

Castro Valley Groundwater Basin

- Groundwater Basin Number: 2-8
- County: Alameda
- Surface Area: 1,800 acres (3 square miles)

Basin Boundaries and Hydrology

The Castro Valley basin is a dogleg shaped intermontane valley located approximately 5 miles east of San Francisco Bay, north of the city of Hayward, and bisected by Interstate 580. The basin is bound on the east by the San Lorenzo Creek and by the Hayward Fault on the west. The basin extends from Lake Chabot in the north to the intersection of Jackson Street with U.S. Highway 238 in the south. San Lorenzo Creek and its tributaries principally drain the basin and discharge to San Francisco Bay (DWR 1975). Annual Precipitation in the basin ranges from 18 inches to 24 inches.

Hydrogeologic Information

Water Bearing Formations

The principal water bearing formation of the Castro Valley groundwater basin is alluvium of Pleistocene age (ACFC&WCD 1988). The Pleistocene alluvium unconformably overlies consolidated non-water bearing rock of Jurassic age and underlies a thin surficial deposit of alluvium of Holocene age (DWR 1955). The Pleistocene alluvium is a heterogeneous mixture of unconsolidated clay, silt, sand and gravel. It has a maximum thickness of approximately 80 feet (DWR 1955). The groundwater is unconfined and yields to wells are limited, usually sufficient only for lawn and garden irrigation (ACFC&WCD 1988).

Recharge Areas

Natural recharge to the basin occurs principally as seepage from streams that drain the upland areas and by direct percolation of precipitation that falls on the basin floor.

Groundwater Level Trends

No published information was found that would indicate groundwater level trends for the Castro Valley groundwater basin.

Groundwater Storage

Groundwater Storage Capacity. No published information was found addressing the groundwater storage capacity of the Castro Valley groundwater basin.

Groundwater in Storage. No published report was found addressing the quantity of groundwater in storage.

Groundwater Budget (Type C)

Not enough data exists presently to provide either an estimate of the Castro Valley basin's groundwater budget or the groundwater extraction from the basin.

Groundwater Quality

Characterization. Groundwater is generally of the bicarbonate type containing calcium and sodium as the predominant cations with a total dissolved-solids concentration generally in the range of 300 to 1,000 milligrams per liter (ACFC&WCD 1988).

Impairments. Groundwater generally should be used for non-potable purposes. The permeability and near surface proximity of the thin alluvial deposits make them susceptible to contamination and should eliminate their consideration as a source of drinking water (ACFC&WCD 1988).

Well Production characteristics

| Well yields (gal/min) | | |
|-----------------------|---------------|---------------------------------|
| Municipal/Irrigation | | |
| Total depths (ft) | | |
| Domestic | Range: 56-305 | Average: 163 (Based on 5 Wells) |
| Municipal/Irrigation | Range: 82-260 | Average: 161 (Based on 2 Wells) |

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 | |

Basin Management

Groundwater management:

Water agencies

Public East Bay MUD

Private

References Cited

Alameda County Flood Control and Water Conservation District. Geohydrology and Groundwater-Quality Overview, East Bay Plain Area, Alameda County, California: 205 (J) Report, June 1988.

California Department of Water Resources. California's Ground Water: Bulletin 118, September 1975.

California State Water Resources Board. Alameda County Investigation: Bulletin 13, July 1955.

Errata

Changes made to the basin description will be noted here.