



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-400
WTR-4.10

APR 05 2017

VIA ELECTRONIC MAIL

Mr. Les Grober
Deputy Director, Division of Water Rights
State Water Resources Control Board
P.O. Box 2000
Sacramento, CA 95812

Subject: Monitoring and Reporting Program on Water Rights Order No. 90-5 (Water Rights)

Dear Mr. Grober:

For the month of March 2017, the temperature control point was set at Balls Ferry, per the June 2016, Sacramento River Temperature Plan.

During March 2017, the average daily water temperature compliance of 56.0 °F or less was met at the Balls Ferry compliance point on the Sacramento River. During the month of March 2017, the average monthly water temperature was 49.4 °F at Balls Ferry.

Enclosed is the monitoring report for March 2017, under Order No. 90-5. The report contains the following data:

Station	Description
Shasta Inlets (R-1) “	Water Temperature Profile Turbidity, monthly, ntu
Shasta Dam (R-2) “	Water Temperature, daily average, degrees F Turbidity, ntu, monthly
Shasta Dam (R-2a)	Flow, average daily, cfs
Keswick (R-3) “	Water Temperature, daily average, degrees F Turbidity, ntu, monthly
Keswick (R-3a)	Flow, average daily, cfs
Spring Creek Power plant (R-4) “	Water Temperature, daily average, degrees F Turbidity, ntu, monthly Flow, average daily cfs

Station	Description
Control Point (R-5) Control Point	Water Temperature, daily average, degrees F Turbidity, ntu, monthly
Sacramento at Delta (R-6)	Water Temperature, monthly, degrees F Turbidity, ntu, monthly
McCloud (R-7) “	Water Temperature, monthly, degrees F Turbidity, ntu, monthly
Pit River (R-8) “	Water Temperature, monthly, degrees F Turbidity, ntu, monthly
Lewiston (R-9)	Water Temperature, daily average, degrees F
Lewiston (R-9a)	Flow, average daily, cfs

Please contact Ms. Randi Field at 916-979-2066, should you have any questions regarding this data.

Sincerely,



Elizabeth Kiteck
Chief, Water Operations

Enclosures

cc: Mr. Kenneth Emanuel
Division of Water Rights
State Water Resources Control Board
P.O. Box 2000
Sacramento, CA 95812
(w/encl)

Central Valley Operations Office
 *Data obtained from the California Data Exchange Center
 **Data calculated by the Central Valley Operations Office
 ***Measurements taken by the Northern CA Area Office Personnel
Water Temperature Data in Degrees F
March 2017

Req. Sampling Frequency - Daily Average (Reading indicates daily average)							Req. Sampling Frequency - Monthly		
Date	Sta 2 Shd*	Sta 3 Kwk*	Sta 4 Spp**	Sta 5 Bsf**	Sta9 Lws*		Sta 6 Dlt***	Sta 7 Mss***	Sta 8 Pmn***
1	47.3	47.4	47.3	47.6	45.0		43.2		
2	47.4	47.5	47.3	47.8	44.9				
3	47.4	47.6	47.3	47.8	45.2				
4	47.3	47.6	47.3	48.0	45.6				
5	47.1	47.3	47.2	47.5	44.7				
6	46.9	47.1	47.2	47.1	44.6				
7	46.8	47.0	47.1	47.3	45.1				
8	46.8	47.1	47.0	48.0	46.1				
9	46.8	47.1	47.2	48.3	46.8				
10	46.8	47.2	47.5	48.8	46.6				
11	46.8	47.3	47.4	49.1	46.3				
12	46.8	47.3	47.4	49.4	46.2				
13	46.7	47.4	47.4	49.5	46.2				
14	46.7	47.4	47.3	49.7	46.6				
15	46.6	47.3	47.3	49.3	46.5				
16	46.5	47.2	47.5	49.4	47.0				
17	46.5	47.3	47.4	49.6	47.0				
18	46.5	47.3	47.4	49.6	46.9				
19	46.5	47.3	47.4	49.5	47.3				
20	46.4	47.3	47.4	49.5	46.9				
21	46.5	47.5	47.5	50.8	47.2				
22	46.5	47.7	48.0	50.6	47.3				51.8
23	46.6	47.7	47.8	49.8	46.8				
24	47.0	47.8	47.9	49.7	-				
25	47.9	47.8	48.1	51.0	47.5				
26	47.9	48.6	48.2	50.5	46.1				
27	48.4	48.5	47.9	51.0	46.3				
28	48.6	49.1	48.0	51.3	46.7				
29	49.2	49.4	48.3	51.4	46.6		47.2		
30	50.0	49.9	48.0	51.8	46.8				
31	50.3	50.5	48.1	51.6	46.3				

