

2548

GEOLOGICAL AND GEOCHEMICAL REPORT

on the

WEST NOS. 1 - 14 MINERAL CLAIMS

Located 150 miles SSE  
of Watson Lake, Yukon  
Territory - 57° 127°NE  
Liard Mining Division, B.C.

by:

H. M. Jones (P. Eng.) Geologist  
El Paso Mining and Milling Company

July 2 - 9, 1970

TABLE OF CONTENTS

	<u>Page</u>
Summary .....	1
Introduction .....	2
Fieldwork .....	3
Geology .....	5
Mineralization .....	6
Assay Results .....	7
Geochemical Results .....	8
Conclusions .....	10
Appendix A - Soil and Rock Assays ....	11
Appendix B - Statement of Qualifications	19
Appendix C - Statement of Costs .....	21

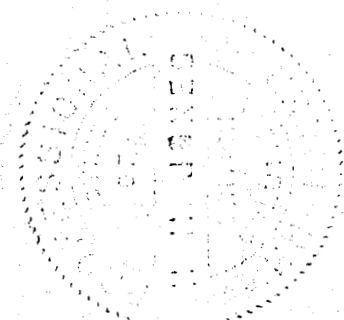
ILLUSTRATIONS

Figure 1 - Frequency Curve .....	9
Copper in Soils	
<i>#1</i> Plate 1 - Geology, West Claims .....	Map Pocket
<i>#2</i> Plate 2 - Geochemical Soils	
Cu in P.P.M.-West Claims... Map Pocket	

Department of	
Mines and Petroleum Resources	
ASSESSMENT REPORT	
NO. <u>2548</u>	MAP .....

SUMMARY

Geological and geochemical surveys were conducted over the West Nos. 1 - 14 claim group held by El Paso Mining and Milling Company from July 2 to July 9, 1970. These claims are located in the Cassiar Mountain Range about 150 miles south-southeast of Watson Lake, Yukon Territory. The claims are underlain by a sequence of sediments and metasediments enclosed in granite of the Cassiar batholith. Two small mineralized zones were outlined in the outcrop area. Three definite copper anomalies were outlined by soil sampling, and two of these show sufficient continuity to warrant further work.



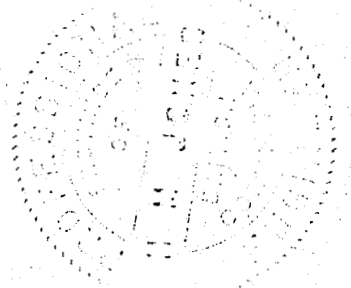
INTRODUCTION

Between July 2 and July 9, 1970, a geological and a geochemical soil survey were conducted on the West Nos. 1 - 14 mineral claim group by a field party of three men working for El Paso Mining and Milling Company. The claims covered in this work include West 3, 4, 5, 6, 7, 8, 9 and 10, which are owned by El Paso Mining and Milling Company and were recorded in July, 1968.

The claims are located in the Liard Mining Division, 16 miles north of the junction of Lunar Creek and Chuckachida River and approximately 150 miles south-southeast of Watson Lake, Yukon Territory. They cover part of a gently dipping bench which forms the lower eastern slope of a cirque encircled peak. The claims extend from approximately 4700 feet to 5500 feet elevation above sea level. The upper end of the claim block is above the timber line while the lower half is covered by small timber and brush.

Outcrop is very sparse and is exposed only over a limited area above timberline and at the base of the main mountain.

Access to the property is by helicopter from Watson Lake, Yukon Territory. There are no roads in the area.

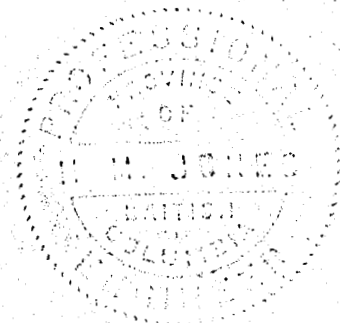


FIELDWORK

The fieldwork completed in July, 1970 by El Paso Mining and Milling Company on the West Claims consisted of a geological survey over the outcrop area and a geochemical soil survey over much of the covered part of the claim group.

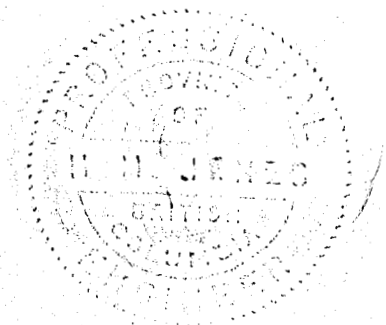
For geological mapping purposes, a Brunton and chain closed survey traverse was run around the outcrop area. Numerous stations were set which were used in the geologic mapping. All mapping was done from these stations, using Brunton and tape to locate all points of interest. A geology map, on a scale of one inch equals 100 feet, was drawn. This map, number 93-E-14-B1 is filed in the pocket at the back of this report.

A baseline, using Brunton and chain, was laid out for control on the geochemical survey. The baseline was tied to the claim cairn for West 3, 4, 5 and 6 and extended for 500 feet N80W from the cairn to 4200 feet S80E. The baseline approximates the claim location line. Sample traverse lines were laid out at 800 foot intervals, except at the main showing where the interval was 500 feet. Sample stations were set at 100 foot spacings along the traverse lines, which run for 1500 feet N10E and 1500 feet S10W from the baseline. Lines spaced at 500 foot intervals could not be extended the full distance to the south due to talus slopes.



A soil sample was taken at each station using a mattock. Samples were taken at a depth of 6 inches from the "B" horizon, and placed in kraft envelopes marked with the station coordinates; e.g., 10E, 15N for line 10 east, 1500 feet north. A total of 214 samples were collected and analyzed for total copper by Chemex Labs Ltd., 212 Brooksbank Avenue, North Vancouver, B. C. A frequency curve was plotted for copper and, from the plot and a statistical analysis, the background and anomalous values were established.

The copper analyses, in parts per million, were plotted on map number 93-E-14-B2 at a scale of one inch equals 200 feet and contoured to indicate the anomalous values. This contoured map is included in the map envelope at the back of this report.



GEOLOGY

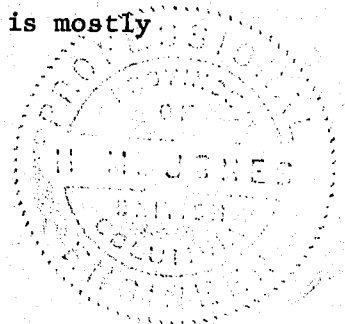
The West claims are located over an area in which there are no published Geological Survey of Canada maps. By inference from the Ketchika map-sheet, which comes to within 5 miles of the property, the claims should be underlain by intrusive rock of the Cassiar batholith.

Detailed geological mapping shows that the claims area is partly underlain by a sequence of sedimentary rocks, which is enclosed in the granite of the batholith. The sedimentary zone is at least 1200 feet wide in the mapped area and trends N65°-75°W.

The intrusive rock is mostly a fresh, light gray to light pink granite, composed mainly of quartz and orthoclase with accessory amounts of biotite, hornblende and magnetite. It is characterized by a gray weathered surface and a coarse blocky fracture. Most of the talus on the steep slopes above the mapped area consists of blocks of granite one foot to five foot square.

The sedimentary zone consists of quartzite, fine grained siliceous sediments, quartz-mica schist, schistose quartzite; epidotized, chloritized, garnetized and silicified sediments; and massive garnet-epidote skarn.

The sediments show the most intense alteration toward the southern contact with the granite. Here, a width of about 700 feet is mostly



epidotized, garnetized, chloritized or silicified, often in alternating beds. This section also contains two beds of massive garnet-epidote skarn.

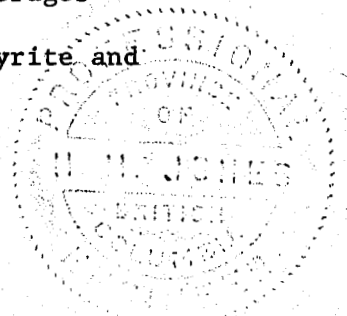
Numerous irregular granite dykes and sills occur throughout the sedimentary section. They appear to follow various zones of weakness - bedding, fractures, faults, etc., and meander in a disjointed pattern throughout the sediments. Their irregular attitudes, widths, etc., were first thought to be due to fault displacement but close examination found that the dykes pinch, swell, virtually disappear and then reappear again along strike.

Faulting and fracturing is common in the outcrop area. The southern granite-sedimentary contact is not exposed but numerous fractures and slickensided surfaces indicate a fault contact trending N70W. Several faults were observed which feather out from this fault contact and cross-cut the beds.

#### MINERALIZATION

Two mineralized zones were found in the outcrop area. Both occur in massive garnet-epidote skarn. The first zone is located about 200 feet north of the south granite contact while the second is 700 feet north of the same contact.

The first zone (Zone 1) is approximately 150 feet long and averages 30 feet wide. It is moderately well mineralized with chalcopyrite and





pyrite, with minor malachite and covellite. Adjoining this to the north is an altered zone with very minor chalcopyrite and pyrite in alternating beds of skarn and sediments (Zone 1A).

The second zone (Zone 2) is about 700 feet north of the south granite contact. It is erratically mineralized over 300 feet in length and averages about 50 feet in width. It is poorly mineralized with pyrite and much less chalcopyrite. Heavy limonite is common in parts of this zone.

Both mineralized zones were sampled and the assays are listed under "Rock Assays" below. Location of the samples appear on Map No. 94-E-14-B-1, which is enclosed in the rear map pocket.

