



# United States Department of the Interior

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

MAR 10 2002

IN REPLY  
REFER TO:

Ms. Celeste Cantu  
Executive Director  
State Water Resources Control Board  
Post Office Box 100  
Sacramento, California 95812

Dear Ms. Cantu:

## Water Year 2002 Vernalis Flow Standard Operations

We are writing to document that in February, both the the 7-day running average and the monthly average San Joaquin River flow at Vernalis fell below flow objectives. The 1995 Bay-Delta Protection Plan, Biological Opinion provides that the monthly average San Joaquin River flow at Vernalis shall be at least 2,280 cfs for a dry-year type. The May 1995 Water Quality Control Plan and State Water Resources Control Board Decision 1641 further specify that the 7-day running average shall not be less than 80 percent of the monthly average (1,824 cfs). From February 1 through February 9, 2002, the 7-day running average flow at Vernalis was less than the objective. Compliance with the 7-day running average was achieved on February 10, 2002, with a 7-day running average of 1,841 cfs. The failure to comply and the action that we took to meet the 7-day running average flow objective has been discussed with Nicholas Wilcox of your staff, and Mr. Roger Guinee of the U.S. Fish and Wildlife Service. Enclosed for your reference is a Summary of the Vernalis 7-Day Running Average and Monthly Average Flow, to date. Because the dry conditions continued through February, the Bureau of Reclamation did not commit sufficient resources to meet the monthly flow average of 2,280 cfs in February and may have difficulty in meeting it in March.

As soon as it became apparent that there was a potential problem with meeting the 7-day objective, releases from New Melones Reservoir were increased to 525 cfs (up from 275 cfs), a level that was computed to bring Reclamation into compliance by February 7, 2002. Unfortunately it appears that the travel time from New Melones Reservoir to Vernalis when flows are low was about 2-1/2 days instead of the 1-1/2 days which was used in the computation of necessary release.

The difficulty in meeting the Vernalis flow objective was precipitated by several events. First, forecasted precipitation failed to appear in the San Joaquin River Basin, local accretions to the river were lower than anticipated, and, as noted above, the travel time from New Melones Reservoir to Vernalis is longer than projected at low flows.

Ms. Celeste Cantu

MAR 13 2002

Page 2

Another factor observed by our staff is that when flows into the San Joaquin River are reduced, the local accretions increase, and conversely, when the tributary inflow into the San Joaquin River increases, the local accretions decrease. This is probably attributable to the effects of bank storage on local accretions. The net result of this effect ; however, is that tributary releases need to be larger than anticipated to provide the desired effect at Vernalis. In addition, the calibration rating for the U.S. Geological Survey gage at Vernalis can (and does) change frequently. The measured flow at Vernalis has been observed to change by up to 1,000 cfs, based on adjustments to the rating curves. While most changes due to recalibration are not this extreme, this does illustrate the difficulty with attempting to meet a flow objective at a location that requires frequent recalibration.

Continued higher than normal releases from New Melones Reservoir will deplete storage and adversely impact other users of the New Melones Reservoir supply. Reclamation uses the Interim Operations Plan for New Melones Reservoir to determine water allocations for the water rights users, instream fishery needs, water quality needs, and Bay-Delta requirements. By reducing reservoir storage, this release could reduce the future water allocations for these purposes.

Reclamation is currently investigating alternatives to New Melones releases for meeting the Vernalis objective. Concurrently Reclamation is consulting with the Service to determine the need for additional flow in the Delta at this time. The flow objective is designed to support delta smelt habitat, and encourage migration upstream into the San Joaquin River. However, in February, the E/I ratio had been relaxed in the Delta due to low distributions of observed smelt in the vicinity of the export facilities. We discussed with the Service the inconsistency of providing attraction flows when the smelt distribution in the South Delta appeared low and E/I was being relaxed. We have discussed with biologists the need to conserve water in New Melones now for later release to maintain cold-water temperatures for Steelhead Trout later in the year. Reclamation is also evaluating potential releases from San Luis Reservoir as an alternative source of water to meet the Vernalis flow objective.

