

**GEOHERMAL BRANCH**

**INTER-OFFICE MEMORANDUM**

SUBJECT: Geochemical Study Drill Cuttings, McCoy

DATE: October 21, 1980

TO: W. Lodder

cc: H. J. Olson  
J. E. Deymonaz

FROM: H. D. Pilkington

In 1979, Joe Moore of UURI proposed to undertake a geochemical study of the McCoy drill cuttings as part of the Industry Coupled program under the DOE. I agreed to supply him with a split of our cuttings. UURI prepared composite samples by combining the cuttings for the intervals: 0-40 feet, 40-80 feet, 80-120 feet and 120-160 feet from each shallow thermal gradient hole. Multielement geochemical analyses have been done for 26 elements on each composite sample.

To date we have received plots for the following elements: Na, K, Ca, Mg, Fe, Al, Ti, P, Sr, Ba, Cr, Mn, Co Ni, Cu Pb, Zn, Ag, Au, Li, Be, Zr, La, Ce, As, and Hg. Joe has not yet completed his analysis of the data. Therefore, in order to obtain some preliminary understanding of the data I have prepared contour maps for Zn, Au, As and Hg (see attached maps) for each of the four depth intervals. The circles represent drill locations shown on the attached drill hole map.

A first pass examination of the contour maps for Zn, Au, As and Hg would suggest that the geochemical analysis of drill cuttings does offer some help in the geothermal evaluation of a property for the following reasons:

1. The contour pattern for each element changes significantly with depth.
2. There is a slight shift of the anomalies in an eastward direction with depth.
3. The contour pattern appears to emphasize certain structural directions which become stronger with depth.
4. There is a good correlation between the geochemical anomaly and the thermal anomaly, including the asymmetry or eastward shift.

5. The geochemical data provides one more line of evidence to help interpret the geophysical data.

As time permits, more of the elements will be evaluated to see if their geochemical behavior will help in our understanding of the prospect.