ASSAY RESULTS

The following is a list of rock samples and assays taken from the mineralized zones:

ZONE 1

<u>Sample No.</u>	<u>Length</u>	<u>% Copper</u>	<u>% Zinc</u>	<u>oz/ton Silver</u>	<u>oz/ton Gold</u>
45362	10'	0.49	< 0.01	0.20	< 0.003
45363	10'	0.49	< 0.01	0.26	< 0.003
45364	5'	0.33	< 0.01	0.10	< 0.003
Average	25'	0.46	< 0.01	0.20	< 0.003



ZONE 1A

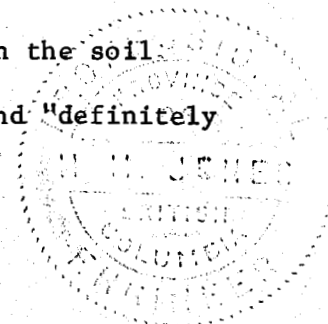
<u>Sample No.</u>	<u>Length</u>	<u>% Copper</u>	<u>% Zinc</u>	<u>oz/ton Silver</u>	<u>oz/ton Gold</u>
45365	10'	0.03	< 0.01	< 0.01	< 0.003
45366	10'	0.02	< 0.01	< 0.01	< 0.003
45367	10'	0.02	< 0.01	0.01	< 0.003
45368	10'	< 0.01	< 0.01	< 0.01	< 0.003
45369	10'	0.03	< 0.01	0.03	< 0.003
Average	50'	0.02	< 0.01	0.01	< 0.003

ZONE 2

<u>Sample No.</u>	<u>Length</u>	<u>% Copper</u>	<u>% Zinc</u>	<u>oz/ton Silver</u>	<u>oz/ton Gold</u>
45370	10'	0.03	< 0.01	0.03	< 0.003
45371	10'	0.02	< 0.01	0.09	< 0.003
45372	10'	0.05	< 0.01	0.01	< 0.003
45373	5'	0.05	< 0.01	0.03	0.003
Average	35'	0.037	< 0.01	0.04	< 0.003

GEOCHEMICAL RESULTS

The arithmetical mean of all copper analyses is 165 ppm. From the frequency curve for copper (Figure 1), the norm or background value is about 150 ppm. The "possibly anomalous" range is taken as two to four times background, or 300 to 600 ppm. "Probably anomalous" values range from four to eight times background, or 600 to 1200 ppm. "Definitely anomalous" values are shown as those above 1200 ppm. Accordingly, geochemical survey map, drawing number 94-E-14-B2, which is in the rear pocket of this report, is contoured using a 150 ppm contour interval below 300 ppm and 600 ppm contour interval above 600 ppm. The areas of "possibly anomalous" copper values in the soil has been shown in yellow, "probably anomalous" in orange, and "definitely anomalous" in red.



