

GEOLOGICAL AND GEOCHEMICAL REPORT  
ON THE  
BOB CLAIMS

Latitude 61° 54'  
Longitude 132° 39'  
NTS 105 F/15

by

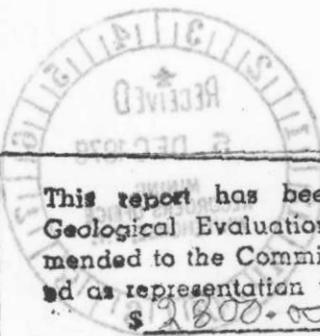
D.C. MILLER, P. ENG.  
and  
D.A.R. HENDRY, P. ENG.

October 1978

Covering Field Work Completed  
June 5, 6, 9, 1978

090400





This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of \$2800.00

*J.B. Cray*

Resident Geologist or  
Resident Mining Engineer

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

*B.R. Baxter*  
B. R. BAXTER  
Supervising Mining Recorder

*[Signature]*  
Commissioner of Yukon Territory

GEOLOGICAL AND GEOCHEMICAL REPORT  
ON THE  
BOB CLAIM

Latitude 61° 54'  
Longitude 132° 39'  
T12 102 E12

by  
D.C. MILLER, P. ENG.  
and  
D.A.E. HENDRY, P. ENG.

October 1918

Governing Field Work Completed  
June 2, 1918

074000



This report has been examined by Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

\$ \_\_\_\_\_

Resident Geologist or  
Resident Mining Engineer

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Section 53 (4) Yukon Quartz Mining Act.

Commissioner of Yukon Territory

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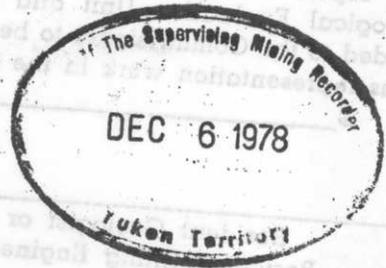
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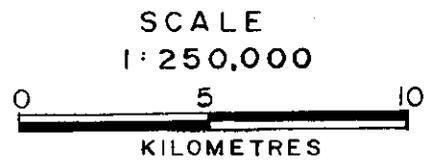
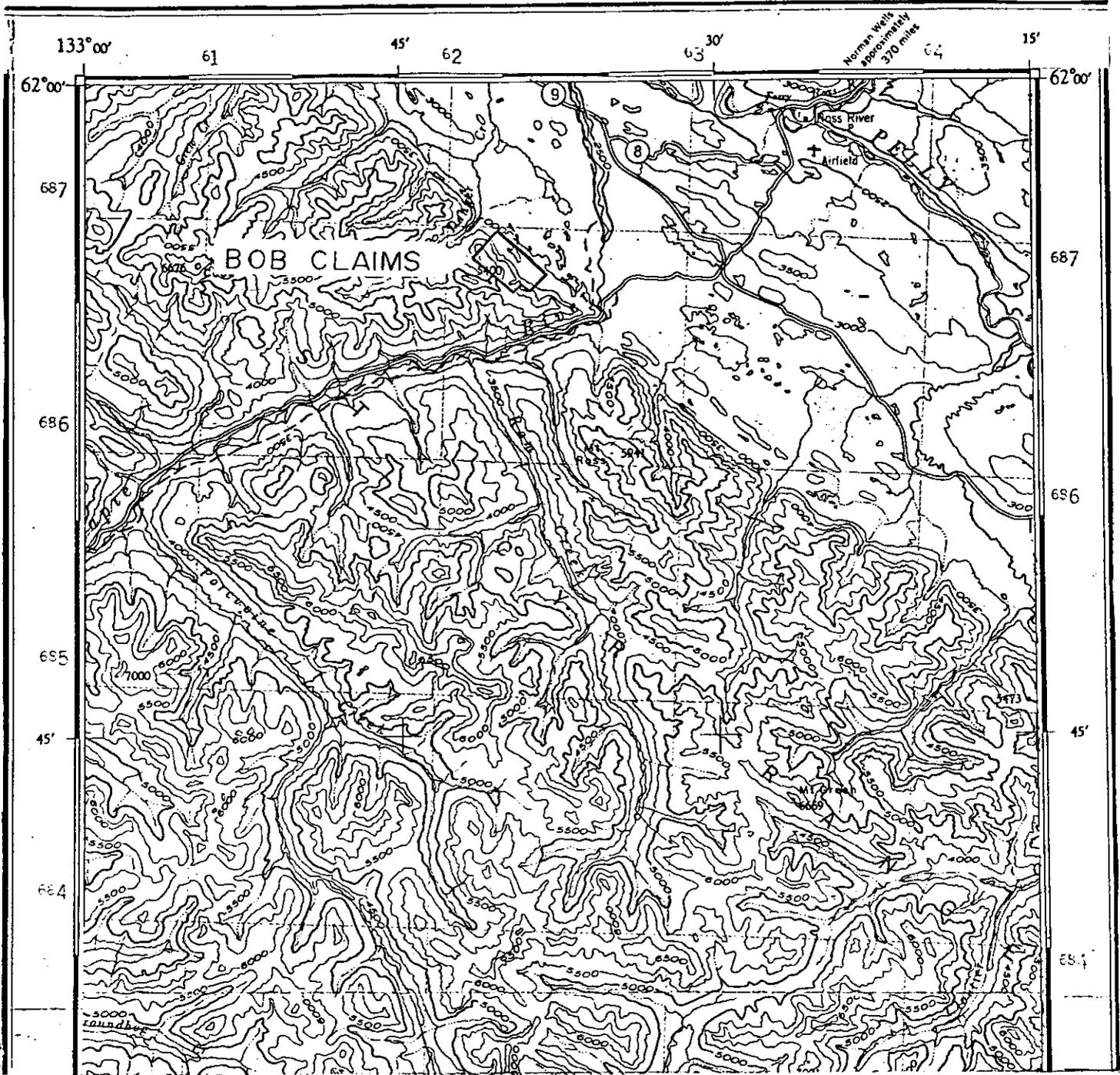
## APPENDICES

~~Appendix 1~~

~~List of personnel, addresses and time employed  
on project.~~

Appendix 2

Histograms and cumulative frequency graphs for  
lead and zinc in soils.



**ST. JOSEPH EXPLORATIONS LIMITED**  
TORONTO, CANADA

**BOB CLAIMS**  
YUKON  
LOCATION MAP

APPROX. LAT. & LONG. OF  
LOWER RT. COR. OF DWG.

61° 40' 00" LATITUDE  
132° 15' 00" LONGITUDE

PROJECT NO. 261.1

SHEET NO.

OF

REPORT NO. 1

NET 105 E-15

figure 1

Introduction and Summary

During June 5,6, and 9, geological and geochemical surveys were conducted on the Bob claims located near Ross River (figure 1). Soil samples were collected at 50 m intervals along lines 400 m apart. All samples were analysed for lead and zinc. Geological mapping and prospecting were done in conjunction with geochemical sampling. Grid stations were chained or measured with topofil, ribboned and tied to a baseline on the ridge above the claims.

Geological units comprise sediments and metasediments ranging from Cambrian to Silurian in age. Minor zinc reaction to "zinc zap" was found in several locations within a limestone unit. A zinc anomaly with values in the 1500 - 2300 ppm range follows this limestone unit also. Four marginally anomalous lead values lie in phyllitic rocks in the northern portion of the claims.

