87-51-

SOIL GEOCHEMISTRY

OF THE

KATIE GROUP AREA

SALMO B.C.

NELSON MINING DIVISION

N.T.S. 82FF/3W

49° 8.5' ; 117° 20'

BY KEN MURRAY (owner/operator)

JANUARY, 1987 KAT-86

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INTRODUCTION

This Geochemical Survey was carried out to re-evaluate previous work. The Katie Group covers ground originally held by Amco Canada Ltd. and is described in assessment report #8258. This grid was established by a pace and compass survey in very heavy brush and lines were found to be out as much as 90 meters north-south and 160 meters east-west. Clear-cut logging, since the first survey, has destroyed much of the grid but has provided excellent access. The first survey did not consider precious metals. This study investigates the copper-gold-silver association thought to be similar to the Rossland Mining Camp. The Katie Group is in the Nelson Mining Division and is on map sheet N.T.S. 82F/3.

This study was carried out in the 1986 field-season between June 9th and October 23rd. A total of 36 days were spent in the field. The time distribution is: 24 days line-cutting; 2 days topo-mapping; 7 DAYS SAMPLING; and 3 days prospecting. Grid work consisted of 16.8 line-kilometers of line cutting using axe, sawvick, and power saw where necessary. The grid is marked by flagged pickets at 25 meter stations and the lines are 100 meters apart.

LOCATION AND ACCESS

The sixteen unit Katie Group is located southwest of Salmo, B.C. The access logging road is located 2 kilometers south of the junction at Salmo and the property is 6 kilometers up this road.

The road is mostly 2-wheel drive but one steep section within the group requires a 4-wheel drive vehicle. The clear-cut areas are fairly easily traversed by foot but the wooded area around the anomalous zone is extremely thick and walking the lines is the only access. This claim is at the headwaters of the west fork of Hellroaring Creek.

GEOLOGY

The Katie Group is underlaid by rocks of lower Jurassic Rossland Volcanics. These rocks are described by H.W. Little in G.S.C. memoir 308 and shown on G.S.C. map 1145A. Assessment report #14933 to the southwest describes the rocks in more detail. Recent work by Falconbridge Ltd. near the south boundary of the Katie Group will soon be available for viewing. The Granodiorite Plug mentioned in assessment report #8258 was not located on the ground but was present in float form. The Hellroaring Creek drainage is anomalous in copper as shown in Open File 514 of the National Geochemical Reconnaissance series.

PHYSIOGRAPHY

This study was carried out in the basin of the headwaters of the west fork of Hellroaring Creek. The relief is between 1200 and 1600 meters. The slopes range from flat to steep but overall are classed as moderate. The basin was formed by Alpine

glaciation and resembles an eroded cirque. The ground is mountainous but not too severe.

The main drainage is handled by the 3 main forks of Hellroaring Creek. There are numerous small creeks entering these forks but most of them are dry in the summer. The streams drain ground, surface, and winter run-off and have no headwater lakes. A bog area is formed between lines 8 and 9 from 100W to 200E but this is drying out due to tree removal. The drainage pattern is generally to the east with the side creeks flowing northeast and southeast.

The soil on the western portion of the grid is mainly residual and the soil to the east is till and outwash. The residual soils are 20 to 60 centimeters in depth and the others are of undetermined depth as road cuts exposed very little outcrop. Natural outcrops are very rare except at the rim of the basin. The B horizon is well developed and is between 5 and 20 cm thick. This horizon is generally found between 20 cm and 40 cm deep. In the bog area the B horizon was found 60 cm deep in places.

The vegetation is very lush and varies over the study area. The lower and wet areas were covered by a cedar and hemlock forest but these have been mostly logged. The western area between lines 3 and 9 north is covered by a very thick hemlock and larch growth.

The side slopes of the basin have spruce and balsam cover and underbrush.

SAMPLING AND ANALYSIS

The samples were collected along the cut lines at the 25 meter stations. A total of 637 B horizon soil samples were collected. The soil was dug up using a spade and the samples were placed in Kraft paper bags. The grid co-ordinates were written on the 4" x 6" bags using a felt pen. The samples were dried before shipping to Acme Analytical Laboratories of Vancouver, B.C. where they were analysed for copper, silver, and gold.

The soil samples were dried at 60 degrees Celsius and sieved to the -80 mesh fraction. For copper and silver a 0.5 gram sample was digested in hot aqua regia for one hour and diluted to 10 ml. with demineralized water, metal content was determined by atomic absorption. For gold a 10.0 gram was ignited for 4 hours at 600 degrees Celsius and digested in 30 mls. of hot aqua regia. Seventy-five mls. of clear solution were extracted with 5 mls. of Methyl Isobutylene Keytone. The metal content was determined by atomic absorption.

ANOMALOUS ZONES

A broad copper anomaly ranging from 200 to 1200 PPM was determined in the central-west portion of the grid. This zone is

approximately 400 by 500 meters and extends beyond the grid. This is co-incidental with a linear gold anamoly with values up to 34 PPB and covers an area 100 x 500 meters. Two more gold anomalies at 3W-9M and 1W-12N result from single high values and can be further explored. Silver values are very erratic and contouring the results does not reveal any trends.

RESULTS

The copper values surrounding the gold values is important. The type of possible mineralization searched for in these rocks is similar to that found at the Rossland Mining Camp and at the Willa property near Silverton, B.C. Only one silver-gold anomaly is co-incidental, at 6E-11N, and could be further investigated. Only the samples on the 100 meter spacings were analysed, however, others were collected at 25 meter intervals, so some of the follow up can be done by analysis. More grid work and sample collection is necessary.

RECOMMENDATIONS

1. Extent grid 300 meters west between lines 3N and 6N to find where the anomaly terminates.

2. Analyse samples already collected on 40 meter stations between line 3N and 6N from 1W to 6W for copper and gold.

3. Analyse samples around the high values at 9N-3W, 12N-1W, and 11N-6E for gold and silver and sample beyond the grid where necessary.

4. Detailed geology mapping of entire claim.

5. Trench where anomalous values may lead to mineralization.

STATEMENT OF COSTS

1.	Salaries - Ken Murray:	June 9-19, July 2-4, July 15-23, Aug. 11-13, Oct. 22-23 36 days @ $100.00	$3600.00
2.	Truck - 36 days @ $40.00/day		$1440.00
3.	Fuel - 36 days @ $8.50		$ 306.00
4.	Power Saw - 11 days @ $20.00		$ 220.00
5.	Field Materials		$ 168.00
6.	Sample Bags - 837 @ $.12		$ 100.44
7.	Assays and sample shipping -		$1376.65
8.	Report and office costs -		$ 44.17
9.	Report preparation - 6 days @ $100.00		$ 600.00
		TOTAL COST	$7855.26

STATEMENT OF QUALIFICATIONS

I have been in the mining and exploration industry in British Columbia since 1964. I have worked in the employ of Cominco Ltd., Falconbridge Ltd., and Placer Development. I have been an exploration contractor since 1982 and have completed all my projects within time and budget limits. I have completed the prospector's course sponsored by the Chamber of Mines at Nelson, B.C. under the supervision of District Geologist Mr. George Addie. In 1986 I completed the mineral exploration course for prospectors at Mescachie Lake, B.C. and received my certificate from Malaspina College.

