(13) Cobre + Copper Kettle
CONGDEN & CAREY

60003704 1230

mining district (4)

January 15, 1963

Copper Kettle Prospect
Churchill County, Nevada

FINAL REPORT

Summary

The Copper Kettle group of 12 unpatented lode claims and the Cobre and Cupre groups, consisting of 60 lode claims and 8 placer claims, cover an area of about 1750 acres, within which geological, geochemical, and geophysical data indicated the possibility of a large, low-grade copper deposit.

This prospect was initially examined by Congdon and Carey, Ltd. in November, 1961 and a lease and option was obtained from Mr. E. J. Bottomley for his Copper Kettle group shortly thereafter. Extensive geochemical sampling, ground magnetic surveying, and claim staking were done in the area during the spring and early summer of 1962. Prospect drilling was begun on the property on July 9th, and completed on November 1, 1962.

The drilling results indicated that there is insufficient mineralization in the area to warrant further exploration.

Location and Geography

The claims are located in Sections 16, 20, 21, 22, 27, 28 and 29, T 24 N, R 34 E, Churchill County, Nevada. The claim group lies on the east flank of the Buena Vista iron district and on the west side of the Stillwater Range.

The prospect area is about 32 road miles south and east of Lovelock, Nevada and is easily accessible throughout most of the year. The topography is not too rugged, the maximum relief being about 600 feet within the claim group. Some moderately rugged terrain is produced by some small canyons cutting through the area, but most portions can be reached by means of a four-wheel drive vehicle. The only vegetation is low sagebrush.

Ownership and History

The outcrops in Copper Kettle Canyon were discovered in 1908. Several carloads of high grade copper ore were hand sorted and shipped from shallow workings in 1917. The early claims were abandoned, and in 1941, Mr. E. J. Bottomley, of Lovelock, covered the eastern portion of the mineralized area with lode claims. He also located a small magnetic ore-body 1,000 feet south of this claim group.

During the mid-1950's, the claims were leased to Gabbs Exploration Company, who drilled three shallow holes and one 700 foot hole in search of a supposed intersection of some copper-ilmenite showings and a fault. Apparently no orebody was found, as no further work was done on the property. A few small pieces of core recovered near the deepest hole showed considerable pyrite in altered volcanics.

(2)
Final Report

Congdon and Carey optioned the Copper Kettle group late in 1961. Since the most extensive copper showings, coincident with favorable geological, geochemical, and geophysical data, occur to the north of the original claims, 60 new lode claims and 6 placer claims were staked in the late winter and early spring of 1962.

General Geology

In the Buena Vista area, the Leach formation, comprised mainly of andesites, was invaded in Jurassic time by dioritic intrusives. In Cretaceous or early Tertiary time the area was folded and faulted and then altered and mineralised. Although the sources of the mineralising solutions are not known, it is possible that the diorites were, in turn, intruded by granites or quartz monzonites during the period of folding and these bodies were the ultimate source of the mineralisation. This is the normal sequence of events and rock relationships in Western Nevada. Small slivers of quartz monzonite are exposed along the Basin and Range block fault which separates the Buena Vista area from the Stillwater Range, and exposures of quartz monzonite within the Stillwater Range show this rock to be definitely related to magnetic (iron) mineralisation and to small copper and nickel occurences.

Geology of the Prospect

The geology of the area was mapped by E. W. Fieldman, Wm. Lundby, and P. S. Geneveau. The predominant rock type is a thick series of andesite flows, tuffs, and breccias of late Paleozoic or early Mesozoic age, trending northwesterly and dipping northeasterly rather steeply. This formation (Leach?) is intensely altered in the claim area, with the development of striking masses of epidote, garnet, and limonite, elongated along the bedding planes. Copper, generally oxidized, although minor chalcopyrite can be found, is present throughout the area, but is most prominent in the most intensely altered rock.

The most significant structural feature is a northeast trending fault having a low dip (30° to 40°) to the southeast. It is evident for at least a mile beyond the southern boundary of the claims and is undoubtedly continuous to the northeast, although in the easternmost portion of the claims it is obscured by rhyolitic welded tuffs. This fault is important because it cuts off the geochemical anomaly abruptly and it changes the strike of the andesites in the upper block enough to make it appear that there is an anticlinal nose. Also, it apparently served as a channel for solutions rich in iron and containing traces of copper, since the upper block has been severely altered and abundant pyrite and minor chalcopyrite have been added, as evidenced by drilling.

Geochemistry and Geophysics

In the early stages of development, geochemical sampling (Fig. 1) and a ground magnetic survey (Fig. 2) were the chief prospecting aids used. In each case the results were encouraging.

The technique used for the taking of geochemical samples was simple. Where rock outcrops were found in place, several rock chips were taken over an area of about twenty square feet of surface per sample. Where no outcrops were present, soil samples were taken from a depth of about eighteen inches. A total of 283 samples was taken and the results plotted; an anomalous area approximately 3,500 feet in diameter was found immediately north of the 12 original C.K. claims, this area generally having copper values in excess of 100 parts per million, or about 10 to 40 times as great as the normal copper content of the surrounding rock.

The ground magnetic survey indicated some magnetic highs and the possibility of magnetite (iron) accumulations. This was very favorable, especially because of the known association of copper with iron in the district.

Electrical Methods

In May, C. J. Melbye and Associates conducted turam and self-potential surveys, the results of which have been reported in detail by Mr. Melbye. To summarise his conclusions, the turam showed three anomalous areas in the northern portion of the prospect (Fig. 3) which overlapped the geochemical anomally and the self-potential method indicated a large area of negative self-potential in the same general region (Fig. 4).

