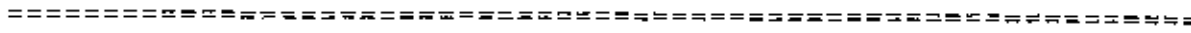


COMINCO LTD.

EXPLORATION

WESTERN DISTRICT



GEOCHEMICAL REPORT

CLAIR 3, 4 and 5

Fort Steele Mining Division
N.T.S. 82F/9

Latitude: 49° 35'N

Longitude: 116° 15'W

Kootenay Exploration
2450 Cranbrook Street
Cranbrook, B.C.

RECEIVED

OCT 23 1979

GOLD COMMISSIONER
FORT STEELE MINING DIVISION
CRANBROOK, B.C.

Reported by:

I.D. McCARTNEY

Under the supervision of:

DOUGLAS ANDERSON

October, 1979

RECEIVED
GOLD COMMISSIONER
FORT STEELE MINING DIVISION
CRANBROOK, B.C.
7681
part 1
of 2

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COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

GEOCHEMICAL REPORT

CLAIR 3, 4, 5.

=====

1.00 GENERAL STATEMENT

This report details the results of geochemical soil surveys conducted on the Clair 3, 4 and 5 mineral claims (45 units) during the period May 1, 1979 to September 24, 1979.

Expenditures incurred in carrying out the geochemical programs amounted to \$3,770.00.

A geological program was conducted during the same time period and is the subject of a separate report. Total expenditures for the geological program were \$6,655.00.

Cominco requests a PAC withdrawal amounting to 30 per cent of the combined geological and geochemical programs (30% of \$10,425 = \$3,127.50). This raises the total expenditure to \$13,552.50.

It is requested that \$13,500.00 of this amount be applied as follows:

CLAIR 3 - 18 units @ \$100/year/unit for 3 years	\$ 5,400
CLAIR 4 - 18 units @ \$100/year/unit for 3 years	5,400
CLAIR 5 - 9 units @ \$100/year/unit for 3 years	<u>2,700</u>
	\$13,500

A Statement of Exploration and Development was submitted to the Gold Commissioner in Cranbrook, B.C., on September 25, 1979.

2.00 INTRODUCTION

2.10 General

Soil sampling surveys on Clair claims were conducted to explore for Pb-Zn deposits in the Aldridge Formation. The portion of those surveys on Clair 3, 4 and 5 is the subject of this report. Two types of soil sampling surveys were conducted:

1. A grid survey with lines 150 metres apart and 50 m sample spacing along lines. Part of this survey was conducted on Clair 3 and 5 and was designed to test the economic potential of an Aldridge Formation wacke subunit.
2. A contour survey where samples were collected every 60 m along lines following a topographic contour. Part of this survey was conducted on the southern part of Clair 4 to evaluate areas of poor outcrop exposure.

A total of 368 samples were collected from the "B" soil horizon on Clair 3, 4 and 5 and were analyzed for Pb and Zn by atomic absorption. Threshold values were established using standard histograms and cumulative probability plots. (See attachments).

The field work was conducted between the period May 1st, 1979 to September 24th, 1979. Total expenditures for the geochemical program were \$3,770.00.

2.20 Location and Access

Clair 3, 4 and 5 are situated approximately 25 km west of Kimberley on the north side of the St. Mary River. They are part of the thirteen claim Clair group which ties on to the southwest corner of the Sullivan Mine claim block.

Latitude: 49° 35'
Longitude: 116° 15'

N.T.S: 82F/9
M.D: Fort Steele

Access to the property is via good logging roads up the St. Mary River valley and Meachem Creek. A hiking trail extends up Alki Creek through Clair 5. No secondary 4-wheel drive roads exist and vehicle access is restricted to the valley floor.

2.30 Topography and Vegetation

On the southern part of Clair 4, in the vicinity of the contour samples there is heavy forest cover, often with thick stands of immature lodgepole pine and cedar. There are few rock outcrops, and slopes are of gentle to moderate steepness.

On the north side of the St. Mary River valley slopes are steep and rugged. Cliffs and blocky talus slopes make it impossible to obtain soil samples at many sites. Outcrop is abundant, soil cover relatively thin and forest cover is sparse.

2.40 Ownership and Status

The Clair Claim group is 100% Cominco-owned. The status of Clair 3, 4 and 5 is as follows:

	<u>No. of Units</u>	<u>Date Recorded</u>	<u>Anniversary Date</u>
CLAIR 3	18	Sept. 25, 1978	Sept. 25, 1979
4	18	Sept. 25, 1978	Sept. 25, 1979
5	9	April 27, 1979	April 27, 1980

3.00 GEOCHEMISTRY

3.10 Sampling Procedures

All samples were taken on the "B" soil horizon with either a mattock (grub-hoe) or a small spade-type shovel. The average depth of sample was 15 cm. Samples were collected in wet strength kraft paper bags. Contour sample lines used a topofoil chain for measuring distances and an altimeter for elevation control. Orthophoto basemaps aided considerably in the plotting of sample positions in the field. All sample sites are clearly marked with flagging ribbon.

A 55° baseline was established to control the grid sampling program. Trees were blazed along the baseline and baseline coordinates labelled on the blazes with lumber crayon. Topofoil chain and compass were used for running sample lines and all sample sites are clearly marked with flagging ribbon.

3.20 Sample Preparation and Analysis

Samples were dried at atmospheric pressures then sieved through a -80 mesh stainless steel screen. The -80 mesh size fraction was sent to Cominco's Exploration Research Lab in Vancouver for Pb and Zn analysis.

Two grams of the -80 mesh fraction were digested in concentrated HCl and HNO₃ by heating on a hot plate. The sample was taken up in 10 per cent HCl, bulked to 100 ml with distilled water and analyzed by atomic absorption methods.

4.00 INTERPRETATION AND RESULTS

The 368 samples taken on Clair 3, 4 and 5 were part of a much larger grid and contour soil sampling program, (1158 samples for entire program). The rest of the samples were taken on or near other claims of the Clair group and all 1158 samples were underlain by Aldridge Formation.

Threshold values for Pb and Zn can be estimated far more precisely using the 1158 sample population and the values thus obtained should be applicable as threshold levels throughout the Clair claim group.

The 1158 sample population was treated using a computer statistics program at Cominco's computer facility at the Exploration Research Lab in Vancouver. The program produced standard log transform histograms and cumulative probability plots for Pb and Zn which are included in the Appendix.

