



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 05 2018

VIA ELECTRONIC MAIL

Mr. Erik Ekdahl
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. Ekdahl:

For the month of October 2018, the temperature control point was set at Balls Ferry, per the May 2018, Sacramento River Temperature Plan.

During the month, 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, the observed average monthly water temperature was 54.9°F at Balls Ferry.

Enclosed is the monitoring report for October 2018, under Order No. 90-5. Some directly measured information is not available due to issues with the telemetry system that records and transmits data from the station (this is the same issue United States Geological Survey is experiencing with Geostationary Operational Environmental Satellite system). Reclamation plans to recover communication as soon as possible. The report contains the following data as required:

ID #	Station	Temperature*	Turbidity*	Dissolved Oxygen*	Flow*
1	Shasta Inlets	X	X		
2	Shasta Dam	X	X	X	
2a	Shasta Dam				X
3	Sacramento River below Keswick Dam	X		X	
3a	Keswick Dam		X		X
4	Spring Creek Power Plant	X	X		X
5	Temperature Control Point	X	X	X	
6	Sacramento River at Delta	X	X		
7	McCloud River	X	X		

ID #	Station	Temperature*	Turbidity*	Dissolved Oxygen*	Flow*
8	Pit River	X	X		
9	Trinity River below Lewiston Dam	X			
9a	Lewiston Dam				X
10	Trinity River at Douglas City Bridge	X			
11	Trinity River at confluence of North Fork	X			

*Monitoring frequency, period, and units are specified in enclosures

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: Ms. Alessia Siclari Melchor
Division of Water Rights
State Water Resources Control Board
P.O. Box 2000
Sacramento, CA 95812

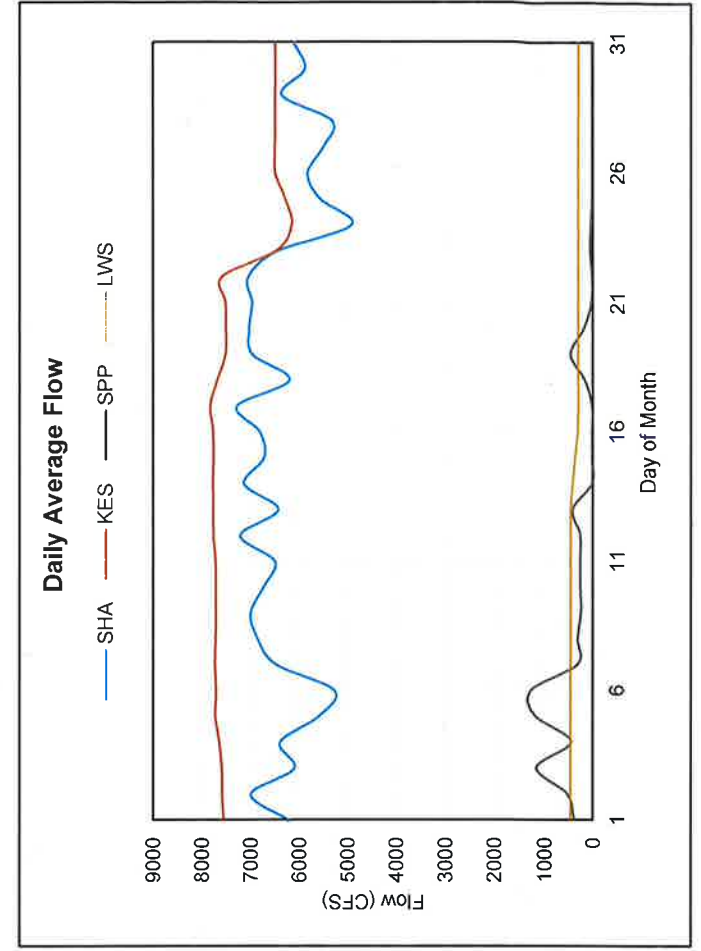
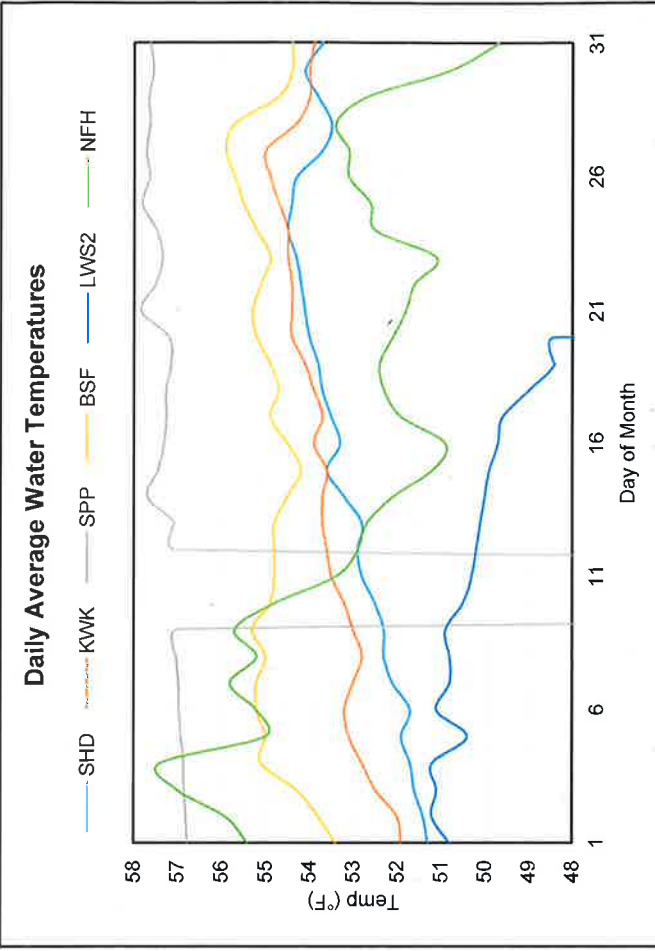
Mr. Vadim Demchuk
Division of Water Rights
State Water Resources Control Board
P.O. Box 2000
Sacramento, CA 95812

