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AND TECHNOLOGY  
HOUGHTON, MICHIGAN

Adams Township, MI

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Sept. 10, 1931.

Mr. Harry T. Mercer,  
Painesdale, Michigan.

My dear Harry:

You will find enclosed  
Temperature Gradient graphs plotted  
from the data taken by Dr. C. E.  
Van Orstrand of the U. S. Geological  
Survey in September 1930 and August,  
1931.

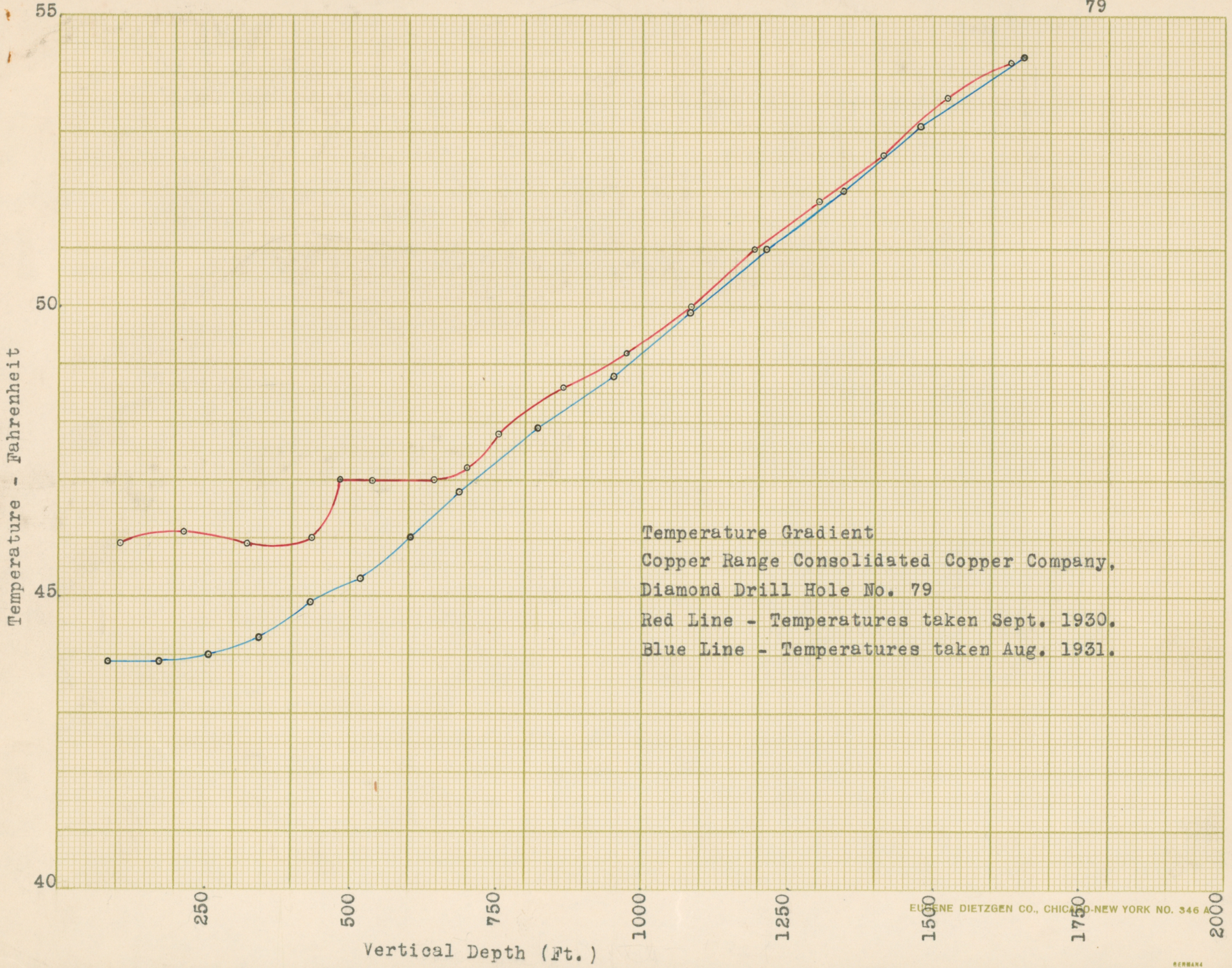
Thanks for the locations  
of the holes as sent in by Soder. I  
believe the data on No. 16 is for  
some other than the No. 16 at the  
4700 foot level of Baltic No. 2 where  
the measurements were taken.