Ken Murray

Ken Murray - Prospector

REFERENCES

1. Walker J.F. Geology & Mineral Deposits of Salmo Map Area. G.S.C., Memoir 172 (1934)

2. Little H.W. Nelson Map Area (West Half) G.S.C. Mem. 308 (1960)

3. MacIsaac B. Soil Geochemistry Report #8258 Jim Group (1980)

4. Burge C.M. Geology Lithogeochemistry & Economic Potential of the Swift Group Assessment Report #14933 (1986)

ME ANALYTICAL LABORATORIES LTD.
852 E.HASTINGS ST.VANCOUVER B.C. V6A 1R6
PHONE 253-3158 DATA LINE 251-1011

DATE RECEIVED: DEC 4 1986

DATE REPORT MAILED: Dec 9/86

GEOCHEMICAL ICP ANALYSIS

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN.FE.CA.P.CR.MG.BA.TI.B.AL.NA.K.W.SI.ZR.CE.SN.Y.NB AND TA. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: SOILS -80MESH AU* ANALYSIS BY AA FROM 10 GRAM SAMPLE.

ASSAYER: D. Toye DEAN TOYE. CERTIFIED B.C. ASSAYER.

KEN MURRAY FILE # 86-3906 PAGE 1

SAMPLE#	Cu PPM	Ag PPM	Au* PPB
L12+00N 6+00W	44	.1	3
L12+00N 5+00W	35	.1	1
L12+00N 4+00W	90	.5	1
L12+00N 3+00W	96	.6	4
L12+00N 2+00W	124	.8	2
L12+00N 1+00W	30	.2	78
L12+00N 0+00W	36	.1	1
L12+00N 1+00E	47	.2	1
L12+00N 2+00E	47	.4	2
L12+00N 3+00E	32	.1	1
L12+00N 4+00E	58	.1	1
L12+00N 5+00E	85	.3	1
L12+00N 6+00E	44	.7	1
L11+00N 6+00W	25	.2	1
L11+00N 5+00W	45	.1	1
L11+00N 4+00W	46	.4	1
L11+00N 3+00W	67	.1	6
L11+00N 2+00W	31	.6	1
L11+00N 1+00W	64	.1	3
L11+00N 0+00W	78	.4	2
L11+00N 1+00E	36	.1	1
L11+00N 2+00E	56	.2	4
L11+00N 3+00E	79	.6	3
L11+00N 4+00E	35	.5	5
L11+00N 5+00E	52	.1	7
L11+00N 6+00E	63	1.0	33
L10+00N 6+00W	375	.3	6
L10+00N 5+00W	103	.5	1
L10+00N 4+00W	113	.9	4
L10+00N 3+00W	41	.4	4
L10+00N 2+00W	72	.3	6
L10+00N 1+00W	115	.9	6
L10+00N 0+00W	100	.7	4
L10+00N 1+00E	97	1.1	7
L10+00N 2+00E	29	.7	16
L10+00N 3+00E	121	.1	1
STD C/AU-S	60	6.8	53

SAMPLE#	Cu PPM	Ag PPM	Au* PPB
L10+00N 4+00E	69	.2	2
L10+00N 5+00E	50	.3	5
L10+00N 6+00E	48	.3	1
L9+00N 6+00W	79	.9	1
L9+00N 5+00W	81	.5	6
L9+00N 4+00W	48	.3	1
L9+00N 3+00W	55	.3	150
L9+00N 2+00W	93	.3	3
L9+00N 1+00W	145	.2	1
L9+00N 0+00W	174	.4	6
L9+00N 1+00E	21	.5	1
L9+00N 2+00E	114	.1	7
L9+00N 3+00E	75	.5	2
L9+00N 4+00E	75	.7	3
L9+00N 5+00E	45	.2	1
L9+00N 6+00E	92	.5	1
L8+00N 6+00W	857	.5	1
L8+00N 5+00W	87	1.0	1
L8+00N 4+00W	57	.3	1
L8+00N 3+00W	606	.4	3
L8+00N 2+00W	67	1.0	2
L8+00N 1+00W	81	.5	3
L8+00N 0+00W	44	.2	1
L8+00N 1+00E	34	.4	1
L8+00N 2+00E	50	.4	8
L8+00N 3+00E	77	.5	1
L8+00N 4+00E	35	.3	1
L8+00N 5+00E	46	.4	1
L8+00N 6+00E	62	.4	1
L7+00N 6+00W	1201	.2	1
L7+00N 5+00W	92	.4	1
L7+00N 4+00W	265	.4	4
L7+00N 3+00W	287	.7	5
L7+00N 2+00W	443	.8	3
L7+00N 1+00W	134	.4	2
L7+00N 0+00W	142	.3	1
STD C/AU-S	61	7.0	51

SAMPLE#	Cu PPM	Ag PPM	Au* PPB
L7+00N 1+00E	108	.6	2
L7+00N 2+00E	49	.3	1
L7+00N 3+00E	92	.5	1
L7+00N 4+00E	68	.3	1
L7+00N 5+00E	58	.3	1
L7+00N 6+00E	70	.8	1
L6+00N 6+00W	230	.5	29
L6+00N 5+00W	183	.7	22
L6+00N 4+00W	58	.6	30
L6+00N 3+00W	493	.1	34
L6+00N 2+00W	290	.4	28
L6+00N 1+00W	269	.6	11
L6+00N 0+00W	181	.1	16
L6+00N 1+00E	105	.8	1
L6+00N 2+00E	46	.4	4
L6+00N 3+00E	63	.3	1
L6+00N 4+00E	57	.3	1
L6+00N 5+00E	53	.4	1
L6+00N 6+00E	14	.1	2
L5+00N 6+00W	418	.4	1
L5+00N 5+00W	812	.2	8
L5+00N 4+00W	321	.6	2
L5+00N 3+00W	271	.8	11
L5+00N 2+00W	283	.3	2
L5+00N 1+00W	221	.4	14
L5+00N 0+00W	141	.4	8
L5+00N 1+00E	80	.3	4
L5+00N 2+00E	82	.3	17
L5+00N 3+00E	130	.3	4
L5+00N 4+00E	93	.7	2
L5+00N 5+00E	52	.1	1
L5+00N 6+00E	62	.3	1
L4+00N 6+00W	276	.1	2
L4+00N 5+00W	75	.5	10
L4+00N 4+00W	104	.5	8
L4+00N 3+00W	93	.4	22
STD C/AU-S	60	7.0	49