Drilling

Since the surface geology, geochemical data, and geophysics were all favorable in the northern half of the claim group, an initial program consisting of four drill holes was decided on.

The site of the first hole was chosen in the portion of the claims having the highest surface copper values and the most intense alteration. Although extremely sparse sulphides were encountered (nearly entirely pyrite), below 350 feet the copper values dropped to about the same level as the background for the district. The total depth of this hole was 1549.5 feet.

The second hole was drilled to intercept the strongest turam and self-potential anomalies. Here again, minor pyrite was found, but the copper values were very low, less than 100 parts per million (0.01% Cu). Hole number two was stopped at 1498 feet.

Drill hole number three was positioned on a magnetic high to test the possibility of a copper concentration coincident with iron concentration. The results of this drilling were also discouraging. Again very minor pyrite was found and the copper values remained very low, less than 150 parts per million. Since almost no mineralization was found, the third hole was drilled to a depth of only 940 feet.

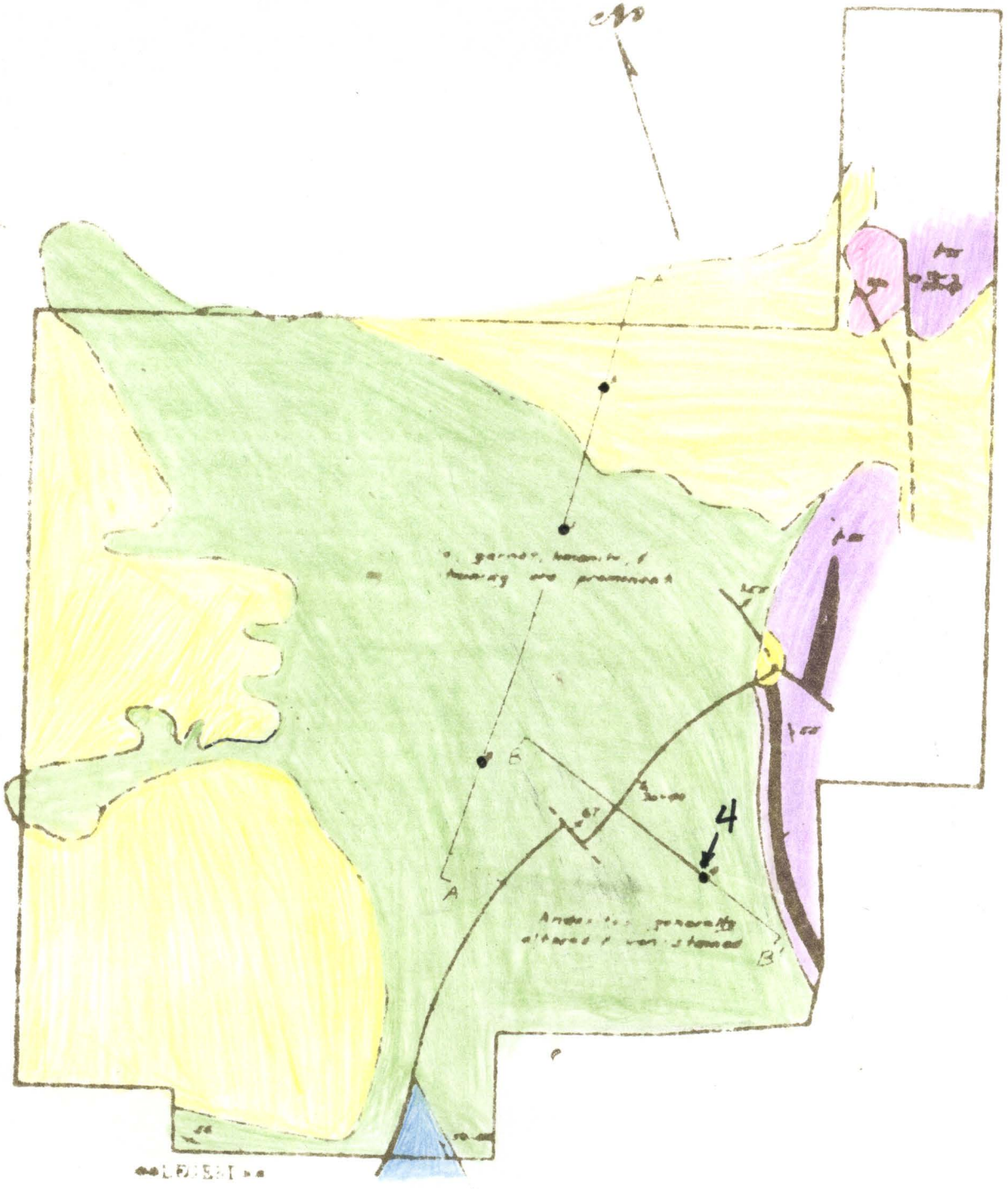
The final hole was drilled in the fault block lying above the low-angle (thrust?) fault in the eastern part of the claims. This site was chosen with the thought that there could be a concentration of copper above the fault in the altered block of andesites. In this hole, very abundant sulphides were encountered down to the main fault, but with very little copper present. After passing through the main fault at 817.5 feet, relatively fresh andesites, similar in appearance to those seen in the first three holes and generally devoid of mineralization, were found and the drill hole was stopped at a depth of 840.1 feet.

