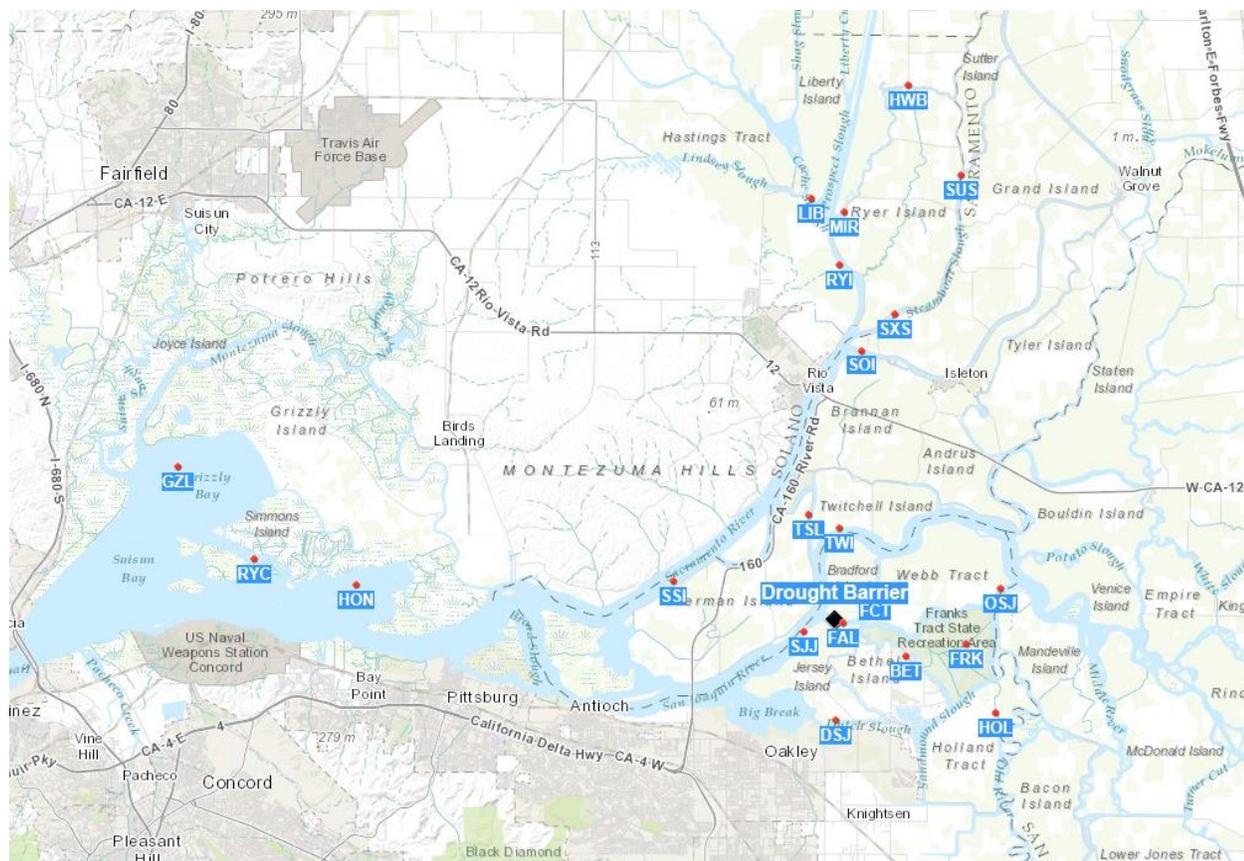


# Emergency Drought Barrier Water Quality Monitoring Summary<sup>1</sup>

## Weekly Update for August 31 through September 7, 2015

Below is a summary of water quality, flow, and velocity data since the hydraulic closure of the Emergency Drought Barrier (EDB) at West False River on May 28, 2015, with emphasis on trends observed during the past week. The EDB rock placement was completed on June 12, 2015. For additional water quality monitoring data, access the network of CDEC stations at the following link:

<http://dwr.maps.arcgis.com/apps/Viewer/index.html?appid=3be5e0bbe0994b76883b0567f4f6b9e3>