SAMPLE#	Cu PPM	Ag PPM	Au* PPB
L4+00N 2+00W	59	.5	1
L4+00N 1+00W	59	.3	3
L4+00N 0+00W	98	.5	3
L4+00N 1+00E	91	.2	13
L4+00N 2+00E	79	.3	19
L4+00N 3+00E	90	.4	1
L4+00N 4+00E	59	.3	1
L4+00N 5+00E	77	.2	3
L4+00N 6+00E	38	.9	2
L3+00N 6+00W	149	.6	1
L3+00N 5+00W	222	.3	6
L3+00N 4+00W	192	.1	7
L3+00N 3+00W	126	.2	3
L3+00N 2+00W	114	.1	5
L3+00N 1+00W	52	.3	1
L3+00N 0+00W	80	.5	4
L3+00N 1+00E	55	.4	3
L3+00N 2+00E	175	.1	18
L3+00N 3+00E	101	.1	12
L3+00N 4+00E	121	.6	3
L3+00N 5+00E	81	.4	7
L3+00N 6+00E	44	.3	1
L2+00N 6+00W	125	.4	3
L2+00N 5+00W	68	.3	2
L2+00N 4+00W	63	.3	15
L2+00N 3+00W	90	.4	5
L2+00N 2+00W	43	.3	6
L2+00N 1+00W	34	.4	1
L2+00N 0+00W	149	.2	9
L2+00N 1+00E	60	.4	3
L2+00N 2+00E	137	.4	2
L2+00N 3+00E	100	.4	12
L2+00N 4+00E	138	1.1	9
L2+00N 5+00E	95	.1	29
L2+00N 6+00E	42	.4	1
L1+00N 6+00W	39	.4	3
STD C/AU-S	63	7.1	52

SAMPLE#	Cu PPM	Ag PPM	Au* PPB
L1+00N 5+00W	64	.3	10
L1+00N 4+00W	91	.3	2
L1+00N 3+00W	71	.4	5
L1+00N 2+00W	30	.6	1
L1+00N 1+00W	41	.6	1
L1+00N 0+00W	38	.5	1
L1+00N 1+00E	115	.6	8
L1+00N 2+00E	74	.4	1
L1+00N 3+00E	104	.3	17
L1+00N 4+00E	59	.5	5
L1+00N 5+00E	84	.2	3
L1+00N 6+00E	67	.6	4
L0+00N 6+00W	108	.4	17
L0+00N 5+00W	97	.3	1
L0+00N 4+00W	74	.5	7
L0+00N 3+00W	61	.4	1
L0+00N 2+00W	52	.4	1
L0+00N 1+00W	47	.4	3
L0+00N 0+00W	79	.3	8
L0+00N 1+00E	73	.5	2
L0+00N 2+00E	52	.5	1
L0+00N 3+00E	91	.1	1
L0+00N 4+00E	106	.6	1
L0+00N 5+00E	51	.1	1
L0+00N 6+00E	15	.1	1
STD C/AU-S	60	6.8	49

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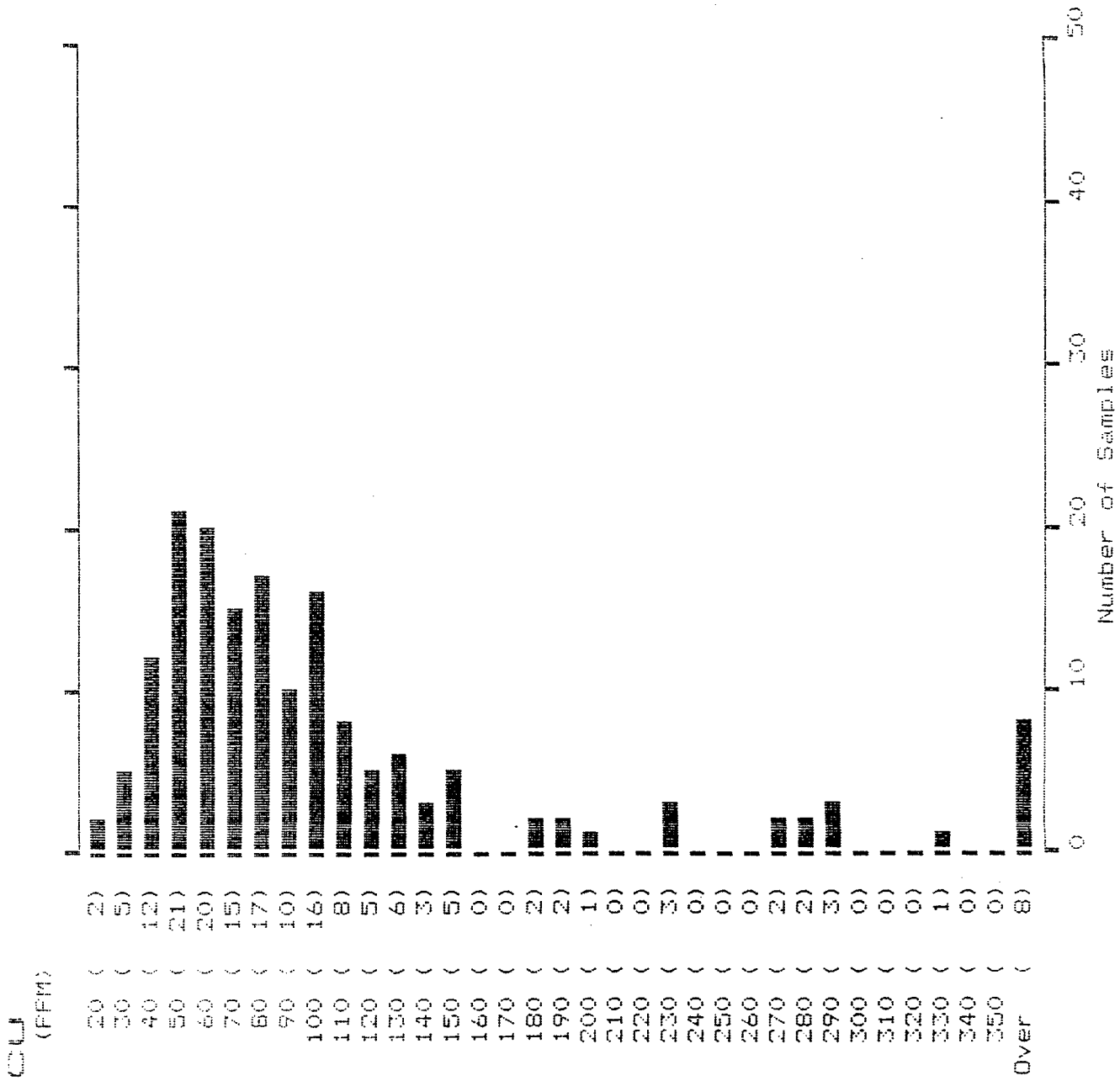

