80-#895-H

SOIL GEOCHEMISTRY

MAGNETOMETER SURVEY

and

VLF EM SURVEY

MOUNT SICKER PROPERTY
(Northeast Side)

VICTORIA MINING DIVISION
British Columbia

Location:	NTS 92 B 13 (E and W) Latitude 48° 52' N Longitude 123° 46' W
Claim Names:	CF Group #5,6,7,8,16 & 18 Rocky #2,5 and #6 Fr.
Owner/Operator:	S.E.R.E.M. Ltd.
Report by:	P. A. Ronning
Date:	June, 1980

1. INTRODUCTION

The Mount Sicker property straddles Big Sicker Mountain and part of Little Sicker Mountain in the Chemainus, Seymour and Somenos Land Districts, Vancouver Island, British Columbia. Big Sicker Mountain is 10 Kilometers northwest of the town of Duncan. Access to the property is by road, from Highway 18 north on Somenos Road, northwest onto the Mt. Prevost Road and thence onto a net work of old mining and logging roads. It can also be reached from Highway 1, via a turnoff to the west onto a country road, just south of the Chemainus River bridge.

Big Sicker Mountain is a little over 700 meters high. For the most part its flanks slope between 10 and 30 degrees and it is densely treed, except for some steep bare cliffs on the east side facing Highway 1. The mountain has been glaciated and much of it has been covered with drift. The flatter parts of the top and flanks are swampy. It is bounded on the south by Mt. Prevost, on the west by the U-shaped Valley of the Chemainus River with Copper Canyon in its bottom, on the north by the broad valley of the Chemainus River and on the east by the valley of Bonsall Creek and Highway 1.

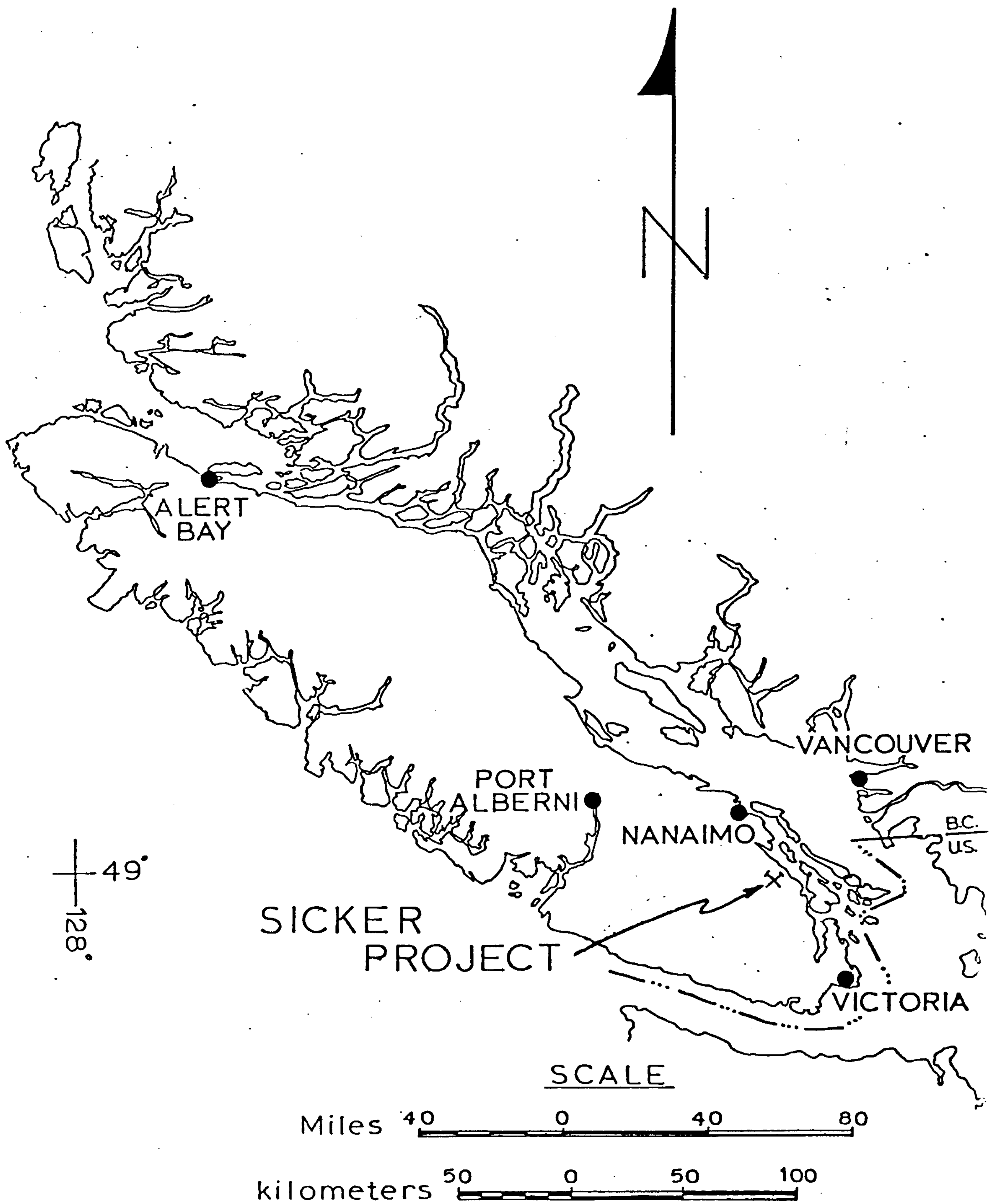
S.E.R.E.M. Ltd. staked the six Rocky claims, the Acme Fraction and the Margret Fraction. The fourteen CF claims and 26 crown grants are owned by S.E.R.E.M. under the terms of an option agreement with Mount Sicker Mines Ltd., now Peppa Resources.

The property centers on an old underground mine which has been worked sporadically by various companies since the turn of the century. The initial discovery was made in 1897, with development and mining beginning on the Tyee Claim in that year. Work on the Lenora claim began in 1898, and mining continued until 1907. A few tons were shipped from the Richard III claim in the

TABLE OF CONTENTS

Location Map

Fig. 1



same period.

Development and exploration work were done by Ladysmith-Tidewater Smelters Ltd. in 1926-1929 and by Sheep Creek Mines Ltd. in 1939-1940.

