

**Stockton Deep Water Ship Channel (DWSC)  
Demonstration Dissolved Oxygen Aeration Facility  
March 2010 Monthly Report**

This report includes monthly plots for the Stockton Deep Water Ship Channel (DWSC) Demonstration Dissolved Oxygen (DO) Aeration Facility remote monitoring stations (Navigation Aid (NA) 40, 42, 43 and 48), handheld instrument data, California Data Exchange Center (CDEC) Rough and Ready Island (RRI) station data, and CDEC San Joaquin River at Garwood Bridge (SJG) station data for the month of March 2010. All reported data is provisional and subject to change.

**Summary:**

The Aeration Facility has not been operated for testing and evaluation since October 26<sup>th</sup>, 2009. The average monthly DO levels at all monitoring stations for March were above the California Regional Water Quality Control Board (RWQCB) San Joaquin River Basin Plan minimum water quality objective, for DO of 5.0 mg/L from December 1<sup>st</sup> through August 31<sup>st</sup>. The monthly average DO concentrations ranged from approximately 8.17 mg/L at NA48 to 8.45 mg/L at NA43 for March. Minimum 15-minute DO concentrations recorded for all monitoring stations were above the 5.0 mg/L minimum water quality objective (see Table1).

Data recorded in March shows no sign of noticeable instrumentation drift. The monthly average remote monitoring station DO concentrations were within -0.24 to 0.05 mg/L of the RRI station data. There is no substantial difference between the DO measurements recorded with the handheld instrument and the remote stations. The monthly average handheld measured DO (at 12 foot depth) and the remote monitoring stations DO values were within -0.68 to 0.02 mg/L of each other.

The average monthly water temperature increased 4.2 degrees Fahrenheit (°F) from 54.4°F to 58.6°F compared to February.

The March monthly average SJG flow was 952 cubic feet per second (cfs). The monthly average flow increased 283 cfs from the February monthly average flow of 669 cfs.

Figures 1, 2, 3, and 4, and Tables 1 and 2 below present a summary of monthly data, and illustrates the discussion topics above.

