6543

COMINCO LTD.

EXPLORATION DIVISION WESTERN DISTRICT

GEOCHEMICAL SURVEY REPORT

ON SOUTH VINE GRID

Fort Steele Mining Division

NTS 82G/5

Submitted by:

G.L. WEBBER

Cominco Ltd.
Kootenay Exploration
2450 Cranbrook Street
Cranbrook, B.C.

Under the supervision of:

D.W. Heddle
P.Eng.

TABLE OF CONTENTS

COMINCO LTD.

EXPLORATION DIVISION WESTERN DISTRICT

1.00 GENERAL STATEMENT

This report describes a detailed geochemical survey and expenditures on the Vine 28, 30, 31, 33 and 34 mineral claims, a total of 76 units, recorded on the 26th day of October, 1976. The soil survey was undertaken to explore for Cu/Pb/Zn deposits in the Aldridge Formation.

This survey was conducted between the 15th day of May 1977 and the 26th day of October 1977. A total of 802 soil samples were collected and analyzed by atomic absorption for ppm Cu, Pb and Zn.

Total expenditures for this soil geochemical program were $14,625.00. Affidavits on Application for Certificate of Work was filed with the Mining Recorder in Cranbrook, B.C., on October 26th, 1977. The amount of assessment credit applied for was $14,600 and rent paid in the amount of $1,460.00. (Suspense Receipt No. 662061E).

2.00 INTRODUCTION

2.10 Status of Ownership

All Vine claims are 100% Cominco-owned.

2.20 Location and Access

Vine 28, 30, 31, 33 and 34 claims are located approximately 7 km WSW of Moyie Lake and 18 km SSW of Cranbrook, B.C. Access is via Highway 3/95 and gravel road up Lamb Creek. Plate 1 is a location map showing survey grid relative to claim boundaries.

NTS: 82G/5 Mining Division: Fort Steele
Long: 115° 56' Lat: 49° 20'

2.30 Topography and Vegetation

Vine geochemical grid covers an area of moderate rugged relief, ranging in elevation from 1,370 to 2,133 m. Relief within the survey area is approximately 762 meters.

The area is covered mainly by second growth lodgepole pine, Douglas fir and low bush.

3.00 GEOCHEMISTRY

3.10 Sampling Procedure

A soil geochemistry survey was conducted over an area of 6,000 m by 4,200 m. A baseline, with azimuth 052° was cut and flagged, sample lines were established at 250 m intervals along the baseline. Sample lines were established at 2,100 m SE and NW from the baseline. Sample intervals along the lines were 100 m. Samples were collected from the "B" horizon of the soil profile using a grub hoe and stored in wet strength kraft bags. Samples were dried at atmospheric temperature and then sieved through a -80 mesh nylon screen. The samples were then shipped to Cominco's Assay Lab in Kimberley for analysis.

Two grams of soil sieved to -80 mesh size, was weighed in a 250 m beaker, 20 m/s of HCl (conc.) was added and the sample digested on a hot plate for approximately 20 minutes. HNO_3 (conc.) added until sample was completely oxidized. Sample was then taken up in 10% HCl, bulked to 100 ml and aspirated directly into the atomic absorption instrument. Blank determinations were used for background readings.

4.00 INTERPRETATION AND RESULTS

Plates 2, 3 and 4 are contoured maps for Cu/Pb/Zn in ppm.
Figures 1A and 1B are Cummulative Frequency Distribution for lead.
Figures 2A and 2B are Cummulative Frequency Distribution for zinc.
Figure 3 shows Cummulative Frequency for copper.

Histograms:		
	Lead	Figure 4
	Zinc	Figure 5A and 5B
	Copper	Figure 6.

One or two cummulative probability graphs and corresponding histograms were constructed for each element assayed (Pb, Zn, Cu). After subjective examination of each graph on an individual basis, the several graphs of each element were compared to determine the respective threshold values. This is thought to be more meaningful than the threshold value commonly in use which is determined by the 84% level of a probability graph (median + 2 standard deviations).

Extremity values (those sporadic highs alienated from the main body of assay data) are omitted from all graphs. In every case, those values represent less than one percent of this data.

Population separations and expansions were not constructed on the probability graphs because of the excess time which would be required by the multiple number of populations on each graph and their corresponding overlap.

4.10 Lead (Pb)

The histogram (Figure 4) was insufficient, alone, in indicating the type of distribution involved. The complicated distribution is reflected by comparison of the probability graphs (Figures 1A and 1B), which indicate a probable mixing or cross between normal and log normal populations - the former favoured by the lower assay values and the latter by the upper values, but neither is definitive.

In both cases, the significant distribution changes in the upper ranges occur at 50 ppm and 80 ppm. Extremity values are all above 110 ppm. These values were used as contour intervals for the lead geochemical map (Plate 2).

4.20 Zinc (Zn)

The zinc distribution is again a compromise between log-normal and normal distributions - the upper values again better represented by log-normal populations (Figure 2B), and the lower values by normal populations (Figure 2A). Both probability graphs appear to define at least two distinct populations which, when combined, contain more than 80 percent of the data - further indicating a lack of a definitive type of distribution. The zinc histogram (Figure 5) also indicates a complicated distribution.

Contour intervals were chosen with significant compromise, the 100 and 150 ppm contour values were determined respectively from the log-normal and normal probability graphs at changes in lineation. All extremity values are above 150 ppm.

Figure 5B was constructed with identical interval sizes as Figure 5, but each interval's limits were raised 5 ppm. Comparison of both histograms indicates the subtle differences dependent on the interpreter's choice of intervals, even with constant interval size and a large number of samples. Thus caution is prescribed in making any detailed interpretation from this type of graph.

4.30 Copper (Cu)

The copper histogram (Figure 6) definitely resembles a log-normal, rather than normal, distribution. Two minor shifts of lineation on the log-normal probability graph (Figure 3) could indicate the presence of two or three, largely overlapping populations. These breaks in direction of lineation, at 40 and 70 ppm, were used as contour intervals. All extremity values lie above 110 ppm, and thus this figure was also used in contouring the copper goechemical map (Plate 4).

The few erratic high values of Pb/Zn/Cu(?) obtained are thought to reflect small quartz veins containing low grade galena and sphalerite, probably associated with and adjacent to gabbro sills and dykes.