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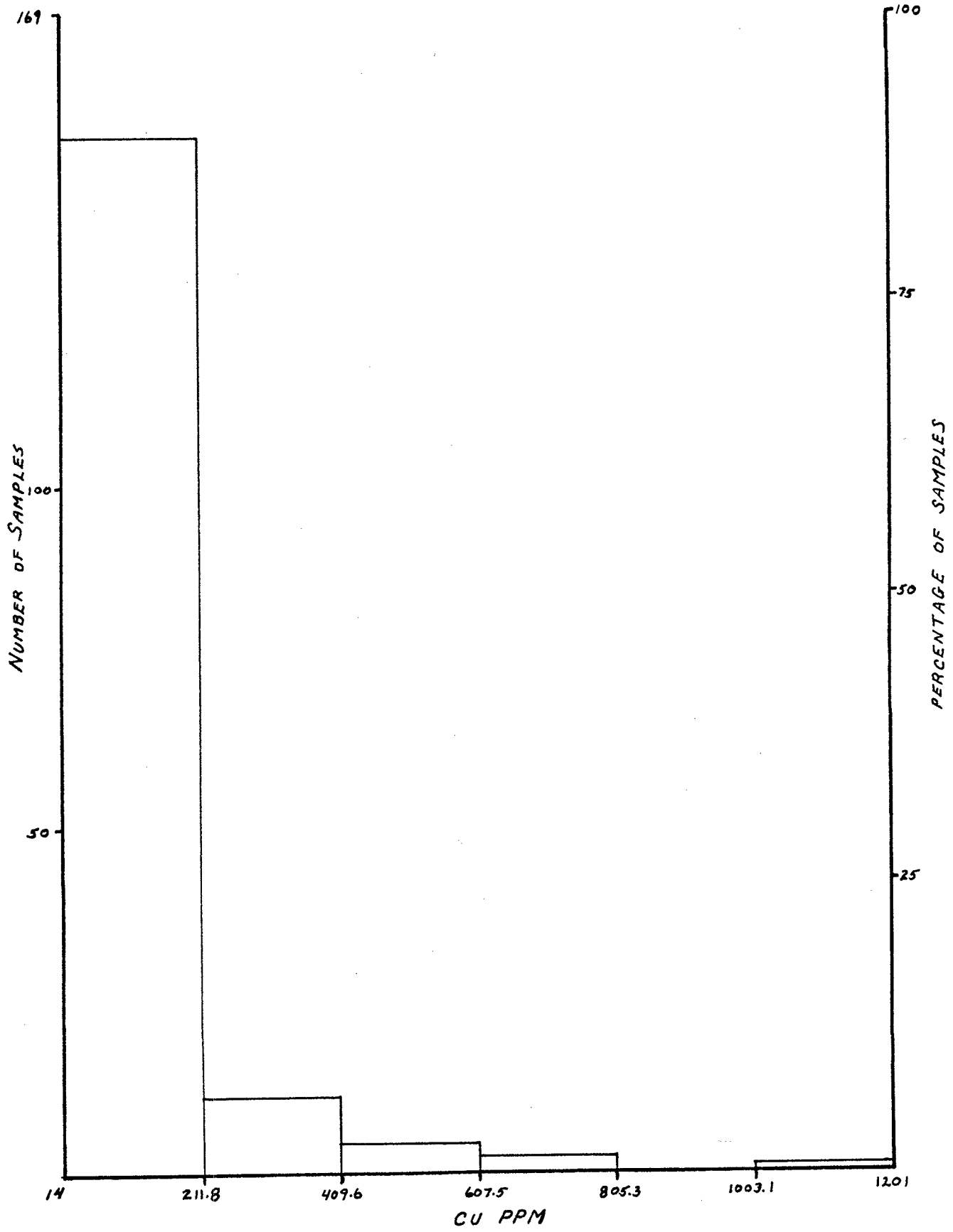

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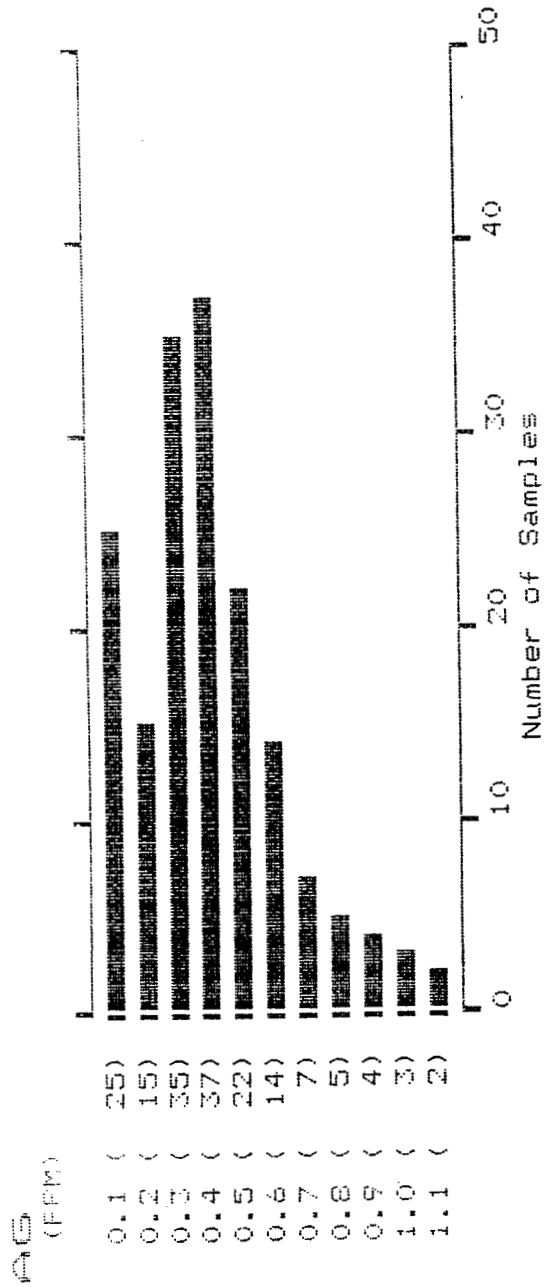

