



Water Resources ♦ Flood Control ♦ Water Rights

GILBERT COSIO, JR., P.E.
MARC VAN CAMP, P.E.
WALTER BOUREZ, III, P.E.
RIC REINHARDT, P.E.
DON TRIEU, P.E.
DARREN CORDOVA, P.E.
NATHAN HERSHEY, P.E., P.L.S.
LEE G. BERGFELD, P.E.
BEN TUSTISON, P.E.
THOMAS ENGLER, P.E., CFM
MICHAEL MONCRIEF, P.E.

ANGUS NORMAN MURRAY
1913-1985

CONSULTANTS:
JOSEPH I. BURNS, P.E.
DONALD E. KIENLEN, P.E.

MEMORANDUM

DATE: July 9, 2021
TO: Melinda Terry, Manager - North Delta Water Agency
FROM: Gary Kienlen, P.E., MBK Engineers
SUBJECT: Notice of Contract Criteria Exceedances and DWR Compliance Actions

The purpose of this memorandum is to inform the North Delta Water Agency (Agency) and water users within the Agency that salinity levels at the Three Mile Slough and Rio Vista monitoring locations are currently exceeding the criteria established in the Agency's 1981 Contract¹ (Contract) with the California Department of Water Resources (DWR). The following summarizes the actions that DWR is taking to improve water quality conditions and regain compliance. Information relative to current water quality conditions, including a map of monitoring locations within the Agency, is attached to this memorandum.

Water quality data available from the California Data Exchange Center (CDEC) shows the salinity, as measured by Electrical Conductivity (EC), at the Contract monitoring locations in the Sacramento River at Three Mile Slough and Rio Vista has increased significantly over the past few weeks. On June 28, 2021, the 14-day Mean EC at the Three Mile Slough monitoring location reached 2.82mS/cm, exceeding the current Contract Criteria of 2.77mS/cm. On the same day, the 14-day Mean EC at Rio Vista rose to 0.89mS/cm, exceeding the Contract Criteria of 0.87mS/cm at this location. Water quality at the other five monitoring locations specified in the Contract have not shown similar increases, and are currently within the Contract Criteria.

As you are aware, MBK Engineers (MBK) has held regular, weekly, calls with State Water Project (SWP) Operations Control Office staff since mid-May to discuss water quality conditions and SWP operations. During the June 9, 2021, call MBK identified that the 14-day Mean EC at Three Mile Slough was rising, and that the mean daily and real time levels were much higher and were a cause for concern. At that time, SWP staff identified that the Projects, the SWP, and the

¹ Contract Between the State of California Department of Water Resources and North Delta Water Agency for the Assurance of a Dependable Water Supply of Suitable Quality.

Federal Central Valley Project (CVP)², were concerned with meeting the State Water Resources Control Board's (SWRCB) Decision 1641 (D-1641) Delta Outflow requirement under the Temporary Urgency Change Petition (TUCP), approved by the State SWRCB on June 1, 2021. Therefore, Project exports were being reduced and releases from Oroville, and Folsom Reservoirs were being increased. In addition, SWP staff indicated that Reclamation closed the Cross Channel Gates on June 8, 2021, to maintain water quality in the Sacramento River. It was also likely that additional releases from Shasta could be made later in June.

Additional discussions with SWP staff occurred on June 15, 2021, and June 23, 2021. During the discussion on June 15th, SWP staff identified that in anticipation of higher spring tides, Project releases from Oroville and Shasta had been increased. However, total exports would remain the same – an approximate total of 850 cfs for both Projects. SWP staff also identified that the Cross Channel Gates were going to be opened on June 16, 2021, and would remain open pending an evaluation of future conditions. On June 23, 2021, we identified that salinity in the Sacramento River at both Three Mile Slough and Rio Vista was continuing to rise, but remained within the Contract Criteria. SWP staff informed MBK that Delta Outflow was in compliance with the requirements of the TUCP; and that the Projects intended to maintain releases from Oroville, Shasta, and Folsom reservoirs, and would keep Project exports at current levels. The Cross Channel Gates would remain open unless they needed to be closed for water quality purposes on the Sacramento River.

On Monday June 28, 2021, MBK informed Ian Uecker, Chief of the Delta Compliance and Modeling Section of the SWP, that based on a review of the most recent data, exceedance of the Contract Criteria at Three Mile Slough and Rio Vista, as well as the D-1614 Standard at Three Mile Slough under the TUCP was imminent. Mr. Uecker acknowledged the condition and informed MBK that the Projects had taken action on Friday, June 25, 2021, to increase releases from Oroville and Shasta, and that Reclamation intended to close the Cross Channel Gates either that afternoon or the following morning.

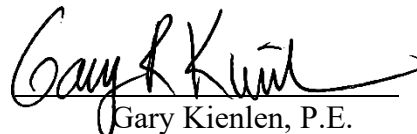
During our weekly call on June 29, 2021, MBK informed Mr. Uecker and his staff that as of June 28, 2021, the 14-day Mean EC Three Mile Slough and Rio Vista was in exceedance of the Contract Criteria, as was the D-1641 Standard at Three Mile Slough under the TUCP. SWP staff recognized and agreed that the Criteria and Standard for the Sacramento River were not being met. SWP informed us that releases from Shasta had been increased from 8,000 cfs to 8,500 cfs on Sunday June 27, 2021, and releases from Oroville were increased from 2,750 cfs to 3,000 cfs on Monday June 28, 2021. Cross Channel Gates were closed the morning of June 29, 2021, with the hope of improving conditions in the Sacramento River.

During our July 6, 2021, teleconference it was recognized that the Contract Criteria was still being exceeded, as was the D-1641 Standard at Three Mile Slough. Furthermore, SWP staff identified that the D-1641 Standard for the San Joaquin River at Jersey Point was also being exceeded. As a result, Reclamation opened the Cross Channel Gates on Friday July 2, 2021. The Channel Gates will remain open until further notice in an attempt to balance water quality on both sides of the Delta. In addition, Reclamation increased releases at Shasta from 8,500 cfs to

² Operated by the U.S. Bureau of Reclamation (Reclamation).

9,250 cfs on Sunday July 4, 2021. Releases from Oroville and Folsom are expected to remain at their current levels; however, Folsom releases may be decreased by up to 500 cfs once the water from Shasta reaches the Delta around July 10th. Mr. Uecker and his staff stated that the Projects are concerned about the effects of high spring tides, which are expected around the end of July. Mr. Uecker also identified that, in general, the tides have been averaging approximately 0.5 ft higher than the astronomical forecasts predicted, which has made Project operations more difficult this year.

Based on observed water quality conditions and discussions with SWP staff, there is concern that salinity in the Sacramento River will likely continue to exceed the Contract Criteria at Rio Vista for next few days. The mean-daily EC Three Mile Slough is currently at or above the Contract Criteria value; therefore, the criteria is likely to be exceeded at this location for a couple of weeks unless conditions change. We are hopeful water quality will improve once the effects of recent changes in Project operations are realized in the Delta. The level of effort and the timing of any improvements is currently unknown. Therefore, MBK will continue to closely monitor conditions, and provide the Agency with updates on water quality and compliance with the Contract Criteria as conditions change. All water users are advised to monitor salinity data on the CDEC website: <http://cdec.water.ca.gov/queryDaily.html>, for daily data or at: <http://cdec.water.ca.gov/queryQuick.html>, for real-time/hourly data. A map and table (key to the map) identifying the Station IDs and locations of many of the monitoring locations within the Agency are attached.



Gary Kienlen, P.E.

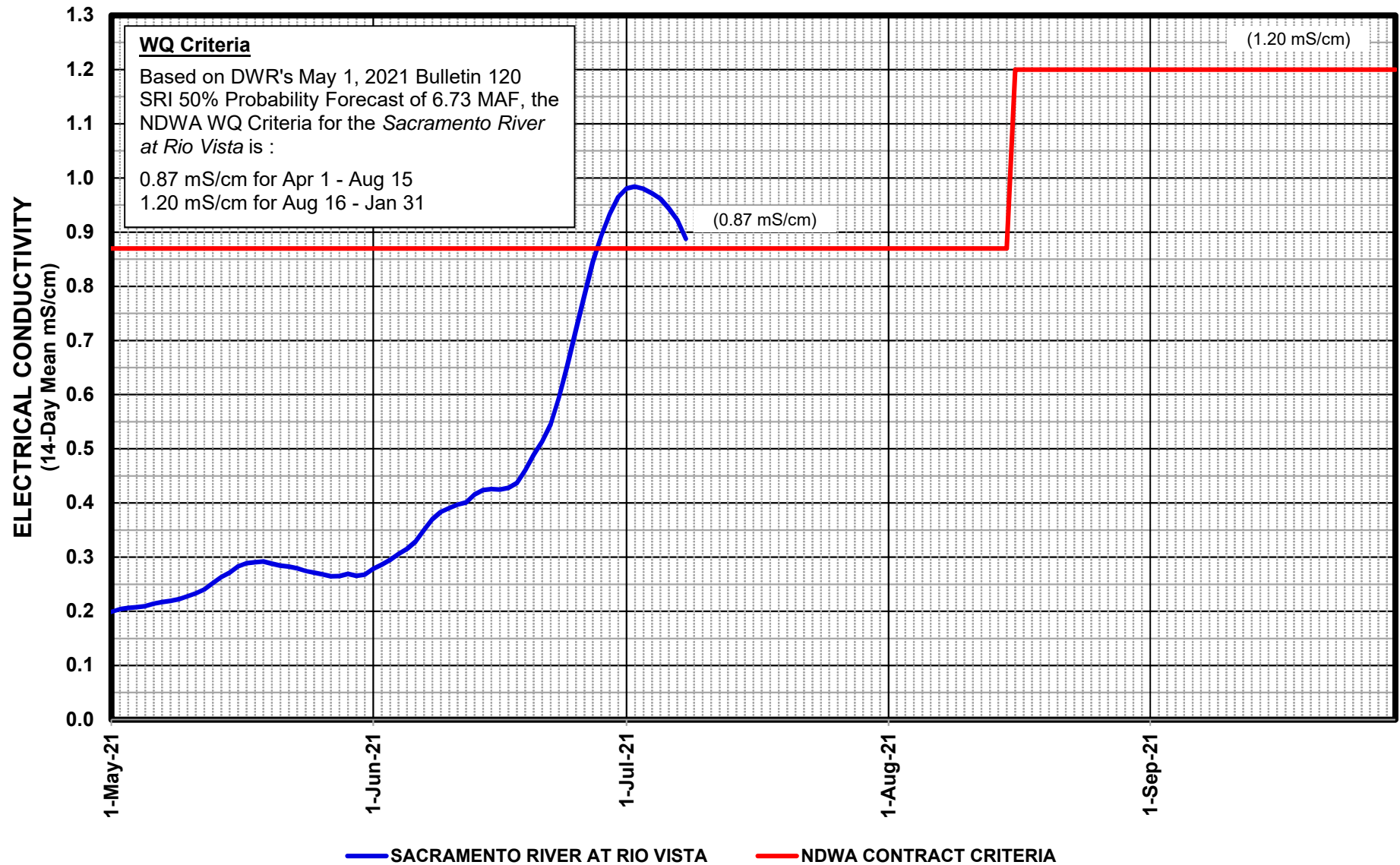
GK/oh
R:/3675/ Memo to Terry 2021-07-09

Attachments: NDWA 14-day Mean Electrical Conductivity
Monitoring Stations within North Delta Water Agency
CDEC Stations within NDWA

