(200)

R210

ms. 76-152

USGS-OFR-76-152

(UNITED STATES DEPARTMENT OF THE INTERIOR)

GEOLOGICAL SURVEY. [Reports - Open file series]

Audio-magnetotelluric Data Log, Station
Location Map, and Telluric Profile Data
for the Elko Hot Springs Known Geothermal
Resource Area (KGRA), Nevada

T14

cm

Ivanala

BY
1930-
Donald B. Hoover, Gary Broughm and
John Clark, 1909-
U.S. Geological Survey

Open-file Report 76-152
1976

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

MASTER

268030

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

39

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency Thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

Elko, Nevada
1976

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.

		FREQUENCY											
Sta. No.		7.5	10	14	27	76	285	685	1.2K	3.3K	6.7K	10.2K	18.6K
1NS	pa	8.1	11.1	8.1	7.7	6.7	—	—	—	—	—	113	15.4
	N	9	14	13	9	12						1	1
	Er	0.9	1.0	0.7	0.2	0.2							
1EW	pa	4.1	3.8	1.7	3.2	3.7	—	—	—	—	85	641	1272.
	N	11	13	12	11	12					4	1	1
	Er	0.4	0.3	0.1	0.2	0.3					6.8		
2NS	pa	8.3	9.4	9.2	9.9	10.7	—	—	—	—	363	408	438
	N	14	13	10	12	10					1	1	1
	Er	1.2	1.5	0.8	0.6	0.1							
2EW	pa	5.9	5.1	3.5	6.2	11.6	—	—	—	—	64	948	706
	N	20	7	10	11	10					6	1	1
	Er	0.4	0.6	0.2	0.4	1.3					1.5		
3NS	pa	41.1	61.	66	92.6	122.6	—	—	—	—	—	309.	42.1
	N	12	9	12	10	10						1	1
	Er	6.9	8.8	9.7	11.8	7.0							
3EW	pa	277	193	179	133.	50.5	—	—	—	—	—	1755	345.
	N	16	18	14	16	10						1	1
	Er	12.	19	12	6.	2.4							
4NS	pa	13.9	46.5	30.4	74	79.5	—	—	—	—	—	212	581
	N	7	5	10	10	10						1	1
	Er	2.7	12	5.1	9.6	0.8						—	—
4EW	pa	54.4	38.5	30.5	33.7	53.6	—	—	—	—	—	55	37
	N	10	10	10	10	10						1	1
	Er	5.6	4.9	1.2	3.5	4.6						—	—

Elko, Nevada
1976

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	42.1	28.3	58.9	41.1	29.2	14.3	-	-	-	169	668	159
	N	10	9	5	11	10	6				4	1	1
	Er	3.4	4.8	3.5	4.4	1.6	1.8				18		
5EW	pa	40.2	280	146	123	93.0	62.9	-	-	-	270	561	488
	N	11	11	13	9	12	5				8	1	1
	Er	22.	23	5.4	8.9	1.6	2.5				1.5		
6NS	pa	4.4	3.1	4.2	3.5	6.0	6.5	-	-	-	81	592	356
	N	4	1	10	13	9	4				4	1	1
	Er	0.6		0.6	0.2	0.5	0.2				11		
6EW	pa	7.1	5.9	4.3	4.1	4.1	7.8	-	-	-	51	627	753
	N	15	15	11	11	14	10				12	1	1
	Er	0.5	0.4	0.2	0.2	0.1	0.5				1.8		
7NS	pa	9	5.6	9.0	11.1	10.9	11.7	-	-	-	173	492	1166
	N	1	2	7	10	10	10				6	1	1
	Er		.8	.7	1.0	0.8	0.5				11.		
7EW	pa	7.9	4.7	5.6	8.9	8.0	14.2	-	-	-	31.9	477	126.
	N	11	6	11	12	11	10				9	1	1
	Er	0.6	0.7	0.4	1.1	0.3	0.5				1.5		
8NS	pa	7.2	9.0	11.5	11.1	13.5	11.4	-	-	-	735	612	1536
	N	9	3	10	8	10	2				3	1	1
	Er	1.0	3.3	1.1	0.8	0.5	0.3	-	-	-	57.		
8EW	pa	5.8	4.9	5.5	7.5	12.2	15.3				116.2	1121	1847
	N	9	8	11	13	11	2				5	1	1
	Er	0.6	0.7	0.4	0.4	0.8	0.3				13.2		

Elko, Nevada
1976

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.