Sincerely yours,

*James Fisher*

JF/G





Temperature Gradient  
Copper Range Consolidated Copper Company,  
Diamond Drill Hole No. 79  
Red Line - Temperatures taken Sept. 1930.  
Blue Line - Temperatures taken Aug. 1931.



TEMPERATURE GRADIENT  
 COPPER RANGE CONSOLIDATED COPPER COMPANY  
 DIAMOND DRILL HOLE NO. 79.  
 Location T-53-N; R-35-W; Section 1.  
 1740' S and 2340' E. of N.W. corner of Section 1.  
 Drilled - April 17, 1930 to July 30, 1930.

Depth Inclined	Dip	Strike	
0'	60°	S 54° - 58' E (True)	
150'	60°		
400'	59°	S 65° E (Magnetic)	
800'	61°	S 76° E "	
1200'	61½°	S 59° E "	
1600'	61½°	S 70° E "	
1938'	61½°	S 68° E	

Inclined Depth in feet	Vert. Depth in feet	Temperature Degrees Fah't.	
		Sept. 1930	August 1931
100	87		43.9
125	108	45.9	
200	173		43.9
250	217	46.1	
300	260		44.0
375	325	45.9	
400	346		44.3
500	432	46.0	44.9
562	485	47.0	
600	518		45.3
625	539	47.0	
700	604		46.0
750	646	47.0	
800	690		46.7
812	700	47.2	
875	755	47.8	
950	820		47.9
1000	864	48.6	
1100	952		48.8
1125	974	49.2	
1250	1083	50.0	49.9
1375	1193	51.0	
1400	1215		51.0
1500	1303	51.8	
1550	1347		52.0
1625	1413	52.6	
1700	1479		53.1
1750	1523	53.6	
1875	1632	54.2	
1900	1654		54.3

Water standing between 95 and 100 feet inclined depth, Sept. 1930.  
 Two foot clay seam between 543 and 545 feet.



