

79-#119-#7233

GEOLOGY AND SOIL GEOCHEMISTRY

CROFT 2 CLAIMS

VICTORIA MINING DIVISION

LOCATION: NTS 92B 13E; 48° 51' N, 123° 40' W

OWNER: S.E.R.E.M. LTD.

OPERATOR: S.E.R.E.M. LTD.

REPORT BY: J.F. GRETTE

DATE: APRIL, 1979

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INTRODUCTION

The Croft 2 claim group sits on and north of Mt. Richards just over 3 kilometers southwest of the Town of Crofton on Vancouver Island (Figure 1). Access to the property is by Cecil Street from Crofton on the east. Numerous logging roads crosscut the property; most roads require a 4-wheel drive vehicle.

Terrain in the area of the present survey is gentle hill with occasional cliff areas. Most of the area is densely forested; valleys may be swampy.

The Croft 2 claims were staked in April of 1978 and ✓ recorded May 1, 1978 by S.E.R.E.M. Ltd. In part they overlap Sirius claims which were once held by CAN-PAC Minerals Limited. CAN-PAC conducted geological, geochemical, and geophysical surveys over their claims. The present work covers ground not previously studied by CAN-PAC.

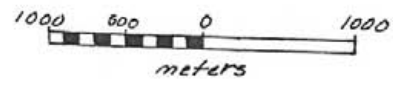
There is evidence of abundant old workings in the area, some as much as 50 years old. These consist largely of trenches and small adits into quartz veins.

Mt. Richards is underlain by greenstones and schists of the mid to upper Paleozoic Sicker Group. Orebodies have been mined from similar rocks on Mt. Sicker about 5 kilometers to the west, and Mt. Richards may sit on an extension of the same mineralized horizons.

This report describes geological mapping and a geochemical soil survey done in the northern portion of the Croft 2



FIGURE 1. INDEX
 MAP, CROFT 2 CLAIMS.
 92 B/13E.



INTRODUCTION (continued)

claims during February, 1979. Mapping, at a scale of 1:3900, and the soil grid covers one square kilometer and includes 255 soil samples. The grid was surveyed with chain and compass, using the old CAN-PAC grid as a starting point.

GEOLOGICAL SURVEY

Mt. Richards is underlain by greenstones of the middle to upper Paleozoic Sicker Group. In the area of this study, Sicker Group rocks are sub-divided into four map units. (Figure 2) These are intruded by later sill-like bodies thought to be part of the Jurassic island intrusions. Sicker Group rocks are strongly deformed; some are quite schistose. Fabric trends 120° - 130° and is nearly vertical. Metamorphism is in subgreenschist conditions - chlorite, sericite.

Map Unit 1, quartz-eye porphyry, is a very distinctive lithology. It consists of spherical to ellipsoidal quartz "eyes" set in an aphanitic, pale green groundmass. In some cases feldspar phenocrysts are visible. This rock unit can be very schistose.

White "chert" makes up Map Unit 2. It is aphanitic quartz, pale brownish grey on a broken surface and weathering white. This may represent a silicified tuff.

Map Unit 3, felsic volcanic rocks, includes dacitic to rhyolitic volcanic rocks. These are generally fine grained, pyritic, and in some exposures feldspar phenocrysts are visible. Some samples from this unit look like quartzite. Unit 3 may include some of Units 1 and 2.

GEOLOGICAL SURVEY (continued)

Unit 4 consists of banded greenstones, of probably andesitic composition for the most part, though some layers are fairly siliceous. Banding is commonly 1 to 3 cm. and individual layers vary from chert as in Unit 2 to fragmental looking rocks which probably represent sedimentary rocks such as greywacke or volcanoclastic rocks like lithic tuffs. Rocks of Unit 4 are generally more chlorite rich than those of the other three units.

Later gabbro to diorite intrusive bodies are mapped as Unit 5. These bodies are sill-like in character, intruding sub-parallel to the pervasive foliation in Units 1 to 4. The intrusions are largely unfoliated though a strong fabric may be developed locally along contacts or in shear zones.

Mineralization is found in the felsic volcanic unit and near the margins of the gabbro-diorite bodies. Disseminated pyrite occurs throughout most of the felsic volcanic rocks; shear zones through these rocks often have coarsely crystalline, more massive pyrite concentrations. No copper minerals were found in those rocks. Copper mineralization is present in three places near the intrusive contacts of the gabbro. Along Line 88+00 W a 1-foot wide quartz vein cutting the gabbro contains chalcopyrite and arsenopyrite. The vein is exposed for about 20 feet. A similar vein exposed along Line 108+00 W contains malachite, chalcocite, tetrahedrite, and minor bornite. More extensive

GEOLOGICAL SURVEY (continued)

mineralization is found in a muck pile near a flooded adit just east of Line 108+00 W. Chalcopyrite and sphalerite predominate. The adit sits along the contact between the intrusion and felsic volcanic rocks.

