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April 14, 2006

Ms. Celeste Cantu, Executive Director
Ms. Victoria Whitney, Water Rights Division Chief
State Water Resources Control Board
Post Office Box 2000
Sacramento, California 95812-2000

Dear Ms. Cantu and Ms. Whitney:

Please find enclosed a report prepared by the Department of Water Resources in coordination with U.S. Bureau of Reclamation in compliance with the State Water Resources Control Board Order 2006-0006. As required by the Order, this report details a plan and schedule of actions that will obviate a threat of non-compliance of the agricultural salinity standards in the south Delta.

In addition, DWR and USBR are submitting a schedule for developing an operations plan that will reasonably protect southern Delta agriculture after construction of four permanent operable gates in the southern Delta channels. As described in the report, implementing the proposed gate project is contingent on completion of required environmental documents and permits.

DWR and USBR will be providing additional reports required by the Order, including a report every three months on the progress and any updates of the actions described in the attached report.

If you have any questions, please contact Ms. Kathy Kelly, Chief of the Bay-Delta Office at (916) 653-1099, or you may contact Mr. Alan Candlish, Regional Planning Officer, at (916) 978-5062.

Sincerely,

Carl Torgersen, Chief
SWP Operations Control Office
Department of Water Resources
3310 El Camino Avenue, Suite 300
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Date: 4/14/06

Ronald Milligan, Operations Manager
Central Valley Operations Office
U.S. Bureau of Reclamation
3310 El Camino Avenue, Suite 300
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Date: 14 Apr 2006

Attachments

PROOF OF SERVICE

I, the undersigned, hereby certify that I am over the age of eighteen (18) years of age and an employee of the State of California Department of Water Resources, 1416 Ninth Street, Sacramento, California 95814.

On April 14 2006, I served true and correct copies of the attached Department of Water Resources "REPORT IN COMPLIANCE WITH CEASSE AND DESIST ORDER WR 2006-0006" by e-mail and fax to the office of Division of Water Rights of the State Water Resources Control Board on the 14th floor of the California Environmental Protection Agency Building at 1001 I Street in Sacramento. I also served true and correct copies of this document by electronically transmitting to those who accept service by electronic mail, or by placing said copies in postage paid envelopes in the U.S. Mail, to the parties listed on the attached "Mailing List for April 14, 2006 Transmittal of Report in Compliance with Cease and Desist Order WR 200-0006."

Date: April 14, 2006

By: _____
Amir H. Rangchi

MAILING LIST
April 14, 2006 Transmittal of
Report in Compliance with Cease and Desist Order WR 200-0006

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DEPARTMENT OF WATER RESOURCES
AND U.S. BUREAU OF RECLAMATION
REPORT IN COMPLIANCE WITH
CEASE AND DESIST ORDER WR 2006-0006

APRIL 15, 2006

INTRODUCTION

The Department of Water Resources, in coordination with U.S. Bureau of Reclamation, has prepared this report as required by the Cease and Desist Order WR 2006-0006 issued on February 15, 2006. DWR and USBR prepared the information below to satisfy the requirements of Terms A2 and A3 on page 29 of the Order.

Term A2 requires DWR and USBR to submit a detailed plan and schedule to the Executive Director, within 60 days of issuance of the CDO, that describes completion dates and actions that will obviate a threat of non-compliance of the 0.7 EC Water Quality Objective for Agricultural Beneficial Uses at the following locations specified in Table 2 of D1641 on page 182:

(1) San Joaquin River at Brandt Bridge (Interagency Station No. C-6);
(2) Old River near Middle River (Interagency Station No. C-8); and
(3) Old River at Tracy Road Bridge (Interagency Station No. P-12)

Term A3 requires DWR and USBR to submit a schedule to the Chief of the Division of Water Rights, within 60 days of issuance of the CDO, for developing an operations plan for the permanent operable barriers that will reasonably protect southern Delta agriculture.

RESPONSE TO TERM A2

The following projects, plans, schedules and timelines collectively describe the strategy that DWR and USBR will pursue in order to obviate a threat of non-compliance of the 0.7 EC standard. The strategies are differentiated by location since the options available to affect water quality vary by location.

Salinity at the interior Delta stations C-8 and P-12 will be managed by implementing the permanent operable gates component of the South Delta Improvements Program (the gates are also referred in some older documents as permanent barriers, and distinguishable from the temporary rock barriers). The program plans and schedule are detailed in the *Compliance Plan for Monitoring Station C-8 and P-12* section, below.