Conclusions and Recommendations

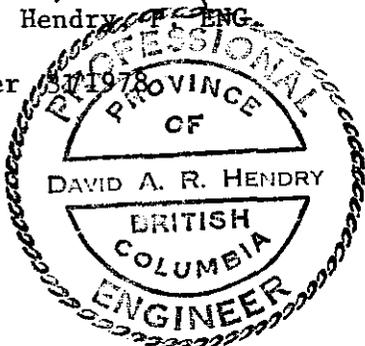
It is concluded from reconnaissance prospecting that the zinc and lead anomalies probably do not represent significant mineralization. It is recommended, however, that detailed prospecting be done over the zinc anomaly prior to allowing the claims to lapse.

Respectfully submitted,

*David Hendry*

D.A.R. Hendry, P. ENG.

October 31 1978



*D.C. Miller*

D.C. Miller, P. ENG.



### Location and Access

The Bob claims lie 12 km southwest of Ross River, Yukon. Access to the claims is gained most conveniently by helicopter from Ross River. The South Canol Road at Lapie River Canyon is 2.5 km east of the claims.

### Physiography

The claims lie along the northeastern front of the Pelly Mountains on the southwestern side of the Tintina Trench. Most of the Bob claims lie on mountainous terrain along the northeast face of a northwest trending ridge. The claims also extend northeastward onto low rolling hills at the base of the mountain. Elevations range from 850 to 1375 m.

Outcrops are abundant on ridges in the alpine and in creek draws, but are sparse within the lowland portion of the claims. A landslide (0.2 km<sup>2</sup>) now covered by vegetation lies in the northwest portion of the claims.

Timberline is at about 1450 m and most areas below this elevation contain slide alder, willow and stands of spruce and aspen.

Lowland portions of the claims were covered by northwestward advancing ice during the last glacial period. Subsequent soil developed in these areas is from glacial till. A post glacial layer of volcanic ash up to 20 cm thick is present over much of the claims.

Claims and ownership

Grant numbers, names and due dates for the Bob claims are summarized in the following table.

| Grant No.      | Name     | Due Date       |
|----------------|----------|----------------|
| YA 22369-22385 | Bob 1-17 | March 10, 1979 |

The 17 Bob claims form a contiguous block. They are owned by St. Joseph Explorations Ltd.

History and Previous Work

The claims were staked on March 10, 1978 and no previous work was noted.

1978 Programme

Initial work consisted of preparation of a base map at a scale of 1:12,500.

During June 5, 6, & 9 baseline preparation and geological and geochemical surveys were conducted in conjunction with similar work on the Tom claims located 5 km southeast. Soil samples were collected at 50 m intervals on lines 400 m apart. Wider spacing was used over areas covered by landslide and swampy areas where sampling was difficult. A total of 160 soil samples were collected and analysed for lead and zinc. Only 3 silt samples were taken due to limited drainage. They were also analysed for lead and zinc.

Geological mapping and prospecting were done in conjunction with geochemical work. Grid stations were chained or measured with topfil, ribboned and tied to a baseline on the ridge above the claims. All work included chaining and flagging the baseline was done by St. Joseph Explorations Ltd. personnel based at Ross River and transported to the property daily by helicopter.

### Geological Setting

The claims primarily overlie faulted blocks of Cambrian to Silurian eugeoclinal clastic rocks of the Selwyn Basin. These units are exposed along the southwest side of the Tintina Fault which parallels the northeast boundary of the claim block and lies just off the claims. Lithologies comprise schist, phyllite, calcareous phyllite, limestone and slate. Bedding trends generally east-west and northwest-southeast with dips variable due to folding parallel to the strike. The folded Ordovician-Silurian section is apparently thrust onto Cambrian phyllites.

### Stratigraphy and Mineralization

The oldest rocks on the property are calcareous phyllites grading to limestone locally, with minor dolomite and quartzite. These probably overlie Cambrian schists which are not exposed on the claims.

The Ordovician-Silurian package is apparently unconformable with the underlying phyllites. The lowest unit is black to rusty, locally graphitic and pyritic, slate. The upper member is medium to dark grey, thin bedded limestone which contains some phyllite and siltstone. Both units are cut by white quartz veins containing chrome mica and copper minerals in the limestone and rarely in the slate.

(5)

The flat lower portion of the claims are covered by a smear of glacial sandy soil and gravel. Volcanic ash covers the glacial material up to 25 cm. thick in places although generally averages 5 - 10 cm. thick.

Table of Formations

| PERIOD                      | GSC*<br>Map Unit | PROPERTY**<br>Map Unit | LITHOLOGY   | THICKNESS (METRES)<br>approximate                   |
|-----------------------------|------------------|------------------------|---|---|
| Quaternary                  |                  | 11                     | Glacial till  |   |
| Ordovician<br>&<br>Silurian | OSslc            | 4                      | Limestone; medium to dark grey, thin bedded, contains white quartz veins with green chrome mica and some copper minerals, local hydrozincite. Includes some phyllite and siltstone. | 150 - 200 m   |
|                             | OSslc            | 3                      | Slate; black to rusty, locally graphitic, local strong pyrite, some white quartz veins with copper minerals.  | base unexposed, greater than 300 m.                 |
| Ordovician<br>&             | COcsl            | 2                      | Phyllite;<br>2a calcareous phyllite, limestone, dolomite, minor quartzite<br>2b calcareous phyllite, thin bedded, fissile, in part brown and rusty.                                 | greater than 300 m complexly folded, base unexposed |
| Cambrian                    | COcsl            | 1                      | Schist; brown biotite schist.   | not exposed on the property                         |

\* Open File 486, G.S.C., Templeman-Kluit, 1977

\*\* Accompanying geology map, Map No. 2

### Structure

The Tintina Fault, lying just northeast of the claims trends northwest-southeast. It is a right lateral fault with 450 km of movement mainly during the Cretaceous. West of the fault northeasterly directed reverse faults have stacked Ordovician-Silurian units onto Cambrian rocks. Folding accompanying the faulting has warped the overlying package around a northwest-southeast axis.

### Geochemistry

Soil environments on the Bob claims can be divided into three types. These comprise the following:

- (1) soils from higher elevations, alpine, shallow depth to outcrop, soils are well drained, soil material is generally of residual origin, A & B horizons are generally fairly thin;
- (2) soils from lower slopes, northeast facing, thick willow and alder, permafrost present, soils have developed from a mixture of transported material from upslope and residual material, generally thick A and B horizons;
- (3) soil from low hills along the base of the mountain front, soils are well developed from parent material composed mostly of till, but locally from outcrop.

A total of 160 soil samples were collected by St. Joseph personnel and were analyzed by Bondar-Clegg Ltd., of Whitehorse, Yukon.

Where possible, samples were collected from the B horizon. However, because of local frozen soil or very thick organics, 30% of the samples were collected from A horizon organics. During collection, samples were coded for the following properties.

(1) Wet, dry or frozen; (2) depth of samples; (3) presence or absence of organics; (4) depth of A horizon; (5) presence or absence of volcanic ash layer; (6) color and texture; (7) horizon samples; (8) vegetation environment; (9) slope; (10) angularity of rock fragments; (11) presence of frost boil; and (12) presence of iron precipitates.

Samples were packaged in standard kraft bags and shipped to Whitehorse for drying, screening and analyses. Minus 80 mesh portions of samples were digested with aqua regia and analyzed for lead and zinc by the atomic absorption method.

