

## ***Regional Objectives for Ground Waters***

### ***Mineral Quality***

Inorganic constituents in ground waters are largely influenced by thermodynamic reactions that occur as ground water comes into contact with various rock and soil types. For example, ground water that flows through beds of gypsum ( $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ ) typically has relatively high levels of calcium cations and sulfate anions. Ground water flowing through limestone ( $\text{CaCO}_3$ ) also has relatively high levels of calcium cations, but coupled with bicarbonate anions instead of sulfate. Ground waters with these ions at levels greater than 120 mg/L (expressed as  $\text{CaCO}_3$ ) are considered hard waters (Hem, 1989).

Human activities and land use practices can influence inorganic constituents in ground waters. Surface waters carrying abnormally high levels of salts (e.g., irrigation return flows) can degrade the ground waters that they recharge. Abnormally high levels of inorganic constituents can impair and preclude beneficial uses. For example, high levels of boron preclude agricultural use (especially for citrus crops) of ground waters. Hard waters present nuisance problems and may require softening prior to industrial use.

*Numerical mineral quality objectives for individual groundwater basins are contained in Table 3-10 (as in the 1994 Basin Plan).*

### **Coastal Aquifer Variance Provision for Mineral Quality Objectives**

In coastal aquifers where elevated concentrations of minerals are caused by natural sources due to an aquifer's proximity to the ocean, the Regional Board may grant a variance from implementing the mineral quality objectives specified in Table 3-10 (as in the 1994 Basin Plan) when issuing waste discharge requirements (WDRs) or enforcement orders. Any variance granted pursuant to this variance provision shall be for no more than five years, and may be extended not more than once for an additional period of up to five years. Any further relief should be in the form of a Basin Plan amendment. A decision to issue or to extend a variance will be based upon the Regional Board's evaluation of the evidence submitted concerning the granting of the variance.

A discharger must submit to the Executive Officer a written request for a variance from compliance with the mineral quality objectives for groundwater. The request must include recent data and analysis that provide clear and convincing evidence that elevated mineral concentrations are natural in origin and result from the aquifer's proximity to the ocean. The discharger's request must include clear and convincing evidence and analysis that:

1. The aquifer's proximity to the ocean leads to one or more of the following:
  - a) seawater intrusion;
  - b) the presence of marine sediments high in mineral content;
  - c) tidal fluctuations that regularly influence the chemistry of the aquifer.
2. The source of the elevated mineral concentrations is natural and not induced by current or past discharge of pollutants.
3. A discharge of minerals in excess of the mineral quality objectives in the coastal aquifer will not degrade adjacent, inland aquifers.
4. The discharger has not caused or significantly contributed to the elevated mineral concentrations from which it seeks relief.

The Regional Board may only grant a variance after a duly noticed public meeting. The Regional Board's decision to grant or to deny a variance shall be based on the record, including the discharger's request, the circumstances leading to the elevated mineral concentrations at the site,

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and the comments of staff and interested persons. The Regional Board may only grant a variance upon the Regional Board's determination that the request satisfies the conditions specified above and that the variance is in the public interest. In granting a variance, the Regional Board must include appropriate requirements in the WDRs or enforcement order consistent with the State Water Resources Control Board's anti-degradation resolution (SWRCB Res. No. 68-16) and other applicable water quality standards as stipulated in regional and statewide water quality control plans.

