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no. 76-412

USGS-OFR-76-412

✓ UNITED STATES (DEPARTMENT OF THE INTERIOR)  
GEOLOGICAL SURVEY.

[Reports - Open file  
series]

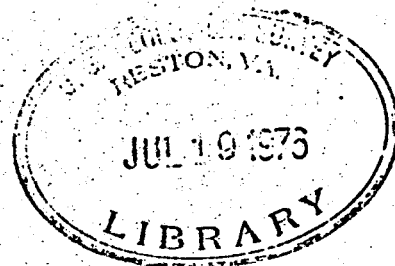
Audio-magnetotelluric data log, and station  
location map for Thermo Known Geothermal  
Resource Area, Utah

TM  
cm  
T. W. ...

By

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Carl L. Long

Open-File Report No. 76-412  
1976



This report is preliminary and has not been  
edited or reviewed for conformity with U.S.  
Geological Survey standards and nomenclature.

**MASTER**

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## **DISCLAIMER**

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113° 15' +  
38° 15' +

+

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113° 15' +  
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113° 15' +  
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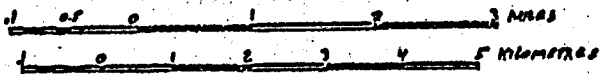
09

010

113° 15' +  
38° 15' +

03

N



⊙ AMT Station

# THERMO, UTAH

AUDIO - MAGNETOTELLURIC  
STATION LOCATION MAP

FIGURE 1

## U.S. GEOLOGICAL SURVEY A.M.T. DATA LOG

pa = observed apparent resistivity in ohm-metres

N = number of observations

Er = standard error in ohm metres

- = no data

"NOTE" - Telluric line orientation indicated with station numbers.

| Sta. No. | FREQUENCY |      |      |      |      |      |      |      |      |      |      |       |       |
|----------|-----------|------|------|------|------|------|------|------|------|------|------|-------|-------|
|          |           | 7.5  | 10   | 14   | 27   | 76   | 285  | 685  | 1.2K | 3.3K | 6.7K | 10.2K | 18.6K |
| 1NS      | pa        | 17.4 | 16.8 | 13.8 | 12.1 | 5.1  | 2.3  | -    | -    | -    | 8.7  | 11.0  | 19.7  |
|          | N         | 7    | 7    | 7    | 11   | 7    | 10   | -    | -    | -    | 9    | 1     | 1     |
|          | Er        | 2.7  | 1.9  | 1.1  | 1.0  | 1.3  | 0.3  | -    | -    | -    | 0.4  | -     | -     |
| 1EW      | pa        | 18.0 | 17.6 | 14.7 | 10.9 | 15.1 | 7.1  | -    | -    | -    | 2.7  | 4.7   | 2.5   |
|          | N         | 10   | 7    | 10   | 10   | 10   | 10   | -    | -    | -    | 10   | 1     | 1     |
|          | Er        | 1.2  | 1.7  | 0.6  | 0.3  | 0.3  | 0.3  | -    | -    | -    | 0.1  | -     | -     |
| 2NS      | pa        | 2.0  | 2.6  | 2.3  | 3.1  | 8.3  | 25.2 | -    | -    | -    | 25.6 | 13.6  | 24.6  |
|          | N         | 9    | 7    | 8    | 10   | 4    | 5    | -    | -    | -    | 3    | 1     | 1     |
|          | Er        | 0.2  | 0.1  | 0.3  | 0.2  | 1.4  | 1.2  | -    | -    | -    | 0.6  | -     | -     |
| 2EW      | pa        | 2.1  | 3.1  | 2.6  | 1.9  | 3.6  | 6.9  | -    | -    | -    | 4.0  | 18.5  | 5.8   |
|          | N         | 4    | 6    | 8    | 10   | 9    | 10   | -    | -    | -    | 10   | 1     | 1     |
|          | Er        | 0.3  | 1.1  | 0.2  | 0.2  | 0.2  | 0.4  | -    | -    | -    | 0.1  | -     | -     |
| 3NS      | pa        | 4.1  | -    | 5.6  | 7.3  | 10.9 | 12.5 | -    | -    | -    | 14.5 | 22.3  | 34.7  |
|          | N         | 10   | 3    | 10   | 10   | 10   | 10   | -    | -    | -    | 4    | 1     | 1     |
|          | Er        | 0.5  | 0.3  | 0.7  | 0.7  | 0.6  | 0.6  | -    | -    | -    | 0.8  | -     | -     |
| 3EW      | pa        | 4.4  | 3.2  | 3.3  | 4.7  | 10.9 | 17.6 | 23.3 | -    | -    | 1.6  | 7.9   | 1.4   |
|          | N         | 7    | 8    | 10   | 11   | 10   | 10   | 6    | -    | -    | 11   | 1     | 1     |
|          | Er        | 0.5  | 0.6  | 0.2  | 0.3  | 0.4  | 0.5  | 1.1  | -    | -    | 0.1  | -     | -     |
| 4NS      | pa        | 7.9  | 5.3  | 10.7 | 14.1 | 11.6 | 5.6  | -    | -    | -    | 8.4  | 4.9   | 14.0  |
|          | N         | 5    | 5    | 3    | 8    | 6    | 10   | -    | -    | -    | 10   | 1     | 1     |
|          | Er        | 2.1  | 1.7  | 2.5  | 1.3  | 1.0  | 0.5  | -    | -    | -    | 0.6  | -     | -     |
| 4EW      | pa        | 14.1 | 10.3 | 9.2  | 14.4 | 13.8 | 11.8 | -    | -    | -    | 1.1  | 2.7   | 24.8  |
|          | N         | 11   | 10   | 7    | 11   | 9    | 10   | -    | -    | -    | 11   | 1     | 1     |
|          | Er        | 1.7  | 1.1  | 0.9  | 1.1  | 0.4  | 0.9  | -    | -    | -    | 0.04 | -     | -     |