Analyses values for lead and zinc were plotted on the accompanying maps 3 and 4. Histograms and cumulative frequency graphs for A horizon and B plus C horizons groups were prepared for these elements, and are appended.

Lead values in both A and B plus C soils are roughly log-normally distributed. In A horizon soils, no anomalous population is seen. The 0.1% upper limit ( $X + 3\sigma$ ) for this populations would be approximately 30 ppm. No values fall above this. In B & C soils, values above 50 ppm are definitely anomalous and those from 30-50 ppm possibly anomalous. The lead map (map 3) has been contoured at 30 ppm.

Zinc values in B & C soils are log-normally distributed. This is also probably true for A horizon soils although the graph is too complex to tell. The possibly anomalous population may extend as low as 1500 ppm, which has been contoured on the accompanying Map 4. Definitely anomalous values are over 5000 ppm, of which there are none.

REFERENCES

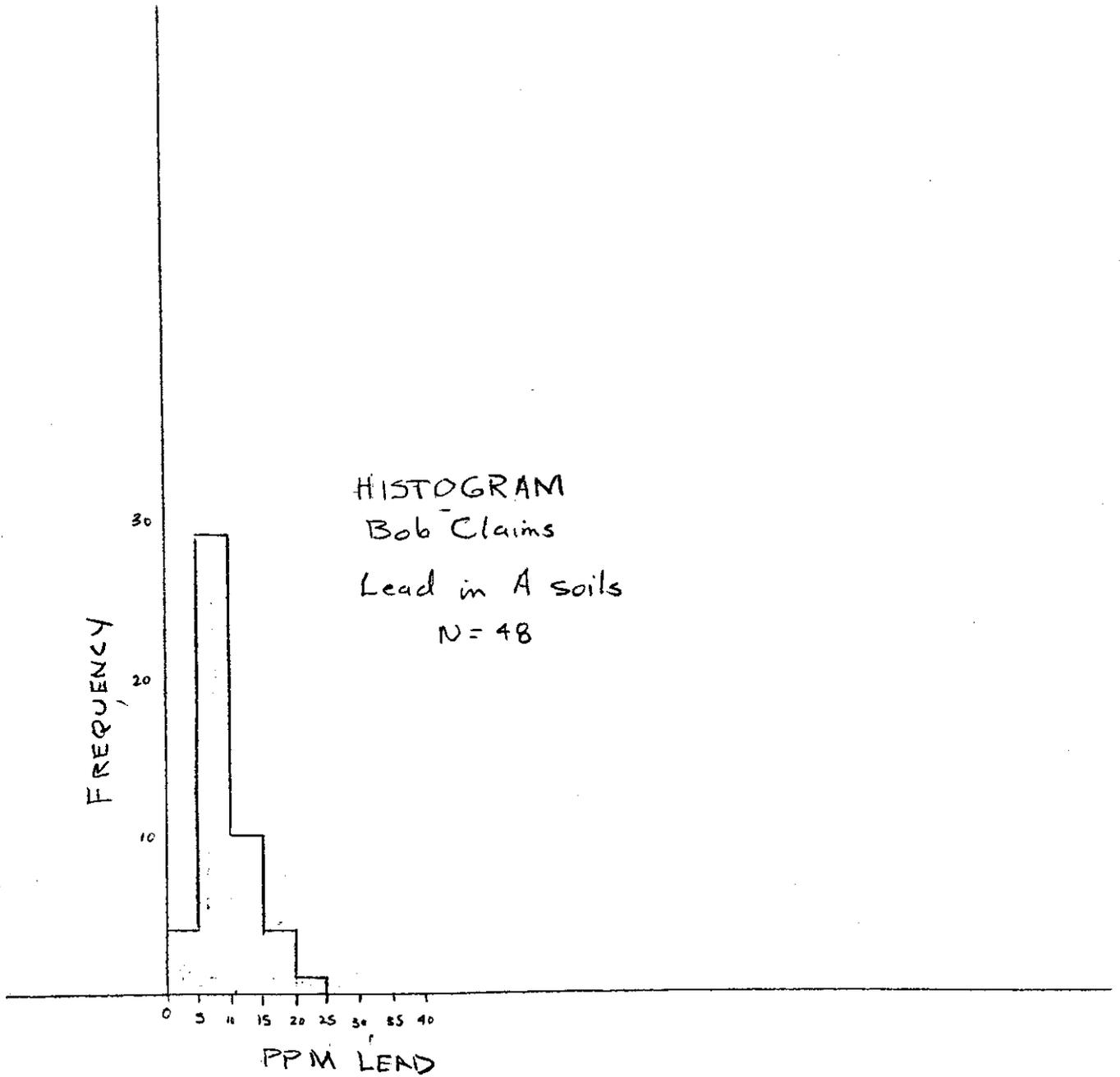
Campbell, R.B.

1967: Geology of Glenlyon map-area, Yukon Territory  
(105L); Geol. Surv. Can., Mem. 352.

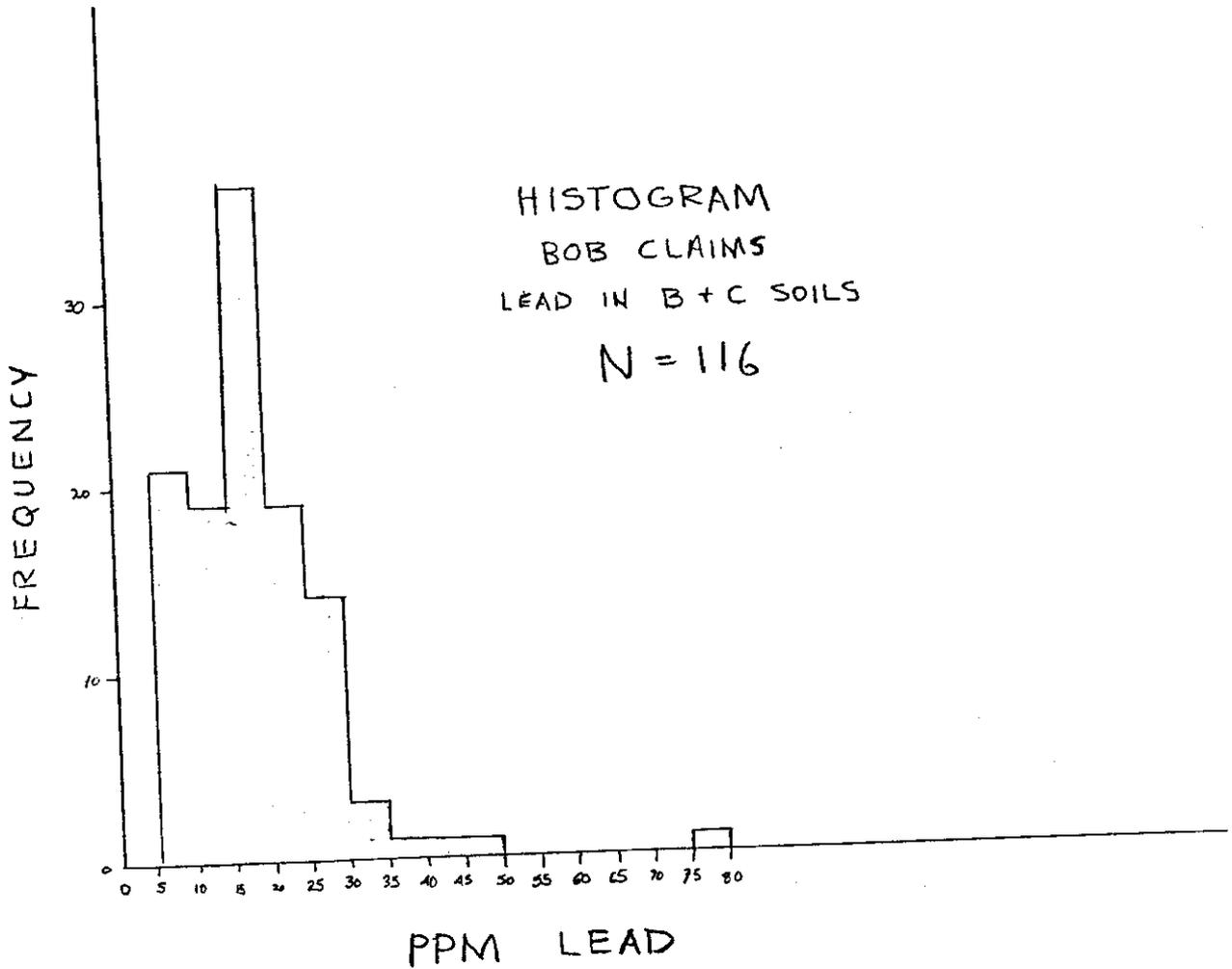
Templeman-Kluit, D.J.