The available salinity management options at Brandt Bridge on the San Joaquin River are quite different from those at the interior Delta stations. For the last ten years, the USBR has been achieving the salinity standards at Vernalis through use of current facilities and operations. DWR and USBR believe that when USBR is meeting the Vernalis salinity standard, exceedences at Brandt Bridge would most likely be attributable to local discharges. Contributions from high-salinity groundwater are suspected as well. The plans, schedules and timelines for addressing exceedences at Brandt Bridge are detailed in the *Compliance Plan for Monitoring Station C-6* section, below.

Compliance Plan for Monitoring Stations C-8 and P-12

DWR and USBR continue to believe that the most implementable and feasible salinity management strategy is the permanent operable gates component of the South Delta Improvements Program. These gates will improve circulation in the interior southern Delta channels. Additional actions to control local salinity discharges may also be needed but this proposed improvement in circulation is seen as a necessary first step. In order to begin construction of the permanent operable gates, Stage I of SDIP, all necessary environmental documentation, permits, and real estate acquisitions need to be completed. Construction is currently scheduled to begin in early spring 2007, but all work within the water is limited to an August through November work window. Based on the current schedule, which does not include float or time contingencies, it is anticipated that the gates will be completed prior to the end of 2009.

Milestone	Date Completed
Finalize Environmental Documentation	September 2006
Acquire Permits	October 2006
Certify Real Estate	October 2006
Advertise and Award Construction Contract	November 2006
Notice to Begin Work	January 2007
In-Water Construction First Year	August 2007
In-Water Construction Second Year	August 2008
Permanent Gates Locally Operable	April 2009
Construction Complete	August 2009
Start Real Time Remote Operation of Gates	September 2009

Finalize Environmental Documentation- Responses to comments received on the draft EIS/EIR are being prepared and incorporated into the Final EIS/EIR. Due to the large number of comments and the substantial nature of some of those comments, the response to comments and the Final EIS/EIR will not be completed before July 2006. Upon completion of the response to comments, DWR and USBR expect to certify a final EIS/EIR and approve the gate construction. DWR will adopt a Notice of Determination and USBR will adopt a Record of Decision. The final EIR/EIS then will be subject to challenge as to its

legal adequacy under CEQA and NEPA, but DWR and USBR could decide to proceed with the project construction even if challenged.

A parallel process to the EIS/EIR is the Action Specific Implementation Plan (ASIP) prepared for obtaining appropriate permits and biological opinions for compliance with the Federal and State Endangered Species Acts. The ASIP provides the information necessary for the U.S. Fish and Wildlife Service, NOAA Fisheries, and the California Department of Fish and Game to enter into consultation on Stage I of the SDIP. Through the ASIP, Stage I impacts are determined and mitigation is recommended. Through consultation, the project impacts to endangered species will be analyzed to determine measures that must be taken to comply with all applicable environmental laws, mitigation and the ecological enhancement values necessary to obtain incidental take permits pursuant to the federal and State ESA. Take permits will be issued when the Record of Decision and the Notice of Determination are filed.

Acquire All Permits - Permits issued by Federal and State agencies are required prior to construction. These include but are not limited to take permits, 404 permit, Section 10 permit, 401 certification, and permits for dredge and disposal, wetlands and stream bed alteration.

Applications and supporting material will be prepared and submitted prior to the Final EIS/EIR, but no decisions will be made or permits granted until the Final EIS/EIR is complete. It is anticipated that the Corps 404 permit will take the longest to process. All permits must be obtained by November 2006 in order to start construction by spring 2007. The Department of Water Resources cannot award a construction contract until all permits are issued.

Certify Real Estate - Stage 1 of SDIP requires the acquisition of real estate. This task is on the critical path and the construction contract cannot be awarded until real estate is certified. However, property acquisition is a lengthy process that is subject to numerous State and Federal laws. Property can not be acquired until CEQA is certified and the ROD has been issued. In order to minimize the risk of delays associated with real estate acquisition, preliminary work has been initiated and will continue.

Advertise and Award Construction Contract – The contract advertisement period will begin as soon as the Department of Water Resources is assured permits and real estate elements are nearing completion. The bidding and selection process will last approximately 90 days. When all permits are in place and the real estate has been certified, the construction contract for permanent gates can be awarded. The selection will be made and construction contract will be awarded to a contractor.

