



United States Department of the Interior

BUREAU OF RECLAMATION

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

SEP 07 2018

IN REPLY REFER TO:

CVO-400
WTR-4.10

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 August 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 August 2018, under Order No. 90-5. Some directly measured information is not available due to the Carr Fire near Shasta and Keswick Dams. Reclamation is working towards recovering communication systems as quickly 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		
8	Pit River	X	X		

ID #	Station	Temperature*	Turbidity*	Dissolved Oxygen*	Flow*
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

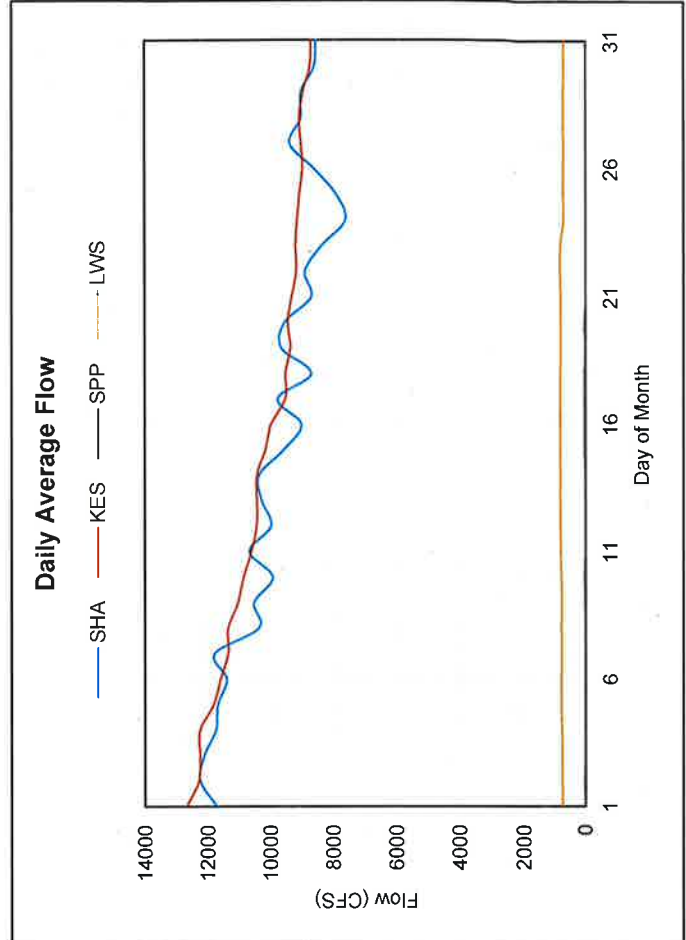
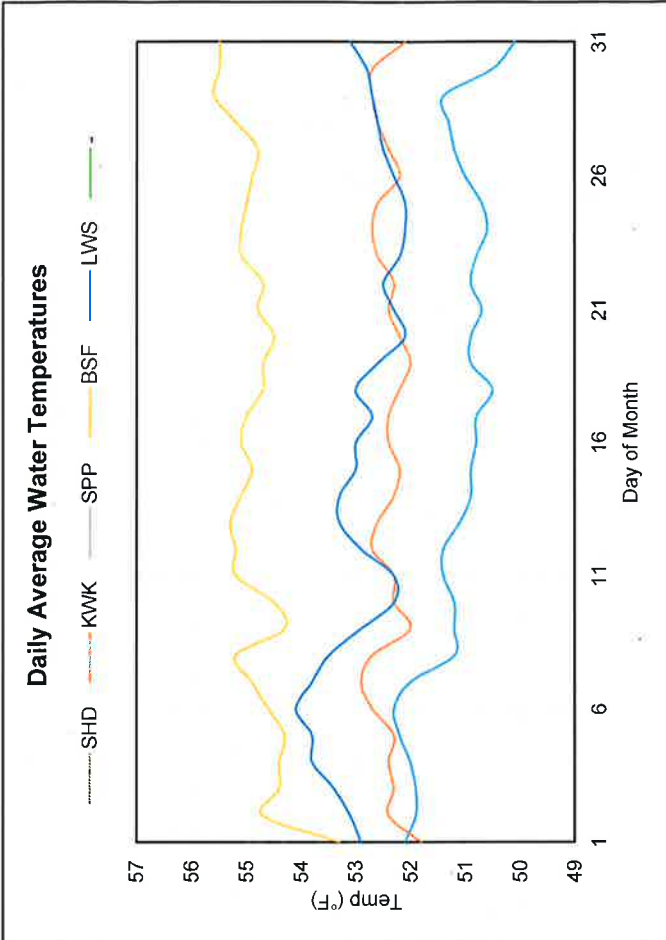
Mr. Vadim Demchuk
Division of Water Rights
State Water Resources Control Board
P.O. Box 2000
Sacramento, CA 95812