1977: Quiet Lake and Finlayson Lake map-areas,  
Yukon Territory; Geol. Surv. Can., OPEN FILE 486.

# APPENDIX II



HISTOGRAM  
BOB CLAIMS  
LEAD IN B+C SOILS  
N = 116



Histogram (Arithmetic Cells) -

Bob Claims  
ZINC in A soils  
N = 48

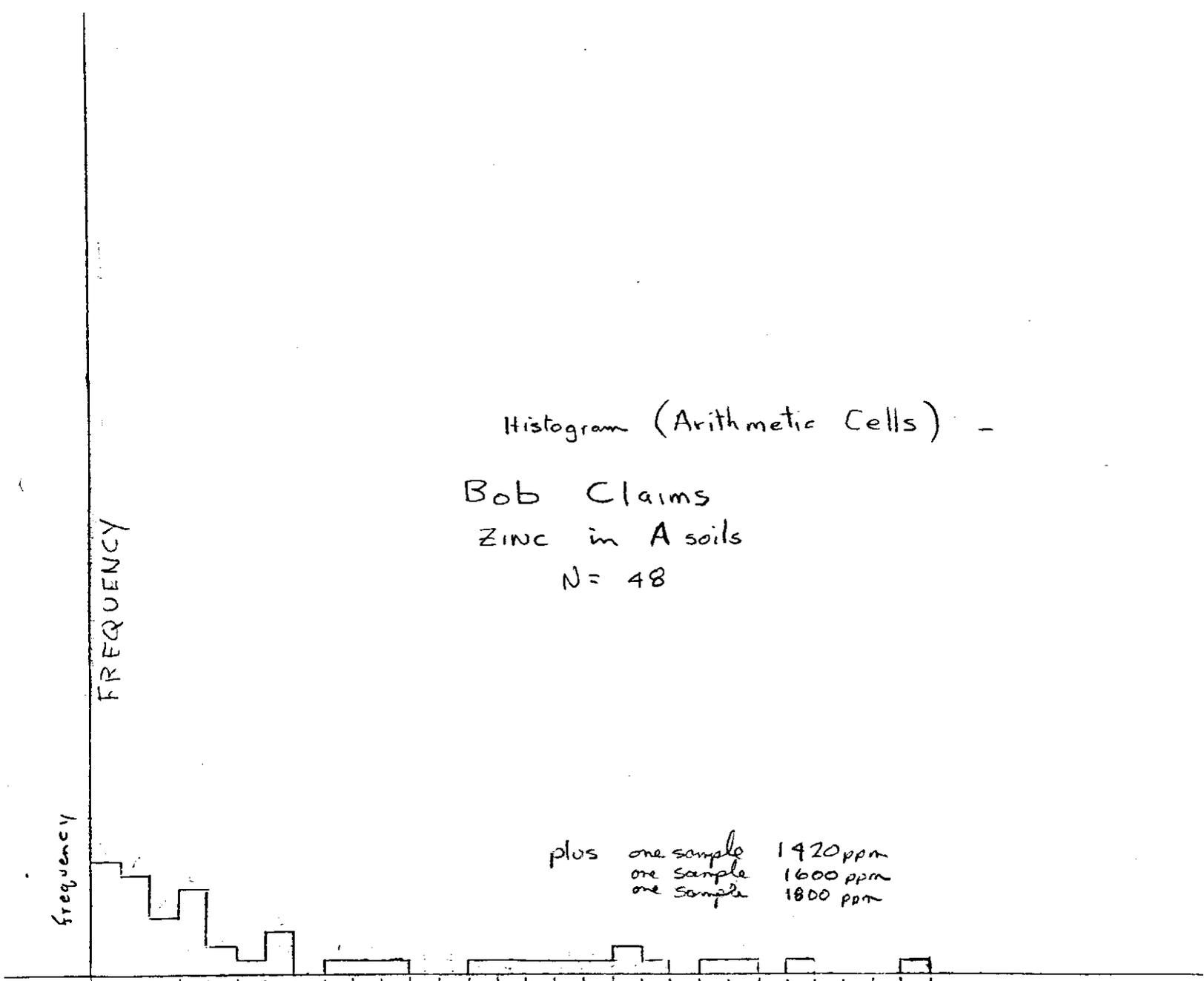
FREQUENCY

frequency

plus one sample 1420 ppm  
one sample 1600 ppm  
one sample 1800 ppm

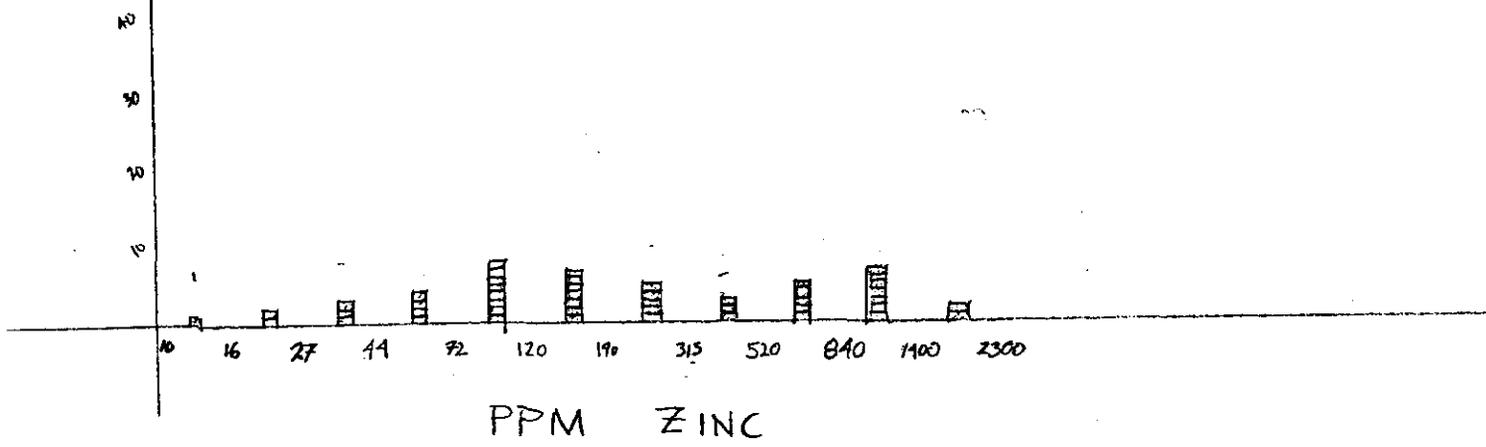
0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1200 1250 1300 1350 1400 1450