The Cumulative Probability plots do not show an obvious separation of data into populations, i.e. background and anomalous populations. For such cases, it is common practice to select thresholds at the 2.5% probability level, i.e. the highest 2.5% of the data are considered anomalous. This is equivalent to arithmetic mean plus two standard deviations and gives threshold values of 83 ppm for Pb and 272 ppm for Zn.

Using these thresholds there are 5 anomalous samples in Zn and 15 anomalous samples in Pb all occurring on the grid north of the St. Mary River.

No obvious target areas are defined. The anomalous values are erratically scattered and show little or no correlation with the Aldridge wacke subunit that the grid was designed to evaluate. Some anomalous values in the northeast corner of Clair 4 may be related to the small Pb-Zn showing on the Dominion Crown grants which are located along the common boundary of Clair 3 and 4.

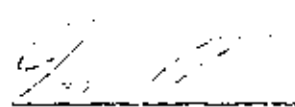
5.00 CONCLUSIONS

1. No obvious target areas were defined by the soil sampling surveys on Clair 3, 4 and 5 claims and more detailed sampling programs do not appear to be warranted.
2. Aside from Pb-Zn bearing veins in gabbro sills on the Dominion Crown Grants, no source for the scattered anomalous values has been detected.

6.00 ATTACHMENTS

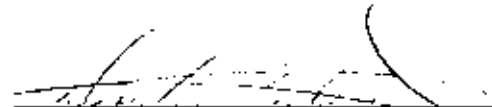
- Plate 1: Claim and Location Map.
Plate 2: Pb in soils - Clair 3, 4 and 5.
Plate 3: Zn in soils - Clair 3, 4 and 5.

Submitted by:

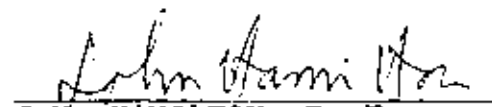

I.D. McCARTNEY, P. Eng.
Geologist



Endorsed by:


DOUGLAS ANDERSON, P. Eng.
Geologist

Approved for
Release by:


J.M. HAMILTON, P. Eng.
Chief Geologist
Kimberley

October 25, 1979

EXHIBIT "A"

STATEMENT OF EXPENDITURES


CLAIR 3, 4 and 5.

Clair 3 and 4 (36 units) (224 samples)

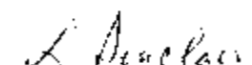
D.L. Sherret (Sampler) 10 days @ \$50/day	\$ 500
C.M. Brunisholz (Sampler) 10 days @ \$50/day.	500
D.L. Sherret - sifting samples to -80 mesh - 3 days @ \$50/day.	150
I.D. McCartney (Geologist) Supervision 3 days @ \$100/day	300
I.D. McCartney (Geologist) Report Preparation 1 day @ \$100/day.	100
Transportation - 4 x 4 trucks 13 days @ \$25/day.	325
Analysis of Samples - 224 samples @ \$2.50/sample	<u>560</u>
	\$2,435.00

Clair 5 (9 units) (144 samples)

D.L. Sherret (Sampler) 5 days @ \$50/day.	250
C.M. Brunisholz (Sampler) 5 days @ \$50/day	250
I.D. McCartney (Geologist) Supervision - 2 days @ \$100/day.	200
I.D. McCartney (Geologist) Report Preparation - 1 day @ \$100/day	100
Transportation - 4 x 4 truck 7 days @ \$25/day.	175
Analysis of Samples - 144 samples @ \$2.50/sample	<u>360</u>
	\$1,335.00
TOTAL COST OF GEOCHEMICAL PROGRAM	<u>\$3,770.00</u>

SIGNED: I.D. McCartney, P. Eng.
Geologist

This is Exhibit "A" to the
Statutory Declaration of
I.D. McCartney declared before
me this 23 day of October, 1979.


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

L. SINCLAIR

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 CLAIR 3, 4 and 5 MINERAL CLAIMS

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

More Particularly N.T.S. 82F/9

A F F I D A V I T

I, I.D. McCARTNEY, of the City of Cranbrook 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 herto and marked as Exhibit "A" to this my Affidavit is a true copy of expenditures incurred on a geochemical programme on the Clair 3, 4 and 5 Mineral Claims.
- 3. That the said expenditures were incurred between the 1st day of May, 1979 and the 24th day of September, 1979, for the purpose of mineral exploration on the above noted claims.

Sworn before me at Cranbrook)
in the Province of British Columbia, this)
23 day of SEPTEMBER, 1979)

I.D. McCartney
I.D. McCartney

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

L. SINCLAIR
A Commissioner for taking
Affidavits for British Columbia

A P P E N D I X

Histograms and
Cumulative Probability
Graphs for Pb and Zn
in Soils on the
Clair Claim Group

PLAIN

HISTOGRAM DATA FOR LEAD

CLASS	LIMITS *	FREQ	ZFREQ	CUM	CUMZ
1	LESS THAN 0.92	0	0.0	1158	100.00
2	0.92TO 1.08	0	0.0	1158	100.00
3	1.08TO 1.27	0	0.0	1158	100.00
4	1.27TO 1.50	0	0.0	1158	100.00
5	1.50TO 1.76	0	0.0	1158	100.00
6	1.76TO 2.07	2	0.2	1158	100.00
7	2.07TO 2.44	0	0.0	1156	99.83
8	2.44TO 2.88	0	0.0	1156	99.83
9	2.88TO 3.39	0	0.0	1156	99.83
10	3.39TO 3.99	0	0.0	1156	99.83
11	3.99TO 4.70	4	0.3	1156	99.83
12	4.70TO 5.53	13	1.1	1152	99.46
13	5.53TO 6.51	22	1.9	1139	98.36
14	6.51TO 7.66	49	4.2	1117	96.46
15	7.66TO 9.02	167	14.4	1068	92.23
16	9.02TO 10.62	95	8.2	901	77.81
17	10.62TO 12.50	162	14.0	806	69.60
18	12.50TO 14.72	127	11.0	644	55.61
19	14.72TO 17.33	125	10.8	517	44.65
20	17.33TO 20.40	82	7.1	392	33.85
21	20.40TO 24.01	61	5.3	310	26.77
22	24.01TO 28.27	37	3.2	249	21.50
23	28.27TO 33.28	37	3.2	212	18.31
24	33.28TO 39.17	31	2.7	175	15.11
25	39.17TO 46.12	29	2.5	144	12.44
26	46.12TO 54.29	26	2.2	115	9.93
27	54.29TO 63.90	26	2.2	89	7.69
28	63.90TO 75.23	20	1.7	63	5.44
29	75.23TO 88.56	12	1.0	43	3.71
30	88.56TO 104.25	8	0.7	31	2.68
31	104.25TO 122.71	9	0.8	23	1.99
32	122.71TO 144.46	2	0.2	14	1.21
33	144.46TO 170.05	3	0.3	12	1.04
34	170.05TO 200.18	3	0.3	9	0.78
35	200.18TO 235.64	1	0.1	6	0.52
36	MORE THAN 235.64	5	0.4	5	0.00