Control Point: 3/1-3/31 BSF @ 56.0 DAT

Cross Channel Gate Operation:
 March 01-31 closed

**Measurements taken by the Northern CA Area Office Personnel
March 2017**

TEMPERATURE						
Sampling Frequency						
Every two weeks May 1 through November 30.						
Lake Elev MSL	Sample 1 3/8/2017 Temperature Degrees F	Sample 2 3/28/2017 Temperature Degrees F	Sample 3 Temperature Degrees F	Sample 4 Temperature Degrees F	Sample 5 Temperature Degrees F	
	Time: 10:00					
	(400 Feet Upstream of Dam)					
	Time: 10:30					
625	45.2	44.6				
650	45.2	44.6				
675	45.3	44.6				
700	45.3	44.6				
725	45.4	44.7				
750	45.4	44.8				
775	45.4	45.0				
800	45.6	45.2				
825	45.7	45.4				
850	46.0	45.9				
875	46.1	46.1				
900	46.2	46.5				
925	46.5	47.0				
950	47.4	47.6				
975	47.6	48.1				
1000	47.6	50.5				
1025	48.0	51.3				
1050						
Lake Surface	48.0 @ 1024.77'	52.1 @ 1046.01'				

TURBIDITY						
Sampling Frequency						
Monthly, except weekly May 1 through Sep 30, when turbidity at Station 2 is equal to or greater than 10 NTU						
Lake Elev MSL	Sample 1 3/8/2017 Turbidity ntu	Sample 2 3/28/2017 Turbidity ntu	Sample 3 Turbidity ntu	Sample 4 Turbidity ntu	Sample 5 Turbidity ntu	
	Time: 10:00					
	(400 Feet Upstream of Dam)					
	Time: 10:30					
625	70.5	29.1				
650	69.8	29.4				
675	66.5	29.6				
700	65.4	29.7				
725	63.2	31.6				
750	57.9	34.4				
775	56.7	38.3				
800	56.7	42.0				
825	50.0	39.2				
850	44.1	39.0				
875	45.0	32.2				
900	40.9	28.1				
925	34.3	21.7				
950	14.9	13.0				
975	9.6	10.6				
1000	9.6	8.4				
1025	8.1	8.1				
1050						
Lake Surface	8.1 @ 1024.77'	7.6 @ 1046.01'				

Central Valley Operations Office
 Measurements taken by the Northern CA Area Office Personnel

**Summary of Turbidity and Dissolved Oxygen Water Sampling
 March 2017**

Turbidity Measurements, NTU

Sampling Frequency

Monthly, except weekly from May 1 through September 30, when turbidity at Station 2 is equal to or greater than 10 NTU.

Station

	R-2	R-3a	R-4	R-5	R-6	R-7	R-8	
	Shasta Dam		Spring					
	Discharge	Keswick	Creek PP		Sacramento	McCloud	Pit	
Day	at Bridge	Discharge	Discharge	Clear Creek	River (DLT)	River	River	
1			13.2		3.1			
15	32.0			28.4				
16		27.7						
22							11.5	
29						4.3		
31	14.3							

Dissolved Oxygen, mg/l

Sampling Frequency

Every two weeks from May 1 through September 30; samples to be taken before 1000 hours.

Station

	R-2	R-3	R-5	
	Shasta Dam			Hour
	Discharge	Keswick		Time Sample
Day	at Bridge	Discharge	Clear Creek	Taken
15	10.7			10:27
15			13.3	10:40
16		10.8		11:00
31	11.5			10:15

Control Point: 3/1-3/31 BSF @ 56.0 DAT

UNITED STATES DEPARTMENT OF THE INTERIOR
 U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA
SHASTA LAKE, DAM AND POWERPLANT