Temperature - Fahrenheit

90

85

80

4600

5000

5500

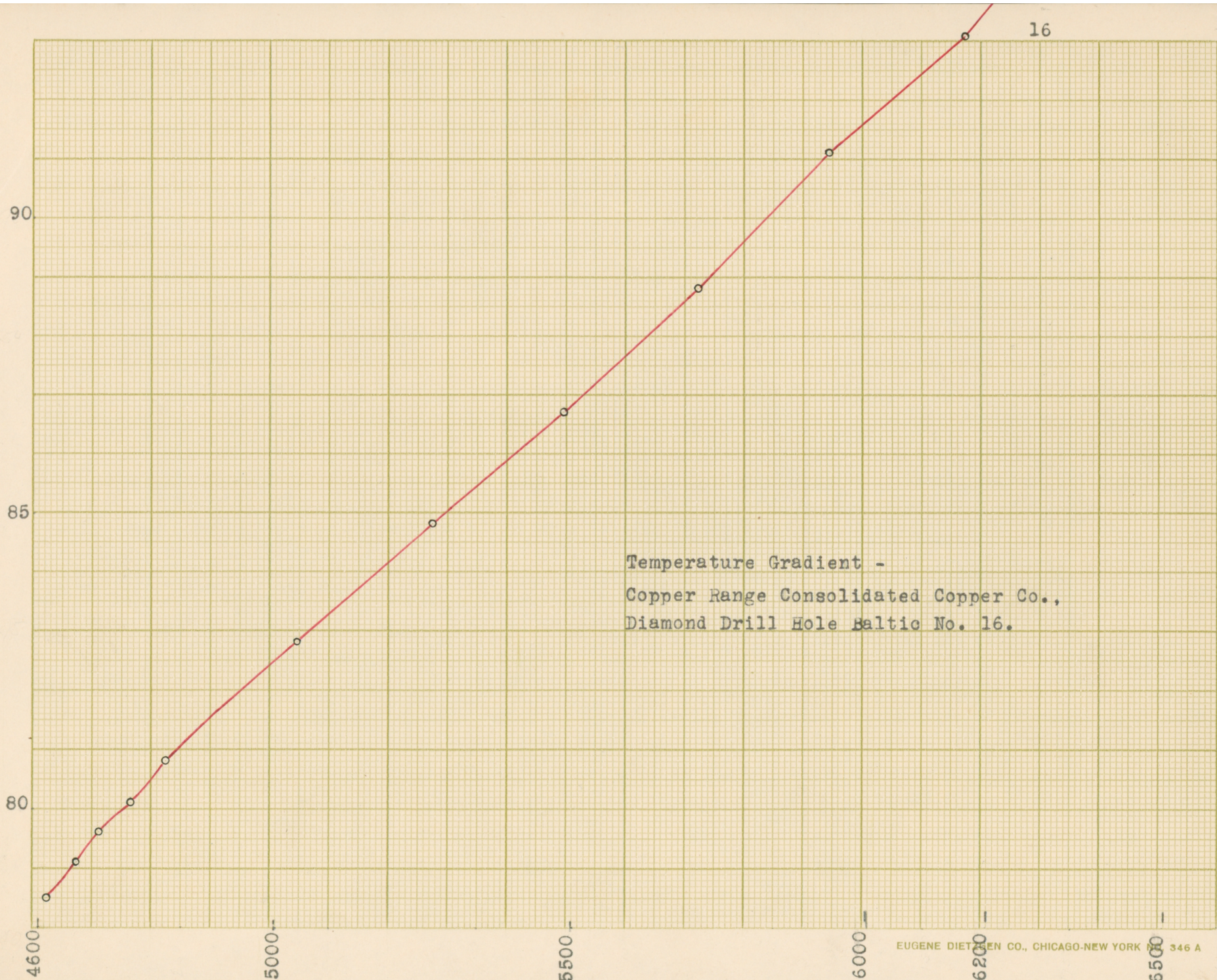
6000

6200

6500

Vertical Depth - Feet

Temperature Gradient -  
Copper Range Consolidated Copper Co.,  
Diamond Drill Hole Baltic No. 16.





TEMPERATURE GRADIENT  
 COPPER RANGE CONSOLIDATED COPPER COMPANY  
 DIAMOND DRILL HOLE BALTIC NO. 16.

Location: 0' of drill hole is 4700' level Baltic No. 2 Shaft.  
 Inclination of shaft 72°. Vertical depth of top of hole from shaft collar - 4470 feet.  
 Drill hole dips 64° with horizontal. Vertical depth of bottom of hole from shaft collar - 6130 feet.  
 From surface over hole - 6250 feet. Air temperature during test ranged from 76.8°F to 78°.0 F.  
 Measurements taken Sept. 1930. Water flowing from hole at rate of about 1/2 barrel per day.  
 Small quantity of gas is discharged from the well.hole.

DEPTH ALONG HOLE	VERTICAL DEPTH	TEMPERATURE
25	22 - 4612	78.5 F
75	67 - 4657	79.1
125	112 - 4702	79.6
187	168 - 4758	80.1
250	225 - 4815	80.8
500	449 - 5039	82.8
750	674 - 5264	84.7
1000	899 - 5489	86.7
1250	1123 - 5713	88.8
1500	1348 - 5938	91.1
1750	1573 - 6163	93.1
1847	1660 - 6250	94.1



Temperature Gradient - Copper Range Consolidated Copper Co.,  
Diamond Drill Hole No. 75.





Adams Township, MI

TEMPERATURE GRADIENT  
COPPER RANGE CONSOLIDATED COPPER COMPANY  
DIAMOND DRILL HOLE NO. 75.

Location: T-53-N; R-35-W; Section 3.  
1600 feet S and 3640 W of N.E. corner of Section 3.

Drilled: Dec. 5, 1929 to Feb. 11, 1930.

