



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

NOV 02 2016

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 October, the temperature control point was set at Balls Ferry, per the June 2016, Sacramento Temperature Plan. The Sacramento River Temperature Task Group met on October 27, 2016, and agreed to a 56 °F daily average temperature at Balls Ferry.

During October 2016, 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 October 2016, the average monthly water temperature was 53.7 °F at Balls Ferry.

Enclosed is the monitoring report for October 2016, 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

Station	Description
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
October 2016

Req. Sampling Frequency - Daily Average (Reading indicates daily average)							Req. Sampling Frequency - Monthly			
	Sta 2	Sta 3	Sta 4	Sta 5	Sta9	Sta10		Sta 6	Sta 7	Sta 8
Date	Shd*	Kwk*	Spp**	Bsf**	Lws*	Nfh*		Dit***	Mss***	Pmn***
1	50.1	51.5	57.9	53.2	51.5	54.8				
2	50.1	51.4	58.0	52.4	51.2	53.1				
3	50.3	50.9	57.8	51.7	50.8	52.1				
4	50.2	50.9	57.9	52.5	51.3	53.7				
5	50.3	51.4	57.6	52.8	50.8	54.2				
6	50.3	51.6	57.8	53.2	50.8	53.9				
7	50.4	52.2	57.8	53.5	50.9	54.4		52.4		
8	50.3	52.2	57.7	54.2	51.5	55.4				
9	50.5	51.9	57.8	54.0	51.7	56.3				
10	50.6	51.9	57.8	54.0	52.1	56.4				
11	50.6	52.0	57.8	53.7	51.9	56.1				
12	50.7	52.0	57.8	53.6	51.9	55.2				
13	50.8	52.0	57.9	53.3	52.2	55.1				
14	51.0	51.9	57.9	54.1	52.3	55.5				
15	51.0	51.9	57.8	53.7	51.9	54.1				
16	51.2	51.9	58.0	53.5	52.0	52.1				
17	51.1	52.1	57.9	53.3	52.2	52.4				
18	51.1	52.6	58.0	54.0	51.8	53.5				
19	51.2	53.0	58.2	54.1	51.1	52.8				
20	51.2	52.7	58.2	54.4	51.2	53.0				
21	51.5	52.6	58.1	54.3	51.9	54.3				55.1
22	51.8	52.6	58.3	54.3	51.7	54.6				
23	51.2	52.6	57.7	54.0	51.9	53.6				
24	50.7	52.4	57.5	53.4	51.6	52.9				
25	51.2	51.7	57.5	53.8	51.8	51.5				
26	51.5	51.4	57.7	54.3	52.6	52.6				
27	50.9	52.1	58.0	53.8	52.1	52.4				
28	51.1	52.0	58.3	54.7	51.8	51.7		51.5		
29	50.9	51.6	57.6	54.7	52.1	52.5				
30	51.6	51.8	57.5	54.4	51.9	51.6				
31	51.3	51.7	58.3	54.3	51.2	50.4				

Control Point: 10/1-10/31 BSF @ 56.0 DAT

Cross Channel Gate Operation:
 October 01-31 open

**Measurements taken by the Northern CA Area Office Personnel
October 2016**

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 Degrees F	Temperature Degrees F	Temperature Degrees F	Temperature Degrees F	Temperature Degrees F	
(400 Feet Upstream of Dam)						
	Time: 11:00	Time: 11:30	Time: 9:45	Time: 11:00		
625	46.2	46.2	46.3	46.3	46.3	
650	46.3	46.3	46.3	46.4	46.4	
675	46.3	46.4	46.4	46.4	46.4	
700	46.4	46.4	46.5	46.5	46.5	
725	46.6	46.7	46.7	46.8	46.8	
750	47.0	47.0	47.2	47.4	47.4	
775	47.5	47.6	47.8	48.1	48.1	
800	48.3	48.5	48.6	49.2	49.2	
825	49.3	49.7	50.4	52.3	52.3	
850	51.9	53.1	54.8	56.2	56.2	
875	56.3	57.7	59.3	59.9	59.9	
900	61.2	62.4	63.1	62.0	62.0	
925	65.5	65.2	65.7	64.6	64.6	
950	69.8	68.3	65.8	64.6	64.6	
975	69.8	68.3	65.8	64.6	64.6	
1000						
1025						
1050						
Lake Surface	69.7 @ 988.36'	68.5 @ 995.4'	65.8 @ 994.41'	64.5 @ 992.49'		