Notice to Begin Work - After the contract is awarded, the contractor needs to set up all required bonds and complete any preliminary work, such as ordering

essential material (the gate components and H-piles), and positioning of the environmental employees prior to breaking ground. Once the notice to begin work is issued, physical construction can start.

In-Water Construction First Year - The notice to begin work is scheduled for early 2007. This will allow the contractor to order materials that require long lead times and to start work that is not in the water. During this time, the temporary barriers will be constructed as in past years. On August 1, 2007 in-water work can begin. Between the periods of August 1, 2007 and November 30, 2007, the contractor can dredge the gate sites and drive H-piles. Much of the work required prior to gate installation should be completed within the first season. After November 30, 2007, no in-water work will be allowed until August 2008. The contractor will be able to make progress on work such as control building construction and other work that is not in the water during the period when no in-water work is allowed.

In-Water Construction Second Year - The temporary barriers will be constructed as in past years. During the period from August 1, 2008 to November 30, 2008, the contractor can install the gate panels. Gate panels will be assembled at a staging area, loaded on barges, and lifted into the water by crane. After November 30th, the contractor can continue with work that is not in the water during the period when no in-water work is allowed. The permanent operable gates include compressors, emergency power, and complex control systems. With the gate panels and control buildings in place, the contractor can work towards making the gates operational.

Permanent Gates Locally Operational - During the third year of construction, the gates are expected to be functional for the irrigation season. Operation will be locally controlled while work is being completed to make them remotely operable. The temporary barriers will not be installed and the permanent operable gates will provide a better tool to help meet water stage and quality requirements.

Construction Third Year - Construction will be completed within the third year. The goal is for the gates to be locally operable as soon as possible. The gates should be locally operable by the 2009 irrigation season and remotely operable in fall 2009. The permanent operable gates will be locally operated until all equipment for the remote operations has been installed and tested.

Real Time Operation of Gates - After construction of the operable gates is complete, the gates will be remotely controlled from the Operational Control Office in Sacramento. Operation of the gates will be refined, and adaptive management principles and practices will be employed. At this point the gates will be fully operational and can be used to their fullest in meeting the salinity requirements in the south Delta and providing adequate water levels while meeting fishery needs.

Compliance Plan for Monitoring Station C-6

DWR and USBR will continue to put forth good faith efforts in managing salinity at Brandt Bridge. However, best available analytical tools and data show that the Delta export projects have a no impact on salinity at Monitoring Station C-6 (DWR 20, Exhibit for CDO Hearing, Nov. 17, 2005). That being the case, DWR and USBR believe that the only way to successfully manage salinity at Brandt Bridge is to continue all ongoing San Joaquin River salinity management activities as well as expanding such solutions to discharges downstream of Vernalis. The following sections highlight specific existing and evolving activities. The common objective of these activities is to develop a better understanding of the problem and the parties involved in order to identify and implement the most effective responses.

While SWP operations are not believed to significantly affect salinity at this location, DWR and USBR under their general water management responsibilities are engaged in various activities designed to reduce salinity. DWR and USBR believe that the plans and schedules detailed below meet the requirements pertaining to Brandt Bridge Monitoring Station C-6 as prescribed in Term A2.

Brandt Bridge Salinity Management Investigations – DWR and USBR have independently initiated a focused planning effort designed to identify primary sources of salinity between Vernalis and Brandt Bridge. Once the source and magnitude of the problem are identified, a comprehensive list of salinity management options will be analyzed and recommended for implementation. It is important to note that the investigation, evaluation, and implementation will involve entities outside of DWR and USBR so a multi-agency effort will be required to reduce salinity at this location. Much of this activity was detailed in the *Milestones to Implement Southern Delta Objectives* document submitted to the Board on February 8, 2006. Below is a summary of the key milestones and timelines associated with this effort. The current high flows on the San Joaquin River and flood concerns may delay the implementation of some of the monitoring equipment.

Milestone	Date Completed
IDENTIFY AND QUANTIFY SALT DISCHARGES	
Install Additional Monitoring Stations	April 2006
Review Prior Data and Analyses	April 2006
Perform Modeling and Develop Salt Balances	May 2006
Document Results	August 2006
ASSESS AND RECOMMEND SALINITY MANAGEMENT OPTIONS	
Quantify Projected Salt Load Exceedences	September 2006
Identify Opportunities for Salt Load Reduction	September 2006
Quantify Required Flows Needed to Offset Degradation	September 2006
Develop and Document Recommendations	November 2006
OTHER RELATED ACTIVITIES	
Improve Wetlands Discharges	Ongoing
Continue Managing RTWQMP	Ongoing

Installation of Additional Monitoring Stations – A number of additional monitoring station are expected to be installed between Vernalis and Brandt Bridge. They will be strategically located to provide insights into salt loading that occurs downstream of Vernalis.

Review Prior Data and Analyses – A great deal of prior monitoring and analytical efforts have been undertaken on this matter. Indeed, DWR and USBR have invested significant resources to monitor and study salinity issues. In order to draw a common and thorough understanding of the problems and potential solutions (and to maximize the utility of ongoing efforts), a literature search and review will be executed. The results will be folded into subsequent milestones as appropriate.

Perform Modeling and Develop Salt Balances – Additional analyses and modeling simulations will focus on times when the 1.0 and 0.7 EC Water Quality Control Plan objectives may be exceeded. A key piece of information will be a well-substantiated degradation relationship between exceedences at Brandt Bridge and discharges downstream of Vernalis. Current estimates show an average degradation of about 8% between Vernalis and Brandt Bridge (DWR 20, Exhibit for CDO Hearing, Nov. 17, 2005)

Document Results –Results of these additional monitoring, investigative, and simulation efforts will be documented in a comprehensive report by August 2006. Many key assumptions, estimates, metadata, and other supporting information will also be documented in order to maximize clarity and transparency.

Quantify Projected Salt Load Exceedences – System operations and water quality modeling will be performed using the best available tools and data in order to quantify the potential future exceedences. This will be done for various

assumption-sets to build a range of future circumstances. The results are expected to provide a quantitative definition of the salinity challenges as well as an indication of factors that influence salinity at this location. This may also illustrate sensitivities of salt loading to various factors.

Identify Opportunities for Salt Load Reduction – In addition to ongoing actives, other options for managing salinity must be explored; especially regarding salt contributions from discharges and/or groundwater between Vernalis and Brandt Bridge. Options might include many of the options being planned or implemented under similar programs such as the San Joaquin River Salinity Management Plan described below.

Quantify Flows That Could Offset Degradation – One response to salinity exceedences at Brandt Bridge is to dilute San Joaquin River water through increased releases from east-side reservoirs. These flows could be from water transfers, water purchases, or changes in operations. Although such a dilution response is physically possible, it should be noted that many legal, institutional and political challenges would exist if such a solution were proposed. Using CALSIM II, DWR and USBR will perform water supply modeling simulations that quantify potential impacts on New Melones or other reservoirs (and the local recipients of these supplies). The studies might also quantify any impacts that reverberate through the Sacramento River system as a result of substantial increases in San Joaquin system releases.

Develop and Document Recommendations - Results of these tasks will be documented by November 2006. Results will include recommendations for further study and/or implementation of salinity management options. It is worth repeating that the investigation, evaluation, and especially implementation will involve entities outside of DWR and USBR so a multi-agency effort will be required to reduce salinity at this location. This could involve additional complexities that are not addressed in this technical activity.

Improve Wetlands Discharges – Based on 1998 data, wetlands discharges contributed about 9% of the total salt load at Vernalis. This percentage is likely higher today due to implementation of CVPIA, EWA, and other wetlands management activities. DWR is funding research and will continue collaborating with Lawrence-Berkeley lab, UC Merced and Grasslands Water District in evaluating opportunities for these improvements. DWR has funded a project through Proposition 204 titled Wetland Drainage Management Technology Development. In addition, DWR will continue to provide in-kind support to existing efforts by supplying environmental staff and monitoring equipment.

Continue Managing Real-Time Water Quality Monitoring Program (RTWQMP) – DWR operates and maintains 25 river monitoring stations and shares responsibility with USGS for another three stations along the lower San Joaquin River. For this effort, DWR expends about $1 million per year. The monitoring

data are important for real time and forecasting river-management activities. DWR will continue to collaborate with the San Joaquin River Water Quality Management Group to realize opportunities to achieve water quality goals. In addition, DWR is also collaborating with the USBR to incorporate parts of RTWQMP into a new operation plan for New Melones Reservoir.

San Joaquin Salinity Management Plan - This section summarizes the programs and activities that DWR has engaged in order to reduce the volume and concentration of saline discharges to the San Joaquin River occurring upstream of Vernalis. This information demonstrates the actions that DWR in cooperation with the United States Bureau of Reclamation (USBR) and local agencies have taken and plan to take to help achieve water quality objectives in the Lower San Joaquin River Delta.

These measures include: 1) Recirculation and 2) Controlling discharge of saline water into the SJR upstream of Vernalis.

1. **Recirculation.**

The concept of recirculation means releasing CVP and potentially SWP water pumped from the Sacramento-San Joaquin River Delta into the Newman Wasteway and the San Joaquin River via Delta-Mendota Canal. Identified in D-1641, the concept could be a useful tool to help improve the overall flow and water quality in the San Joaquin River Basin. Still, many questions need to be answered to determine its feasibility. DWR collaborated with the USBR and other agencies in a successful Pilot Recirculation Study conducted in August 2004. Currently, DWR is exploring its participation as the lead State agency in an EIR/EIS and a feasibility study of the concept.

It is worth noting that many complexities and trade-offs surround recirculation alternatives. For example, intentionally increasing Delta diversions to reduce the effects of local waste discharges can cause the unintended consequence of stressing certain life cycles of Delta fish or their food web and/or increased fish entrainment at the diversion pumps. These types of complexities and trade-offs could be significant and will affect the feasibility (and favorability) of recirculation alternatives.

2. Measures to control salinity in the San Joaquin River upstream of Vernalis

In D1641, the SWRCB recognizes that regional management of drainage water is the preferred method to meet the SJR objectives (page 84). Measures to control salinity upstream of Vernalis include: (a) On-farm management activities to reduce subsurface drainage, (b) Real-time water quality management to maximize the assimilative capacity of the SJR, and (c) Efforts to improve wetlands discharges.

a) On-Farm Drainage Management Activities

Drainage management activities involving source control have proven to be effective in reducing salt loads in the San Joaquin River. These measures include:

- Irrigation Water Conservation such as use of improved irrigation systems;
- Agricultural tailwater control and recycling; and
- Agricultural subsurface drainage water reuse through the San Joaquin River Improvement Project.

DWR continues to implement many of the San Joaquin Valley Drainage Implementation Program (SJVDIP) recommendations through its Agricultural Drainage and Water Use Efficiency Programs and working in partnership with California Universities, CALFED, USBR, Resource Conservation Districts, Watershed groups, Water and Drainage Districts and many other Local, State and Federal entities. These activities include:

a) providing grants for control of agricultural drainage water and reduction of its toxic elements using funds from Propositions 13, 50, and 204 and DWR's own project fund monies;
b) developing, educate, and promote the use Integrated On-Farm Drainage Management Systems (IFDM) in the San Joaquin Valley;
c) providing technical assistance and collaborating with water and drainage districts, and local entities to reduce and control surface subsurface agricultural drainage water;
d) maintaining research and demonstration projects to develop drainage reuse systems, including development of cost effective salt tolerant crops, drainage treatment and disposal technologies, and salt separation and utilization;
e) monitoring the quality and distribution of shallow groundwater water levels in drainage impaired areas of the San Joaquin Valley.

DWR is also a participant in additional efforts proposed by the USBR and Regional Agencies to control saline water discharges into the San Joaquin River. DWR provides technical assistance and cooperation, data, plan review and funding in many cases. These efforts include the West Side Regional Plan, USBR's San Luis Drainage Feature Reevaluation to provide drainage service to the San Luis Unit of the CVP, USBR's Evaluation of its Operation Plan of New Melones Reservoir, and the Integrated On-Farm Drainage Management Program that DWR and collaborating agencies maintain. In addition, DWR supports the recommendations of the San Joaquin River Management Group made on its report on controlling salinity in the San Joaquin River. Those recommendations include:

1. Fully implementing the West Side Regional Drainage Plan.

2. Further evaluating and pursuing managed wetland drainage management actions to mitigate impacts of February through April drainage releases.
3. Developing a real-time water quality management coordination group involving LSJR tributaries, LSJR drainers, and DWR to coordinate reservoir releases and SWP/CVP Project operations (Head of Old River Barrier and New Melones operations) to realize opportunities to improve water quality and increase the utility of stored water releases.