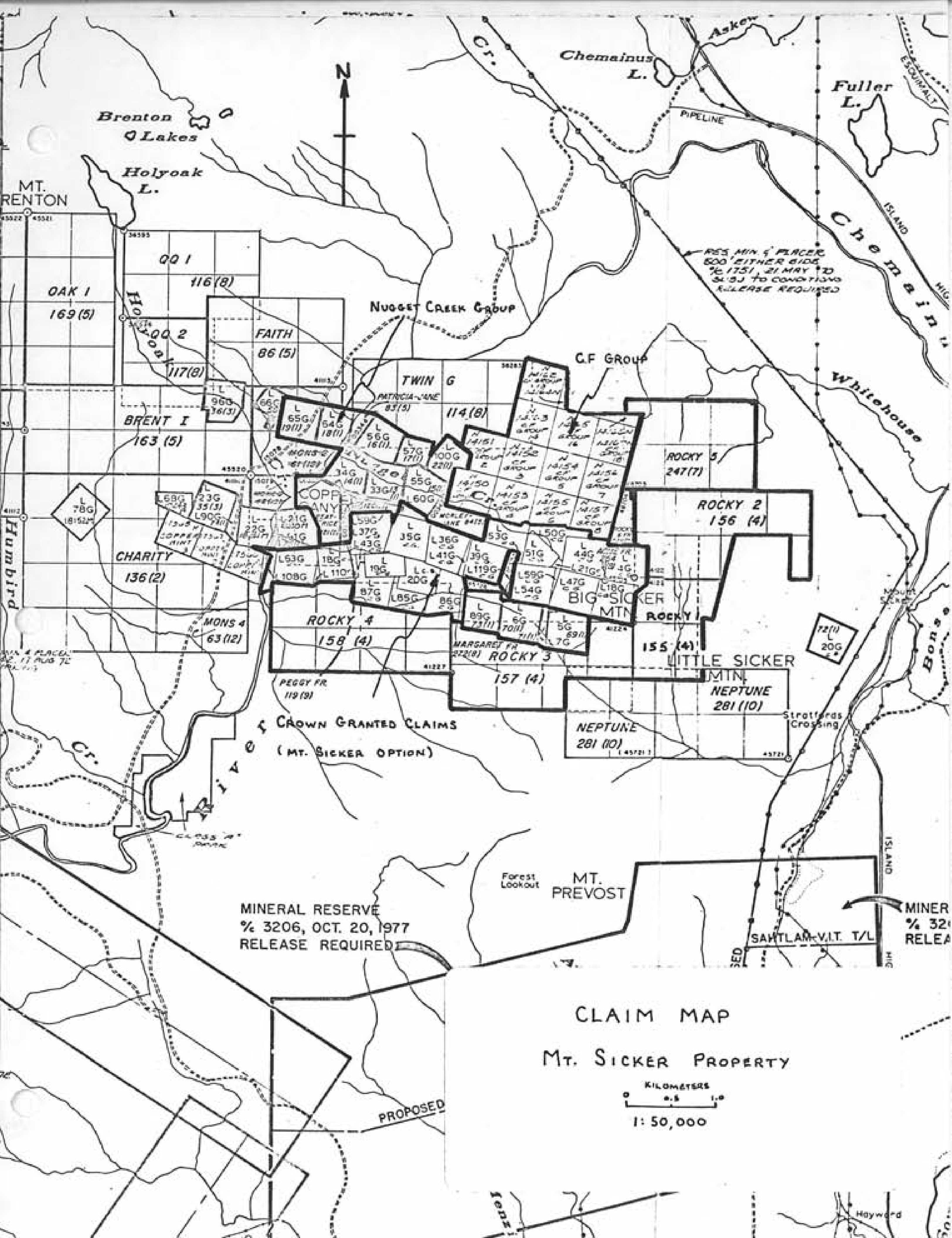
From 1943-1947 Twin J. Mines produced copper and zinc concentrates from the consolidated group. In 1949 - 1952 Vancouver Island Base Metals rehabilitated the mine, with some production.

Some surface mining was done by the original principals of Mt. Sicker Mines Ltd. in 1964, and the company was formed shortly thereafter. From that time until 1974, various operators explored the property, doing surface work and diamond drilling. In 1967 an attempt was made to extract copper from dump material by heap leaching but it did not prove feasible.

In the old mine were two nearly parallel, east-west trending ore bodies. They consisted of massive sulphides, containing principally copper and zinc, with minor lead and significant gold and silver. Barite is a major constituent of some ore and may be of economic interest. To date production has been 305,787 tons of ore yielding 20,265,763 lbs. of copper, 45,960,252 lbs. of zinc, 40,052 ounces of gold and 841,276 ounces of silver.

The ore bodies occur within the mid to upper paleozoic Sicker Group, associated with schists believed to have originated as felsic volcanics.

This report concerns itself specifically with parts of the CF Group, Rocky #2, Rocky #5, and Rocky #6 fraction, in an area known as the Northeast Copper Zone about 2 km. northeast of the mine. Three irregular bands, each a few meters wide and traceable on surface for about 200 meters, contain up to 5% pyrite with small amounts of chalcopyrite in rock made up of cryptocrystalline



CLAIM MAP

MT. SICKER PROPERTY

KILOMETERS 0 0.5 1.0

1: 50,000

to very fine grained quartz. Selected specimens assay up to 2% copper though most of the rock contains much less.

About 400 meters northwest of the Northeast Copper Zone and geologically on strike is the Fortuna Adit. It is caved and inaccessible, but an 1899 engineer's report cites three "workable veins" of copper ore 5 feet, 8 feet and 20 feet wide assaying $7.20, $9.35 and $12.40 per ton. Though the information is unreliable, some copper probably occurs in the adit.

Knowledge of the bedrock geology on the CF Group north of the Fortuna Adit and on the Rocky #5 claim north of the Northeast Copper Zone is poor, due to a lack of outcrops. For this reason the VLF EM and Magnetometer surveys described herein were done.

The Rocky #5 claim was staked in July, 1979, and line cutting was done in March, 1980, to extend the grid system onto the property. The new lines were soil sampled for geochemistry in May and June, 1980.

The work described in this report is summarized in the table below.

Work	Date		Distance	Claims
	Start	Complete	or Quantity	
Line cutting	March 13/80	March 25/80	5.4 km	Rocky #5
VLF EM	April 20/80	April 30/80	6.4 km	CF Group #5 - 8 16, 18
			9.9 km	Rocky #2,5,6 Fr
Magnetometer	May 5/80	May 12/80	6.3 km	CF Group #5,8, 16, 18
			10.2 km	Rocky #2,5,6 Fr.
Soil Geochem	May 13/80	June 6/80	151 samples	Rocky #5

2. LINE CUTTING

The line cutting simply involved extension of the existing Mt. Sicker grid system onto the Rocky #5 claim. This was done by two men, cutting with a chain saw and axe. A hip chain and compass were used for measuring and orientation.

The lines run north-south (see figs. 3,4,5) at nominal intervals of 120 meters with 30 meter spacings between stations. Lines 88E to 104E were not run as far north as the others in order to avoid cutting lines on private property.

Line cutting was delayed and impeded by unexpected snow storms.

3. MAGNETOMETER SURVEY

3.1 Purpose

The purpose of the magnetometer survey was to obtain some information about the geology of the Rocky #5 claim, which has not yet been geologically mapped. The survey also covers part of the C.F. claims where the geological mapping is poor due to a lack of outcrop.

3.2 Instrument

A Geometrics Model G-826 was used. This is a proton precession magnetometer which reads the total field.

3.3 Method

The survey was done by one man walking north-south lines taking readings at stations every 30 meters. In order to estimate the diurnal variations in the earth's magnetic field, readings were taken at a base station at least 3 times a day.

Because of dense brush and difficult terrain, the sensor was carried on the operator's back instead of on a staff. The operator carried or wore almost nothing magnetic and testing showed a precision of better than ± 2 gammas for readings taken within a minute of each other at a station in an area of low field gradient.

All readings were corrected using the assumption that variation with time of the earth's field between base station readings was linear. All readings were arbitrarily adjusted by subtracting 56,000 gammas, giving smaller numbers easier to plot and work with. With the adjusted readings, background levels range from about 250 to 500 gammas, with very low readings being negative and very high ones being above 1,000 gammas.

The results were plotted on a plan (fig. 3) and contoured at 250 gamma intervals.