GEOCHEMICAL SOIL SURVEY

Sample Collection and Analysis

A soil grid was run along seven lines, spaced at 122 meters. Samples were taken at intervals of 30 m. with the aid of a mattock. In all but a few cases, a good B horizon sample was obtained at depths from 5 to 50 cm. A total of 255 samples were taken. The samples are listed in the table on the following pages and their distribution is shown on Figure 3.

The minus 80 mesh fraction of each sample was analyzed by Van Geochem Lab, North Vancouver, B. C. for copper, zinc, and silver, using standard atomic absorption techniques. These values are plotted on Figures 4, 5, and 6.

Results

There is a close correlation between metal values and geology. Higher copper and zinc values are almost exclusively limited to the central area which is underlain by felsic volcanic and sedimentary rocks. Along the margins of the gabbro bodies where they intrude siliceous volcanic rocks to the south, a few high values

Sample	Line	Soil Horizon	Depth (cm)
MR 1	8+00 W	B	20
2	"	"	15
3	"	"	15
4	"	"	20
5	"	"	20
6	"	"	30
7	"	"	20
8	"	"	"
9	"	"	"
10	"	"	"
11	"	"	"
12	"	"	"
13	"	"	15
14	"	"	20
15	"	"	15
16	"	"	20
17	"	"	"
18	"	"	"
19	"	"	30
20	"	"	20
21	"	"	20
22	"	"	30
23	"	"	20
24	"	"	30
25	"	"	20
26	"	"	15
27	"	"	30
28	"	"	15
29	"	"	15
30	"	"	10
31	"	"	15
32	"	"	10
33	"	"	20
34	"	"	20
35	92+00 W	"	15
36	"	"	25
37	"	"	30
38	"	"	20
39	"	"	15
40	"	"	15
41	"	"	20
42	"	"	"
43	"	"	"
44	"	"	"
45	"	"	"

Sample	Line	Soil Horizon	Depth (cm)
MR 46	92+00 W	B	30
47	"	"	20
48	"	"	"
49	"	"	"
50	"	"	"
51	"	"	30
52	"	"	40
53	"	"	30
54	"	"	40
55	"	B?	15
56	"	B	30
57	"	"	30
58	"	"	40
59	"	"	30
60	"	"	20
61	"	"	30
62	"	"	30
63	"	"	20
64	"	"	"
65	"	"	"
66	"	"	"
67	"	"	"
68	"	"	"
69	"	"	"
70	"	"	30
71	"	"	20
72	"	"	10
73	"	"	20
74	96+00 W	"	15
75	"	"	25
76	"	"	25
77	"	"	25
78	"	"	20
79	"	"	20
80	"	"	30
81	"	"	25
82	"	"	5
83	"	"	20
84	"	"	"
85	"	"	"
86	"	"	"
87	"	"	"
88	"	"	"
89	"	"	"
90	"	"	15

Sample	Line	Soil Horizon	Depth (cm)	Sample	Line	Soil Horizon	Depth (cm)
MR 91	96+00W	B	20	MR 137	96+00 W	B	20
92	100+00 W	"	30	138	"	"	"
93	"	"	20	139	"	"	"
94	"	"	20	140	"	"	15
95	"	B?	10	141	"	"	20
96	"	B	20	142	"	"	"
97	"	"	"	143	"	"	"
98	"	"	"	144	"	"	"
99	"	"	"	145	"	"	"
100	"	"	"	146	"	"	15
101	"	"	"	147	"	"	15
102	"	"	"	148	"	"	30
103	"	"	"	149	"	"	20
104	"	"	"	150	"	"	20
105	"	"	"	151	"	"	30
106	"	"	"	152	109+00W	"	30
107	"	B?	10	153	"	A	5
108	"	B	10	154	"	B	20
109	"	"	20	155	"	"	"
110	"	"	"	156	"	"	"
111	"	"	"	157	"	"	"
112	"	"	"	158	"	"	"
113	"	"	30	159	"	"	"
114	"	"	"	160	"	"	"
115	"	"	"	161	"	"	"
116	"	"	15	162	"	"	"
117	"	"	20	163	"	"	"
118	"	"	30	164	"	"	"
119	"	"	20	165	"	"	"
120	"	"	30	166	"	"	"
121	"	"	20	167	"	"	"
122	"	"	30	168	"	"	"
123	"	"	20	169	"	"	"
124	"	"	"	170	"	"	"
125	"	"	"	171	"	"	50
126	"	"	"	172	"	"	20
127	"	"	"	173	"	"	"
128	"	"	"	174	"	"	"
129	"	"	"	175	"	"	30
130	96+00W	"	"	176	"	"	20
131	"	"	"	177	"	"	40
132	"	"	"	178	"	"	"
133	"	"	30	179	"	"	"
134	"	"	"	180	"	"	30
135	"	"	"	181	"	"	20
136	"	"	50	182	"	"	"