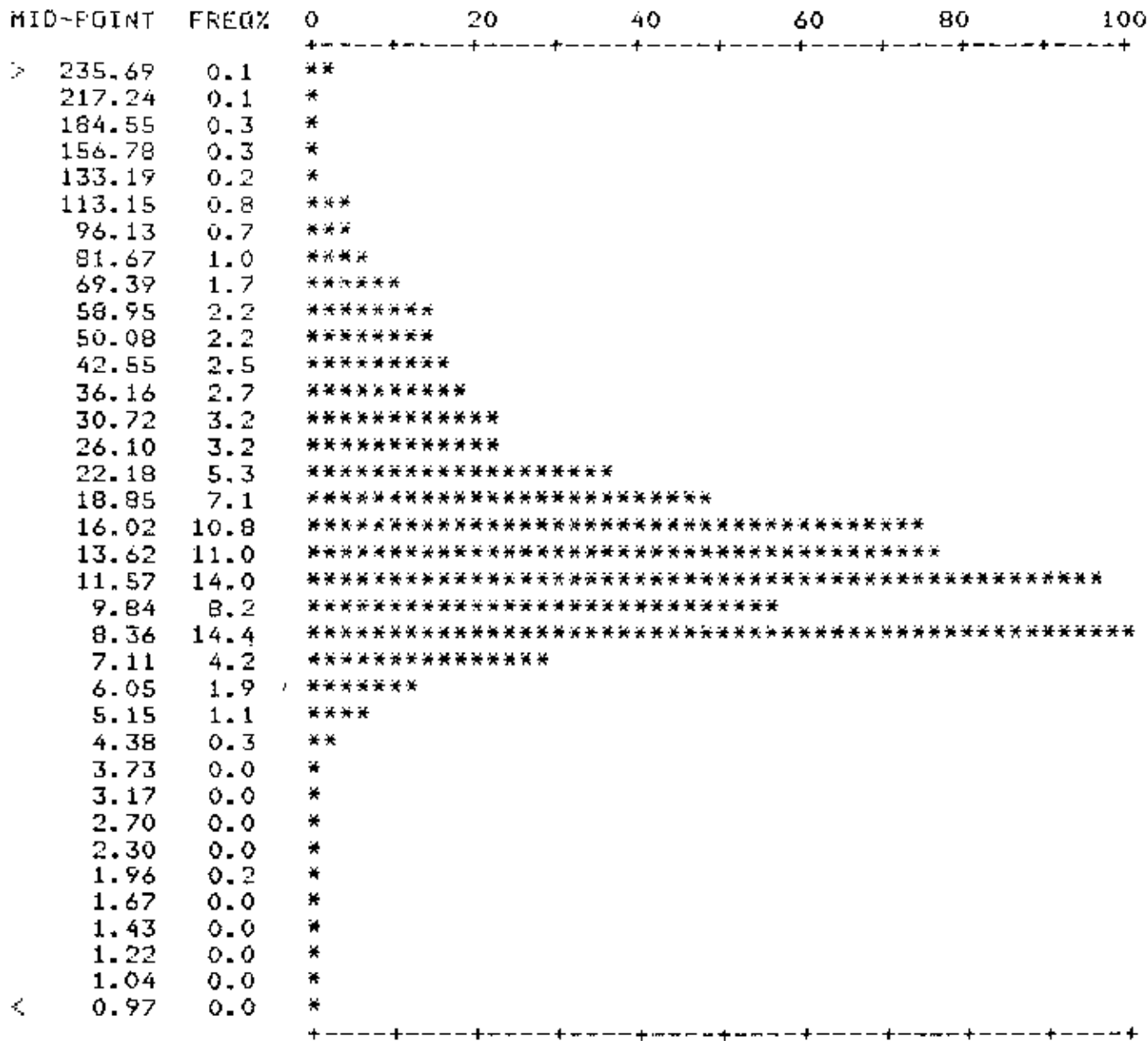
PPM IN INTERVALS OF .070 LOG (BASE 10) UNITS
 THERE ARE 34 REGULAR CLASSES, AN OVERFLOW AND UNDERFLOW CLASS
 THE RANGE CONSIDERED IS 8 STD DEVIATIONS CENTRED ON THE GEOMETRIC MEAN
 THE CLASS INTERVAL IS APPROX ONE-QUARTER STD DEVIATION

SOIL

CLAIR

LOG TRANSFORM HISTOGRAM FOR LEAD

frequency (arithmetic scale)