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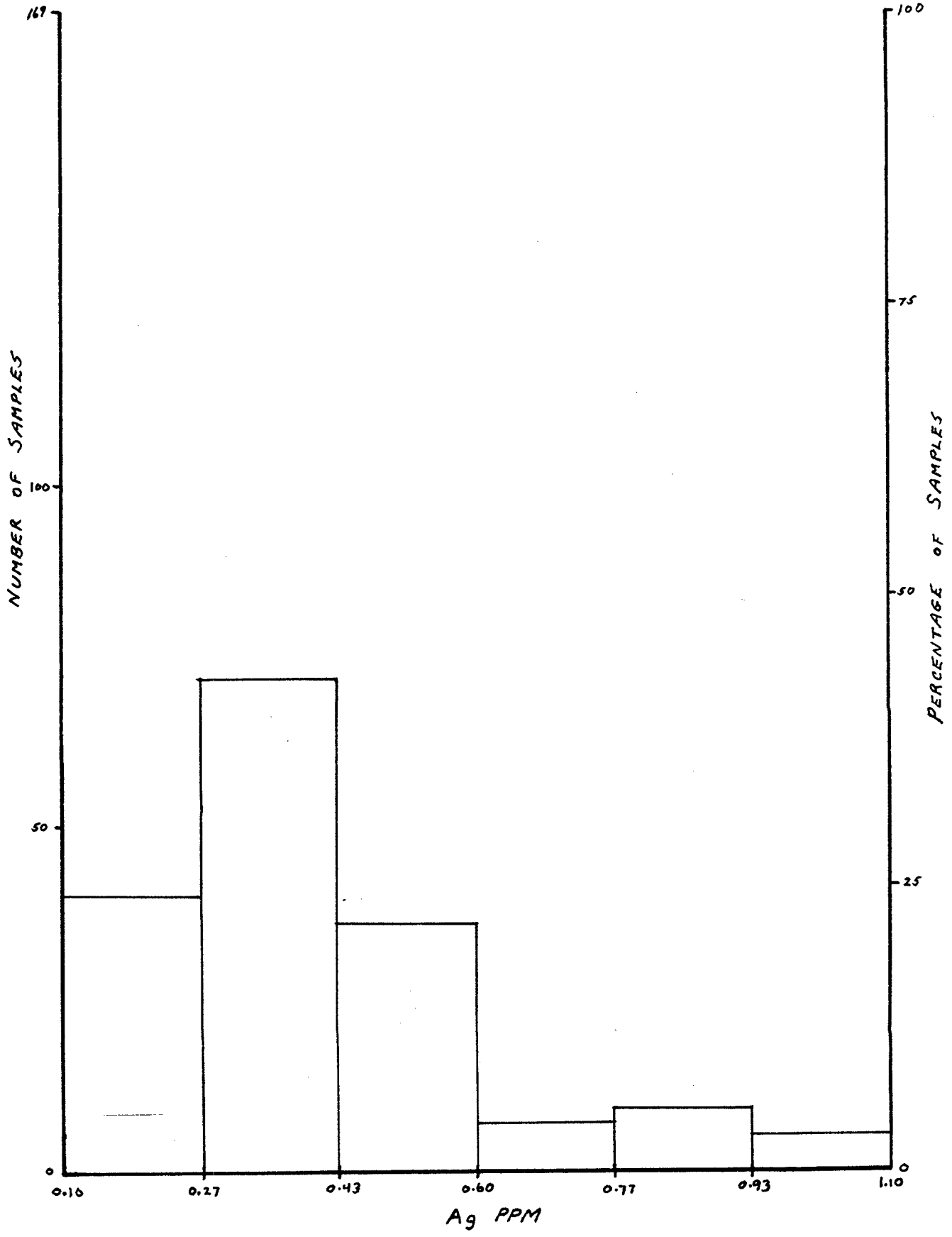

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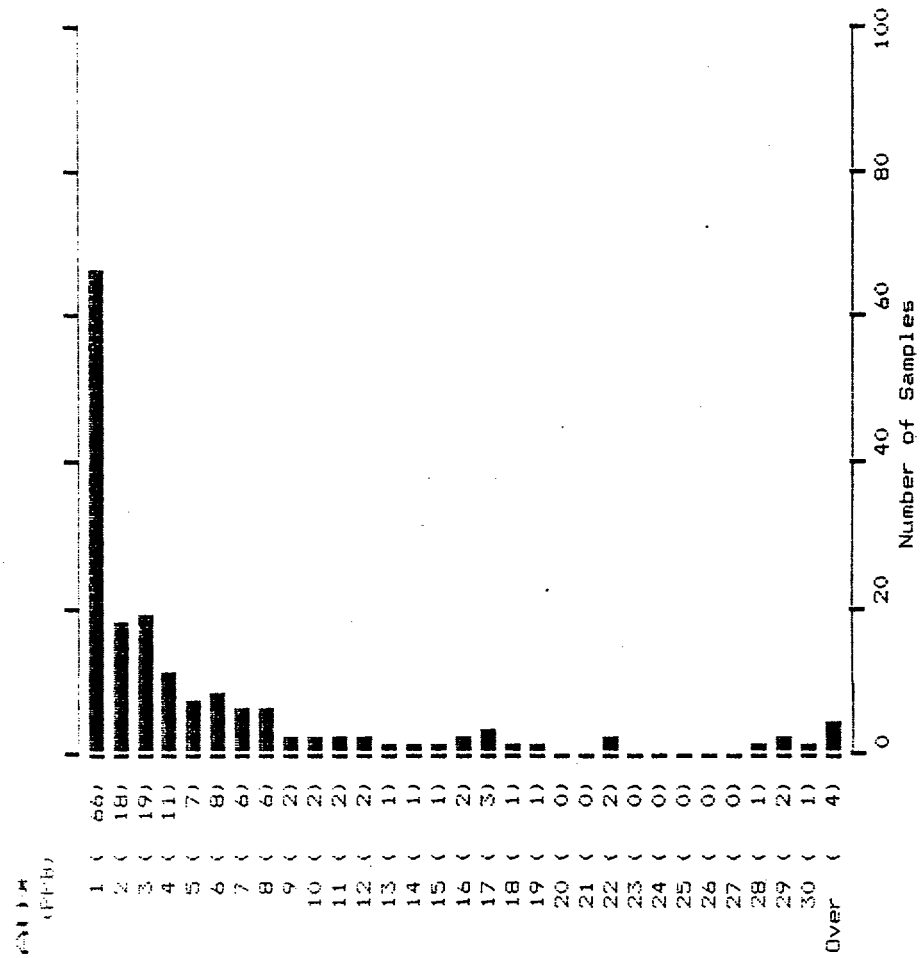