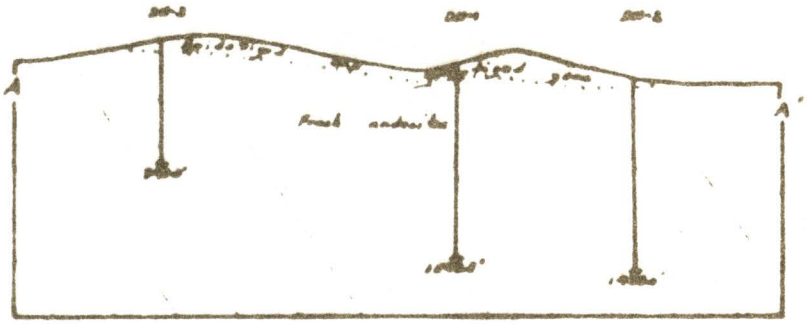
Conclusion

Although the surface indications and the results of the modern prospecting methods were extremely encouraging, drilling has pretty well exhausted the possibility of sufficient copper mineralization in the immediate area to be economically interesting.

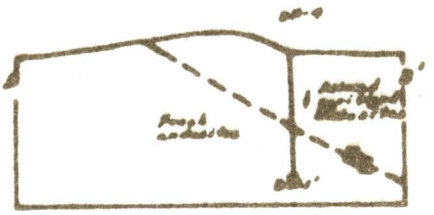
There is a slight chance that there is an ore body somewhere along the thrust (?) fault found in the eastern part of the claims. If there were, it could account for the weak mineralizing solutions that passed through this fault zone, giving rise to the flaverable-appearing surface features. However, the chance is slight and the exploration expense would be prohibitive. Also any such body would probably be deeply buried by Tertiary lavas, making such a deposit uneconomical even if found.

Therefore, further expenditures on this claim group were not advisable and the lease and option on the Copper Kettle Group was dropped.


4
A
B
B'



Geologic cross-section A-A' (looking west) through drill holes 1, 2, and 3 showing fresh andesites in all three drill holes. (Scale: 1" = 1500').



Geologic cross-section B-B' (looking northeast) through drill hole 4, showing altered and pyritized andesites above the thrust(?) fault and fresh andesites below the fault. (Scale: 1" = 1500').

—100— Copper content (parts per million)

Scale: 1" = 1500'

Figure 1. Geochemical survey

Contour interval: 200 gammas

Scale: 1" = 1500 '

Figure 2. Vertical intensity ground magnetic map.