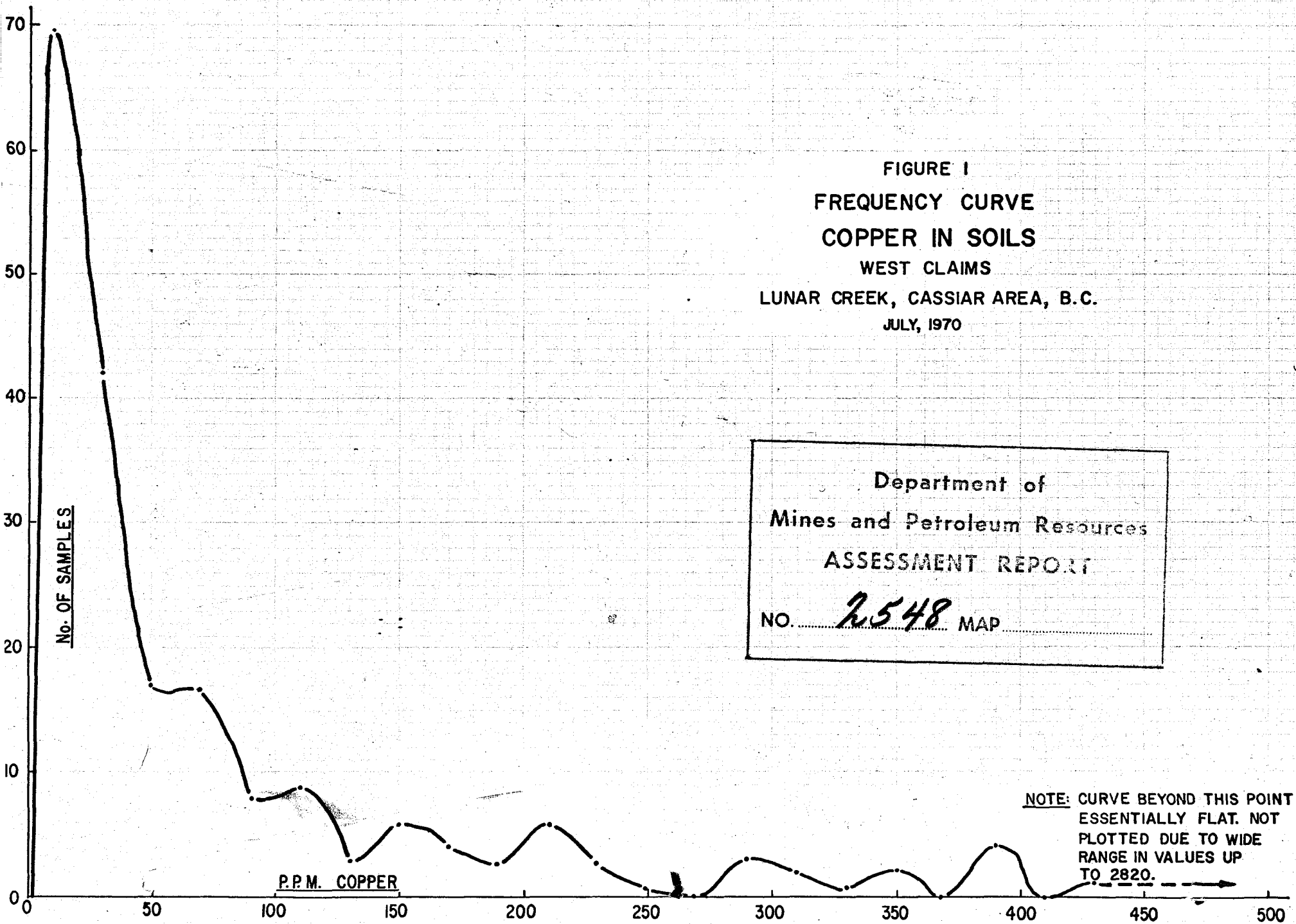


FIGURE 1  
 FREQUENCY CURVE  
 COPPER IN SOILS  
 WEST CLAIMS  
 LUNAR CREEK, CASSIAR AREA, B.C.  
 JULY, 1970

Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO. 2548 MAP

NOTE: CURVE BEYOND THIS POINT  
 ESSENTIALLY FLAT. NOT  
 PLOTTED DUE TO WIDE  
 RANGE IN VALUES UP  
 TO 2820.

CONCLUSIONS

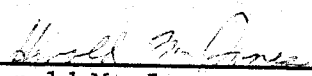
Geological mapping of the outcrop area shows that two skarn-type mineralized zones are present. Both appear small and very limited in their extent. The average copper grade of both areas is low.

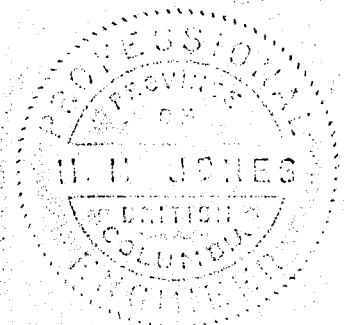
The geochemical survey shows three "definite copper anomalies", two of which persist over 2400 feet and 2800 feet respectively. These two anomalies warrant further work.

It may be concluded that while the exposed mineralized zones are small, the environment is favourable for ore deposition. For this reason, the two soil anomalies mentioned above may reflect similar mineralization but over a much greater strike length. It is for this reason that further work is justified to explain the source of these anomalies.

Vancouver, B. C.

HMJ:jb  
July 29, 1970

  
\_\_\_\_\_  
Harold M. Jones  
Senior Geologist  
El Paso Mining and Milling Company



APPENDIX A

SOIL AND ROCK ASSAYS





# CHEMEX LABS. LTD.

RECEIVED  
JUL 22 1970

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

- CHEMISTS
- GEOCHEMISTS
- ANALYSTS
- ASSAYERS

## CERTIFICATE OF ANALYSIS

TO: El Paso Mining and Milling Company  
#500 - 885 Dunsmuir St.,  
Vancouver, B. C.

CERTIFICATE NO. 9705  
INVOICE NO. 3308  
DATE RECEIVED July 13.70  
DATE ANALYSED July 20/70

ATTN:

**WEST.**

SAMPLE NO.:	PPM	
	Copper	From Harold Jones Watson Lake.
10E 1N	. 8	
2	. 31	
3	. 50	
4	. 58	
5	. 7	
6	. 28	
7	. 36	
8	. 18	
9	. 21	
10	. 20	
11	. 18	
12	. 28	
13	. 18	
14	. 21	
10E 15N	. 66	
10E 10S	. 66	
11	. 10	
12	. 7	
13	. 30	
14	. 64	
10E 15S	. 34	
18E 1N	. 236	
2	. 292	
3	. 13	
4	. 236	
5	. 18	
6	. 300	
7	. 74	
8	. 42	
9	. 14	
10	. 1040	
11	. 289	
12	. 730	
13	. 112	
14	. 64	
18E 15N	. 18	
18E 1S	. 173	
2	. 206	
3	. 586	
18E 4S	. 60	
Std. #22	56	

Certified by

West



# CHEMEX LABS LTD.

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

• CHEMISTS • GEOCHEMISTS • ANALYSTS • ASSAYERS

## CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 9706

TO: El Paso Mining and Milling Company,  
#500 - 885 Dunsmuir St.,  
Vancouver, B. C.

