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Telluric profiles across the Darrough
Known Geothermal Resource Area, Nevada

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By

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TELLURIC PROFILES

Darrrough, Nevada

Three telluric profiles were completed across the Darrrough, Nevada K.G.R.A. One-traverse crossed through the center of the area from west to east, another near the south boundary from west to east, and one traverse near the center from south to north. See data and location map for exact positions. Two five-hundred metre lines were used in a linear array, giving a station spacing of one-half km interval. Only one component between three colinear electrodes was used. The array was leap-frogged along a straight profile line to obtain running ratios of electric field amplitudes, all referenced back to the first dipole location.

The signal was bandpassed filtered to limit the period to a 10 to 60 second range. The data were recorded on an x-y plotter and the slope of the line is proportional to the ratio of the electric field amplitudes observed between the two dipoles.

The profiles for the west to east traverses are shown at the top of the location map and the south to north profile is along the west edge of the map. The south to north traverse paralleled the mountain range and gives some indication of less resistive structure features at depth, which may be indicative of the east dipping fault (Ferguson and Cathcart, 1954). The central profile also shows a low value near the west end of the profile which could be related to the fault in that area, there being two high points on either side of the hot springs area would indicate a perched low resistivity zone related to the hot springs alteration at depth with the lowest part of the profile on the east end probably reflecting the deeper basin sediments. The A.M.T. 27 Hz, telluric line n-S resistivity map supports

the telluric profile very well from the Darrough hot springs eastward by indicating low resistivity over the hot springs with a higher resistivity ridge separating the basin sediments from the area of the hot springs.

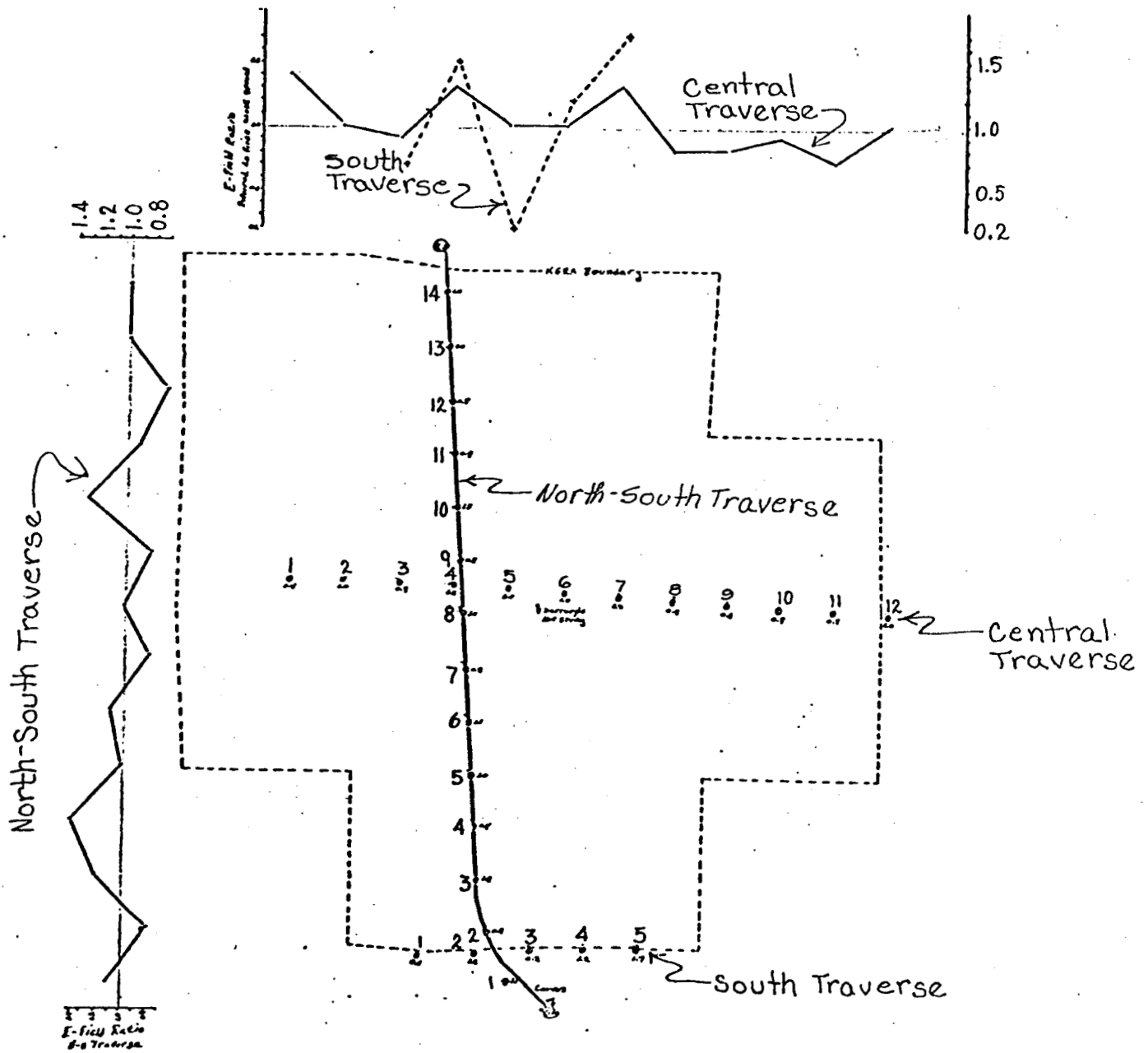
The south profile does show a moderate change in resistivity just east of highway 84 near Carvers station, which would be in the proper location to intersect the east dipping fault. A fourth traverse was attempted near the north boundary, but except for the first two west stations, we were unable to obtain a signal above the noise level.

Telluric Profiles-Darroug, Nevada

September 18-22, 1975

Electric-field Ratios

Station	Central traverse (West-East)		South-North traverse (South-North)		Southern traverse (West-East)	
	Angle	y/x ratio	Angle	y/x ratio	Angle	y/x ratio
1	36°	1.36	43.5°	1.11	56°	0.68
2	45°	1.00	53.0°	0.75	(34°)	(1.49)
3	47°	0.93	40.0°	1.18	76°	0.25
4	38°	1.28	36.0°	1.38	39°	1.24
5	45°	1.00	44.0°	1.03	30°	1.74
6	45°	1.00	42.0°	1.11		
7	37°	1.33	51.0°	0.81		
8	50°	0.84	46.0°	0.96		
9	51°	0.81	50.5°	0.82		
10	49°	0.87	38.0°	1.28		
11	(54°)	(0.73)	49.0°	0.87		
12	44°	1.03	55.0°	0.70		
13			45.0°	1.00		
14			45.0°	1.00		



Scale: 1:62500

Telluric profile with data and location map,
Darrough Hot Springs KGRA, Nevada.