The failure to comply with the flow objectives has occurred at a time when there are relatively small amounts of delta smelt in the Southern Delta, and thus should not have negatively impacted the fish. Although our action in making the increased release from New Melones Reservoir to satisfy the 7-day running average has impacted storage, that action was deemed more prudent than increasing releases further to satisfy the monthly average flow objective. Reclamation desires to work with the

Ms. Celeste Cantu

MAR 13 2002

Page 3

State Water Resources Control Board, the Service, and other agencies and stakeholders to reach a balanced solution to this problem.

If you require additional information, please contact Paul Fujitani at (916) 979-2197 or Curtis Creel, DWR, (916) 574-2722

Chester V. Bowling 3/13/02  
Chester V. Bowling Date  
Operations Manager  
Central Valley Operations Office

Carl A. Torgersen for  
Carl A. Torgersen, Chief Date  
Operations Control Office  
Department of Water Resources

Enclosure

cc: Mr. Wayne White  
Field Supervisor  
U.S. Fish and Wildlife Service  
2800 Cottage Way  
Sacramento, California 95825

Robert C. Hight, Director  
Department of Fish and Game  
1416 Ninth Street, Room 1207  
Sacramento, California 95814

Thomas P. Hannigan, Director  
Department of Water Resources  
Post Office Box 942836, Room 1115-1  
Sacramento, California 94236-0001

Mr. Edward Anton  
Chief, Water Rights Division  
State Water Resources Control Board  
Post Office Box 2000  
Sacramento, California 95812-2000

03/01/02

U.S. Bureau of Reclamation - Central Valley Operations Office

Delta Outflow Computation (values in c.f.s.)