PPM ZINC



FREQUENCY

Histogram (Logarithmic Cells)  
Bob Claims  
Zinc in A soils  
N = 47



FREQUENCY

10

30

20

10

0

HISTOGRAM (ARITHMETIC CELLS)  
BOB CLAIMS

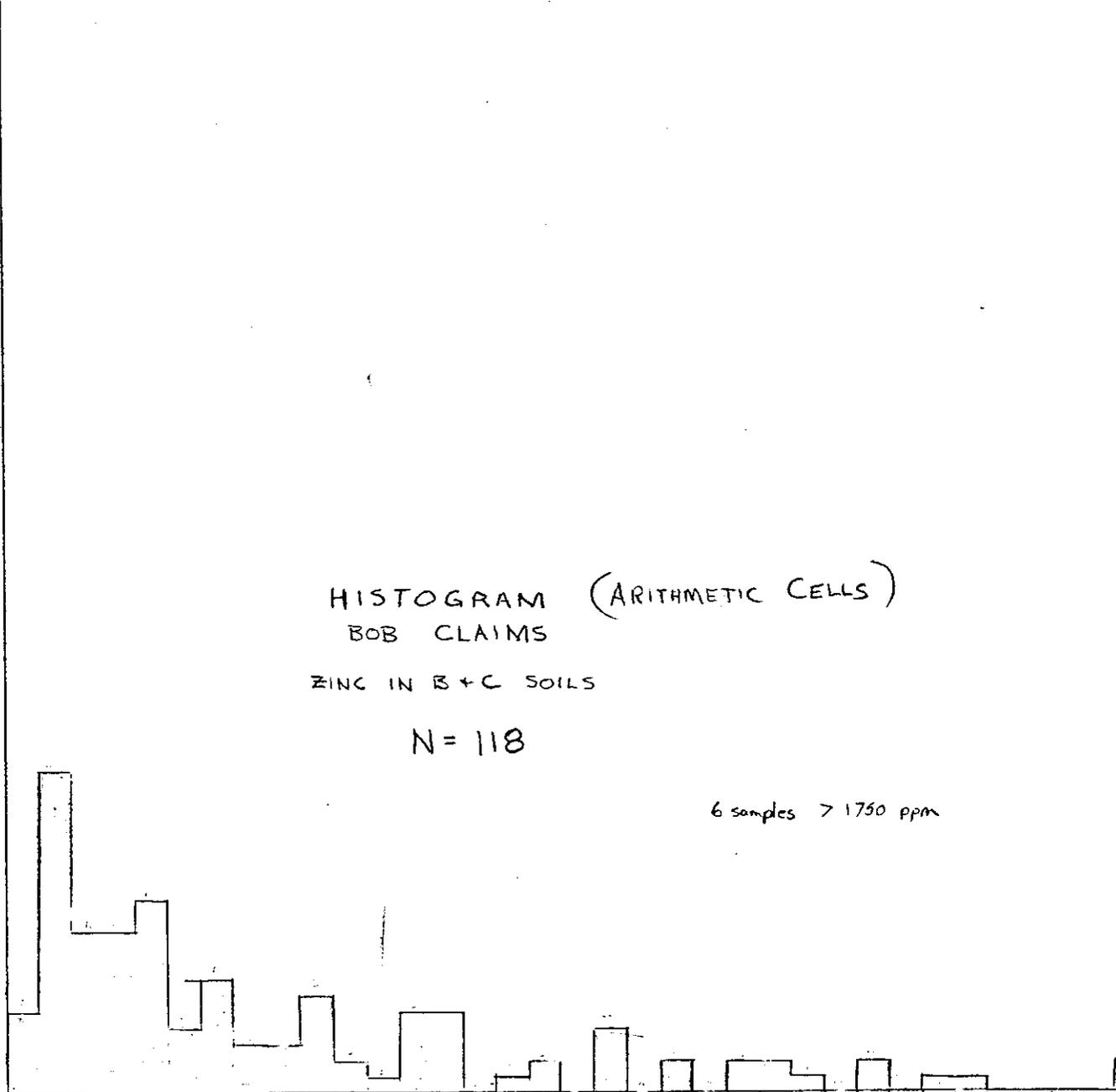
ZINC IN B + C SOILS

N = 118

6 samples > 1750 ppm

0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1200 1250 1300 1350 1400 1450 1500 1550 1600 1650 1700