3.4 Results

From about line 60E west, the survey shows relatively constant "background" readings of 250 to 500 gammas. Near the north ends of the lines, starting about 15 + 60 N, these readings increase to the 500 - 600 gamma range with one approaching 1,000 gammas. The increased readings correspond well with a dyke-like body of gabbro that has been traced in outcrop from west of the survey area to about 72E. No geological mapping has been done east of 72E, where outcrops are rare, but the magnetometer map suggests the gabbro may broaden or be structurally thickened in that area. The southern edge of the magnetic high is at 11 + 40 N on line 104 E, so it has angled to the southeast across the survey area. Its northern edge is beyond the northern limit of the survey.

The most marked magnetic feature is in the south to central part of the surveyed area from 104E to 60E, being strongest from 104E to 76E. It is a magnetic high that characteristically exceeds 1,000 gammas and on one line, 84E, exceeds 3,000 gammas. Flanking it on the north is a magnetic low that in places is less than -1,000 gammas. Magnetic gradients between the peak of the high and the trough of the low are extreme; for example on line 84E at the 26 N base line a change of nearly 3,000 gammas takes place over less than 30 m.

The magnetic high corresponds well with a mapped body of gabbro that runs from 104 E to 76 E. Due to a lack of outcrops it had not been possible to determine where the northern edge of this gabbro was or whether it extended west of 76 E. The magnetic data suggests that it extends somewhat west of 76 E but no farther than about 60 E. Probably the transition between the magnetic high and the magnetic low marks the gabbro's northern edge. The combined width of the magnetic high and low averages about 300 meters.

It appears that along the southern fringe of the surveyed area another high may be building up. The survey doesn't go far enough south to confirm this but there is a well known and well mapped body of gabbro in that area as well.

The magnetometer appears to be an effective mapping tool for outlining gabbro sills and dykes but does not distinguish other rock units in this area.

4. VLF - EM SURVEY

4.1 Purpose

The purpose of the VLF - EM Survey was similar to that of the magnetometer survey; to obtain some information about the geology of the Rocky #5 claim and part of the CF Group north of the Fortuna Adit.

4.2 Method

The instrument used for the survey was a VLF - 2 manufactured by Phoenix Geophysics. This instrument allows measurements of both dip angles and field strength, but in this case only dip angles were used.

The VLF - 2 instrument allows readings to be taken from 2 transmitting stations in the course of a single survey. For this survey, the transmitters in Seattle, Wash., and Cutler, Maine were used. The survey was done by one man, walking the north-south lines and taking dip angle measurements every 30 meters.

The dip angle data were transformed using a method described by D.C. Fraser in "Geophysics, Vol. 34, No. 6 (December, 1969), p. 958-967". This method applies a difference operator, transforming zero cross-overs into peaks, and a low-pass smoothing operator to reduce noise. It makes it possible to present the data on a plan in contoured form (see figs. 4a, 4b).

4.3 Results

Figure 4a shows the results of the VLF survey using the Seattle transmitter. The strongest feature noted is a southeast-northwest trending zone of relatively "high" readings across the southern part of the survey area. It ranges from 125 m to 250 m wide, with its southeast end centered at about 92 E, 4 + 95 S and with the northwest end at about 44 E, 9 + 30 N. These southeast and northwest ends are survey limits and the VLF high probably extends farther in both directions. There does, however, appear to be a gradual weakening to the northwest.

From its southeast end to about 68E this high corresponds to a zone of schists lying between two bodies of gabbro. The gabbros themselves seem to be marked as "lows".

These schists are what earlier workers named the "Northeast Copper Zone". This zone is underlain by pyritiferous chlorite schist with some chlorite sericite quartz schist along its southern side. Within the chlorite schist are three bands (layers?) several meters wide of rock composed of cryptocrystalline to finely crystalline quartz, bearing pyrite and minor chalcopyrite, disseminated or concentrated in "patches".

Within the VLF high are scattered peaks. In the area of 68E to 76E these peaks correspond well with known occurrences of the sulphide bearing quartz rock described above.

It has not previously been possible to trace this quartz rock west of 68 E due to a lack of surface exposure. However, there is an apparent VLF peak trending from about 56 E, 8 + 55 N to 64 E, 8 + 55 N with its highest peak at 60 E, 8 + 55 N. If the empirical relationship between peaks in the VLF high and the quartz rock holds true then it appears that at least one band of the rock extends at least as far west as line 56 E.

From 56 E west the VLF high becomes weaker and narrower although the survey did not go far enough to define its western limit. The zone of pyritiferous schists may be pinching out to the west.

Trending southeast - northwest across the central part of the survey area is a broad, somewhat amorphous area of moderately high VLF readings. On line 104 E it extends from about 7 + 95 N to 12 + 00 N, while on 44 E it covers 11 + 40 N to 16 + 20 N. Its width is quite consistent at about 400 meters.

This area of highs has an irregular pattern of "peaks and valleys" but there is a consistent "trough" along its center from about 104 E, 9 + 75 N to 44 E, 13 + 50 N.

Over most of this broad high we have no direct evidence of the bedrock geology due to a lack of exposure. However, the west end overlaps an area where scattered exposures of chlorite, sericite and lesser quartz schists occur. The VLF high indicates that these schists probably continue along strike to the east with little major change. The gentle "trough" along the center of the high probably marks a lithologic boundary, perhaps between a zone of generally chloritic schist to the south with more sericitic and siliceous schist to the north.

Immediately bounding this high on the north is a northwest-southeast trending zone of negative values. From about 44 E, 16 + 50 N to 72 E, 14 + 85 N the low corresponds well with a known body of gabbro. Geological mapping is incomplete east of there but the VLF map suggests the gabbro continues and broadens to the southeast. The magnetometer survey suggests a similar pattern.

Increasing VLF readings along the northern fringe of the survey area lie in a zone of scattered outcrops of tuff, chlorite schist and andesite.

The VLF results using the transmitter in Cutler, Maine give a pattern that is similar to that for Seattle, though less clear. The Cutler results serve mostly to confirm those using Seattle and a separate description is unnecessary.

It is interesting that the VLF maps and the magnetometer map are, roughly speaking, reversed images of each other. Highs on the VLF maps correspond with magnetometer lows and vice-versa. In areas of known geology the highest magnetometer responses correspond to bodies of gabbro, which show up as VLF lows. The highest VLF responses occur in areas of schists, particularly if they are sulphide-bearing. These areas have a low magnetic response. In areas of unknown geology the two surveys are complementary mapping aids.

5. SOIL GEOCHEMISTRY

5.1 Purpose

In 1979 soil samples were collected over most of the Mount Sicker property. The work done in 1980, described in this report, involved collecting 151 samples on the new grid lines on the Rocky #5 claim.

5.2 Method

Samples were collected by a geologist or by a helper trained and supervised by a geologist. They were collected from the "B" soil horizon wherever possible. However, the Rocky #5 is on a steep north facing slope and in many cases soil horizons are poorly developed. Many samples had to be collected from recently stabilized talus slopes which, while having a good cover of small timber, brush and grass, have not yet developed good soil horizons. In such cases whatever soil could be found was used.

Field records were kept of the depth, colour, texture, etc. for all samples.

Samples were processed by Min - En Laboratories Ltd. at 705 W. 15th St., North Vancouver, B.C. They dry the samples at 95°C and sieve them to minus 80 mesh. 1.0 gram of the sample is digested for 6 hours in a mixture of HNO_3 and $HClO_4$. The samples are cooled and diluted to standard volume. The resulting solutions are analyzed using atomic absorption spectrophotometers.