		FREQUENCY											
Sta. No.		7.5	10	14	27	76	285	685	1.2K	3.3K	6.7K	10.2K	18.6K
9NS	pa	6.2	14.3	10.5	18.3	24.5	18.8	-	-	-	-	1454	1220
	N	3	6	9	10	4	3						
	Er	0.6	3.9	1.2	1.0	3.3	0.5						
9EW	pa	8.3	13.4	10.6	15.7	19.5	-	-	-	-	-	1570	1907
	N	4	5	8	10	6							
	Er	1.5	3.2	0.9	0.9	1.0							
10NS	pa	14.3	10.3	14.8	20.5	19.4	15.0	-	-	-	626	1278	-
	N	5	7	9	12	9	6				6	1	
	Er	2.0	0.9	1.3	1.8	1.4	1.4				212		
10EW	pa	14.2	7.7	11.6	14.6	17.0	11.0	-	-	-	94	1924	923
	N	7	8	11	11	11	3				4	1	
	Er	2.2	0.9	0.7	0.6	1.1	1.9				12		
11NS	pa	8.3	21.1	18.8	17.1	13.5	-	-	-	-	298	7850	2480
	N	3	3	12	10	13					3	1	1
	Er	2.4	2.4	1.3	0.9	0.9					66		
11EW	pa	12.5	14.2	15.1	16.2	17.4	15.5	-	-	-	78.8	743	2970
	N	3	6	9	8	11	4				6	1	1
	Er	2.0	2.1	1.7	1.7	1.5	1.4				4.9		
12NS	pa	2.7	7.5	2.4	4.9	5.7	-	-	-	-	-	312	102
	N	3	4	9	9	6						1	1
	Er	0.8	2.0	0.4	0.6	1.3							
12EW	pa	6.0	6.3	4.3	5.7	6.5	-	-	-	-	56.6	1648	471
	N	9	9	12	11	10					5	1	1
	Er	0.7	0.7	0.3	0.5	0.2					6.8		

Elko, Nevada
1976

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
13NS	pa	4.7	4.0	3.4	3.9	3.1	4.6	-	-	-	229	996	-
	N	4	1	4	9	10	3				2	1	
	Er	0.7		0.3	0.5	0.2	0.3				26		
13EW	pa	10.5	5.4	5.0	3.9	4.9	-	-	-	-	54	1396	-
	N	10	5	10	10	9					8	1	
	Er	0.9	0.9	0.3	0.2	0.7					4.0		
14NS	pa	4.2	5.3	3.6	4.2	2.7	3.5	-	-	-	-	216	148
	N	5	7	5	4	9	2					1	1
	Er	0.6	0.9	0.4	0.4	0.1	0.8						
14EW	pa	13.1	9.7	7.0	7.6	8.9	9.8	-	-	-	72.2	77.1	3069
	N	6	7	11	7	10	1				4	1	1
	Er	1.6	1.0	0.4	0.3	0.3					1.8		
15NS	pa	8.1	13.6	6.7	6.1	4.4	4.8	-	-	-	147	889	90
	N	9	6	9	10	8	5				1	1	1
	Er	0.7	1.9	0.4	0.3	0.1	0.8						
15EW	pa	11.9	8.2	6.0	7.2	8.8	14	-	-	-	90	1287	833
	N	6	4	10	10	10	2				5	1	1
	Er	1.3	1.2	0.4	0.3	0.3	0.5				4.0		
16NS	pa	3.7	3.8	4.8	5.6	11.4	11.8				75.9	232	309
	N	8	6	9	12	13	6				4	1	1
	Er	0.3	0.4	0.2	0.5	0.4	0.8				7.		
16EW	pa	11.7	9.3	6.3	6.7	13.0	17.1				113.5	762	1039
	N	8	7	12	9	11	7				8	1	1
	Er	0.4	1.4	0.4	0.4	0.3	0.8				7.6		

Elko, Nevada
1976

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.

		FREQUENCY											
Sta. No.		7.5	10	14	27	76	285	685	1.2K	3.3K	6.7K	10.2K	18.6K
17MS	pa	6.3	6.4	8.7	10.7	9.8	19.0				—	1100	682
	N	5	4	5	6	10	8					1	1
	Er	0.5	1.1	1.1	0.5	0.6	0.6						
17EW	pa	12.6	11.1	8.1	9.4	11.2	40.				—	3220	5880
	N	9	4	9	10	8	8					1	1
	Er	0.7	1.5	0.3	0.7	0.7	1.7						
	pa												
	N												
	Er												
	pa												
	N												
	Er												
	pa												
	N												
	Er												
	pa												
	N												
	Er												
	pa												
	N												
	Er												
	pa												
	N												
	Er												

40°52'30"

Explanation

⊙ Station location

Scale 1:62,500

1 0.5 0 1 MILES

1 0.5 0 1 2 KILOMETRES

115°52'30"

115°45'

40°45'

FIGURE 1.
Audio-magnetotelluric and telluric traverse location map for the Elko
Hot Springs KGRA (Known Geothermal Resource Area), Nevada.

Scale 1:62,500
Station spacing 0.5 km

Figure 2. Telluric profile data for the Elko Hot Springs Known Geothermal Resource Area (KGRA), Nevada.