PPM ZINC

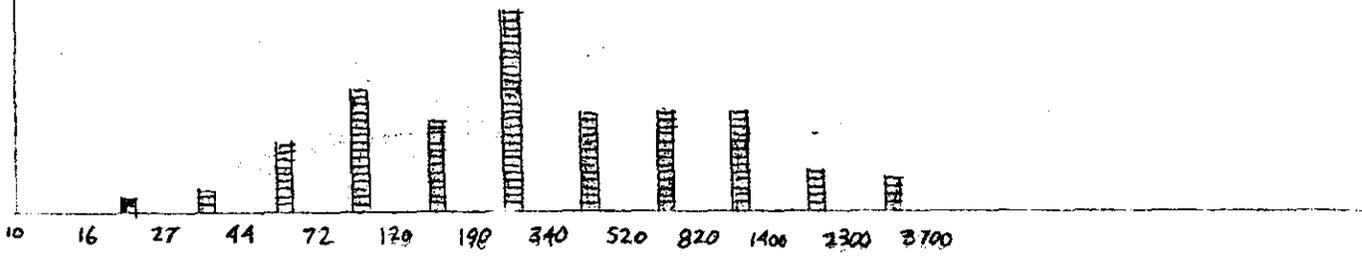


FREQUENCY

# HISTOGRAM (Logarithmic Cells)

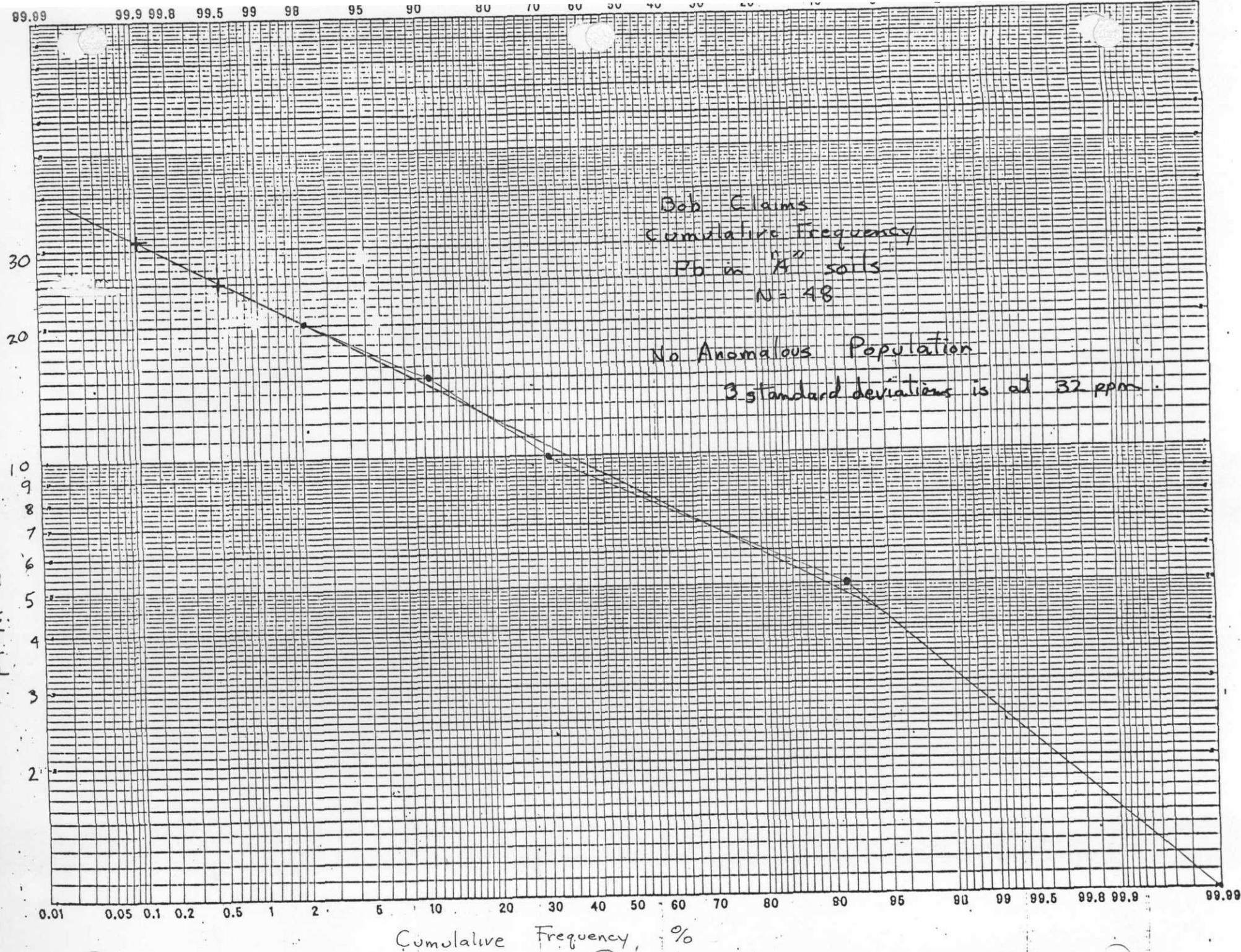
Bob Claims  
Zinc in B+C soils

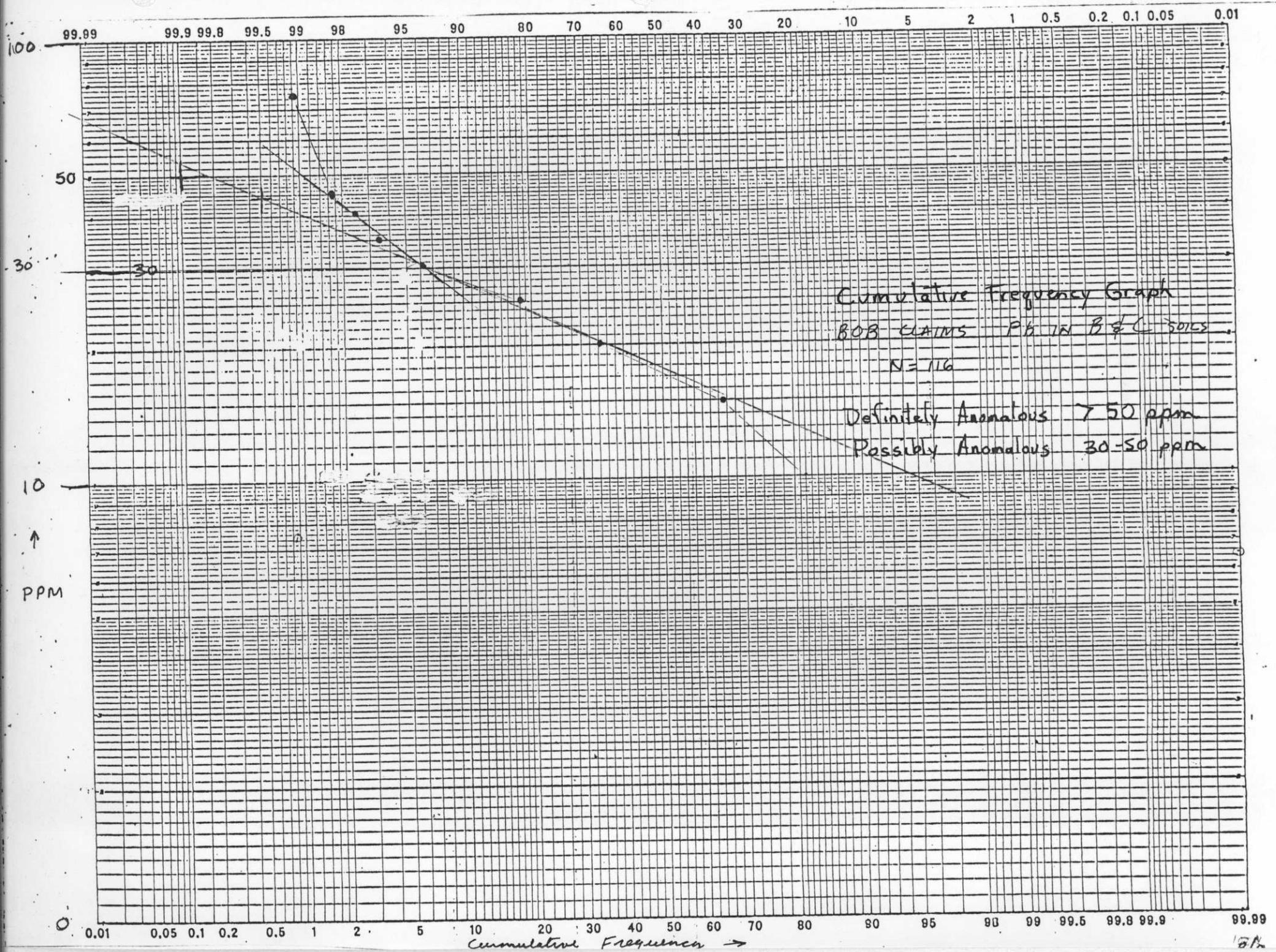
N=116

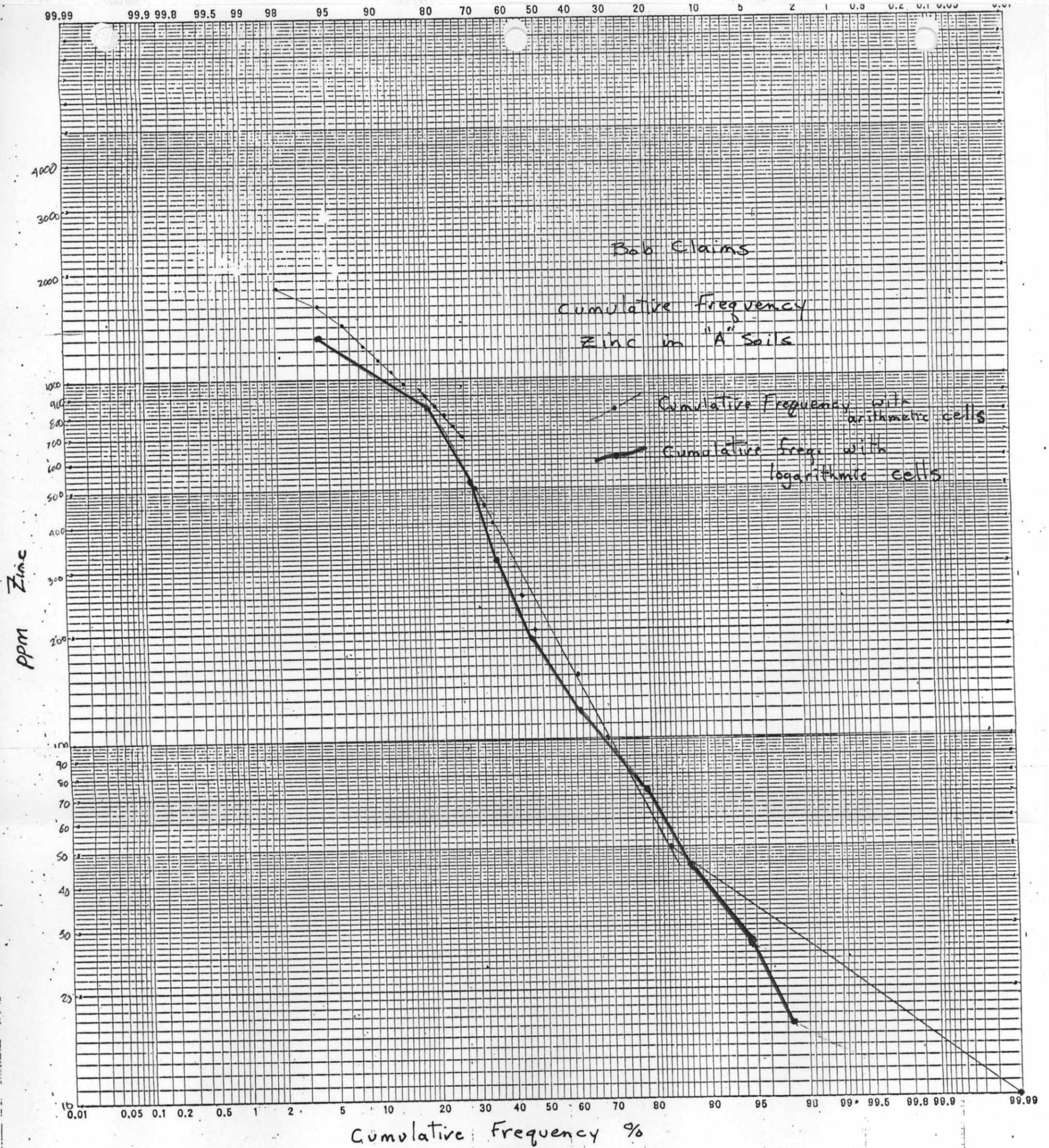


PPM ZINC

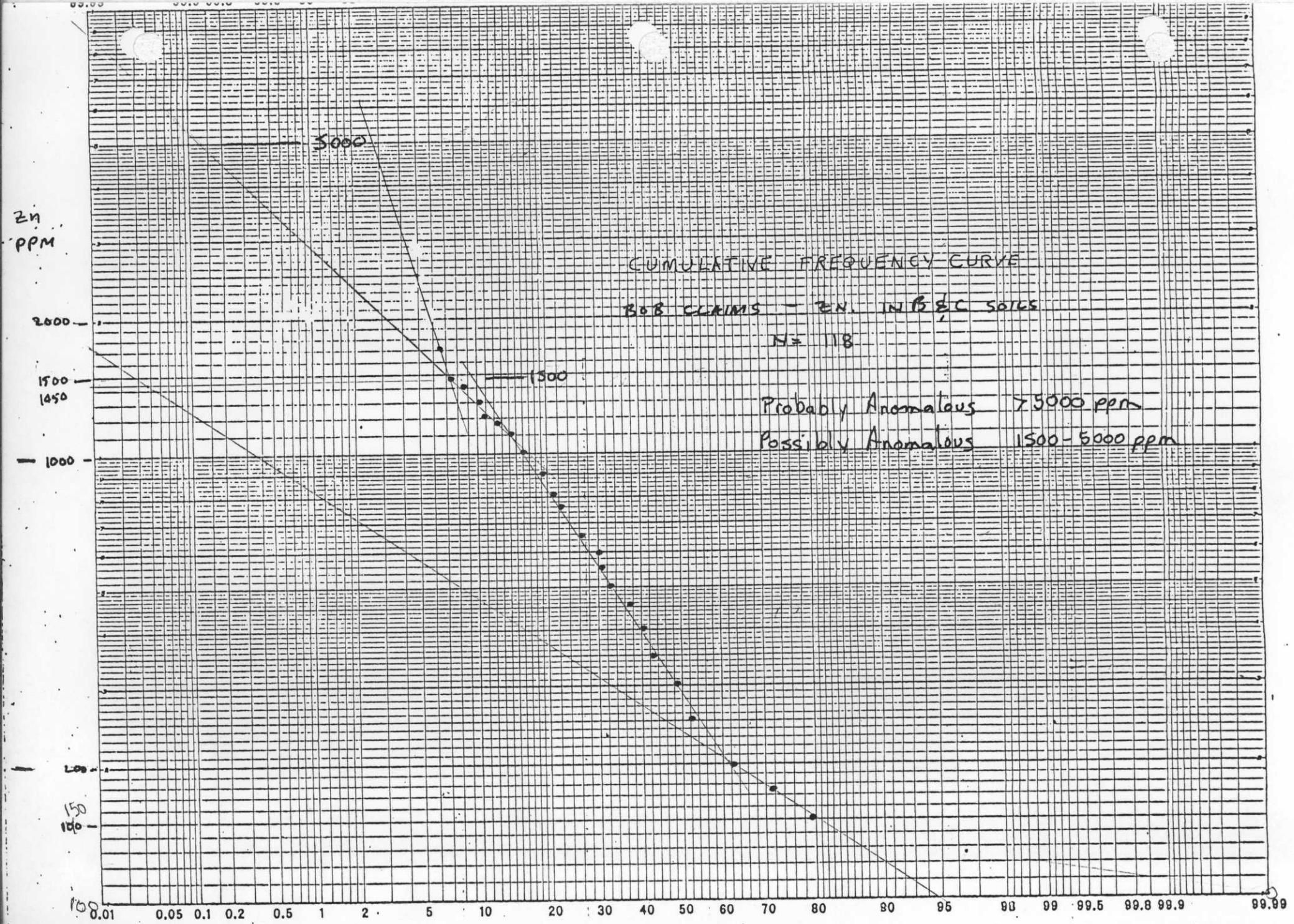
PPM LEAD



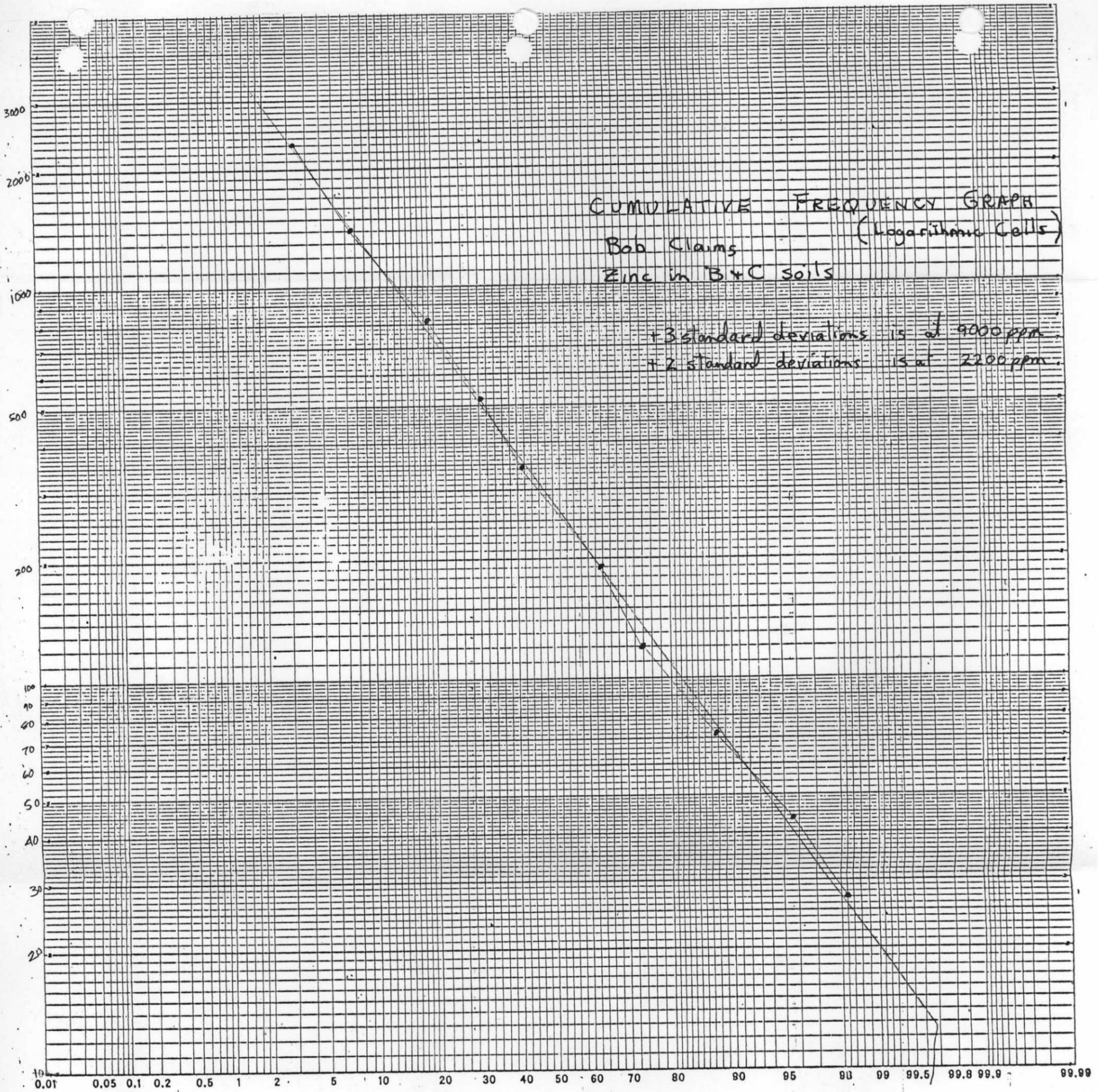




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PPM ZINC



Cumulative FREQUENCY %



- LEGEND**
- GRID LINE, SOIL SAMPLE SITE
  - LAKE, STREAM, SILT SAMPLE
  - SWAMP
  - LANDSLIDE
  - CLIFF
  - FAN DEPOSIT
  - CLAIMPOST

120 E  
116 E  
112 E  
108 E  
104 E  
100 E

To accompany report by D.C. Miller and D.A.R. Hendry dated October 1978



**ST. JOSEPH EXPLORATIONS LIMITED**  
TORONTO, CANADA

**BOB CLAIMS**  
**CLAIM MAP & SILT SAMPLE NUMBERS**

|   |                   |                  |  |
|---|-------------------|------------------|--|
| SCALE: 1:12,500                           |                   | 0 250 500 METRES |  |
| APPROX LAT & LONG OF LOWER RT COR. OF DWG | PROJECT NO. 261.1 | SHEET NO. 1 OF 1 |  |