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 ntu	Turbidity ntu	Turbidity ntu	Turbidity ntu	Turbidity ntu	
(400 Feet Upstream of Dam)						
	Time: 11:00	Time: 11:30	Time: 9:45	Time: 11:00		
625	6.9	6.2	5.3	7.0		
650	6.6	5.9	4.9	7.0		
675	6.8	5.9	5.1	6.8		
700	6.8	5.9	5.0	7.2		
725	6.6	5.9	5.0	6.8		
750	6.4	5.8	4.4	6.2		
775	5.9	5.0	4.0	5.1		
800	5.0	3.9	2.8	3.7		
825	3.7	2.7	1.3	2.0		
850	2.1	1.2	0.0	1.4		
875	1.2	0.8	0.0	1.4		
900	1.1	0.6	0.0	1.4		
925	1.0	0.6	0.0	1.4		
950	1.0	0.7	0.0	1.4		
975	1.0	0.6	0.0	1.2		
1000						
1025						
1050						
Lake Surface	0.7 @ 988.36'	0.6 @ 995.4'	0.1 @ 994.41'	0.6 @ 992.49'		

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

**Summary of Turbidity and Dissolved Oxygen Water Sampling
 October 2016**

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	
3				2.8				
5			1.6					
7					1.3			
13	3.1	3.8						
21							6.9	
27						2.4		

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
3			12.4	13:10
13	9.3			12:20
13		9.9		13:00

Control Point: 10/1-10/31 BSF @ 56.0 DAT

SHASTA LAKE, DAM AND POWERPLANT

QG

GENERATION RELEASE, CFS

WATER YEAR OCTOBER 2016 TO SEPTEMBER 2017

DAY	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
	NOV	OCT								
1		6,289								
2		6,463								
3		6,942								
4		6,469								
5		6,546								
6		5,865								
7		4,953								
8		6,060								
9		6,069								
10		5,860								
11		6,325								
12		6,275								
13		5,812								
14		6,180								
15		5,544								
16		6,164								
17		6,027								
18		5,192								
19		4,812								
20		5,304								
21		5,789								
22		5,733								
23		5,549								
24		5,367								
25		4,817								
26		4,817								
27		4,791								
28		4,057								
29		3,861								
30		5,475								
31		4,387								
TOTAL		173,794								
MEAN		5,606								
MAX		6,942								
MIN		3,861								

WATER YEAR TOTALS

TOTAL	173,794
DAILY MEAN	5,606
DAILY MAX	6,942 10/03/2016
DAILY MIN	3,861 10/29/2016

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

RUN DATE: November 1, 2016

QT

TOTAL RELEASE, CFS

WATER YEAR OCTOBER 2016 TO SEPTEMBER 2017

DAY	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
	QT										
1	7,368										
2	7,366										
3	7,349										
4	7,021										
5	7,013										
6	6,764										
7	6,751										
8	6,756										
9	6,751										
10	6,510										
11	6,505										
12	6,537										
13	6,545										
14	6,542										
15	6,519										
16	6,515										
17	6,519										
18	6,232										
19	6,222										
20	6,225										
21	5,770										
22	5,495										
23	5,493										
24	5,444										
25	5,346										
26	4,888										
27	4,887										
28	4,889										
29	4,889										
30	4,864										
31	4,864										
TOTAL	190,839										
MEAN	6,156										
MAX	7,368										
MIN	4,864										

WATER YEAR TOTALS

TOTAL	190,839
DAILY MEAN	6,156
DAILY MAX	7,368 10/01/2016
DAILY MIN	4,864 10/30/2016

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: November 1, 2016

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											
2	461											
3	440											
4	440											
5	448											
6	450											
7	450											
8	446											
9	447											
10	449											
11	463											
12	465											
13	455											
14	451											
15	447											
16	445											
17	408											
18	330											
19	301											
20	301											
21	300											
22	302											
23	305											
24	306											
25	305											
26	317											
27	321											
28	309											
29	308											
30	309											
31	308											
TOTAL	11,953											
MEAN	386											
MAX	466											
MIN	300											

WATER YEAR TOTALS

TOTAL	11,953
DAILY MEAN	386
DAILY MAX	466
DAILY MIN	300

10/01/2016
10/21/2016

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

RUN DATE: November 1, 2016

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											
2	349											
3	276											
4	454											
5	309											
6	808											
7	1,036											
8	398											
9	292											
10	292											
11	365											
12	417											
13	380											
14	14											
15	362											
16	417											
17	658											
18	1,086											
19	802											
20	730											
21	295											
22	16											
23	14											
24	14											
25	14											
26	19											
27	191											
28	14											
29	14											
30	14											
31	989											
TOTAL	11,785											
MEAN	380											
MAX	1,086											
MIN	14											

WATER YEAR TOTALS

TOTAL	11,785
DAILY MEAN	380
DAILY MAX	1,086
DAILY MIN	14

10/18/2016
 10/14/2016