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April 11, 2017

Central Valley Regional Water Quality Control Board  
11020 Sun Center Drive, #200,  
Rancho Cordova, CA 95670-6114  
Attention: James Brownell

Re: Basin Plan Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins to Establish Salinity Water Quality Objectives for the Lower San Joaquin River

Dear Board members,

I have reviewed the February 2017 Draft Staff Report on Proposed Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins to Establish Salinity Water Quality Objectives for the Lower San Joaquin River (Mouth of Merced to Vernalis) as well as the meeting materials for the Regional Board's April 6-7, 2017 meeting.

According to the Regional Board's meeting material, the draft Basin Plan Amendments incorporate the results of work performed by Board staff from 2005-2010 and continued by the Lower San Joaquin River (LSJR) Committee from May 2010 to the end of 2015. The LSJR Committee, a subcommittee of the CV-SALTS initiative, has developed recommendations for salinity objectives intended to be protective of beneficial uses of water in the lower SJR. Water from the lower San Joaquin River flows into the south and central Delta so also affects beneficial use of that water by municipal and industrial water users such as Contra Costa Water District and south-of-Delta urban agencies such as the Metropolitan Water District of Southern California and Santa Clara Valley Water District. It also affects the water quality for agricultural water agencies such as the South Delta Water Agency.

The quality of water in the LSJR, and the water quality objectives for discharges, has the potential to impact public health and safety and agricultural production for these agencies.

The draft Basin Plan Amendments would establish an electrical conductivity (EC) objective of **1,550** micro Siemens per centimeter ( $\mu\text{S}/\text{cm}$ ) as a 30-day running average in the LSJR, except during Extended Dry Periods, when the objective will be **2,470**  $\mu\text{S}/\text{cm}$  as a 30-day running average and **2,200**  $\mu\text{S}/\text{cm}$  as an annual average. The meeting materials state the proposed objectives provide protection of beneficial uses in this section of the LSJR (Mouth of Merced to Vernalis), including the two most sensitive to salinity impacts: agricultural supply (AGR) and municipal and domestic supply (MUN). A performance goal of **1,350**  $\mu\text{S}/\text{cm}$  is also being proposed during certain months and water year types to promote the achievement of the best possible water quality under variable conditions.

As discussed below, these salinity objectives are not consistent with the need to protect beneficial uses of water in the Delta and will impact legal users of water by necessitating the release of additional Central Valley Project water into the LSJR to meet the Vernalis EC standards.

### **Municipal and Industrial Water Quality Standards in the Delta**

The protections being proposed are insufficient to protect Municipal and Domestic Supply or Municipal and Industrial (M&I) water use. The State Water Resources Control Board in Water Rights Decision 1641 set M&I standards of 250 mg/L chloride concentration year round at key drinking water intakes within the Delta as well as a 150 mg/L chloride concentration standard at the intake to the Contra Costa Canal or the City of Antioch's intake on the San Joaquin River. The 150 mg/l standard applies for 155-240 days per year depending upon the water year type. The EC objectives for the LSJR are much higher than EC equivalents of those Delta M&I standards.

Figure 1 shows water quality grab sample data from the LSJR plotted in the form of chloride concentration as a function of EC. The data were downloaded from the California Department of Water Resources' Water Data Library <http://www.water.ca.gov/waterdatalibrary/>. In this region, water quality is dominated by agricultural drainage. The relationship between chloride concentration (Cl) and EC is  $Cl = 0.15 EC - 12^1$ .

Only data collected since 1980 are plotted in Figure 1. As reported in the SWRCB's Environmental Impact Report for the 1995 Bay-Delta WQCP, the Tuolumne River water quality, prior to 1977, was heavily influenced by abandoned gas wells that discharged highly saline water into the river. As a result, the Tuolumne River had higher salinity than the other tributaries. The wells were capped in 1977 (or perhaps as late as 1979), so only data collected from 1980 on are plotted. Some of the data collected prior to 1977 have the characteristics of water that is dominated by seawater, i.e., the relationship between chloride and EC is closer to  $Cl = 0.285 EC - 50^1$ .

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<sup>1</sup> Richard A. Denton, "*Delta Salinity Constituent Analysis*", Prepared for the State Water Project Contractors Authority, February 2015  
[http://www.baydeltalive.com/assets/588ee18bdb51ef1619ac6fd28b97f694/application/pdf/Denton\\_2015\\_Delta\\_Salinity\\_Constituents\\_Report.pdf](http://www.baydeltalive.com/assets/588ee18bdb51ef1619ac6fd28b97f694/application/pdf/Denton_2015_Delta_Salinity_Constituents_Report.pdf)

