

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Water Resources Division

WATER RESOURCES OF THE ANTELOPE VALLEY-EAST KERN

WATER AGENCY AREA, CALIFORNIA

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Prepared in cooperation with the
Antelope Valley-East Kern Water Agency

67-21
OPEN-FILE REPORT

Menlo Park, California
August 28, 1967

Subdivisions of the Antelope Valley Basin

The subdivisions of the Antelope Valley basin are the Lancaster, Buttes, Pearland, Neenach, West Antelope, Finger Buttes, North Muroc, and Peerless subunits, and the Hi Vista, Foothill, and Rosamond-Bissell areas (fig. 10). The Rosamond-Bissell area also includes part of the Fremont Valley.

The Lancaster subunit, the largest subunit of the Antelope Valley basin, contains the major agricultural area of Antelope Valley. Ground water is pumped from hundreds of irrigation wells in this subunit. To the northwest, the Lancaster subunit adjoins the Neenach fault. The northern boundary of the subunit consists of the Rosamond fault, the consolidated rocks of the Rosamond and Bissell hills, and the near-surface bedrock body beneath the northern part of Rogers dry lake. The eastern boundary of the subunit is the consolidated rock that forms the hills in the Hi Vista area along the east margin of Antelope Valley. The southeastern boundary is an unnamed fault, postulated from water-level data. The fault seems to trend southwestward from about 5½ miles southwest of Hi Vista and to intersect the San Andreas fault about 3 miles east of Palmdale (fig. 5).

Along the eastern extent of the postulated fault there is a water-level disparity of between 50 and 200 feet, and along the western extent there is a water-level disparity of between 100 and 250 feet (fig. 10). The location of wells used in the water-level analysis is shown in figure 10.

The southern boundary of the subunit is another unnamed fault, mostly concealed and postulated from water-level data, which parallels the San Gabriel Mountains and the San Andreas fault. Large water-level disparities occur along practically the entire extent of this fault.

The Buttes subunit is bounded on the northwest, the northeast, and the southwest by unnamed faults, which are postulated from water-level data. Along the postulated fault that is common to the Pearland subunit, there is a water-level disparity of 25 to 100 feet. The southeastern boundary of the subunit is a ground-water divide between the Antelope Valley and the El Mirage dry lake drainage area to the east. The divide, which is outside the AVEK boundaries and is not shown in figure 10, is approximately a north-south line about 3 miles east of the Los Angeles-San Bernardino County line.