NORTH DELTA WATER AGENCY

SACRAMENTO RIVER AT RIO VISTA

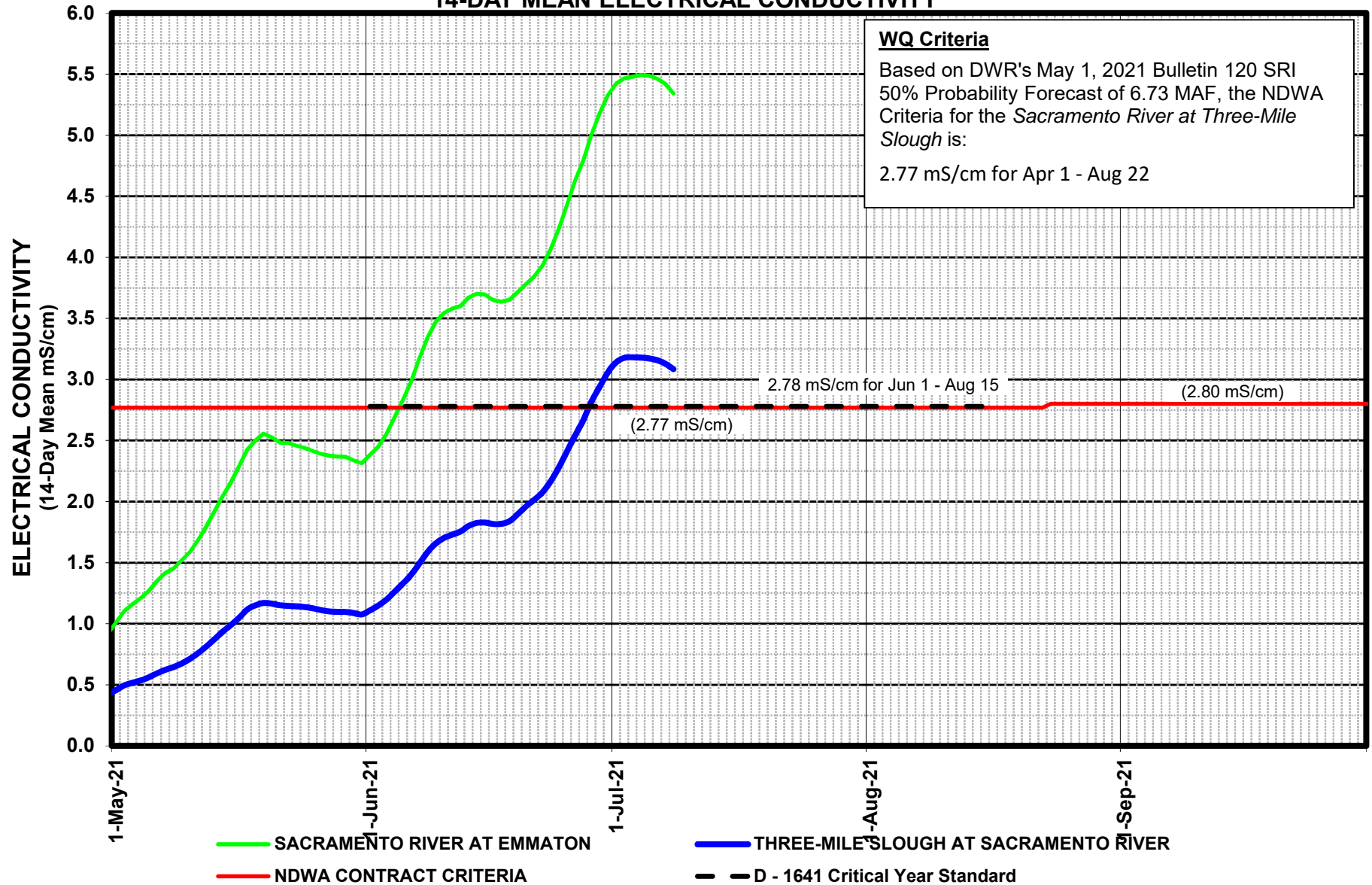
14-DAY MEAN ELECTRICAL CONDUCTIVITY



NORTH DELTA WATER AGENCY

SACRAMENTO RIVER AT THREE-MILE SLOUGH

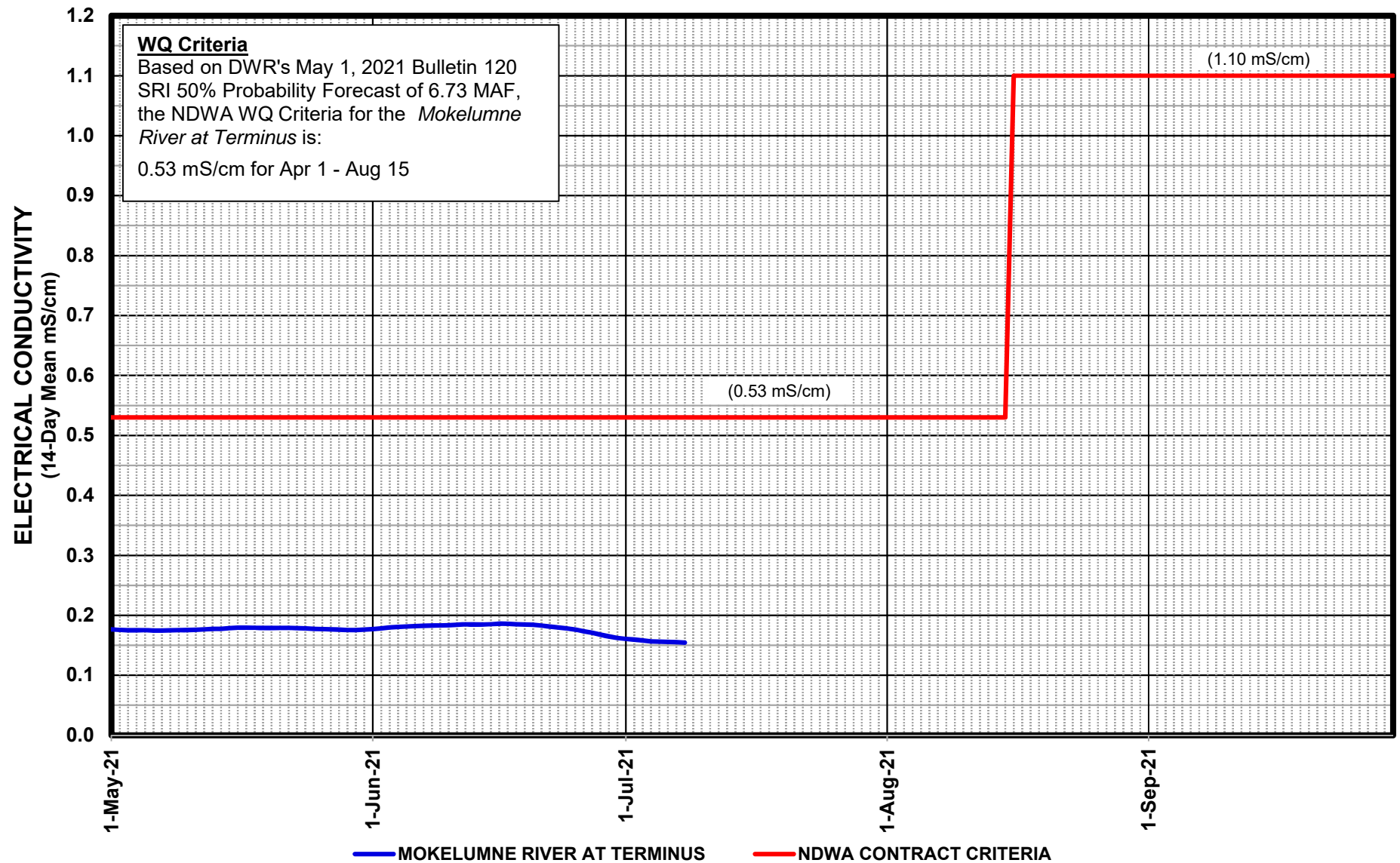
14-DAY MEAN ELECTRICAL CONDUCTIVITY



NORTH DELTA WATER AGENCY

MOKELUMNE RIVER AT TERMINUS (STATEN ISLAND)