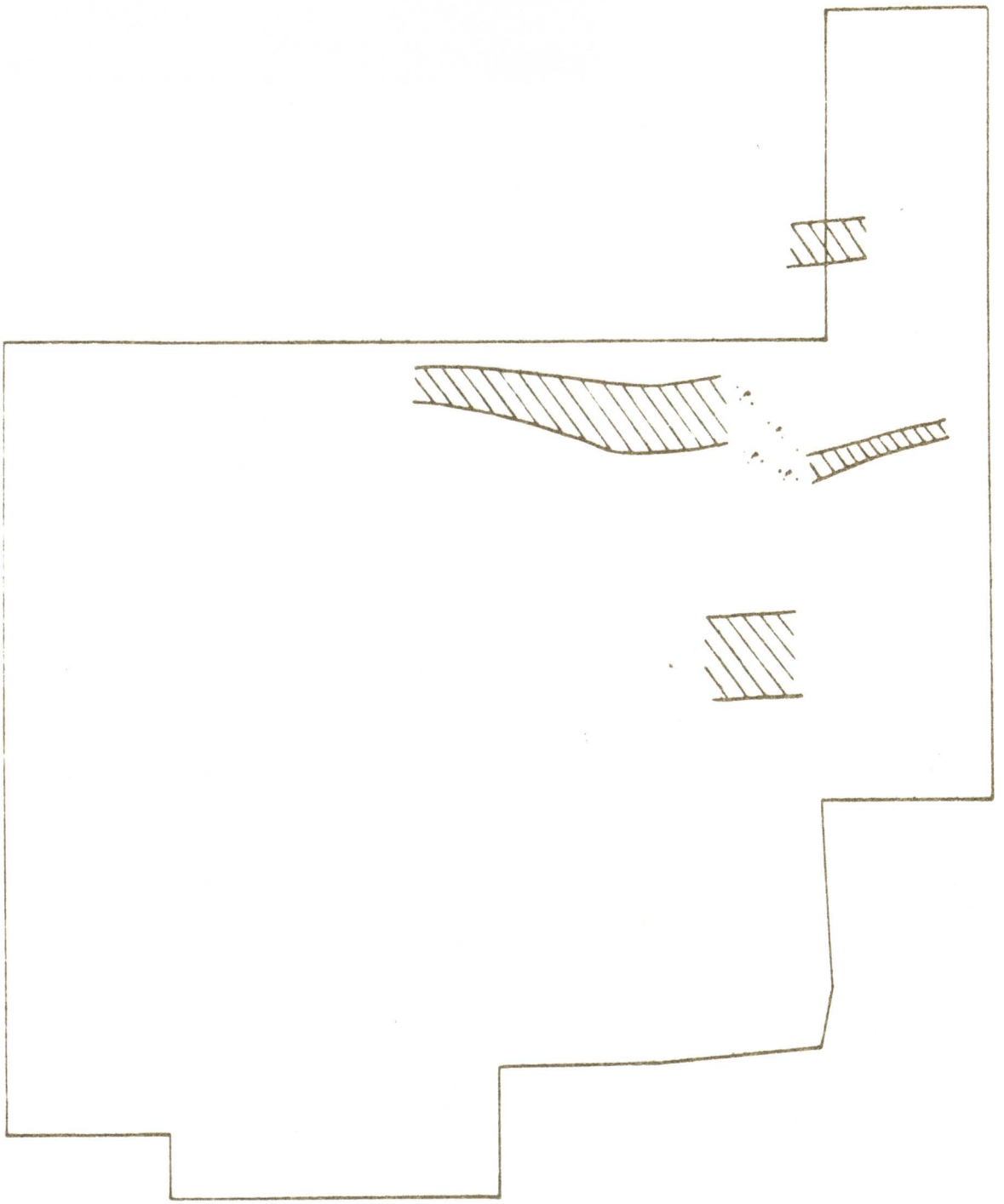
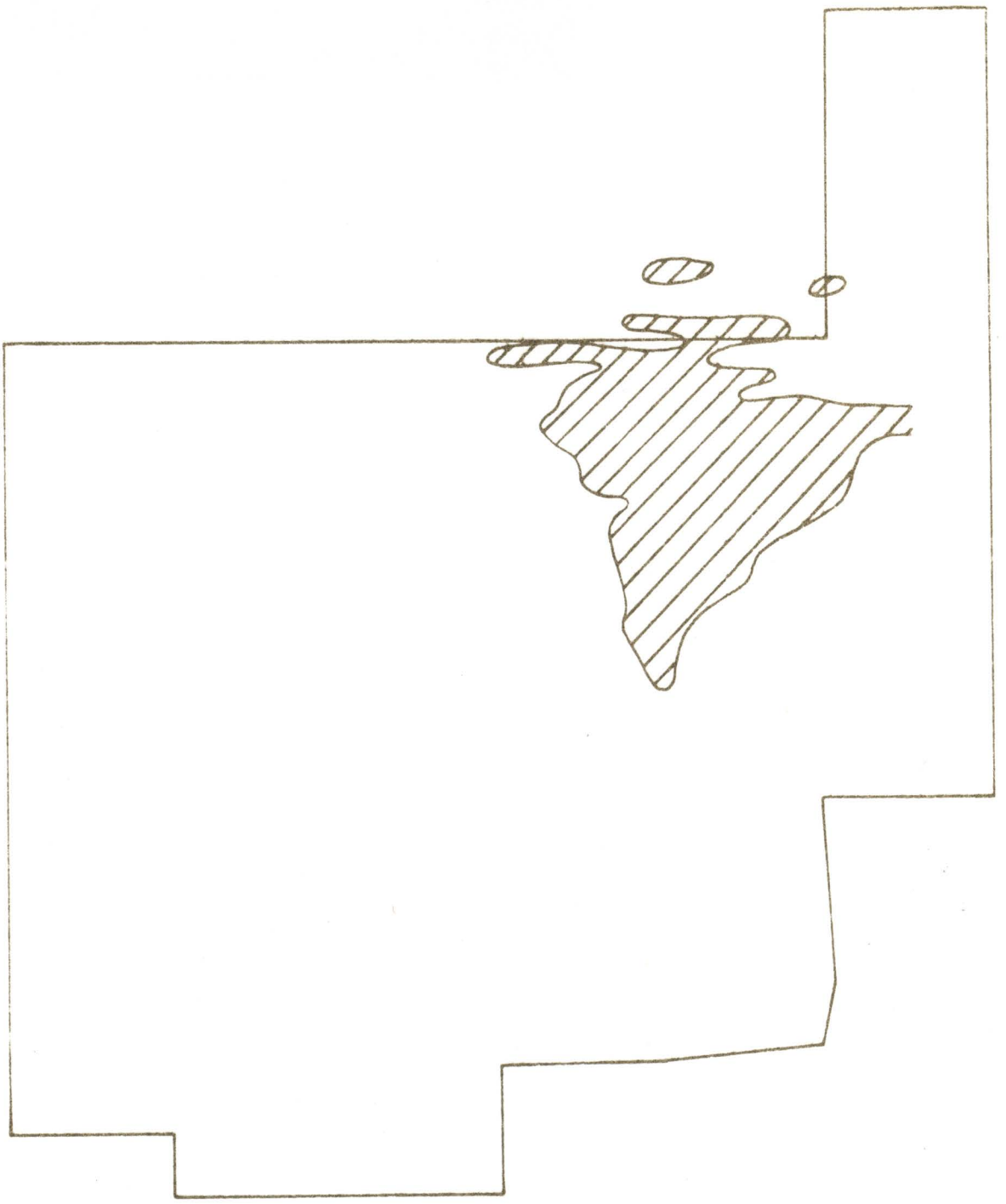


Figure 3. Turam survey (by C. E. Melbye).



Areas of relative negative self-potential

Scale: 1" = 1500'

Figure 4. Self-potential survey (C. E. Melbye).

2114 CURTIS STREET

TELEPHONE MAin 3-1852

[redacted] PARKER & CO.

CHEMISTS • ASSAYERS • ENGINEERS
DENVER 5, COLORADO

Folio 7857

Date Oct. 29-31, 1962.

Congdon & Carey,
1037 First National Bank Bldg.,
Denver, Colorado.

We hereby Certify, that the samples assayed for you gave the following results:

DESCRIPTION	GOLD OUNCES PER TON	SILVER OUNCES PER TON	COPPER PER CENT (WET)	LEAD PER CENT WET)	ZINC PER CENT	IRON PER CENT	INSOLUBLE PER CENT	VALUE PER TON
Copper 4-1	TRACE	0.06	0.025					
4-2	TRACE	0.10	0.04					
4-3	TRACE	0.04	0.035					
4-4	TRACE	0.08	0.025					
4-5	TRACE	0.22	0.06					

Molybdenum:
16 parts per million.
85 parts per million.

