

**SURFACE DRAINAGE IN AND AROUND THE
SOUTHWESTERN EXTENSION OF
INDIAN WELLS VALLEY, CALIFORNIA**

<u>Drainage Basin</u>	<u>Area (sq. mi.)</u>	<u>Average Precipitation (in./yr.)</u>	<u>Average Precipitation (ac-ft/yr).</u>
Sierra Nevada	105	10 ¹	56,000
El Paso Mountains	16	5 ¹	4,300
Valley (includes project area)	89	5 ²	23,700
Total	210		84,000

According to one study³, 2 - 2 1/2% of the precipitation that falls in the drainage basin of the main portion of Indian Wells Valley is incorporated into the ground water. Applying this value to the drainage basin for the project area suggests that about 2,000 acre-ft/year enters the ground water of this part of the valley. This should be considered only an estimate, which may be conservative. We consider it a useful first attempt subject to more detailed analysis as new information becomes available.

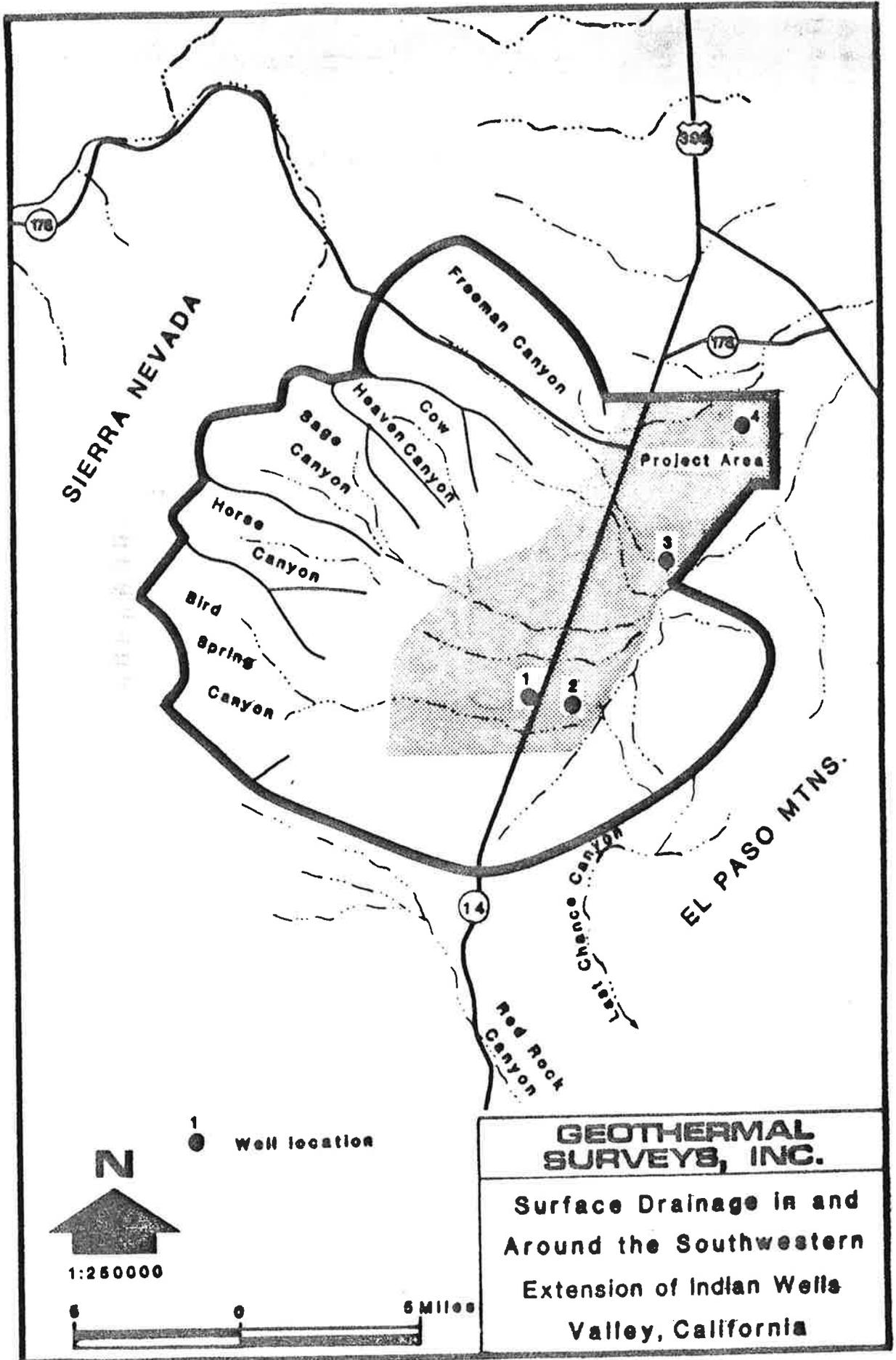
Table 1

DATA ON WELLS AND GROUND WATER LEVELS⁴

<u>Well</u>	<u>Total Depth of Well (ft)</u>	<u>Depth to Water (ft)</u>	<u>Elevation of Ground Water Surface (ft)</u>
1	400	280	2800
2	600	211	2814
3	300	170	2705
4	305.6	292	2347

1. St. Amand, P., 1985, Table 1.
2. This rate is the same as that shown for Inyokern in St. Amand, P., 1985, Figure 6. This is likely a good approximation of the precipitation in the field area.
3. St. Amand, P., 1985, p. 20.
4. Moyle, W. R., 1963.

Figure 4



APPLICATION

Number of Probes Installed: 57

Depth of Sensors: 10 feet

Dates of Probe Installation: January 7-12, 1986

Comments

For a brief description of the use of temperature measurements in ground water studies, please refer to Appendix A.

The project area, about 58 square miles, is crudely rectangular and measures approximately 12 miles in length by a maximum of 6 miles in width. Within the project area, probes were installed in a rough grid pattern with average probe spacing on the order of 1 mile.

All probe holes were drilled by auger by Permanent Dead Man Company of Bakersfield, California.

Most probe holes were drilled in silt and sand. Some also contained gravel with clasts up to 25 cm.

No ground water was encountered in any of the probe holes.

STATISTICS

Date of Reading	No. of Probes	Temperature Range (°C)	Mean (°C)	Standard Deviation (°C)	Skewness
1/13-14/86	57	16.93-19.95	18.14	0.77	-1.17
1/22-24/86	57	16.49-19.62	17.62	0.85	-1.43