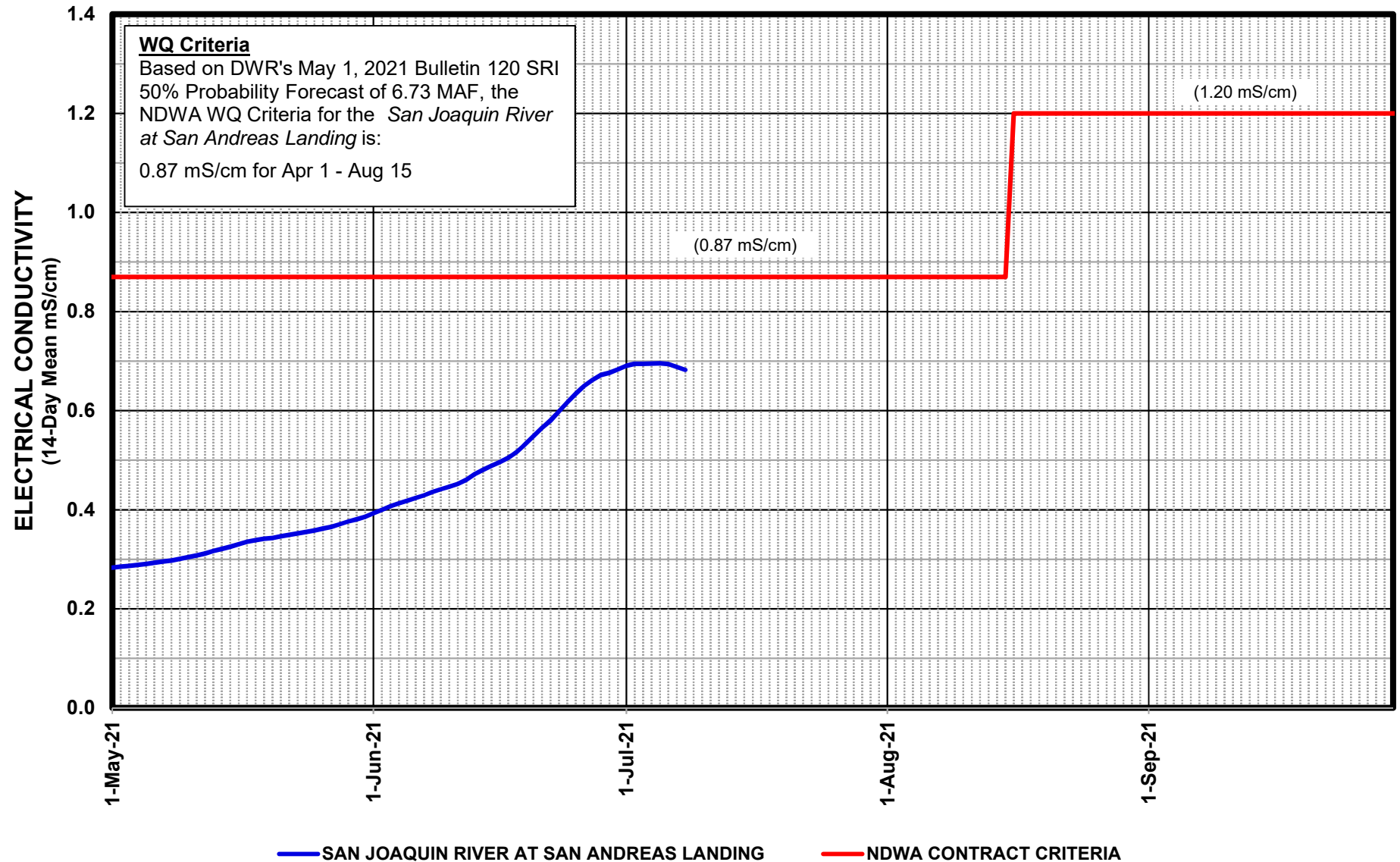
14-DAY MEAN ELECTRICAL CONDUCTIVITY



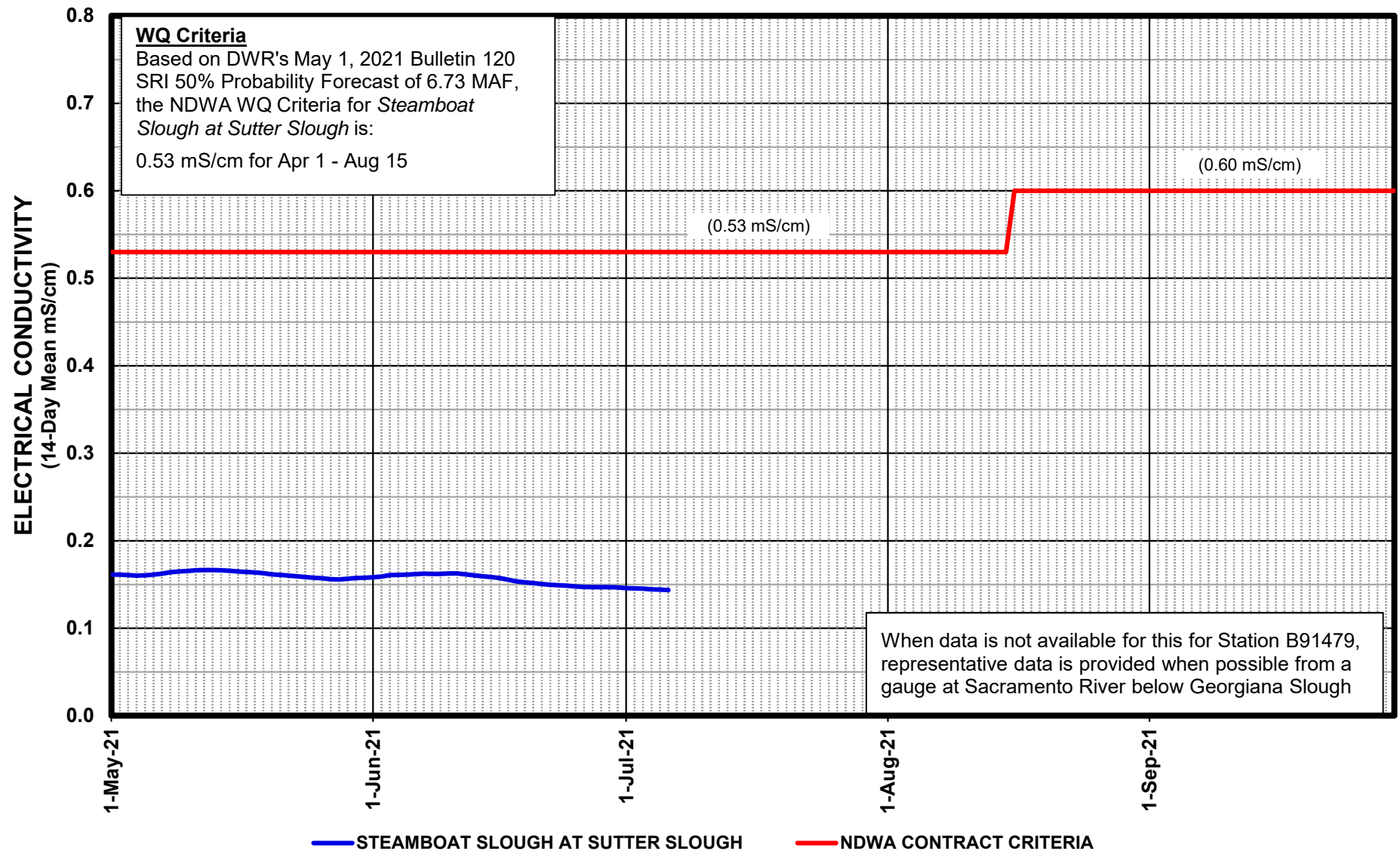
NORTH DELTA WATER AGENCY