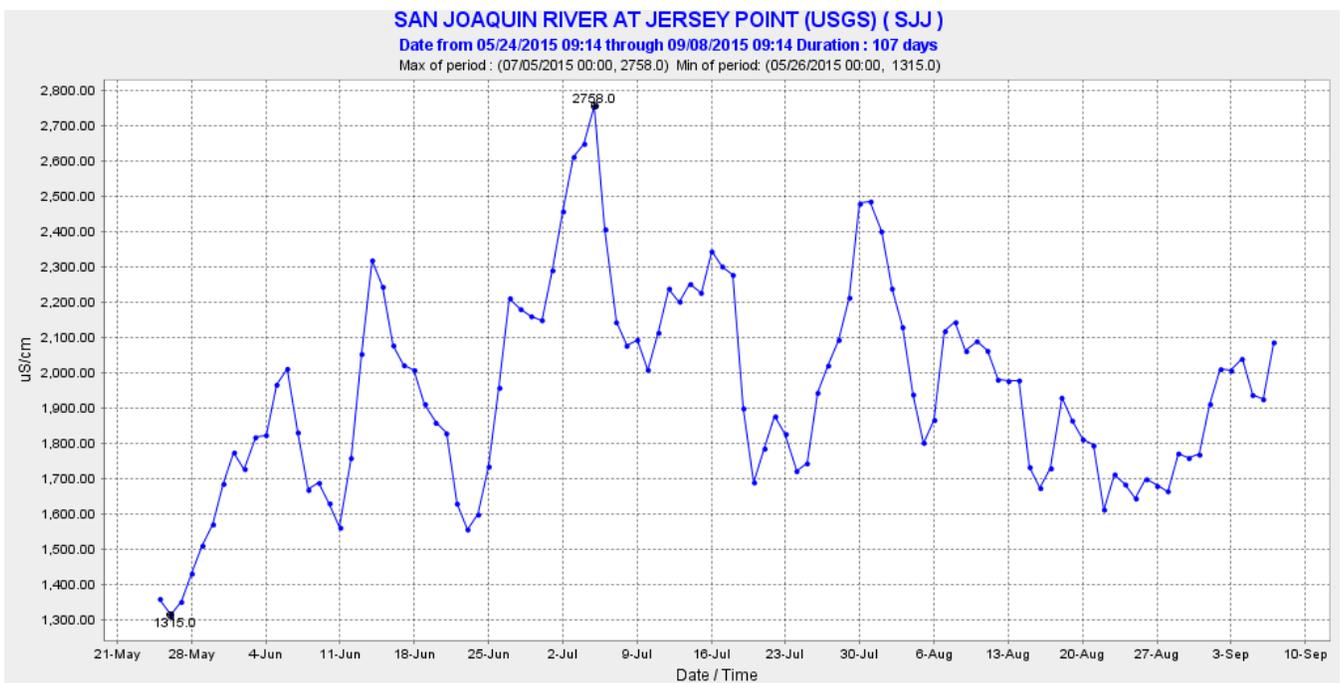
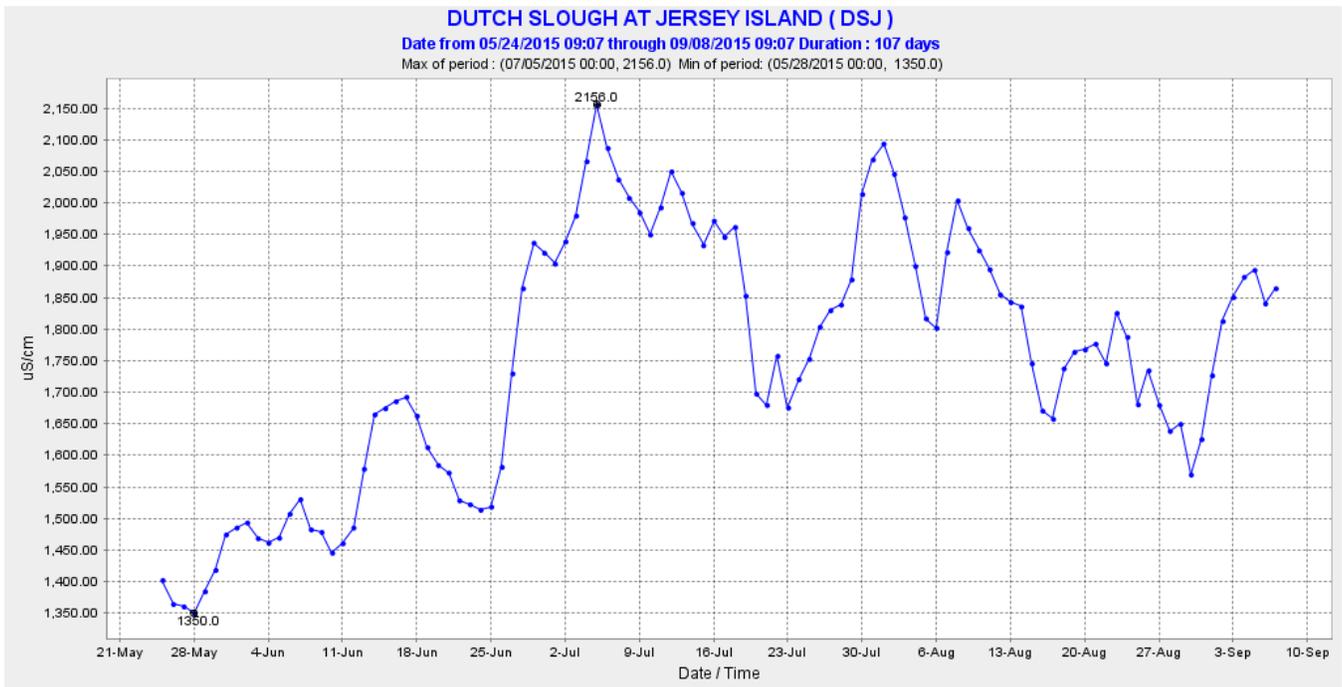
### Specific Conductivity

During the past 8 days, average daily specific conductivity (EC) levels increased at San Joaquin River at Jersey Point (SJJ), Dutch Slough at Jersey Island (DSL), and at Fisherman's Cut (FCT), but decreased at the two stations behind the barrier-- False River (FAL) and Holland Cut (HOL). The increase was most dramatic for SJJ, which increased about 300  $\mu\text{S}/\text{cm}$  during the period. EC magnitudes are within the range experienced over the past 3 months since the barrier was closed at DSL, FAL, SJJ, and FCT. However, at HOL average daily EC continued to

<sup>1</sup> All data in this report and subsequent weekly reports posted to California Data Exchange Network (CDEC) are preliminary and have not yet been validated.

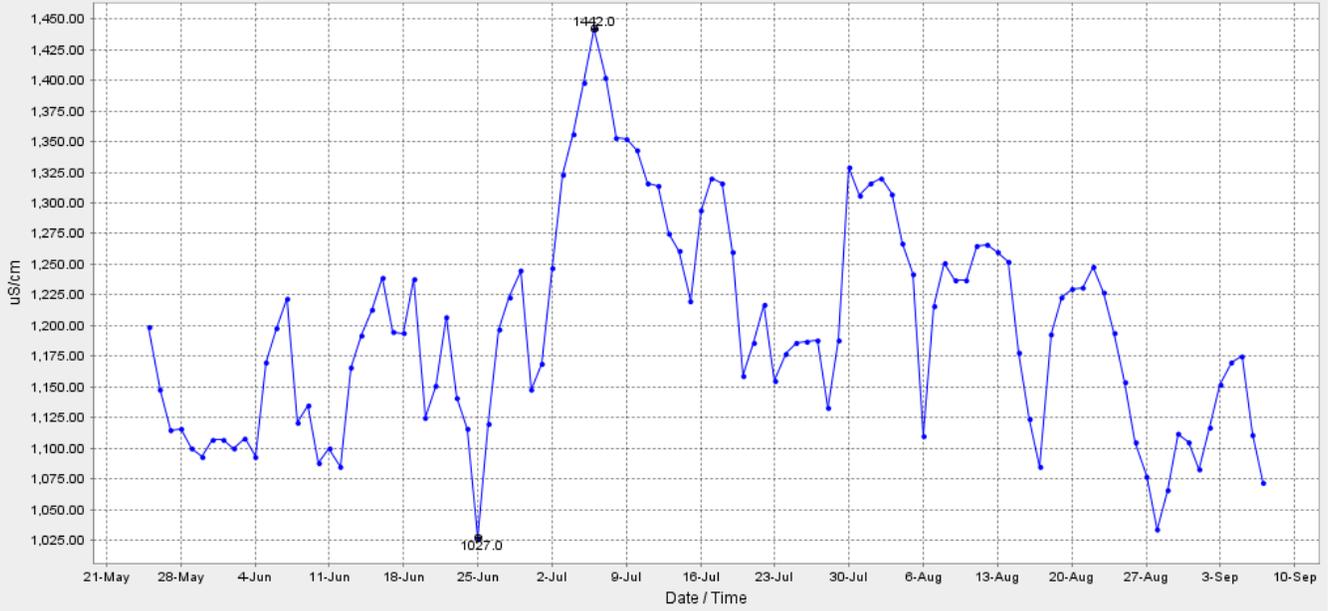
trend downward, and are now at the lowest level since the barrier was installed. Average daily EC at HOL was 662  $\mu\text{S}/\text{cm}$  at the end of the period.

Daily average EC values for five stations in the vicinity of the EDB:



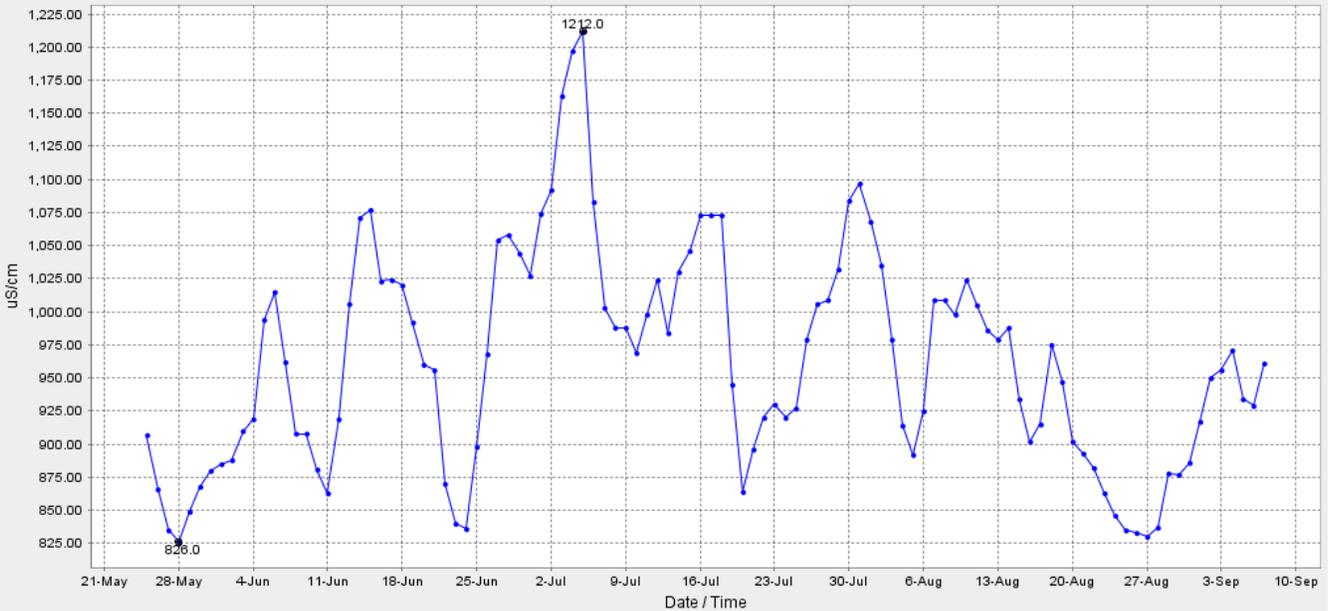
### FALSE RIVER ( FAL )

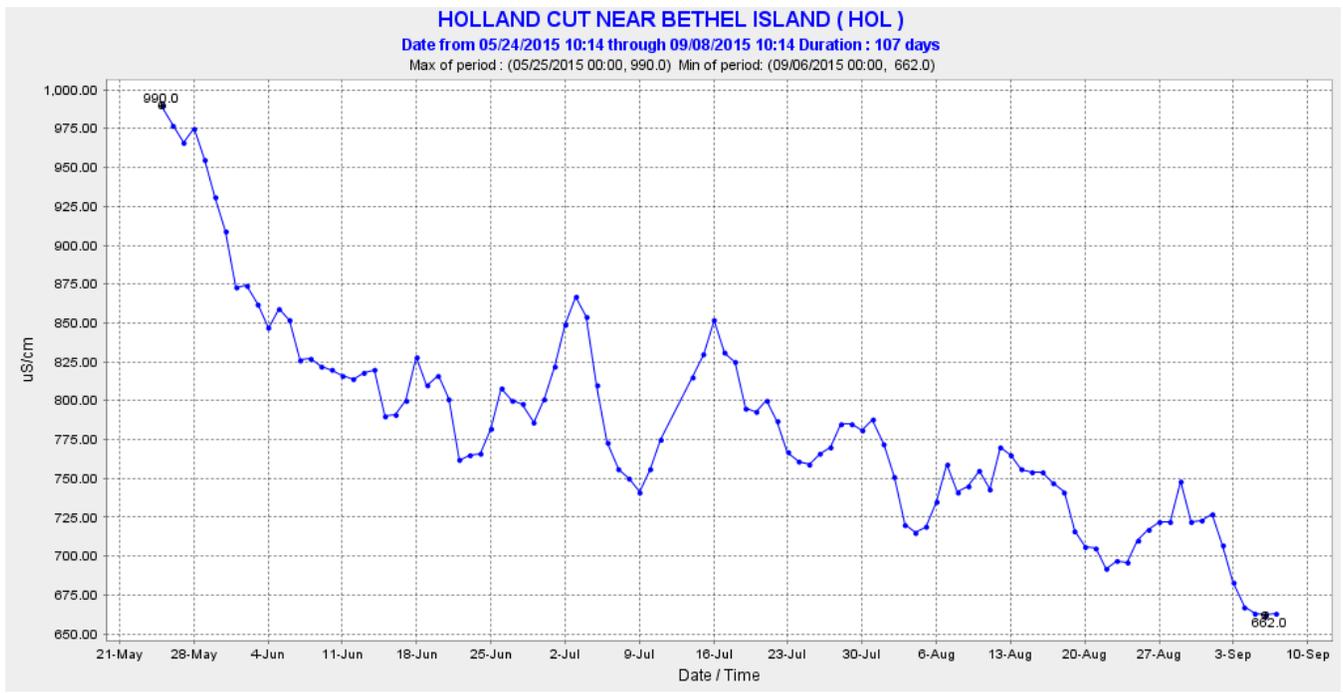
Date from 05/24/2015 10:04 through 09/08/2015 10:04 Duration : 107 days  
Max of period : (07/06/2015 00:00, 1442.0) Min of period : (06/25/2015 00:00, 1027.0)