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

August 2018

Daily Averages from Hourly Automated Observations													
Parameter	Temp (°F)										Flow (CFS)		
	2	3	4	5	9	-	2a	3a	4	9a			
Site	SHD	KWK	SPP ²	BSF ¹	LWS	-	SHA	KES	SPP	LWS			
1	52.1	51.8	-	53.3	52.9	-	11702	12666	14	742			
2	51.9	52.4	-	54.7	53.1	-	12235	12272	32	744			
3	51.9	52.3	-	54.4	53.4	-	12115	12236	14	752			
4	52.0	52.4	-	54.4	53.8	-	11737	12237	14	756			
5	52.2	52.3	-	54.3	53.8	-	11678	11808	14	774			
6	52.3	52.7	-	54.6	54.1	-	11384	11579	14	774			
7	52.0	52.9	-	54.9	53.8	-	11778	11333	14	766			
8	51.2	52.7	-	55.2	53.5	-	10356	11333	14	774			
9	51.2	52.0	-	54.3	52.9	-	10510	11017	23	770			
10	51.2	52.3	-	54.5	52.3	-	9914	10840	36	776			
11	51.4	52.3	-	55.2	52.3	-	10655	10588	14	796			
12	51.4	52.7	-	55.2	52.9	-	9963	10416	14	808			
13	51.1	52.6	-	55.3	53.3	-	10261	10410	14	804			
14	50.9	52.3	-	55.1	53.3	-	10347	10413	14	806			
15	50.9	52.2	-	54.9	53.0	-	9557	10138	38	804			
16	50.8	52.4	-	55.1	53.0	-	8988	9950	38	806			
17	50.8	52.4	-	55.0	52.7	-	9743	9494	38	809			
18	50.5	52.2	-	54.7	53.0	-	8673	9486	38	814			
19	50.9	52.0	-	54.7	52.6	-	9621	9331	14	797			
20	50.9	52.2	-	54.5	52.1	-	9518	9412	37	800			
21	50.7	52.4	-	54.8	52.3	-	8671	9287	0	794			
22	50.9	52.3	-	54.7	52.5	-	8867	9140	0	816			
23	50.8	52.6	-	55.1	52.2	-	8340	9162	0	804			
24	50.6	52.7	-	55.1	52.1	-	7570	9113	0	711			
25	50.7	52.6	-	55.0	52.1	-	7844	9037	0	714			
26	51.0	52.2	-	54.9	52.3	-	8552	8939	0	714			
27	51.2	52.4	-	54.8	52.5	-	9337	8983	0	712			
28	51.3	52.6	-	55.2	52.6	-	8995	9028	0	716			
29	51.4	52.7	-	55.6	52.7	-	8983	8916	0	713			
30	50.5	52.7	-	55.5	52.8	-	8566	8694	0	711			
31	50.1	52.1	-	55.5	53.1	-	8507	8663	14	707			
							Max	12235	12666	38	816		
							Mean	9838	10191	15	767		
							Min	7570	8663	0	707		
							Volume (TAF)	605	627	1	47		