SAN JOAQUIN RIVER AT SAN ANDREAS LANDING

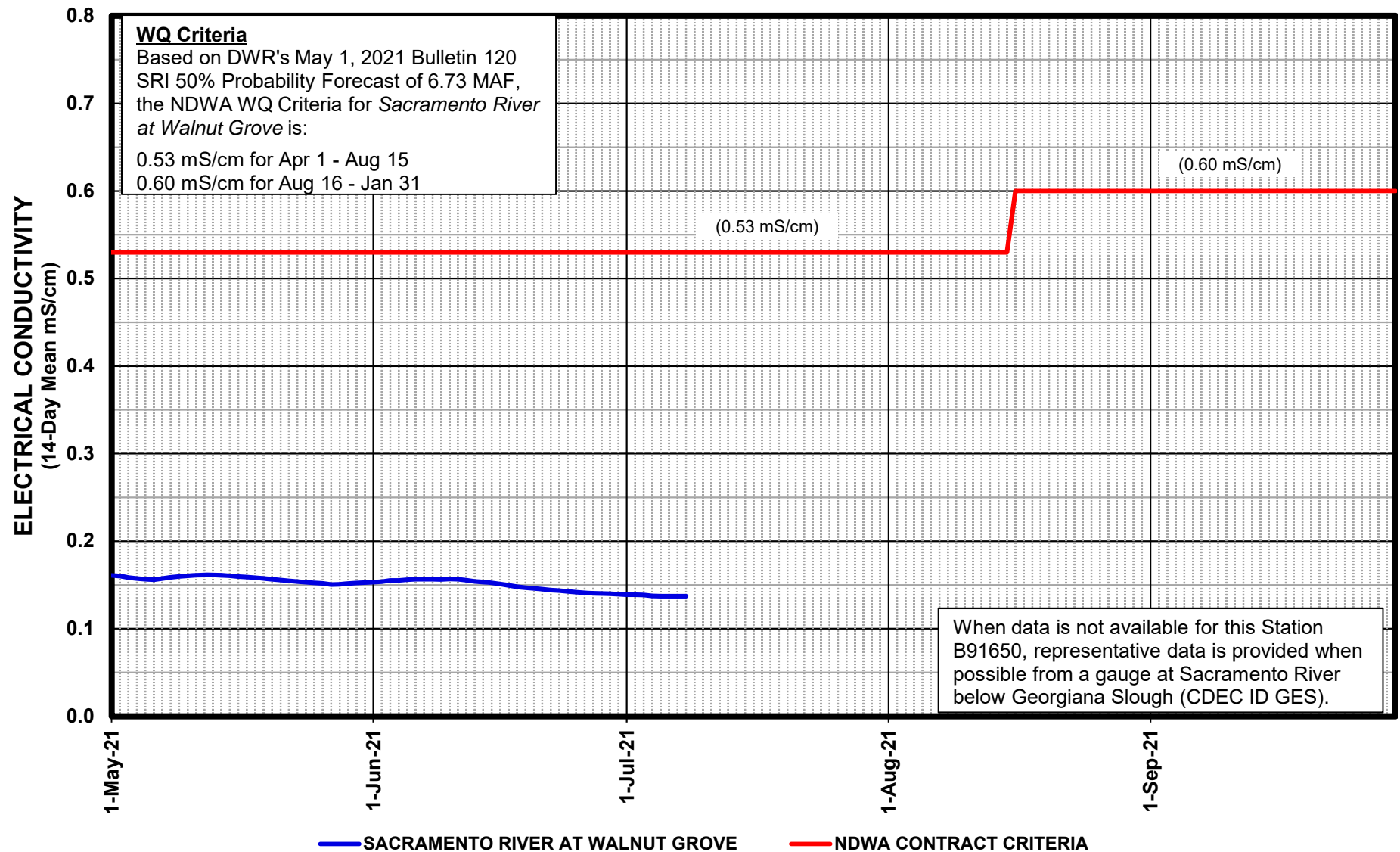
14-DAY MEAN ELECTRICAL CONDUCTIVITY



NORTH DELTA WATER AGENCY STEAMBOAT SLOUGH AT SUTTER SLOUGH 14-DAY