RECLAMATION
Managing Water in the West

FINDING OF NO SIGNIFICANT IMPACT

Additional Point of Delivery for Patterson Irrigation District's Non-Central Valley Project Water to Del Puerto Water District

FONSI-12-054

Recommended by:

Date: 07/06/2012

Rain Healer
Natural Resources Specialist
South-Central California Area Office

Concurred by:

for

Date: 7-6-12

Chuck Siek
Supervisory Natural Resources Specialist
South-Central California Area Office

Concurred by:

Date: 7/9/12

Randy English
Chief, Resources Management Division
South-Central California Area Office

Approved by:

for

Date: 7/17/12

Michael P. Jackson
Area Manager
South-Central California Area Office

U.S. Department of the Interior
Bureau of Reclamation
South-Central California Area Office

July 2012

Introduction

In accordance with section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969, as amended, the South-Central California Area Office of the Bureau of Reclamation (Reclamation), has determined that an environmental impact statement is not required for the approval of an additional point of delivery of Patterson Irrigation District's (PID's) non-Central Valley Project (CVP) water to Del Puerto Water District (DPWD). This Finding of No Significant Impact (FONSI) is supported by Reclamation's Supplemental Environmental Assessment (SEA)-12-054, *Additional Point of Delivery of Patterson Irrigation District's Non-Central Valley Project Water to Del Puerto Water District*, and is hereby incorporated by reference.

Background

In March 2010, Reclamation signed a FONSI approving the execution of five-year Warren Act Contracts for Banta-Carbona Irrigation District, Byron Bethany Irrigation District, PID, and West Stanislaus Irrigation District. The five-year Warren Act Contracts allowed for the conveyance and storage per contractor of up to 10,000 acre-feet per year (AFY) of non-CVP surface water in the Delta-Mendota Canal (DMC) through February 28, 2016.

The environmental effects of the proposed five-year Warren Act Contracts was analyzed in the Environmental Assessment (EA)-09-156, *Five-year Warren Act Contracts for Banta-Carbona Irrigation District, Byron Bethany Irrigation District, Patterson Irrigation District, and West Stanislaus Irrigation District*. EA-09-156 analyzed direct, indirect, and cumulative impacts to the following resources: surface water resources, land use, air quality, biological resources, cultural resources, Indian Trust Assets, socioeconomic resources, environmental justice, and global climate change. No adverse impacts were expected to occur as a result of the issuance of the five-year contracts.

In June 2012, Reclamation received a request from PID to approve delivery of up to 10,000 AFY of their pre-1914 water rights water (non-CVP water), previously analyzed in EA-09-156, to DPWD via the DMC. The additional points of delivery to DPWD are the only change proposed from what was analyzed in EA-09-156. Delivery of PID's non-CVP water to DPWD will continue through February 28, 2016, consistent with EA-09-156 and PID's current Warren Act Contract.

Proposed Action

Reclamation will approve additional points of delivery along the DMC for conveyance of up to 10,000 AFY of PID's non-CVP water to DPWD. Delivery of this water will continue through February 28, 2016, consistent with PID's existing Warren Act Contract. PID's non-CVP water will continue to be pumped into the DMC at milepost 42.53L. This water, less losses, will then be conveyed down the DMC and delivered to DPWD's turnouts. Any water not delivered to DPWD will be stored in San Luis Reservoir for later delivery via exchange with Reclamation to DPWD or PID.

Environmental Commitments

The Proposed Action is subject to the following conditions:

- The water will only be used for beneficial purposes and in accordance with Federal Reclamation law and guidelines.
- The water will not be used to place untilled or new lands into production, or to convert undeveloped land to other uses.
- The Proposed Action will not affect CVP or State Water Project operations; all supplies will be previously scheduled for delivery points south-of-Delta, and do not require additional Delta exports.
- The movement of the water will not require the construction of any new water diversion or conveyance facilities.
- The Proposed Action must comply with water quality standards specified in Exhibit D of the Warren Act Contract (see Appendix A of EA-12-054).