Ms. Diane Riddle
Division of Water Rights
State Water Resources Control Board
P.O. Box 2000
Sacramento, CA 95812
(w/encl)

90-5 Required Water Monitoring Data

October 2018

Daily Averages from Hourly Automated Observations													
Parameter	Temp (°F)											Flow (CFS)	
	2	3	4	5	9	11	2a	3a	4	9a			
Site	SHD	KWK	SPP	BSF ¹	LWS ²	NFH	SHA	KES	SPP	LWS			
1	51.3	51.9	56.8	53.4	50.8	55.4	6210	7551	380	459			
2	51.4	52.0	56.8	53.8	51.2	55.9	6991	7586	528	460			
3	51.6	52.5	56.9	54.3	51.1	57.0	6099	7588	1162	459			
4	51.7	52.8	56.9	55.1	51.2	57.4	6396	7641	450	460			
5	51.9	53.1	56.9	55.0	50.4	55.0	5599	7718	1191	461			
6	51.7	53.2	57.0	55.2	51.1	55.2	5261	7705	1260	460			
7	52.1	53.0	57.0	55.2	50.8	55.8	6466	7725	311	458			
8	52.3	52.8	57.0	55.0	50.8	55.2	6849	7715	310	456			
9	52.3	53.0	57.0	55.3	50.9	55.7	6994	7710	242	457			
10	52.5	53.2	-	54.9	50.5	54.8	6732	7708	261	457			
11	52.8	53.5	-	54.8	50.3	53.4	6496	7712	261	458			
12	52.9	53.6	57.1	54.8	50.2	52.9	7206	7755	261	457			
13	52.8	53.7	57.1	54.8	50.1	52.7	6424	7761	415	456			
14	53.2	53.7	57.7	54.5	50.0	52.1	7124	7767	14	418			
15	53.6	53.6	57.4	54.2	49.9	51.2	6715	7757	14	367			
16	53.3	53.9	57.3	54.5	49.7	50.9	6796	7763	14	313			
17	53.5	53.7	57.3	54.9	49.6	51.9	7268	7820	14	300			
18	53.7	53.9	57.3	54.7	49.0	52.3	6184	7675	163	301			
19	53.8	54.1	57.2	54.9	48.4	52.4	6953	7503	458	303			
20	54.0	54.4	57.2	55.2	48.4	52.1	7022	7496	184	302			
21	54.1	54.4	57.8	55.3	-	51.8	6955	7506	28	304			
22	54.2	54.4	57.5	55.1	-	51.6	7035	7576	16	304			
23	54.3	54.5	57.4	54.9	-	51.1	6429	6455	54	303			
24	54.5	54.5	57.5	55.2	-	52.5	4889	6143	41	304			
25	54.4	54.7	57.8	55.5	-	52.6	5547	6276	17	303			
26	54.3	54.9	57.6	55.7	-	53.1	5812	6481	14	303			
27	53.7	55.0	57.7	55.9	-	53.1	5485	6485	14	303			
28	53.5	54.3	57.6	55.7	-	53.4	5293	6483	14	301			
29	53.8	54.0	57.7	54.7	-	52.7	6345	6479	14	298			
30	54.1	54.0	57.6	54.4	-	50.8	5865	6474	14	298			
31	53.7	53.9	57.6	54.4	-	49.7	6086	6481	18	298			
						Max	7268	7820	1260	461			
						Mean	6372	7306	262	374			
						Min	4889	6143	14	298			
						Volume (TAF)	392	449	16	23			