Sample	Line	Soil Horizon	Depth (cm)
MR 183	104-00 W	B	20
184	"	"	"
185	"	"	20
186	"	"	40
187	"	"	30
188	"	"	20
189	108-00 W	A	5
190	"	A	5
191	"	B?	10
192	"	B	20
193	"	"	"
194	"	"	"
195	"	"	"
196	"	"	25
197	"	"	"
198	"	"	"
199	"	"	"
200	"	"	"
201	"	A-B	15
202	"	B	20
203	"	"	20
204	"	"	30
205	"	"	"
206	"	"	"
207	"	"	"
208	"	"	"
209	"	"	"
210	"	"	20
211	"	"	"
212	"	"	"
213	"	"	"
214	"	"	"
215	"	"	"
216	"	"	"
217	"	"	30
218	"	"	"
219	"	"	"

Sample	Line	Soil Horizon	Depth (cm)
MR 220	108-00 W	B	30
221	"	"	20
222	"	"	"
223	112-00 W	"	"
224	"	B?	"
225	"	B	"
226	"	"	"
227	"	"	"
228	"	"	"
229	"	"	"
230	"	"	"
231	"	"	"
232	"	"	30
233	"	"	"
234	"	"	"
235	"	"	20
236	"	"	20
237	"	"	30
238	"	"	20
239	"	"	"
240	"	"	"
241	"	"	"
242	"	"	"
243	"	"	"
244	"	"	"
245	"	"	"
246	"	"	"
247	"	"	"
248	"	"	"
249	"	"	"
250	"	"	"
251	"	"	"
252	"	"	"
253	"	"	"
254	"	"	40
255	"	"	30

GEOCHEMICAL SOIL SURVEY (continued)

occur. The high values of Lines 108+00 W and 112+00 W are in an area of very poor exposure; thus exact correlation with the geology is difficult.

CONCLUSIONS

Copper and zinc sulphide mineralization present on the Croft 2 claims is related to the distribution of dacitic to rhyolitic volcanic rocks. Sulphides may be concentrated along sheared intrusions contacts between felsic volcanic rocks of the Sicker Group and later island intrusions. Further work extending mapping and soil sampling to the northwest is necessary.

COST STATEMENT

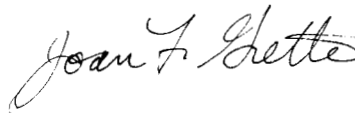
<u>Description</u>	<u>Cost</u>
<u>Wages</u>	
G. Allen - surveying, mapping, and soil sampling; Jan. 31 to Feb. 12 13 days @ \$75.00 per day	\$ 975.00
C. von Houten - mapping Feb. 1-2 2 days @ \$75.00 per day	150.00
J. Grette - mapping Jan. 31 to Feb. 9 10 days @ \$75.00 per day - data compilation and report 3 days @ \$75.00 per day	750.00 225.00
<u>Board</u>	
25 man days @ \$7.00 per day	175.00
<u>Room</u>	
25 man days @ \$3.00 per day	75.00
<u>Transportation</u>	
Company truck - average cost fuel and service - \$100.00/month - 1/2 month use	50.00
Ferry and taxi transportation of crew to and from Duncan	33.00
<u>Analyses</u>	
255 samples analyzed for Cu, Zn, Ag @ \$2.60 per sample	663.00
<u>Report Expenses</u>	<u>50.00</u>
TOTAL COST	<u><u>\$3,146.00</u></u>

STATEMENT OF QUALIFICATIONS

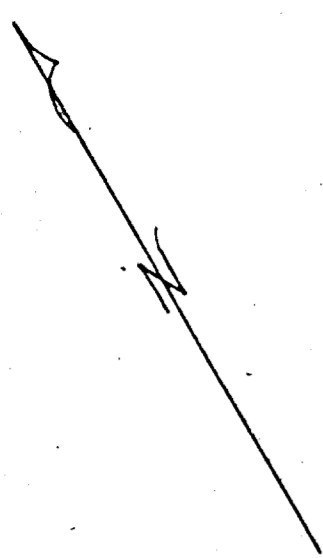
I, JOAN F. GRETTE, of Vancouver, B.C. hereby certify that:

1. I hold a B.A. in geology from Middlebury College, Middlebury, Vermont and am receiving a M.Sc. in geology from the University of British Columbia in spring of 1979.
2. I am a geologist employed by S.E.R.E.M. Ltd. of 505 - 850 West Hastings Street, Vancouver, B.C.
3. I have worked in geology and mineral exploration for two years and three summers.
4. The field work described in this report was carried out under my supervision.
5. I have no financial interest in the claims covered by this report or in S.E.R.E.M. Ltd.