Figure 1

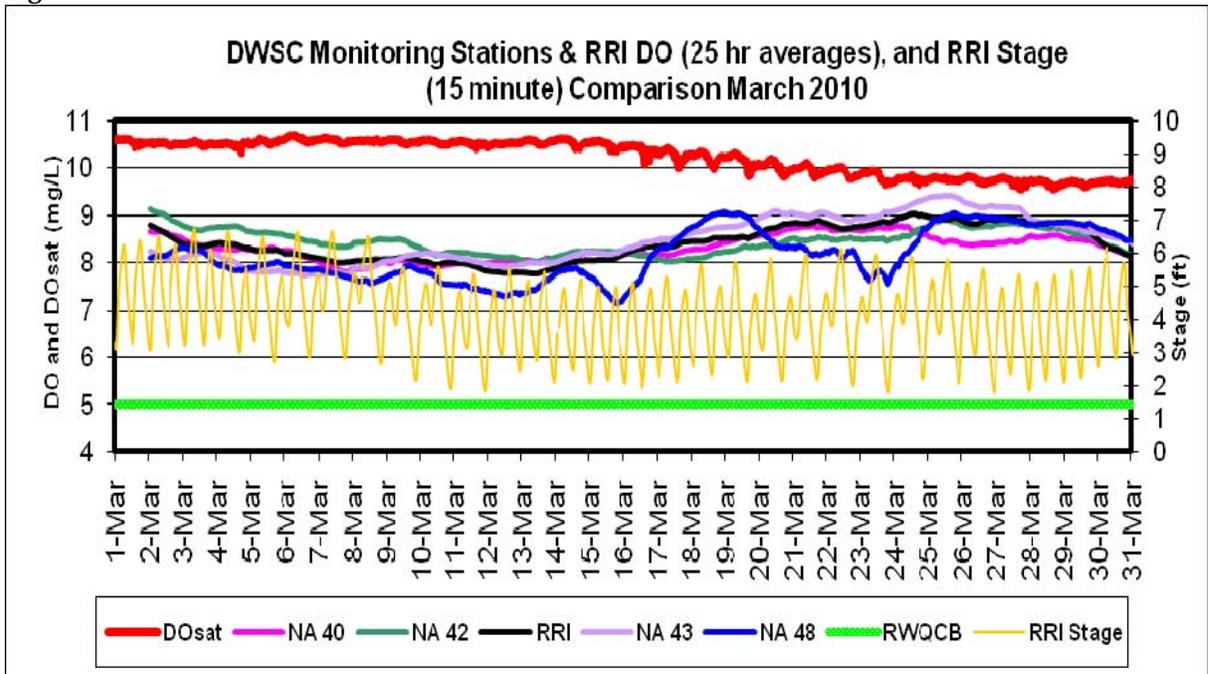


Figure 2

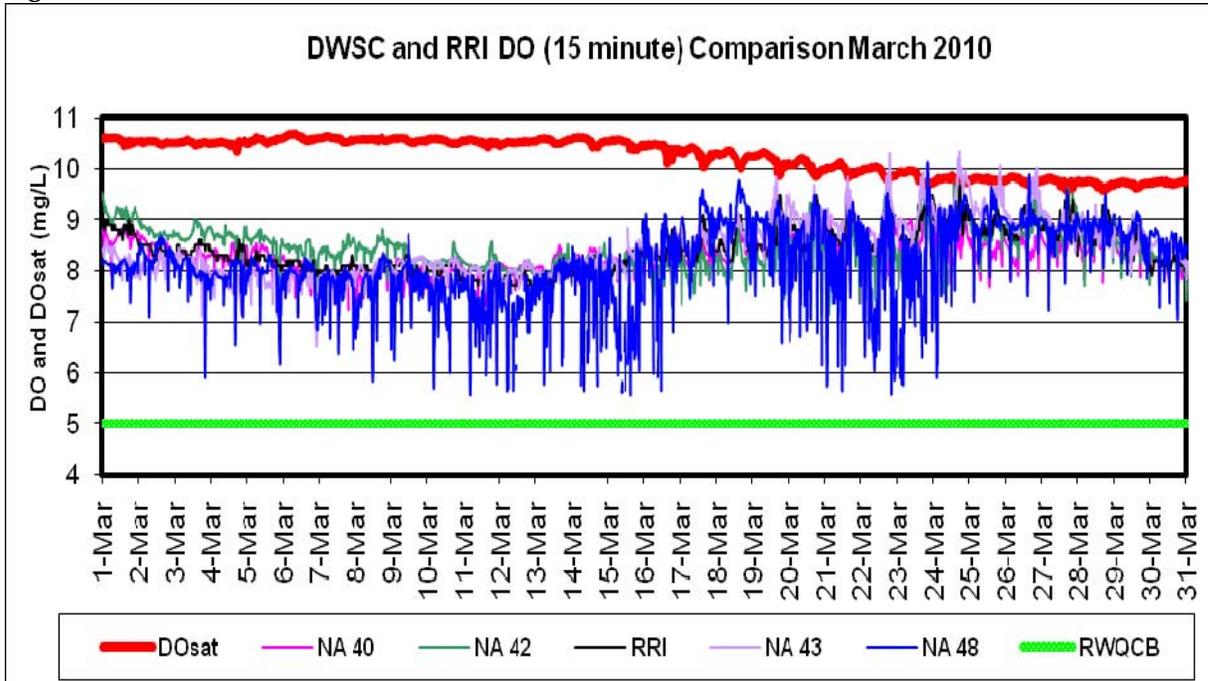


Figure 3

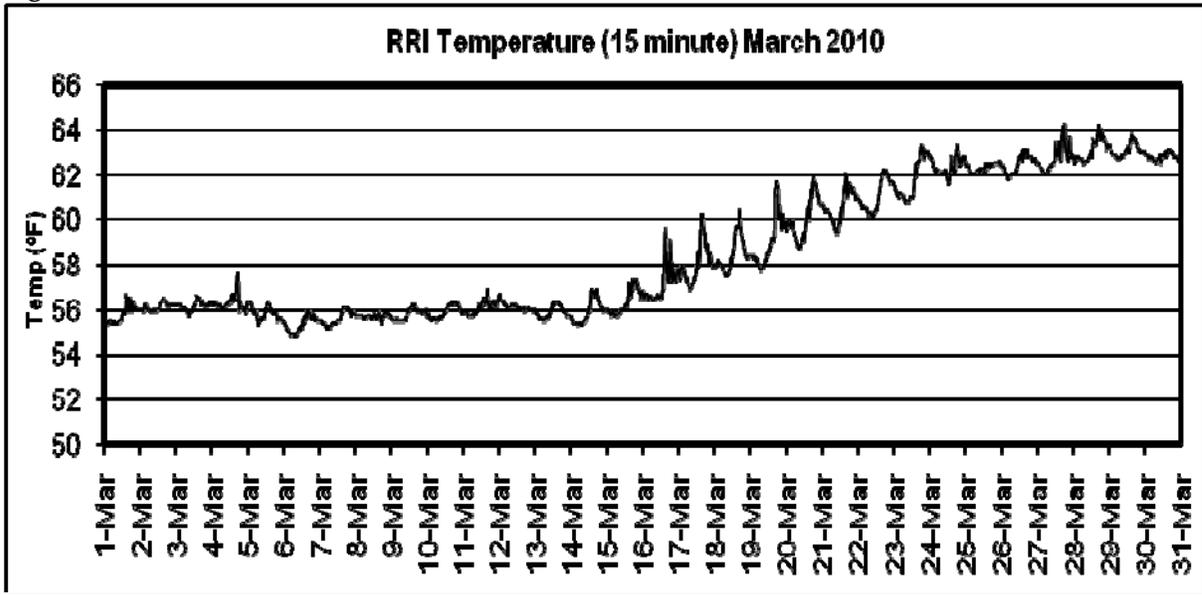


Figure 4

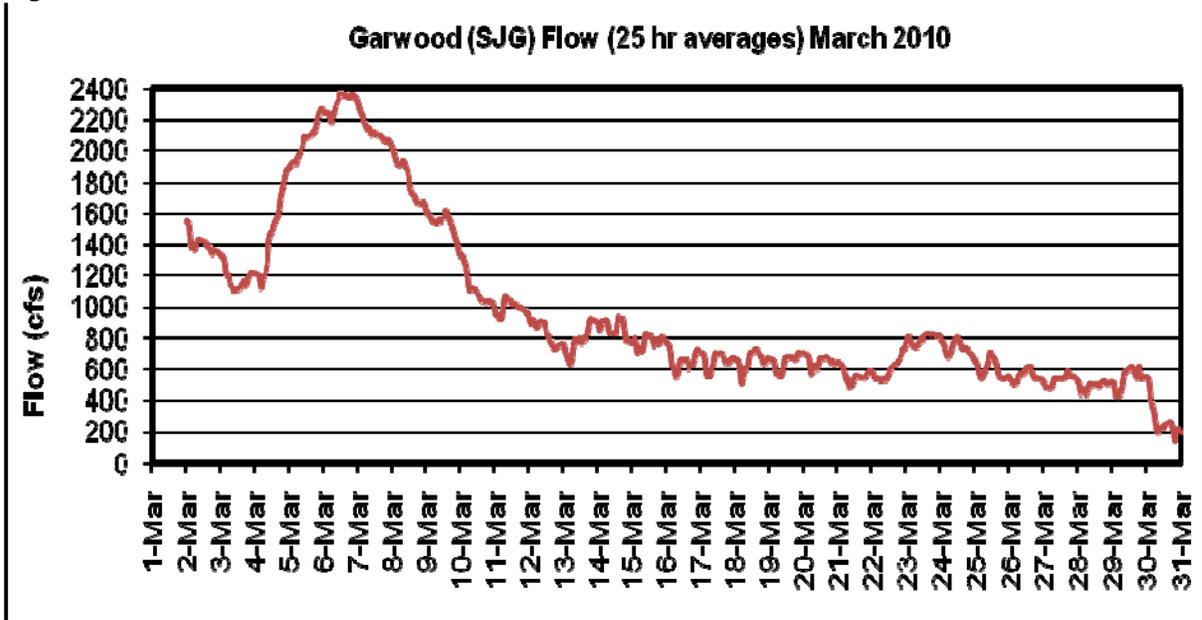


Table 1

YSI Remote Stations and RRI DO <sup>1</sup> (mg/L) & Temp <sup>1</sup> (°F)						
Mar-2010						
	RRI <sup>2</sup> DO (mg/L)	NA40 DO (mg/L)	NA42 DO (mg/L)	NA43 DO (mg/L)	NA48 DO (mg/L)	RRI Temp (°F)
Monthly DO & Temp Averages	8.41	8.30	8.43	8.45	8.17	58.6
NA Stations and RRI Monthly Average Difference		-0.11	0.02	0.05	-0.24	
Monthly Min DO	7.60	7.14	7.15	6.52	5.57	
Monthly Max DO	9.70	9.42	9.71	10.34	10.09	
Monthly DO STDEV	0.42	0.33	0.38	0.54	0.73	
Monthly DO Median	8.30	8.28	8.39	8.35	8.18	

<sup>1</sup>Z-Score outlier test was applied to remove anomalous recorded values.

<sup>2</sup>RRI DO data is from 3 foot depth. NA DO data is from 12 foot depth except NA48. NA48 DO data is from 9 foot depth starting March 24<sup>th</sup>, 2010.

Table 2

Handheld DO Measurements @ 12 ft Depth and YSI DO Measurements Comparison					
Mar-2010					
		NA40 DO (mg/L)	NA42 DO (mg/L)	NA43 DO (mg/L)	NA48 DO (mg/L)
Handheld Monthly <sup>3</sup> Averages		8.41	8.41	8.75	8.85
NA Stations and Handheld Monthly Average Difference		-0.11	0.02	-0.29	-0.68

<sup>3</sup>Handheld monthly averages are based on the average weekly readings for the month

**Additional Aeration Facility Associated Information:**

**DWSC Aeration Facility Operation**

The Aeration Facility was briefly operated without oxygen for a routine monthly system inspection on March 1<sup>st</sup> and 17<sup>th</sup>.

**Head of Old River Barrier Status**

N/A

**Port of Stockton Dredging Activity**

None

**San Joaquin River Flow Changes**

The average daily 25-hr flow at SJG increased from approximately 1200 cfs on March 4<sup>th</sup> to approximately 2400 cfs on March 7<sup>th</sup> due to increased precipitation. The average daily 25-hr flow returned to 1200 cfs by March 10<sup>th</sup> and continued to decrease the remainder of the month to less than 200 cfs.

**Port of Stockton Dock 19/20 Ship Activity**

Days	Arrival	Departure
3	03/25/10	03/27/10

Please provide your feedback concerning our observations as well as your independent observations.