Gold at _____ per ounce Copper at _____ per unit

Silver at _____ per ounce Zinc at _____ per unit

Lead at _____ per unit

Charge $ 30.00

CHARLES O. PARKER & CO.
CHEMISTS, ASSAYERS and ENGINEERS

TN MN

18°

LEGEND

-20 Self - potential contour

Anomalous (low) area

(4)
Item 3

C-32 C-36 C-40 C-44 C-48

C-31 C-35 C-39 C-43 C-47

C-30 C-34 C-38 C-42 C-46

C-29 C-33 C-37 C-41 C-45

C-13 C-17 C-20 C-23 C-26

C-12 C-16 C-19 C-22 C-25

C-11 C-15 C-18 C-21 C-24

C-10 C-14 CK-10 CK-11 CK-12

C-6 C-1 CK-9 CK-3 CK-1

Congdon & Carey, Ltd.

SELF-POTENTIAL MAP
COPPER KETTLE PROPERTY
CHURCHILL COUNTY, NEVADA

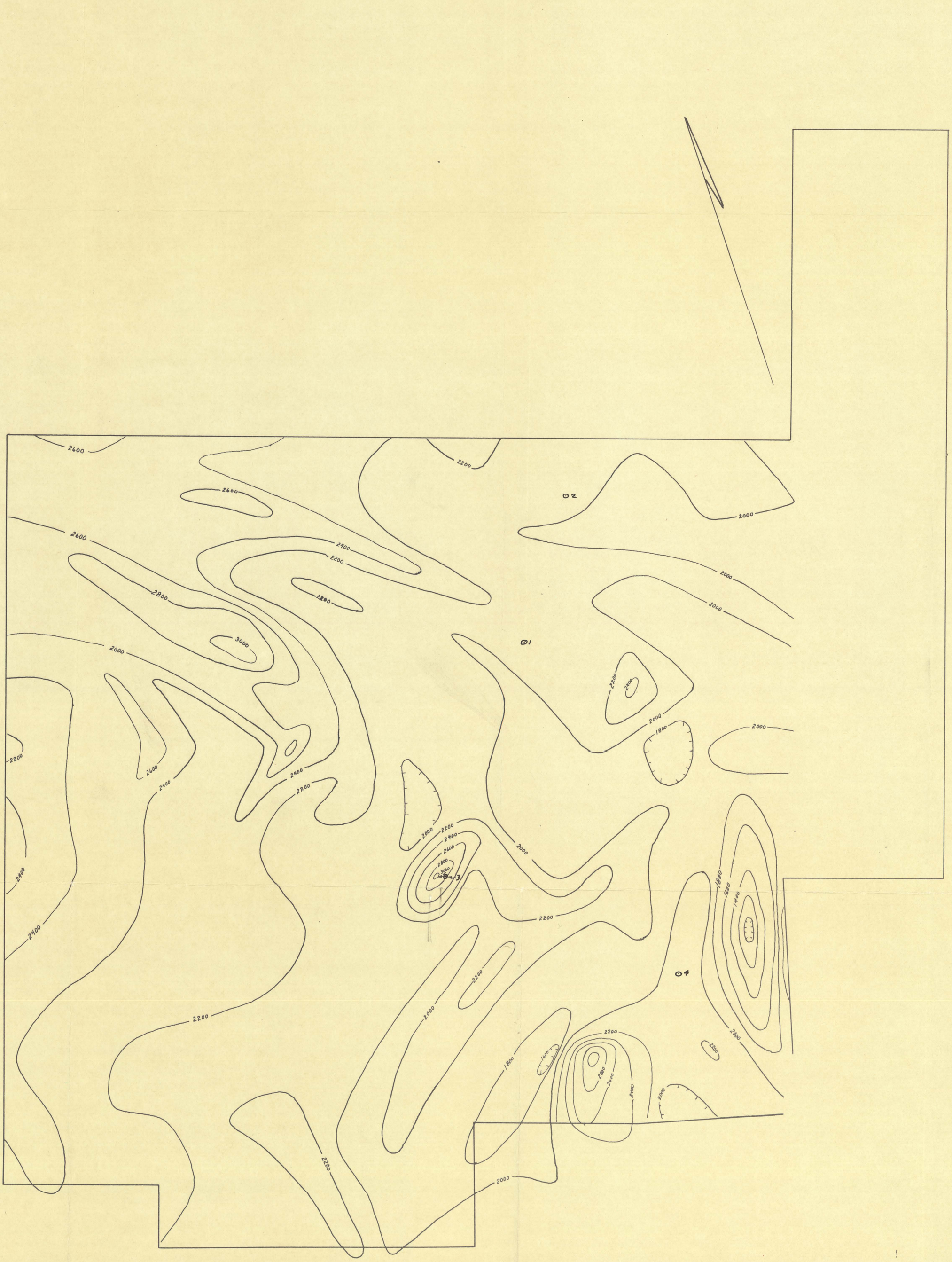
SCALE: 1"= 600' MAY, 1962

CONTOUR INTERVAL: 10 Mv

0 600 Ft.

(4)

M2



(4)
Item 6

Congdon and Carey, Ltd.