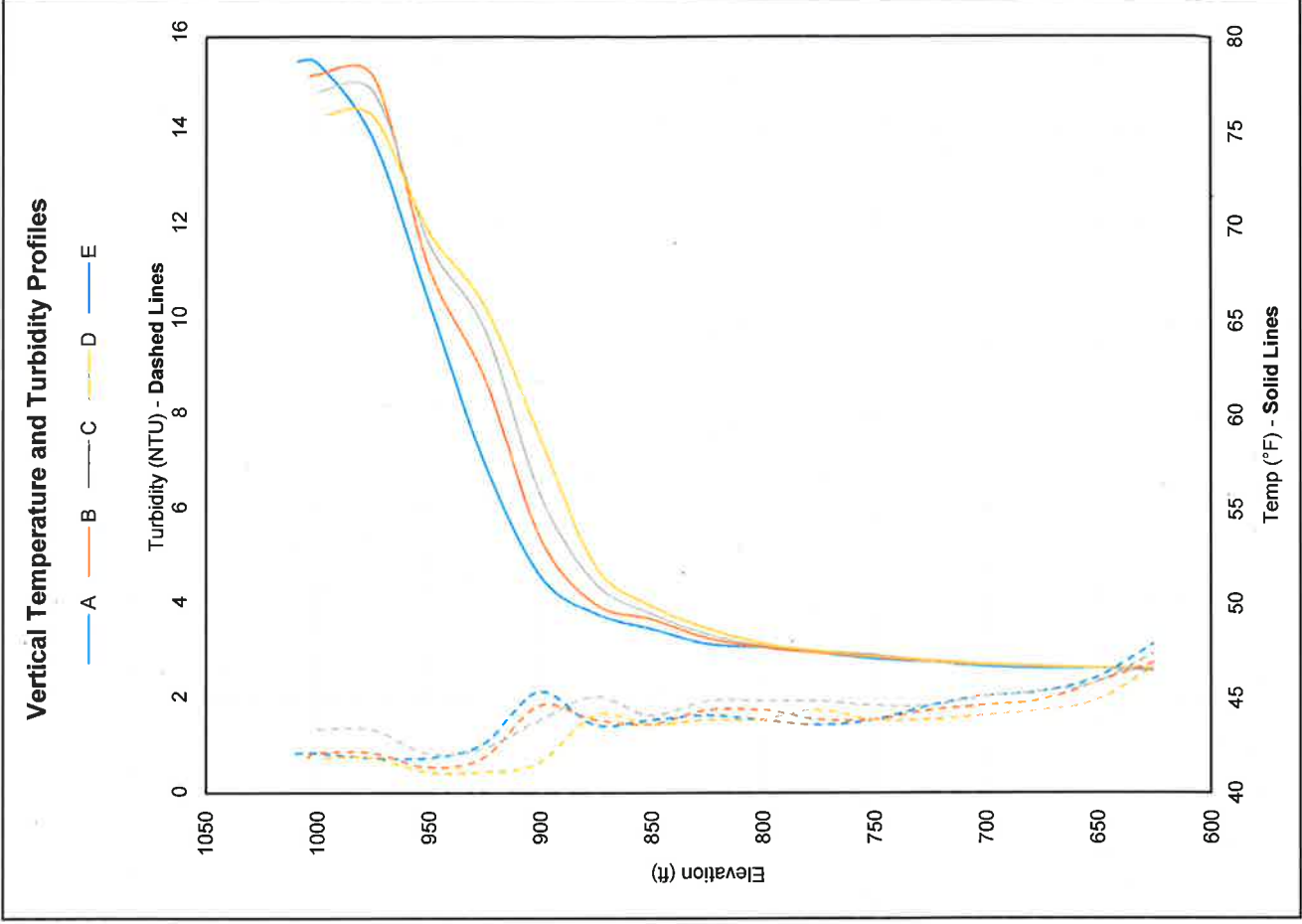
Notes

- ¹ Current temperature control point
- ² Missing data due to Carr Fire

90-5 Required Water Monitoring Data (Continued)