**RECEIVED**

INVOICE NO. 3308

DATE RECEIVED July 13/70

**WEST.**

JUL 22 1970

DATE ANALYSED July 20/70

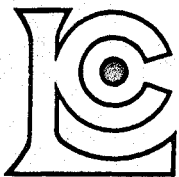
ATTN:

SAMPLE NO.:	PPM Copper
18E 5S	.1320
6S	.352
7	.386
8	.12
9	.6
10	.8
11	.30
12	.7
13	.1240
14	.1120
18E 15S	.48
26E B.L.	.13
1N	.26
2	.20
3	.10
4	.14
5	.144
6	.14
7	.20
8	.6
9	.160
10	.31
11	.4
12	.21
13	.7
14	.34
26E 15N	.600
26E 1S	.24
2	.62
3	.12
4	.13
5	.22
6	.36
7	.126
8	.22
9	.44
10	.960
11	.12
12	.8
26E 13S	.940
Std. #22	56

West

Certified by *[Signature]*





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

# CHEMEX LABS LTD.

• CHEMISTS • GEOCHEMISTS • ANALYSTS • ASSAYERS

## CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 9707

TO: El Paso Mining and Milling Company,  
#500 - 885 Dunsmuir St.,  
Vancouver, B. C.

RECEIVED

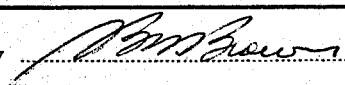
INVOICE NO. 3308  
DATE RECEIVED July 13/70  
DATE ANALYSED July 20/70

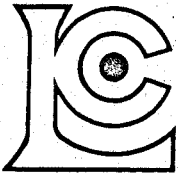
WEST JUL 22 1970

ATTN:

SAMPLE NO.:	PPM Copper
26E 14S	62
26E 15S	92
42E B.L.	22
1N	13
2	76
3	112
4	1200
5	78
6	880
7	1040
8	1030
9	2820
10	94
11	104
12	92
13	212
14	212
42E 15N	168
42E 1S	12
2	16
3	3
4	7
5	7
6	10
7	7
8	7
9	33
10	6
11	3
12	6
13	3
14	4
42E 15S	7
Std. #22	52

west

Certified by 



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

# CHEMEX LABS LTD.

• CHEMISTS • GEOCHEMISTS • ANALYSTS • ASSAYERS

## CERTIFICATE OF ANALYSIS

JUL 29 1970

CERTIFICATE NO. 10060  
INVOICE NO. 3410  
DATE RECEIVED July 21.70  
DATE ANALYSED July 28/70

TO: El Paso Mining and Milling Company,  
#500 - 885 Dunsmuir St.,  
Vancouver, B. C.

El Paso Mining & Milling Co.

ATTN: Mr. G. A. Noel

cc: Watson Lake

SAMPLE NO.:	PPM Copper
OBL 1N	1040
2	34
3	108
4	330
5	46
6	218
7	20
8	100
9	46
10	78
11	38
12	18
13	84
14	51
OBL 15N	14
OE 1S	1200
2	148
3	160
4	173
OE 5S	21
3E BL	112
5E BL	50
1N	24
2	18
3	56
4	310
5	7
6	22
7	28
8	33
9	18
10	40
11	34
12	20
13	14
14	14
5E 15N	18
5E 1S	56
2	20
5E 3S	206
Std. #22	54

West claims

Certified by

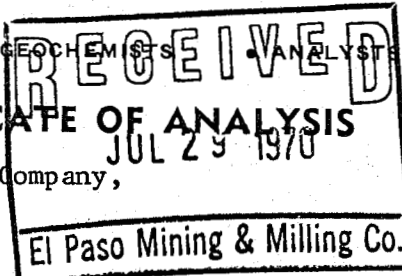


# CHEMEX LABS LTD.

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

• CHEMISTS • GEOCHEMISTS • ANALYSTS • ASSAYERS

## CERTIFICATE OF ANALYSIS



TO: El Paso Mining and Milling Company,  
#500 - 885 Dunsmuir St.,  
Vancouver, B. C.

CERTIFICATE NO. 10061  
INVOICE NO. 3410  
DATE RECEIVED July 21/70  
DATE ANALYSED July 28/70

ATTN: Mr. G. A. Noel cc: Watson Lake

SAMPLE NO.:	PPM. Copper
5E 4S	.120
5	.128
7	.66
8	.467
SE 9S	.212
5W BL	.189
1N	.54
2	.178
3	.148
4	.60
5	.63
6	.88
7	.467
8	.94
9	.40
10	.34
11	.10
12	.20
13	.138
14	.68
5W 15N	.26
5W 1S	.36
2	.102
3	.62
4	.22
5W 5S	.48
BL 6E	.21
BL 7E	.10
BL 8E	.30
BL 9E	.8
10E BL	.18
1S	.8
2	.112
3	.7
4	.20
5	.22
6	.44
7	.31
8	.6
10E 9S	.10
Std.	51

*West claims*

Certified by 

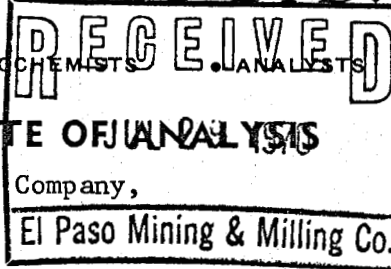


212 BROOKSBANK AVE.  
NORTH VANCOUVER, B.C.  
CANADA  
TELEPHONE: 985-0648

# CHEMEX LABS LTD.

• CHEMISTS • GEOCHEMISTS • ANALYSTS

• ASSAYERS



## CERTIFICATE OF ANALYSIS

TO: El Paso Mining and Milling Company,  
#500 - 885 Dunsmuir St.,  
Vancouver, B. C.