Vertical Intensity Magnetic Map
Copper Kettle Group Churchill Co, Nevada

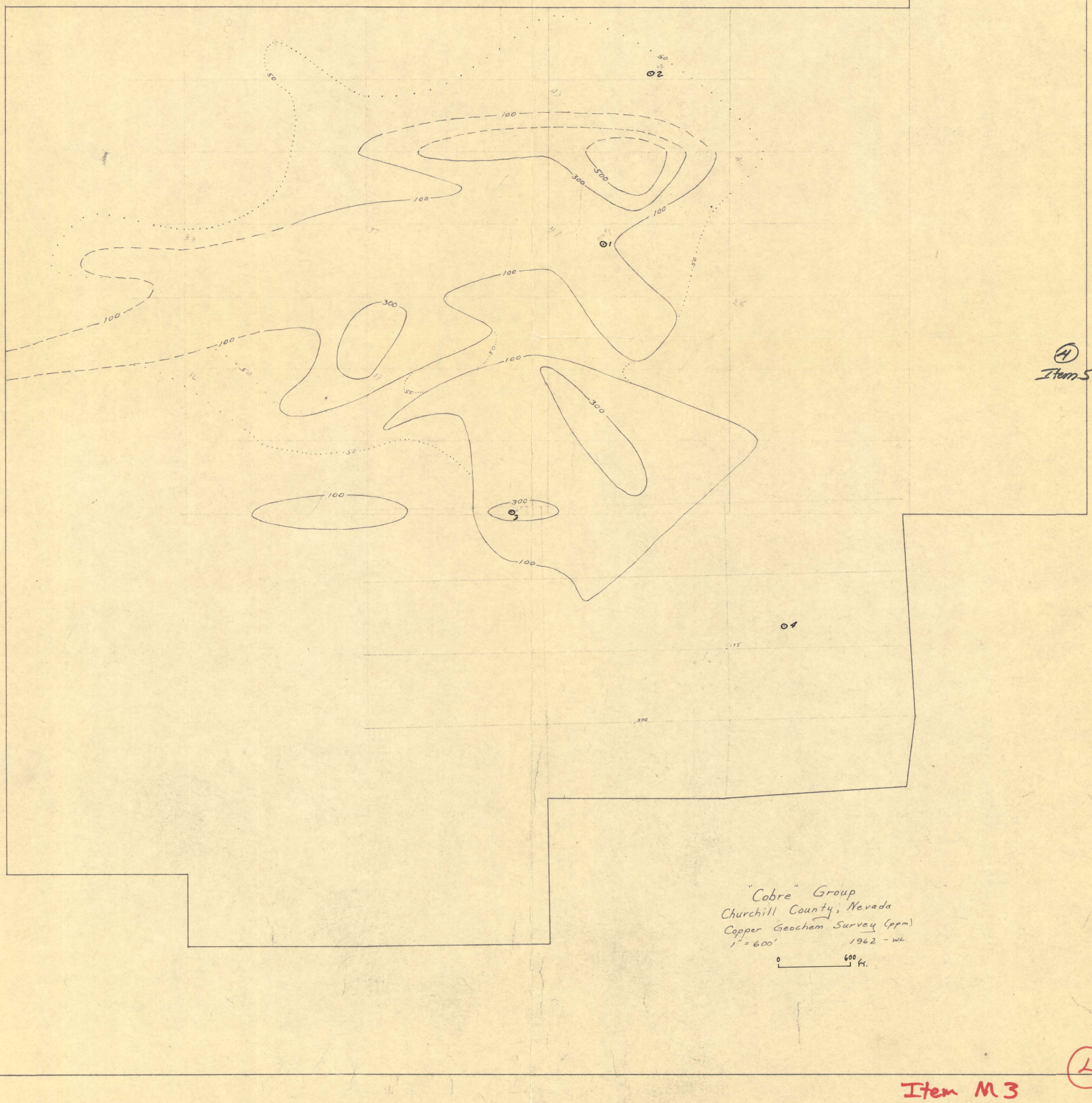
1 inch = 600 feet Contour Interval - 200 Gammas

0 600 1200 Ft.

July 1962

(4)

Item M 9



"Cobre" Group
Churchill County, Nevada
Copper Geochem Survey (ppm)
1" = 600' 1962 - WL