Notes

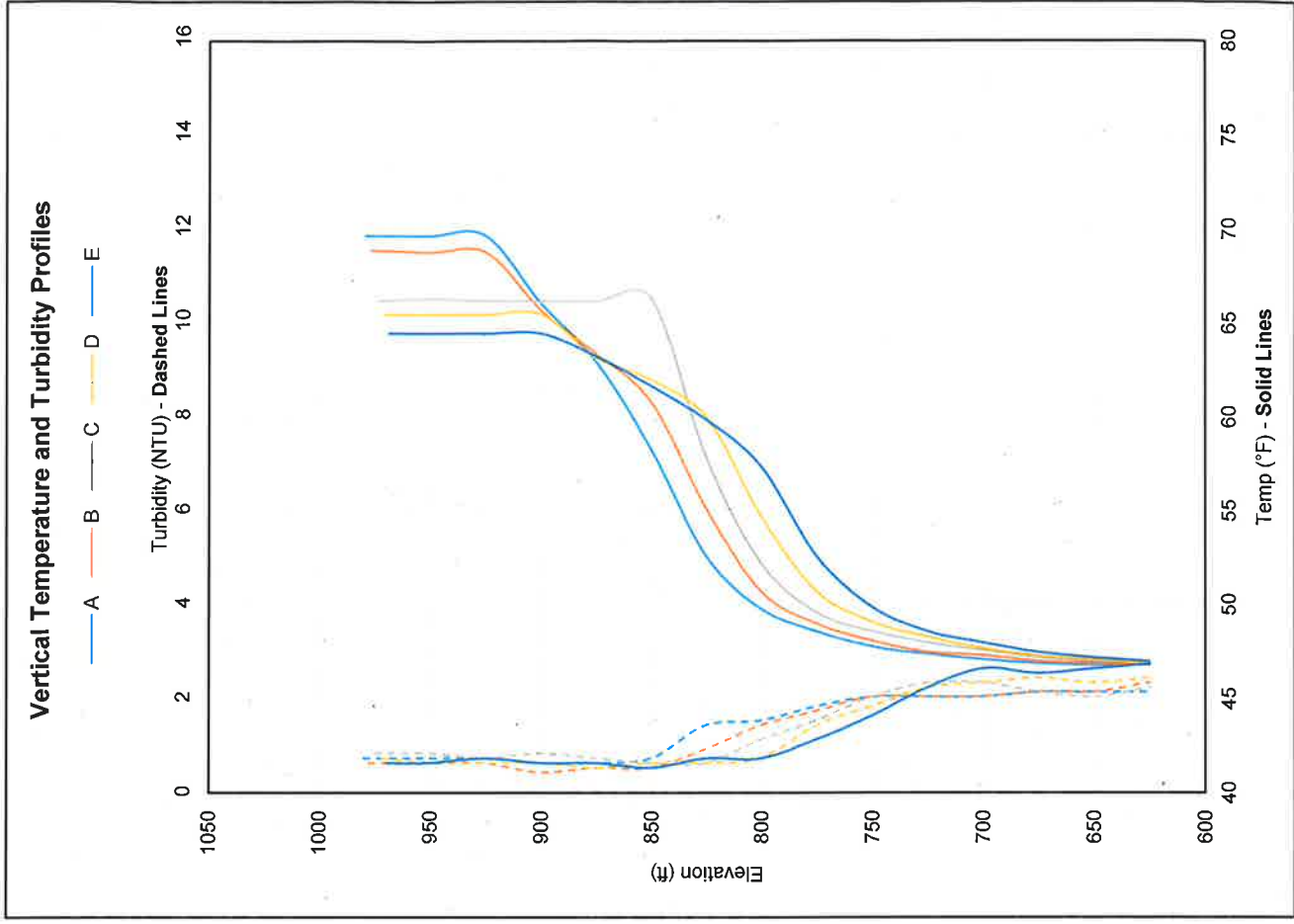
¹ Current temperature control point

² Missing data per faulty transmitter

90-5 Required Water Monitoring Data (Continued)