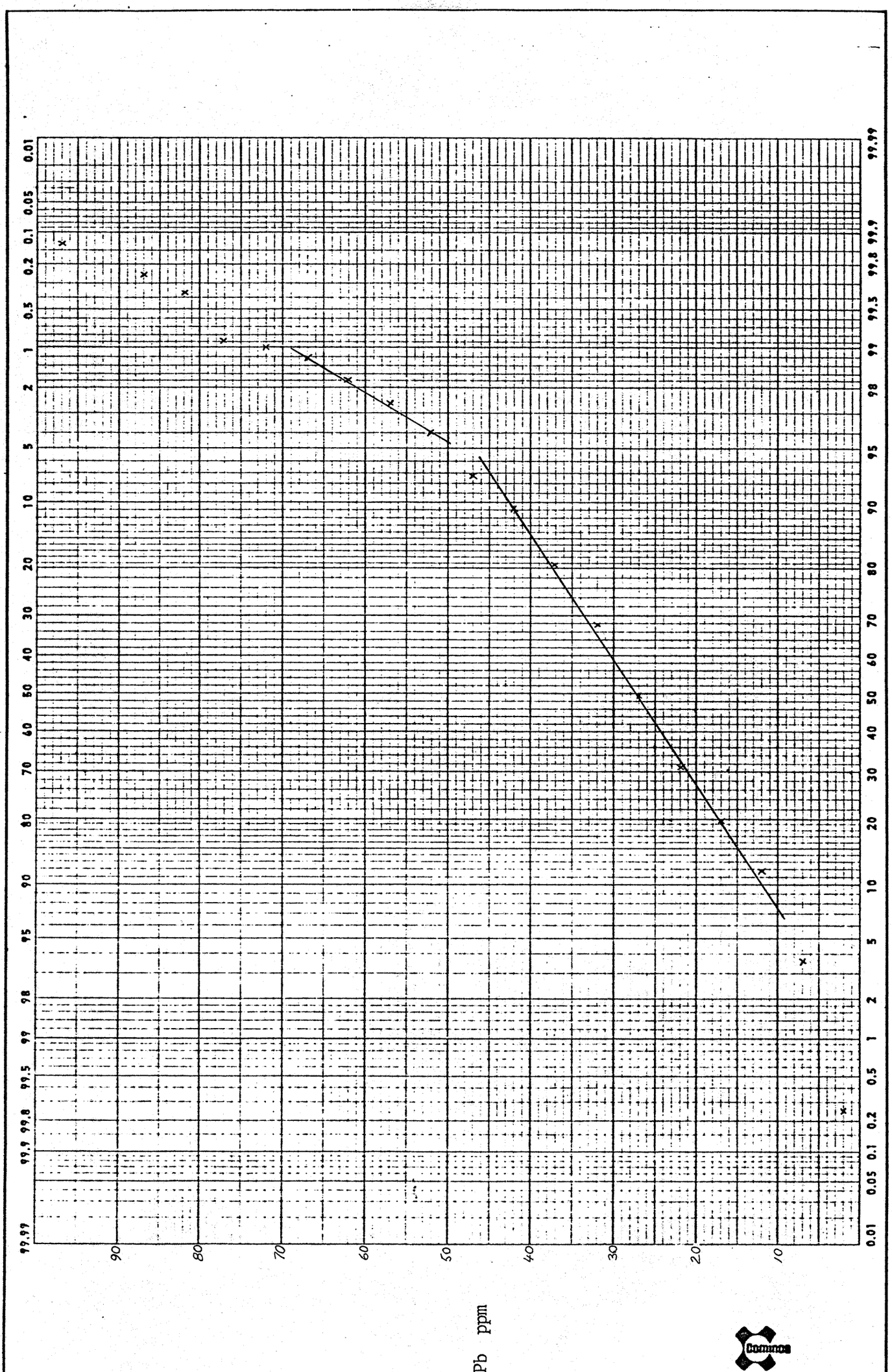
Submitted by: G.L. Webber
G.L. WEBBER

Endorsed by: D.W. Heddle
D.W. HEDDLE, P. Eng.
Assistant Manager
Exploration
Western District

Approved for
Release by: G. Harden per D.W. Heddle
G. HARDEN, Manager
Exploration
Western District

December 6, 1977

cc: Mining Recorder
Vanc. Exploration



Drawn by: JMF		Traced by:	
Revised by	Date	Revised by	Date

FIGURE 1A

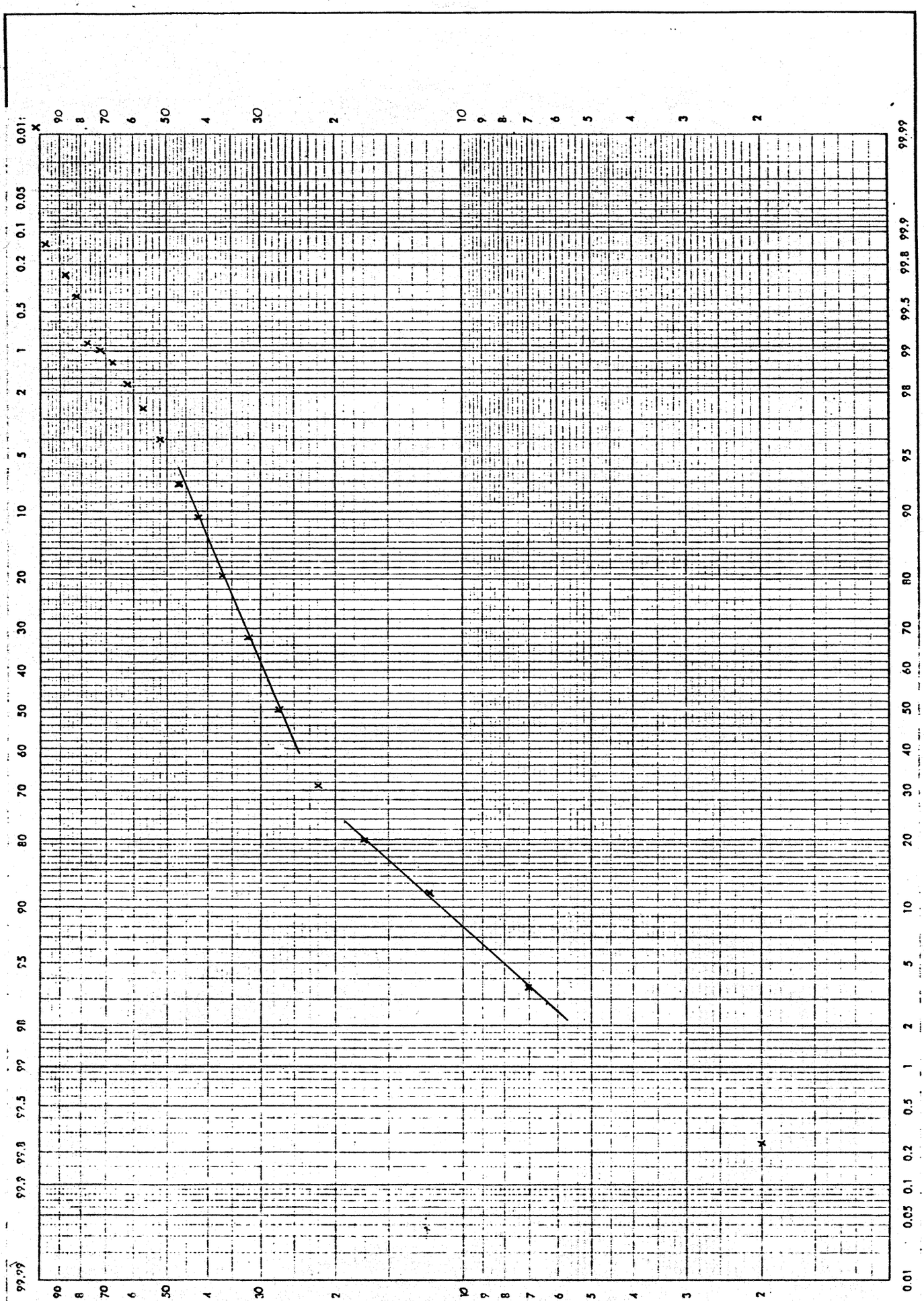
Pb - Cummulative Frequency Distribution

SOUTH VINE GRID NTS: 82G/5W

Scale:	Date: Dec. 2, 1977	Plate:

BCIL 2187C

210-0610



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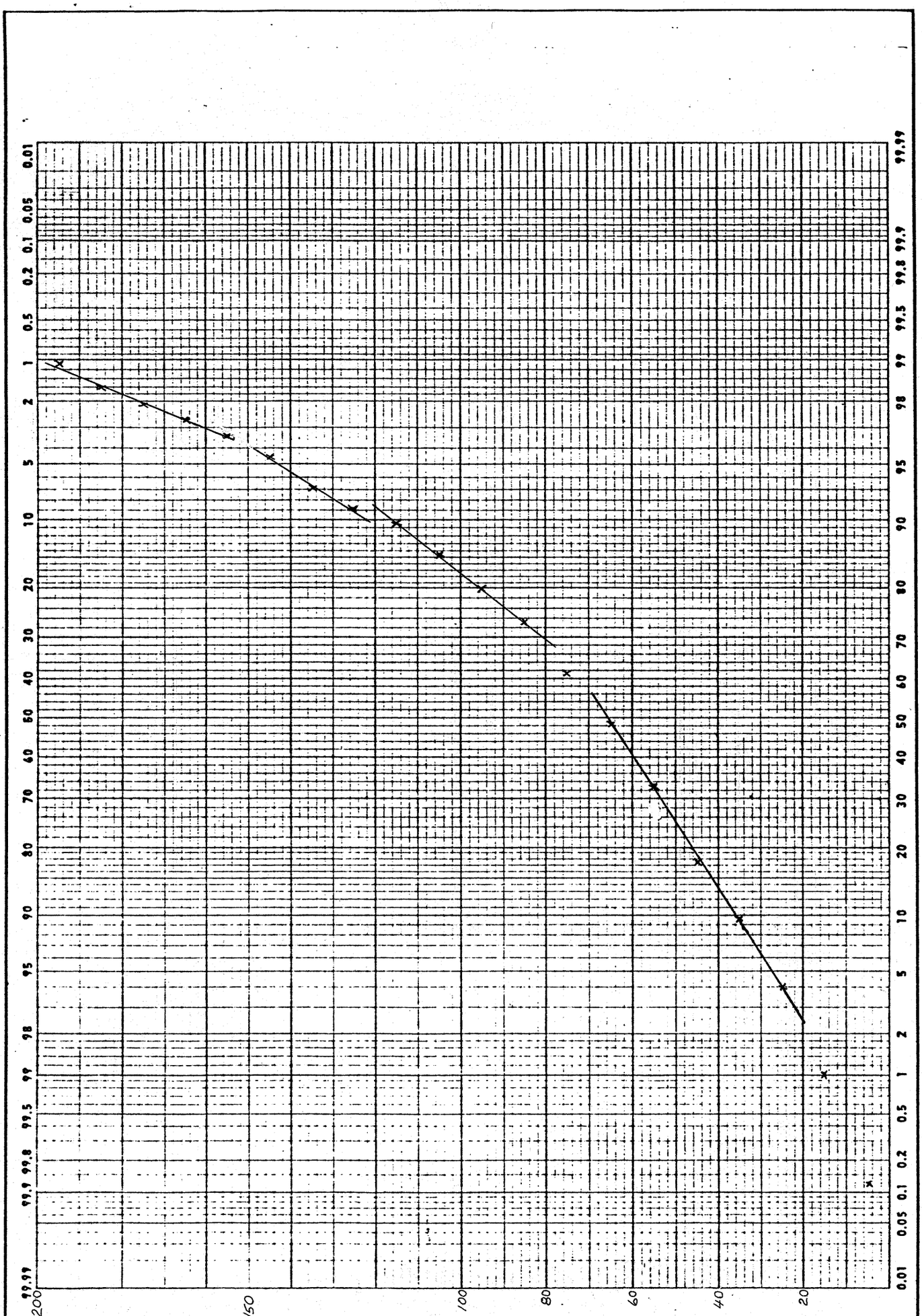
Revised by	Date	Revised by	Date

FIGURE 1B

Pb - Cummulative Frequency Distribution

SOUTH VINE GRID NTS: 82G/5W

Scale:	Date: Dec. 2, 1977	Plate:



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Revised by	Date	Revised by	Date