Threshold levels for the Rocky #5 area are assumed to be the same as those obtained for Mt. Sicker as a whole. These were determined using a statistical method described by Claude A. Lepeltier in "A Simplified Statistical Treatment of Geochemical Data by Graphical Representation; Economic Geology, Vol. 64, 1969, pp. 538-550". The results obtained are tabulated below:

	Anomalous	Very Anomalous
Cu	86 ppm	270 ppm
Pb	42 ppm	
Zn	125 ppm	410 ppm
Ag	1.8 ppm	

5.3 Results

The results of the 1980 soil sampling are plotted on figs. 5a, 5b, 5c and 5d. Results of previous sampling in the surrounding area are also plotted to put the 1980 results in context.

There were no new anomalies turned up by the 1980 sampling on the Rocky #5 claim and the best that can be said is that the new samples serve to more clearly show the limits of the previously known anomalies. The discussion below deals mostly with the 1979 results but serves to put the 1980 results in context.

5.3a Copper

A large 86 plus ppm anomaly surrounds the Northeast Copper Zone, straddling the 26N base line on lines 72E, 76E and 80E. Within the larger anomaly a smaller but stronger 270 plus ppm anomaly occurs from about 6 + 30 N to 7 + 50 N on 76E and 6 + 00 N to 6 + 30 N on 80 E. Another strong anomaly occurs on 72 E from 7 + 80 N to 8 + 70 N and extending about 130 m northeast to line 76 E. These anomalies probably reflect disseminated copper mineralization in the highly siliceous, chert-like rocks of the Northeast Copper Zone.

A 270 plus ppm. anomaly occurs on lines 60E and 64E, adjacent to and downslope from the Fortuna Adit. Probably this anomaly is at least partly due to contamination from waste rock from the adit and from water flowing out of the adit. However, whether it is a natural anomaly or one caused by mining activity, it must reflect the presence of copper in the Fortuna area.

Downslope on line 64 E, from 12 + 00 N to 13 + 20 N is a strong 270 plus ppm anomaly with a periphal zone of 86 plus ppm extending east to line 72 E. This anomaly occurs on a comparatively level swampy bench on an otherwise steep hillside, and the writer feels that this is a transported anomaly from farther up-slope.

A similar anomaly occurs in a similar setting on line 80 E from 11 + 40 N to 12 + 00 N. It also is probably transported, perhaps hydromorphically, from farther up-slope.

A small 270 plus ppm anomaly sits on line 96 E at 5 + 40 N, with an 86 plus ppm anomaly extending eastwards from there. This is near a gabbro-schist contact where weak copper disseminations have been found along the contact.

All other sizeable areas of high copper values are underlain by gabbro and the anomalies likely reflect high background levels of copper in the gabbro.

A scattering of isolated high copper values occurs in the north central part of the map. Individually, these are unexplained, but such a pattern is common on Mt. Sicker and is not very significant.

5.3b Lead

The only sizeable lead anomaly occurs on lines 60 E and 64 E, 30 to 60 meters north of the Fortuna Adit. It is contiguous with the copper anomaly north of the Fortuna Adit and may reflect the same source. Its presence is interesting in that lead anomalies, other than isolated high values, are very rare on Mt. Sicker.

Downslope from there, at 12 + 90 N to 13 + 20 N on line 64 E, a small lead anomaly is contiguous with a copper anomaly. As previously mentioned, this is on a swampy bench and the anomaly could have been transported from higher up the slope.

Eight isolated high lead values are scattered over the map. These probably have little significance, although there is a cluster of 3 on line 76 E near the Northeast Copper Zone.

5.3c Zinc

Commonly on Mt. Sicker zinc anomalies are large and frequent. This is at least partly due to zinc's high geochemical mobility and it makes the anomalies difficult to interpret.

Generally speaking, the north facing slope north of the 26 N base line from about 60 E to 88 E has anomalously high zinc in soils. The strongest anomaly is on line 64 E from 12 + 00 N to 14 + 10 N, contiguous with copper and lead anomalies. A fairly large 410 plus ppm anomaly runs from 10 + 50 N to 11 + 10 N on line 68 E, extending east to 10 + 50 N on 72 E. Other very high values are scattered within the large anomalous zone. The anomalous areas are directly downslope from the Northeast Copper Zone and the Fortuna Adit. Though no zinc mineralization is known in these areas, given the terrain and zinc's mobility, the writer feels that the anomalies were probably transported downslope from the Northeast Copper Zone - Fortuna area.

A small zinc anomaly is directly associated with the Fortuna Adit, on lines 60 E and 64 E.

5.3d Silver

There are no extremely high concentrations of silver in soils anywhere in the map area. There are some weak to moderate anomalies between 56 E and 72 E, with isolated weak highs elsewhere.

Right at the Fortuna Adit is a moderate anomaly of 2.6 ppm and 2.9 ppm. Sixty to ninety meters downslope, a moderate anomaly stretches east-west across lines 56 E, 60 E and 64 E. These anomalies are contiguous with the copper, lead and zinc anomalies associated with the Fortuna Adit, making this one of only two areas on Mt. Sicker where all four elements are concentrated together in soil. The other area is an untested anomaly near the old mine.

Other moderate silver anomalies occur farther downslope on lines 56 E to 60 E and 68 E to 72 E. These show no particular congruence to anomalies for other elements and they are as yet unexplained.

6. CONCLUSION

The VLF EM and magnetometer surveys of the Rocky #5 and surrounding areas have clarified somewhat the geology of an area of little outcrop. It appears probable that the characteristic lithologies of the Northeast Copper Zone, pyritiferous schists with bands of chert-like rock, continue northwest from the zone to about 56 E. They were not previously known west of 68 E.

A small body of gabbro had previously been mapped from 104 E to 76 E near the 26 N base line. It has proven to be highly magnetic and the magnetometer survey suggests that it extends northwest to about 60 E. The magnetometer map shows a northwest-southeast trending zone of very high magnetic gradient which probably marks the northeast edge of this gabbro.

Schists previously mapped along the western edge of the survey area between the 26 N and 56 N base lines probably continue to the southeast across the central part of the survey area.

A body of gabbro along the northern edge of the survey area appears, based on magnetic and VLF data, to continue and broaden east of 72 E.

The geochemical survey on the Rocky #5 claim found no new anomalies of interest. The Fortuna area and Northeast Copper Zone continue to be of most interest from a geochemical point of view.

