Antelope Valley Groundwater Basin

- Groundwater Basin Number: 6-7
- County: Mono
- Surface Area: 20,100 acres (31 square miles)

Basin Boundaries and Hydrology

Antelope Valley is at the eastern base of the Sierra Nevada and straddles the California-Nevada state line in northern Mono County. It lies at about 5,000 feet elevation and encompasses about 20,100 acres within California (an additional 35,000 acres exist in Nevada). The West Walker River flows north through Antelope Valley and is the confluence of many streams draining the east slopes of the Sierra Nevada. The West Walker River continues to flow north into Nevada and eventually drains into Walker Lake, Nevada. Topaz Lake lies just outside the northwest end of the basin and straddles the California-Nevada state border. Elevation ranges from approximately 5,000 feet above sea level at Topaz Lake to 5,800 feet at the southern margins of the basin.

Average annual precipitation in the basin ranges from 8 inches to 12 inches, increasing from north to south.

Hydrogeologic Information

Water Bearing Formations

The groundwater basin is composed of a series of interbedded alluvial fans, floodplain and stream channel deposits, and lake sediments. The primary water-bearing formations are Recent valley sediments. Some localized groundwater occurs within fractures and joints of volcanic, granitic or metamorphic rocks. Groundwater in Antelope Valley occurs in unconfined and artesian zones. Depths to groundwater in the upper zone varies from 160 feet in the southeastern portion of Antelope Valley to less than 2 feet in many places in the center of the valley. (DWR 1964).

Recent Valley Sedimentary Deposits. Alluvial valley fill consisting of unconsolidated brown or bluish sandy silty gravel with occasional boulders. This material, originally derived from glaciation of the mountainous area to the southwest, was transported in immense quantities by streams flowing from the glacial areas and deposited in the valley as "glacial outwash". These deposits occur extensively throughout the valley but their thickness is unknown. However, it is assumed that similar materials extend to a depth of at least several hundred feet. Average specific yields are estimated to range from 13 to 26 percent.

Due to lack of borehole data, descriptions of material underlying the glacial outwash are not available.

Groundwater Level Trends

No published data was found for the Antelope Valley Basin.

Groundwater Storage

Walker River Investigation (DWR 1964) estimates groundwater storage in the Antelope Valley Basin to be 170,000 acre-feet. The groundwater storage capacity was based on a storage interval between 10 and 100 feet and a specific yield of 5 percent and 15 percent.

Groundwater Budget (Type C)

Due to lack of groundwater budget data, inflows, including natural, applied, and artificial recharge and outflows including urban and agricultural extraction have not been included.

Groundwater Quality

Characterization. A wide range of water types exist in the basin. Boron, fluoride, and arsenic are present in water from artesian wells near the center of Antelope Valley.

Impairments. No published information was found for the Antelope Valley Basin.

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	5	2
Nitrates	4	0
Pesticides	5	0
VOCs and VSOCs	5	0
Inorganics – Secondary	5	0

[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 production characteristics

	Well yields (gal/min)	
Municipal/Irrigation		Average: Unknown
	Total depths (ft)	
Domestic	Range: 48–415	Average: 184 (76 Well Completion Reports)
Municipal/Irrigation	Range: 130–365	Average: 253 (9 Well Completion Reports)

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
	Groundwater levels	No wells monitored at this time
	Miscellaneous water quality	No wells monitored at this time
Department of Health Services and cooperators	Title 22 water quality	No wells monitored at this time

Basin Management

Groundwater management:	None identified
Water agencies	
Public	Bridgeport Public Works
Private	

References Cited

California Department of Water Resources. 1964. Bulletin 64, West Walker River Investigation: Sacramento, Calif.

Additional References

Jennings, O.P. and Koenig, J.B. 1963. Geologic map of California: California Division of Mines and Geology, Geologic Map Series Walker Lake Sheet, scale 1:250,000.

California Department of Water Resources. 1991. Walker River Atlas: Sacramento, Calif.

Errata

Changes made to the basin description will be noted here.