| 61° 54' LATITUDE                          | MAP NO.           | N.T.S. 105F-15   |  |
| 132° 39' LONGITUDE                        |                   |                  |  |



- LEGEND**
- +---+---+ GRID LINE, SOIL SAMPLE SITE
  - LAKE, STREAM, SILT SAMPLE
  - \*---\*---\* SWAMP
  - ▲ LANDSLIDE
  - |—|—| CLIFF
  - ▲ FAN DEPOSIT
  - CLAIMPOST

**GEOLOGICAL LEGEND**

- ORDOVICIAN-SILURIAN
- 4 Limestone Medium to dark grey, thin bedded, contains white quartz veins with green chrome mica and some copper minerals and hydrozincite, includes some phyllite and siltstone
  - 3 Slate Black to rusty, locally araphitic, locally strong pyrite, some white quartz veins with copper minerals
- Cambrian-Ordovician
- 2 Phyllite 2a. calcareous phyllite, limestone dolomite, minor quartzite  
2b. calcareous phyllite, thin bedded, fissile in part brown and rusty weathered
  - 1 Schist Brown biotite schist, not exposed on property
- 1/4/20 BEDDING, FOLIATION
- OUTCROP
- - - GEOLOGICAL BOUNDARY (APPROXIMATE)
- HZN HYDROZINCITE