COST STATEMENT

Line Cutting

Contract Fees:

1 man x $150.00/day x 6.5 days	=	$ 975.00	
1 man x $100.00/day x 6.5 days	=	650.00	
1 truck x $30.00/day x 6.5 days	=	195.00	
Board: $20.00 /man day x 6.5 days x 2 men	=	260.00	$ 2,080.00
Room: $5.00 per man day x 2 men x 6.5 days			65.00
Supervision: 1 man x 1 day x $100.00 per day			100.00
		TOTAL	$ 2,245.00

COST STATEMENT

Magnetometer Survey

Wages:			
Field - 1 man x 5 days x $55/day	=	275.00	
Data Reduction - 1 man x 1 day x $100/day	=	100.00	
Drafting report - 1 man x 1 day x $100/day	=	100.00	$ 475.00
Instrument Rental: 7 days x $17/day			119.00
Transportaton:			
Truck - 5 days x $17/day		85.00	
Fuel - 5 days x $2/day		10.00	
Ferry (Vancouver to Nanaimo)		12.00	107.00
Room: 5 days x $5.00 per day			25.00
Board: 5 days x $15.00 per day			75.00
		TOTAL	$ 801.00

Apportionment of Costs:

CF Group - $801.00 x 6.3 km / 16.5 km = $ 305.84

Rocky Group - $801.00 x 10.2 km/16.5 km = $ 495.16

COST STATEMENT

VLF Em Survey

Wages:			
Field - 1 man x 6 days x $78 per day	=	$ 468.00	
Office - 1 man x 2.5 days x $78 per day	=	195.00	
Supervision - 1 man x .5 day x $100/day	=	50.00	$ 713.00
Instrument Rental; 10 days x $17/day			170.00
Transportation:			
Truck - 6 days x $24.00/day	=	144.00	
Fuel - 6 days x $2.00/day	=	12.00	
Ferry (Vancouver to Nanaimo)	=	12.00	168.00
Room: 8.5 days x $5.00 per day			42.50
Board: 8.5 days x $15.00 per day			127.50
		TOTAL	$1,221.00

Apportionment of Costs:

CF Group - $1,221.00 x 6.4 km/ 16.3 km = $479.41

Rocky Group - $1,221.00 x 9.9 km/ 16.3 km = $741.59

COST STATEMENT

Soil Geochemistry

Wages:			
Field - 1 man x 2.5 days x $55/day	=	$ 137.50	
1 man x 1 day x $100.00/day	=	100.00	
Drafting and Report - 1 man x 1 day x $100/day	=	100.00	$ 337.50
Transportation:			
Truck: 3.5 days x $17/day	=	59.50	
Fuel: 4 days x $2.00/day	=	8.00	
Ferry: (Nanaimo to Vancouver)	=	12.00	79.50
Room: 2.5 days x $5.00/day			12.50
Board: 2.5 days x $15.00/day			37.50
Sample Shipment:			14.36
Sample Bags:			14.00
Analysis: 151 samples x $4.60 per sample			694.60
		TOTAL	$ 1,189.96

APPENDIX I

List of Claims

Claim Name	Record No.
CF Group # 5	14154
6	14155
7	14156
8	14157
16	14165
18	14167
Rocky #2	156
Rocky #5	247
Rocky #6 Fr.	248

APPENDIX 2

STATISTICAL TREATMENT OF GEOCHEMICAL DATA

Geochemical soil sample data were treated statistically using a method described in Lepeltier, Claude; A Simplified Statistical Treatment of Geochemical Data by Graphical Representation; Economic Geology, Vol. 64, 1969, pp. 538-550.

In outline the method is as follows:

a) obtain analytical results for a particular element from as many samples as is practical

b) group these values into an adequate number of classes using a logarithmic class interval

c) calculate the frequency of occurrence in each class

d) calculate the cumulative percent frequency for each class, working from highest values to lowest

e) plot the cumulative percent frequencies as ordinates and the lower class limits as abscissa on logarithmic probability graph paper.

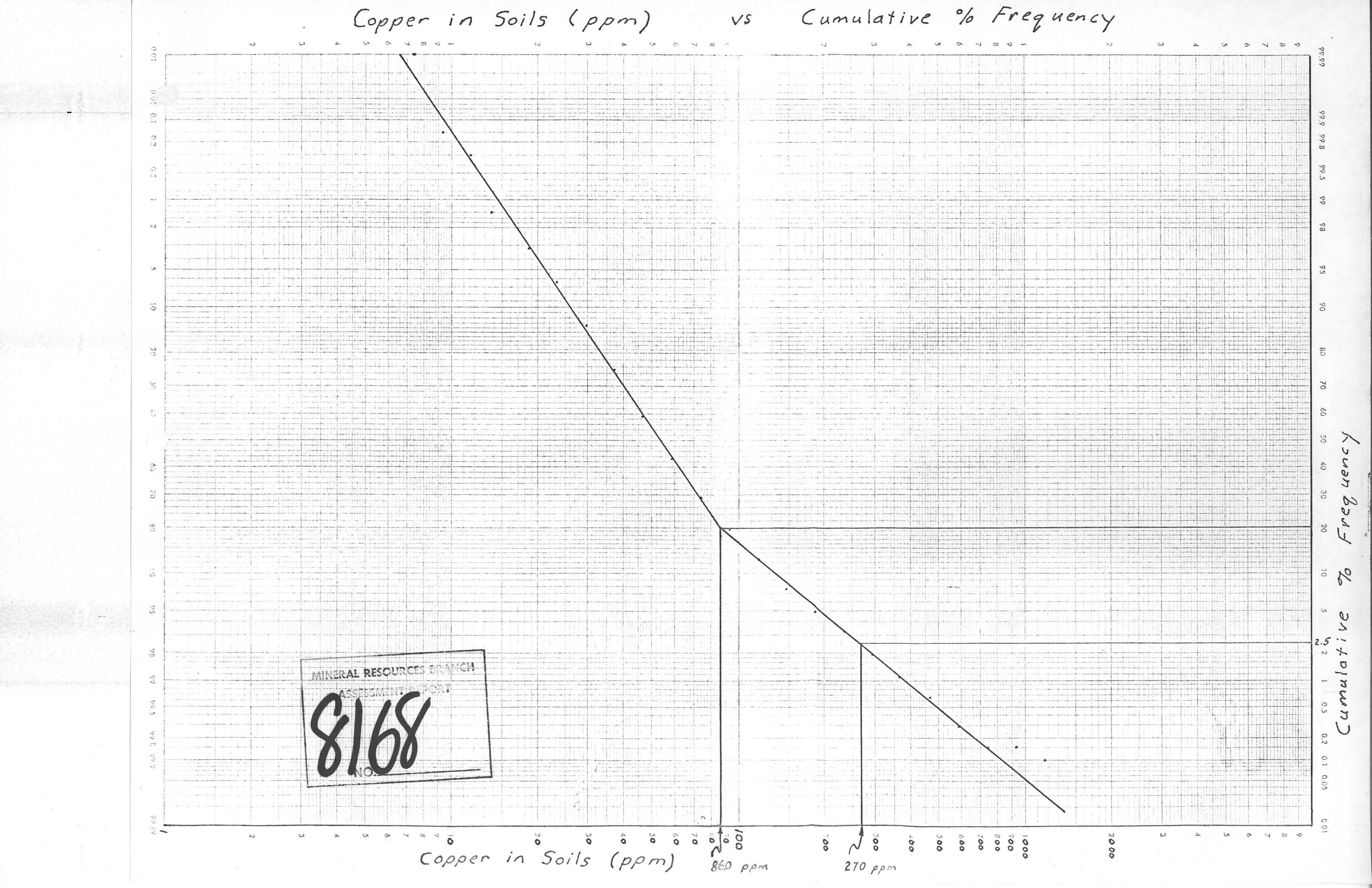
For Mt. Sicker, data for copper, lead, zinc and silver were treated this way, producing the accompanying graphs.