Preliminary Data - Subject to Change

FEBRUARY 2002

Estimated numbers are in bold print

Date	DELTA INFLOW								NDCU	DELTA EXPORTS						OUTFLOW INDEX			Export/Inflow			
	Sacto R	S RTP	Yolo +	East Side	S. Joaquin River		Vernalis	Total		Clifton	Tracy	Contra	Byron	NBA	Total	3-day	NDOI	7-day	Monthly	Daily	3 Day	14 Day
	@Freeport	Misc	Streams	7-day	Monthly	Delta	Court	Costa														
-prev day-	-prev wk-	-prev day-	-prev day-	-prev day-	Average	Average	Inflow	(CLT)	(TRA)	(CCC)	(BBID)	Exports	TRA & CLT									
02/01/2002	19,360	227	0	458	1,779	1,764	1,772	21,824	672	5,484	4,149	289	0	12	9,935	10,792	11,217	11,405	11,217	44.1%	48.5%	42.9%
02/02/2002	18,728	229	0	461	1,772	1,764	1,769	21,190	672	5,497	4,044	275	0	10	9,826	10,180	10,692	11,424	10,955	45.0%	46.8%	41.8%
02/03/2002	18,364	230	0	455	1,765	1,761	1,760	20,814	672	5,544	4,147	259	0	6	9,955	9,622	10,187	11,271	10,699	46.6%	45.2%	40.6%
02/04/2002	18,140	232	0	438	1,744	1,759	1,752	20,554	900	5,400	4,135	227	0	13	9,775	9,589	9,879	10,963	10,494	46.4%	46.0%	41.5%
02/05/2002	17,657	233	0	430	1,726	1,757	1,748	20,046	900	5,496	4,143	255	0	13	9,906	9,622	9,240	10,585	10,243	48.1%	47.0%	42.5%
02/06/2002	17,000	235	0	422	1,732	1,757	1,754	19,389	900	5,502	3,686	271	0	23	9,483	9,454	9,006	10,209	10,037	47.4%	47.3%	42.7%
02/07/2002	16,611	236	0	418	1,782	1,773	1,773	19,047	900	5,496	3,533	276	0	28	9,333	9,286	8,814	9,862	9,862	47.4%	47.6%	42.7%
02/08/2002	16,037	238	0	417	1,893	1,795	1,793	18,585	(698)	5,491	3,563	286	0	32	9,372	9,091	9,910	9,676	9,868	48.7%	47.8%	42.6%
02/09/2002	16,032	238	0	584	1,926	1,817	1,806	18,780	(698)	5,488	3,567	289	0	29	9,373	9,046	10,104	9,592	9,894	48.2%	48.1%	43.1%
02/10/2002	15,691	238	0	624	1,915	1,841	1,817	18,468	(748)	5,499	3,531	293	0	31	9,353	9,046	9,862	9,545	9,891	48.9%	48.6%	43.7%
02/11/2002	15,757	238	0	553	1,911	1,871	1,828	18,459	(748)	5,494	3,543	256	0	31	9,324	9,041	9,883	9,546	9,890	49.0%	48.7%	44.4%
02/12/2002	15,819	238	0	528	1,938	1,901	1,837	18,523	(748)	5,192	3,534	256	0	33	9,014	8,931	10,257	9,691	9,921	47.1%	48.3%	44.6%
02/13/2002	15,386	238	0	520	1,944	1,923	1,845	18,088	850	5,190	3,444	278	0	25	8,937	8,799	8,301	9,590	9,796	47.7%	47.9%	44.6%
02/14/2002	15,162	238	0	519	1,937	1,924	1,849	17,856	850	4,989	3,361	273	0	25	8,647	8,570	8,359	9,525	9,694	46.8%	47.2%	44.2%
02/15/2002	14,858	238	0	519	1,896	1,915	1,850	17,511	850	3,988	3,366	102	0	22	7,478	8,112	9,183	9,421	9,660	42.0%	45.5%	42.5%
02/16/2002	14,689	238	0	521	1,863	1,907	1,850	17,311	850	3,494	3,359	101	0	21	6,976	7,519	9,485	9,333	9,649	39.6%	42.8%	40.0%
02/17/2002	14,395	238	0	524	1,863	1,904	1,853	17,020	(63)	2,999	3,372	83	0	8	6,462	6,860	10,621	9,441	9,706	37.4%	39.7%	37.0%
02/18/2002	14,602	238	0	1,119	1,889	1,903	1,857	17,842	(1,432)	2,971	3,353	84	0	12	6,420	6,516	12,854	9,866	9,881	35.4%	37.5%	35.5%
02/19/2002	14,901	238	0	1,054	1,930	1,902	1,861	18,123	(1,432)	4,298	3,369	75	0	13	7,756	6,788	11,799	10,086	9,982	42.3%	38.4%	37.3%
02/20/2002	15,111	238	0	867	1,934	1,904	1,866	18,150	(1,660)	4,482	3,362	50	0	12	7,907	7,279	11,904	10,601	10,078	43.2%	40.4%	40.2%
02/21/2002	15,714	238	0	1,984	1,954	1,921	1,873	19,890	(1,610)	4,573	3,362	5	0	21	7,961	7,816	13,539	11,341	10,243	39.9%	41.7%	43.0%
02/22/2002	19,558	238	0	1,506	2,014	1,943	1,879	23,316	(698)	5,190	3,361	2	0	22	8,575	8,110	15,438	12,234	10,479	36.7%	39.7%	43.8%
02/23/2002	28,563	238	0	1,209	2,018	1,962	1,884	32,028	672	5,295	3,380	5	0	20	8,700	8,387	22,656	14,116	11,008	27.1%	33.4%	43.1%
02/24/2002	31,119	238	0	1,079	1,996	1,974	1,888	34,432	672	6,695	3,370	8	0	18	10,091	9,097	23,669	15,980	11,536	29.2%	30.4%	44.1%
02/25/2002	27,482	238	0	979	1,971	1,979	1,891	30,670	900	6,597	3,360	11	0	8	9,976	9,566	19,794	16,971	11,866	32.5%	29.5%	44.5%
02/26/2002	23,615	238	0	888	1,963	1,982	1,894	26,704	900	4,997	3,497	7	0	11	8,512	9,505	17,292	17,756	12,075	31.8%	31.1%	43.1%
02/27/2002	21,284	238	0	824	1,957	1,977	1,895	24,303	900	3,998	3,862	10	0	12	7,883	8,771	15,520	18,273	12,202	32.3%	32.2%	39.0%
02/28/2002	19,648	238	0	786	1,922	1,961	1,895	22,594	900	3,998	3,868	14	0	14	8,014	8,114	13,680	18,293	12,255	35.3%	33.1%	35.5%
Total	511,283	6,620	0	20,680	52,934	52,542	51,336	591,517	3,426	139,339	100,743	4,339	0	525	244,945	243,507	343,146	326,593	293,081	1166.2%	1180.6%	1170.2%
Average	18,260	236	0	739	1,891	1,876	1,833	21,126	122	4,976	3,598	155	0	19	8,748	8,697	12,255	11,664		41.7%	42.2%	41.8%

03/11/2002

U.S. Bureau of Reclamation - Central Valley Operations Office  
Delta Outflow Computation (values in c.f.s.)

