Cronise Valley Groundwater Basin

- Groundwater Basin Number: 6-35
- County: San Bernardino
- Surface Area: 127,000 acres (198 square miles)

Basin Boundaries and Hydrology

Cronise Valley Groundwater Basin underlies a broad northwest-trending valley in central San Bernardino County. Elevation of the valley floor ranges from 1,065 feet above mean sea level at West Cronise (dry) Lake to about 2,500 feet. The basin is bounded on the north by nonwater-bearing rocks of the Tiefort Mountains, on the east and northeast by the Soda Mountains, and on the south by the eastward extension of the Alvord and Cronise Mountains. A low drainage divide separates Cronise Valley from Langford Valley and defines the western boundary. Most of the bordering mountains rise to about 3,000 feet in elevation, but the Tiefort Mountains exceed 5,000 feet. Much of the western portion of the basin lies within Fort Irwin National Training Center (DWR 1964; USGS 1986a, 1986b, 1986c, 1986d).

Average annual precipitation ranges from about 3 to 5 inches. Runoff from the north, northwest, and west drains towards West Cronise Lake; runoff from the south and southeast drains towards East (dry) Cronise Lake (Jennings and others 1962).

Hydrogeologic Information

Water Bearing Formations

Quaternary alluvium forms the major water-bearing material within the basin and includes unconsolidated younger alluvial deposits and underlying unconsolidated to semiconsolidated older alluvial deposits. Maximum thickness of the alluvium is at least 430 feet (DWR 1964).

Recharge and Discharge Areas

Recharge to the basin is derived principally from the percolation of runoff through alluvial deposits at the base of the Tiefort and Soda Mountains and the infiltration of precipitation that falls to the valley floor. Subsurface inflow from Red Pass Valley Groundwater Basin on the north and Soda Lake Valley Groundwater Basin on the south also contribute to recharge of the basin. Groundwater in the younger and underlying older alluvium moves towards West Cronise Lake (USGS 1955; DWR 1964).

Groundwater Level Trends

Water levels in one well near West Cronise Lake remained at 25 to 26 feet below the surface during 1953 through 1961. Around East Cronise Lake, water levels in wells remained between 12 to 36 feet below the surface from 1954 through 1979, with delines in water levels ranging from about 1 to 10 feet. Average decline in water levels was about 5 feet. In other wells located south of East Cronise Lake, water levels declined on average by about 5 feet between 1954 and 1984, although at a another well to the southeast of the

lake, water levels declined 25 feet from 1932 through 1970. Depth to water at the latter location was 52 feet below the surface in the fall of 1970.
Groundwater Storage

Groundwater Storage Capacity. Total storage capacity is estimated at about 1,000,000 af (DWR 1975).

Groundwater in Storage. Unknown.

Groundwater Budget (C)

Groundwater budget information is not available.

Groundwater Quality

Characterization. The character of the groundwater is predominately sodium bicarbonate or sodium chloride.

Impairments. Groundwater within the basin is rated inferior for both domestic and irrigational uses. Among the impairments to domestic use is an elevated concentration of fluoride, which averages 2.9 mg/L and ranges from 1.7 to 4.3 mg/L in wells in the basin. TDS concentration in wells averages 1,690 mg/L and ranges from about 510 to 2,550 mg/L. Boron content can adversely affect certain plants at concentrations as low as 1.0 mg/L, averages about 2.2 mg/L and ranges from about 0.5 to 4.2 mg/L.

Bitter Springs, in the central part of the, issues the poorest quality groundwater in the basin. This water is sodium sulfate in character, with a TDS content ranging between 1,620 and 5,500 mg/L. Fluoride content ranges from 8.0 and 15.0 mg/L, boron content ranges from 4.4 to 11.0 mg/L (USGS 1955; DWR 1964, 1967).

Well Production Characteristics

	Well yields (gal/min)	
Municipal/Irrigation	Range: to 600gal/min	Average: 340 gal/min (DWR 1975)
	Total depths (ft)	
Domestic		
Municipal/Irrigation		

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

Private

References Cited

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Errata

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