Clarifying the Definition of "Baseflow" Objectives in the Basin Plan

Current Basin Plan Provisions *(no changes to this text)*

"The dissolved mineral content of the waters of the region, as measured by the total dissolved solids test, shall not exceed the specific objectives listed in Table 4-1 as a result of controllable water quality factors."

Water Quality Control Plan for the Santa Ana River Basin; Feb., 2016; pg. 4-10

Table 4-1 WATER QUALITY OBJECTIVES - Continued

INLAND SURFACE STREAMS	WATER QUALITY OBJECTIVES (mg/L)							Hydrologic Unit	
	Total Dissolved Solids	Hardness	Sodium	Chloride	Total Inorganic Nitrogen	Sulfate	Chemical Oxygen Demand	Primary	Secondary
UPPER SANTA ANA RIVER BASIN									
Santa Ana River									
Reach 3 – Prado Dam to Mission Blvd. in Riverside – Base Flow[2]	700	350	110	140	10[3]	150	30	801.21	801.27, 801.25

Water Quality Control Plan for the Santa Ana River Basin; Feb., 2016; pg. 4-40

Proposed Clarifications to the Basin Plan:

Add the underlined sentence to the third paragraph on pg. 5-38 of the Basin Plan:

> "As discussed in Chapter 4, the Basin Plan specifies baseflow TDS and total nitrogen objectives for Reach 3 of the River. Base Flow is that portion of the total surface flow passing a point of measurement (e.g. Riverside Narrows or Prado Dam) which remains after deduction of storm flow, non-tributary flows (e.g. imported water deliveries), and other flows as determined by the Executive Officer. For Reach 2, a TDS objective based on a five-year moving average of the annual TDS concentration is specified…"

Add the underlined word and phrases to the second paragraph on pg. 6-6 of the Basin Plan:

> "The Basin Plan specifies water quality objectives applicable to Reach 3 of the Santa Ana River for TDS, nitrogen, and other constituents which are set on the baseflow of the River (see Chapter 4). To determine compliance with these objectives, the Basin Plan requires that sampling of the River be conducted annually at Prado Dam. As directed by the Basin Plan, Board staff conducts the sampling during August and September, when the quantity and quality of baseflow is most consistent. Staff then calculates baseflow water quality based on the best available data and reports the results to the Board. The results of this program are used to determine the effectiveness of the Board's regulatory programs and to determine whether changes, such as revisions to the TDS and nitrogen wasteload allocations, are necessary."

The following excerpts are provided for reference; no changes are proposed for this text.

"The U.S. Geological Survey (USGS) operates a permanent continuous monitoring station immediately below Prado Dam, and the data collected there are utilized by the Watermaster. Orange County Water District (OCWD) samples the river monthly at the USGS gage and determines the water quality. Compliance with the objectives for reaches 2 and 3 is monitored by the Regional Board, using data and information available from the USGS gage and these sources, plus data from its own specific sampling programs (see Chapter 6). **The quality of the Santa Ana River is a function of the quantity and quality of the various components of the flows. The two major components of total flow are storm flow and base flow. Storm flow is the water which results directly from rainfall (surface runoff) in the upper basin; it also includes the stormwater runoff from the San Jacinto Basin which may reach the River via Temescal Creek. Most storms occur during the winter rain season (December through April). Base flow is composed of wastewater discharger, rising groundwater, and nonpoint source discharges. Wastewater discharges are the treated sewage effluents discharged by municipalities to the river and its tributaries. Rising groundwater occurs at a number of locations along the River, including the San Jacinto Fault, Riverside Narrows, and in or near the Prado Flood Control Basin. Nonpoint source discharges include uncontrolled runoff from agricultural and urban areas which is not related to storm flows…** As noted earlier, the three components of base flow in the river are wastewater, rising water, and nonpoint source discharges. These three components are present in varying amounts throughout the year, and contributions and quality of each can be affected by the regulatory activities of the Regional Board. The quantity of storm flow is obviously highly variable; programs to control its quality are in their nascent stages. For these reasons, water quality objectives for controllable constituents are set based on the base flow of the river, rather than the total flow."

Water Quality Control Plan for the Santa Ana River Basin; Feb., 2016; pg. 4-28

"In order to determine whether the water quality and quantity objectives for base flow in Reach 3 are being met, the Regional Board will collect a series of grab and composite samples when the influence of storm flows and non-tributary flows is at a minimum. This typically occurs during **August and September.** At this time of year, there is usually no water impounded behind Prado Dam. The volumes of storm flows, rising water and nonpoint source discharges tend to be low. The major component of base flow at this time is municipal wastewater. The results of this sampling will be compared with the continuous monitoring data collected by USGS and data from other sources. These data will be used to evaluate the efficacy of the Regional Board's regulatory approach, including the TDS and nitrogen wasteload allocations (see Chapter 5).

Water Quality Control Plan for the Santa Ana River Basin; Feb., 2016; pg. 4-29

"Base Flow – That portion of the total surface flow passing a point of measurement (either Riverside Narrows or Prado Dam) which remains after deduction of storm flow, nontributary flows, exchange water purchased by OCWD, and certain other flows as determined by the Watermaster."

Santa Ana River Watermaster for Orange County Water District vs. City of Chino, et al. Case No. 117628 – County of Orange. Forty-fourth Annual Report of the Santa Ana River Watermaster for Water Year October 1, 2013 – September 30, 2014. April 30, 2015; pg. 30.