## U.S. GEOLOGICAL SURVEY A.M.T. DATA LOG

pa = observed apparent resistivity in ohm-metres

N = number of observations

Er = standard error in ohm metres - = no data

"NOTE" - Telluric line orientation indicated with station numbers.

| Sta. No. |    | FREQUENCY |       |       |      |       |       |      |      |      |      |       |       |
|----------|----|-----------|-------|-------|------|-------|-------|------|------|------|------|-------|-------|
|          |    | 7.5       | 10    | 14    | 27   | 76    | 285   | 685  | 1.2K | 3.3K | 6.7K | 10.2K | 18.6K |
| 5NS      | pa | -         | -     | 40.1  | 39.1 | 46.2  | -     | -    | -    | -    | 21.5 | 11.5  | 49.7  |
|          | N  | 3         | 7     | 8     | 10   | 8     | 10    | -    | -    | -    | 10   | 1     | 1     |
|          | Er | 0.5       | 0.3   | 3.0   | 4.4  | 8.1   | 0.1   | -    | -    | -    | 1.2  | -     | -     |
| 5EW      | pa | 92.5      | 100.2 | 102.7 | 92.7 | 77.8  | 56.3  | -    | -    | -    | 10.9 | 12.4  | 118.7 |
|          | N  | 4         | 4     | 11    | 10   | 7     | 10    | -    | -    | -    | 10   | 1     | 1     |
|          | Er | 23.1      | 16.9  | 8.2   | 5.4  | 5.1   | 2.9   | -    | -    | -    | 0.8  | -     | -     |
| 6NS      | pa | 26.6      | 58.0  | -     | 83.8 | 177.3 | 101.6 | -    | -    | -    | 23.4 | 4.7   | 110.0 |
|          | N  | 3         | 2     | -     | 10   | 7     | 6     | -    | -    | -    | 7    | 1     | 1     |
|          | Er | 8.9       | 14.6  | -     | 9.6  | 6.0   | 6.0   | -    | -    | -    | 1.1  | -     | -     |
| 6EW      | pa | 71.0      | 96.2  | 84.5  | 57.1 | 52.8  | 75.1  | -    | -    | -    | 7.8  | 17.7  | 28.6  |
|          | N  | 10        | 7     | 9     | 10   | 6     | 10    | -    | -    | -    | 10   | 1     | 1     |
|          | Er | 8.9       | 12.2  | 8.2   | 6.4  | 3.2   | 1.6   | -    | -    | -    | 0.3  | -     | -     |
| 7NS      | pa | 27.1      | 45.2  | 45.2  | 29.1 | 72.0  | 90.1  | -    | -    | -    | 40.5 | 36.7  | 30.5  |
|          | N  | 9         | 5     | 9     | 8    | 7     | 9     | -    | -    | -    | 10   | 1     | 1     |
|          | Er | 5.8       | 7.1   | 5.5   | 5.1  | 14.6  | 12.8  | -    | -    | -    | 2.4  | -     | -     |
| 7EW      | pa | 42.8      | 38.0  | 42.8  | 23.2 | 75.8  | 79.6  | 88.3 | -    | -    | 11.7 | 8.2   | 4.5   |
|          | N  | 8         | 10    | 13    | 11   | 12    | 11    | 4    | -    | -    | 12   | 1     | 1     |
|          | Er | 5.7       | 2.4   | 3.7   | 2.8  | 10.8  | 6.9   | 14.5 | -    | -    | 0.6  | -     | -     |
| 8NS      | pa | 19.9      | 12.1  | 19.6  | 22.1 | 30.4  | 27.3  | -    | -    | -    | 5.2  | 2.5   | 15.6  |
|          | N  | 7         | 6     | 8     | 10   | 9     | 10    | -    | -    | -    | 7    | 1     | 1     |
|          | Er | 3.1       | 1.6   | 1.9   | 1.6  | 2.2   | 1.4   | -    | -    | -    | 0.2  | -     | -     |
| 8EW      | pa | 26.3      | 22.7  | 21.6  | 25.4 | 30.3  | 32.9  | 18.6 | -    | -    | 2.3  | 2.4   | 4.0   |
|          | N  | 10        | 10    | 10    | 10   | 9     | 10    | 4    | -    | -    | 9    | 1     | 1     |
|          | Er | 1.7       | 3.3   | 1.8   | 1.7  | 1.6   | 1.3   | 1.5  | -    | -    | .08  | -     | -     |