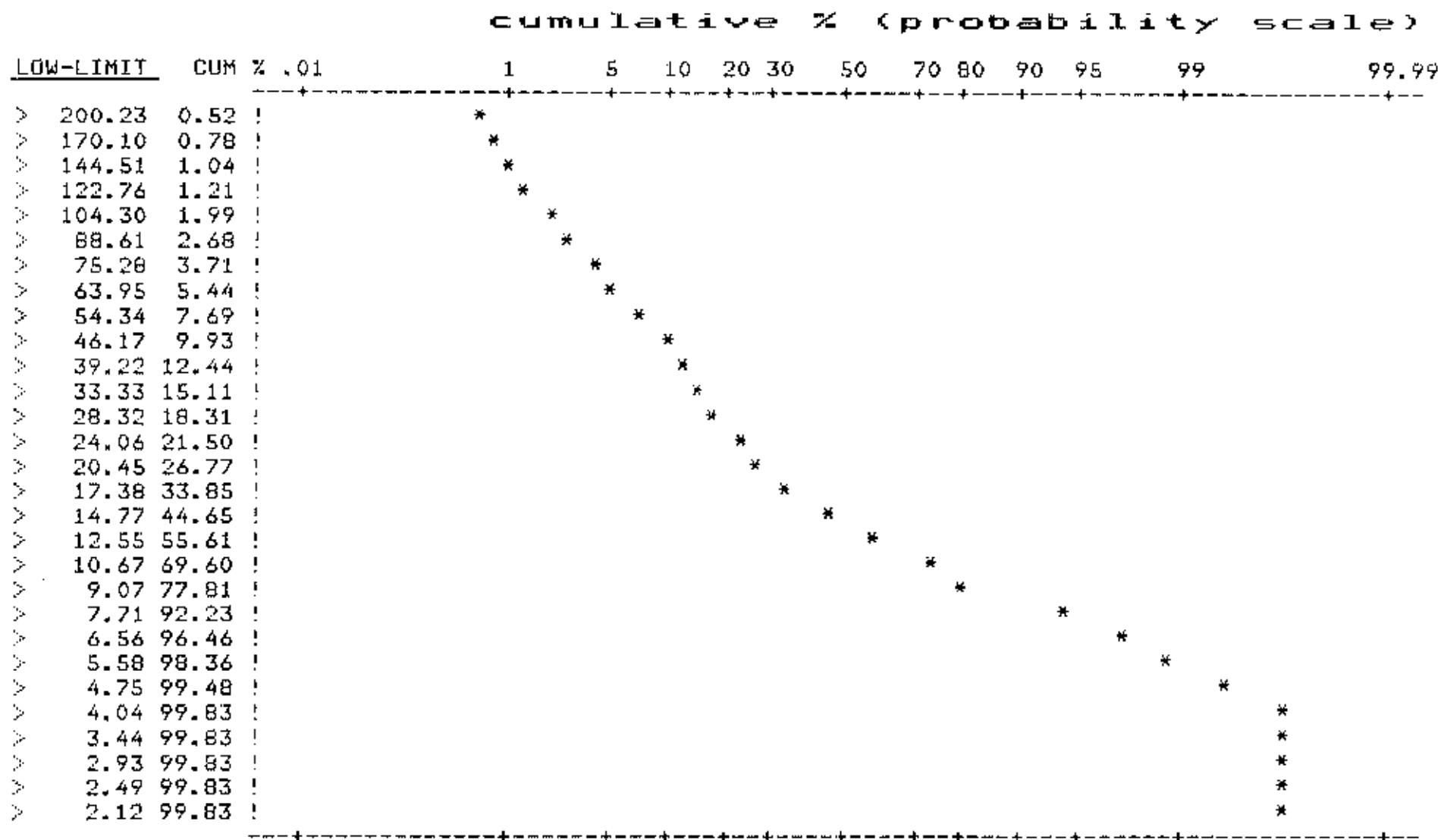
↑
PPM

NOTE : CONC SCALE IS LOGARITHMIC (INTERVAL=.070), VALUES ARE MID-POINTS OF C SOIL

ELEMENT	NO OF ANALYSES	RANGE	ARITH MEAN (M+2STD DEV)
LEAD	1158	<4 TO 500 PPM	22.5 (83)

CLAIR

CUMULATIVE PROBABILITY PLOT FOR LEAD



↑
PPM

NOTE: CONCENTRATION SCALE IS LOGARITHMIC (INTERVAL=.070), VALUES ARE CLASS LOWER LIMITS

SOIL

EL	IENT	NO OF ANALYSES	RANGE	ARITH MEAN (M+2STD DEV)	GEO MEAN (M+2 D DEV)
LEAD		1158	<4 TO 500 PPM	22.5 (83)	15.9 (20)

CLAIR

HISTOGRAM DATA FOR ZINC

CLASS	LIMITS *	FREQ	%FREQ	CUM	CUM%
1	LESS THAN 8.35	1	0.1	1158	100.00
2	8.35TO 9.59	0	0.0	1157	99.91
3	9.59TO 11.02	2	0.2	1157	99.91
4	11.02TO 12.66	1	0.1	1155	99.74
5	12.66TO 14.55	0	0.0	1154	99.65
6	14.55TO 16.72	0	0.0	1154	99.65
7	16.72TO 19.21	0	0.0	1154	99.65
8	19.21TO 22.08	3	0.3	1154	99.65
9	22.08TO 25.37	6	0.5	1151	99.40
10	25.37TO 29.15	19	1.6	1145	98.88
11	29.15TO 33.49	14	1.2	1126	97.24
12	33.49TO 38.49	32	2.8	1112	96.03
13	38.49TO 44.22	47	4.1	1080	93.26
14	44.22TO 50.82	51	4.4	1033	89.21
15	50.82TO 58.39	69	6.0	982	84.80
16	58.39TO 67.09	80	6.9	913	78.84
17	67.09TO 77.09	100	8.6	833	71.93
18	77.09TO 88.59	96	8.3	733	63.30
19	88.59TO 101.79	105	9.1	637	55.01
20	101.79TO 116.96	97	8.4	532	45.94
21	116.96TO 134.39	108	9.3	435	37.56
22	134.39TO 154.42	98	8.5	327	28.24
23	154.42TO 177.44	63	5.4	229	19.78
24	177.44TO 203.88	44	3.8	166	14.34
25	203.88TO 234.27	43	3.7	122	10.54
26	234.27TO 269.19	33	2.8	79	6.82
27	269.19TO 309.31	19	1.6	46	3.97
28	309.31TO 355.41	9	0.8	27	2.33
29	355.41TO 408.38	8	0.7	18	1.55
30	408.38TO 469.24	4	0.3	10	0.86
31	469.24TO 539.18	1	0.1	6	0.52
32	539.18TO 619.54	3	0.3	5	0.43
33	619.54TO 711.87	1	0.1	2	0.17
34	711.87TO 817.97	0	0.0	1	0.09
35	817.97TO 939.88	0	0.0	1	0.09
36	MORE THAN 939.88	1	0.1	1	0.00