August 2018

Vertical Profiles Taken at Site 1 (Shasta Lake at Dam Inlets)											
Profile	A		B		C		D		E		
Day of Month	7		15		22		28				-
Lake Elev.	1008.97		1003.63		999.26		995.77				-
Parameter	Temp	Turb	Temp	Turb	Temp	Turb	Temp	Turb	Temp	Turb	
L.E.	78.7	0.8	77.9	0.7	77.1	1.3	75.9	0.7	-	-	-
1050	-	-	-	-	-	-	-	-	-	-	-
1025	-	-	-	-	-	-	-	-	-	-	-
1000	78.6	0.8	78.0	0.8	-	-	-	-	-	-	-
975	74.6	0.7	77.9	0.8	77.1	1.3	75.8	0.7	-	-	-
950	66.0	0.7	67.8	0.5	69.1	0.8	69.7	0.4	-	-	-
925	57.5	1.0	62.0	0.7	64.6	0.9	65.8	0.4	-	-	-
900	51.5	2.1	53.5	1.8	55.8	1.5	58.8	0.6	-	-	-
875	49.5	1.4	50.0	1.5	51.1	2.0	52.0	1.6	-	-	-
850	48.7	1.5	49.2	1.4	49.5	1.6	49.9	1.4	-	-	-
825	47.9	1.6	48.2	1.7	48.4	1.9	48.7	1.5	-	-	-
800	47.7	1.5	47.7	1.7	47.8	1.9	47.9	1.5	-	-	-
775	47.4	1.4	47.4	1.5	47.5	1.9	47.5	1.7	-	-	-
750	47.1	1.5	47.2	1.5	47.3	1.8	47.2	1.5	-	-	-
725	46.9	1.8	46.9	1.7	46.9	1.8	47.0	1.5	-	-	-
700	46.7	2.0	46.8	1.8	46.8	2.0	46.8	1.6	-	-	-
675	46.6	2.1	46.7	1.9	46.7	2.1	46.7	1.7	-	-	-
650	46.6	2.4	46.6	2.3	46.6	2.3	46.6	1.9	-	-	-
625	46.5	3.1	46.6	2.7	46.6	2.9	46.6	2.6	-	-	-



Monthly Manual Observations												
Parameter	Temp (°F)						Turb (NTU)					
	6	7	8	2	3	4	5	6	7	8		
Site	DLT	MSS ¹	PMN	SHD	KWK ¹	SPP ¹	RDB	DLT	MSS ¹	PMN		
Value	63.1	-	66.1	1.2	-	-	1.6	0.7	-	1.3		
Day of Month	29	-	24	16	-	-	23	29	-	24		

Monthly Manual ^{**} & Bi-Monthly Automated Observations												
Parameter	DO (mg/L)											
	2		3		5							
Site	SHD		KWK ¹		RDB							
Value	9.5	9.8 ^{**}	9.5	11.1	11.7	10.8	10.0	12.0 ^{**}	11.0			
Day of Month	6	16	26	5	15	25	1	23	31			
Time	9:00	9:30	9:00	9:00	9:00	9:00	9:00	9:00	12:15	9:00		