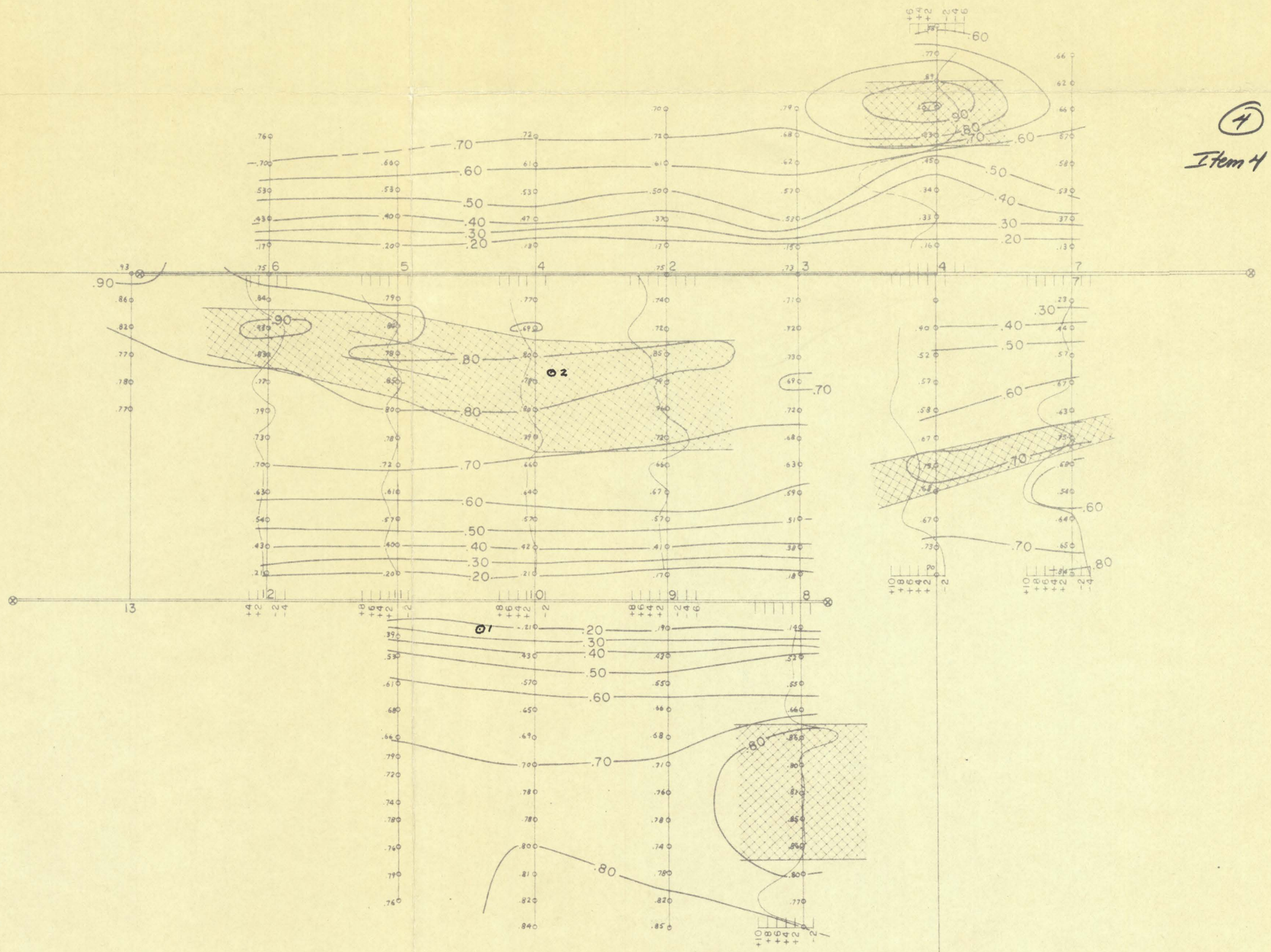
0 600 Ft.

(4)
Item 5

(4)
Item M3

TN MN

18°



(4)

Item 4

LEGEND

780 — Turam station w/amplitude ratio

.80 — Amplitude ratio contour

⊗——⊗ Primary grounded cable

Anomalous zone (conductor)

Graph of phase differences (degrees) of electromagnetic field

Congdon & Carey, Ltd.

TURAM ELECTROMAGNETIC MAP COPPER KETTLE PROPERTY

CHURCHILL COUNTY, NEVADA

SCALE: 1"= 600' MAY, 1962

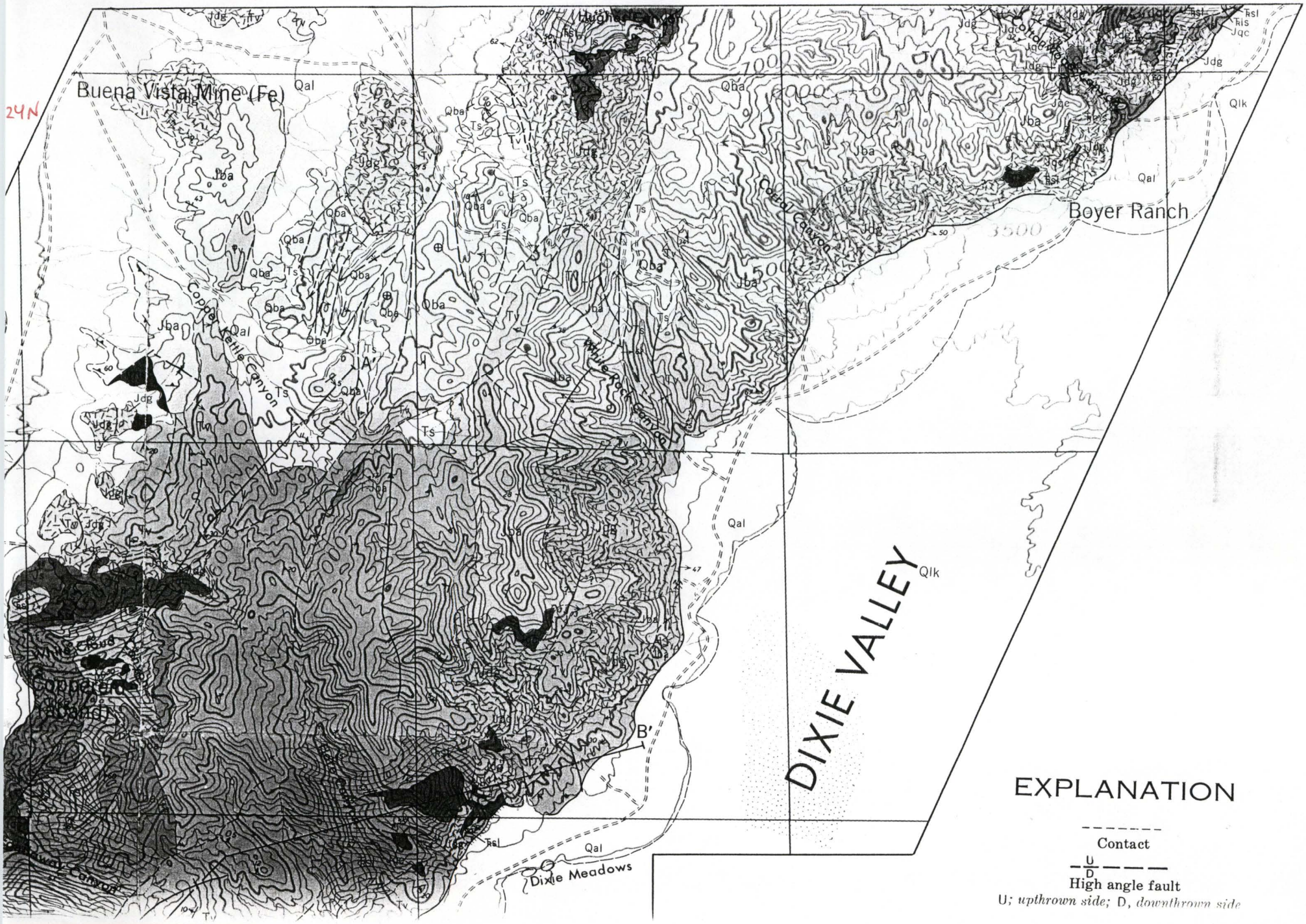
0 600 Ft.