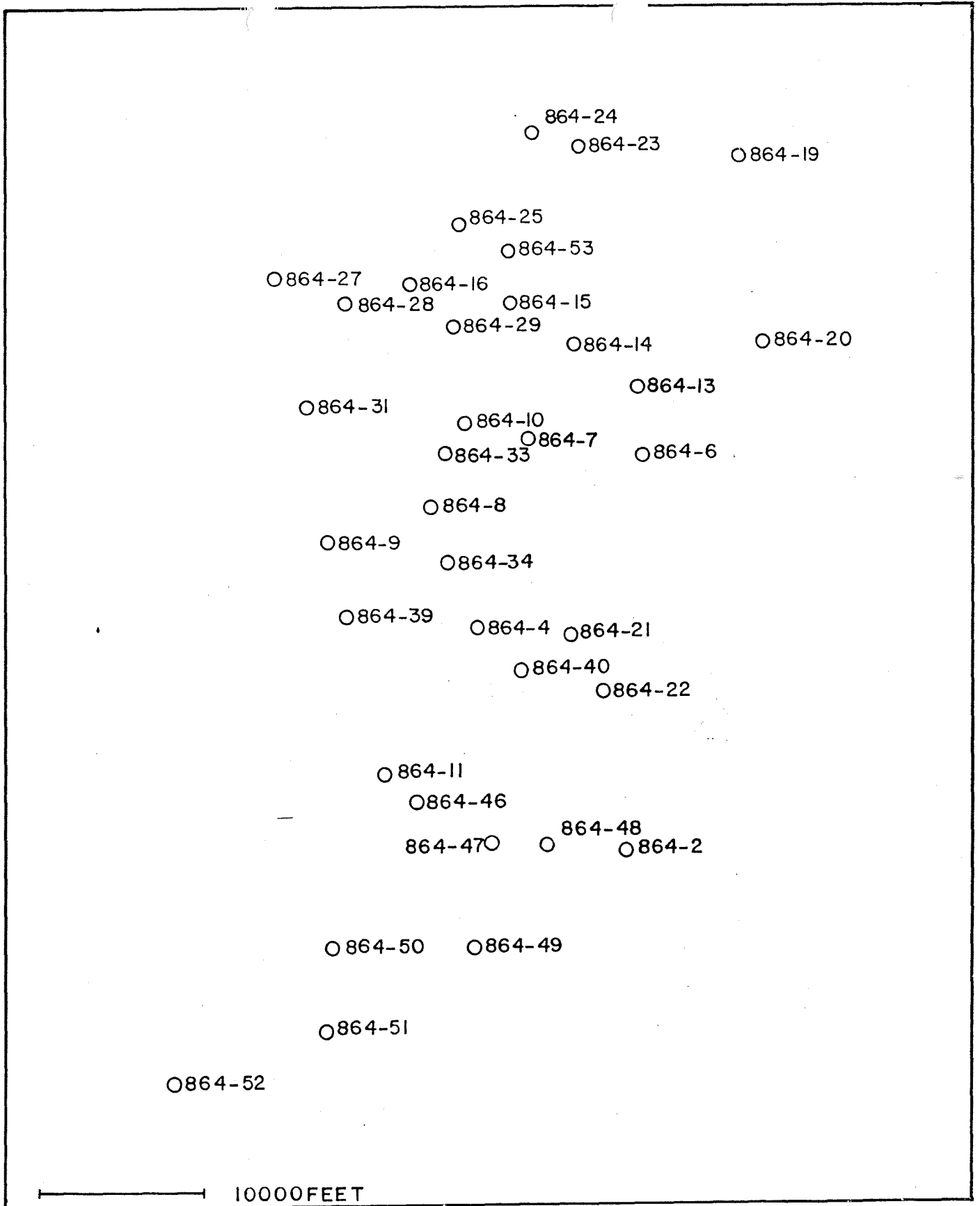


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H. D. Pilkington

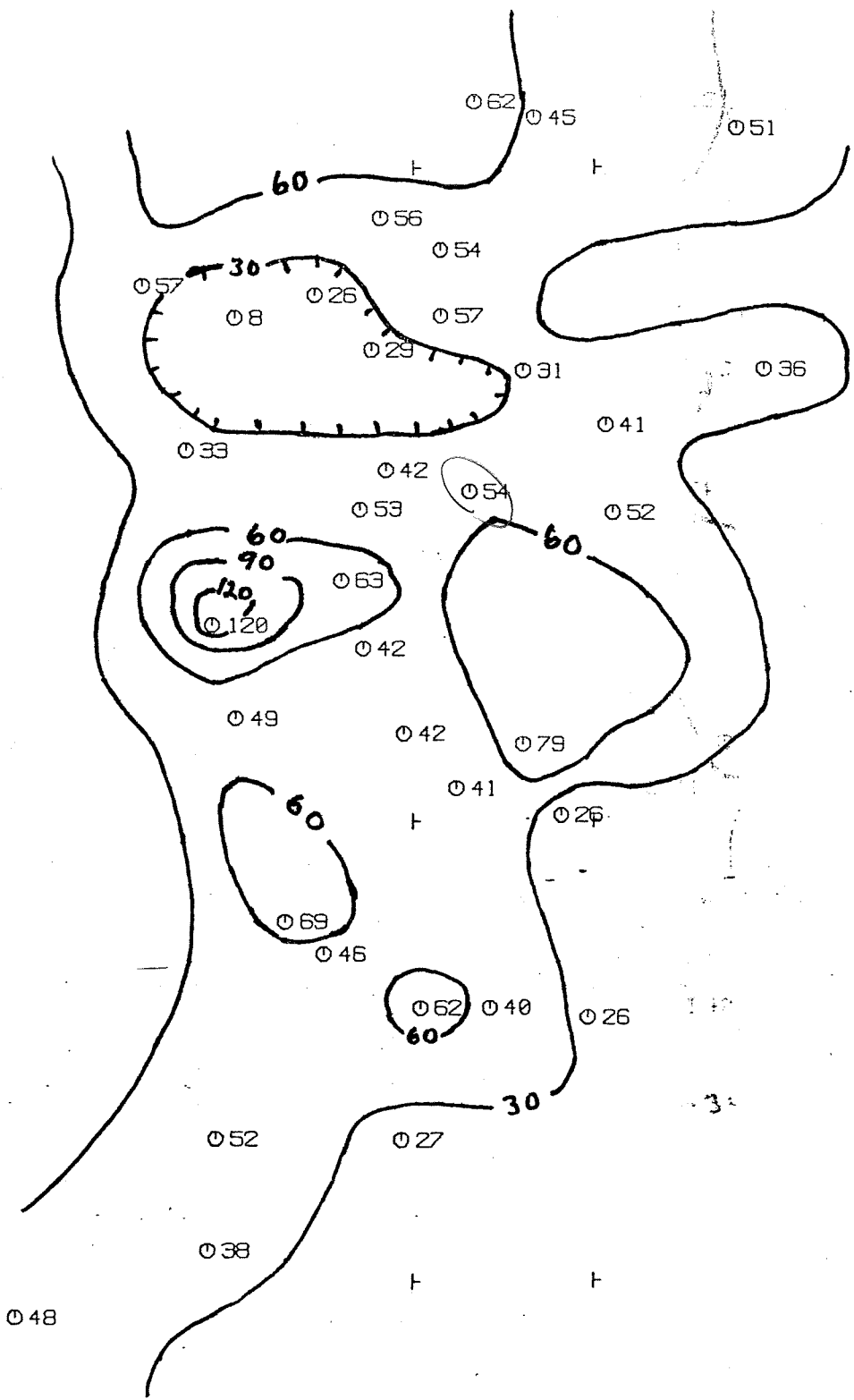
HDP/c

attachments



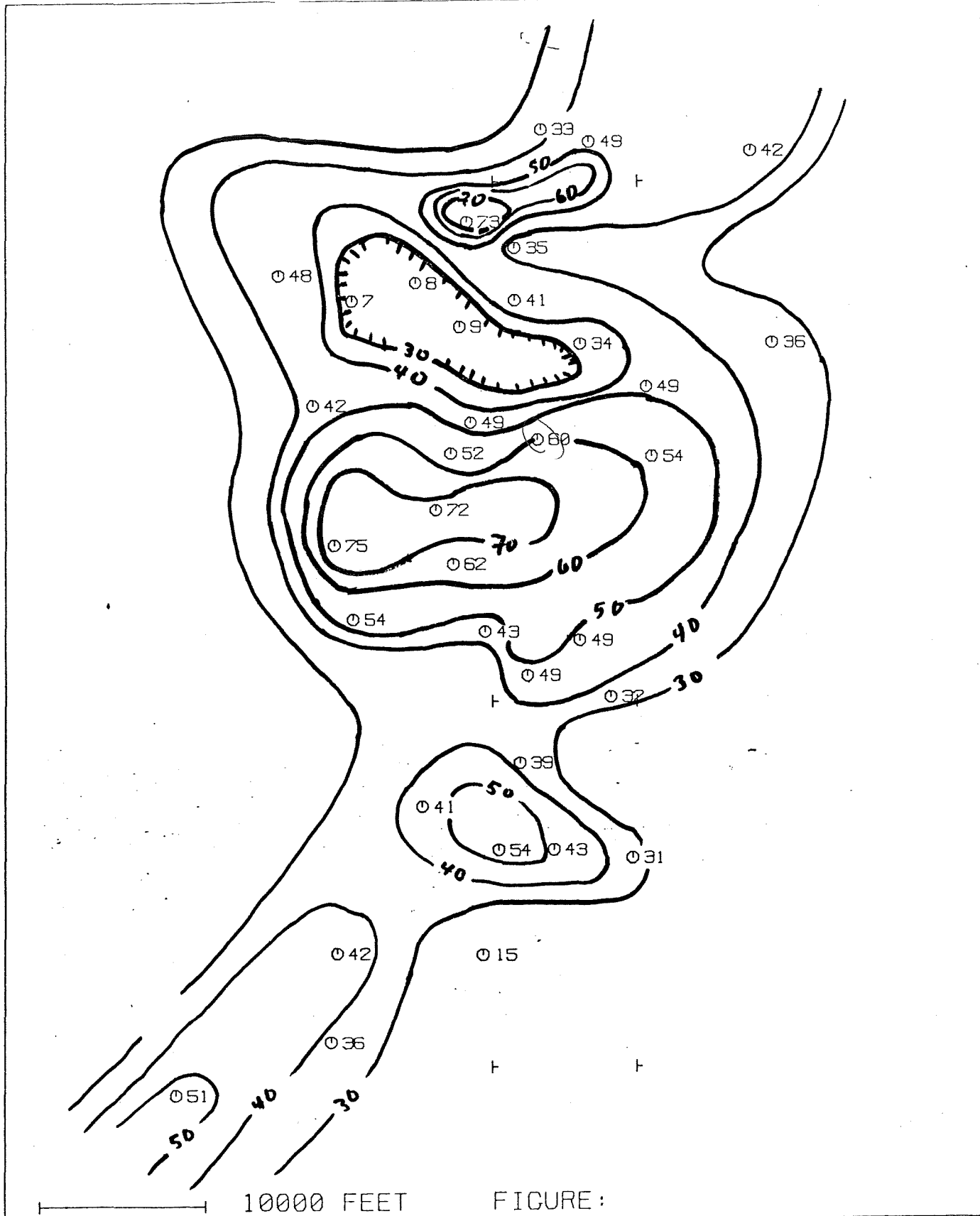
McCOY GEOTHERMAL

DRILL HOLE MAP



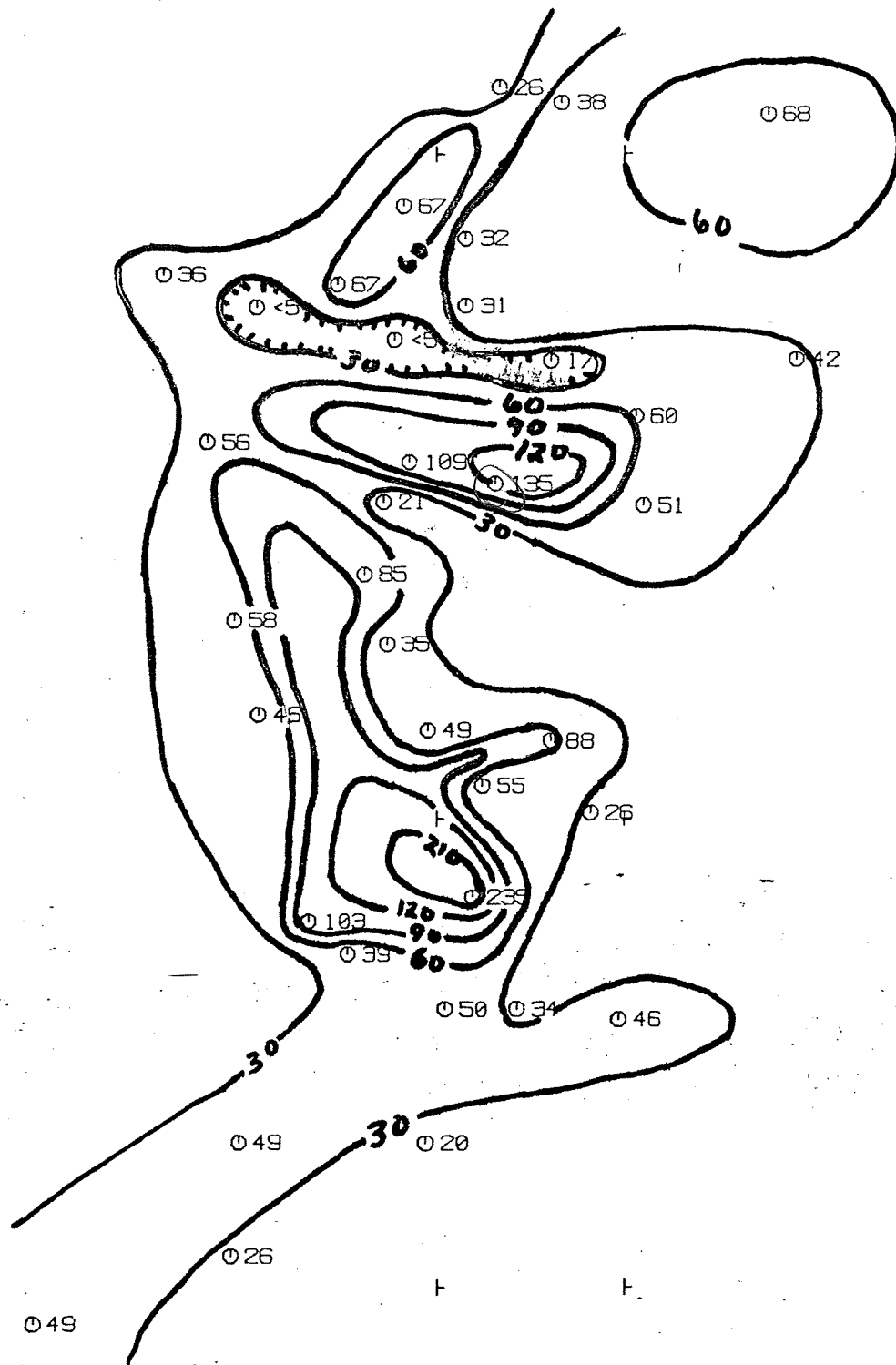
MCCOY GEOTHERMAL AREA (A)  
LANDER & CHURCHILL, NV