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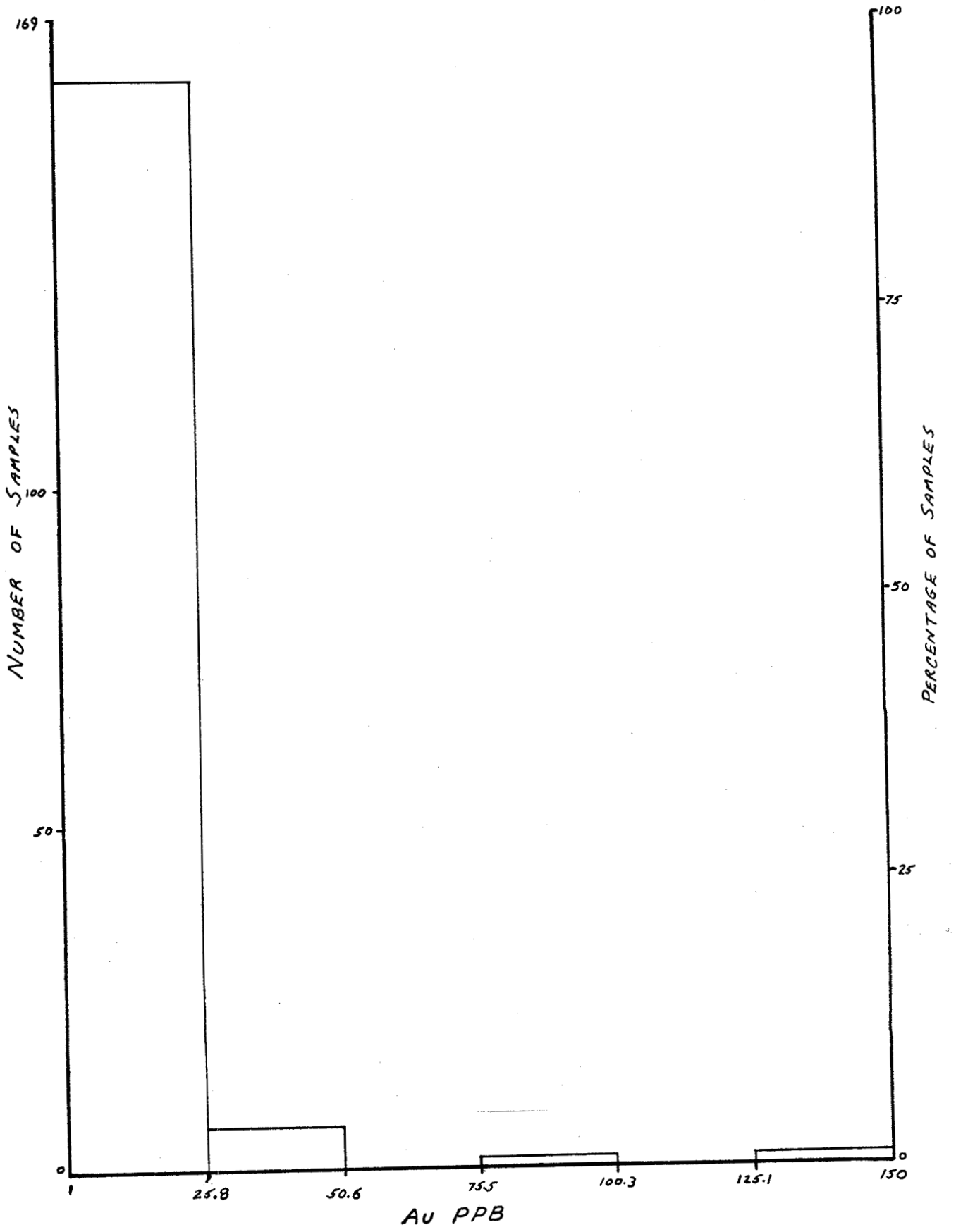
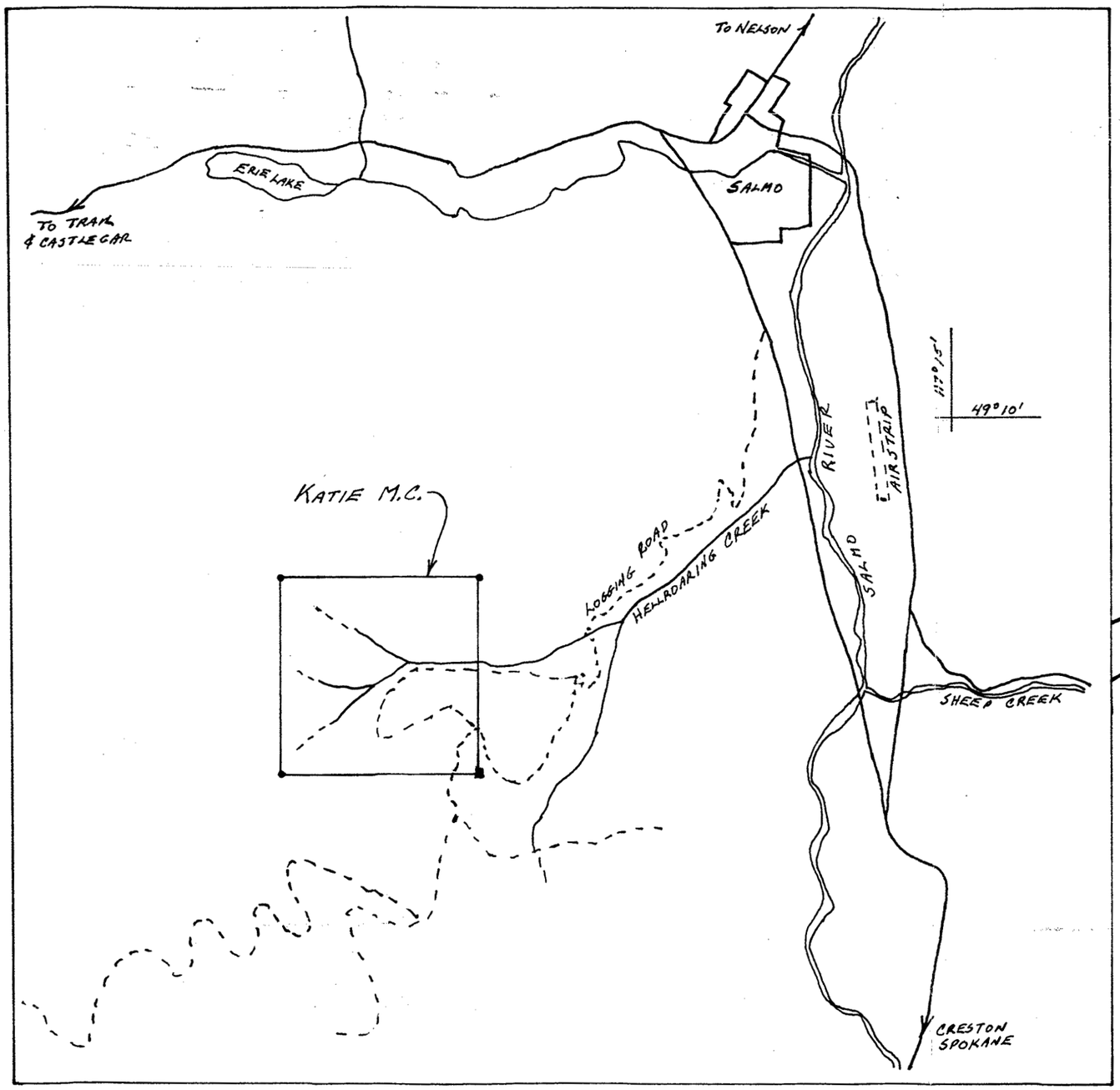