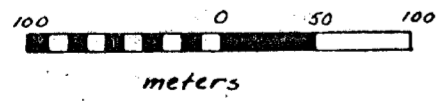
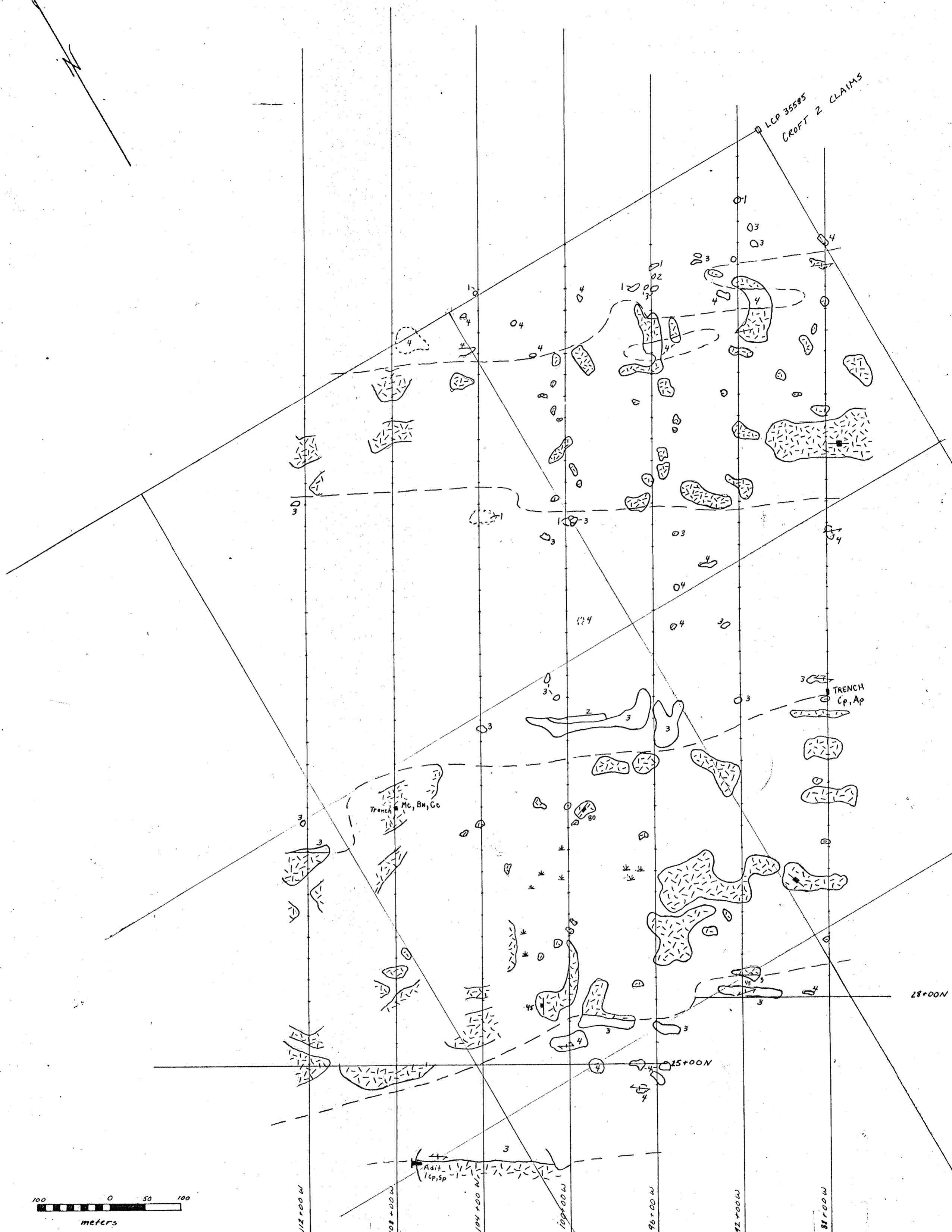
Dated this 10th day of April, 1979 at Vancouver, B.C.



Joan F. Grette
Geologist



LCP 35585
CROFT 2 CLAIMS



LEGEND

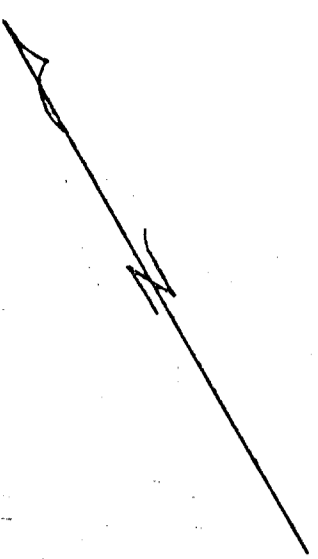
- Unit 5 Gabbro-Diorite
- Unit 4 Banded Greenstones
- Unit 3 Felsic Volcanic Rocks
- Unit 2 White "Chert"
- Unit 1 Quartz-Eye Porphyry
- Outcrop
- Float