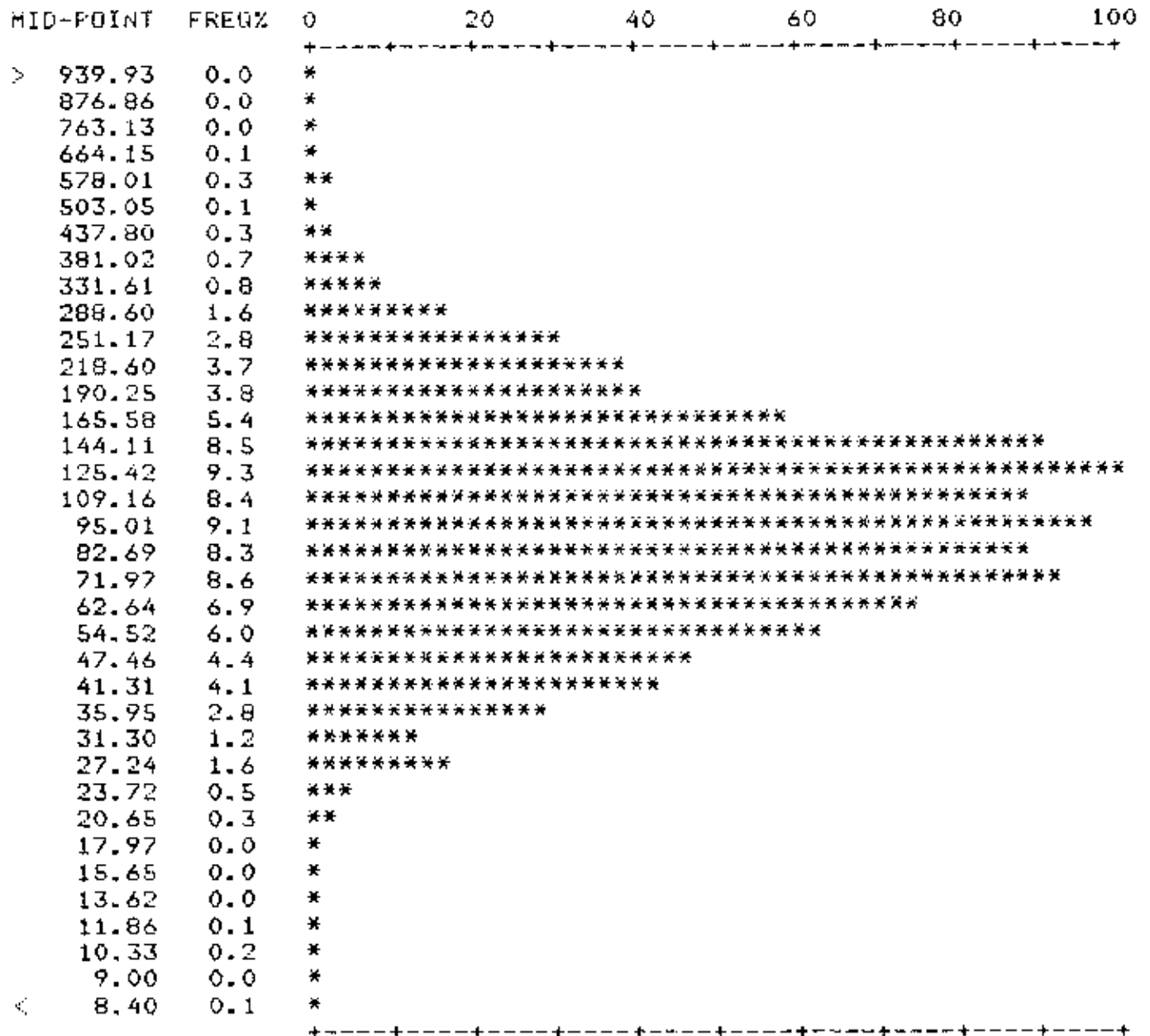
PPM IN INTERVALS OF .060 LOG (BASE 10)UNITS
 THERE ARE 34 REGULAR CLASSES ,AN OVERFLOW AND UNDERFLOW CLASS
 THE RANGE CONSIDERED IS 8 STD DEVIATIONS CENTRED ON THE GEOMETRIC MEAN
 THE CLASS INTERVAL IS APPROX ONE-QUARTER STD DEVIATION

SOIL

CLAIR

LOG TRANSFORM HISTOGRAM FOR ZINC

frequency (arithmetic scale)



↑
PPM

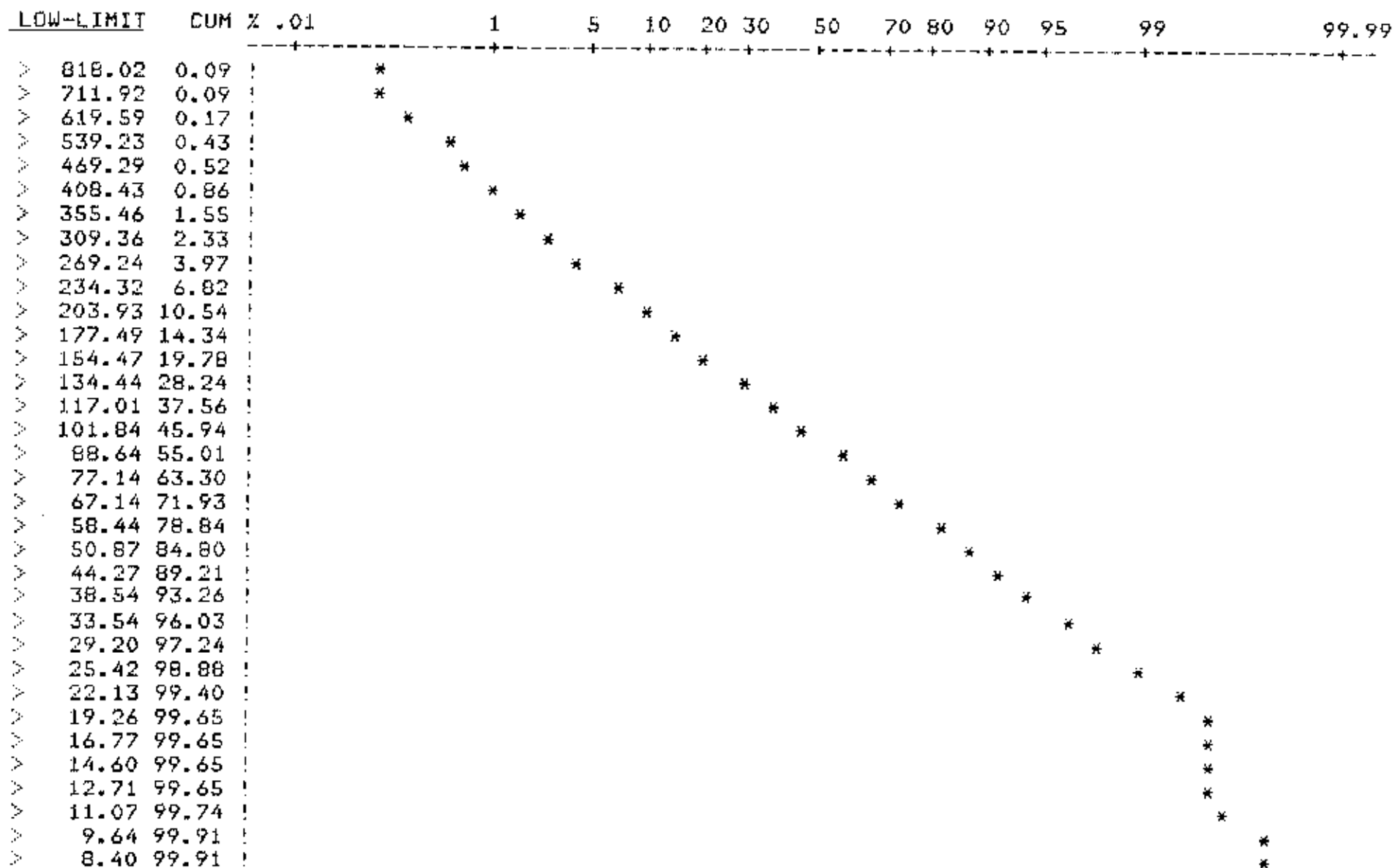
NOTE : CONC SCALE IS LOGARITHMIC (INTERVAL=.060), VALUES ARE MID-POINTS OF CL SOIL