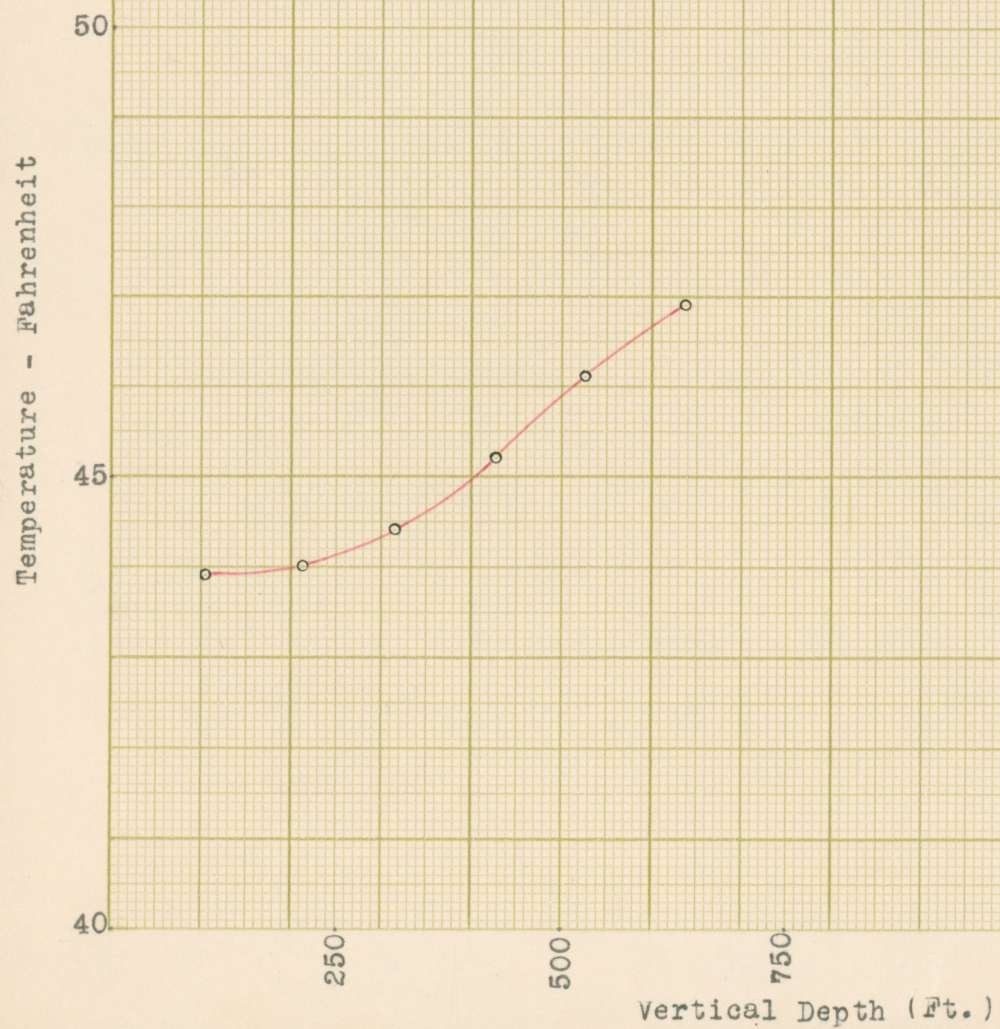
Temperatures taken Sept. 1930.

<u>Dip</u>		<u>Strike</u>	
0'	63°	S 57° - 18' E.	(True)
400'	63°	S 69° E	(Magnetic)

<u>Inclined Depth</u>	<u>Vertical Depth</u>	<u>Temperature</u>
25'	22'	45.0° F
75'	67'	44.0
125'	111'	43.9
250'	223'	44.0
375'	334'	43.9



Temperature Gradient - Copper Range Consolidated  
Copper Company  
Diamond Drill Hole No. 72.





TEMPERATURE GRADIENT  
COPPER RANGE CONSOLIDATED COPPER COMPANY  
DIAMOND DRILL HOLE NO. 72.

Location: T-54-N; R-35-W; Section 34; 1335 feet N and 1130 feet W  
of S.E. corner of Sec. 34.

Drilled: Oct. 22, 1929 - Dec. 4, 1929.

Temperature observations taken Sept. 1930.

<u>Dip</u>	<u>Strike</u>
0' - 58°	S 47° - 37' E (True)
400' - 58½°	S 46° E (Magnetic)
800' - 61°	

Water between 70 and 75 feet.

<u>Inclined Depth</u>	<u>Vertical Depth</u>	<u>Temperature</u>
125 feet	106 feet	43.9° F
250	212	44.0
375	318	44.4
500	425	45.2
625	531	46.1
750	638	46.9