- Contact, inferred
- Trench or Adit with Mineralization
Cp - Chalcopyrite; Mc - Malachite; Bn - Bornite;
Ap - Arsenopyrite; Cc-Chalcocite; Sp - Sphalerite;
- Foliation
- Joint
- Claim Unit Boundaries, surveyed by Chain and Compass

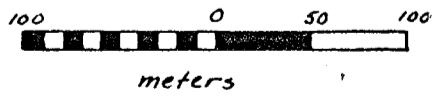
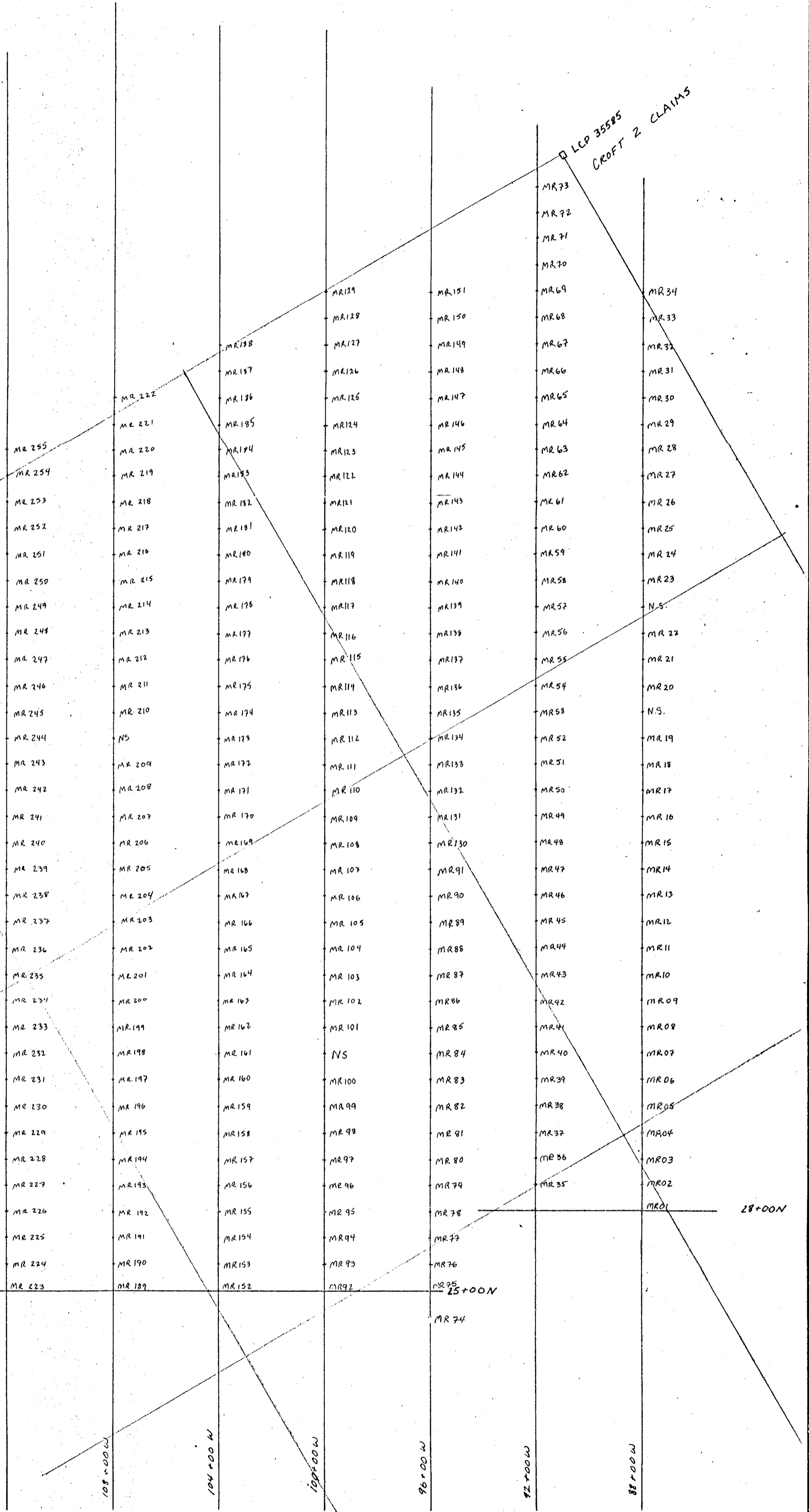
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FIGURE 2
GEOLOGY