FIGURE 2A

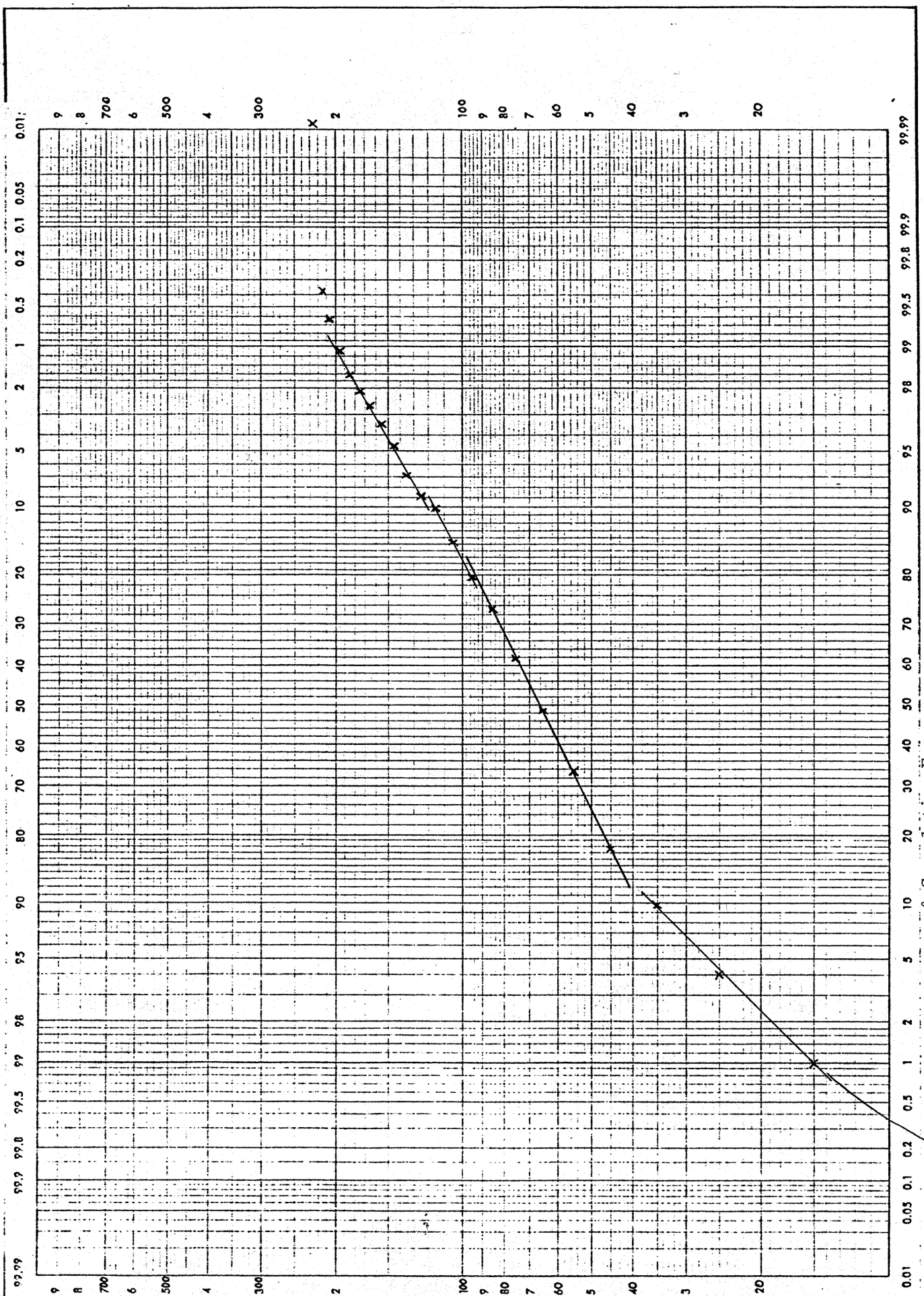
Zn - Cummulative Frequency Distribution

SOUTH VINE GRID NTS: 82G/5W

Scale:	Date: Dec. 2, 1977	Plate:

BCIL 2187C

210-0610



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Revised by	Date	Revised by	Date

FIGURE 2B

Zn - Cummulative Frequency Distribution

SOUTH VINE GRID NTS: 82G/5W

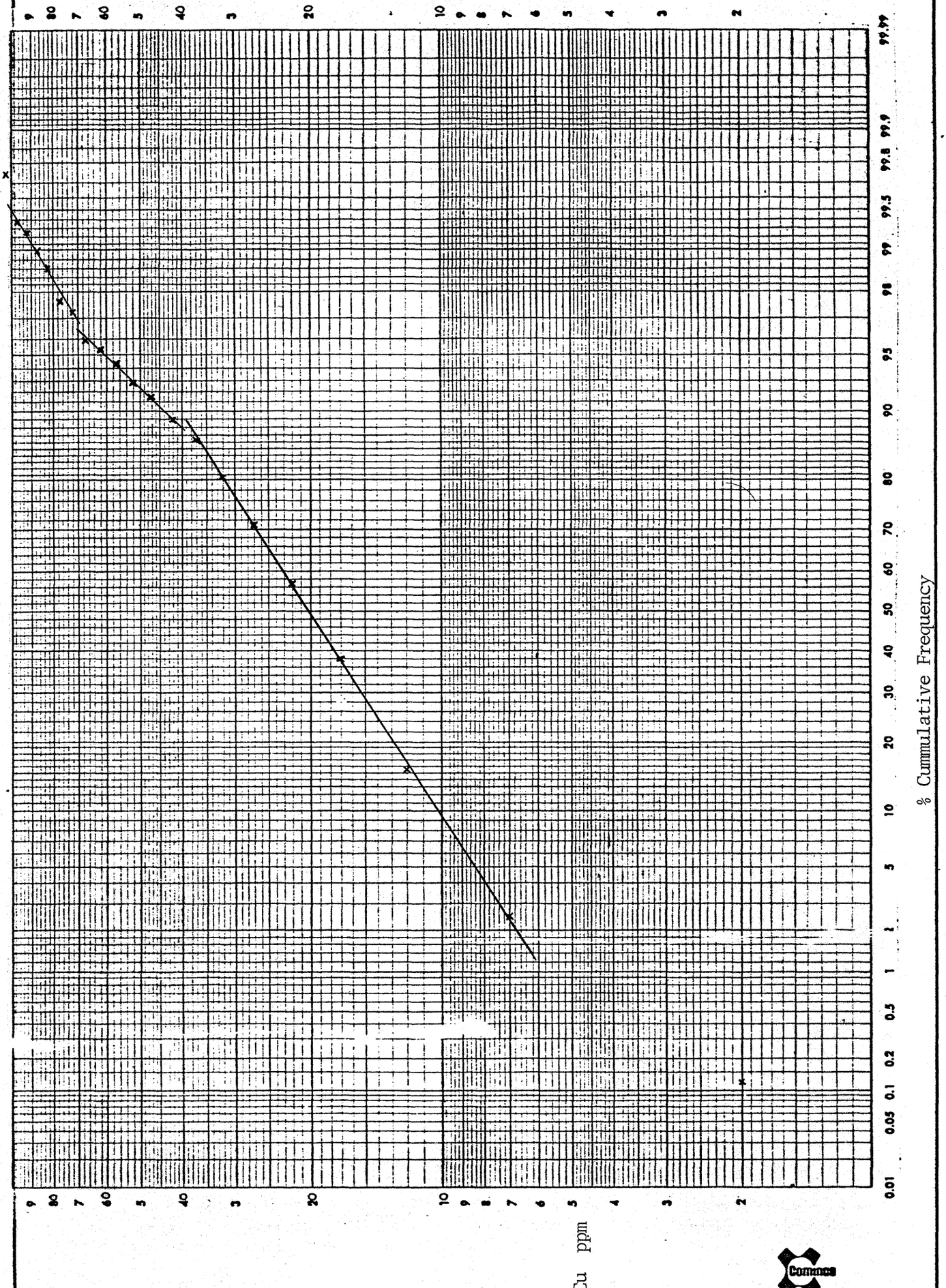
Scale:

Date: Dec. 2, 1977

Plate:

BCIL 2187C

210-0610



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Revised by	Date	Revised by	Date