RUN DATE: April 4, 2017

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GENERATION RELEASE, CFS

WATER YEAR OCTOBER 2016 TO SEPTEMBER 2017

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6,289	4,929	4,122	5,765	18,164	18,613						
2	6,463	4,805	4,181	5,467	18,257	19,433						
3	6,942	4,257	4,630	4,764	18,708	18,909						
4	6,469	4,132	4,570	3,401	18,806	18,656						
5	6,546	3,985	4,123	3,865	18,609	19,005						
6	5,865	4,666	4,054	4,285	18,763	18,880						
7	4,953	4,429	4,088	8,401	18,323	18,041						
8	6,060	4,387	4,979	11,517	17,804	17,999						
9	6,069	3,948	5,086	9,821	15,665	16,282						
10	5,860	3,670	4,720	9,158	15,331	13,566						
11	6,325	4,016	4,126	12,026	17,378	11,446						
12	6,275	4,279	3,453	18,778	17,716	9,556						
13	5,812	4,781	3,964	17,022	18,573	7,667						
14	6,180	4,605	3,960	18,722	18,464	8,523						
15	5,544	4,948	1,657	18,490	18,653	7,245						
16	6,164	5,005	2,446	18,236	18,669	6,079						
17	6,027	4,610	2,801	18,215	19,050	6,497						
18	5,192	4,023	2,871	17,665	19,430	6,412						
19	4,812	4,247	2,656	17,799	18,887	6,703						
20	5,304	4,378	3,422	18,125	18,688	6,592						
21	5,789	4,357	7,632	18,065	18,948	5,997						
22	5,733	4,673	7,859	18,584	19,369	4,845						
23	5,549	4,642	9,317	18,517	19,679	6,213						
24	5,367	4,159	9,866	17,848	19,804	6,131						
25	4,817	4,461	9,186	18,354	19,768	5,675						
26	4,817	4,341	9,346	17,930	19,346	6,851						
27	4,791	4,427	8,207	18,390	19,604	7,480						
28	4,057	4,238	8,682	18,457	19,393	7,390						
29	3,861	4,423	9,191	18,487		9,551						
30	5,475	4,779	8,429	18,146		9,117						
31	4,387		7,462	18,566		8,778						
TOTAL	173,794	132,600	171,086	442,866	519,849	334,132						
MEAN	5,606	4,420	5,519	14,286	18,566	10,778						
MAX	6,942	5,005	9,866	18,778	19,804	19,433						
MIN	3,861	3,670	1,657	3,401	15,331	4,845						

WATER YEAR TOTALS

TOTAL	1,774,327
DAILY MEAN	9,749
DAILY MAX	19,804
DAILY MIN	1,657

02/24/2017
12/15/2016

UNITED STATES DEPARTMENT OF THE INTERIOR
 U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA
KESWICK DAM, RESERVOIR, AND POWERPLANT

RUN DATE: April 4, 2017

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TOTAL RELEASE, CFS

WATER YEAR OCTOBER 2016 TO SEPTEMBER 2017

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7,368	4,950	4,816	6,179	21,870	66,365						
2	7,366	5,147	4,832	5,978	21,947	56,516						
3	7,349	5,023	4,842	5,304	22,318	47,139						
4	7,021	4,840	4,840	4,756	22,445	40,147						
5	7,013	4,841	4,841	4,776	22,619	33,474						
6	6,764	4,841	4,841	4,792	27,729	28,177						
7	6,751	4,841	4,838	9,531	25,848	23,006						
8	6,756	4,840	4,835	13,032	21,361	18,958						
9	6,751	4,854	4,840	13,339	17,284	15,948						
10	6,510	4,866	4,839	13,479	38,612	13,659						
11	6,505	4,866	4,837	16,048	49,030	12,190						
12	6,537	4,866	4,841	32,098	59,280	10,960						
13	6,545	4,865	4,840	32,404	67,438	9,632						
14	6,542	4,863	4,842	32,383	73,966	9,401						
15	6,519	4,779	4,997	32,056	65,398	8,109						
16	6,515	4,865	4,946	31,833	46,123	7,997						
17	6,519	4,866	4,889	31,987	53,728	7,928						
18	6,232	4,864	4,891	28,724	45,624	7,857						
19	6,222	4,866	4,890	25,912	45,427	7,697						
20	6,225	4,862	4,870	25,968	26,418	7,697						
21	5,770	4,865	9,706	26,456	29,828	7,702						
22	5,495	4,864	9,852	25,898	57,422	7,816						
23	5,493	4,864	9,753	25,617	66,552	8,942						
24	5,444	4,866	9,762	25,936	68,035	9,091						
25	5,346	4,861	9,760	25,424	68,631	9,141						
26	4,888	4,814	9,762	26,751	68,906	8,887						
27	4,887	4,815	9,825	26,226	68,287	8,886						
28	4,889	4,810	9,839	22,215	68,444	8,889						
29	4,889	4,816	9,836	21,646		8,891						
30	4,864	4,816	8,527	21,790		8,889						
31	4,864		7,175	21,762		8,679						
TOTAL	190,839	145,987	201,004	640,300	1,270,570	528,670						
MEAN	6,156	4,866	6,484	20,655	45,378	17,054						
MAX	7,368	5,147	9,852	32,404	73,966	66,365						
MIN	4,864	4,779	4,816	4,756	17,284	7,697						