John H. Hult



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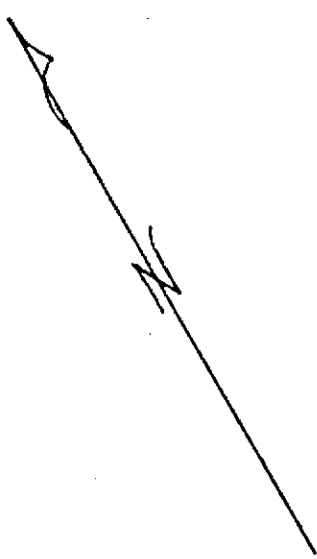


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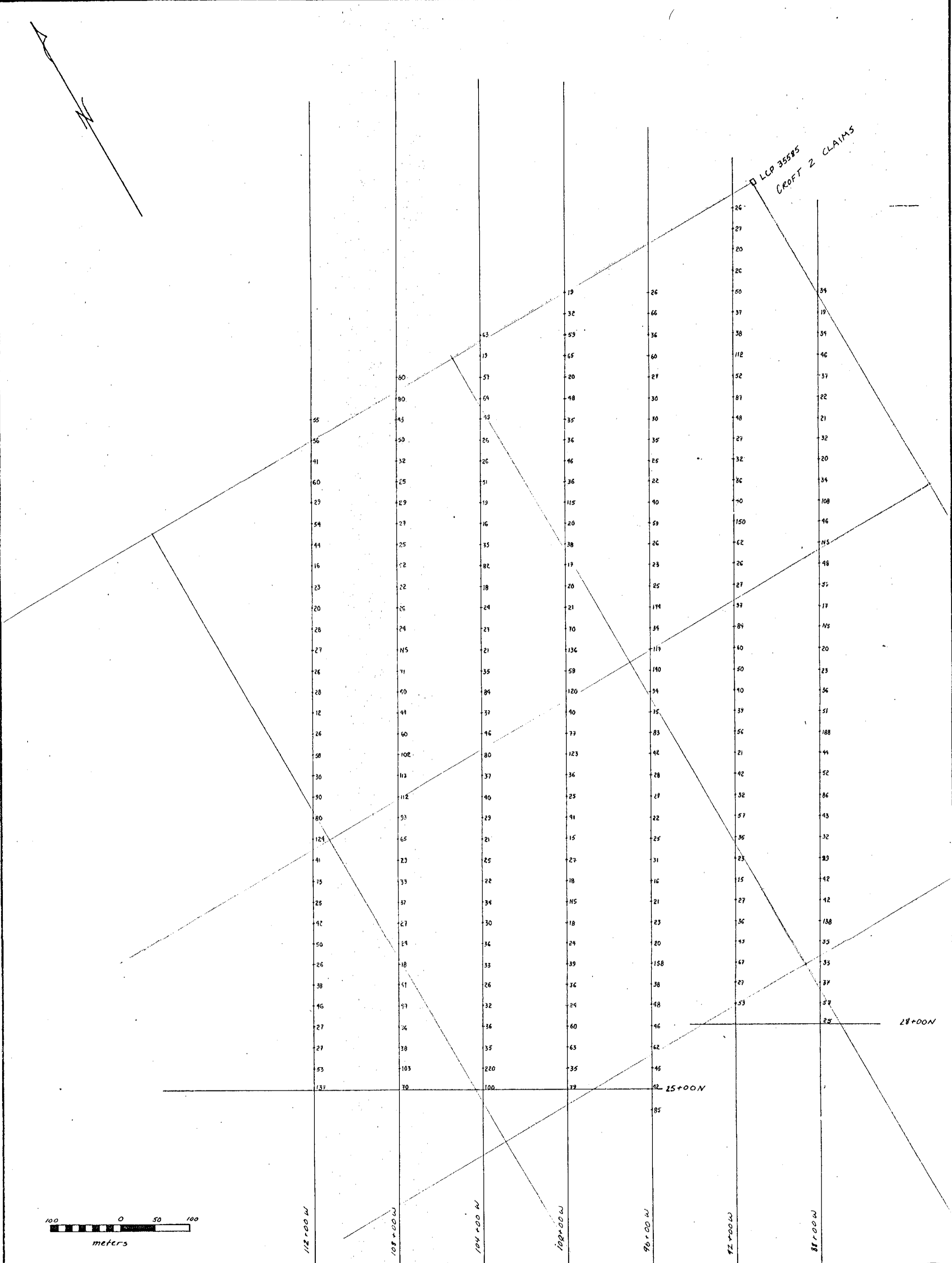
FIGURE 3
SOIL SAMPLE STATIONS

