

Calzona Valley Groundwater Basin

- Groundwater Basin Number: 7-41
- County: Riverside, San Bernardino
- Surface Area: 81,000 acres (127 square miles)

Basin Boundaries and Hydrology

This basin underlies Calzona Valley in southeastern San Bernardino County and northeastern Riverside County. The basin is bounded by nonwater-bearing rocks of the Whipple Mountains on the north, of the Riverside Mountains on the southwest, and by the Colorado River on the south and east (Bishop 1963). A diffuse drainage divide on the west separates this basin from the Vidal Valley Groundwater Basin (Bishop 1963). The valley is drained by Vidal Wash and several unnamed washes to the Colorado River. Average annual precipitation ranges up to 6 inches.

Hydrogeologic Information

Water Bearing Formations

Groundwater in the basin is found in younger and older alluvium. The older alluvium is of Pleistocene age and consists of fine- to coarse-grained sand interbedded with gravel, silt, and clay. The older alluvium yields water freely to wells and is the most important aquifer in the basin (DWR 1963). The younger alluvium is of Holocene age and consists of poorly sorted gravel, sand, silt, and clay. The younger alluvium is generally a thin mostly veneer above the water table (DWR 1963).

Restrictive Structures

Several unnamed faults cross the northeast portion of the basin (Bishop 1963), but it is not known whether or not these faults impede groundwater flow in the basin.

Recharge Areas

The primary source of recharge to the basin is runoff from the surrounding mountain ranges that percolates through unconsolidated deposits at the edges of the valley floor (DWR 1963). Underflow likely enters the basin from Vidal Valley Groundwater Basin on the west.

Groundwater Level Trends

Groundwater moves southeastward toward the Colorado River (Moyle 1974; DWR 1979).

Groundwater Storage

Groundwater Storage Capacity. The total storage capacity is estimated at 1,500,000 af (DWR 1975).

Groundwater in Storage. Unknown.

Groundwater Budget (Type C)

Natural recharge in the basin is estimated at about 400 af/yr (DWR 1975).
 The estimated annual extraction is 45 af (DWR 1954).

Groundwater Quality

Characterization. Water from a well in the northern part of the basin has sodium chloride-sulfate character and a TDS content of 642 mg/L (DWR 1954). Water from two public supply wells have TDS concentrations of 609 and 1,770 mg/L.

Impairments. Fluoride, chloride, sulfate, and TDS concentrations are high (DWR 1975).

Water Quality in Public Supply Wells

| Constituent Group¹ | Number of wells sampled² | Number of wells with a concentration above an MCL³ |
|--------------------------------------|--|--|
| Inorganics – Primary | 2 | 0 |
| Radiological | 0 | 0 |
| Nitrates | 2 | 0 |
| Pesticides | 1 | 0 |
| VOCs and SVOCs | 1 | 0 |
| Inorganics – Secondary | 2 | 1 |

¹ A description of each member in the constituent groups and a generalized discussion of the relevance of these groups are included in *California's Groundwater – Bulletin 118* by DWR (2003).

² Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.

³ Each well reported with a concentration above an MCL was confirmed with a second detection above an MCL. This information is intended as an indicator of the types of activities that cause contamination in a given basin. It represents the water quality at the sample location. It does not indicate the water quality delivered to the consumer. More detailed drinking water quality information can be obtained from the local water purveyor and its annual Consumer Confidence Report.

Well Characteristics

| | Well yields (gal/min) | |
|----------------------|------------------------------|---------------------------------|
| Municipal/Irrigation | Range: to 2,340 gal/min | Average: 500 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 Metropolitan Water District of Southern
California

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.
- _____. 1963. *Data on Water Wells and Springs in the Rice and Vidal Valley Areas, San Bernardino and Riverside Counties, California*. Bulletin No. 91-8. 35 p.
- _____. 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.
- 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.

Errata

Changes made to the basin description will be noted here.