ELEMENT	NO OF ANALYSES	RANGE	ARITH MEAN (M+2STD DEV)
ZINC	1158	8 TO 960 PPM	114.3(272)

CLAIR

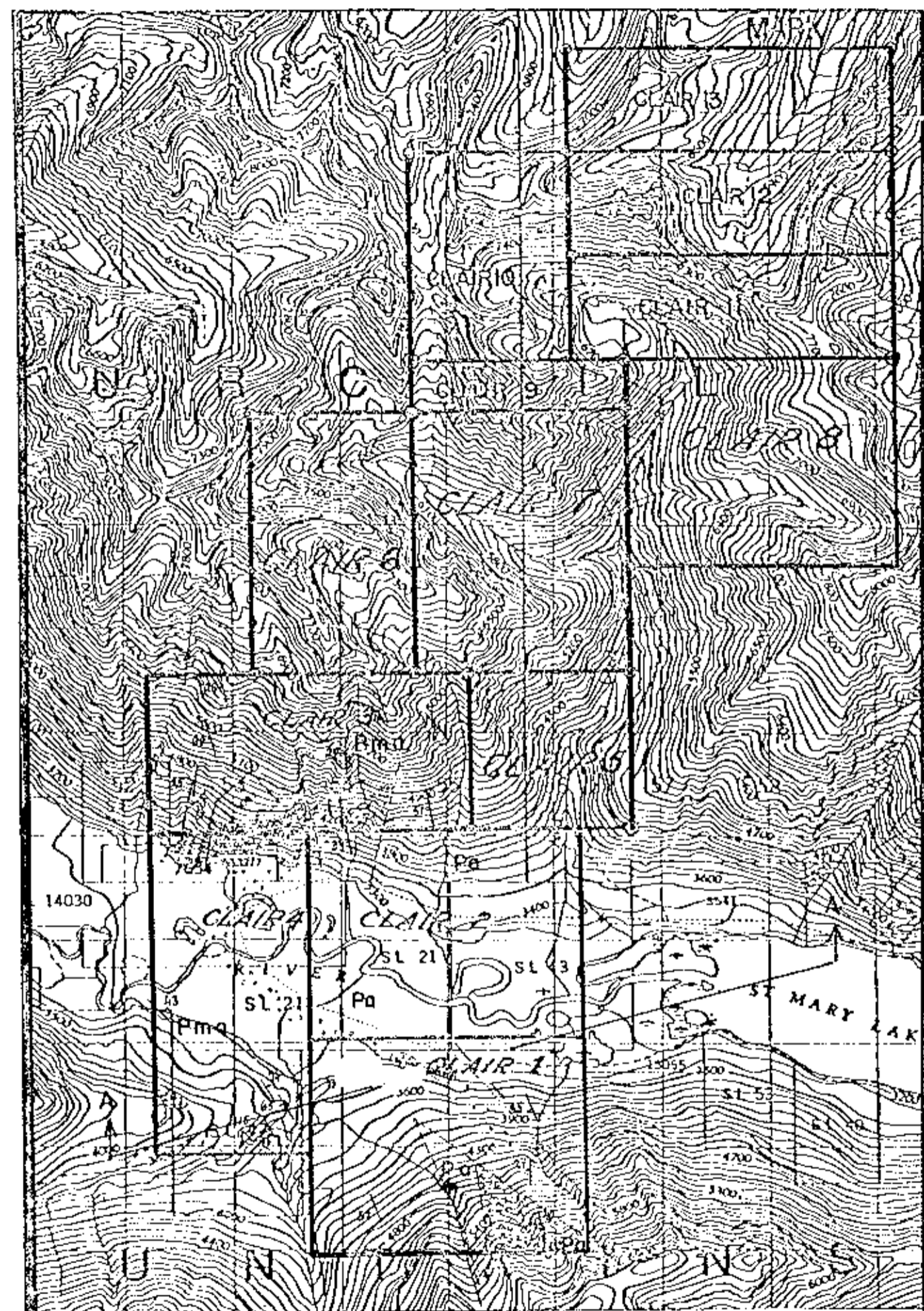
CUMULATIVE PROBABILITY PLOT FOR ZINC

cumulative % (probability scale)

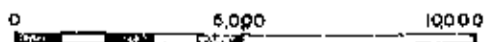


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PPM

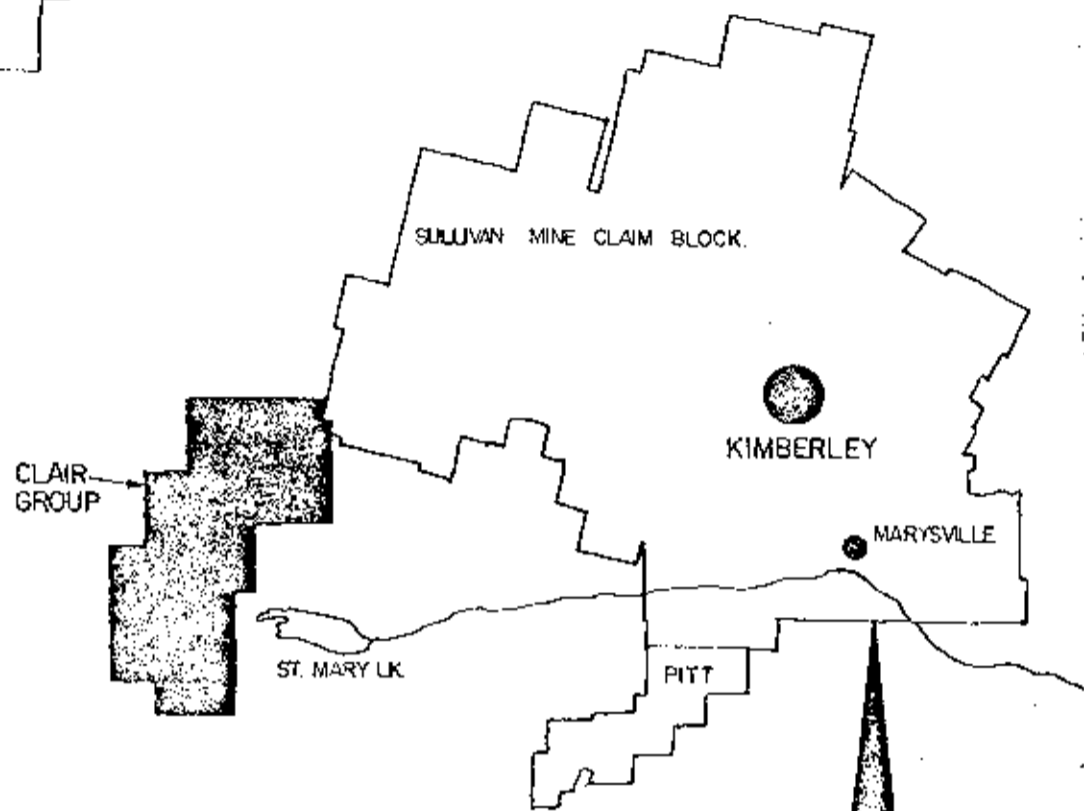
NOTE: CONCENTRATION SCALE IS LOGARITHMIC (INTERVAL=.060), VALUES ARE CLASS LOWER LIMITS



SCALE 1 : 50,000

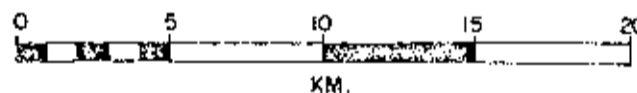


VULCAN



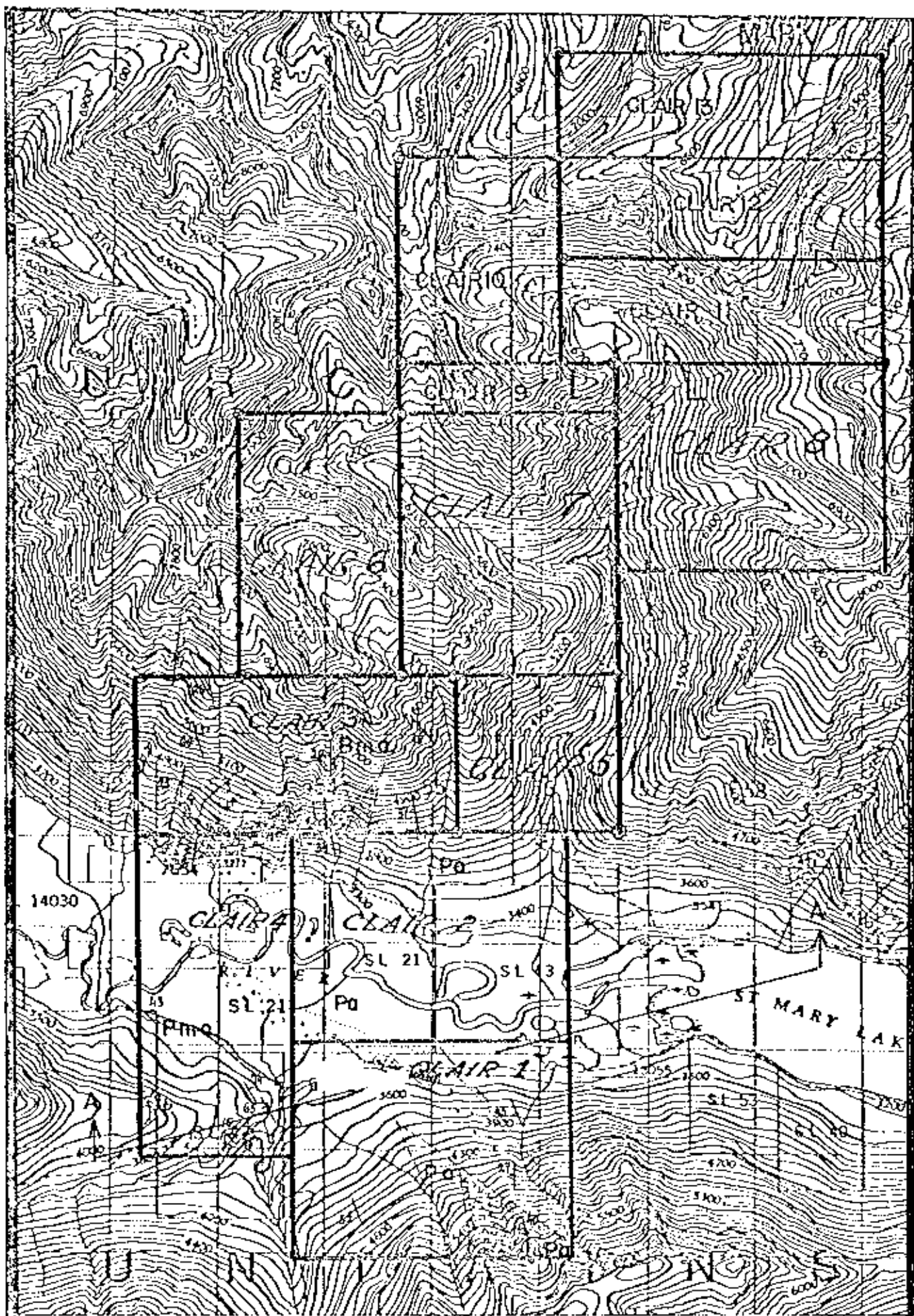
LOCATION MAP

SCALE 1:250,000

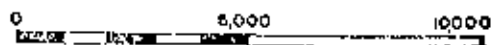


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of 2

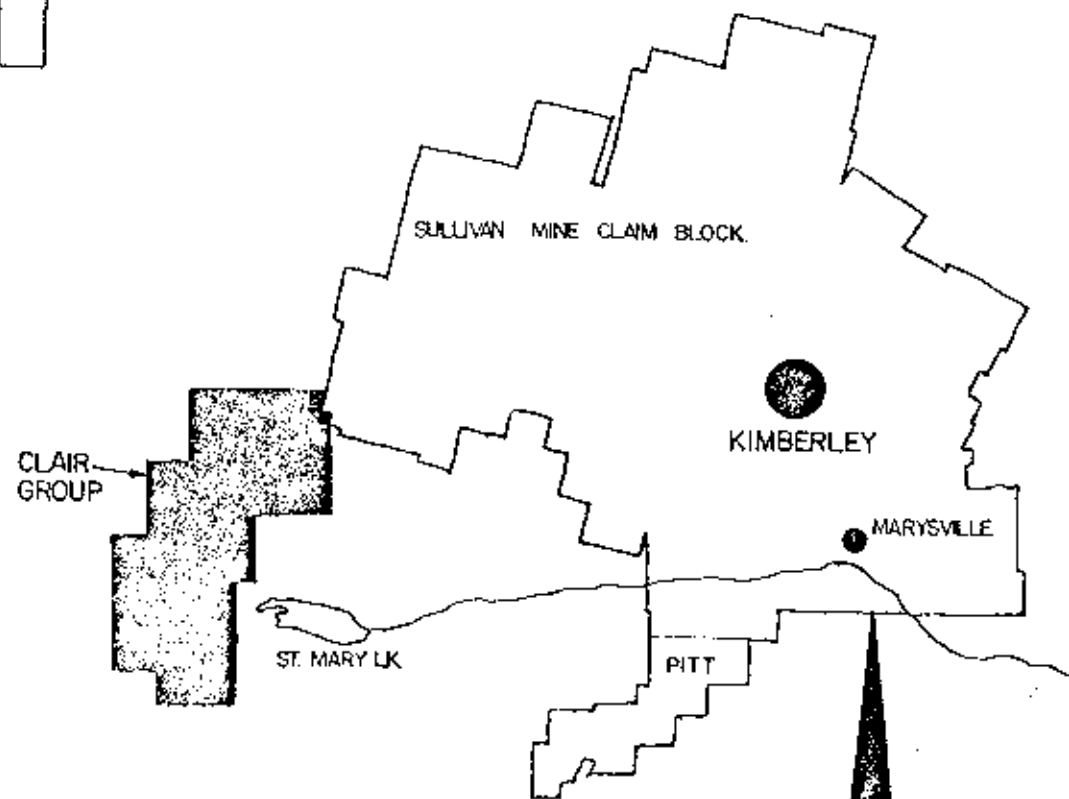
Drawn by:	Traced by: ZK	CLAIM & LOCATION MAP	
Revised by:	Date:		
Revised by:	Date:	Scale: 1 : 50,000	Date: SEPT 1979
Revised by:	Date:	1 : 250,000	Plate:



SCALE 1 : 50,000

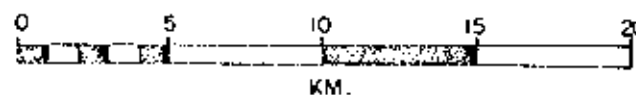