**Table 3-10. Water Quality Objectives for Selected Constituents in Regional Ground Waters<sup>a</sup>.**

DWR Basin No. <sup>b</sup>	BASIN	OBJECTIVES (mg/L) <sup>k</sup>			
		TDS	Sulfate	Chloride	Boron
	Pitas Point Area <sup>dc</sup>	None specified			
4-1	Ojai Valley Upper Ojai Valley West of Sulfur Mountain Road Central area Sisar area	1,000 700 700	300 50 250	200 100 100	1.0 1.0 0.5
4-2	Lower Ojai Valley West of San Antonio--Senior Canyon Creeks East of San Antonio--Senior Canyon Creeks	1,000 700	300 200	200 50	0.5 0.5
4-3	Ventura River Valley Upper Ventura San Antonio Creek area Lower Ventura	800 1,000 1,500	300 300 500	100 100 300	0.5 1.0 1.5
4-4	Ventura Central <sup>cd</sup> Santa Clara--Piru Creek area Upper area (above Lake Piru) Lower area east of Piru Creek Lower area west of Piru Creek Santa Clara--Sespe Creek area Topa Topa (upper Sespe) area Fillmore area Pole Creek Fan area South side of Santa Clara River Remaining Fillmore area Santa Clara--Santa Paula area East of Peck Road West of Peck Road Oxnard Plain Oxnard Forebay Confined aquifers Unconfined and perched aquifers	1,100 2,500 1,200 900 2,000 1,500 1,000 1,200 2,000 1,200 1,200 3,000	400 1,200 600 350 800 800 400 600 800 600 600 1,000	200 200 100 30 100 100 50 100 110 150 150 500	2.0 1.5 1.5 2.0 1.0 1.1 0.7 1.0 1.0 1.0 1.0 --
4-6	Pleasant Valley Confined aquifers Unconfined and perched aquifers	700 --	300 --	150 --	1.0 --
4-7	Arroyo Santa Rosa	900	300	150	1.0
4-8	Las Posas Valley South Las Posas area NW of Grimes Cyn Rd & LA Ave & Somis Rd E of Grimes Cyn Rd and Hitch Blvd S of LA Ave between Somis Rd & Hitch Blvd Grimes Canyon Rd & Broadway area North Las Posas area	700 2,500 1,500 250 500	300 1,200 700 30 250	100 400 250 30 150	0.5 3.0 1.0 0.2 1.0
4-5	Upper Santa Clara Acton Valley Sierra Pelona Valley (Agua Dulce) Upper Mint Canyon Upper Bouquet Canyon Green Valley Lake Elizabeth--Lake Hughes area	550 600 700 400 400 500	150 100 150 50 50 100	100 100 100 30 25 50	1.0 0.5 0.5 0.5 -- 0.5

**Table 3-10. Water Quality Objectives for Selected Constituents in Regional Ground Waters<sup>a</sup> (cont.)**

DWR Basin No. <sup>b</sup>	BASIN	OBJECTIVES (mg/L) <sup>k</sup>			
		TDS	Sulfate	Chloride	Boron
4-4.07	Eastern Santa Clara				
	Santa Clara--Mint Canyon	800	150	150	1.0
	South Fork	700	200	100	0.5
	Placerita Canyon	700	150	100	0.5
	Santa Clara--Bouquet & San Francisquito Canyons	700	250	100	1.0
	Castaic Valley	1,000	350	150	1.0
	Saugus Aquifer	--	--	--	--
4-9	Simi Valley				
	Simi Valley Basin				
	Confined aquifers	1,200	600	150	1.0
	Unconfined aquifers	--	--	--	--
	Gillibrand Basin	900	350	50	1.0
4-10	Conejo Valley	800	250	150	1.0
4-11	Los Angeles Coastal Plain				
	Central Basin	700	250	150	1.0
	West Coast Basin	800	250	250	1.5
	Hollywood Basin	750	100	100	1.0
	Santa Monica Basin	1,000	250	200	0.5
4-12	San Fernando Valley				
	Sylmar Basin	600	150	100	0.5
	Verdugo Basin	600	150	100	0.5
	San Fernando Basin				
	West of Highway 405	800	300	100	1.5
	East of Highway 405 (overall)	700	300	100	1.5
	Sunland-Tujunga area <sup>fe</sup>	400	50	50	0.5
	Foothill area <sup>fe</sup>	400	100	50	1.0
	Area encompassing RT-Tujunga-Erwin-	600	250	100	1.5
	N. Hollywood-Whithall-LA/Verdugo-Crystal Springs-				
	Headworks-Glendale/Burbank Well Fields	900	300	150	1.5
	Narrows area (below confluence of Verdugo				
	Wash with the LA River)	800	150	100	0.5
4-13	Eagle Rock Basin				
	San Gabriel Valley				
	Raymond Basin				
	Monk Hill sub-basin	450	100	100	0.5
	Santa Anita area	450	100	100	0.5
	Pasadena area	450	100	100	0.5
	Main San Gabriel Basin				
	Western area <sup>ef</sup>	450	100	100	0.5
	Eastern area <sup>ef</sup>	600	100	100	0.5
4-14 8-2 <sup>hg</sup>	Puente Basin	1,000	300	150	1.0
	Upper Santa Ana Valley				
	Live Oak area	450	150	100	0.5
	Claremont Heights area	450	100	50	--
	Pomona area	300	100	50	0.5
	Chino area	450	20	15	--
	Spadra area	550	200	120	1.0
4-15	Tierra Rejada	700	250	100	0.5
4-16	Hidden Valley	1,000	250	250	1.0
4-17	Lockwood Valley	1,000	300	20	2.0
4-18	Hungry Valley and Peace Valley	500	150	50	1.0

