

rounded up value of 85,000 lbs/yr was used in Table 3-10.

Selenium Notes

Note a. Agricultural

Estimates of the contribution to selenium loads from agricultural sources were obtained from the following two data sources: Agricultural Drainage Contribution in the Grassland Area of Western Merced County, California: October 1994 to September 1995, December 1996 (CVRWQCB, 1996); and U.S. Bureau of Reclamation data provided by Joseph McGahan of Summers Engineering, Inc. (November, 1997).

San Joaquin Basin- Load estimates for the San Joaquin Basin are discussed below by information source.

CVRWQCB - Annual loads from Salt and Mud Sloughs for water years 1986-1995 are presented in Table 6 of the CVRWQCB report (1996). The average annual selenium load for all recorded water years is estimated to be 7,000 pounds. Note that Table 6 incorrectly states that the selenium load estimates are in tons rather than pounds. *- confirmed in Table 17 of 1998 CVRWQCB report (yes pounds!)*

U.S. Bureau of Reclamation- Data provided by Summers Engineering, Inc. includes annual selenium loads from Salt and Mud Sloughs estimated by the Bureau of Reclamation. The average annual selenium load from Salt and Mud Sloughs for water years 1986-1997 was also estimated to be 7,000 pounds.

Since the selenium load estimates from the two data sources match, 7,000 pounds was the value entered in Table 3.11 of this report. ✓

Note c. Municipal and Industrial

Bay Region - Refinery discharges are important sources of selenium in the Bay Region. Regional Board staff estimated that the loads from the Shell, Exxon, Unocal/Tosco, Tosco, and Chevron refineries totaled about 11.6 lbs/day as of February, 1997 (San Francisco Bay Regional WQCB, Apr., 1997). If these loads would be sustained, the annual loads are about 4200 lbs/day. Estimates from wastewater plants are highly suspect because most measurement are below detection levels. The estimate for M&I loads as provided in Table 19 of the State of the Estuary Report (SFEP, 1992) is 2.1 metric tons or 4630 lbs, which agrees well with the refinery estimate. A rounded off value of 4500 lbs/day was used in Table 3.11.

Note c. Basin Estimates

San Joaquin Basin - Basin estimates for selenium used data reported by the USGS in cooperation

with the San Joaquin Valley Drainage Program (USGS, 1988). Figure 67 of the USGS report shows an annual dissolved selenium load at Vernalis of about 4.6 tons, or about 9200 lbs/yr. ✓

agrees with table 17 8,800 pounds but table 17 values could be high for wet years

Total Dissolved Solids (TDS) Notes

Note a. Agricultural

Estimates of the contribution of TDS from agricultural sources were obtained using the following three data sources: Study of Drinking Water Quality in Delta Tributaries, April 1995 (CUWA, 1995); Agricultural Drainage Contribution in the Grassland Area of Western Merced County, California: October 1994 to September 1995, December 1996 (CVRWQCB, 1996); and U.S. Bureau of Reclamation data provided by Joseph McGahan of Summers Engineering, Inc. (November, 1997).

San Joaquin Basin- Load estimates for the San Joaquin Basin are discussed below by information source:

CUWA- Table D-7 of the CUWA report (CUWA, 1995) presents average daily loads from Mud and Salt Sloughs. The sloughs represent the two major agricultural drainages in the San Joaquin River and Basin. The loads were estimated using USGS flow and water quality data for water years 1986-1988. Water year 1986 represented a wet year, while water years 1987 and 1988 represented critically dry years. The mass load (pounds per day) was calculated as flow (cfs) * TDS concentration (mg/L) * 8.34 pounds/gallon * 0.64632 (conversion factor). Daily wet season and dry season loads were calculated for wet and critically dry water years. The study assumed 151 days in the wet season (December through January), and 214 days in the dry season.

Table D-7 (CUWA, 1995) includes wet and dry season loads for the one wet and two critically dry years between 1986-1988. The average wet season load was calculated using the wet season loads and the average dry season load was calculated using the dry season loads for the wet year and the two critically dry years of that period. The mean annual TDS load, which was the sum of average wet and dry season loads for all three years, was estimated to be 810,000,000 pounds per year.

CVRWQCB - Annual loads from Salt and Mud Sloughs for water years 1986-1995 are presented in Table 6 of the CVRWQCB report (1996). This source estimates the average annual TDS load for the 1986-1995 sequence of water years to be 730,000,000 pounds.

U.S. Bureau of Reclamation- Data provided by Summers Engineering, Inc. includes annual TDS loads from Salt and Mud Sloughs as estimated by the Bureau of Reclamation. They estimated the average annual TDS load from Salt and Mud Sloughs for water years 1986-1997 to be 830,000,000 pounds.

The three data sources of TDS loads provide comparable load estimates for the San Joaquin Basin. The value of 830,000,000 pounds was used to estimate the load and entered into Table 3.12 because it is derived from the largest data set covering the longest sequence of years.

*Add ref to Table 17 of 1998 C-14 CVRWQCB Report
consider using table 17 for estimate of SJV Basin contribution.*