

## Dale Valley Groundwater Basin

- Groundwater Basin Number: 7-9
- County: Riverside, San Bernardino
- Surface Area: 213,000 acres (333 square miles)

### Basin Boundaries and Hydrology

This groundwater basin underlies Dale Valley in southeastern San Bernardino County. It is bounded by nonwater-bearing rocks of the Bullion Mountains on the north, of the Pinto Mountains on the south, of the Sheephole Mountains on the east, and by the Mesquite fault on the west (Bishop 1963). Surface runoff drains toward Dale (dry) Lake in the southeastern part of the valley (DWR 1961). Average annual precipitation ranges to 6 inches.

### Hydrogeologic Information

#### ***Water Bearing Formations***

Groundwater in the basin is found in alluvial deposits of Quaternary age. Such alluvium generally consists of lenticular beds of sand, gravel, silt, and clay, except near the mountains where it consists principally of coarse-grained angular rock detritus (DWR 1961, 1979).

#### ***Restrictive Structures***

Water levels drop eastward across the Mesquite, Bullion, and Cleghorn Lake faults, which indicates that they are partial barriers to groundwater movement (DWR 1961, 1979). The Mesquite fault displaces water levels by as much as 240 feet (DWR 1961, 1979).

#### ***Recharge Areas***

Recharge to the basin is by percolation of runoff from the slopes of the surrounding mountains and precipitation to the valley floor and by underflow past the Mesquite fault from the west (DWR 1961, 1979).

#### ***Groundwater Level Trends***

Groundwater moves toward Dale Lake in the southeastern part of the valley (DWR 1979).

#### ***Groundwater Storage***

**Groundwater Storage Capacity.** The total storage capacity is estimated at 2,000,000 af (DWR 1975) and 3,500,000 af (DWR 1979).

**Groundwater in Storage.** Unknown.

#### ***Groundwater Budget (Type C)***

Natural recharge is estimated at about 900 af/yr (DWR 1975). Groundwater extractions in 1952 were about 1 af (DWR 1975).

## Groundwater Quality

**Characterization.** Analyses of water from 11 wells in the basin show an average TDS content of 53,457 mg/L with a range of 1,218 to 332,000 mg/L (DWR 1961). Groundwater beneath Dale Lake is saline and has been mined for salts (DWR 1979). TDS content is generally less than 2,000 mg/L north of Dale Lake, and about 1,450 mg/L in the central part of the basin (DWR 1979). Fluoride concentration is commonly high; water from one well in the central part of the basin contained 6.0 mg/L of fluoride (DWR 1979).

**Impairments.** The water quality in this basin is generally unsuitable for domestic and agricultural uses (DWR 1979). TDS and fluoride concentrations impair domestic use, and boron and sodium concentrations impair agricultural use in this basin (DWR 1979).

## Well Characteristics

Well yields (gal/min)		
Municipal/Irrigation	Range: to 380 gal/min	Average: 275 gal/min (DWR 1975)
Total depths (ft)		
Domestic	Range:	Average:
Municipal/Irrigation	Range:	Average:

## 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	2

## Basin Management

Groundwater management:

Water agencies

Public

Private

## References Cited

Bishop, C. C. 1963. *Geologic Map of California, Needles Sheet*. 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.

\_\_\_\_\_. 1961. *Data on Water Wells in the Dale Valley Area, San Bernardino and Riverside Counties, California*. Bulletin No. 91-5.

\_\_\_\_\_. 1975. *California's Ground Water*. Bulletin 118. 135 p.

\_\_\_\_\_. 1979. Sources of Powerplant Cooling Water in the Desert Area of Southern California- Reconnaissance Study. Bulletin 91-24. 55 p.

### **Additional References**

California Department of Water Resources (DWR). 1958. *Water Supply Conditions in Southern California During 1956-57*. Bulletin 39-57, v.3.

\_\_\_\_\_. 1960. *Data on Water Wells and Springs in the Yucca Valley-Twenty-nine Palms area, San Bernardino and Riverside Counties, California*. Bulletin 91-2. 163 p.

U. S. Bureau of Reclamation (USBR). 1967. *Interim Report, Inland Basins Projects Morongo-Yucca Upper Coachella Valley, California*. Unnumbered Reconnaissance Investigation.

### **Errata**

Changes made to the basin description will be noted here.