Claim Unit Boundaries, surveyed by Chain and Compass

John J. Felt



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CROFT 2 CLAIMS

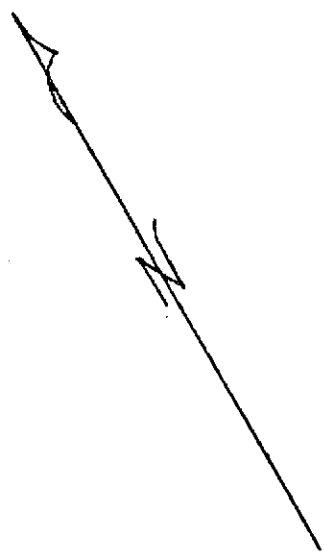


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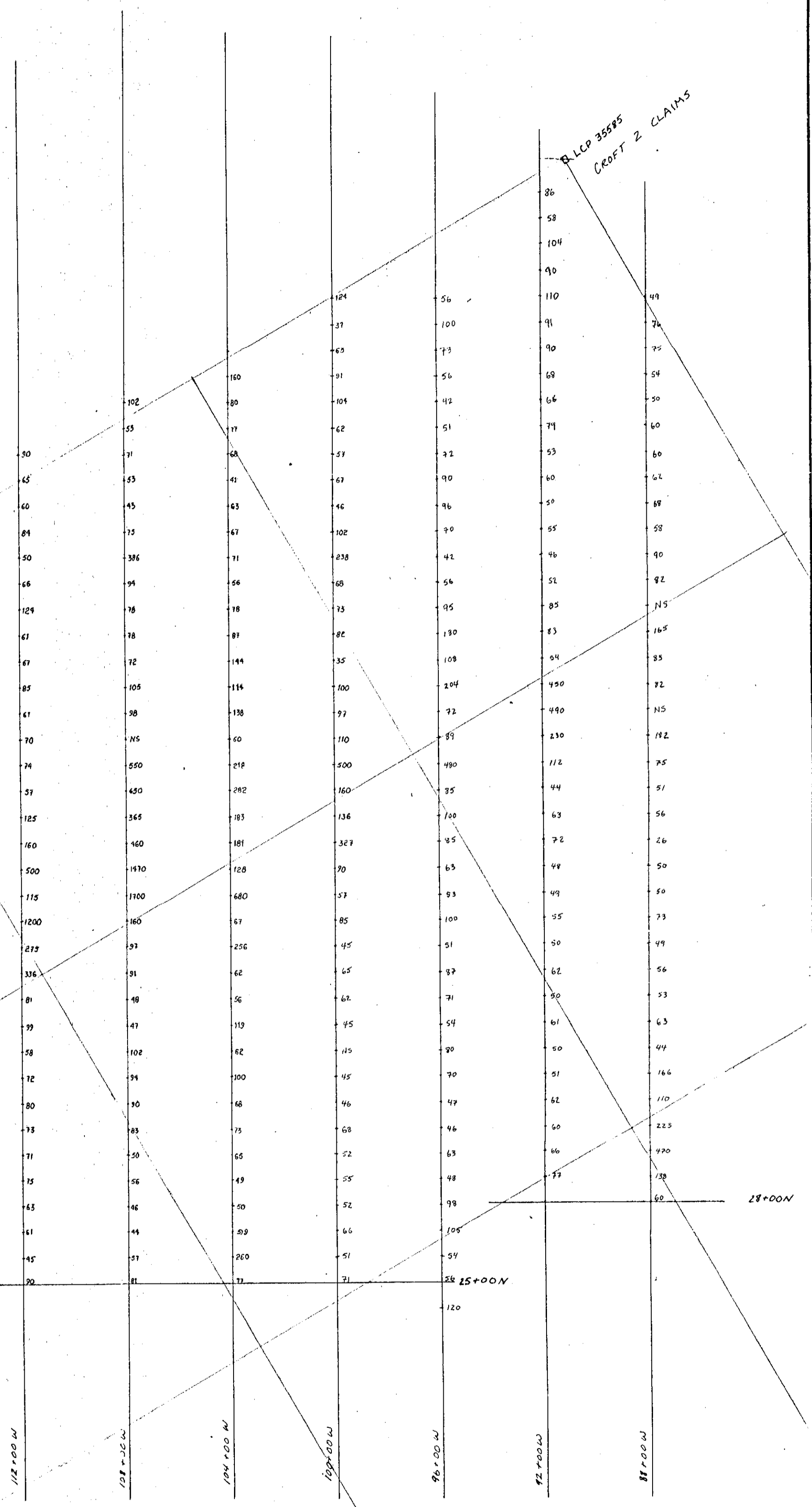
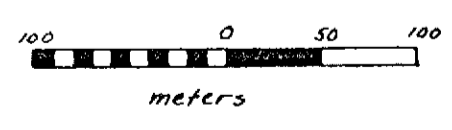
FIGURE 4
COPPER IN SOILS
VALUES IN PPM