WATER YEAR TOTALS

TOTAL	2,977,370
DAILY MEAN	16,359
DAILY MAX	73,966
DAILY MIN	4,756
	02/14/2017
	01/04/2017

UNITED STATES DEPARTMENT OF THE INTERIOR
 U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA
LEWISTON DAM, LAKE, AND JUDGE FRANCIS CARR POWERPLANT

RUN DATE: April 4, 2017

QR

RELEASE TO RIVER, CFS

WATER YEAR OCTOBER 2016 TO SEPTEMBER 2017

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	466	313	310	306	290	325						
2	461	320	311	307	290	324						
3	440	319	307	310	291	312						
4	440	317	304	315	291	313						
5	448	316	306	312	291	316						
6	450	316	305	313	292	316						
7	450	314	306	313	298	315						
8	446	302	306	318	296	311						
9	447	311	306	318	296	314						
10	449	303	308	316	312	312						
11	463	304	309	314	320	313						
12	465	304	308	316	318	317						
13	455	302	308	315	315	316						
14	451	321	308	320	324	315						
15	447	311	313	324	333	316						
16	445	310	311	327	334	317						
17	408	313	311	324	335	316						
18	330	314	312	326	334	317						
19	301	313	309	326	339	315						
20	301	312	307	326	338	313						
21	300	313	303	324	335	315						
22	302	311	306	326	334	316						
23	305	309	308	325	337	316						
24	306	307	308	334	338	317						
25	305	311	307	333	330	318						
26	317	313	306	317	293	320						
27	321	311	307	317	290	317						
28	309	311	306	317	326	316						
29	308	311	307	313	317	317						
30	309	310	307	290	317	317						
31	308		306	290	316	316						
TOTAL	11,953	9,342	9,536	9,632	8,820	9,798						
MEAN	386	311	308	317	315	316						
MAX	466	321	313	334	339	325						
MIN	300	302	303	290	290	311						
WATER YEAR TOTALS												
TOTAL						59,281						
DAILY MEAN						326						
DAILY MAX						466			10/01/2016			
DAILY MIN						290			01/30/2017			

UNITED STATES DEPARTMENT OF THE INTERIOR
 U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA

RUN DATE: April 4, 2017

WHISKEYTOWN DAM, LAKE, AND SPRING CREEK POWERPLANT

QG

GENERATION RELEASE, CFS

WATER YEAR OCTOBER 2016 TO SEPTEMBER 2017

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	746	18	14	15	2,665	3,513						
2	349	14	293	223	3,047	3,534						
3	276	530	14	602	2,256	1,058						
4	454	481	14	859	2,033	1,051						
5	309	519	14	25	1,680	865						
6	808	14	62	14	1,487	1,038						
7	1,036	14	220	683	2,028	1,645						
8	398	31	215	1,255	2,004	1,694						
9	292	471	16	3,051	1,108	1,792						
10	292	654	130	3,570	2,697	1,838						
11	365	183	14	3,354	3,004	1,474						
12	417	180	414	866	2,117	1,412						
13	380	23	393	1,641	1,928	1,460						
14	14	166	583	444	2,495	695						
15	362	35	2,090	854	1,143	1,934						
16	417	86	2,161	190	1,315	1,692						
17	658	154	1,723	422	1,250	1,372						
18	1,086	170	1,674	1,069	14	1,368						
19	802	193	1,821	702	1,130	1,366						
20	730	135	703	1,405	2,702	1,441						
21	295	14	519	1,482	2,415	1,659						
22	16	336	475	719	2,484	3,192						
23	14	511	122	857	2,156	2,446						
24	14	238	315	1,272	2,104	2,875						
25	14	311	152	819	2,096	3,250						
26	19	171	200	1,322	3,615	2,855						
27	191	280	1,049	1,116	3,767	1,701						
28	14	344	353	997	3,505	1,713						
29	14	14	164	2,235	44	44						
30	14	14	82	2,514	199	199						
31	989		25	2,320	239	239						
TOTAL	11,785	6,314	16,024	36,897	60,245	52,415						
MEAN	380	210	517	1,190	2,152	1,691						
MAX	1,086	654	2,161	3,570	3,767	3,534						
MIN	14	14	14	14	14	44						
WATER YEAR TOTALS												
TOTAL	183,680											
DAILY MEAN	1,009											
DAILY MAX	3,767											
DAILY MIN	14											
	02/27/2017											
	10/14/2016											