



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

JUN 09 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 May 2017, the temperature control point was set at Balls Ferry, per the June 2016, Sacramento River Temperature Plan.

During May 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 with the exception of May 2 (56.3°F), May 3 (57.5°F), May 4 (57.6°F), May 5 (57.9°F), and May 6 (56.5°F). The following action was taken to avoid exceedences and bring temperature back into compliance: May 2, 2016, a Shasta Temperature Control Device Middle Gate was opened to access cooler water. Temperature excursions occurred during a coincident period of record air temperature and low Keswick release to accommodate instream Sacramento River flood damage work.

During the month of May 2017, the average monthly water temperature was 54.5°F at Balls Ferry.

Enclosed is the monitoring report for May 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
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
May 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	51.8	52.8	50.0	55.5	45.5				
2	50.2	53.0	50.2	56.3	46.0				
3	49.3	52.8	50.6	57.5	46.2				
4	49.3	51.7	50.7	57.6	46.4				
5	49.5	52.0	50.2	57.9	47.1				
6	49.4	52.1	50.7	56.5	47.2				
7	51.1	51.3	50.5	54.6	47.6				
8	50.8	51.9	50.6	53.8	46.5				
9	50.7	51.8	50.5	54.6	46.3				
10	50.3	51.8	50.6	54.5	46.1				
11	50.3	51.5	50.6	53.8	45.6				
12	50.4	51.2	50.8	53.0	45.0				
13	50.6	51.2	50.7	52.9	45.0				
14	51.6	51.5	50.6	53.2	45.2				
15	51.2	52.2	50.5	54.2	45.5				
16	50.4	51.8	50.3	53.2	45.5				
17	51.2	51.0	50.2	52.8	45.2				
18	50.6	51.7	50.0	53.6	45.7				
19	49.7	51.4	49.9	54.2	45.8				
20	49.4	50.8	49.8	53.8	45.9				
21	49.6	50.6	49.7	53.6	46.0				
22	49.7	50.7	49.6	53.7	46.1				
23	49.6	50.8	49.7	53.9	46.2				
24	49.8	50.8	49.7	54.2	46.4		54.0		58.7
25	49.6	51.0	49.9	54.4	46.5			55.1	
26	49.9	51.0	49.8	54.4	46.7				
27	50.1	51.0	50.0	54.4	46.4				
28	49.8	51.4	50.1	54.7	46.6				
29	49.8	51.2	50.0	54.7	46.6				
30	49.9	51.2	50.2	54.2	46.4				
31	49.9	51.0	50.2	54.3	45.9				

Control Point: 5/1-5/31 BSF @ 56.0 DAT

Cross Channel Gate Operation:
 May 01-31 closed

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

TEMPERATURE						
Sampling Frequency						
Every two weeks May 1 through November 30.						
Lake Elev	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	
MSL	Temperature	Temperature	Temperature	Temperature	Temperature	Temperature
	Degrees F	Degrees F	Degrees F	Degrees F	Degrees F	Degrees F
	Time: 10:30	Time: 9:20	Time: 10:00	Time: 10:30	Time: 10:30	
	(400 Feet Upstream of Dam)					
625	45.0	45.0	45.1	45.1	45.1	
650	45.0	45.0	45.1	45.1	45.1	
675	45.0	45.1	45.1	45.2	45.2	
700	45.1	45.2	45.2	45.2	45.2	
725	45.2	45.2	45.2	45.3	45.3	
750	45.4	45.4	45.4	45.4	45.4	
775	45.5	45.6	45.5	45.6	45.6	
800	45.8	45.8	45.7	45.8	45.8	
825	46.1	46.0	46.0	46.0	46.0	
850	46.3	46.5	46.3	46.3	46.3	
875	46.9	47.2	46.7	46.8	46.8	
900	47.3	48.1	47.4	47.6	47.6	
925	48.1	48.9	48.9	48.7	48.7	
950	49.5	49.5	49.9	50.0	50.0	
975	50.3	50.8	50.7	51.1	51.1	
1000	50.9	52.0	52.1	53.6	53.6	
1025	56.7	60.8	57.1	58.2	58.2	
1050	62.8	60.9	68.6	72.7	72.7	
Lake Surface	64.7 @ 1061.07	60.9 @ 1061.26	69.3 @ 1061.11	73 @ 1060.39		