October 2018

Vertical Profiles Taken at Site 1 (Shasta Lake at Dam Inlets)											
Profile	A		B		C		D		E		
Day of Month	2	9		16		23		30			
Lake Elev.	979.03	976.77		973.89		970.79		968.66			
Parameter	Temp	Turb	Temp	Turb	Temp	Turb	Temp	Turb	Temp	Turb	
L.E.	69.7	0.7	68.9	0.6	66.2	0.8	65.5	0.7	64.5	0.6	
1050	-	-	-	-	-	-	-	-	-	-	
1025	-	-	-	-	-	-	-	-	-	-	
1000	-	-	-	-	-	-	-	-	-	-	
975	69.7	0.7	68.9	0.6	-	-	-	-	-	-	
950	69.7	0.7	68.8	0.6	66.3	0.8	65.5	0.6	64.5	0.6	
925	69.7	0.7	68.8	0.6	66.2	0.7	65.5	0.6	64.5	0.7	
900	66.1	0.6	65.7	0.4	66.2	0.8	65.5	0.6	64.5	0.6	
875	63.0	0.6	63.4	0.5	66.2	0.7	63.2	0.5	63.3	0.6	
850	58.3	0.7	60.8	0.5	66.3	0.6	62.0	0.6	61.7	0.5	
825	52.6	1.4	55.1	0.9	57.8	0.6	60.0	0.6	59.9	0.7	
800	49.8	1.5	50.7	1.4	52.2	1.1	54.7	0.7	57.4	0.7	
775	48.6	1.8	49.0	1.7	49.6	1.5	50.7	1.4	52.6	1.1	
750	47.8	2.0	48.1	2.0	48.6	2.0	49.1	1.8	49.9	1.6	
725	47.4	2.0	47.5	2.0	48.0	2.3	48.3	2.2	48.6	2.2	
700	47.1	2.0	47.3	2.0	47.6	2.3	47.7	2.3	48.0	2.6	
675	46.9	2.1	47.0	2.1	47.2	2.1	47.3	2.4	47.5	2.5	
650	46.8	2.1	46.9	2.1	47.0	2.0	47.1	2.3	47.2	2.6	
625	46.8	2.1	46.8	2.3	46.9	2.2	46.9	2.4	47.0	2.7	



Monthly Manual Observations												
Parameter	Temp (°F)						Turb (NTU)					
	6	7	8	2	3	4	5	6	7	8		
Site	DLT	MSS	PMN	SHD	KWK	SPP	RDB	DLT	MSS	PMN		
Value	49.7	46.6	57.3	1.4	1.4	1.9	2.1	1.2	0.9	2.3		
Day of Month	16	23	12	24	10	2	11	16	23	12		