### FISHERMANS CUT ( FCT )

Date from 05/24/2015 10:13 through 09/08/2015 10:13 Duration : 107 days  
Max of period : (07/05/2015 00:00, 1212.0) Min of period : (05/28/2015 00:00, 826.0)

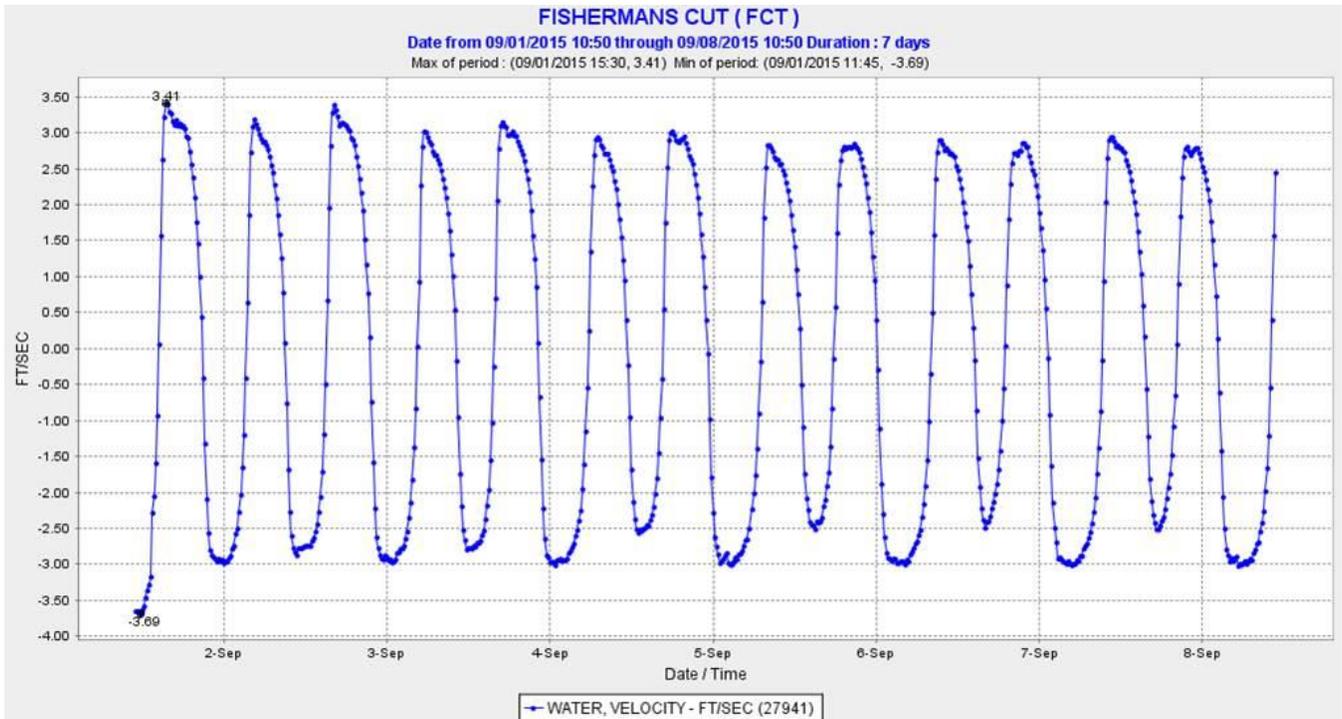




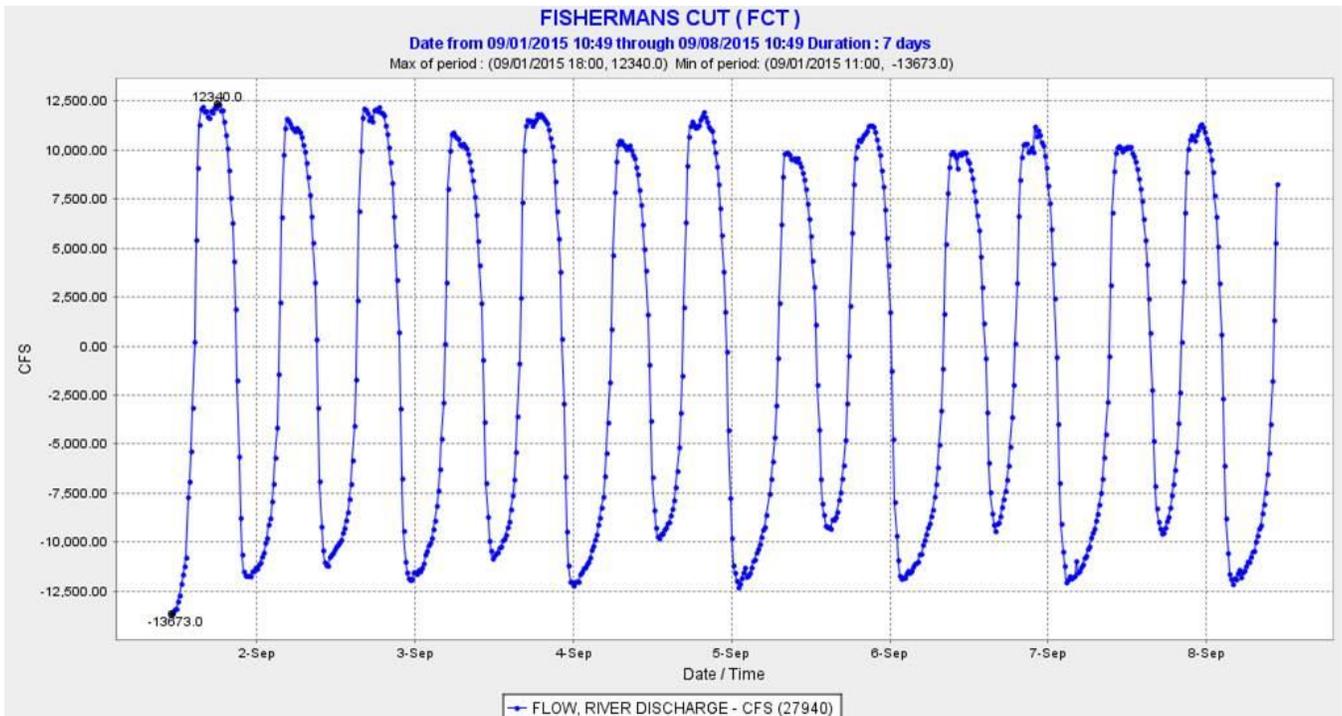
**Flow and Velocity**

Fisherman’s Cut experienced a neap tide during the week of September 1 through September 7. Peak water velocities at the FCT flow station varied between +3.41 ft/s (9/1/15 at 15:30) and – 3.69 ft/s (9/1/15 at 11:45). While the barrier is in place, positive water velocities measured at this station refer to water flowing into Fisherman’s Cut southward from the San Joaquin River. Thus, last week’s peak water velocity of -3.69 ft/s occurred during an ebb tide. Flows appear to have varied between +12,340 cfs (9/1/15 at 18:00) and –13,673 cfs (9/1/15 at 11:00) indicating a higher peak flow during an ebb tide. A new vertical beam filtering algorithm has been deployed as of August 31 and appears to be working quite well. A human-error was found on September 1 related to an incorrectly entered rating coefficient which affected velocity and flow data seen in the plots below until 12:25 pm when the error was corrected. This certainly affected the peak ebb tide velocity (-3.69 ft/s) and peak ebb flow (-13,673 cfs) discussed above that occurred on 9/1/2015 prior to 12:25 pm. These data will be validated and reported to the Water Data Library and most certainly will be lower than what is shown in the plots below. FCT velocity and flow data since that time is very good with the exception of an occasional vertical beam drop out. These drop outs are a function of the new vertical beam filtering algorithm being less aggressive in correcting data such that less quality control work will now be necessary to adjust over-corrected data. Below are the velocity and flow plots for the last week of data.

15-Minute velocities for FCT in the vicinity of the emergency drought barrier:



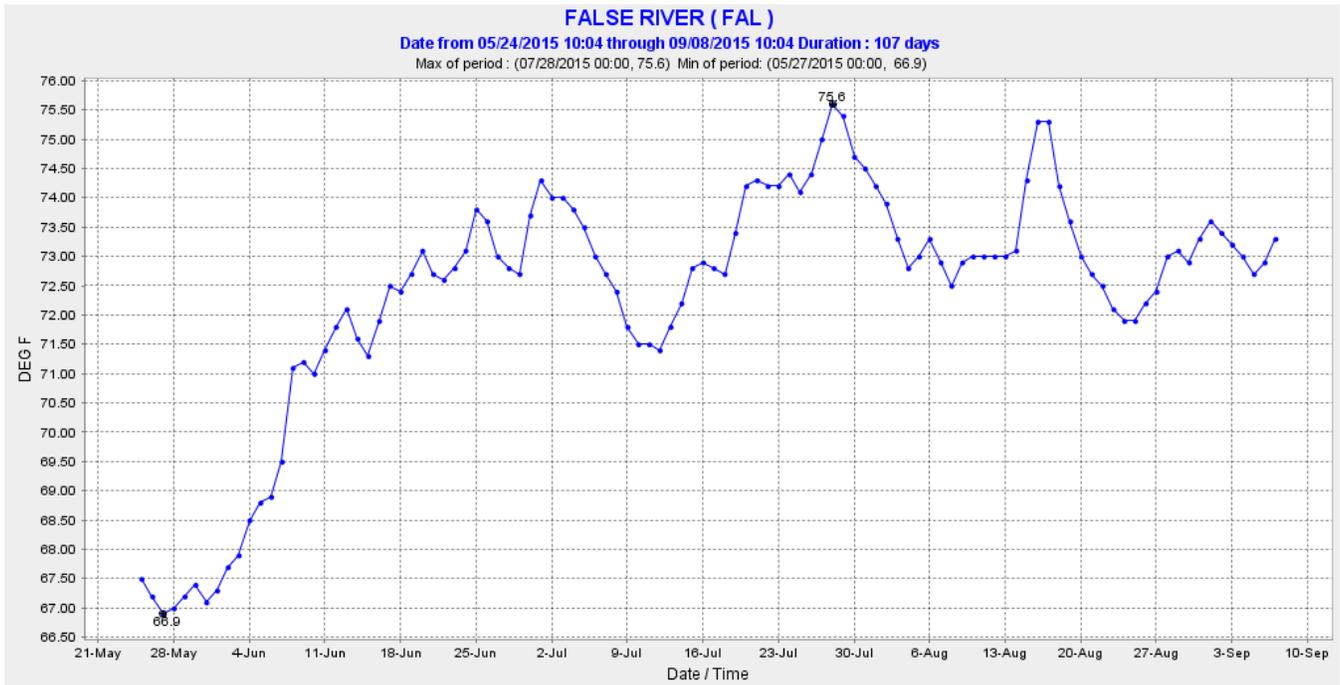
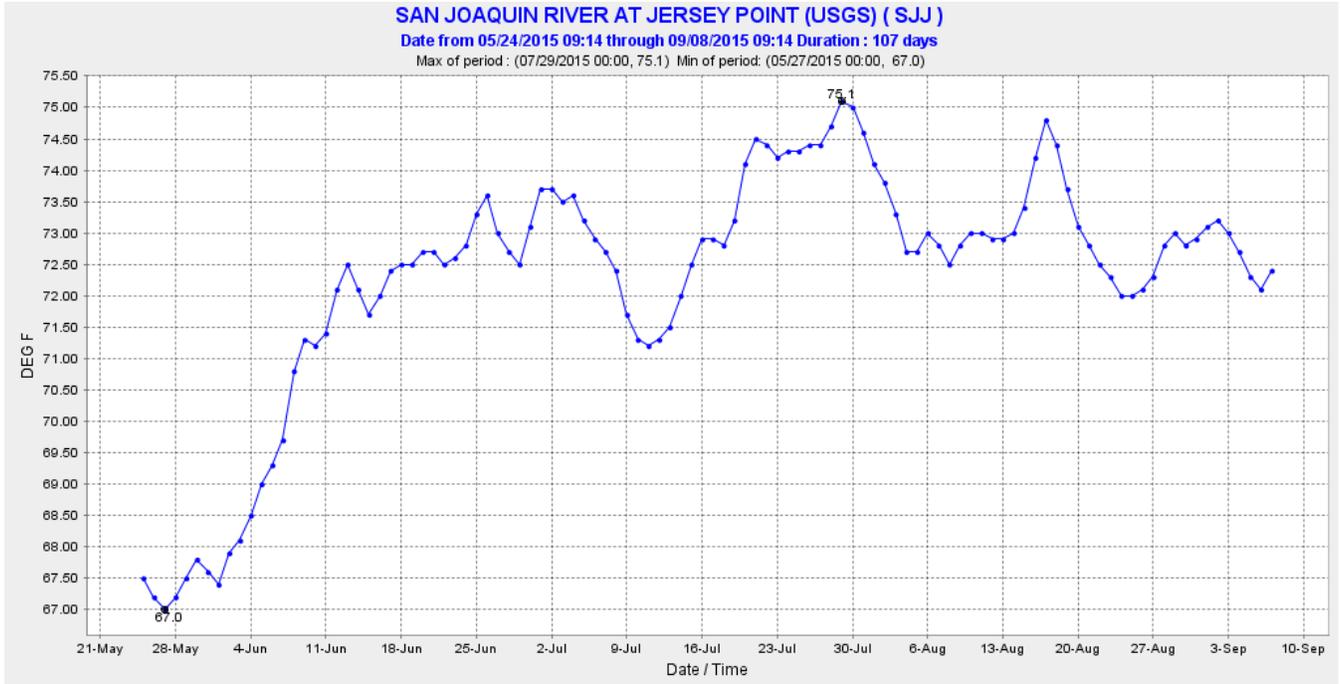
15-Minute flows for FCT in the vicinity of the emergency drought barrier:



## Water Temperatures

During the 8 day period, water temperature at SJJ fell about 0.5°F, but rose about 0.5 °F at FAL, all of which occurred on September 7.

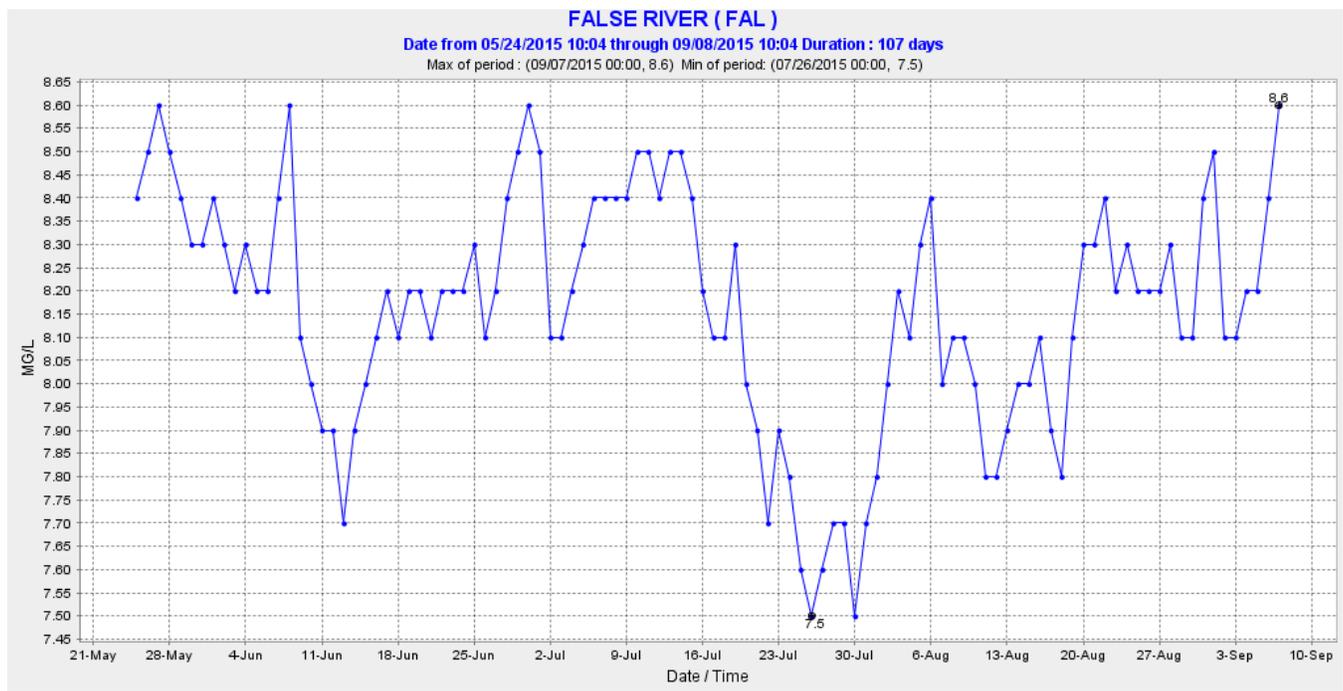
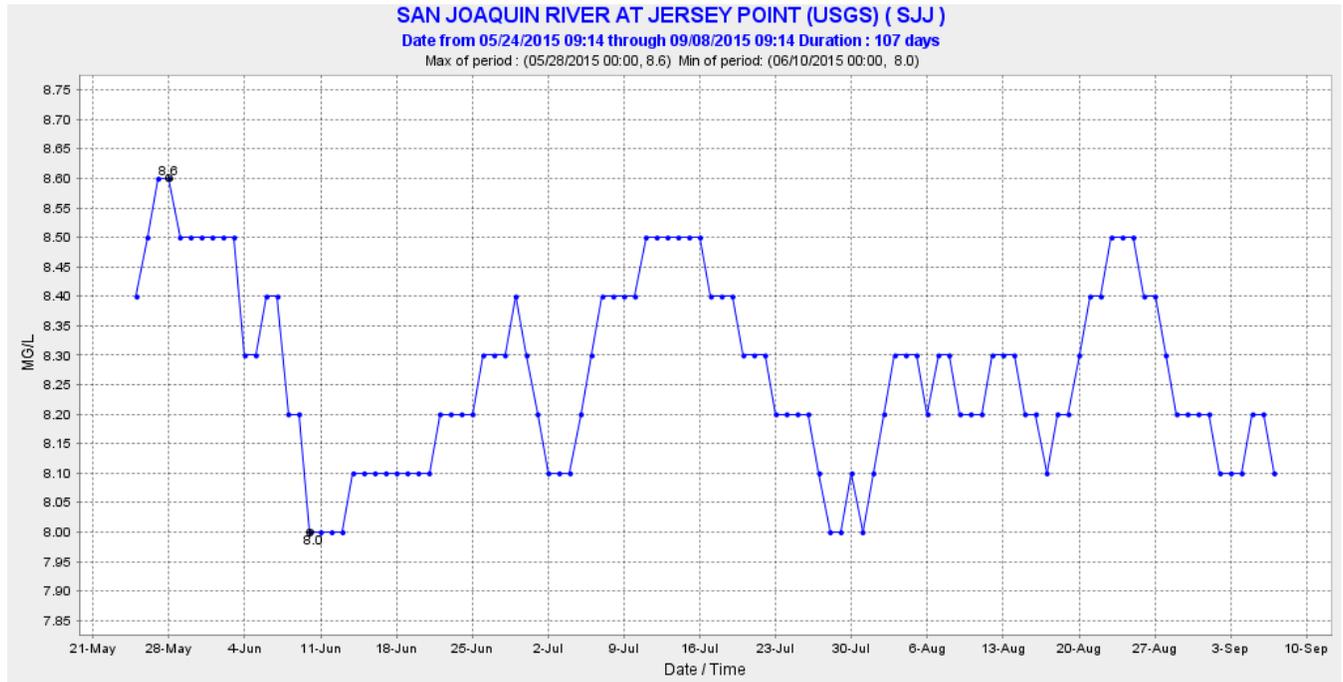
Daily average temperature for stations immediately upstream and downstream of the EDB:



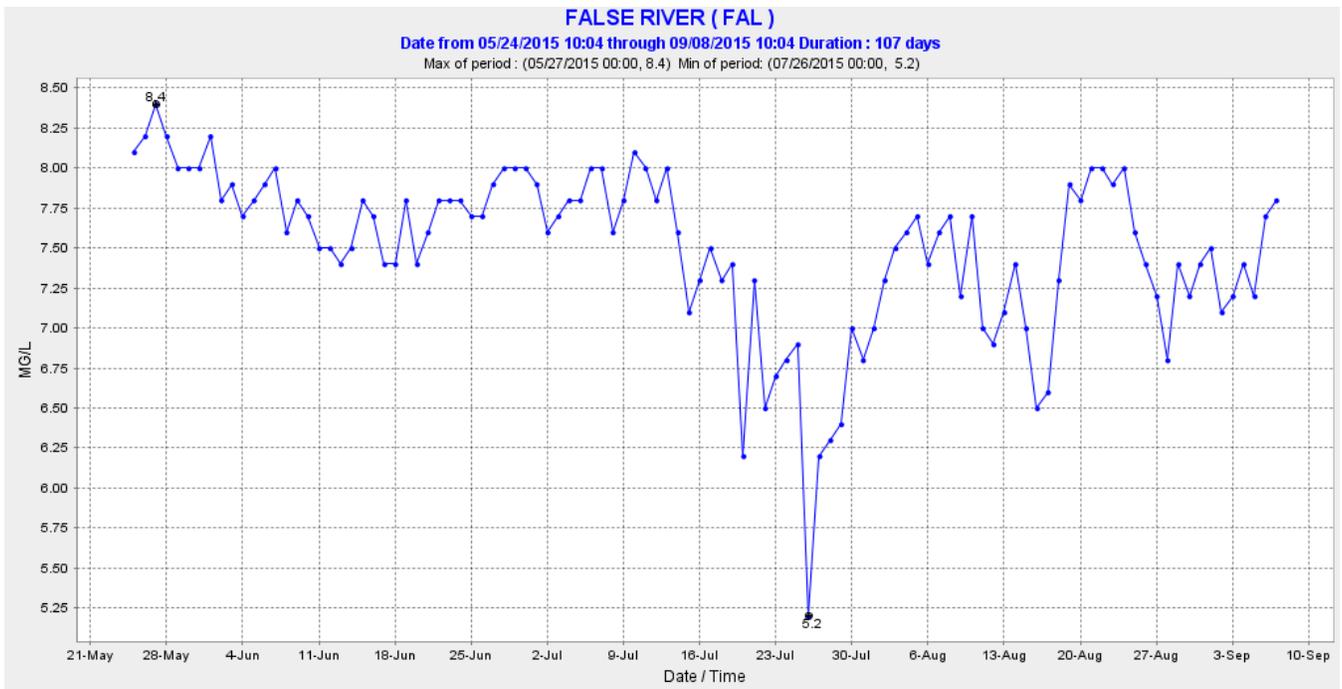
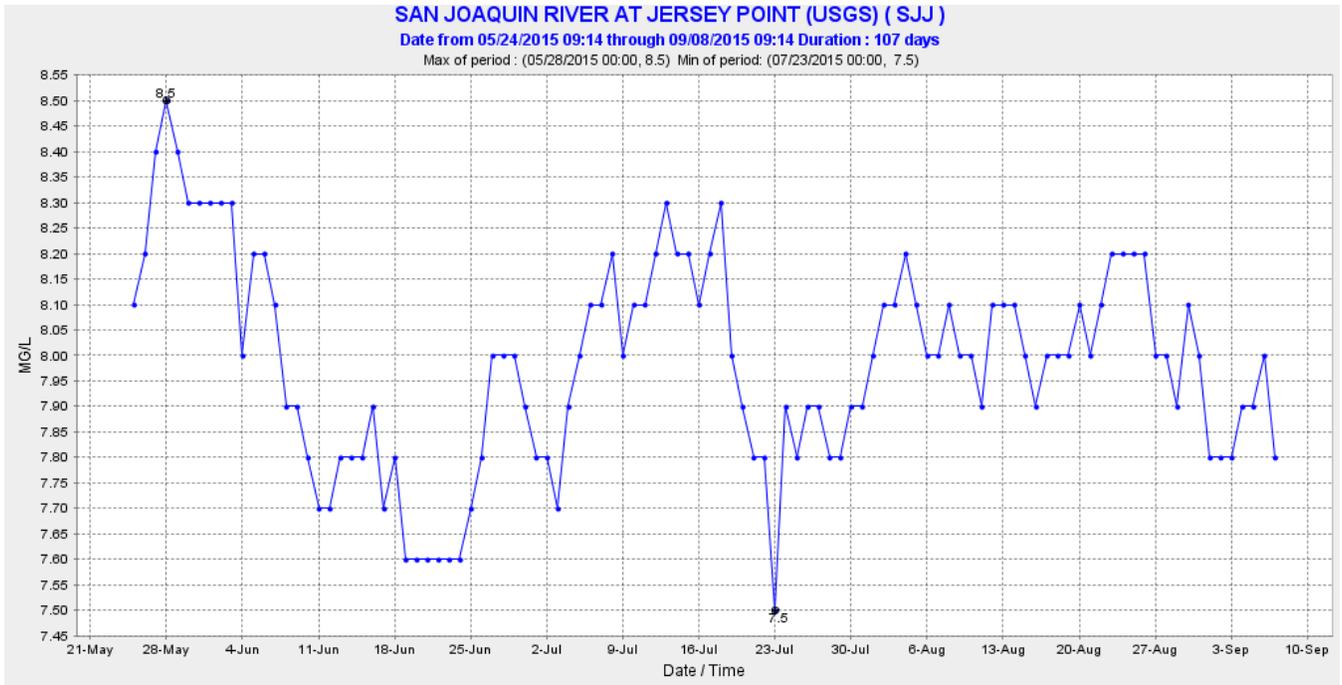
## Dissolved Oxygen

During the past 8 days, average daily dissolved oxygen (DO) remained steady at SJJ, and increased by about 0.4 mg/L at FAL. Average daily DO remains above 8.0 mg/L at both stations. Minimum DO levels decreased slightly at JSS but increased slightly at FAL. At both stations DO remained well above the 5.0 mg/l water quality criterion for aquatic life, as they have remained since the barrier was installed.

Daily average DO for stations immediately upstream and downstream of the EDB:



Daily minimum DO for stations immediately upstream and downstream of the EDB:



Summary of EC data ( $\mu\text{S}/\text{cm}$ ) by station for the period of August 31 through September 7, 2015. **Note: Not all data for all stations has transmitted through CDEC for this period. For RYC, only data from after 9/1/15 is available. Thus, RYC summary statistics are not shown because the limited data may not adequately represent the period. Data are missing for the first half of 8/31/15, and from most of 9/7/15, for DSJ and SUS, respectively.**

Station	Mean	Median	Minimum	Maximum	Area
Grizzly Bay (GZL)	21612	21388	19651	23951	Grizzly Bay to Lower Sac River
Sacramento River near Sherman Island (SSI)	5245	5021	1287	10742	
Dutch Slough @ Jersey Island (DSJ)	1827	1785	1520	2520	Dutch Slough
San Joaquin River @ Jersey Point (SJJ)	1952	1730	1030	4280	Vicinity of EDB
Three Mile Slough at San Joaquin River (TSL)	1684	1540	948	3560	
San Joaquin River @ Twitchell Island (TWI)	1290	1286	681	2342	
Fisherman's Cut (FCT)	934	869	628	1527	
False River (FAL)	1123	1100	1040	1310	
Bethel Island near Piper Slough (BET)	934	936	897	966	Frank's Tract
Franks Tract Mid (FRK)	757	753	742	777	
Old River near Frank's Tract near Terminous (OSJ)	588	575	525	771	
Holland Cut near Bethel Island (HOL)	687	678	590	867	
Sacramento River downstream of Isleton (SOI)	317	281	199	879	North Delta/Cache Slough
Steamboat Slough near Sacramento River (SXS)	231	216	202	349	
Cache Slough @ Ryer Island (RYI)	224	224	202	262	
Liberty Island @ Approx Cntr S End (LIB)	219	220	202	249	
Miner Slough (MIR)	212	210	197	243	
Steamboat Slough downstream of Sutter Slough (SUS)	207	207	197	219	
Miner Slough @ HWY 84 Bridge (HWB)	203	204	191	217	

Mean specific conductance ( $\mu\text{S}/\text{cm}$ ) for the period of August 31 through September 7, 2015.

