

Owl Lake Valley Groundwater Basin

- Groundwater Basin Number: 6-88
- County: San Bernardino, Inyo
- Surface Area: 22,300 acres (34.8 square miles)

Basin Boundaries and Hydrology

The Owl Lake Valley Groundwater Basin underlies a northeast-trending valley in northern San Bernardino County and southern Inyo County. Elevation of the valley floor ranges from 1,693 feet at Owl (dry) Lake to about 2,100 feet above mean sea level along the perimeter of the valley. The basin is bounded by nonwater-bearing rocks of the Owlshead Mountains of the southern Panamint Range on the north, east, and west and by the Quail Mountains on the south. Elevations of peaks in the bordering mountains range to about 3,400 feet in the Owlshead Mountains and about 4,700 feet in the Quail Mountains (Jennings and others 1962; USGS 1985).

Average annual precipitation ranges from about 1 to 6 inches. Surface runoff from the bordering mountains drains towards Owl Lake located in the central part of the valley (USGS 1985).

Hydrogeologic Information

Water Bearing Formations

Quaternary alluvium, which forms the primary water-bearing unit within the basin, includes unconsolidated younger alluvial fan material underlain by semi-consolidated, older alluvium.

Recharge and Discharge Areas

Recharge to the basin is derived chiefly from the percolation of runoff from the bordering mountains and possible subsurface inflow from Lost Lake Valley Groundwater Basin. Groundwater in the alluvium moves towards Owl Lake where discharge occurs through evaporation.

Groundwater Level Trends

The basin has no known wells.

Groundwater Storage

Groundwater Storage Capacity. Unknown.

Groundwater in Storage. Unknown.

Groundwater Budget (C)

Groundwater budget information is not available.

Groundwater Quality

Characterization. Quail Spring, located on the north slope of the Quail Mountains, and Owl Hole Spring, located in the southeastern Owlshead Mountains, are the only two groundwater sources to have been analyzed for

their mineral constituents. Water from Quail Spring has a sodium bicarbonate-chloride character, and the character of the water from Owl Hole Spring is sodium sulfate-chloride.

The water obtained from Quail Spring is suitable for all beneficial uses and has a TDS content of about 360 mg/L (DWR 1964). In contrast, the water from Owl Hole Spring is rated inferior for both domestic and irrigation purposes because of elevated concentrations of fluoride, boron, nitrate, and TDS. Nitrate levels, although high but not exceeding the maximum contaminant level of 45 mg/L as NO₃, range from 23.7 to 39.6 mg/L and average 32.9 mg/L. TDS levels range from 1,580 to 1,964 mg/L, and average about 1,740 mg/L.

Impairments. The water from Owl Hole Spring is rated inferior for both domestic and irrigation purposes because of elevated levels of fluoride, boron, nitrate, and TDS. Fluoride concentrations, which range from 4.0 to 7.5 mg/L and average about 5.6 mg/L, make the water unsuitable for domestic consumption. Boron content, which can impair the growth of certain plants at levels of 1.0 mg/L, range from about 4.0 to 5.5 mg/L, and average 4.75 mg/L. TDS levels range from 1,580 to 1,964 mg/L, and average about 1,740 mg/L.

Well Production characteristics

Well yields (gal/min)	
Municipal/Irrigation	
Total depths (ft)	
Domestic	
Municipal/Irrigation	

Active Monitoring Data

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

Basin Management

Groundwater management:	
Water agencies	
Public	
Private	

References Cited

- California Department of Water Resources (DWR). 1964. *Ground Water Occurrence and Quality Lahontan Region*. Bulletin No.106-1. 439 p.
- Jennings, C. W. , J. L. Burnett, B. W. Troxel. 1962. *Geologic Map of California: Trona Sheet*. Olaf P. Jenkins Edition. California Department of Conservation, Division of Mines and Geology. Scale 1: 250,000.
- U. S. Geological Survey. 1985. *Owl lake, California*. 7.5' Quadrangle. Provisional Edition. Scale 1: 24,000.

Errata

Changes made to the basin description will be noted here.