STATEMENT OF QUALIFICATIONS

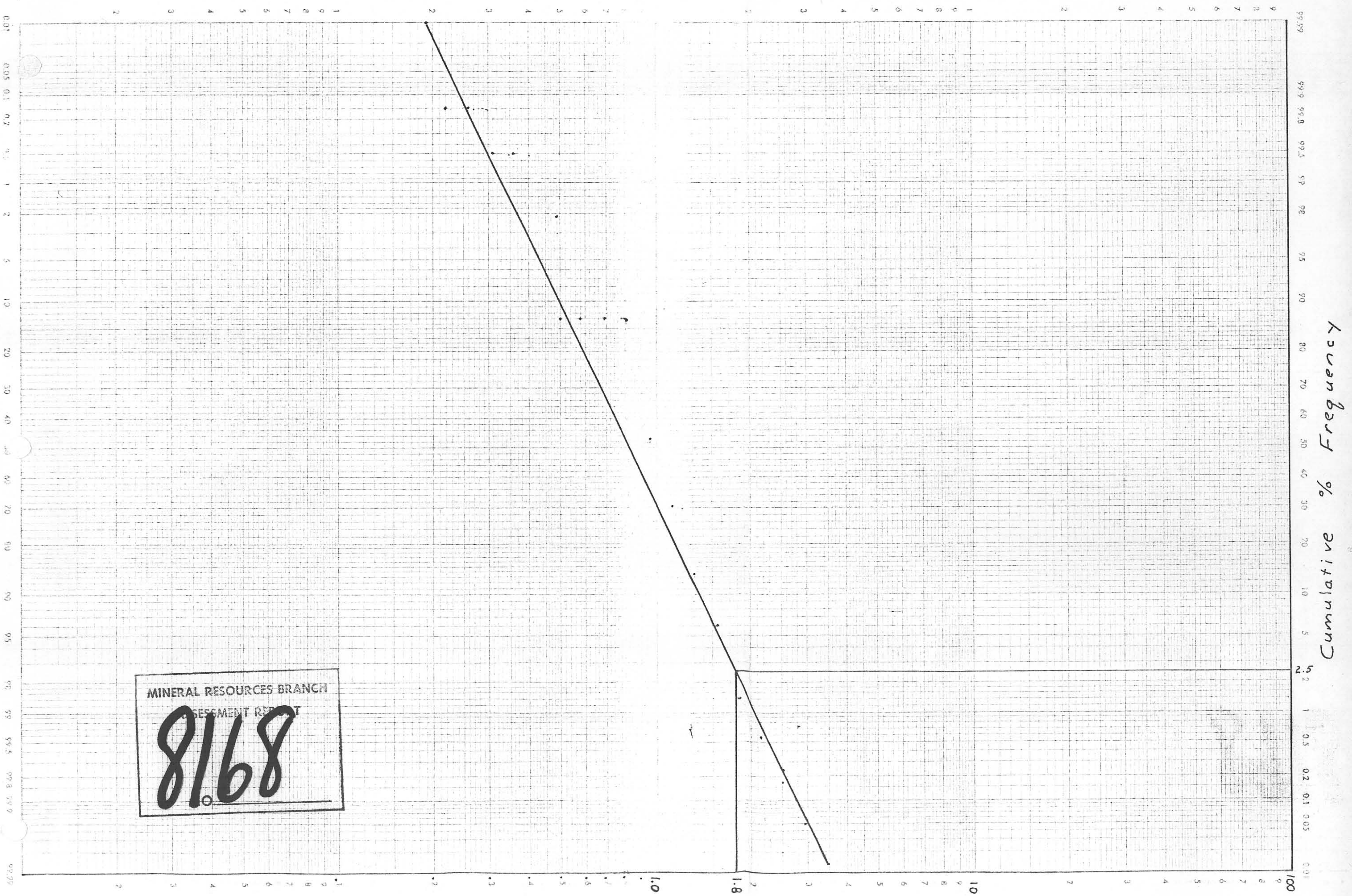
I, Peter A. Ronning of P. O. Box 718, Duncan, B.C. hereby certify that:

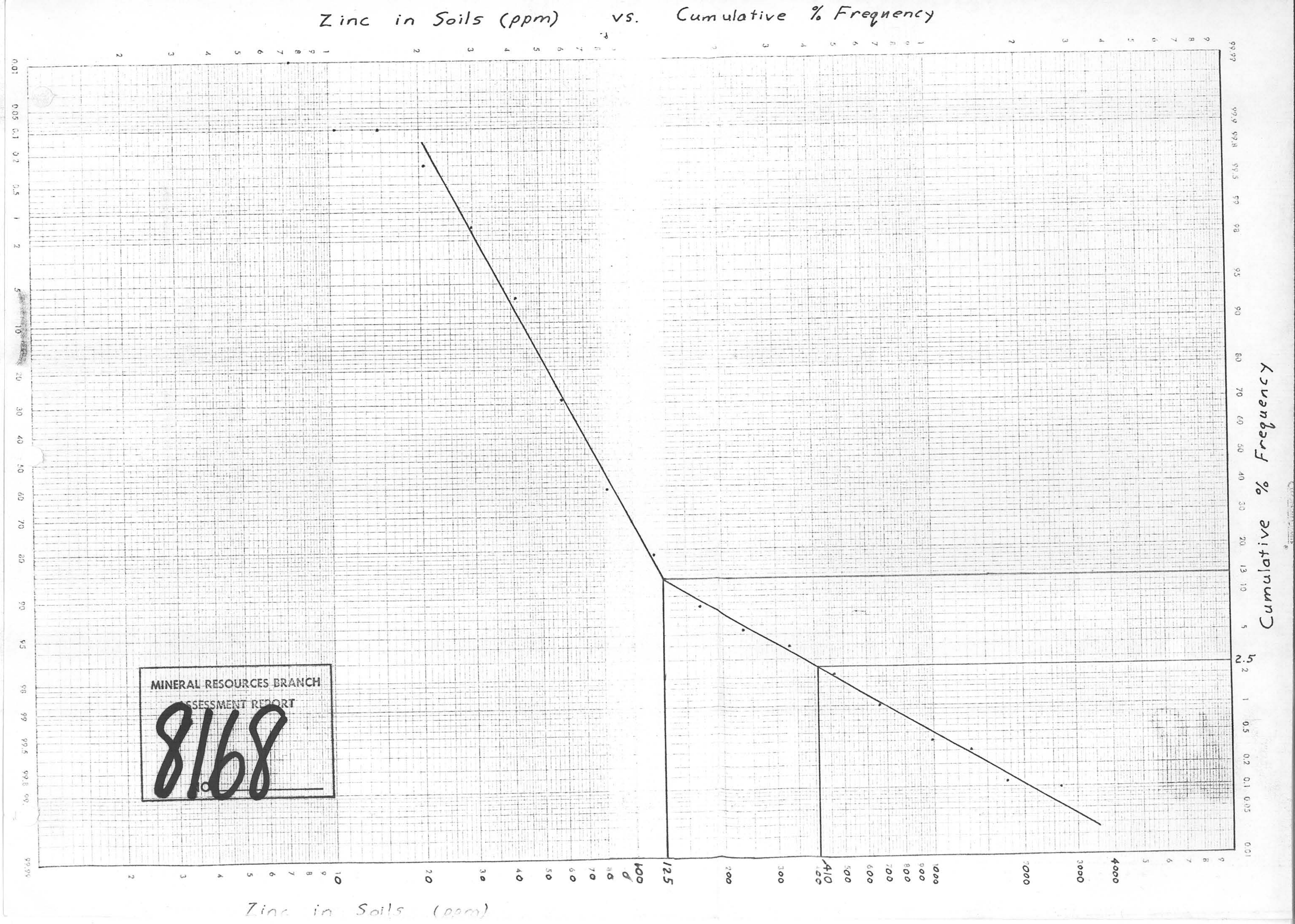
1. I am a geologist employed by S.E.R.E.M. Ltd. of 300 - 535 Thurlow Street, Vancouver, B.C.
2. I hold the degree of Bachelor of Applied Science in Geological Engineering from the University of British Columbia, granted in 1973.
3. I have worked as a geologist in mineral exploration since 1973.
4. I supervised and participated in the work covered by this report.
5. I have no financial interest in any of the claims covered by this report.

