United States Department of the Interior

BUREAU OF RECLAMATION
Central Valley Operations Office
3310 El Camino Avenue, Suite 300
Sacramento, California 95821

IN REPLY
REFER TO:
CVO-100
WTR 4.10

APR 14 2016

VIA ELECTRONIC MAIL

Mr. Thomas Howard
Executive Director
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Subject: Report of Exceedance of San Joaquin River at Airport Way Bridge, Vernalis Base Flow Objective February 2016

Dear Mr. Howard:

The monthly average flow rate for the San Joaquin River at Airport Way Bridge, Vernalis compliance station was 1,043 cubic feet per second (cfs) on February 29, 2016, falling short of the State Water Resources Control Board Water Rights Decision 1641 (D-1641) objective of 1,140 cfs for a "Critically Dry" San Joaquin River year classification. This is the higher "Critically Dry" flow objective contained in D-1641 and this flow objective applies because of the requirement that the 2-ppt isohaline (measured as 2.64 mmhos/cm surface salinity) be at or west of Chipps Island. The lower Critically Dry year objective is an average monthly flow of 710 cfs.

Attachment 1 summarizes the running 30-day average San Joaquin River flow at Vernalis through the month of February 2016. The running 30-day average flow was above the higher 1,140 cfs objective the majority of the month and did not drop below the objective until February 27.

The reasons for the exceedance include the extremely dry rainfall/runoff in the San Joaquin River Basin in February (February 2016, 5-Station Index was only 20% of historic average with only 1.4 inches of precipitation), the very low reservoir storage levels and releases throughout the San Joaquin Basin (the result of multiple consecutive Critically Dry years), and the requirement to meet the higher D-1641 Critically Dry base flow objective that was heavily influenced by the wetter January 2016 hydrologic conditions creating high Sacramento River flows driving excess Delta outflows.

A key factor in establishing the San Joaquin River base flow objective is the calculation of the San Joaquin Valley Water Supply Index (WSI) value for a particular month. For the San Joaquin River flow objectives, D-1641 prescribes that the index be based on the 75% Probability of Exceedance, and the San Joaquin Valley WSI is heavily weighted to the projected April through July runoff.

Although the February 1, 2016, WSI, as estimated by the California Department of Water Resources (DWR), was estimated as "Dry" using the 75% Probability of Exceedance, we believe that it is more appropriate, given the very dry conditions in February, to consider the San Joaquin basin as remaining in a "Critical" state, especially given the four preceding years of extremely dry hydrology, and the later modified estimates of April through July runoff in February.

Footnote [13] to Table 3 of D-1641 directs that the best available information be used to establish the WSI. Given the very dry February conditions, the California-Nevada River Forecast Center significantly reduced their estimates of April-July runoff for the San Joaquin River Basin as we have progressed through the month of February. So much so that by mid-February the estimated April-July runoff had fallen to 2.8 maf at the 75% Probability of Exceedance – an estimate that then classifies the WSI as Critical (a WSI of about 2.0). The March 1 DWR estimate of the WSI was reclassified as Critical due to the dry conditions in February.

Meeting the Critical year objective was not a concern when preparing the February update to the Drought Contingency Plan. Given the higher than average January hydrology conditions, it was reasonable to expect that the Critical year objective of 1,140 cfs for February could have been met with the forecasted Stanislaus River releases and natural runoff generated with a 90% Probability of Exceedance hydrology. However, persistent dry conditions occurred from the end of January throughout the month of February. Although several weather systems were forecast for the later part of the month of February, the dominant atmospheric high pressure did not subside until early March. The 30-day running average daily flow at Vernalis fell below 1,140 cfs on February 27, 28 and 29.

Reclamation has been working diligently to conserve as much water in storage as possible given the very low reservoir storage at New Melones Reservoir during the drought, and the critical flows required for Biological Opinion instream flows and permit conditions later this year. To achieve this objective, the Bureau of Reclamation (Reclamation) has attempted to operate as close to the governing objectives as possible. New Melones Reservoir storage was 459,000 acre-feet as of February 29, which was only 19% of capacity, and projections at the time estimated a New Melones end-of-September storage of less than 300,000 acre-feet.

Although the monthly average San Joaquin River flow fell below 1,140 cfs at the end of the month of February, we believe that the average flow of 1,043 cfs, in combination with the Delta actions to manage entrainment contained in the 2008 U.S. Fish and Wildlife Service and the 2009 Nation Marine Fisheries Service Biological Opinions, has been adequately protective of the pelagic and salmonid fish species present in the lower San Joaquin River and southern Delta during February 2016.

Over the coming months, Reclamation will continue to work with your staff and Oakdale Irrigation District and South San Joaquin Irrigation District to develop coordinated operations for the remainder of the water year which will include the pulse flow during the April-May 2016 period that we have requested in our recent Temporary Urgency Change Petition.

If you have any questions or would like more information regarding this report, please contact me at 916-979-2199 or Ms. Elizabeth Kiteck at 916-979-2684.

Sincerely,

Ronald Milligan
Operations Manager

Attachment

Attachment

Monthly Average Flow Rate
San Joaquin River at Airport Way Bridge, Vernalis

Date	Vernalis Daily Flow	30-day Running Average Flow	Average Monthly Flow
February 2016	(cfs)	(cfs)	(cfs)
2/1/2016	1483	1659	
2/2/2016	1476	1682	
2/3/2016	1424	1703	
2/4/2016	1388	1723	
2/5/2016	1349	1740	
2/6/2016	1283	1745	
2/7/2016	1223	1735	
2/8/2016	1175	1722	
2/9/2016	1188	1713	
2/10/2016	1153	1706	
2/11/2016	1112	1700	
2/12/2016	1046	1694	
2/13/2016	987	1690	
2/14/2016	952	1688	
2/15/2016	930	1686	
2/16/2016	891	1685	
2/17/2016	877	1682	
2/18/2016	891	1668	
2/19/2016	905	1612	
2/20/2016	879	1521	
2/21/2016	878	1451	
2/22/2016	868	1394	
2/23/2016	843	1342	
2/24/2016	844	1279	
2/25/2016	881	1223	
2/26/2016	870	1172	
2/27/2016	846	1127	
2/28/2016	805	1089	
2/29/2016	793	1059	**1043**