

Kenwood Valley Groundwater Basin

- Groundwater Basin Number: 2-19
- County: Sonoma
- Surface Area: 5,135 acres (8 square miles)

Basin Boundaries and Hydrology

Kenwood Valley occupies a northwest-trending structural depression in the southern part of the Coast Ranges of northern California, which divides the Mayacamas Mountains on the east and the Sonoma Mountains on the west. This valley is located east of the Santa Rosa Valley and the City of Santa Rosa. This valley is approximately 7 miles in length and varies in width from less than one mile to about 2 miles at its widest point in the middle of the basin. The Kenwood Valley Groundwater Basin is defined by the areal extent of unconsolidated to semi-consolidated geologic materials that are underlain by bedrock of the Sonoma Volcanics. The Kenwood Valley Groundwater Basin is bounded to the northwest by the Rincon Valley Subbasin of the Santa Rosa Valley Groundwater Basin and to the southeast by the Sonoma Valley Subbasin of the Napa-Sonoma Valley Groundwater Basin. There is a drainage divide located within Kenwood Valley which causes the northern half of the valley to drain to the northwest into Santa Rosa Creek and the southern half to drain to the southeast into Sonoma Creek which ultimately drains into Sonoma Valley. Annual precipitation in Kenwood Valley ranges from about 36 to 44 inches.

Hydrogeologic Information

Information was not available for the following subsection:

Groundwater Budget (Type C)

Water-Bearing Formations

The primary water-bearing units in Kenwood Valley are Alluvium and the Glen Ellen Formation. The Basin is underlain by bedrock of the Sonoma Volcanics which, in general, is considered to be non-water bearing but is tapped for domestic uses.

Pleistocene-Holocene Alluvium. Alluvial deposits are present over a significant proportion of Kenwood Valley. These deposits consist of poorly sorted coarse sand and gravel, and moderately sorted fine sand, silt, and clay, and have a specific yield of 8 to 17 percent (DWR 1982). The Older Alluvial deposits are Late Pleistocene in age, are sometimes dissected, and have a maximum exposed thickness of 100 feet in the Santa Rosa Valley (Cardwell 1958). The Younger Alluvium is a thin veneer over the old, ranging from 30 to 100 feet thick, and is Late Pleistocene to Holocene in age. The deposits are not perennially saturated, have low permeability, and are generally unconfined or slightly confined (Cardwell 1958).

Plio-Pleistocene Glen Ellen Formation. The Glen Ellen consists of partially cemented beds and lenses of poorly sorted gravel, sand, silt, and clay that vary widely in thickness and extent (Cardwell 1958; DWR 1982). This continental deposit is Pliocene (?) to Pleistocene in age, was deposited in structural troughs, and varies in thickness from 3,000 feet to less than 1,500

feet on the west side of the Santa Rosa Valley (Cardwell 1958). Average specific yield for the Glen Ellen Formation is 3 to 7 percent (DWR 1982). This formation is tapped for domestic use (Cardwell 1958).

Groundwater Level Trends

Review of hydrographs from wells within Kenwood Valley indicates water levels have remained relatively stable during the period of 1990 to 2001.

Groundwater Storage

Groundwater Storage Capacity. An estimate of the gross groundwater storage capacity for Kenwood Valley of 40,000 acre-feet was obtained by the USGS using an area of 3,300 acres, an average specific yield of 5.5 to 6.5 percent, and an estimated 190 feet of water-bearing materials (Cardwell 1958). In a separate study, an estimate of the usable storage capacity for the Kenwood-Rincon Valley area of 45,000 acre-feet was obtained by DWR using an area of 4,300 acres, a specific yield of 5.5 percent, and an alluvial aquifer thickness of 190 feet (DWR 1965).

Groundwater Quality

Characterization. There are no published water quality data available for Kenwood Valley, although the adjacent Rincon Valley Subbasin is generally characterized by a calcium-bicarbonate water type (DWR 1975). According to analyses of five water supply wells in the subbasin total dissolved solids range from 172 to 280 milligrams per liter (mg/L) and averages about 223 mg/L.

Well Characteristics

Well yields (gal/min)		
Municipal/Irrigation	Range: 25 – 500	Average: 111 (based on 17 well completion reports [WCRs])
Total depths (ft)		
Domestic	Range: 22 – 1,114	Average: 225 (based on 369 WCRs)
Municipal/Irrigation	Range: 83 – 1,015	Average: 402 (based on 25 WCRs)

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
DWR	Groundwater levels	2 wells/biennially
DWR	Miscellaneous water quality	None
Department of Health Services and cooperators	Title 22 water quality	13 wells/annually

Basin Management

Groundwater management:	No known water management agency
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Water agencies

Public	Unknown
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Private	Unknown
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References Cited

- Cardwell, G.T., 1958. Geology and Ground Water in the Santa Rosa and Petaluma Valley Areas, Sonoma County, California. USGS Water Supply Paper 1427.
- California Department of Water Resources (DWR). 1965. Water Resources and Future Water Requirements. North Coast Hydrographic Region. Volume 1: Southern Region, DWR Bulletin 142-1.
- California Department of Water Resources (DWR). 1975. Evaluation of Ground Water Resources: Sonoma County. Volume 1: Geologic and Hydrologic Data, Bulletin 118-4.
- California Department of Water Resources (DWR). 1982. Evaluation of Ground Water Resources – Sonoma County. Volume 2: Santa Rosa Plain, Bulletin 118-4.
- Harding-Lawson Associates. 1978. Evaluation of Alternatives for Recharge of the Santa Rosa Plain Ground-Water Basin.

Errata

Changes made to the basin description will be noted here.