U.S. GEOLOGICAL SURVEY A.M.T. DATA LOG

$\rho_a$  = observed apparent resistivity in ohm-metres

N = number of observations

Er = standard error in ohm metres      - = no data

"NOTE" - Telluric line orientation indicated with station numbers.

| Sta. No. |          | FREQUENCY |      |      |      |       |       |       |      |      |       |       |       |
|----------|----------|-----------|------|------|------|-------|-------|-------|------|------|-------|-------|-------|
|          |          | 7.5       | 10   | 14   | 27   | 76    | 285   | 685   | 1.2K | 3.3K | 6.7K  | 10.2K | 18.6K |
| 9NS      | $\rho_a$ | 23.3      | 47.6 | 42.8 | 48.1 | -     | 10.3  | -     | -    | -    | 47.4  | 40.6  | 14.1  |
|          | N        | 5         | 9    | 10   | 10   | -     | 8     | -     | -    | -    | 6     | 1     | 1     |
|          | Er       | 4.5       | 4.6  | 3.8  | 6.0  | -     | 2.3   | -     | -    | -    | 2.7   | -     | -     |
| 9EW      | $\rho_a$ | 22.9      | 29.9 | 35.5 | 40.7 | 56.0  | 66.3  | -     | -    | -    | 11.7  | 16.5  | 5.2   |
|          | N        | 9         | 10   | 11   | 10   | 11    | 10    | -     | -    | -    | 10    | 1     | 1     |
|          | Er       | 1.9       | 2.6  | 2.1  | 2.3  | 3.3   | 5.9   | -     | -    | -    | 0.5   | -     | -     |
| 10NS     | $\rho_a$ | 10.7      | 15.3 | 17.3 | 18.4 | 27.2  | 40.6  | -     | -    | -    | 15.2  | 4.8   | 106   |
|          | N        | 5         | 4    | 7    | 10   | 9     | 10    | -     | -    | -    | 10    | 1     | 1     |
|          | Er       | 1.2       | 1.9  | 3.9  | 1.5  | 1.6   | 4.1   | -     | -    | -    | 1.1   | -     | -     |
| 10EW     | $\rho_a$ | 22.5      | 29.2 | 27.6 | 25.4 | 39.1  | 56.4  | 58.8  | -    | -    | 11.8  | 9.5   | 26.1  |
|          | N        | 10        | 9    | 9    | 10   | 10    | 10    | 8     | -    | -    | 10    | 1     | 1     |
|          | Er       | 1.5       | 2.2  | 1.2  | 1.4  | 2.6   | 1.6   | 6.1   | -    | -    | 0.2   | -     | -     |
| 11NS     | $\rho_a$ | 29.1      | 30.9 | 31.6 | 42.1 | 81.6  | 14.9  | -     | -    | -    | 73.8  | 62.7  | 85.2  |
|          | N        | 4         | 3    | 10   | 9    | 8     | 8     | -     | -    | -    | 7     | 1     | 1     |
|          | Er       | 2.6       | 4.9  | 4.7  | 3.8  | 10.3  | 2.7   | -     | -    | -    | 3.7   | -     | -     |
| 11EW     | $\rho_a$ | 42.1      | 36.6 | 45.4 | 48.5 | 62.9  | 70.2  | -     | -    | -    | 24.6  | 50.7  | 10.2  |
|          | N        | 7         | 10   | 10   | 10   | 10    | 11    | -     | -    | -    | 10    | 1     | 1     |
|          | Er       | 4.8       | 4.0  | 4.4  | 5.4  | 6.5   | 7.2   | -     | -    | -    | 2.9   | -     | -     |
| 12NS     | $\rho_a$ | 60.5      | 60.8 | 61.7 | 55.8 | 159.8 | 182.2 | -     | -    | -    | 105.0 | 62.0  | -     |
|          | N        | 3         | 4    | 4    | 5    | 6     | 10    | -     | -    | -    | 10    | 1     | -     |
|          | Er       | 11.3      | 10.5 | 8.7  | 10.6 | 17.2  | 19.8  | -     | -    | -    | 6.1   | -     | -     |
| 12EW     | $\rho_a$ | 53.5      | 59.5 | 55.7 | 58.6 | 91.6  | 135.9 | 181.0 | -    | -    | 32.3  | 13.5  | 79.4  |
|          | N        | 10        | 8    | 5    | 7    | 7     | 10    | 8     | -    | -    | 10    | 1     | 1     |
|          | Er       | 6.8       | 10.2 | 7.1  | 7.3  | 11.5  | 17.7  | 24.1  | -    | -    | 1.8   | -     | -     |