Preliminary Data - Subject to Change

MARCH 2002

Estimated numbers are in bold print

Date	DELTA INFLOW								NDCU	DELTA EXPORTS							OUTFLOW INDEX			Export/Inflow		
	Saclo R @Freeport	SRTP	Yolo + Misc	East Side Streams	S. Joaquin River@Vernalis			Total Delta Inflow		Clifton Court	Tracy	Contra Costa	Byron	NBA	Total Delta Exports	3-day Avg	NDOI	7-day Avg	Monthly Avg	Daily (%)	3 Day (%)	14 Day (%)
	-prev day-	-prev wk-	-prev day-	-prev day-	-prev day-	7-day Average	Monthly Average			(CLT)	(TRA)	(CCC)	(BBID)		TRA & CLT	daily						
03/01/2002	18,730	238	0	756	1,897	1,938	1,862	21,621	950	3,992	3,993	18	0	0	8,003	7,944	12,668	17,897	12,668	36.9%	34.8%	34.3%
03/02/2002	18,064	236	0	732	1,862	1,922	1,873	20,894	1,000	3,994	3,976	23	0	0	7,993	7,981	11,901	16,361	12,285	38.1%	36.8%	34.1%
03/03/2002	17,993	234	0	692	1,883	1,912	1,882	20,802	1,000	4,191	3,966	26	0	11	8,194	8,037	11,609	14,638	12,059	39.2%	38.1%	34.0%
03/04/2002	18,472	232	0	653	1,901	1,911	1,900	21,258	1,000	4,194	4,070	17	8	12	8,285	8,130	11,974	13,521	12,038	38.8%	38.7%	34.0%
03/05/2002	18,236	231	0	628	1,952	1,910	1,910	21,047	1,050	4,199	4,174	14	8	27	8,407	8,265	11,590	12,706	11,948	39.8%	39.3%	34.2%
03/06/2002	17,805	229	0	610	1,953	1,923	1,927	20,597	1,050	4,197	4,181	4	12	31	8,402	8,338	11,145	12,081	11,814	40.6%	39.7%	34.3%
03/07/2002	17,902	227	0	832	2,012	1,955	1,955	20,973	(2,373)	4,164	4,222	13	5	32	8,427	8,379	14,920	12,258	12,258	40.0%	40.1%	34.3%
03/08/2002	19,679	225	0	2,705	2,122	1,997	1,980	24,731	(3,008)	4,160	4,204	119	0	33	8,516	8,376	19,223	13,194	13,129	33.8%	37.9%	34.2%
03/09/2002	23,792	225	0	1,909	2,158	2,036	2,000	28,079	(3,008)	4,082	4,202	124	0	33	8,441	8,345	22,646	14,729	14,186	29.5%	33.9%	34.5%
03/10/2002	26,134	225	0	1,294	2,162	2,092	2,029	29,815	(3,008)	4,088	4,188	120	0	31	8,427	8,308	24,396	16,556	15,207	27.8%	30.2%	34.8%
03/11/2002	27,477	225	0	1,410	2,293			31,405														
03/12/2002																						
03/13/2002																						
03/14/2002																						
03/15/2002																						
03/16/2002																						
03/17/2002																						
03/18/2002																						
03/19/2002																						
03/20/2002																						
03/21/2002																						
03/22/2002																						
03/23/2002																						
03/24/2002																						
03/25/2002																						
03/26/2002																						
03/27/2002																						
03/28/2002																						
03/29/2002																						
03/30/2002																						
03/31/2002																						
<b>Total</b>	224,284	2,527	0	12,221	22,190	19,596	19,317	261,222	(5,347)	41,260	41,177	477	31	210	83,094	82,104	152,070	143,940	127,592	364.5%	369.4%	342.7%
<b>Average</b>	20,389	230	0	1,111	2,017	1,960	1,932	23,747	(535)	4,126	4,118	48	3	21	8,309	8,210	15,207	14,394	12,752	36.5%	36.9%	34.3%