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	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	
MSL	Turbidity	Turbidity	Turbidity	Turbidity	Turbidity	Turbidity
	ntu	ntu	ntu	ntu	ntu	ntu
	Time: 10:30	Time: 9:20	Time: 10:00	Time: 10:30	Time: 10:30	
	(400 Feet Upstream of Dam)					
625	21.7	21.7	22.7	21.8	21.8	
650	21.6	21.8	22.5	21.6	21.6	
675	21.1	21.8	21.7	21.0	21.0	
700	20.8	21.2	21.6	21.3	21.3	
725	21.0	21.3	21.3	20.6	20.6	
750	20.8	20.6	20.9	20.2	20.2	
775	21.0	20.3	20.8	19.8	19.8	
800	20.1	19.8	20.3	19.9	19.9	
825	20.0	19.5	20.0	18.6	18.6	
850	17.7	17.0	18.5	16.9	16.9	
875	14.3	12.8	16.0	14.0	14.0	
900	11.9	8.7	11.5	10.1	10.1	
925	8.3	7.1	7.7	6.8	6.8	
950	6.0	6.0	5.7	5.5	5.5	
975	4.0	4.7	4.9	4.2	4.2	
1000	3.6	4.0	4.2	3.7	3.7	
1025	3.1	4.3	3.7	4.2	4.2	
1050	1.6	3.6	2.9	2.9	2.9	
Lake Surface	0.7 @ 1061.07	3.5 @ 1061.26	2.1 @ 1061.11	0.9 @ 1060.39		

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

**Summary of Turbidity and Dissolved Oxygen Water Sampling
 May 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	
11			14.6					
16				7.2				
24					3.3		2.4	
25						1.5		
31		6.9						
June 1	8.2							

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
16			11.9	10:20
31		13.2		9:15
June 1	11.2			10:00

Control Point: 5/1-5/31 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: June 1, 2017

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	6,289	4,929	4,122	5,765	18,164	18,613	9,138	8,534				
2	6,463	4,805	4,181	5,467	18,257	19,433	8,916	7,407				
3	6,942	4,257	4,630	4,764	18,708	18,909	8,346	6,498				
4	6,469	4,132	4,570	3,401	18,806	18,656	8,960	4,939				
5	6,546	3,985	4,123	3,865	18,609	19,005	8,875	4,285				
6	5,865	4,666	4,054	4,285	18,763	18,880	8,577	3,909				
7	4,953	4,429	4,088	8,401	18,323	18,041	7,181	8,544				
8	6,060	4,387	4,979	11,517	17,804	17,999	8,741	9,211				
9	6,069	3,948	5,086	9,821	15,665	16,282	8,620	9,752				
10	5,860	3,670	4,720	9,158	15,331	13,566	8,816	9,129				
11	6,325	4,016	4,126	12,026	17,378	11,446	8,366	8,624				
12	6,275	4,279	3,453	18,778	17,716	9,556	10,318	8,628				
13	5,812	4,781	3,964	17,022	18,573	7,667	13,679	8,965				
14	6,180	4,605	3,960	18,722	18,464	8,523	13,615	10,082				
15	5,544	4,948	1,657	18,490	18,653	7,245	13,502	9,565				
16	6,164	5,005	2,446	18,236	18,669	6,079	13,779	8,896				
17	6,027	4,610	2,801	18,215	19,050	6,497	14,001	9,578				
18	5,192	4,023	2,871	17,665	19,430	6,412	13,659	10,061				
19	4,812	4,247	2,656	17,799	18,887	6,703	13,857	9,004				
20	5,304	4,378	3,422	18,125	18,688	6,592	14,202	9,023				
21	5,789	4,357	7,632	18,065	18,948	5,997	14,493	9,390				
22	5,733	4,673	7,859	18,584	19,369	4,845	15,458	9,173				
23	5,549	4,642	9,317	18,517	19,679	6,213	15,228	9,246				
24	5,367	4,159	9,866	17,848	19,804	6,131	16,893	9,975				
25	4,817	4,461	9,186	18,354	19,768	5,675	16,436	8,041				
26	4,817	4,341	9,346	17,930	19,346	6,851	17,351	8,885				
27	4,791	4,427	8,207	18,390	19,604	7,480	16,969	9,044				
28	4,057	4,238	8,682	18,457	19,393	7,390	12,334	8,489				
29	3,861	4,423	9,191	18,487		9,551	11,642	8,596				
30	5,475	4,779	8,429	18,146		9,117	10,678	9,061				
31	4,387		7,462	18,566		8,778		8,290				
TOTAL	173,794	132,600	171,086	442,866	519,849	334,132	362,630	262,824				
MEAN	5,606	4,420	5,519	14,286	18,566	10,778	12,088	8,478				
MAX	6,942	5,005	9,866	18,778	19,804	19,433	17,351	10,082				
MIN	3,861	3,670	1,657	3,401	15,331	4,845	7,181	3,909				
WATER YEAR TOTALS												
TOTAL						2,399,781						
DAILY MEAN						9,876						
DAILY MAX						19,804	02/24/2017					
DAILY MIN						1,657	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: June 1, 2017