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 N = number of observations  
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| Sta. No.         |    | FREQUENCY |      |      |       |      |       |     |      |      |       |       |       |
|------------------|----|-----------|------|------|-------|------|-------|-----|------|------|-------|-------|-------|
|                  |    | 7.5       | 10   | 14   | 27    | 76   | 285   | 685 | 1.2K | 3.3K | 6.7K  | 10.2K | 18.6K |
| 13N <sub>1</sub> | pa | 36.2      | 87.3 | 71.5 | 131.5 | 67.3 | 36.8  | -   | -    | -    | 102.8 | 18.9  | 163.9 |
|                  | N  | 2         | 4    | 7    | 3     | 8    | 6     | -   | -    | -    | 5     | 1     | 1     |
|                  | Er | 4.4       | 26.4 | 14.8 | 14.6  | 11.4 | 9.5   | -   | -    | -    | 12.2  | -     | -     |
| 13E <sub>W</sub> | pa | 49.1      | 38.5 | 42.7 | 42.7  | 90.2 | 101.3 | -   | -    | -    | 51.8  | 26.4  | 123.1 |
|                  | N  | 10        | 10   | 6    | 8     | 7    | 10    | -   | -    | -    | 10    | 1     | 1     |
|                  | Er | 3.7       | 3.2  | 2.3  | 4.9   | 15.1 | 25.8  | -   | -    | -    | 1.7   | -     | -     |
|                  | pa |           |      |      |       |      |       |     |      |      |       |       |       |
|                  | N  |           |      |      |       |      |       |     |      |      |       |       |       |
|                  | Er |           |      |      |       |      |       |     |      |      |       |       |       |
|                  | pa |           |      |      |       |      |       |     |      |      |       |       |       |
|                  | N  |           |      |      |       |      |       |     |      |      |       |       |       |
|                  | Er |           |      |      |       |      |       |     |      |      |       |       |       |
|                  | pa |           |      |      |       |      |       |     |      |      |       |       |       |
|                  | N  |           |      |      |       |      |       |     |      |      |       |       |       |
|                  | Er |           |      |      |       |      |       |     |      |      |       |       |       |
|                  | pa |           |      |      |       |      |       |     |      |      |       |       |       |
|                  | N  |           |      |      |       |      |       |     |      |      |       |       |       |
|                  | Er |           |      |      |       |      |       |     |      |      |       |       |       |
|                  | pa |           |      |      |       |      |       |     |      |      |       |       |       |
|                  | N  |           |      |      |       |      |       |     |      |      |       |       |       |
|                  | Er |           |      |      |       |      |       |     |      |      |       |       |       |