¹ Site not visited this month due to Carr Fire

90-5 Required Water Monitoring Details

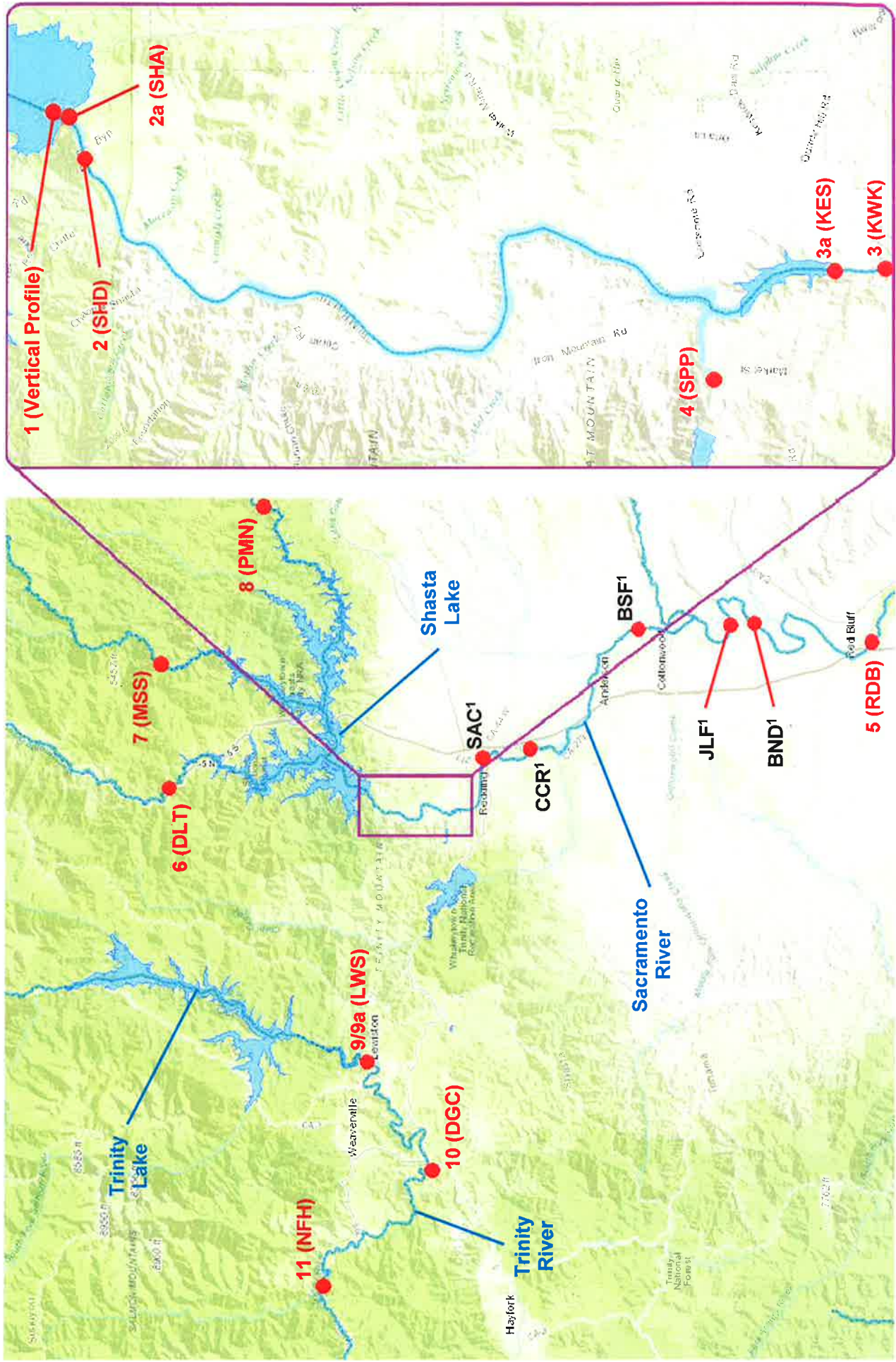
Site	CDEC ID	Description
1	-	Shasta Dam inlets or lake adjacent to the dam face. ¹
2	SHD	Shasta Dam release immediately downstream from the power plant.
2a	SHA	Shasta Dam release.
3	KWK	Sacramento River immediately downstream from Keswick Dam.
3a	KES	Keswick Dam release.
4	SPP	Spring Creek Power Plant 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