(4)

Item M 1

NBMG

MAP 28
STILLWATER RANGE, NEV.



EXPLANATION

Contact

High angle fault

U; *upthrown side*; D, *downthrown side*

NBMG REPT. 30

NEVADA BUREAU OF MINES AND GEOLOGY

REPORT 30

THE NEVADA BUREAU OF MINES AND GEOLOGY SAMPLE LIBRARY — AN INDEX TO THE DRILL CORE AND CUTTINGS IN THE COLLECTION

JOHN H. SCHILLING

A list of core and cuttings from Nevada wells and drill holes, available for public inspection at the Nevada Bureau of Mines and Geology Sample Library as of September 1977.

MACKAY SCHOOL OF MINES
UNIVERSITY OF NEVADA · RENO
1977

NBMG SAMPLE LIBRARY — INDEX TO CORE AND CUTTINGS

SCHILLING

MINERAL EXPLORATION

COUNTY S–T–R	COMPANY Project	Hole	Interval (ft)	Row	Code no.	Core	Cuttings	Logs in file	Mineralization
CHURCHILL									
	KERR–McGEE								
1–16N–31E	Four Mile Flat	1	0–245	38	22		XX		Salines
12–17N–30E	Eight Mile Flat	1	0–500	38	22		XX		"
6–17N–30E	" " "	2	0–500	38	22		XX		"
36–25N–29E	Humboldt Sink	1	0–490	38	22		XX		"
14–25N–31E**	" "	2	0–500	38	22		XX		"
26–24N–29E	" "	3	0–135	38	22		XX		"
	CONGDEN & CAREY								
24N–34E	Cobre	1	0–1371	8,10	13	XX			Copper
" "	"	4	0–840	10	13	XX			"
34,35–25N–36E	**COASTAL (HANNA)**								
" "	Cottonwood Canyon	1	0–791	28	17	XX		XX	Nickel
" "	" "	2	0–304	28	17	XX		XX	"
" "	" "	3	0–281	28,30	17	XX		XX	"
	(DON CURRY)								
NW¼ –16N–32E	Sand Springs Pass	1	305–375	I	37	XX			Silver
	" " "	4	0–315	I	37	XX			"
CLARK									
	KERR–McGEE								
25–18S –66E	White Basin	7–1	0–395	38	22		XX		Salines
" " "	" "	7–2	0–400	38	22		XX		"
28–18S –66E	" "	141–1	0–500	38	22		XX		"
29–18S –66E	" "	176–1	0–500	38	22		XX		"
34–18S –66E	" "	183–1	0–500	38	22		XX		"
33–18S –66E	" "	185–1	0–500	38	22		XX		"
35–18S –66E	" "	186–1	0–500	38	22		XX		"
25–18S –66E	" "	188–1	0–440	38	22		XX		"
	HOMESTAKE								
35–28S –61E	Crescent Peak	1	10–1045	7,9	3	XX		XX	Copper, molybdenum
" " "	" "	2	10–1000	9	3	XX		XX	" "
" " "	" "	3	10–1000	11	3	XX		XX	" "
" " "	" "	4	10–1000	11,13	3	XX		XX	" "
DOUGLAS									
18,19–14N–24E	**HUMBLE (EXXON)**								
" "	Minnesota Mine	1	425–1010	D	34	XX			Copper, Iron
" "	" "	2	0–1653	E	34	XX			" "
ELKO									
	BEAR CREEK								
6–28N–67E	Dolly Varden	1	0–1023	2	6	XX			Copper
	AMAX								
17–40N–67E	Indian Springs	15–1	505–903*	12	35	XX		XX	Tungsten
" " "	" "	15–2	284–815*	12	35	XX		XX	"
" " "	" "	15–3	451–697*	12	35	XX		XX	"
" " "	" "	15–4	221–591*	12	35	XX		XX	"
" " "	" "	15–5	355–792*	12	35	XX		XX	"
" " "	" "	15–6	502–755*	12	35	XX		XX	"
" " "	" "	15–7	502–766*	12	35	XX		XX	"