FIGURE 3

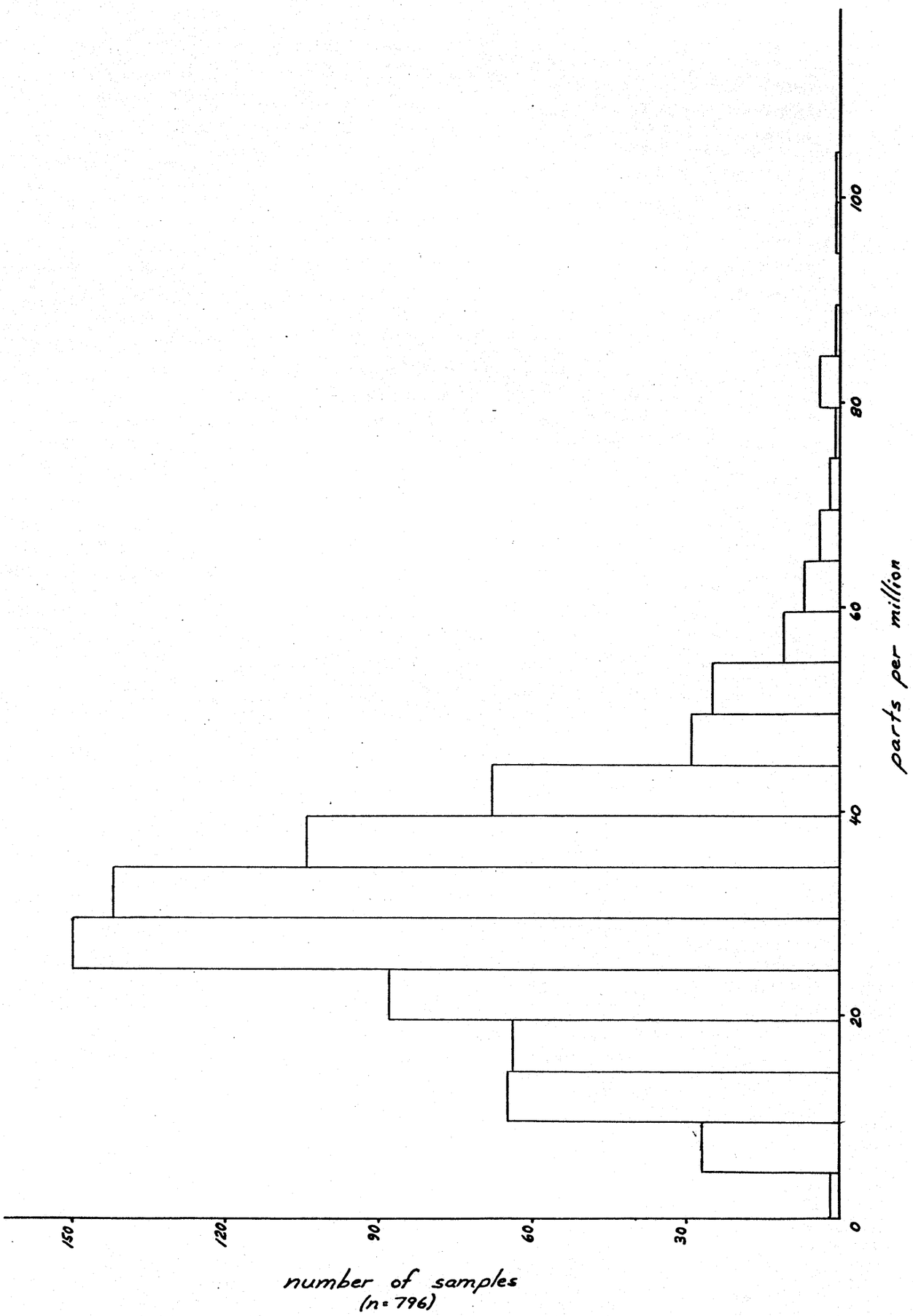
Cu - Cummulative Frequency Distribution

SOUTH VINE GRID NTS: 82G/5W

Scale:	Date: Dec. 2, 1977	Plate:

NCI - 112A - CL

210-0610



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Revised by	Date	Revised by	Date

FIGURE 4

LEAD HISTOGRAM

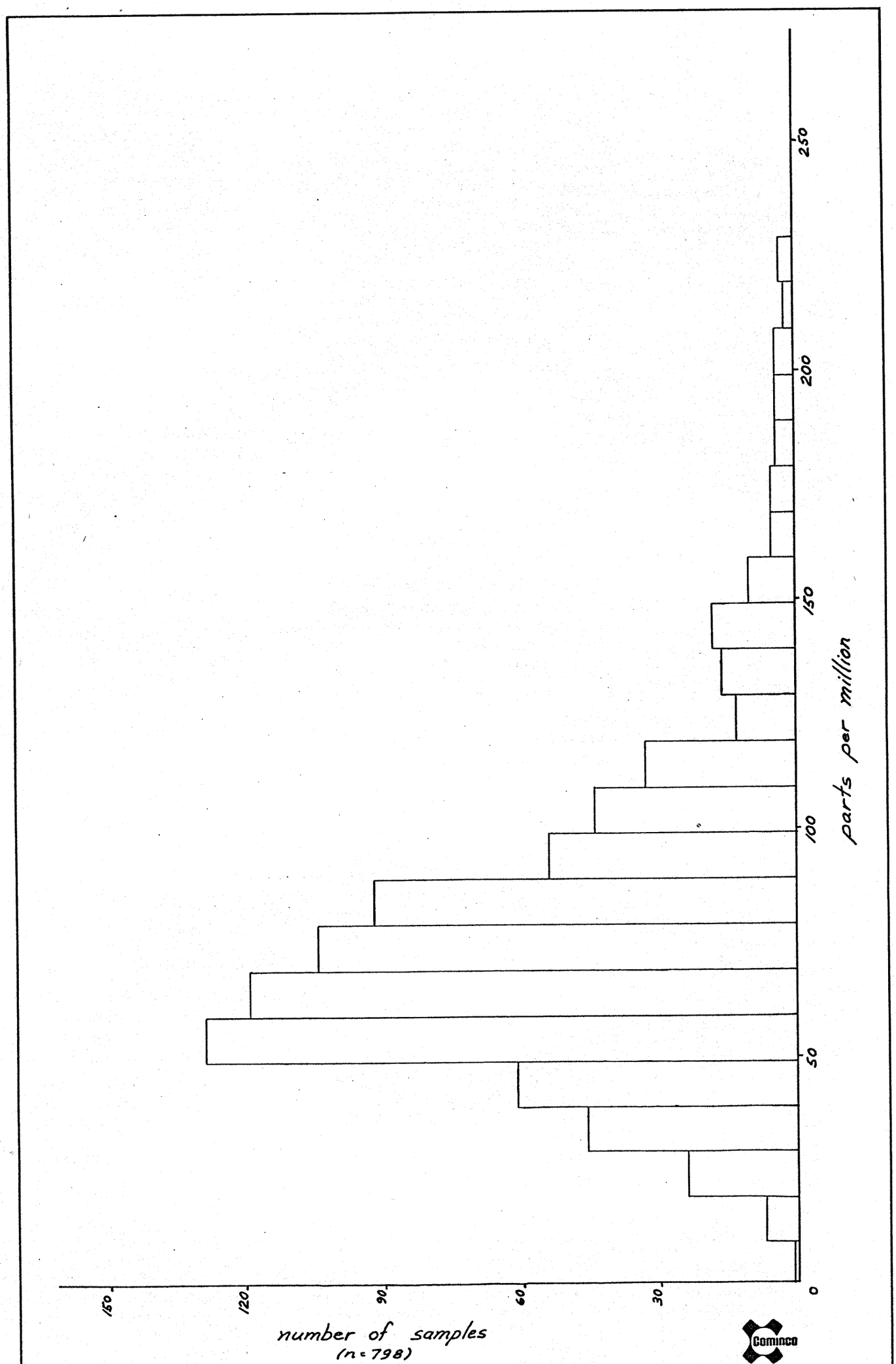
SOUTH HALF OF SOUTH VINE GRID

(NTS: 82G/SW)

