Site Description

S Monitor Valley

(updated 2010)

Geologic setting: The thermal features of southern Monitor Valley are associated with the Central Monitor Valley fault, a north-trending, concealed Holocene fault running along the valley axis (Stewart and Carlson, 1974; Fiero, 1986; Sawyer, 1998).

Geothermal features:

Dianas Punch Bowl (Map): Dianas Punch Bowl (Dianna's, Devils) is a 15-m wide cup-shaped depression atop a 183-m wide travertine dome (Sec. 22, T14N, R47E). The dome is ~23 m above the Monitor Valley floor, and the pool sits 9 m below the rim. Temperatures up to 59°C have been reported, and the estimated minimum reservoir temperature by several chemical geothermometers is 88-97.7°C (Mariner and others, 1974; Hose and Taylor, 1974). A small hot spring (43-49°C) issues from the southwest corner of the travertine dome (Fiero, 1986).

Slightly anomalous radioactivity (16 µR/hr) is reported by Wollenberg (1974b). Spurr (1905, p. 257) describes a report by J.L. Butler that the water receded and cooled in the years prior to 1905. Butler also reported more gaseous emissions, with occasional flames above the water surface.

Mosquito Ranch Springs: Fiero (1986) reports a 35ºC hot spring near Mosquito Ranch (SE¼ NE¼ Sec. 6, T11N, R47E), and a second hot spring ~4.5 km to the north (SE¼ SE¼ Sec. 24, T12N, R46E). A tufa mound and infrared thermal anomaly are associated with the latter spring (Fiero, 1986).

Hot wells are shown in Secs. 19 and 20, T12N, R47E, on the Mosquito Creek 7.5-minute topographic map.

Potts Ranch Hot Springs: Potts Ranch Hot Springs are located in central Monitor Valley, ~6 km north of Dianas Punch Bowl (Sec. 1, 2, Tl4N, R47E). Maximum temperatures are 45°C, with estimated minimum reservoir temperatures nearly identical to those at Dianas Punch Bowl (88-98°C). A number of springs, seeps, and travertine mounds are present near Potts Ranch.

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The outflow from Potts Ranch Hot Springs and Dianas Punch Bowl contains a small minnow, the speckled dace (Hubbs and others, 1974). The stream courses from some springs have been ditched to improve their flow (figure).

Leasing information: