

San Mateo Valley Groundwater Basin

- Groundwater Basin Number: 9-02
- County: San Diego, Orange
- Surface Area: 2,990 acres (4.7 square miles)

Basin Boundaries and Hydrology

This basin underlies San Mateo Valley and Christianitos Canyon in northwestern San Diego County and southeastern Orange County. The basin is bounded by the Pacific Ocean on the west and elsewhere by semi-permeable Tertiary marine sedimentary rocks (DWR 1967). The valleys are drained westward to the ocean by San Mateo and Christianitos Creeks. Average annual precipitation ranges from 11 to 15 inches.

Hydrogeologic Information

Water Bearing Formations

The principal water bearing deposits are alluvium and the San Mateo Formation. Quaternary age alluvium consists of sand, gravel, silt, and clay deposits (DWR 1967) that reach about 100 feet thick and average about 60 feet thick (SDCWA 1997). The Pliocene age San Mateo Formation consists of deposits of marine sand, gravel, silt, and clay, that are locally water-bearing (DWR 1967).

Recharge Areas

Recharge is derived from percolation of runoff derived from rainfall and effluent from a wastewater treatment plant (SDCWA 1997). The infiltration is through natural reaches and five spreading basins in the stream channel of San Mateo Creek (SDCWA 1997).

Groundwater Level Trends

Groundwater level information is available until about 1988 with hydrographs showing that water levels vary with wet and dry weather cycles, generally recovering during wet periods. A hydrograph for a well in Christianitos Canyon ranges from 2 to 40 feet below ground surface during about 1965 through 1988. A hydrograph for one well at the confluence of Christianitos and San Mateo Creeks ranges from about 5 to 40 feet below ground surface during 1955 through 1988. Hydrographs for wells in the western part of the basin show small fluctuations about a stable level during 1946 through 1988.

Groundwater Storage

Groundwater Storage Capacity. The total storage capacity for this basin is estimated to be 14,000 af (DWR 1975; SDCWA 1997).

Groundwater in Storage. Unknown.

Groundwater Budget (Type A)

Average groundwater production for potable use is about 900 af/yr, and average production for irrigation is about 640 af/yr (SDCWA 1997). Recharge of reclaimed water is estimated at about 250 af/yr (SDCWA 1997).

Groundwater Quality

Characterization. Groundwater in the San Mateo Valley Groundwater Basin is calcium-sodium bicarbonate-chloride in character (DWR 1967). This water has been rated suitable for domestic and irrigation uses (DWR 1967). Water from 5 public supply wells ranges in TDS concentration from 490 to 770 mg/L, with an average of 586 mg/L.

Impairments.

Water Quality in Public Supply Wells

Constituent Group ¹	Number of wells sampled ²	Number of wells with a concentration above an MCL ³
Inorganics – Primary	5	1
Radiological	4	0
Nitrates	5	2
Pesticides	5	0
VOCs and SVOCs	5	0
Inorganics – Secondary	5	3

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:	Average:
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	5
	Miscellaneous water quality	
	Title 22 water quality	

Basin Management

Groundwater management:

Water agencies

Public

Tri-Cities Metropolitan Water District
Camp Pendleton Marine Corps Base

Private

References Cited

California Department of Water Resources (DWR). 1967. *Ground Water Occurrence and Quality: San Diego Region*. Bulletin No. 106-2. 235 p.

_____. 1975. *California's ground water*. Bulletin 118. 135 p.

San Diego County Water Authority (SDCWA). 1997. *San Diego County Water Authority Groundwater Report June 1997*. Water Resources Department. San Diego California.

Additional References

Rogers, Thomas H. 1965. Geologic Map of California, Santa Ana Sheet. California Division of Mines and Geology. Olaf P. Jenkins Edition. Scale 1:250,000.

Errata

Substantive changes made to the basin description will be noted here.