Scale:	Date: 05 DEC 77	Plate:

NCI - 112A - CL

210-0610



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Revised by	Date	Revised by	Date

FIGURE 5A

ZINC HISTOGRAM A

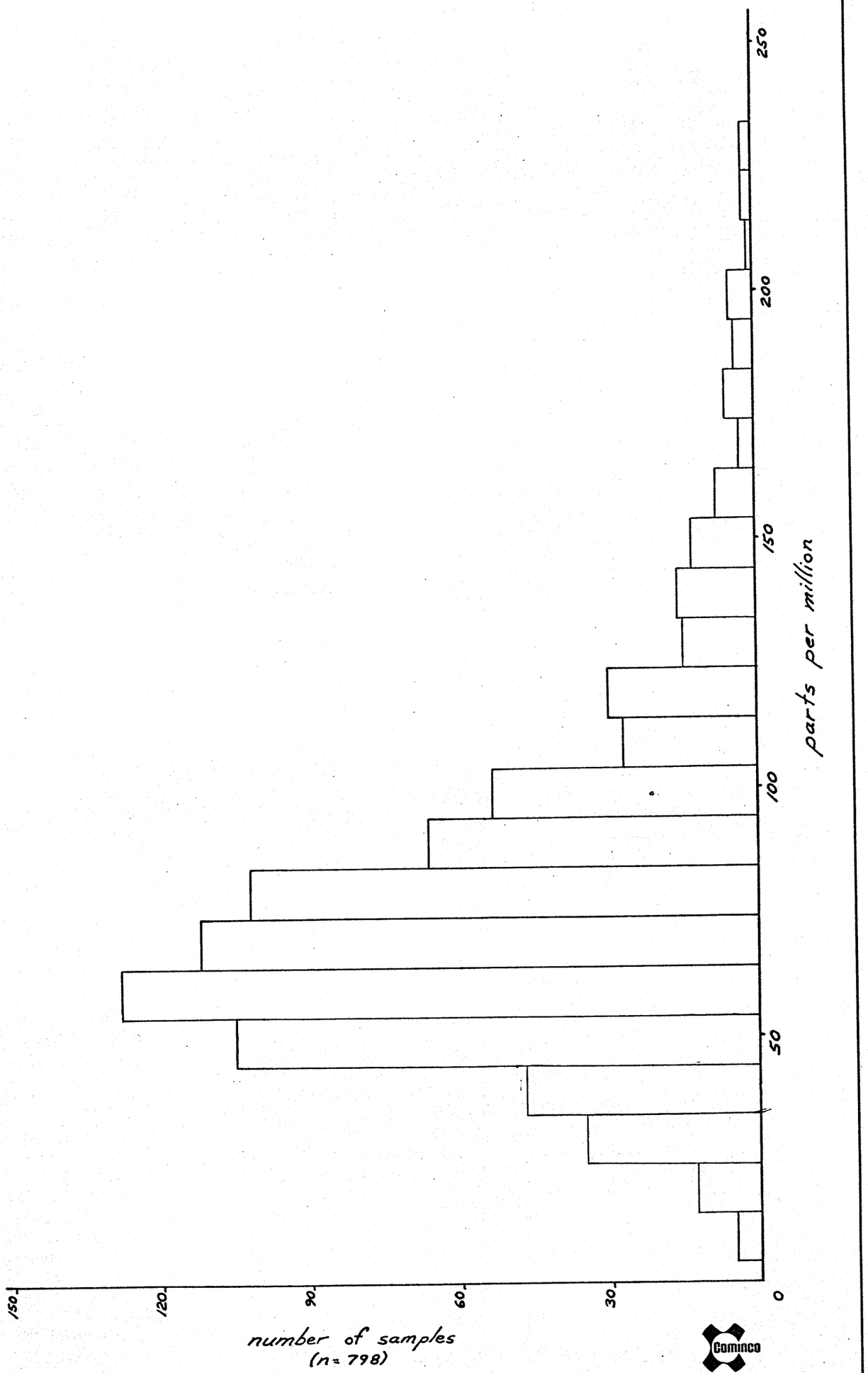
SOUTH HALF OF SOUTH VINE GRID

(NTS : 82G/5W)

Scale:	Date: 05 DEC 77	Plate:

NCI - 112A - CL

210-0610



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Revised by	Date	Revised by	Date	

