Mineral Deposits
 GOLDEN GROUP AREA

NO. **5364** MAP **#4**
 Fig 4

Jan 1975