Claim Unit Boundaries, surveyed by Chain and Compass

John F. Fuller



R.L.P. 35585
CROFT 2 CLAIMS

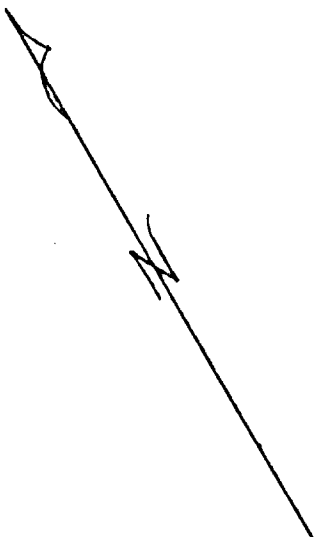


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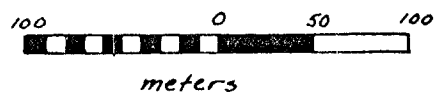
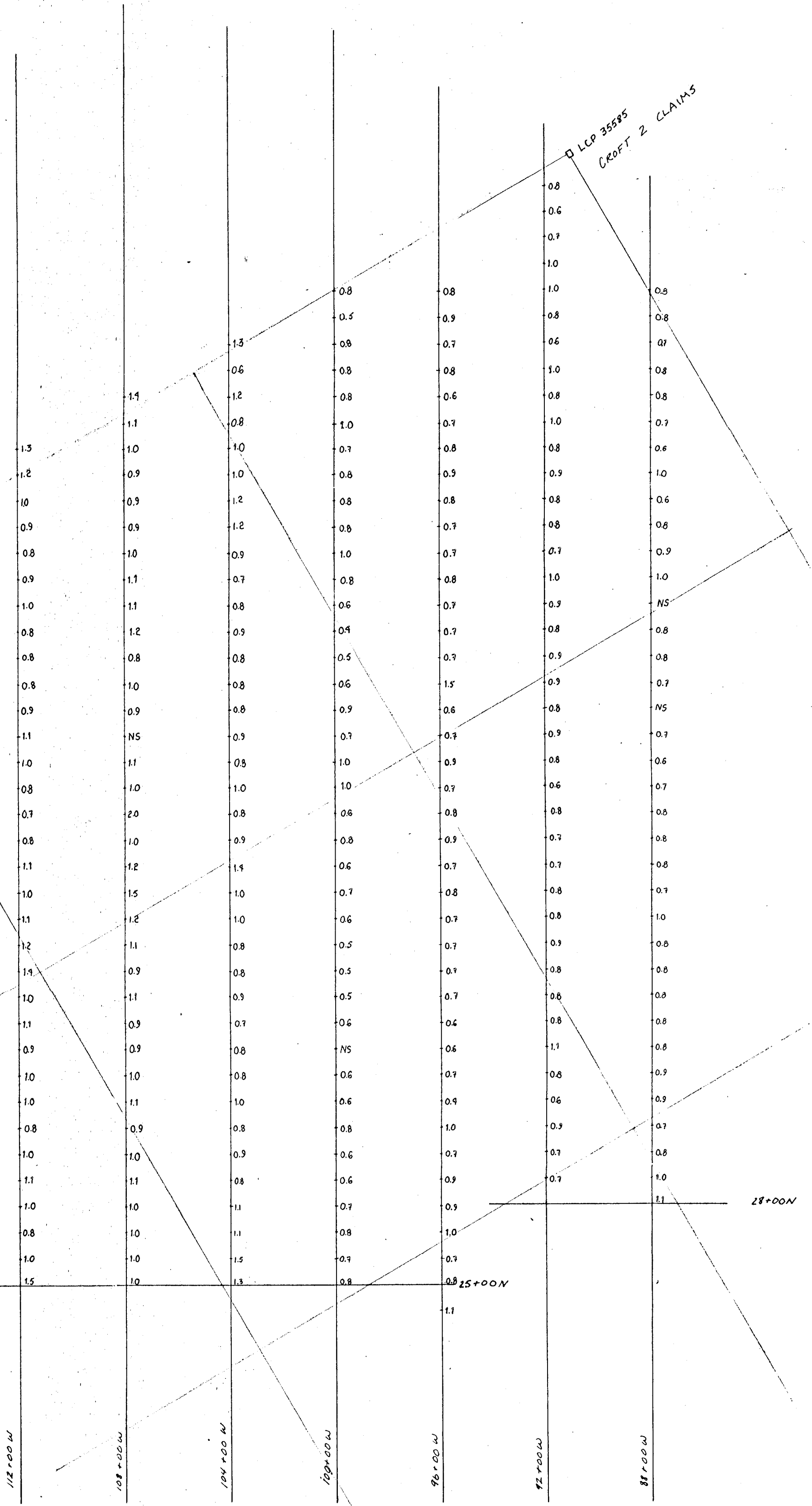
FIGURE 5
ZINC IN SOILS
VALUES IN PPM

Claim Unit Boundaries, surveyed by Chain and Compass

Jan F. Galt



LCP 35585
CROFT 2 CLAIMS



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FIGURE 6

SILVER IN SOILS
VALUES IN PPM

Claim Unit Boundaries, surveyed by Chain and Compass

John J. Hett