Reclamation's finding that implementation of the Proposed Action will result in no significant impact to the quality of the human environment is supported by the following findings:

Findings

Water Resources

No additional diversions are being generated or needed for the delivery of PID's non-CVP water to DPWD via the DMC. No modifications of existing facilities are required for the movement of this water to DPWD. Therefore, there will be no impact to district or federal facilities or water rights as a result of the Proposed Action.

No activities such as dredging or filling of wetlands or surface waters will be required for implementation of the Proposed Action, therefore, permits obtained in compliance with the Clean Water Act are not required.

Executive Order 11988 requires Federal agencies to prepare floodplain assessments for actions located within or affecting flood plains, and similarly, Executive Order 11990 places similar requirements for actions in wetlands. The Proposed Action will not affect either concern as there are none within the action area.

Delivery of up to 10,000 AFY of PID's non-CVP water to DPWD will not impact PID's ability to service their customers as this water is only a portion of their existing pre-1914 water rights entitlement and will not impact the availability or use of PID's other available water supplies. Therefore, there will be no adverse impacts to water supplies within PID.

The addition of up to 10,000 AF of PID's non-CVP water to DPWD's overall water supply will help increase water supply reliability in DPWD. Therefore, the Proposed Action will have beneficial impacts to water resources within DPWD.

Land Use
Under the Proposed Action, neither PID nor DPWD will change historic land and water management practices. PID's non-CVP water will move through existing facilities for delivery to lands within DPWD and will be used on existing crops. The water will not be used to place untilled or new lands into production, or to convert undeveloped land to other uses. Therefore, there will be no change to land use.

Biological Resources
Affects are similar to the No Action Alternative. Most of the habitat types required by species protected under the ESA do not occur in the Proposed Action area. Any encountered biological resources are likely to be those associated with actively cultivated land. The Proposed Action will not involve the conversion of any land fallowed and untilled for three or more years as the non-CVP water will be used on existing agricultural lands. Such actions will require additional environmental review. Since no natural stream courses or additional surface water pumping will occur and there are capacity limitations and water quality restrictions in the DMC, there will be no effect to listed fish species. No critical habitat occurs within the area affected by the Proposed Action; therefore, no primary constituent elements of any critical habitat will be affected.

Based upon the short duration of the water availability, the requirement that no native lands be converted without consultation with U.S. Fish and Wildlife Service, and the stringent requirements for introduction of non-CVP water into federal facilities, any potential impacts to wildlife (whether federally listed or not) will be precluded. Reclamation has determined there will be no effect to listed species or birds protected by the Migratory Bird Treaty Act.

Cultural Resources
There will be no impacts to cultural resources as a result of implementing the Proposed Action as the Proposed Action will facilitate the flow of water through existing facilities to existing users. No new construction or ground disturbing activities will occur as part of the Proposed Action. The pumping, conveyance, and storage of water will be confined to existing pumps and CVP facilities. Reclamation has determined that these activities have no potential to cause effects to historic properties pursuant to 36 CFR Part 800.3(a)(1).

Indian Sacred Sites
Reclamation has determined that there will be no impacts to Indian sacred sites as a result of the Proposed Action since the Proposed Action will not limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites.

Indian Trust Assets
Reclamation has determined that the Proposed Action will not impact Indian Trust Assets as there are none in the Proposed Action area.

Environmental Justice
The Proposed Action will not cause dislocation, changes in employment, or increase flood, drought, or disease and will not disproportionately impact economically disadvantaged or minority populations.

Socioeconomic Resources
The availability of this additional supplemental water supply will have beneficial impacts on socioeconomic resources with DPWD as this water will be used to help sustain existing crops and maintain farming within the district. As there will be no adverse impact to water resources within PID that will impact their ability to deliver water to their agricultural and urban uses, there will be no impacts to socioeconomic resources within PID.

Air Quality
No construction or modification of facilities will be needed under the Proposed Action to move PID's non-CVP water to DPWD through the DMC. Non-CVP and CVP water exchanged for PID's non-CVP water will be moved either via gravity or electric pumps which will not produce emissions that impact air quality. Therefore, a conformity analysis is not required under the Clean Air Act and there will be no impact to air quality as a result of the Proposed Action.