CERTIFICATE NO. 10062

INVOICE NO. 3410

DATE RECEIVED July 21/70

DATE ANALYSED July 28/70

ATTN: Mr. G. A. Noel

cc: Watson Lake

SAMPLE NO.:	PPM Copper	PPM Zinc
34E BL	.60	
1N	.8	
2	.3	
3	.7	
4	.850	
5	.310	
6	.400	
7	.38	
8	.437	
9	.600	
10	.680	
11	.80	
12	.24	
13	.386	
14	.341	
34E 15N	.68	
34E 1S	.118	
2	.183	
3	.242	
4	.400	
5	.540	
6	.64	
7	.40	
8	.28	
9	.24	
10	.18	
11	.18	
12	.230	
13	.183	
14	.540	
34E 15S	.88	

West claims

Certified by

APPENDIX B

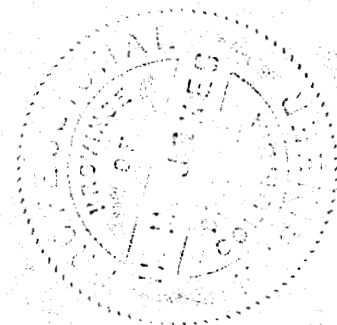
STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

The fieldwork for this report was done under the supervision of H. M. Jones, whose qualifications are listed below:

H. M. Jones: P. Eng. (Geol. Eng.) - Senior Geologist, El Paso Mining and Milling Company, Vancouver, B. C.

Completed B.A. Sc. (Geological Engineering) at University of British Columbia in 1956; employed by Bethlehem Copper Corp., from May, 1956 to September, 1956 as junior geologist under the supervision of C. S. Coveney; employed by Utah Construction and Mining Company from October, 1956 to September, 1963 in British Columbia and Alaska as a field geologist under the supervision of L. C. Clark and G. A. Noel; employed by Noranda Exploration from January, 1964 to July, 1966 in Australia as supervisor of Queensland field office under the supervision of B. O. Brynelsen and E. B. Bell; employed by the Brenda Group from August, 1966 to December, 1969 in British Columbia and the United States as project engineer under the supervision of B. O. Brynelsen and L. S. Trenholme; employed from January, 1970 to present in British Columbia and Yukon as senior geologist for El Paso Mining and Milling Company under the supervision of G. A. Noel.