MEAN ELECTRICAL CONDUCTIVITY



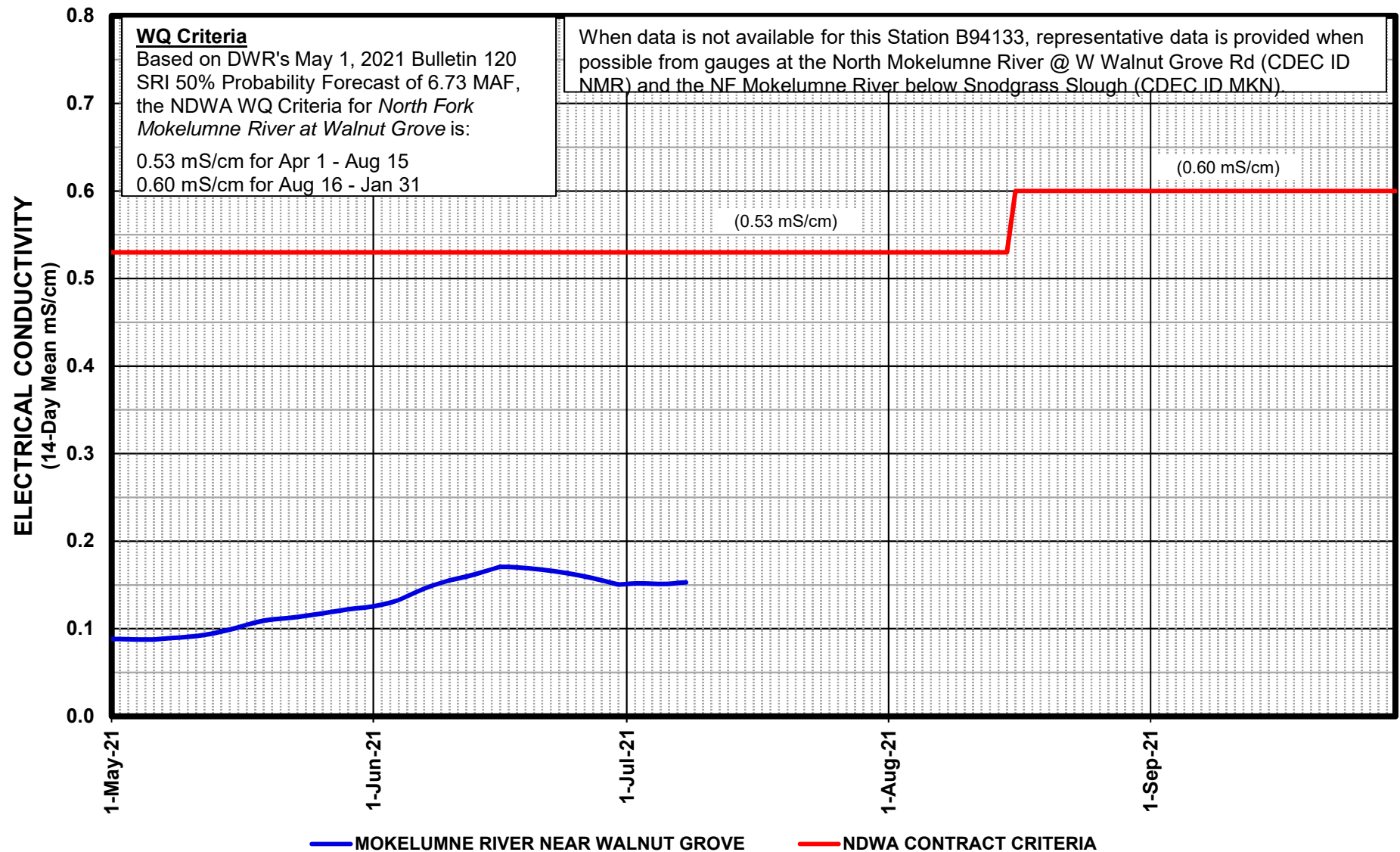
NORTH DELTA WATER AGENCY SACRAMENTO RIVER AT WALNUT GROVE 14-DAY MEAN ELECTRICAL CONDUCTIVITY