QT

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	8,737	9,068				
2	7,366	5,147	4,832	5,978	21,947	56,516	8,627	7,786				
3	7,349	5,023	4,842	5,304	22,318	47,139	8,665	6,298				
4	7,021	4,831	4,840	4,756	22,445	40,147	8,689	5,200				
5	7,013	4,841	4,841	4,776	22,619	33,474	8,694	4,829				
6	6,764	4,841	4,841	4,792	27,729	28,177	8,691	4,766				
7	6,751	4,841	4,838	4,531	25,848	23,006	9,050	11,736				
8	6,756	4,840	4,835	13,032	21,361	18,958	8,812	12,356				
9	6,751	4,854	4,840	13,339	17,284	15,948	8,770	12,178				
10	6,510	4,866	4,839	13,479	38,612	13,659	8,698	12,230				
11	6,505	4,866	4,837	16,048	49,030	12,190	8,937	12,182				
12	6,537	4,866	4,841	32,098	59,280	10,960	11,281	12,414				
13	6,545	4,865	4,840	32,404	67,438	9,632	17,654	12,754				
14	6,542	4,863	4,842	32,383	73,966	9,401	20,955	12,149				
15	6,519	4,779	4,997	32,056	65,398	8,109	22,556	12,107				
16	6,515	4,865	4,946	31,833	46,123	7,997	22,460	12,235				
17	6,519	4,866	4,889	31,987	53,728	7,928	22,451	12,690				
18	6,232	4,864	4,891	28,724	45,624	7,857	25,572	12,688				
19	6,222	4,866	4,890	25,912	45,427	7,697	26,855	12,688				
20	6,225	4,862	4,870	25,968	26,418	7,697	26,377	12,692				
21	5,770	4,865	9,706	26,456	29,828	7,702	26,352	12,691				
22	5,495	4,864	9,852	25,898	57,422	7,816	26,899	12,105				
23	5,493	4,864	9,753	25,617	66,552	8,942	28,032	11,673				
24	5,444	4,866	9,762	25,936	68,035	9,091	28,046	10,982				
25	5,346	4,861	9,760	25,424	68,631	9,141	22,653	10,175				
26	4,888	4,814	9,762	26,751	68,906	8,887	18,492	10,067				
27	4,887	4,815	9,825	26,226	68,287	8,886	15,477	10,069				
28	4,889	4,810	9,839	22,215	68,444	8,889	12,929	10,193				
29	4,889	4,816	9,836	21,646	8,891	8,891	11,190	10,182				
30	4,884	4,816	8,527	21,790	8,889	8,889	10,065	10,178				
31	4,864		7,175	21,762	8,679	8,679		9,844				
TOTAL	190,839	145,987	201,004	640,300	1,270,570	528,670	492,666	329,205				
MEAN	6,156	4,866	6,484	20,655	45,378	17,054	16,422	10,620				
MAX	7,368	5,147	9,852	32,404	73,966	66,365	28,046	12,754				
MIN	4,864	4,779	4,816	4,756	17,284	7,697	8,627	4,766				