APPENDIX C

STATEMENT OF COSTS

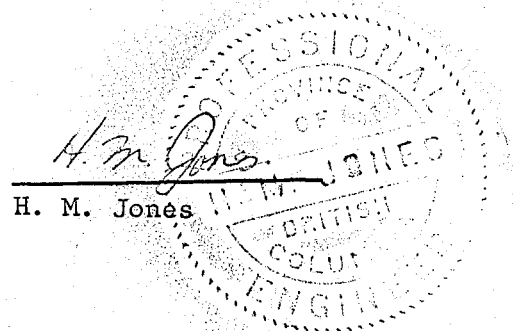
STATEMENT OF COSTS

WAGES

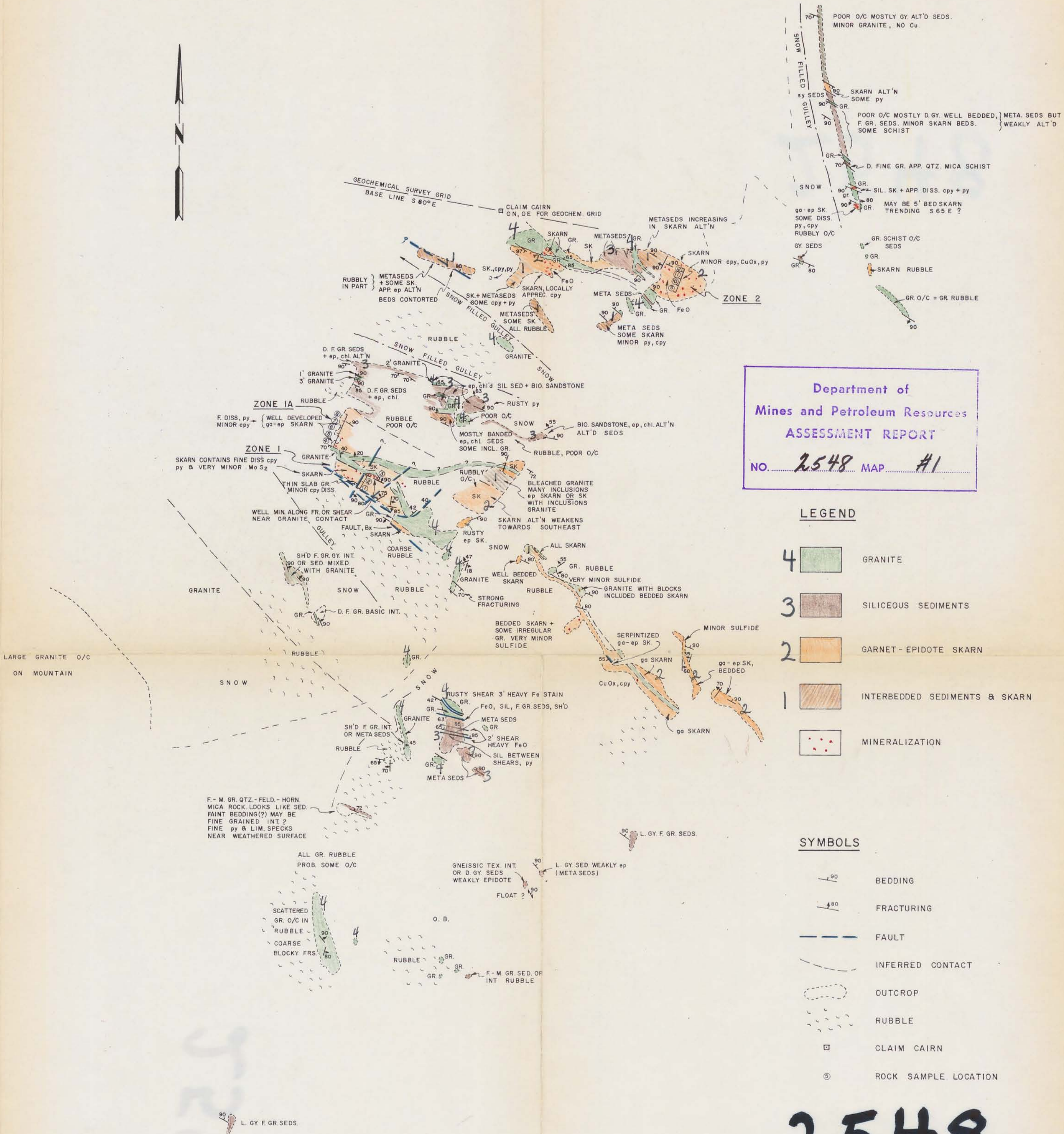
H. Jones	8 days	July 2 - July 9, 1970 @ \$1,250/month	\$ 320.00
J. Franzen	8 days	July 2 - July 9, 1970 @ \$ 500/month	\$ 130.00
D. Dolsen	8 days	July 2 - July 9, 1970 @ \$ 500/month	<u>\$ 130.00</u>
			\$ 580.00

Total Wages		\$ 580.00
Helicopter Servicing		\$ 1,000.00
Geochemical Analyses		
Cu - 224 samples @ \$1.20		\$ 268.80
Rock Assays		
Cu, Zn, Ag, Au - 12 samples @ \$10.25		<u>\$ 123.00</u>
		<u>\$ 1,971.80</u>

*H. M. Jones*  
H. M. Jones







Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO. **2548** MAP #1

- LEGEND**
- 4 [Green Box] GRANITE
  - 3 [Brown Box] SILICEOUS SEDIMENTS
  - 2 [Orange Box] GARNET-EPIDOTE SKARN
  - 1 [Hatched Box] INTERBEDDED SEDIMENTS & SKARN
  - [Red Dots] MINERALIZATION

- SYMBOLS**
- [Line with 90°] BEDDING
  - [Line with 80°] FRACTURING
  - [Dashed Line] FAULT
  - [Dotted Line] INFERRED CONTACT
  - [Dashed Circle] OUTCROP
  - [Scattered Dots] RUBBLE
  - [Square] CLAIM CAIRN
  - [Circle] ROCK SAMPLE LOCATION

**ROCK SAMPLES**

SAMPLE No.	LENGTH	% Cu	% Zn	OZ/TON Ag	OZ/TON Au	
1	10'	0.49	<0.01	0.20	<0.003	ZONE 1
2	10'	0.49	<0.01	0.26	<0.003	
3	5'	0.33	<0.01	0.10	<0.003	
4	10'	0.03	<0.01	<0.01	<0.003	
5	10'	0.02	<0.01	<0.01	<0.003	ZONE 1A
6	10'	0.02	<0.01	0.01	<0.003	
7	10'	<0.01	<0.01	<0.01	<0.003	
8	10'	0.03	<0.01	0.03	<0.003	
9	10'	0.03	<0.01	0.03	<0.003	ZONE 2
10	10'	0.02	<0.01	0.09	<0.003	
11	10'	0.05	<0.01	0.01	<0.003	
12	5'	0.05	<0.01	0.03	0.003	