The San Joaquin River Water Quality Management Group has merged into the Water Quality Subcommittee of the San Joaquin River Management Plan (SJRMP) with the purpose of implementing the above recommendations. DWR is a lead agency for the SJRMP.

b) Real-time Water Quality Monitoring Program

The Real-time Water Quality Monitoring Program (RTWQMP) provides information on existing water quality conditions and forecasts flow and water quality conditions to SJR water managers and stakeholders. The information provided is important for improving management and coordination of reservoir releases, agricultural and wetlands drainage flows, and eastside tributary releases to achieve water quality objectives at the SJR compliance points. In fact, DWR is collaborating with the San Joaquin River Water Quality Management Group and other stakeholders to realize opportunities to achieve these goals using the RTWQMP and other tools.

As noted above, DWR operates and maintains 25 river monitoring stations and shares responsibility with USGS for another three stations along the lower San Joaquin River System. DWR staff constantly revises and analyzes the data provided by these and other stations in the LSJR network. In the early stages, the RTWQMP was funded by USBR and then by CALFED. Currently, DWR has assumed responsibility for funding most of the RTWQMP for the San Joaquin River. Table 1 lists the current LSJR surface water monitoring stations including DWR stations as well as other cooperating agency stations in the RTWQMP.

Table 1

SAN JOAQUIN RIVER AND RESERVOIR STATION META DATA

								Real-time Monitoring							Bi-annually Analysis						
Station ID	CDEC ID	River Stations	Elev ft	Latitude	Longitude	County	Operator	Telemetered	Stage	Flow	EC	H2O Temp	DO	Chlorophyll		Minerals (lab)	Nutrients (lab)	Minor Elements (lab)	EC (field)	pH (field)	DO (field)	H2O Temp (field)	
B00416		Eastside Bypass Below Mariposa Bypass				Merced	DWR		X	X													
B03115		Stanislaus R. At Koetitz Ranch	30	37° 42' 00" N	121° 10' 12" W	Stanislaus	DWR		X	X						X	X	X	X	X	X	X	
B05516		Bear Creek Below Eastside Canal	20			Merced	DWR		X	X													
B07040		San Joaquin River At Maze Road Bridge	39	37.642N	121.228W	Stanislaus	DWR		X	X						X	X	X	X	X	X	X	
	BDT	San Joaquin River at Brandt Bridge	0	37.8650 N	121.3231 W	San Joaquin	DWR	X	X		X	X											
B07802	CBP	Chowchilla Bypass	170	36.774N	120.285W	Madera	DWR	X	X	X													
B05155	CRS	Merced River At Cressey	165	37.4250N	120.6630W	Merced	DWR	X	X	X	X	X											
B04130	DCM	Dry Creek near Modesto	88	37.657N	120.923W	Stanislaus	DWR	X	X	X						X	X	X	X	X	X	X	
	DNB	San Joaquin River at Donny Bridge	239	36.834N	119.966W	Madera	USBR	X	X	X	X	X											
B00435	ELN	Eastside Bypass Near El Nido	100	37.133N	120.567W	Merced	DWR	X	X	X													
B07375	FFB	San Joaquin R @ Fremont Ford Bridge	65	37.310N	120.930W	Merced	USGS	X	X	X	X					X	X	X	X	X	X	X	
	GRF	San Joaquin River At Gravelly Ford	170	36.798N	120.16W	Fresno	DWR	X	X	X	X	X											
	LDC	Little Dry Creek (USBR)	350	36.942N	119.683W	Fresno	USBR	X	X	X													
B04175	LGN	Tuolumne River Below La Grange Dam	170	37.6660N	120.4410W	Stanislaus	USGS	X	X	X													
B05525	MCK	Bear Creek At McKee Road	187	37.309N	120.444W	Merced	USACE	X	X	X													
B07710	MEN	San Joaquin River Near Mendota	170	36.783N	120.367W	Fresno	USGS/DWR	X	X	X						X	X	X	X	X	X	X	
B05184	MMF	Merced River Below Merced Falls	310	37.522N	120.331W	Merced	Merced Co.	X	X	X													
B04120	MOD	Tuolumne River At Modesto	90	37.6500N	121.0010W	Stanislaus	DWR	X	X	X	X	X											
