

Piute Valley Groundwater Basin

- Groundwater Basin Number: 7-45
- County: San Bernardino
- Surface Area: 176,000 acres (275 square miles)

Basin Boundaries and Hydrology

This basin underlies a portion of Piute Valley in eastern San Bernardino County. The Piute Valley, and its underlying groundwater basin, extends into southern Nevada (Jennings 1961; Bishop 1963), but this report considers only the portion that lies within California. The basin is bounded by the nonwater-bearing rocks of the Dead Mountains on the east, of the Piute Range and Homer Mountain on the northwest, of the Piute Mountains on the southwest, and of the Sacramento Mountains on the southeast (Bishop 1963). The valley is drained by Piute Wash to the southeastern part of the valley, where the drainage enters the Needles Valley and flows eastward to the Colorado River. Annual average precipitation ranges from about 4 to 8 inches.

Hydrogeologic Information

Water Bearing Formations

Groundwater in the basin is found in younger and older alluvium. Older alluvium of Pleistocene age consists of fine to coarse sand interbedded with gravel, silt, and clay. Younger alluvium of Holocene age consists of poorly sorted gravel, sand, silt, and clay (DWR 1954). Valley fill extends to at least 1,044 feet in the central part of the basin and 920 feet in the southeastern part of the basin. Wells in the basin yield a maximum of 1,500 gpm.

Restrictive Structures

A fault in this basin may be a barrier to groundwater flow (DWR 1954).

Recharge Areas

Likely, recharge of the basin is chiefly from percolation of runoff from surrounding mountains. Percolation of precipitation to the valley floor and subsurface inflow may be additional sources of recharge.

Groundwater Level Trends

Groundwater moves toward the southeastern part of the basin and into Needles Valley Groundwater Basin (DWR 1954; Moyle 1974).

Groundwater Storage

Groundwater Storage Capacity. The total storage capacity is estimated at 2,400,000 (DWR 1975).

Groundwater in Storage. Unknown.

Groundwater Budget (Type A)

Natural recharge is estimated at about 1,200 af/yr (DWR 1975). Estimated annual extraction is 2 af (DWR 1954).

Groundwater Quality

Characterization. Groundwater in the southern and southeastern parts of the basin is sodium bicarbonate in character and ranges in TDS content from 196 to 329 mg/L. Analyses of water from one well near Goffs shows fluoride concentrations ranging from 1.0 to 1.7 mg/L. Water from a well near Searchlight Nevada has calcium-sodium sulfate-bicarbonate character with a TDS content of 698 mg/L (DWR 1954).

Impairments. Locally sulfate and fluoride concentrations are high for domestic use and sodium is high for irrigation use (DWR 1975).

Well Characteristics

Well yields (gal/min)		
Municipal/Irrigation	Range: to 360 gal/min	Average: 200 gal/min (DWR 1975)
Total depths (ft)		
Domestic	Range:	Average:
Municipal/Irrigation	Range:	Average:

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
Department of Health Services and cooperators	Groundwater levels	
	Miscellaneous water quality	
	Title 22 water quality	

Basin Management

Groundwater management:

Water agencies

Public

Private

References Cited

- Bishop, C. C. 1963. *Geologic Map of California, Needles Sheet*. California Division of Mines and Geology. Single Map Sheet, Scale 1:250,000.
- California Department of Water Resources (DWR). 1954. *Ground Water Occurrence and Quality, Colorado River Basin Region*. Water Quality Investigations Report No. 4.
- _____. 1975. *California's Ground Water*. Bulletin 118. 135 p.
- Jennings, C. W. 1961. *Geologic Map of California, Kingman Sheet*. California Division of Mines. Single Map Sheet, Scale 1:250,000.
- Metzger, D. G., and Loeltz, O. J. 1973. *Geohydrology of the Needles Area, Arizona, California, and Nevada*. U. S. Geological Professional Paper 486-J.
- Moyle, W. R. Jr. 1974. *Geohydrologic Map of Southern California*. Dept. of the Interior, U.S. Geological Survey Water-Resources Investigations 48-73. 1 sheet.

Additional References

Rush, F. E., and others. 1966. *Ground-Water Appraisal of the Eldorado-Piute Valley Area, Nevada and California*. Nevada Department of Conservation and Natural Resources, Water Resources-Reconnaissance Series Report 36.

Errata

Changes made to the basin description will be noted here.