FIGURE 5B

ZINC HISTOGRAM B

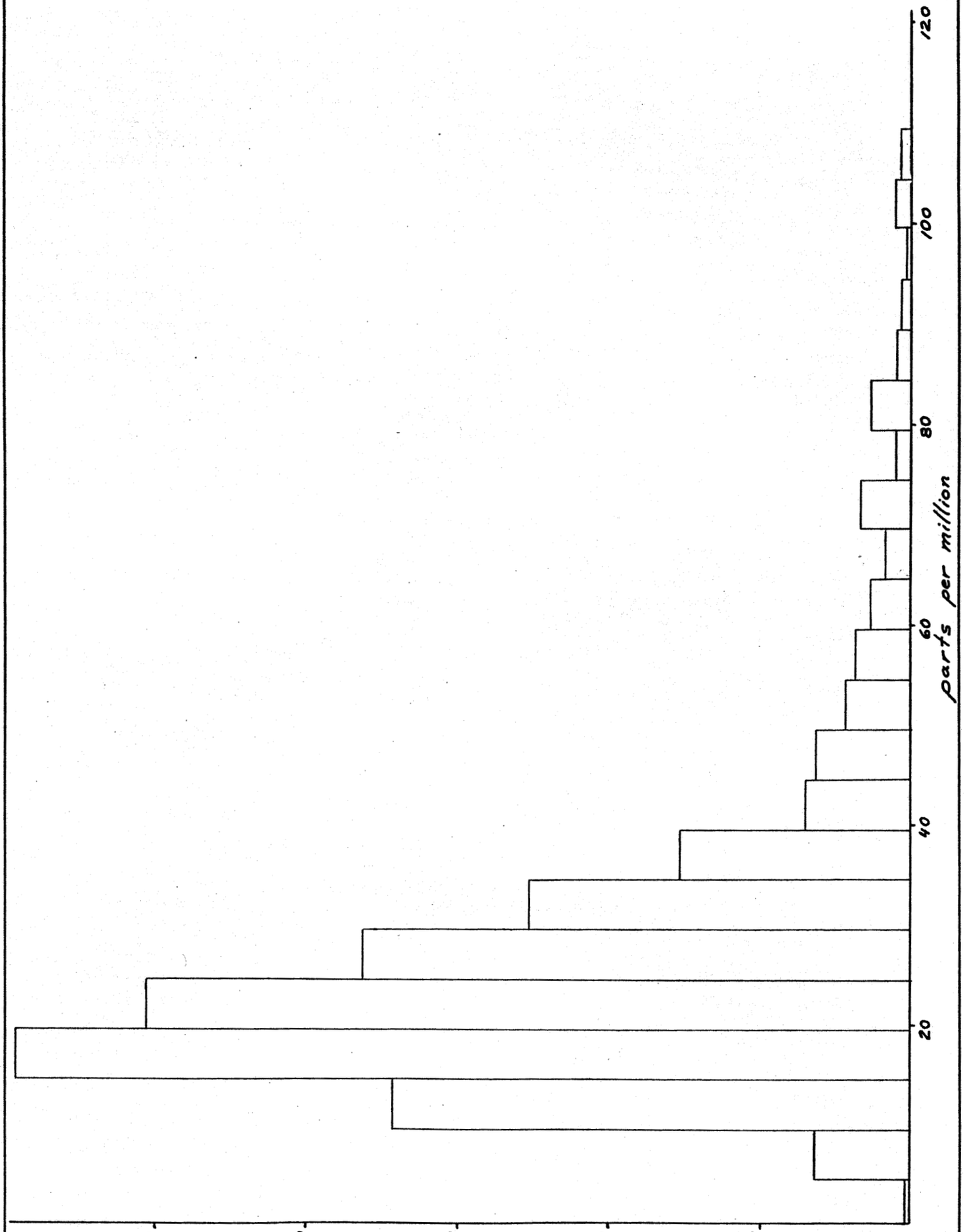
SOUTH HALF OF SOUTH VINE GRID

(NTS: 82G/5W)

Scale:	Date: 05 DEC 77	Plate:

NCI - 112A - CL

210-0610



Drawn by: JMF		Traced by:	
Revised by	Date	Revised by	Date

FIGURE 6

COPPER HISTOGRAM

SOUTH HALF OF SOUTH VINE GRID

(NTS : 82G/SW)

Scale:	Date: 05 DEC 77	Plate:

NCI - 112A - CL

210-0610

EXHIBIT "A"

Statement of Expenditures

SOUTH VINE

Geochemical Grid

GEOCHEMICAL SOIL SURVEY

As a result of this Geochemical soil survey, on the Vine Claims, the following expenditures were incurred by Cominco Ltd.

SALARIES	
Supervision	
May 15 to October 26: 5 days @ $100/day - E.W. Batchelor, Geologist	$ 500.00
Establishing Grid (line cutting)	
May 30 & 31: D. Byford, B. Fisher, D. MacDonald - 3 men x 2 days = 6 days @ $35/day.	210.00
G. McDonald, Tech., 2 days @ $50/day.	100.00
June 1-4 & 6-11: 10 days.	
D. Byford, B. Fisher, D. MacDonald - 3 men x 10 days = 30 man days @ $35/day.	1,050.00
G. McDonald, Tech., 10 days @ $50/day	500.00
Aug. 22-27 &29-31: 9 days.	
D. Byford, D. MacDonald, P. Kavanagh, W. Armstrong - 36 man days @ $35/day.	1,260.00
Sept. 1-2 & 6-9: 6 days.	
D. MacDonald, P. Kavanagh, R. Grainger, W. Armstrong, 24 man days @ $35/day.	840.00
Sampling Grid and Soil Preparation	
Sept. 12-16 & 19-22 - 9 days	
D. MacDonald, P. Kavanagh, R. Grainger, W. Armstrong, D. Roe: 5 men x 9 days @ $35/day - 45 man days.	1,575.00
Sept. 23 = 1 day.	
G. McDonald - 1 day @ $50/day.	50.00
W. Armstrong - 1 day @ $35/day	35.00
Sept. 26-30 = 5 days.	
B. Barre, 5 days @ $42/day.	210.00
G. McDonald, 5 days @ $50/day	250.00
D. Roe, W. Armstrong - 5 days x 2 = 10 days @ $35/day..	350.00
Oct. 1 & 3 = 2 days.	
G. McDonald, 2 days @ $50/day	100.00
W. Armstrong, 2 days @ $35/day.	70.00
Oct. 4 & 11-14 - 5 days.	
G. McDonald, 5 days @ $50/day	250.00
B. Barre, J. Bromley, I. McPhaden - 5 days x 3 men = 15 man days @ $42/day.	630.00
DOMICILE	
199 man days @ $10/day	1,990.00
TRANSPORTATION	
49 days rental of 4 x 4 @ $32/day.	1,568.00
ASSAYS	
1075 samples for Cu/Pb/Zn @ $2.50/sample	2,687.00
REPORT AND MAP PREPARATION	
G.L. Webber, Geologist: 4 days $ $100/day.	400.00
TOTAL EXPENDITURE	$14,625.00

This is Exhibit "A" to the Statutory Declaration of G.L. Webber, declared before me this 26 day of October, 1977.

A Commissioner for taking Affidavits for British Columbia

IN THE MATTER OF THE

B.C. MINERAL ACT

AND

IN THE MATTER OF A GEOCHEMICAL PROGRAMME

CARRIED OUT ON THE SOUTH VINE MINERAL CLAIMS

WEST OF MUNROE LAKE

in the Fort Steele Mining Division of the
Province of British Columbia

More Particularly N.T.S. 82G/5

A F F I D A V I T

I, G.L. WEBBER, of the City of Kimberley in the Province of British Columbia, make Oath and say:

1. That I am employed as a Geologist by Cominco Ltd. and as such, have a personal knowledge of the facts to which I hereinafter depose;

2. That annexed hereto and marked as Exhibit "A" to this my Affidavit is a true copy of expenditures incurred on a soil geochemical program, on the South Vine Mineral Claims.

3. That the said expenditures were incurred between the 15th day of May, 1977 and the 26th day of October, 1977, for the purpose of mineral exploration on the above noted claim.

Sworn Before Me at Cranbrook
in the Province of British Columbia, this 26th
day of October, 1977

G.L. Webber
G.L. WEBBER

A Commissioner for taking Affidavits
in the Province of British Columbia.

COMINCO LTD.