B95820	MSD	San Joaquin River At Mossdale Bridge	31	37.786N	121.306W	San Joaquin	Co.	X	X		X	X	X	X									
	MSG	Mud Slough Near Gustine	70	37.263N	120.906W	Merced	USGS	X	X	X	X	X											
	MSGCR	Mud Slough At Gun Club Road		37.231N	120.899W	Merced	Grasslands		X	X	X	X											
B05170	MSN	Merced River Near Snelling	260	37.5020N	120.4510W	Merced	DWR	X	X	X													
B05125	MST	Merced River Near Stevinson	82	37.3710N	120.9310W	Fresno	DWR	X	X	X	X	X				X	X	X	X	X	X	X	
B07300	NEW	San Joaquin River At Newman	90	37.3500N	120.9770W	Merced	USGS/DWR	X	X	X													
B03175	OBB	Stanislaus River At Orange Blossom Bridge	117	37.7830N	120.7500W	Stanislaus	DWR	X	X	X	X	X											
	OCL	Orestimba Creek Near Crows Landing	65	37.414N	121.015W	Stanislaus	USGS	X	X	X	X	X											
	OH1	Old River at Head	15	37.8080N	121.3290W	San Joaquin	DWR	X	X	X		X											
B87100	ORE	Orestimba Creek Nr Newman		37.316N	121.124W	Stanislaus	USGS	X	X	X													
B03125	RIP	Stanislaus River At Ripon		37.7300N	121.1090W	San Joaquin	USGS	X	X	X													
	RPN	Ripon	35	37.7300N	121.1090W	San Joaquin	USBR	X			X	X	X										
	RR1	Rough and Ready Island	15	37.9630N	121.3650W	San Joaquin	DWR	X	X	X	X	X		X									
B07250	SCL	San Joaquin River At Crows Landing Bridge	60	37.428N	120.003W	Stanislaus	USGS	X	X	X	X	X											
B07798	SJB	San Joaquin River Below Bifurcation	170	36.773N	120.286W	Madera	DWR	X	X	X													
B07885	SJF	San Joaquin River Below Friant	294	36.984N	119.723W	Fresno	USGS	X	X	X	X	X											
	SJL	San Joaquin R Below Old River Nr Lathrop	10	37.810N	121.323W	San Joaquin	DWR	X	X														
B07200	SJP	San Joaquin River At Patterson Bridge	97	37.4940N	121.0810W	Stanislaus	DWR	X	X	X	X	X				X	X	X	X	X	X	X	
B07400	SJS	San Joaquin River Near Stevinson	82	37.2950N	120.8510W	Merced	DWR	X	X	X	X	X				X	X	X	X	X	X	X	
B03185	SKF	Stanislaus R Bl Goodwin Nr Knights Ferry	253	37.854N	120.637W	Calaveras	USGS	X	X	X													
B03160	SOK	Stanislaus River At Oakdale	120	37.777N	120.852W	Stanislaus	USGS	X				X											
B00470	SSH	Salt Slough Near Stevinson	75	37.248N	120.851W	Merced	USGS	X	X	X	X	X				X	X	X	X	X	X	X	
B07020	VER	Vernalis (USBR)	35	37.6670N	121.2670W	San Joaquin	USBR	X			X	X											
	VNS	San Joaquin River At Vernalis	35	37.6670N	121.2670W	San Joaquin	USGS/DWR	X	X	X													
NIGEL'S STATIONS																							
	DEL	Del Puerto Creek		37° 32' 29.3" N	121° 07' 2.0" W	Stanislaus	SJVDA	X	X	X	X	X											
		Grayson Drain																					
	HOS	Hospital Creek		37° 36' 37.7" N	121° 13' 50.8"	Stanislaus	SJVDA	X	X	X	X	X											
	ING	Ingram Creek		37° 36' 0.8" N	121° 13' 30.2"	Stanislaus	SJVDA	X	X	X	X	X											
	MSM	Marshall-Spanish -Moran Drains		37° 26' 10.7" N	121° 02' 10.2"	Stanislaus	SJVDA	X	X	X	X	X											
	NJD	New Jerusalem Drain		37° 43' 36.1"	121° 17' 58.4"	San Joaquin	SJVDA	X	X	X	X	X											
	RAM	Ramona Lake		37° 24' 49.9" N	121° 00' 53.6"	Stanislaus	SJVDA	X	X	X	X	X											
	WES	Westley Wasteway		37° 33' 27.3" N	121° 09' 36.3"	Stanislaus	SJVDA	X	X	X	X	X											
ADDITIONAL STATIONS																							
B00770.00		Delta-Mendota Canal to Mendota Pool	160	36° 47' 12" N	120° 23' 04" W	Fresno					X	X	X			X	X	X	X	X	X	X	
B00400.00		Mud Slough at Hwy 140	60	37° 17' 28" N	120° 56' 40" W	Merced					X	X	X			X	X	X	X	X	X	X	
B08735.00		Orestimba Creek at Hwy 33	106	37° 22' 42" N	121° 03' 18" W	Stanislaus					X	X	X			X	X	X	X	X	X	X	
B07080.00		San Joaquin River at Grayson (of Laird Sl.)	30	37° 33' 48" N	121° 09' 06" W	Stanislaus										X	X	X	X	X	X	X	
B04105.00		Tuolumne River at Tuolumne City	40	37° 36' 12" N	121° 07' 00" W	Stanislaus										X	X	X	X	X	X	X	