FIGURE:  
PPM ZN  
SAMPLE TYPE: WHOLE ROCK  
ANALYTICAL METHOD: ICPO  
0-40 ft



MCCOY GEOTHERMAL AREA (B)  
 LANDER & CHURCHILL, NV

FIGURE: **40-80 ft**  
 PPM ZN  
 SAMPLE TYPE: WHOLE ROCK  
 ANALYTICAL METHOD: ICPO



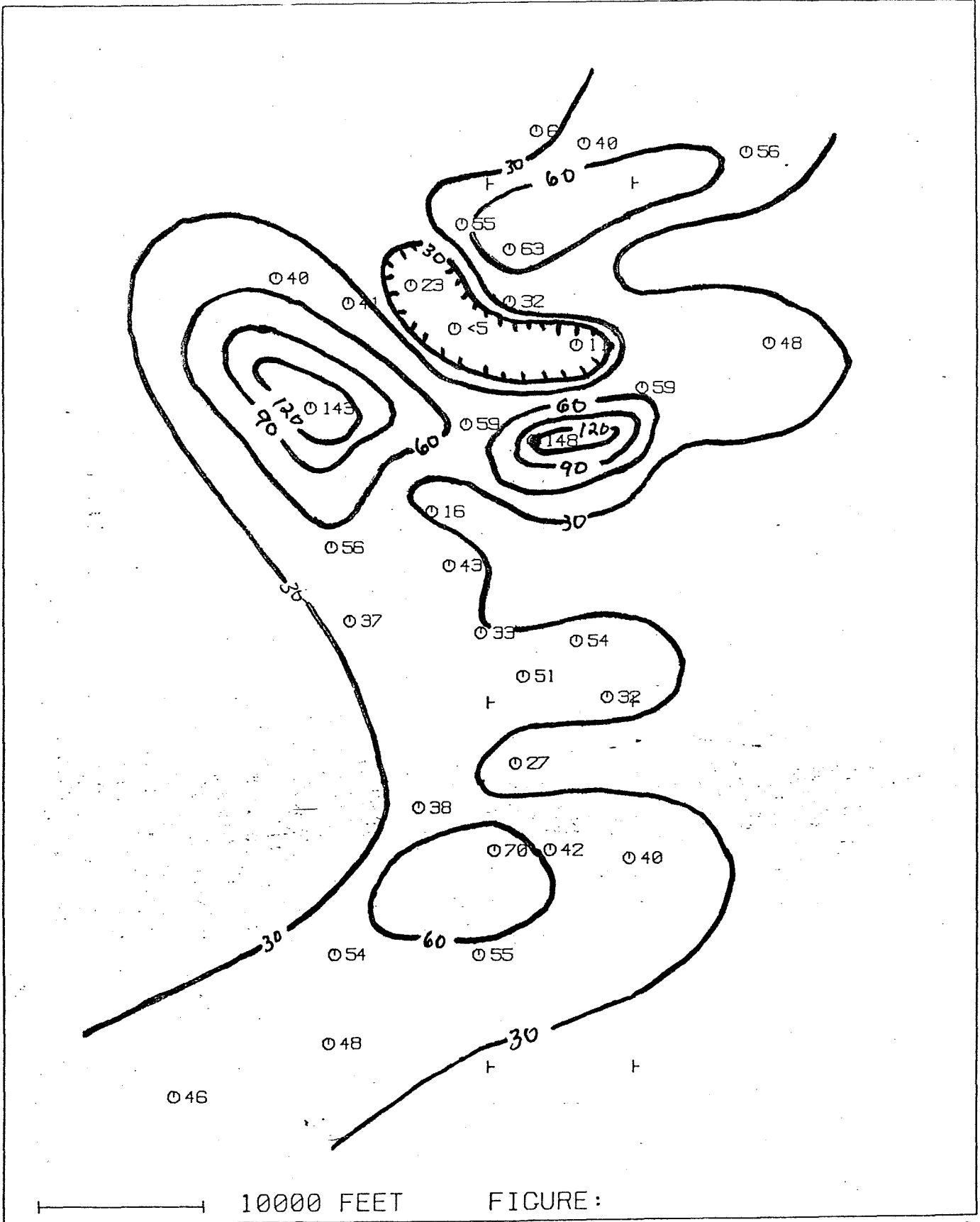
10000 FEET

MCCOY GEOTHERMAL AREA (C)  
LANDER & CHURCHILL, NV

FIGURE:

PPM ZN  
SAMPLE TYPE: WHOLE ROCK  
ANALYTICAL METHOD: ICPO

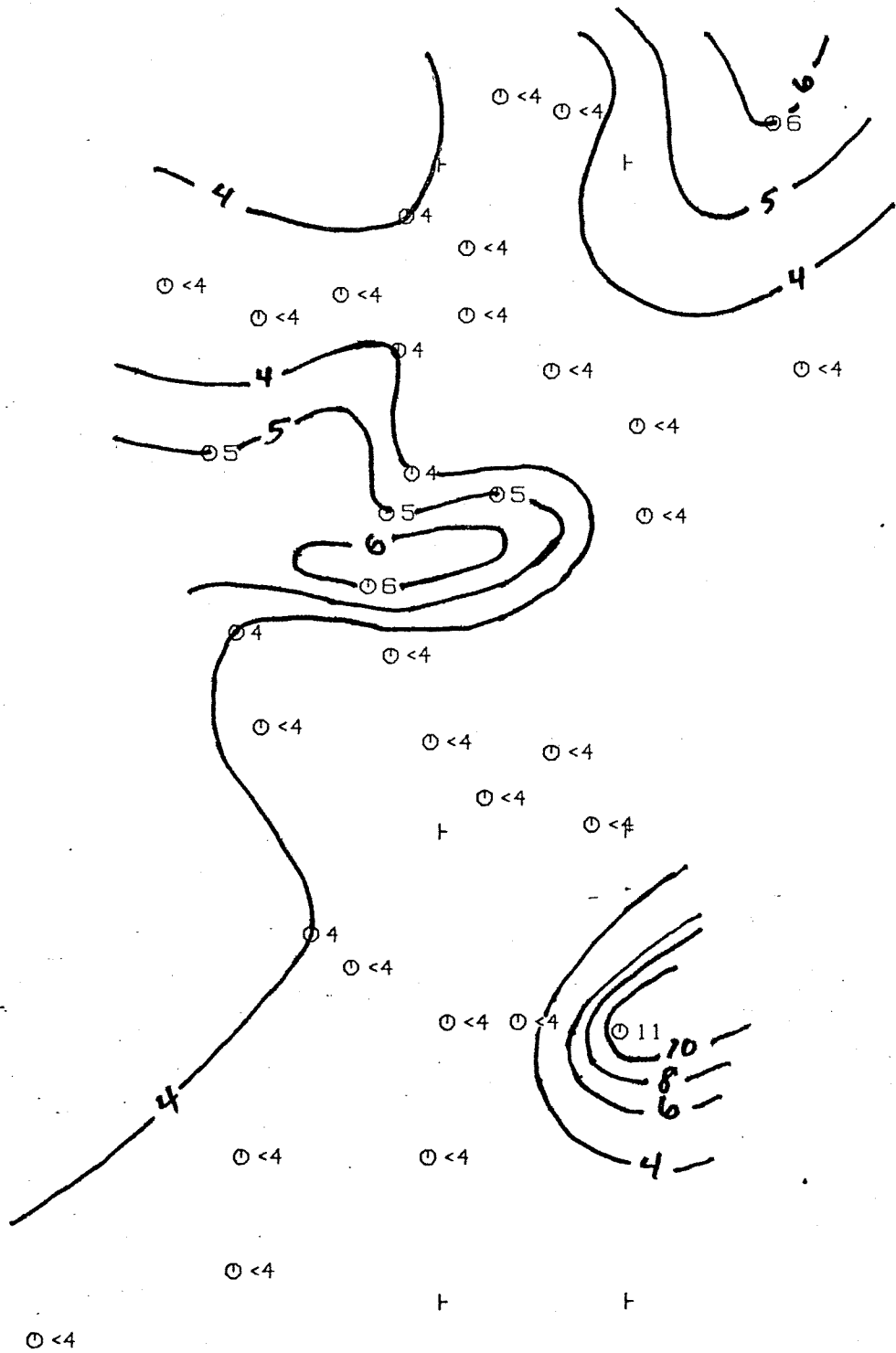
80-120 ft



MCCOY GEOTHERMAL AREA (D)  
LANDER & CHURCHILL, NV

PPM ZN  
SAMPLE TYPE: WHOLE ROCK  
ANALYTICAL METHOD: ICPO

120-160 ft



77

10000 FEET

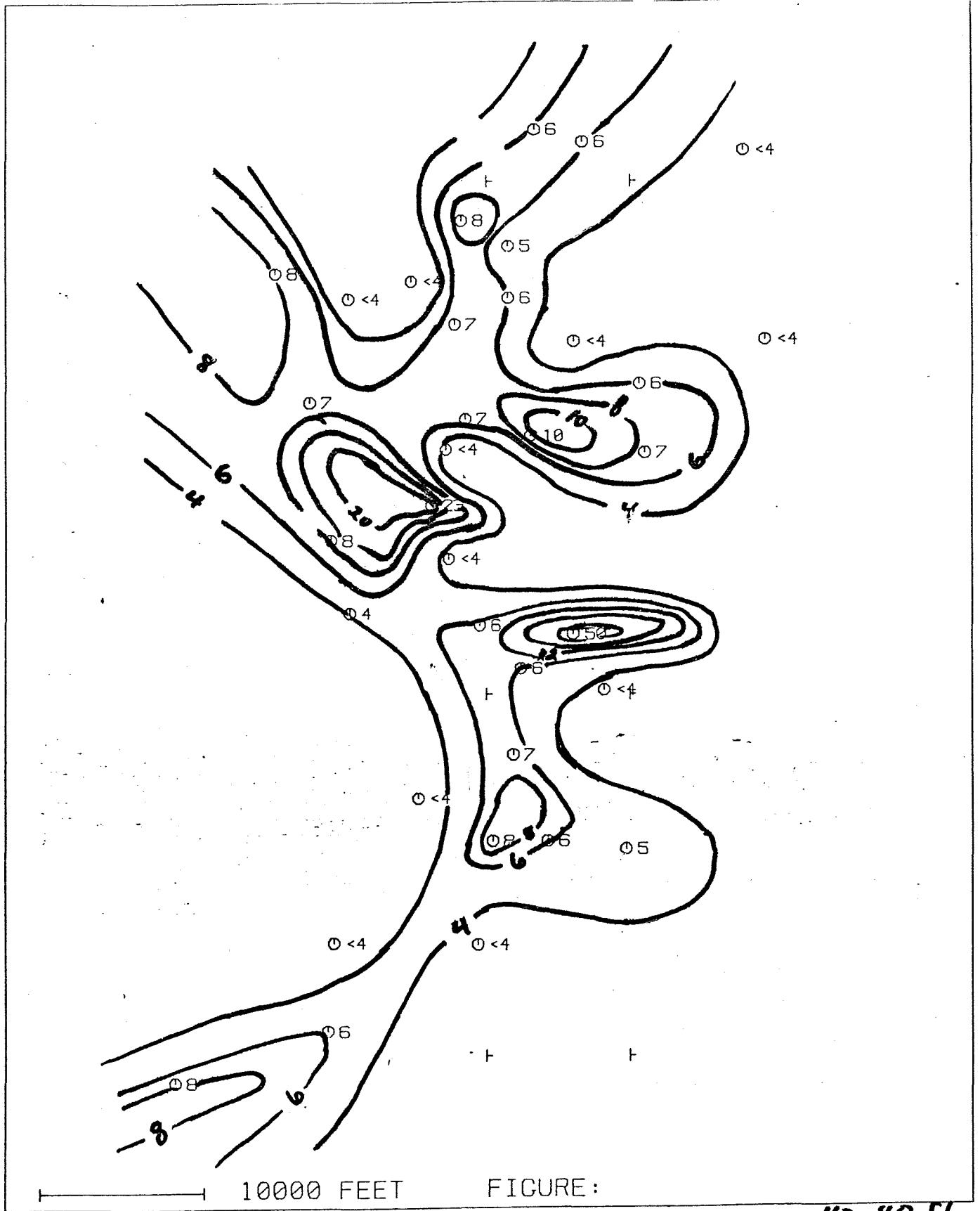
FIGURE:

MCCOY GEOTHERMAL AREA (A)  
LANDER & CHURCHILL, NV

PPM AU  
SAMPLE TYPE: WHOLE ROCK  
ANALYTICAL METHOD: ICPO

0-40 ft.



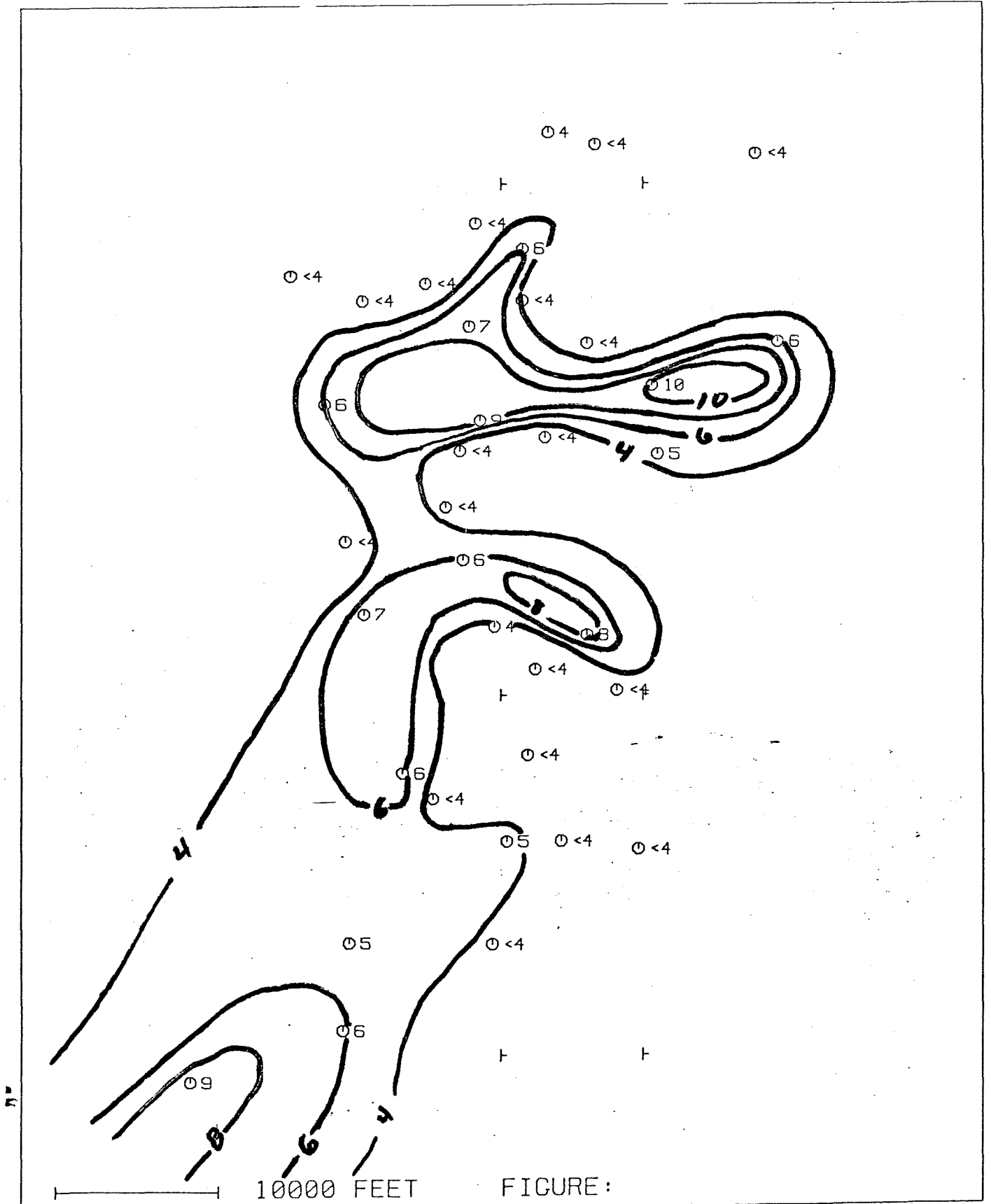


MCCOY GEOTHERMAL AREA (B)  
LANDER & CHURCHILL, NV

FIGURE:

PPM AU  
SAMPLE TYPE: WHOLE ROCK  
ANALYTICAL METHOD: ICPQ

40-80 ft

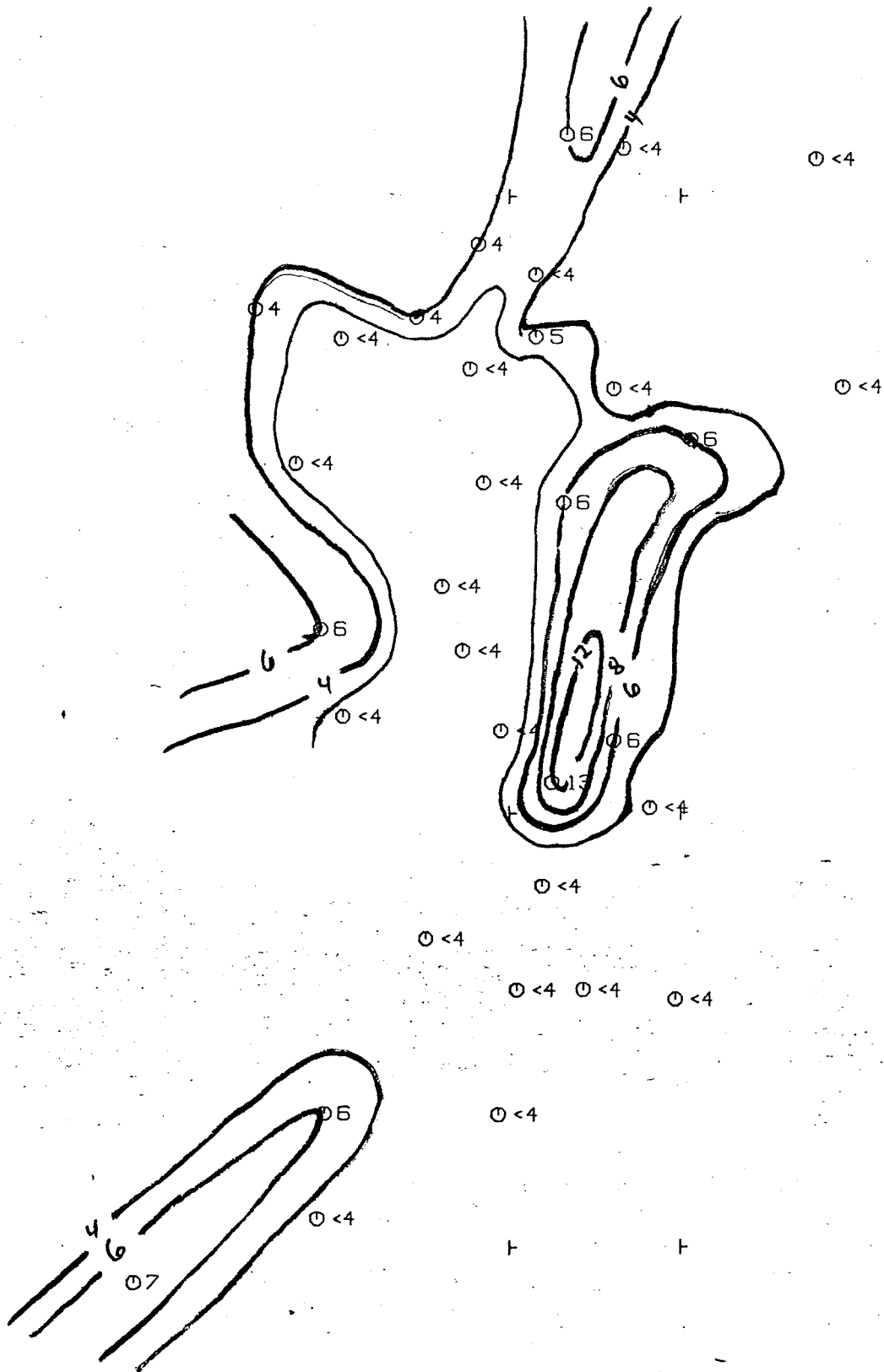


MCCOY GEOTHERMAL AREA (C)  
 LANDER & CHURCHILL, NV

FIGURE:

PPM AU  
 SAMPLE TYPE: WHOLE ROCK  
 ANALYTICAL METHOD: ICPO

*80-120 ft.*



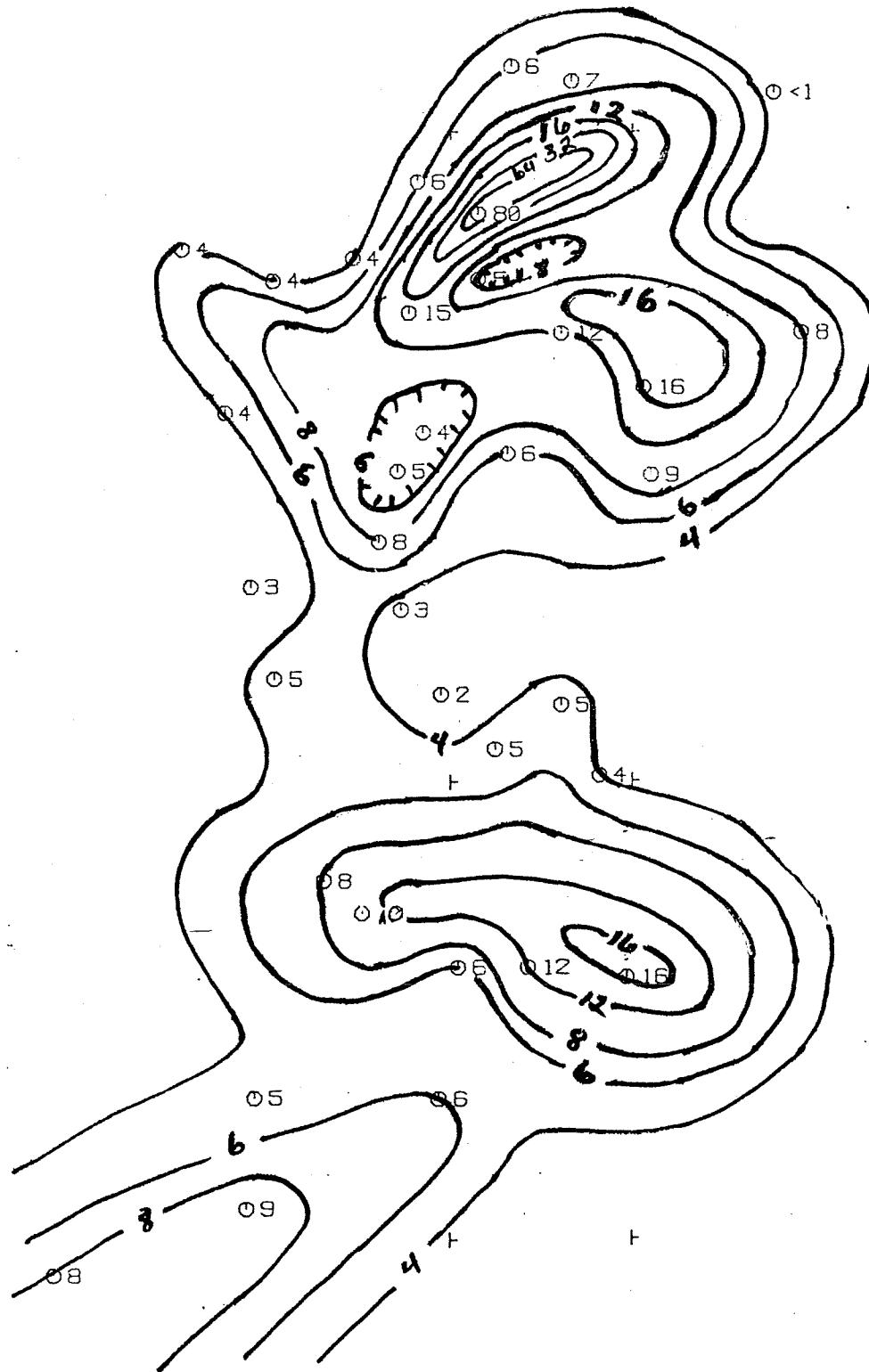
10000 FEET

FIGURE:

MCCOY GEOTHERMAL AREA (D)  
LANDER & CHURCHILL, NV

PPM AU  
SAMPLE TYPE: WHOLE ROCK  
ANALYTICAL METHOD: ICPO

*120 - 160 ft*

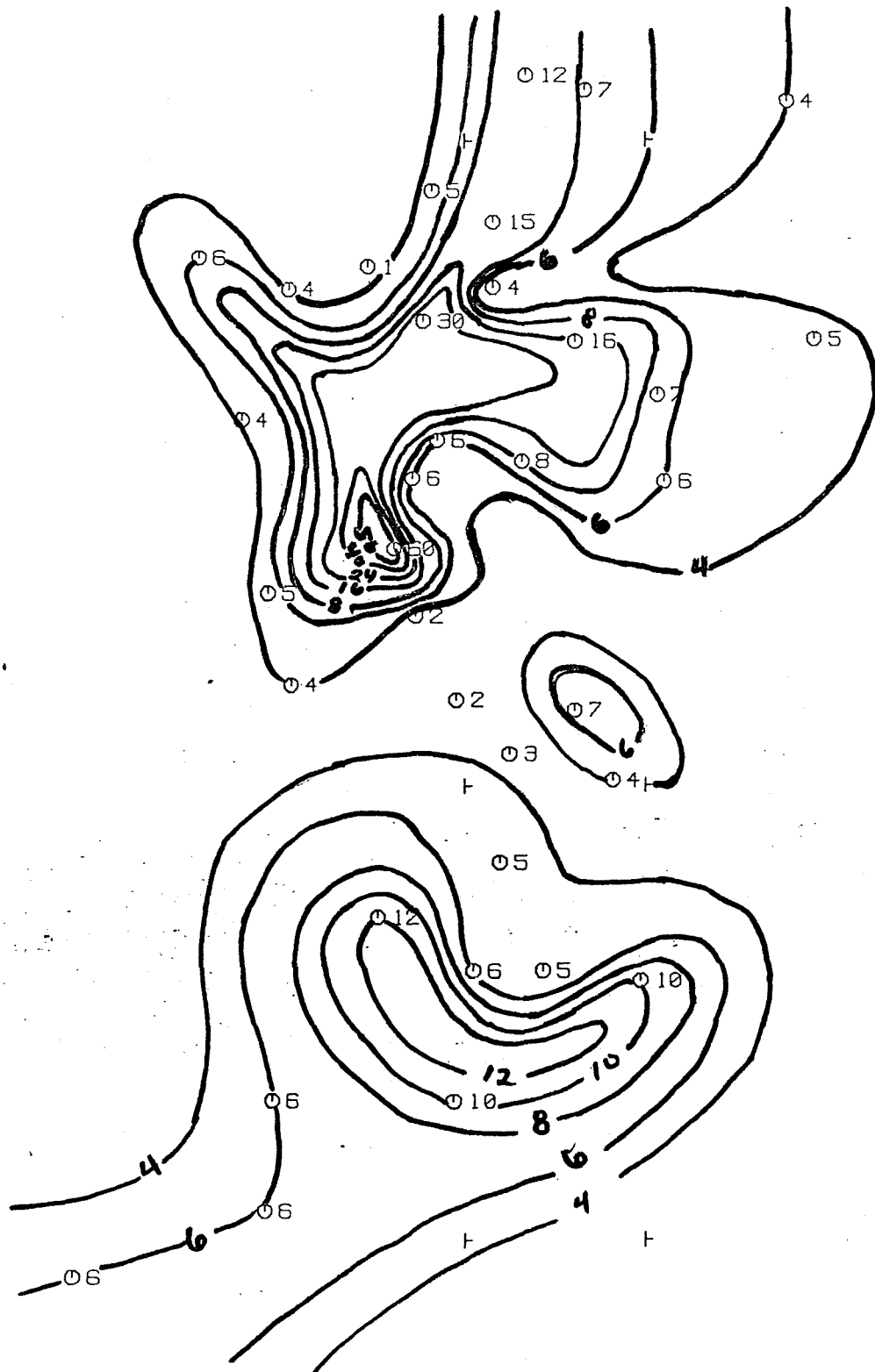


10000 FEET

FIGURE:

MCCOY GEOTHERMAL AREA (A)  
LANDER & CHURCHILL, NV

ARSENIC\* (PPM) 0-40 F  
SAMPLE TYPE:  
ANALYTICAL METHOD: COLOR

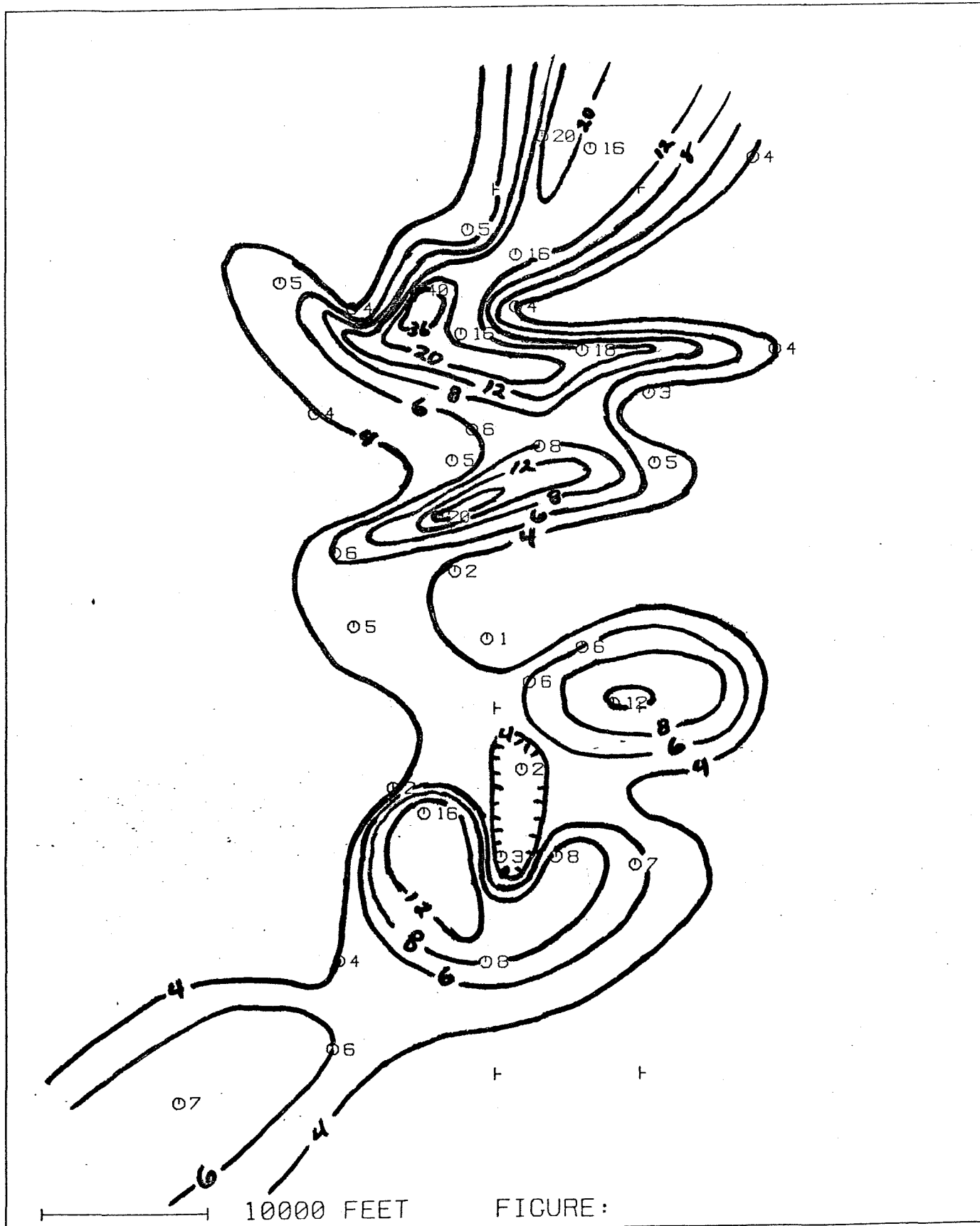


10000 FEET

FIGURE:

MCCOY GEOTHERMAL AREA (B)  
LANDER & CHURCHILL, NV

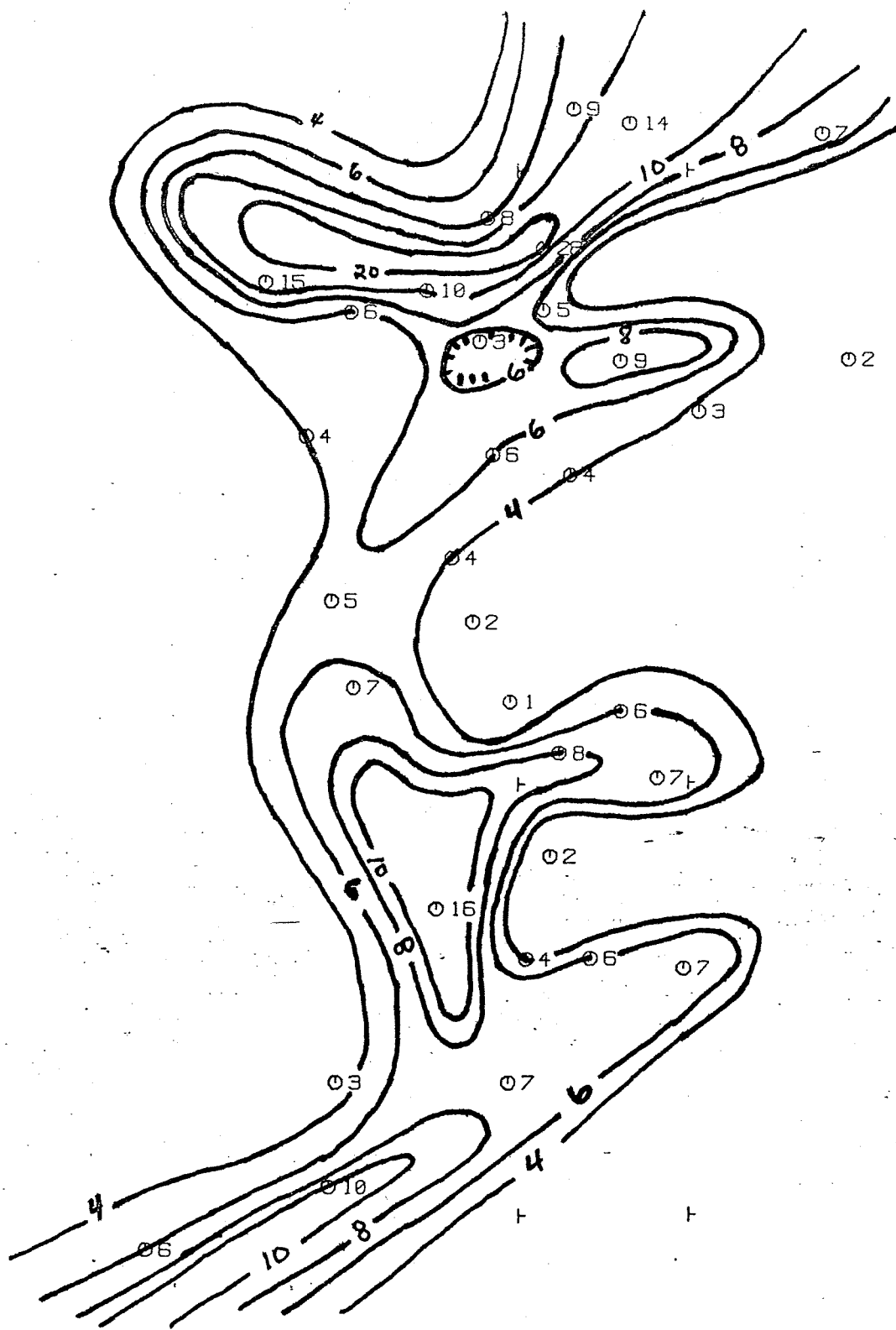
ARSENIC\* (PPM) 40-80 ft.  
SAMPLE TYPE:  
ANALYTICAL METHOD: COLOR