KAT 86-01



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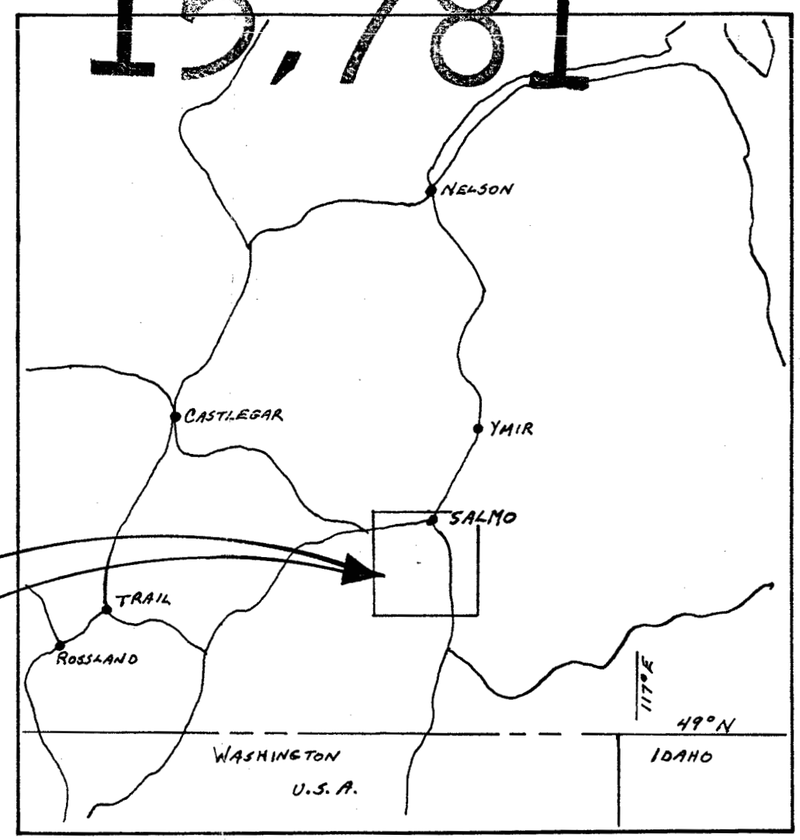