One important activity of this program is forecasting flow and salinity conditions on the SJR so that decision makers can take advantage of assimilative capacity of the river when available. For this purpose, DWR collects data from the network of stations and inputs it into the San Joaquin River Input-Output Day (SJRIODAY) model. The model forecasts salinity and flow conditions on the River near Vernalis, and other upstream stations on a biweekly basis. DWR publishes the information on its website on a weekly basis. Currently DWR is evaluating options to upgrade the current forecast model and extend its capabilities to the LSJR compliance points.

c) Efforts to Improve Wetlands Discharges

Per 1998 data, wetlands discharges contributed about 9% of the total salt load in the San Joaquin River at Vernalis. The contribution is likely to be higher today as additional water supply and land are acquired for managed wetlands wildlife refuges through CVPIA, EWA, and other programs. Timing of wetland releases with assimilative capacity of the SJR will result in significant water quality

improvements. However, little has been done in this regard due to concerns over disrupting existing, proven wetland management practices.

Research is needed to determine if improved wetlands management practices can be achieved for the benefit of both wildlife and SJR water quality. Current research has focused on real-time water quality monitoring and adaptive management. Research goals are to coordinate timing of wetland discharges when assimilative capacity is available. Multiple grants have been provided for these purposes. In addition to funds provided by CALFED for the study on the *Effect of Delayed Wetland Drawdown on Moist Soil Plants*, staff from DWR and DFG are conducting a joint study to assess other aspects of delayed wetland drawdown. The study will complement DFG's current wetland drawdown research. DWR, DFG and U.C. Davis staff are working cooperatively on preparing the study plan.

The studies on delayed wetland drawdown are complemented with a study funded by DWR under Proposition 204 (drainage sub-account). The study is a part of the Real-time Water Quality Monitoring Program.

RESPONSE TO TERM A3

The Draft EIS/EIR for the South Delta Improvements Program contains detailed studies on the operation of South Delta Export Facilities and the use of the permanent operable gates. The planning studies look at all of the various structural and operational scenarios that make up the suite of alternatives. Upon the completion of the environmental documentation a new round of refined studies can be initiated using the structural components that will be constructed. These refined studies will culminate in an initial plan to operate the permanent operable gates in a manner that protects South Delta Agriculture and the environment. After Stage 1 of SDIP is in place adaptive management principles will be utilized to improve operations.

Milestone	Date Completed
Finalize Environmental Documentation	September 2006
Stakeholder Discussions/Review of draft Operations Plan	April 2007
Complete Draft Operations Plan	October 2007
Submit Draft Operations Plan to SWRCB Chief of the Division of Water Rights	December 2007
Revise Operations Plan if necessary	August 2008
Submit final Operations Plan to SWRCB Ex. Director	December 2008
Permanent Gates Locally Operable	April 2009

Stakeholders will be given the opportunity to review and provide comments on the draft operations plan. This will be an iterative process that seeks to resolve as many stakeholder concerns as possible without compromising the water quality and stage improvement goals of SDIP. When consensus or a reasonable compromise is reached with stakeholders the plan can be revised to incorporate changes made through the stakeholder process.

It is anticipated that the gates will be locally operable prior to being able to control the gates remotely in real time from the Operations Control Office. The gates would be locally operated to protect meet water quality requirements in the South Delta, provide adequate water levels, and protect salmon migrating on the San Joaquin River.