P. Ronning
Duncan, B.C.
June 27, 1980


Copper in Soils (ppm) vs Cumulative % Frequency
Copper in Soils (ppm)
Cumulative % Frequency
86.0 ppm
270 ppm
2.5
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 8168

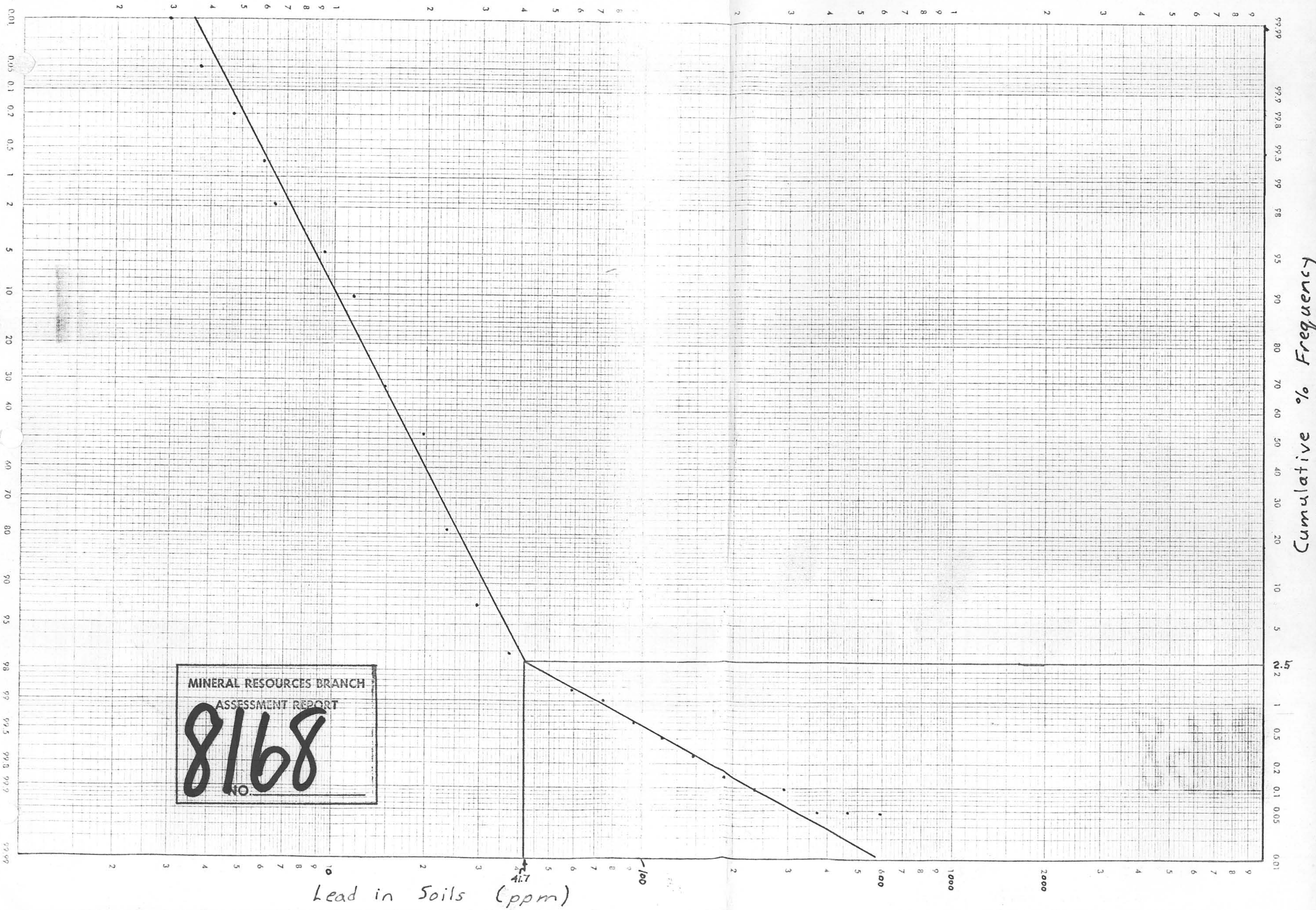
Silver in Soils (ppm) vs. Cumulative % Frequency





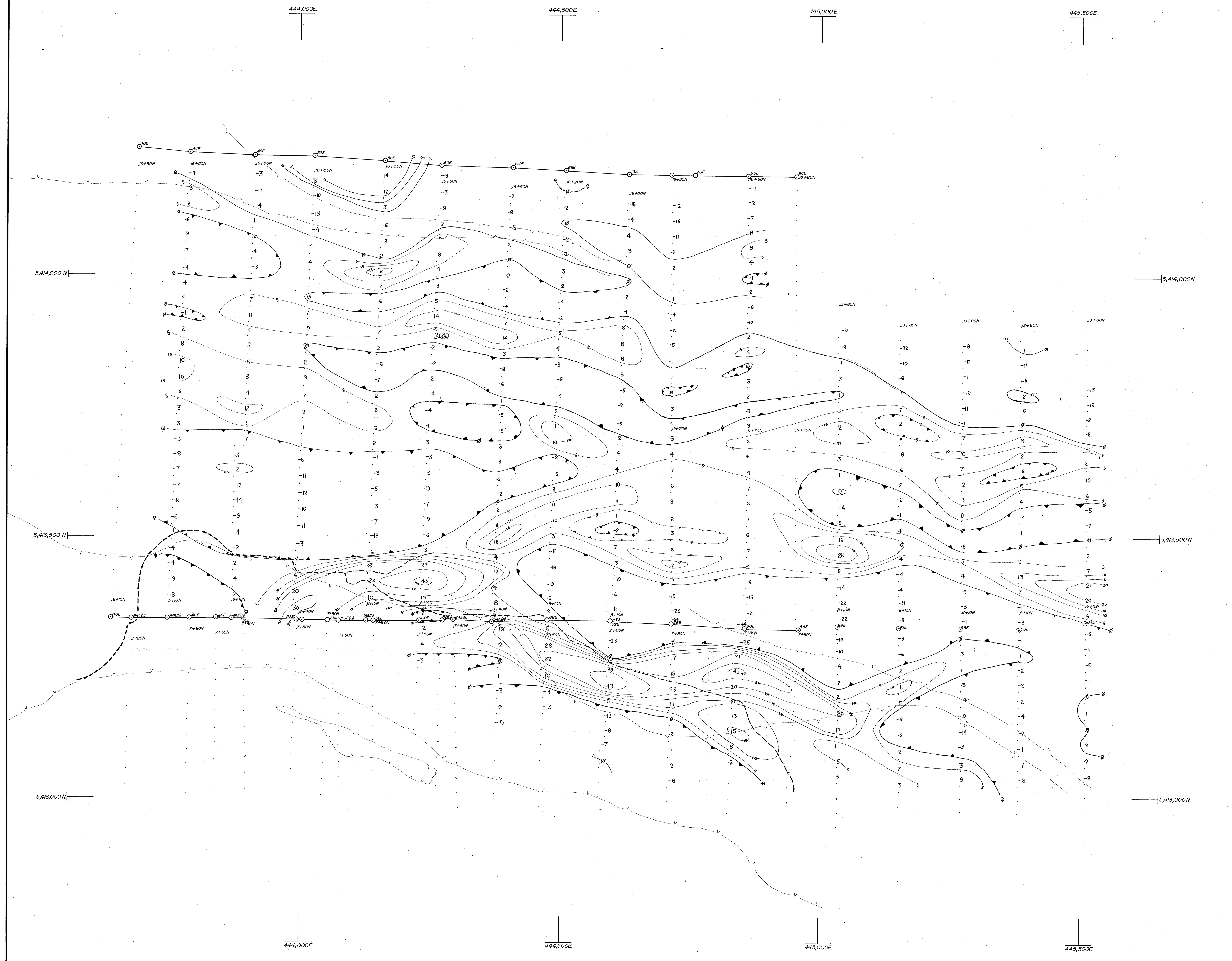
Zinc in Soils (ppm) vs. Cumulative % Frequency
Cumulative % Frequency
Zinc in Soils (ppm)
10
20
30
40
50
60
70
80
100
125
200
300
410
500
600
700
800
900
1000
2000
3000
4000
2.5
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8168