### San Joaquin River Chlorides

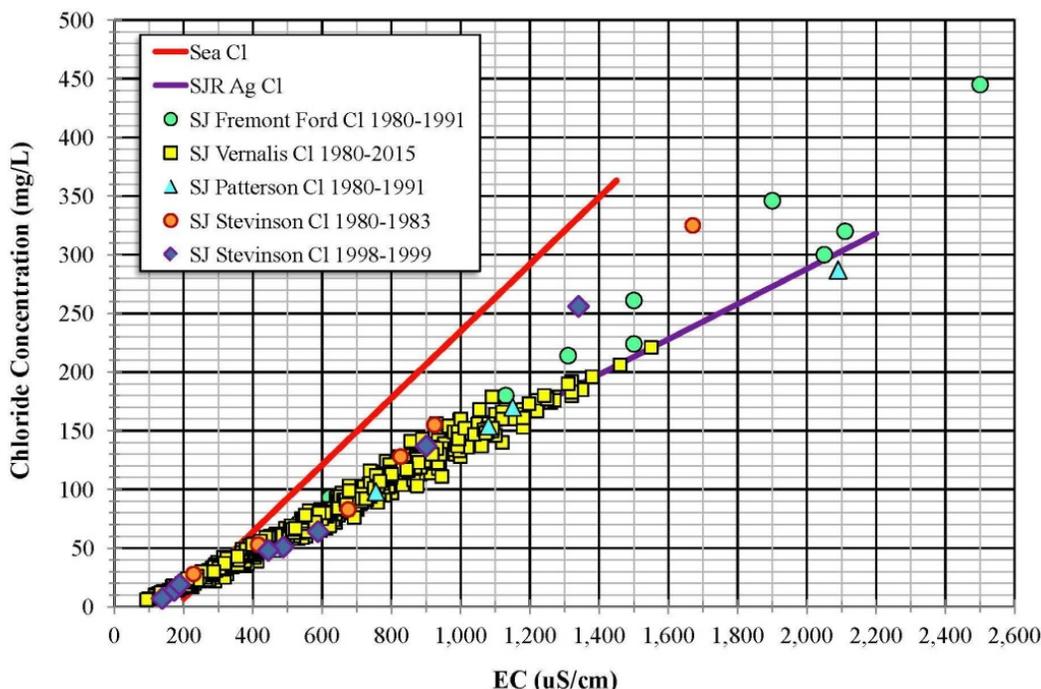


Figure 1: Chloride concentration as a function of EC for grab sample data collected from the LSJR. Data from DWR Water Data Library.

The draft Basin Plan Amendments proposals for EC objective during Extended Dry Periods are 2,470  $\mu\text{S}/\text{cm}$  as a 30-day running average and 2,200  $\mu\text{S}/\text{cm}$  as an annual average. These correspond to chloride concentrations of 350 and 318 mg/L, well in excess of the SWRCB's M&I standard of 250 mg/L year round. Additional water would need to be released into the Delta by the State Water Project and Central Valley Project to meet the Delta M&I standards and offset the effect of the high salinity discharges into the LSJR that are the subject of these Basin Plan amendments.

#### SWRCB EC Standards at Vernalis

The SWRCB's D-1641 standards for water quality at Vernalis are 700  $\mu\text{S}/\text{cm}$  for April-August and 1,000  $\mu\text{S}/\text{cm}$  for September-March. Discharges into the LSJR under the proposed Basin Plan Amendments would be allowed to increase EC up to 1,550 micro  $\mu\text{S}/\text{cm}$  as a 30-day running average during all except Extended Dry Periods. The CVP will need to make additional releases of CVP water from New Melones Reservoir to dilute 1,550  $\mu\text{S}/\text{cm}$  water to meet the much lower D-1641 EC standards. Even more water would need to be released to offset the even higher proposed salinity objectives during Extended Dry Periods.

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The EC objectives in the Basin Plan for the LSJR need to be consistent with the SWRCB's D-1641 water quality standards for the San Joaquin River at Vernalis so the CVP will not have to release additional water from New Melones Reservoir or Friant Reservoir to offset the adverse impacts of LSJR discharges on EC at Vernalis.

The Basin Plan amendments should establish an electrical conductivity (EC) objective for discharges of 700  $\mu\text{S}/\text{cm}$  as a 30-day running average in the LSJR, April-August, and 1,000  $\mu\text{S}/\text{cm}$ , September-March. Like the D-1641 water quality standards at Vernalis, these would apply for all water year types. It would not be necessary to have a separate performance goal.

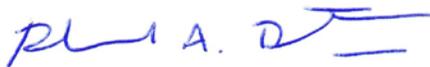
### **End-of-Pipe Objectives**

The meeting materials also note that NPDES permittees have indicated that they will need to implement costly facility upgrades if they are required to meet the proposed salinity objectives at the end-of-pipe. Board Basin Planning staff are apparently working with NPDES permittees to ensure that the proposed Basin Plan language will allow the salinity limits imposed in NPDES permits to consider available dilution, dry weather versus wet weather conditions, TDS loading limits and monthly averaging.

The RWQCB should not allow exceedences at the end of the pipe if stored water would need to be released to dilute those discharges in order to meet 700  $\mu\text{S}/\text{cm}$  at Vernalis from April-August, and 1,000  $\mu\text{S}/\text{cm}$  at Vernalis from September-March. An exception might be if there are sufficiently high natural flows in the river to ensure those EC objectives are met in the river immediately downstream of the discharge point.

Thank you for consideration of these comments. If you have any questions, please contact me at (510) 339-3618.

Sincerely,



Richard A. Denton

Cc: David Murillo, USBR Mid-Pacific Regional Director  
Michelle Banonis, USBR Bay-Delta Office Manager  
Les Grober, Deputy Director, SWRCB  
Ryan A. Hernandez, Manager, Contra Costa County Water Agency