VULCAN




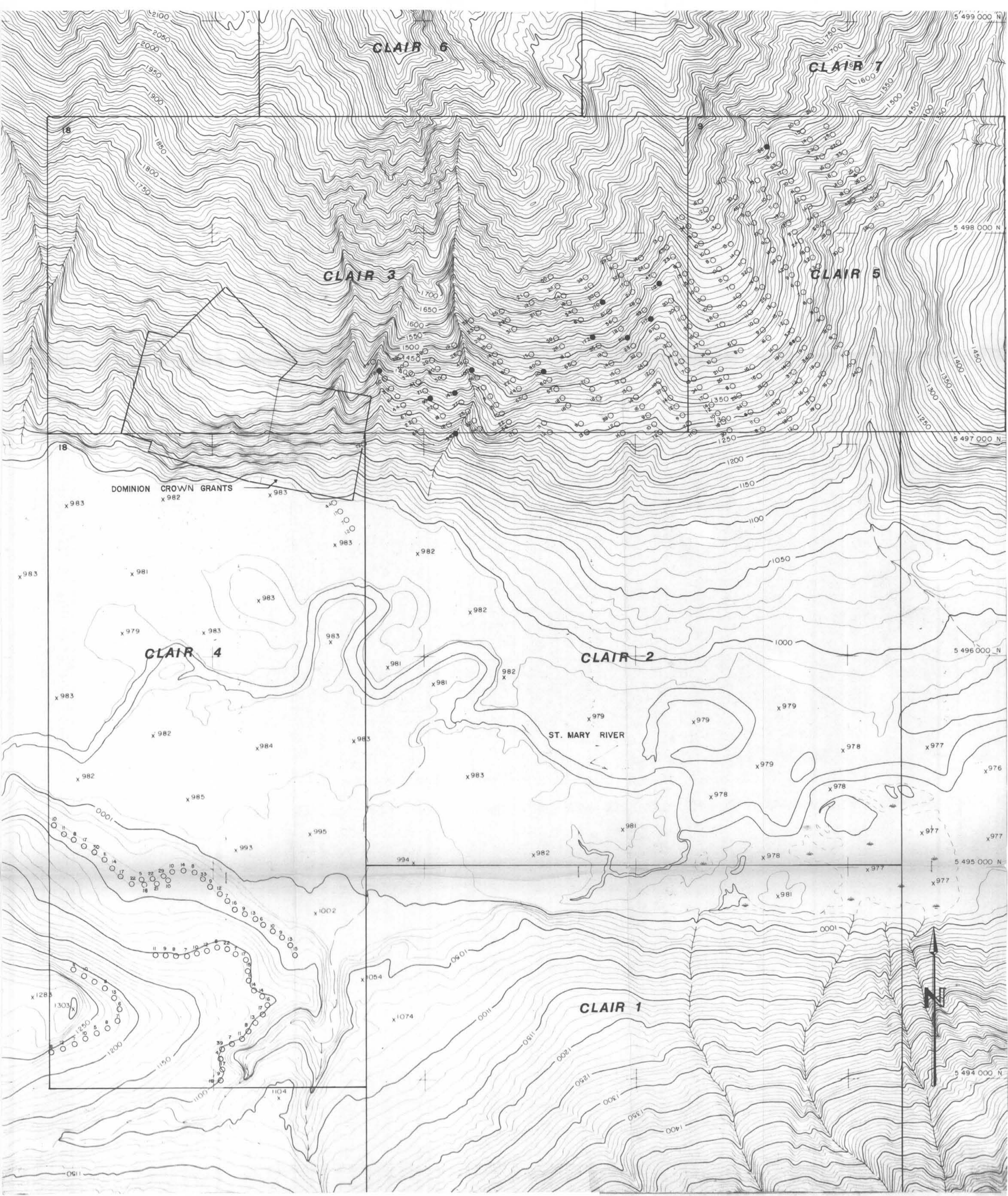
LOCATION MAP

SCALE 1:250,000



7681
part 2
of 2

Drawn by:		Traced by: <i>JK</i>		 CLAIM & LOCATION MAP CLAIR CLAIMS NTS 82F/9
Revised by:	Date:	Revised by:	Date:	
				Scale: 1 : 50,000 1 : 250,000
				Date: SEPT 1979
				Plate:



CLAIR PROPERTY

SOIL GEOCHEM. Pb. in ppm.

● ANOMALOUS SOIL SAMPLE

CLAIR CLAIMS 3, 4, 5, NTS 82 F / 9

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT

NO. **7681** PART 182