- ~ REVERSE FAULT



**ST. JOSEPH EXPLORATIONS LIMITED**  
TORONTO, CANADA

**BOB CLAIMS**  
**GEOLOGY**

SCALE 1:12,500

APPROX LAT & LONG OF LOWER RT COR OF DWG

61.54 LATITUDE  
132.39 LONGITUDE

PROJECT NO. 26L1

MAP NO. 2

SHEET NO. 1 OF 1

NTS 105F-15

To accompany report by D.C. Miller and D.A.R. Hendry dated October 1978





- LEGEND**
- GRID LINE, SOIL SAMPLE SITE
  - LAKE, STREAM, SILT SAMPLE
  - SWAMP
  - LANDSLIDE
  - CLIFF
  - FAN DEPOSIT
  - CLAIMPOST
  - PPM ZINC
  - >1500 PPM ZINC

To accompany report by D.C. Miller and D.A.R. Hendry dated October 1978



**ST. JOSEPH EXPLORATIONS LIMITED**  
TORONTO, CANADA

**BOB CLAIMS**  
**P.P.M. ZINC IN SOILS & SILTS**

SCALE 1:12,500 METRES

|  |                   |                  |
|--|-------------------|------------------|
| APPROX LAT & LONG OF LOWER RT COR OF DWG | PROJECT NO. 261.1 | SHEET NO. 1 OF 1 |
| 61° 54' LATITUDE                         | MAP NO. 4         | NTS 105F-15      |
| 132° 39' LONGITUDE                       |                   |                  |