90-5 Required Water Monitoring Details

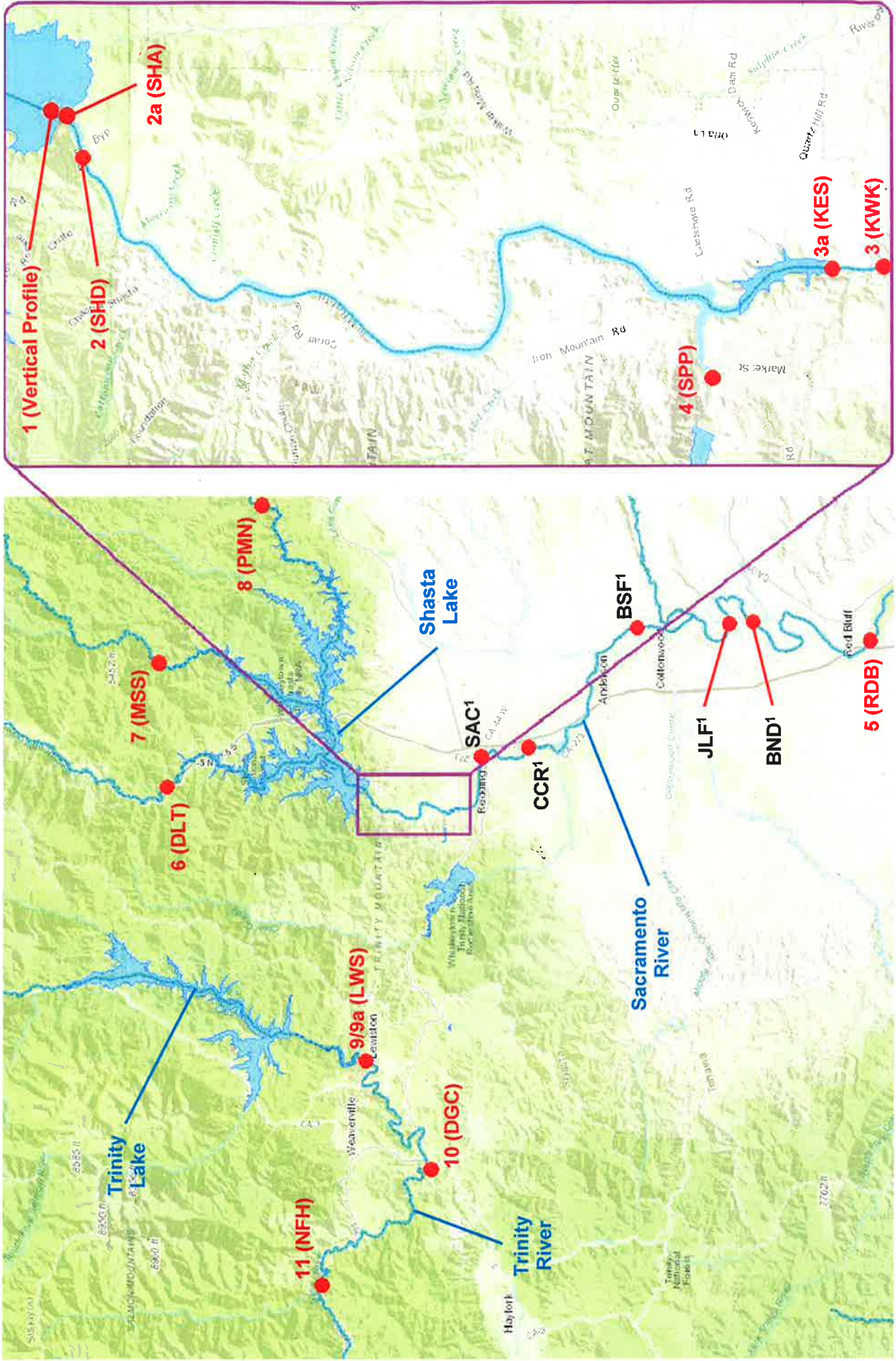
Site	CDEC ID	Description
1	-	Shasta Dam inlets or lake adjacent to the dam face. ¹
2	SHD	Shasta Dam release immediately downstream from the power plant.
2a	SHA	Shasta Dam release.
3	KWK	Sacramento River immediately downstream from Keswick Dam.
3a	KES	Keswick Dam release.
4	SPP	Spring Creek Power Plant release.
5	RDB	Sacramento River downstream from Red Bluff Diversion Dam.
6	DLT ²	Sacramento River (above Shasta Dam).
7	MSS	McCloud River (above Shasta Dam).
8	PMN	Pit River (above Shasta Dam).
9	LWS	Trinity River immediately downstream from Lewiston Dam.
9a	LWS	Lewiston Dam release.
10	DGC	Trinity River at the Douglas City Bridge.
11	NFH	Trinity River at the confluence of the North Fork Trinity River.

	Temperature		Turbidity ³		Dissolved Oxygen ⁴		Flow	
	Frequency	Period	Frequency	Period	Frequency	Period	Frequency	Period
1	Every 2 weeks	5/1 to 11/30	Monthly	All Year	-	-	-	-
2	Average Daily	All Year	Monthly	All Year	Every 2 weeks	5/1 to 9/30	-	-
2a	-	-	-	-	-	-	Average Daily	All Year
3	Average Daily	All Year	-	-	Every 2 weeks	5/1 to 9/30	-	-
3a	-	-	Monthly	All Year	-	-	Average Daily	All Year
4	Average Daily	All Year	Monthly	All Year	-	-	Average Daily	All Year
5	Average Daily ⁵	All Year	Monthly	All Year	Every 2 weeks	5/1 to 9/30	-	-
6	Monthly	All Year	Monthly	All Year	-	-	-	-
7	Monthly	All Year	Monthly	All Year	-	-	-	-
8	Monthly	All Year	Monthly	All Year	-	-	-	-
9	Average Daily	All Year	-	-	-	-	-	-
9a	-	-	-	-	-	-	Average Daily	All Year
10	Average Daily	9/15 to 10/1	-	-	-	-	-	-
11	Average Daily	10/1 to 12/31	-	-	-	-	-	-

Notes

- ¹ Take sufficient collection points to characterize the vertical profile for temperature and turbidity.
- ² Site 6 (DLT) is not accessible year round making it unsuitable for real-time Dissolved Oxygen monitoring do to calibration requirements.
- ³ From 5/1 to 9/30 if turbidity at site 2 is greater than or equal to 10 ntu's then frequency must be weekly.
- ⁴ To be taken before 10:00 am.
- ⁵ If the temperature control point is moved upstream from site 5, then temperature monitoring shall continue at the new site.

90-5 Required Water Monitoring Site Map



Notes

¹ SAC, CCR, BSF, JLF and BND are alternative upstream temperature control points to RDB