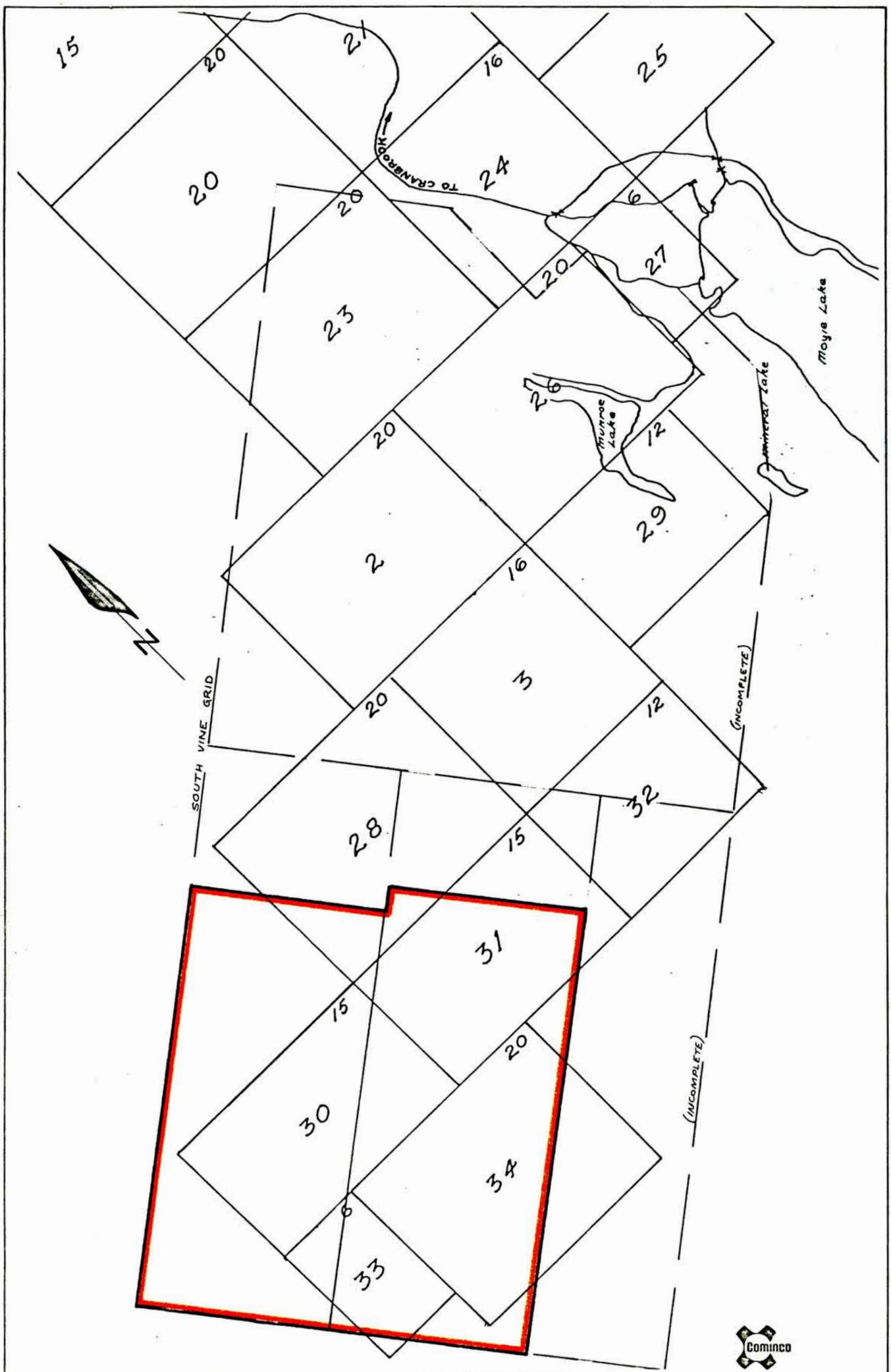
EXPLORATION DIVISION WESTERN DISTRICT

STATEMENT OF QUALIFICATIONS

G.L. Webber, has been involved in various types of mineral exploration work for Cominco Ltd. over the last twenty-five years.

I consider him well qualified to carry out the reporting on all phases of geological exploration work.

D.W. HEDDLE, P. Eng.
Assistant Manager
Exploration
Western District



Drawn by: JMF	Traced by:		
Revised by / Date	Revised by / Date		

LOCATION MAP

SOUTH HALF OF SOUTH VINE GRID
(AND VINE CLAIMS)

NTS: 82G/SW

Scale: 1:50,000	Date: 06 DEC 77	Plate: 1

NCI - 112A - CL

210-0610

0N 4N 8N 12N 16N 20N 24N

20W 16W 12W 8W 4W 0W 4E 8E 12E 16E 20E 24E 28E 32E

BASELINE A

BASELINE B

VINE 28 VINE 2

VINE 3 VINE 32

LEAD

N

EXAMPLE LEAD ZINC COPPER
21 34 13 (PPM)

LEAD VALUES (PPM)

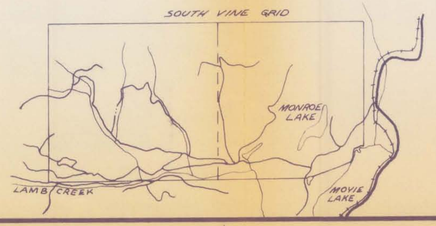
0 – 49

50 – 79

80 – 109

110 +

SOUTH VINE GRID



SCALE : 1:10,000

METERS 500 0 400 800 METERS

NTS: 82G/SW

SOUTH VINE GRID — SOUTH HALF

Drawn by: JMF Traced by:

Revised by | Date | Revised by | Date

BLW

SOUTH VINE RECONNAISSANCE

B HORIZON SOIL GEOCHEMISTRY

Scale: 1:10,000 Date: 15 NOV 77 Plate:

FORM 210-0860

NCI - 117 - C.L.

0N 4N 8N 12N 16N 20N 24N

20W 16W 12W 8W 4W 0W 4E 8E 12E 16E 20E 24E 28E 32E

BASELINE A

BASELINE B

VINE 28 VINE 2

VINE 3 VINE 32

EXAMPLE LEAD ZINC COPPER

21 34 13 (PPM)

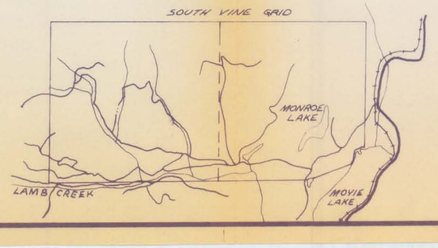
ZINC VALUES (PPM)

0 – 99

100 – 149

150 – 249

250 +



SCALE: 1:10,000

METERS 500 0 400 800 METERS

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 6543

NTS: 82G/SW

SOUTH VINE GRID — SOUTH HALF

Drawn by: JMF | Traced by:

Revised by	Date	Revised by	Date

SOUTH VINE RECONNAISSANCE

B HORIZON SOIL GEOCHEMISTRY

Scale: 1:10,000 | Date: 15 NOV 77 | Plate:

FORM 210-0860

NCI - 117 - C.L.

COPPER

0N 4N 8N 12N 16N 20N 24N

20W 16W 12W 8W 4W 0W 4E 8E 12E 16E 20E 24E 28E 32E

BASELINE A

BASELINE B

VINE 28 VINE 2

VINE 3 VINE 32

EXAMPLE LEAD ZINC COPPER

21 34 13 (PPM)

COPPER VALUES (PPM)

0 — 39

40 — 69

70 — 109

110 +

SOUTH VINE GRID

MONROE LAKE

LAMB CREEK

MOVIE LAKE

SCALE: 1:10,000

METERS 500 0 400 800 METERS

NTS: 82G/SW

SOUTH VINE GRID — SOUTH HALF

Drawn by: JMF Traced by:

SOUTH VINE RECONNAISSANCE

B HORIZON SOIL GEOCHEMISTRY

Scale: 1:10,000 Date: 15 NOV 77 Plate:

FORM 210-0860

NCI-117-O.L.