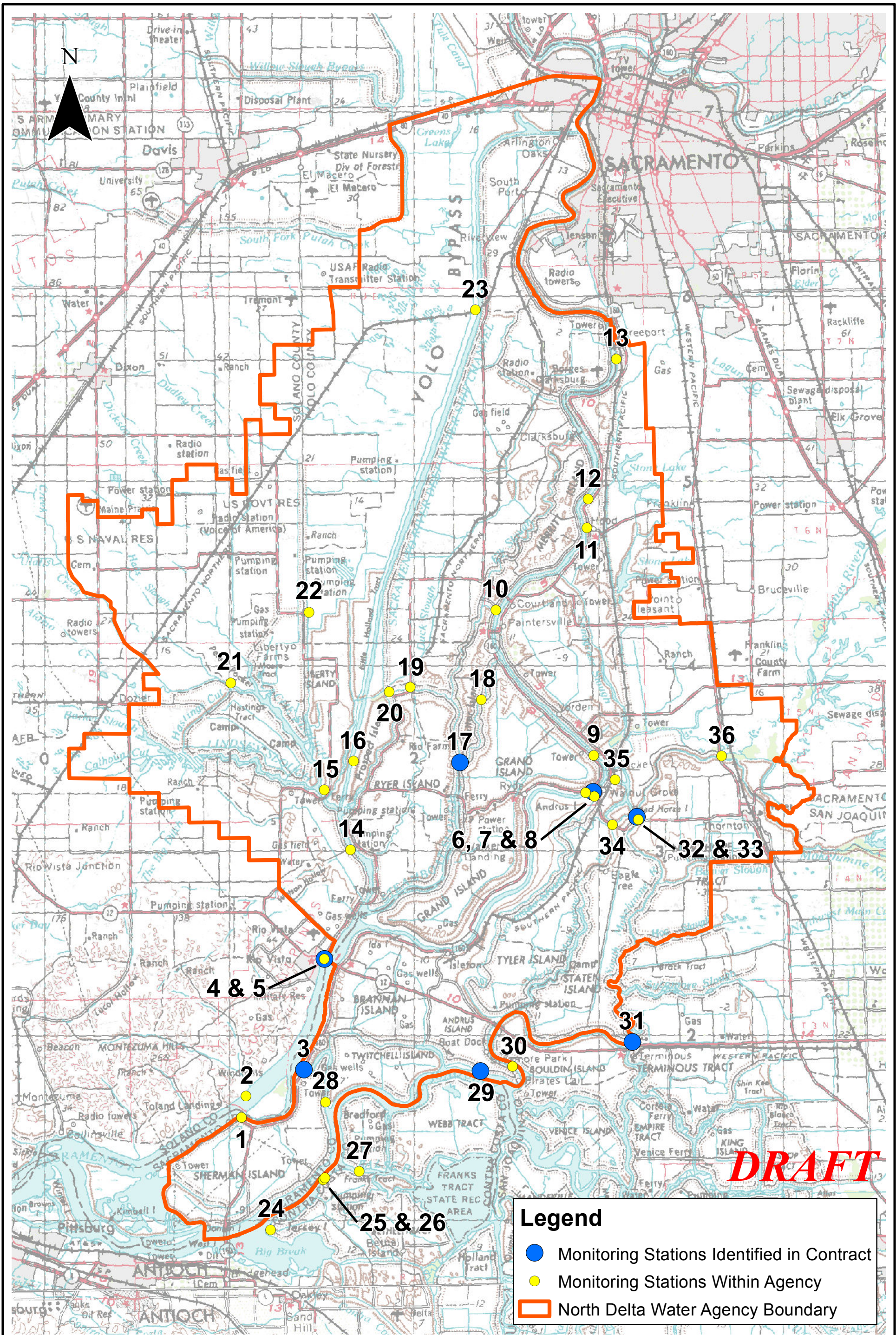


NORTH DELTA WATER AGENCY

MOKELUMNE RIVER NEAR WALNUT GROVE

14-DAY MEAN ELECTRICAL CONDUCTIVITY





CDEC Stations within NDWA

Map ID No	CDEC Station ID	Station Name	EC	Velocity	Flow	Stage
1	EMM	Emmaton	X			
2	SDI	Sacramento River at Decker Island	X	X	X	
3	TMS	Sacramento River ar Three Mile Slough	X			
4	RVB	Sacramento River at Rio Vista Bridge	X			
5	RIV	Sacramento River at Rio Vista	X			X
7	GSS	Georgiana Slough at Sacramento River	X	X	X	X
8	GES	Sacramento Blw Georgiana Slough	X	X	X	X
9	SDC	Sacramento R above Delta Cross Channel		X	X	X
10	SUT	Sutter Slough at Courtland		X	X	X
11	SRD	Sacramento River at Hood (USGS)		X	X	X
12	SRH	Sacramento River at Hood	X			
13	FPT	Sacramento River at Freeport	X	X	X	X
14	RYI	Cache Slough at Ryer Island				
15	LIB	Liberty Island @ Approx Center S End		X	X	X
16	DWS	Deep Water Ship Channel				
18	SSS	Steamboat Slough btw Sac R and Sutter SI		X	X	X
19	HWB	Miner Slough at Hwy 84 Bridge				
20	MFV	Miner Slough at Five Points				X
21	CCS	Cache Slough	X			
22	LIR	Liberty Island - RD 2068				X
23	LIS	Yolo Bypass at Lisbon		X	X	X
24	BLP	Blind Point	X			
25	SJJ	San Joaquin River at Jersey Point	X	X	X	X
26	JER	Jersey Point	X			
27	FAL	False River	X	X	X	X
28	TSL	Threemile Slough at San Joaquin River	X	X	X	X
29	SAL	San Joaquin River at San Andreas Landing	X			
30	MOK	Mokelumne R @ San Joaquin River	X	X	X	
31	STI	Staten Island on SF Mokelumne River (Terminous)	X			
33	SMR	South Mokelumne River at W Walnut Grove Rd				
34	NMR	North Mokelumne River at W Walnut Grove Rd				
35	DLC	Delta Cross Channel btw Sac R & Snodgrass	X	X	X	X
36	BEN	Mokelumne R NR Thornton (Benson's Ferry)				X