MCCOY GEOTHERMAL AREA (C)  
 LANDER & CHURCHILL, NV

FIGURE:

ARSENIC\* (PPM) 80-120 **ft.**  
 SAMPLE TYPE:  
 ANALYTICAL METHOD: COLOR



10000 FEET

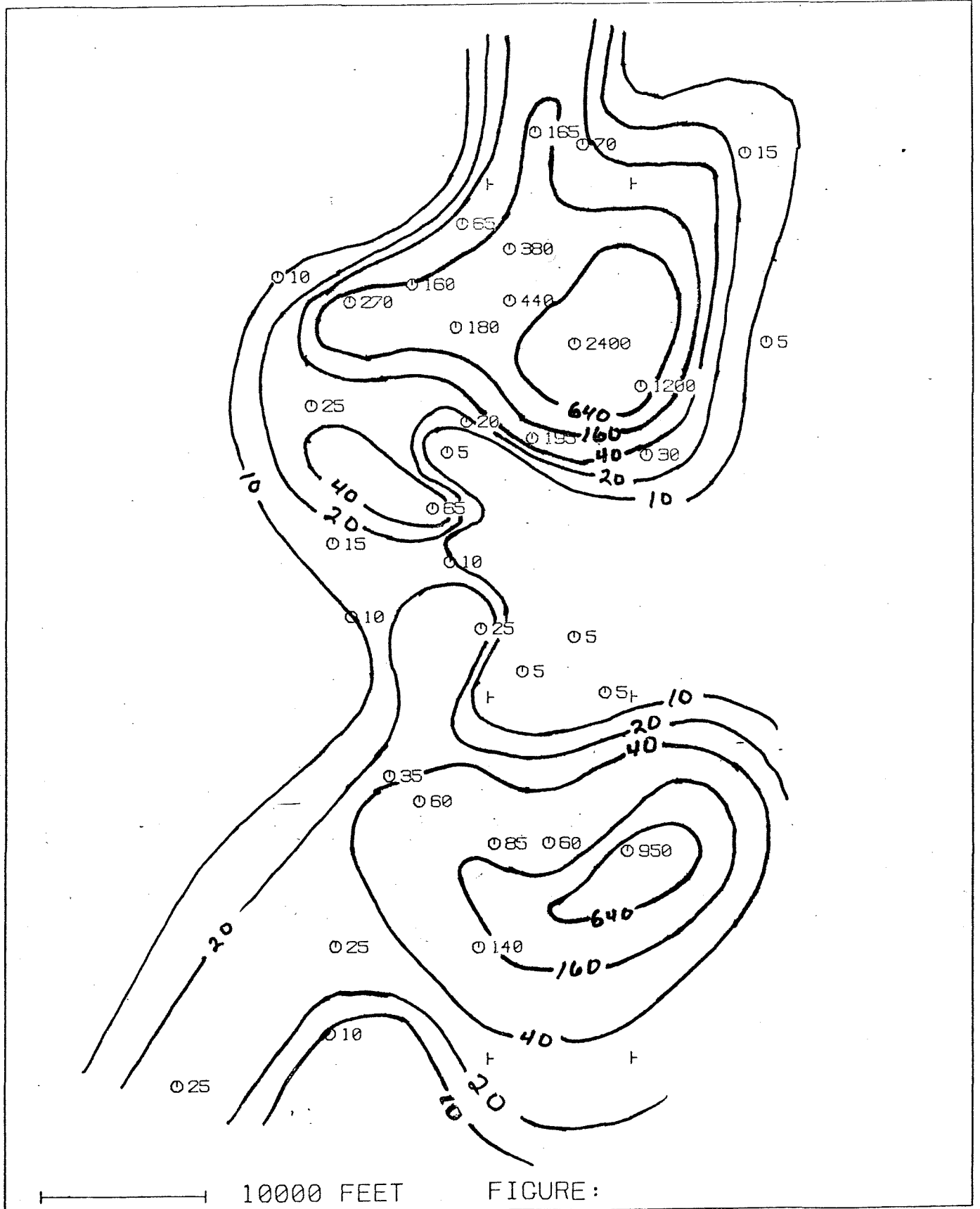
MCCOY GEOTHERMAL AREA (D)  
LANDER & CHURCHILL, NV

FIGURE:

ARSENIC\* (PPM) 120-160 **ft**

SAMPLE TYPE:

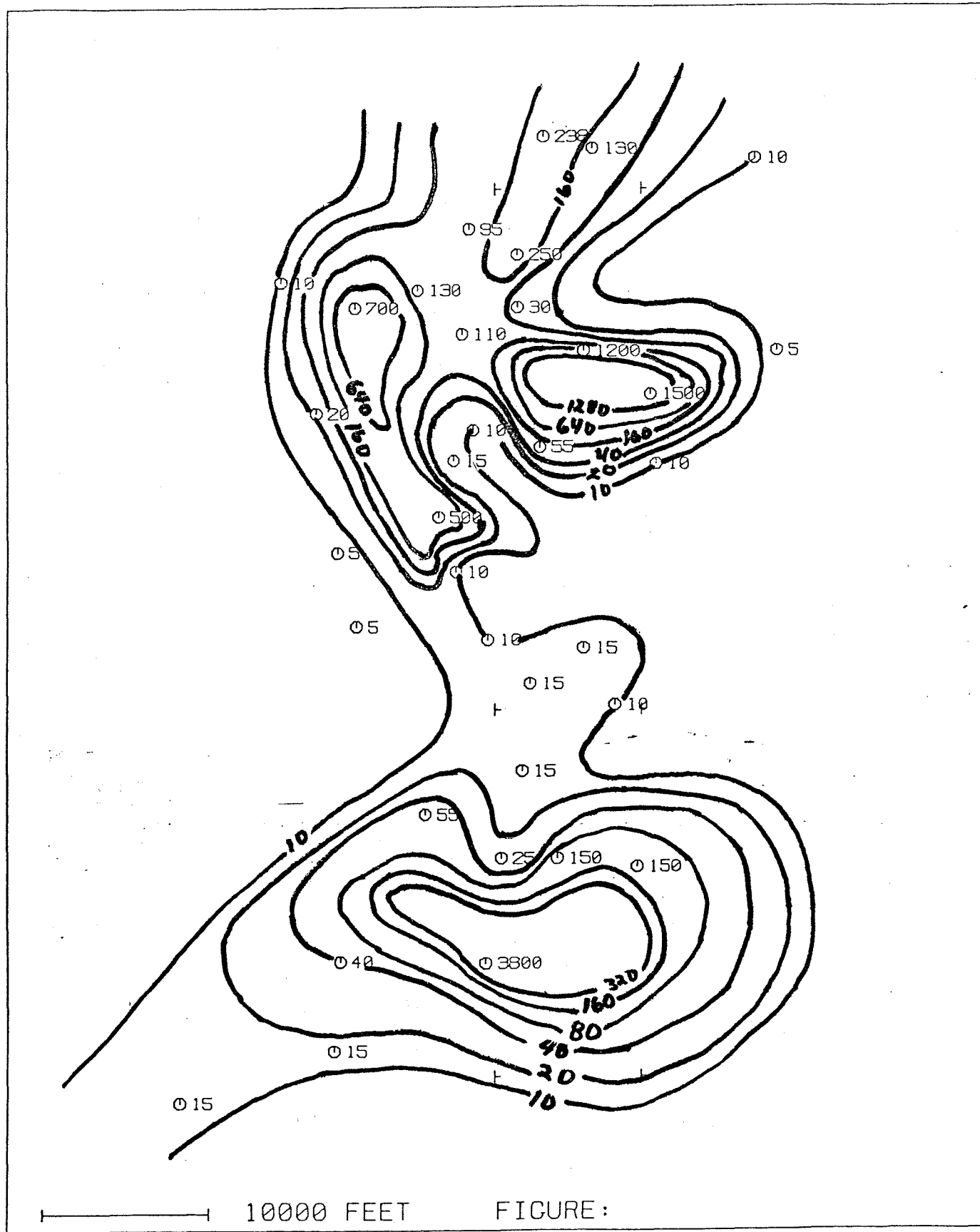
ANALYTICAL METHOD: COLOR



MCCOY GEOTHERMAL AREA (A)  
LANDER & CHURCHILL, NV

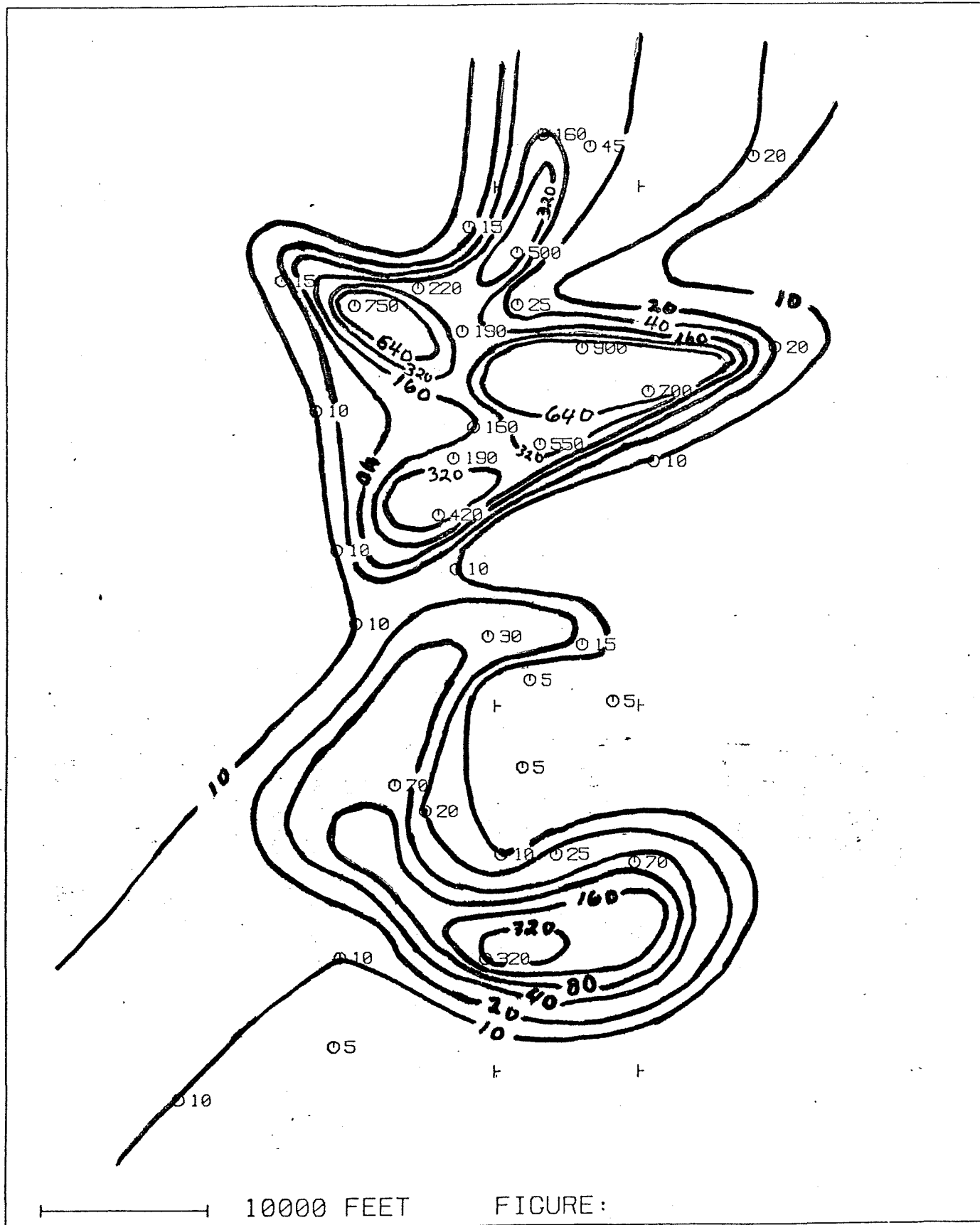
FIGURE:  
MERCURY (PPB) 0-40 FT  
SAMPLE TYPE:  
ANALYTICAL METHOD: COLD FILM





MCCOY GEOTHERMAL AREA (B)  
LANDER & CHURCHILL, NV

FIGURE:  
MERCURY (PPB) 40-80 Ft  
SAMPLE TYPE:  
ANALYTICAL METHOD: GOLD FILM

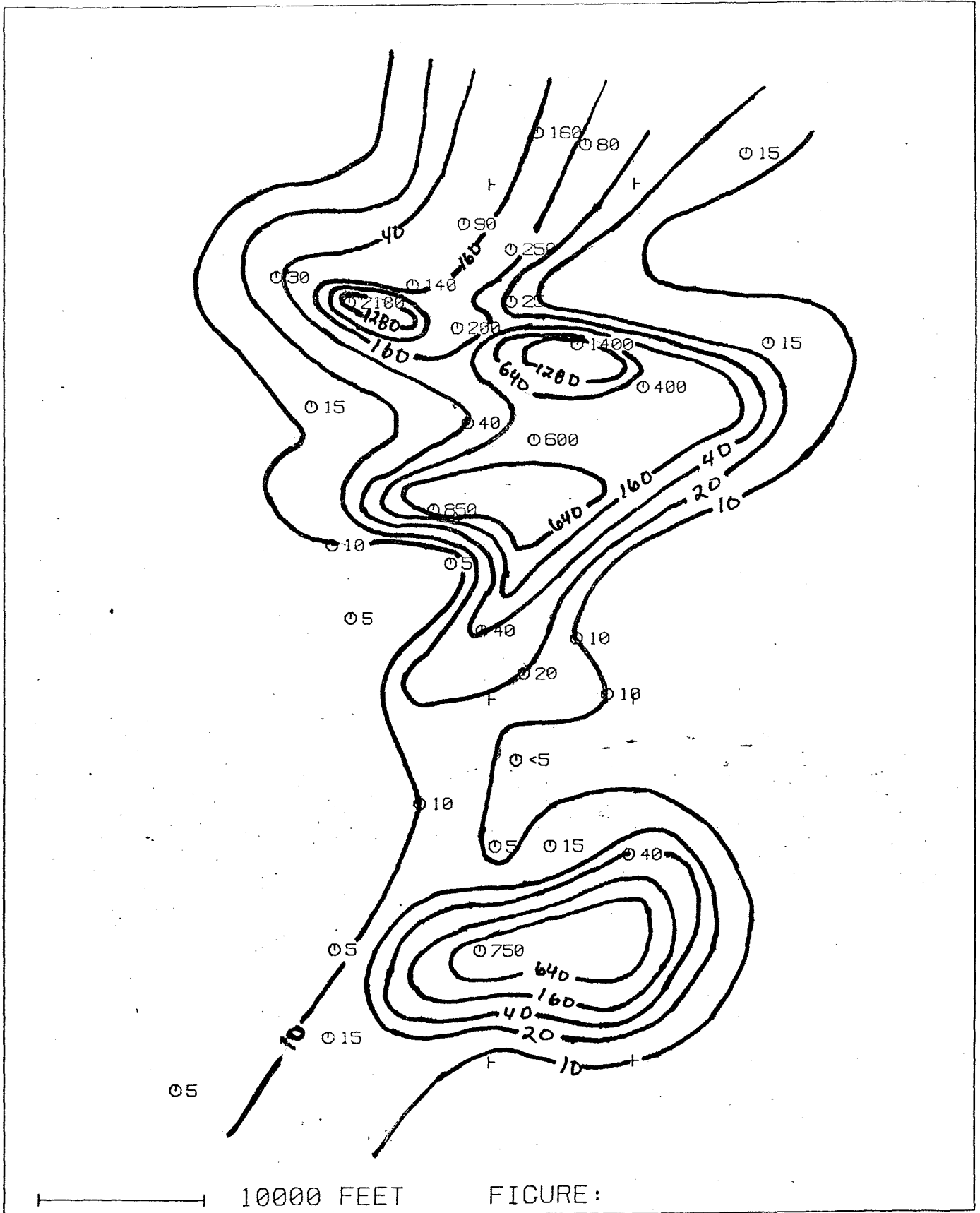


10000 FEET

FIGURE:

MCCOY GEOTHERMAL AREA (C)  
LANDER & CHURCHILL, NV

MERCURY (PPB) 80-120 **ft.**  
SAMPLE TYPE:  
ANALYTICAL METHOD: GOLD FILM



10000 FEET

FIGURE:

MCCOY GEOTHERMAL AREA (D)  
LANDER & CHURCHILL. NV

MERCURY (PPB) 120-160 ft.  
SAMPLE TYPE:  
ANALYTICAL METHOD: GOLD FILM