WATER YEAR TOTALS

TOTAL	3,799,241
DAILY MEAN	15,635
DAILY MAX	73,966 02/14/2017
DAILY MIN	4,756 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: June 1, 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	316	6,033				
2	461	320	311	307	290	324	315	4,403				
3	440	319	307	310	291	312	315	3,339				
4	440	317	304	315	291	313	315	2,786				
5	448	316	306	312	291	316	1,037	2,502				
6	450	316	305	313	292	316	1,511	2,228				
7	450	314	306	313	298	315	1,519	2,091				
8	446	302	306	318	296	311	1,522	2,217				
9	447	311	306	318	296	314	1,517	2,424				
10	449	303	308	316	312	312	1,528	4,865				
11	463	304	309	314	320	313	1,534	5,423				
12	465	304	308	316	318	317	1,540	5,427				
13	455	302	308	315	315	316	1,515	5,438				
14	451	321	308	320	324	315	1,508	5,497				
15	447	311	313	324	333	316	1,509	5,301				
16	445	310	311	327	334	317	1,507	5,026				
17	408	313	311	324	335	316	1,507	4,971				
18	330	314	312	326	334	317	1,511	4,905				
19	301	313	309	326	339	315	1,336	4,744				
20	301	312	307	326	338	313	757	4,686				
21	300	313	303	324	335	315	393	4,521				
22	302	311	306	326	334	316	539	4,380				
23	305	309	308	325	337	316	1,643	4,203				
24	306	307	308	334	338	317	2,988	4,359				
25	305	311	307	333	330	318	6,006	4,260				
26	317	313	306	317	293	320	9,629	4,397				
27	321	311	307	317	290	317	11,029	4,279				
28	309	311	306	317	326	316	11,129	4,417				
29	308	311	307	313		317	10,032	4,263				
30	309	310	307	290		317	8,000	4,359				
31	308		306	290		316		4,310				
TOTAL	11,953	9,342	9,536	9,832	8,820	9,798	85,507	132,054				
MEAN	386	311	308	317	315	316	2,850	4,260				
MAX	466	321	313	334	339	325	11,129	6,033				
MIN	300	302	303	290	290	311	315	2,091				
							WATER YEAR TOTALS					
							276,842					
							1,139					
							11,129	04/28/2017				
							290	01/30/2017				

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

RUN DATE: June 1, 2017

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	14	580				
2	349	14	293	223	3,047	3,534	852	111				
3	276	530	14	602	2,256	1,058	1,105	16				
4	454	481	14	859	2,033	1,051	932	14				
5	309	519	14	25	1,680	865	1,190	457				
6	808	14	62	14	1,487	1,038	806	780				
7	1,036	14	220	683	2,028	1,645	2,093	2,853				
8	398	31	215	1,255	2,004	1,694	808	2,858				
9	292	471	16	3,051	1,108	1,792	912	3,022				
10	292	654	130	3,570	2,697	1,838	779	3,617				
11	365	183	14	3,354	3,004	1,474	873	3,419				
12	417	180	414	866	2,117	1,412	839	3,332				
13	380	23	393	1,641	1,928	1,460	660	3,065				
14	14	166	583	444	2,495	695	1,057	2,856				
15	362	35	2,090	854	1,143	1,934	1,468	3,424				
16	417	86	2,161	190	1,315	1,692	1,193	3,339				
17	658	164	1,723	422	1,250	1,372	1,037	3,159				
18	1,086	170	1,674	1,069	14	1,368	681	2,817				
19	802	193	1,821	702	1,130	1,366	1,262	3,197				
20	730	135	703	1,405	2,702	1,441	833	3,152				
21	295	14	519	1,482	2,415	1,659	572	3,021				
22	16	336	475	719	2,484	3,192	130	3,001				
23	14	511	122	857	2,156	2,446	67	3,188				
24	14	238	315	1,272	2,104	2,875	219	1,810				
25	14	311	152	819	2,096	3,250	38	2,363				
26	19	171	200	1,322	3,615	2,855	163	1,288				
27	191	280	1,049	1,116	3,767	1,701	141	2,278				
28	14	344	353	997	3,505	1,713	903	2,031				
29	14	14	164	2,235	44	44	668	1,643				
30	14	14	82	2,514	199	199	422	1,809				
31	989	25	25	2,320	239	239	2298	2,298				
TOTAL	11,785	6,314	16,024	36,897	60,245	52,415	22,717	70,798				
MEAN	380	210	517	1,190	2,152	1,691	757	2,284				
MAX	1,086	654	2,161	3,570	3,767	3,534	2,093	3,617				
MIN	14	14	14	14	14	44	14	14				
WATER YEAR TOTALS												
TOTAL	277,195											
DAILY MEAN	1,141											
DAILY MAX	3,767											
DAILY MIN	14											
							02/27/2017					10/14/2016