# San Elijo Valley Groundwater Basin

- Groundwater Basin Number: 9-23
- County: San Diego
- Surface Area: 883 acres (1.4 square miles)

## Basin Boundaries and Hydrology

The San Elijo Valley Groundwater Basin underlies two southwest-northeast-trending valleys with the Escondido Creek flowing (occasionally) through the upper, northeast valley, discharging into the San Elijo Lagoon. The basin is bounded to the north and to the south by the contacts of alluvium with the semi-permeable marine deposits of the La Jolla Group. The northeastern boundary is defined by contact with impermeable Cretaceous deposits of the Santiago Peak Volcanics. The western boundary is the Pacific Ocean (Izbicki 1983). Average annual precipitation ranges from 11 to 15 inches.

## Hydrogeologic Information

### *Water Bearing Formations*

The primary water bearing units in this basin consist of Quaternary alluvium and part of the La Jolla Group. Well yields range from 10 to 1,800 gpm (Izbicki 1983). Another potential, but not regionally significant, water bearing unit is the Santiago Peak volcanics. Well yields, here, are generally less than 2 gpm, but may reach 125 gpm (Izbicki 1983).

**Quaternary Alluvium.** The alluvium of the San Elijo Creek Groundwater Basin has an average thickness of less than 50 feet. The deposits are composed of unconsolidated gravel, sand, silt, and clay. The alluvium has a maximum thickness of 100 feet, under San Elijo Lagoon, but maximum thickness in the groundwater basin is approximately 70 feet (Izbicki 1983).

**La Jolla Group.** The Eocene La Jolla group consists of six sedimentary formations. Two of these formations, the Torrey Sandstone and the Del Mar Formation, are found in this basin. Together, in this locality, these units have a maximum thickness of 1,650 feet (DWR 1967). The Torrey Sandstone is water bearing and consists of coarse grained, loosely consolidated, marine sand. The Del Mar Formation has low permeability, and is composed of massive marine mudstone, siltstone, and shale (Izbicki 1983).

### *Recharge Areas*

Natural recharge of the alluvial aquifer is primarily from percolation in Escondido Creek, with smaller amounts contributed by direct precipitation and underflow from the surrounding marine sedimentary units. Return of irrigation waters and water from residential use are additional recharge contributors. Groundwater in this basin is unconfined (Izbicki 1983).

### *Groundwater Level Trends*

Groundwater generally flows west following the course of Escondito Creek, toward San Elijo Lagoon.

### *Groundwater Storage*

**Groundwater Storage Capacity.** Unknown.

**Groundwater in Storage.** Groundwater in storage was estimated to be approximately 8,500 acre-feet in 1983 (Izbicki 1983).

### *Groundwater Budget (Type C)*

Information is not available to construct a budget

### *Groundwater Quality*

**Characterization.** Groundwater mineral content in this basin is variable, depending on the source unit (Izbicki 1983). Water from the eastern of the basin is of a mixed sodium, calcium, chloride, and sulfate character. In the western part basin, the water is of sodium-chloride character. TDS concentration ranges from 1,170 to 5,090 mg/L, with concentrations lowest in the eastern part of the basin and increasing toward the west. Electrical conductivity ranges from 970 to 3,010 μmho.

**Impairments.**

## Well Characteristics

| | **Well yields (gal/min)** | |
|---|---|---|
| Municipal/Irrigation | Range: 10 to 1,800 gal/min | Average: |
| | **Total depths (ft)** | |
| Domestic | Range: | Average: |
| Municipal/Irrigation | Range: - | Average: |

## Active Monitoring Data

| **Agency** | **Parameter** | **Number of wells /measurement frequency** |
|---|---|---|
| | Groundwater levels | |
| Department of Health Services and cooperators | Miscellaneous water quality | |
| | Title 22 water quality | |

## Basin Management

Groundwater management:

Water agencies

Public

Private

## References Cited

Izbicki, John A. 1983. Evaluation of the San Dieguito, San Elijo, and San Pasqual Hydrologic Subareas *for Reclaimed Water Use, San Diego County, California.* U. S. Geological Survey Water-Resources Investigations Report 83-4044. 131 p.

Kennedy, M. P. 1973. "Bedrock Lithologies, San Diego Coastal Area, California". In Ross, A. and Dowlen, R.J., eds. *Studies on the Geology and geologic hazards of the Greater San Diego Area, California*. San Diego Association of Geologists and the Association of Engineering Geologists. p. 9-17.

## Additional References

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

## Errata

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