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KATIE GROUP

SCALE: AS SHOWN	N.T.S. 82F/3	DRAWN BY
DATE: DEC, 86		KEN MURRAY

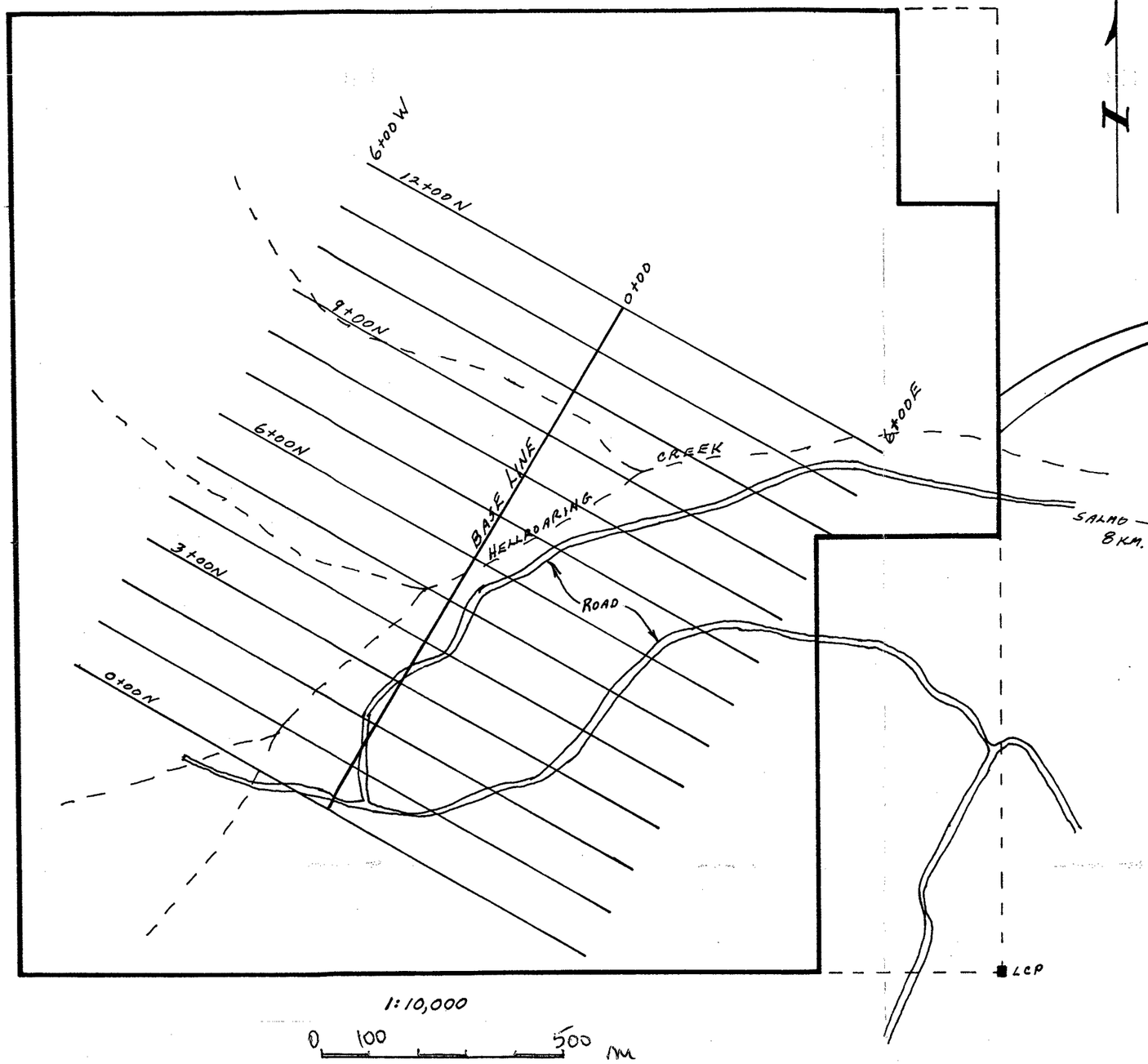
LOCATION PLAN

DRAWING NUMBER
KAT-86-01

GEOLOGICAL BRANCH
ASSESSMENT REPORT

KAT-86-02

15,781



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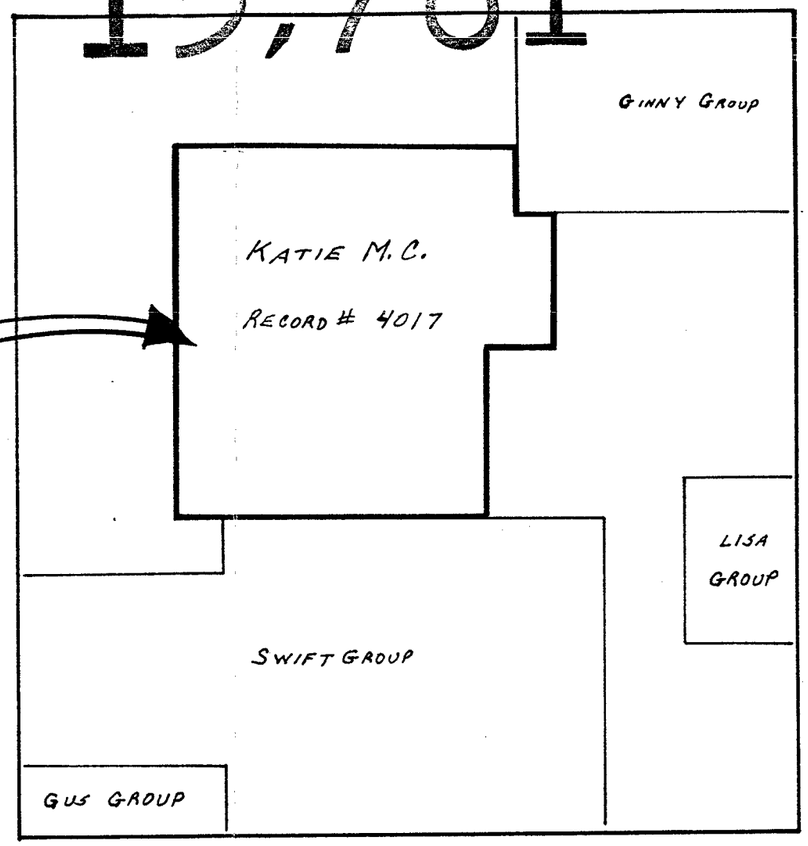
0 100 500 m



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KATIE GROUP

SCALE: AS SHOWN	N.T.S. 82F/3W	DRAWN BY: KEN MURRAY
DATE: DEC. 86		

CLAIM & GRID LOCATION

DRAWING NUMBER
KAT-86-02

KAT 86-03

44	35	90	96	124	30	36	47	41	32	58	85	44	12N
25	45	46	67	31	64	78	36	56	79	35	52	63	11N
375	103	113	41	72	115	100	97	29	121	69	50	48	10N
79	81	48	55	93	145	174	21	114	75	75	45	92	9N
857	87	57	606	67	81	44	34	50	77	35	46	62	8N
1201	92	265	287	443	134	142	108	49	92	68	58	70	7N
230	183	58	493	290	269	181	105	46	63	57	53	14	6N
418	812	321	271	283	221	141	80	82	130	93	52	62	5N
276	75	104	93	59	59	98	91	79	90	59	77	38	4N
149	222	192	126	114	52	80	55	175	101	121	81	44	3N
125	68	63	90	43	34	149	60	137	100	138	95	42	2N
39	64	91	71	30	41	38	115	74	104	59	84	67	1N
108	97	74	61	52	47	79	73	52	91	106	51	15	0N
6W	5W	4W	3W	2W	1W	0	1E	2E	3E	4E	5E	6E	

200
400
600
800
1000
1200

GEOLOGICAL BRANCH
ASSESSMENT REPORT

15,781

0 100 m

KATIE GROUP

SCALE: 1:5,000	NTS 82F/3W	DRAWN BY: KEN MURRAY
DATE: DEC, 86		

B-HORIZON SOIL GEOCHEMISTRY

COPPER :- VALUES IN PPM

DRAWING NUMBER: KAT-86-03

KAT 86-04

6W	5W	4W	3W	2W	1W	0	1E	2E	3E	4E	5E	6E	
.4	.3	.5	.4	.4	.4	.3	.5	.5	.1	.6	.1	.1	0N
.4	.3	.3	.4	.6	.6	.5	.6	.4	.3	.5	.2	.6	1N
.4	.3	.3	.4	.3	.4	.2	.4	.4	.4	(.7)	.1	.4	2N
.6	.3	.1	.2	.1	.3	.5	.4	.1	.1	.6	.4	.3	3N
.1	.5	.5	.4	.5	.3	.5	.2	.3	.4	.3	.2	.9	4N
.4	.2	.6	.8	.3	.4	.4	.3	.3	.3	.7	.1	.3	5N
.5	.7	.6	.1	.4	.6	.1	(.8)	.4	.3	.3	.4	.1	6N
.2	.4	.4	.7	.8	.4	.3	.6	.3	.5	.3	.3	.8	7N
.5	(1.0)	.3	.4	(1.0)	.5	.2	.4	.4	.5	.3	.4	.4	8N
.8 .9 .8 .6	.5	.3	.3	.3	.2	.4	.5	.1	.5	.7	.2	.5	9N
.3	.5	.9 .8 .6	.4	.3	.9	.7	(1.0)	.7	.1	.2	.3	.3	10N
.2	.1	.4	.1	.6	.1	.4	.1	.2	.6	.5	.1	(1.0)	11N
.1	.4	.5	.6	.8	.2	.1	.2	.4	.1	.1	.3	.7	12N

N

GEOLOGICAL BRANCH
ASSESSMENT REPORT

15,781

KATIE GROUP

SCALE: 1:5,000	NTS 82F/3W	DRAWN BY: KEN MURRAY
DATE: DEC, 86		

B-HORIZON SOIL GEOCHEMISTRY

SILVER :- VALUES IN PPM

DRAWING NUMBER: KAT-86-04

KAT 86-05

6W	5W	4W	3W	2W	1W	0	1E	2E	3E	4E	5E	6E	
3	1	1	4	2	78	1	1	2	1	1	1	1	12N
1	1	1	6	1	3	2	1	4	3	5	7	33	11N
6	1	4	4	6	6	4	7	16	1	2	5	1	10N
1	6	1	150	3	1	6	1	7	2	3	1	1	9N
1	1	1	3	2	3	1	1	8	1	1	1	1	8N
1	1	4	5	3	2	1	2	1	1	1	1	1	7N
29	22	130	34	28	11	16	1	4	1	1	1	2	6N
1	8	2	111	2	14	8	4	17	4	2	1	1	5N
2	10	8	22	1	3	3	13	19	1	1	3	2	4N
1	6	7	3	5	1	4	3	18	12	3	7	1	3N
3	2	15	5	6	1	9	3	2	12	9	29	1	2N
3	10	2	5	1	1	1	8	1	17	5	4	3	1N
17	1	7	1	1	3	8	2	1	1	1	1	1	0N

10 20 10 20 10 10

N

GEOLOGICAL BRANCH
ASSESSMENT REPORT

15,781

0 100 m

KATIE GROUP

SCALE: 1:5,000	NTS 82F/3W	DRAWN BY: KEN MURRAY
DATE: DEC, 86		

B-HORIZON SOIL GEOCHEMISTRY

GOLD :- VALUES IN PPB

DRAWING NUMBER: KAT-86-05