**Table 3-10. Water Quality Objectives for Selected Constituents in Regional Ground Waters<sup>a</sup> (cont.)**

DWR Basin No. <sup>b</sup>	BASIN	OBJECTIVES (mg/L) <sup>k</sup>			
		TDS	Sulfate	Chloride	Boron
4-19	Thousand Oaks area	1,400	700	150	1.0
4-20	Russell Valley	1,500	500	250	1.0
	Russell Valley	2,000	500	500	2.0
	Triunfo Canyon area	2,000	500	500	2.0
	Lindero Canyon area	2,000	500	500	2.0
	Las Virgenes Canyon area	2,000	500	500	2.0
4-21	Conejo-Tierra Rejada Volcanic area <sup>ih</sup>	--	--	--	--
4-22	Santa Monica Mountains--southern slopes <sup>ji</sup>	1,000	250	250	1.0
	Camarillo area	1,000	250	250	1.0
	Point Dume area	2,000	500	500	2.0
	Malibu Valley	2,000	500	500	2.0
	Topanga Canyon area	2,000	500	500	2.0
	San Pedro Channel Islands <sup>j</sup>	--	--	--	--
	Anacapa Island	1,100	150	350	--
	San Nicolas Island	1,000	100	250	1.0
	Santa Catalina Island	--	--	--	--
	San Clemente Island	--	--	--	--
	Santa Barbara Island	--	--	--	--

- a. Objectives for ground waters outside of the major basins listed on this table and outlined in Figure 1-9 have not been specifically listed. However, ground waters outside of the major basins are, in many cases, significant sources of water. Furthermore, ground waters outside of the major basins are either potential or existing sources of water for downgradient basins and, as such, objectives in the downgradient basins shall apply to these areas.
- b. Basins are numbered according to Bulletin 118-80 (Department of Water Resources, 1980).
- c. Ground waters in the Pitas Point area (between the lower Ventura River and Rincon Point) are not considered to comprise a major basin, and accordingly have not been designated a basin number by the California Department of Water Resources (DWR) or outlined on Figure 1-9.
- d. The Santa Clara River Valley (4-4), Pleasant Valley (4-6), Arroyo Santa Rosa Valley (4-7) and Las Posas Valley (4-8) Ground Water Basins have been combined and designated as the Ventura Central Basin (DWR, 1980).
- e. The category for the Foothill Wells area in existing Basin Plan incorrectly groups ground water in the Foothill area with ground water in the Sunland-Tujunga area. Accordingly, the new categories, Foothill area and Sunland-Tujunga area, replace the old Foothill Wells area.
- f. All of the ground water in the Main San Gabriel Basin is covered by the objectives listed under Main San Gabriel Basin - eastern area and Western area. Walnut Creek, Big Dalton Wash, and Little Dalton Wash separate the Eastern area from the Western area (see dashed line on Figure 2-17). Any ground water upgradient of these areas is subject to downgradient beneficial uses and objectives, as explained in Footnote a.
- g. The border between Regions 4 and 8 crosses the Upper Santa Ana Valley Ground Water Basin.
- h. Ground water in the Conejo-Tierra Rejada Volcanic Area occurs primarily in fractured volcanic rocks in the western Santa Monica Mountains and Conejo Mountain areas. These areas have not been delineated on Figure 1-9.
- i. With the exception of ground water in Malibu Valley (DWR Basin No. 4-22), ground waters along the southern slopes of the Santa Monica Mountains are not considered to comprise a major basin and accordingly have not been designated a basin number by the California Department of Water Resources (DWR) or outlined on Figure 1-9.
- j. DWR has not designated basins for ground waters on the San Pedro Channel Islands.

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- k. The Regional Board may grant, at its sole discretion, individual dischargers a variance from the numeric mineral quality objectives for groundwater specified in Table 3-10 under the conditions and procedures specified in "Coastal Aquifer Variance Provision for Mineral Quality Objectives" set forth in the Regional Objectives for Ground Waters.