# 2548

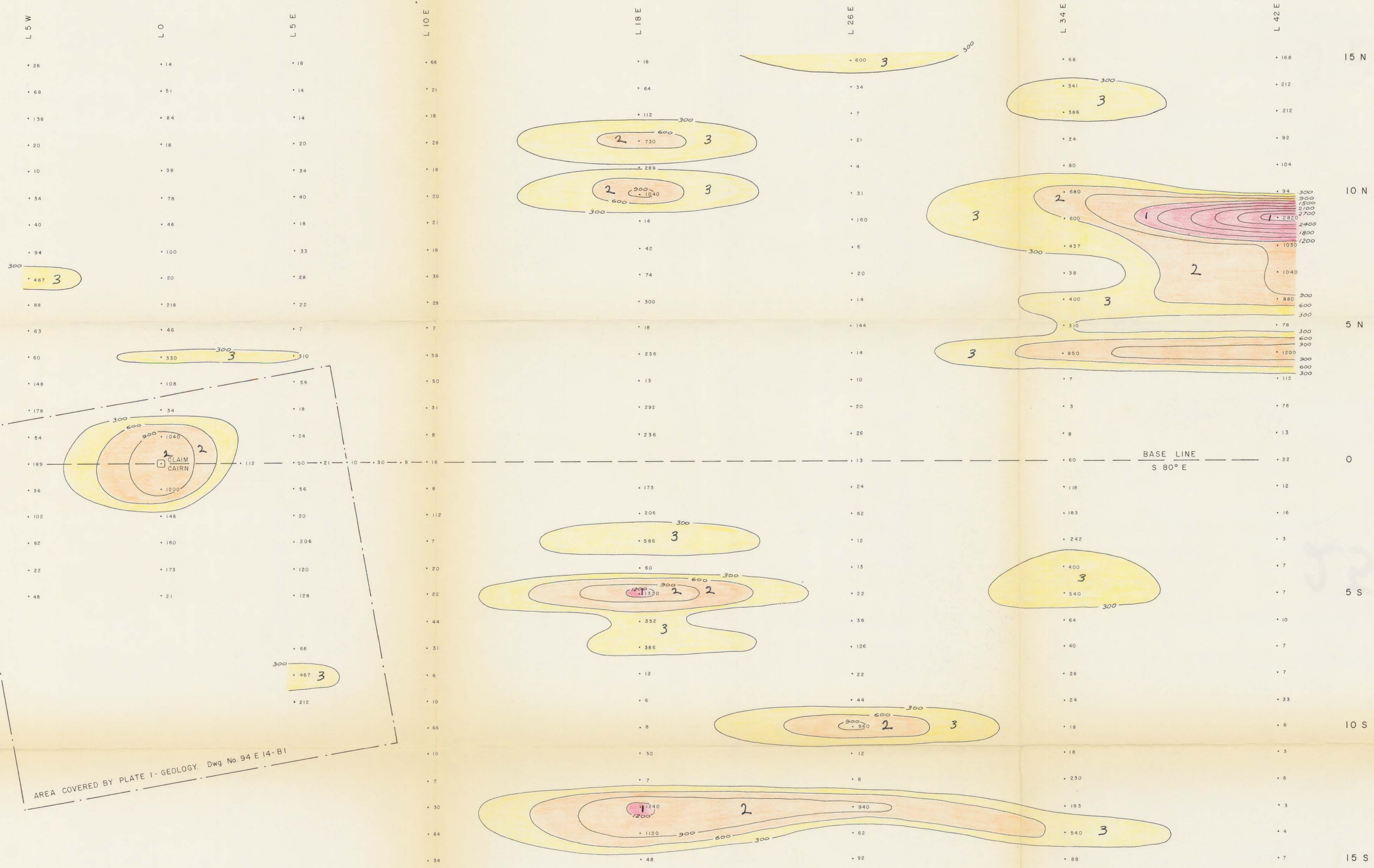
**EL PASO MINING AND MILLING COMPANY**  
 DEL NORTE MINING GROUP

PLATE I  
**GEOLOGY**  
 WEST CLAIMS  
 LUNAR CREEK, CASSIAR AREA, B.C.

DRAWN BY: K.L.J.	DATE: JULY, 1970	SCALE: 1" = 100'
TRACED BY:	DATE:	
REVISED	DATE	REVISED
DRAWING No.:		94 E 14-B I

FIELD WORK: H.M. JONES, 2-9 JULY, 1970





AREA COVERED BY PLATE 1 - GEOLOGY. DWG. No. 94 E 14-B1

- LEGEND**
- CONTOUR INTERVAL 300 P.P.M.
  - BACKGROUND 150 P.P.M.
  - 3** POSSIBLY ANOMALOUS 300 - 600 P.P.M.
  - 2** PROBABLY ANOMALOUS 600 - 1200 P.P.M.
  - 1** DEFINITELY ANOMALOUS > 1200 P.P.M.

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 2548 MAP #2

**2548**

EL PASO MINING AND MILLING COMPANY  
DEL NORTE MINING GROUP

PLATE 2  
GEOCHEMICAL SOILS  
COPPER IN P.P.M.  
WEST CLAIMS  
LUNAR CREEK, CASSIAR AREA, B.C.

DRAWN BY: K.L.J.	DATE: JULY, 1970	SCALE: 1" = 200'
TRACED BY:	DATE:	
REVISED DATE	REVISED DATE	
DRAWING No.:		94 E 14-B2