Lead Concentrations in Soils vs. Cumulative % Frequency



444,000E
444,500E
445,000E
445,500E
5,414,000 N
5,413,500 N
5,413,000 N
N
LEGEND
STATIONS
BASE LINE
MAGNETOMETER READING (ADJUSTED)
POSITIVE MAGNETIC CONTOURS
NEGATIVE MAGNETIC CONTOURS
CONTOUR INTERVAL 250 GAMMAS.
ADJUSTED READINGS ARE REDUCED BY 56,000 GAMMAS AND CORRECTED FOR DIURNAL VARIATIONS
UPPER & LOWER LIMIT GABBRO
ROAD
S.E.R.E.M. LTD.
MOUNT SICKER
MAGNETOMETER SURVEY
FORTUNA, NORTHEAST COPPER ZONE, ROCKY No.5 GROUP
DATA: PETER RONNING
DRAWN: P.A.R., D.G.DOLSEN
DATE: JUNE 1980
NTS 92B 13E
SCALE 1:2500
FIGURE 3
MINERAL RESOURCES BRANCH ASSESSMENT REPORT
8168


444,000E
444,500E
445,000E
445,500E
5,414,000 N
5,413,500 N
5,413,000 N
N
LEGEND
STATIONS
BASE LINE
VLF DIP ANGLES (FILTERED)
—DIP ANGLES FILTERED AS DESCRIBED BY FRASER IN GEOPHYSICS, VOL. 34, No. 6, DEC. 1969, pp. 958—967.
VLF CONTOURS
MINERAL RESOURCES BRANCH ASSESSMENT REPORT
8168
UPPER & LOWER LIMITS GABBRO
ROAD
S.E.R.E.M. LTD.
MOUNT SICKER
VLF SURVEY: FROM SEATTLE, WASH. TRANS.
FORTUNA, NORTHEAST COPPER ZONE, ROCKY No. 5 GROUP
DATA: PETER RONNING, B.A.
DRAWN: B.A., D.G.DOLSEN
DATE: JUNE 1980
NTS 92B 13E
SCALE 1:2500
25 0 50 100 150m
FIGURE 4a



LEGEND

- STATIONS
- BASE LINE
- VLF DIP ANGLES (FILTERED)
  —DIP ANGLES FILTERED AS DESCRIBED BY FRASER IN *GEOPHYSICS*, VOL. 34, No. 6, DEC. 1969, pp. 958 – 967.
- VLF CONTOURS
- UPPER & LOWER LIMITS GABBRO
- ROAD

S.E.R.E.M. LTD.

MOUNT SICKER

VLF SURVEY: FROM CUTLER, MAINE TRANS.
FORTUNA, NORTHEAST COPPER ZONE, ROCKY No. 5 GROUP

DATA: PETER RONNING, B.A.	DRAWN: B.A. , D.G.DOLSEN	DATE: JUNE 1980
NTS 92B 13E	SCALE 1 : 2500 (25 0 50 100 150m)	FIGURE 4b

56 N base line
26 N base line
C F GROUP
ROCKY # 5
ROCKY # 2
ROCKY #6 Fr.
Fortuna Adit
LCP ROCKY #'s 5+6
Northeast Copper Zone
N
LEGEND:
Line
Station and Number
Base Line
Line number
Soil sample result in PPM
Lines cut and Sampled in 1980
Claim Boundary
Road
Military Grid Reference
metres
8168
SEREM LTD.
PROJECT: Mt. SICKER
TITLE: LINE CUTTING
SOIL GEOCHEMISTRY — COPPER
VICINITY of ROCKY # 5 CLAIM
NTS: 92B 13E
SCALE: 1 : 2,500
DATA: FAR
DRAWN: FAR
DATE 12/6/80
FIGURE 5a

56 N base line
26 N base line
C F GROUP
ROCKY # 5
ROCKY # 2
ROCKY #6 Fr.
Fortuna Adit
LCP ROCKY #'s 5+6
Northeast Copper Zone
N
LEGEND:
Line
Station and Number
Base Line
Line number
Soil sample result in PPM
Lines cut and Sampled in 1980
Claim Boundary
Road
Military Grid Reference
meters
MINERAL RESOURCES BRANCH
8168
SEREM LTD.
PROJECT: Mt. SICKER
TITLE: LINE CUTTING
SOIL GEOCHEMISTRY — LEAD
VICINITY of ROCKY # 5 CLAIM
NTS: 92B 13E
SCALE: 1 : 2,500
DATA: PAR
DRAWN: PAR
DATE: 12/6/80
FIGURE 5b

56 N base line
26 N base line
C F GROUP
ROCKY # 5
ROCKY # 2
ROCKY #6 Fr.
Northeast Copper Zone
Fortuna Adit
LCP ROCKY #'s 5+6
N
LEGEND:
Line
Station and Number
Base Line
Line number
Soil sample result in PPM
Lines cut and Sampled in 1980
Claim Boundary
Road
Military Grid Reference
meters
MINERAL RESOURCES BRANCH ASSESSMENT REPORT
NO. 8168
SEREM LTD.
PROJECT: Mt. SICKER
TITLE: LINE CUTTING SOIL GEOCHEMISTRY — ZINC VICINITY of ROCKY # 5 CLAIM
NTS: 92B 13E
SCALE: 1 : 2,500
DATA: FAR
DRAWN: FAR
DATE: 12/6/80
FIGURE 5c


56 N base line
26 N base line
C F GROUP
ROCKY # 5
ROCKY # 2
ROCKY #6 Fr.
Fortuna Adit
LCP ROCKY #'s 5+6
Northeast Copper Zone
N
LEGEND:
Line
Station and Number
Base Line
Line number
Soil sample result in PPM x 10
Lines cut and Sampled in 1980
Claim Boundary
Road
5,413,500 N Military Grid Reference
meters
MINERAL RESOURCES BRANCH ASSESSMENT REPORT
NO. 8168
SEREM LTD.
PROJECT: Mt. SICKER
TITLE: LINE CUTTING
SOIL GEOCHEMISTRY — SILVER
VICINITY of ROCKY # 5 CLAIM
NTS: 92B 13 E
SCALE: 1 : 2,500
DATA: PAR
DRAWN: PAR
DATE: 12/6/80
FIGURE 5d