Global Climate
Neither the Proposed Action nor the No Action alternative will involve physical changes to the environment or construction activities and, therefore, will not impact global climate change. Global climate change is expected to have some effect on the snow pack of the Sierra Nevada and the runoff regime. Current data are not yet clear on the hydrologic changes and how they will affect the San Joaquin Valley. CVP water allocations are made dependent on hydrologic conditions and environmental requirements. Since Reclamation operations and allocations are flexible, any changes in hydrologic conditions due to global climate change will be addressed within Reclamation's operation flexibility and therefore surface water resource changes due to climate change will be the same with or without either alternative.

Cumulative Impacts
Cumulative impacts result from incremental impacts of the Proposed Action or No Action alternative when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. To determine whether cumulatively significant impacts are anticipated from the Proposed Action or the No Action alternative, the incremental effect of both alternatives were examined together with impacts from past, present, and reasonably foreseeable future actions in the same geographic area.

As in the past, hydrological conditions and other factors are likely to result in fluctuating water supplies which drives requests for water service actions. Water districts aim to provide water to their customers based on available water supplies and timing, all while attempting to minimize costs. Farmers irrigate and grow crops based on these conditions and factors, and a myriad of water service actions are approved and executed each year to facilitate water needs. Each water service transaction involving Reclamation undergoes environmental review prior to approval.

Existing or foreseeable projects, in addition to the proposed delivery of PID's non-CVP water to DPWD, that could affect or could be affected by the Proposed Action or No Action alternative include the following:

Exchange Contractors 25-Year Water Transfer Program The San Joaquin River Exchange Contractors are currently transferring up to 130,000 AF of their substitute water to Reclamation under a 10-year (March 1, 2005, through February 28, 2014) water transfer program. Under the current program, the San Joaquin River Exchange Contractors develop sources of water to temporarily reduce the need for delivery of substitute water by Reclamation. The sources of water developed by the San Joaquin River Exchange Contractors include a maximum of 80,000 AF from conservation, tailwater recapture, and groundwater as well as a maximum of 50,000 AF from voluntary temporary land fallowing. For each AF of water developed by the San Joaquin River Exchange Contractors, an in-kind amount of water is considered acquired and left within the CVP for Reclamation to deliver to CVP contractors or wildlife areas. Reclamation and the San Joaquin River Exchange Contractors prepared an Environmental Impact Statement (EIS)/ Environmental Impact Report (EIR) for the 10 year program and a Record of Decision was completed March 23, 2005. As the program will expire soon, Reclamation and the San Joaquin River Exchange Contractors have proposed extending the program for another 25 years. A draft EIS/EIR was released for a 60 public review on May 4, 2012.

San Joaquin River Restoration Program In 2006, the San Joaquin River Restoration Program (SJRRP) was established to implement the Stipulation of Settlement in *NRDC, et al. v. Kirk Rodgers et al.* The Settlement's two primary goals include: (1) restoration and maintenance of fish populations in the San Joaquin River below Friant Dam to the confluence of the Merced River; and (2) management of water resources in order to reduce or avoid adverse water supply impacts to Friant Division long-term contractors. The SJRRP is a long-term effort to restore flows to the San Joaquin River from Friant Dam to the confluence of Merced River in order to meet the two goals established in the Settlement. In 2007, Reclamation released a notice of intent to prepare a programmatic EIS/EIR in the Federal Register. The draft programmatic EIS/EIR was released for a 60 public review on April 22, 2011. A final programmatic EIS/EIR is pending.

As an initial action to guide implementation of the SJRRP, the Settlement requires that Reclamation modify releases from Friant Dam from October 1 to September 30 for a program of interim flows in order to collect pertinent scientific data and to implement a monitoring program. Environmental effects for the release of interim flows from Friant Dam down the San Joaquin River were addressed in a FONSI and EA/Initial Study entitled *Water Year 2010 Interim Flows Project*. Supplemental EAs and FONSIs for continuation of interim flows were also completed for Water Years 2011 and 2012 (March 1, 2011 through February 28, 2013). Full restoration flows are scheduled to start no later than January 1, 2014.

In order to reduce or avoid adverse water supply impacts to all of the Friant Division long-term contractors that may result from the interim flows, Reclamation developed plans for recirculation, recapture, reuse, and exchange or transfer of interim flows. An EA that analyzed the impacts of recirculation of interim flows entitled *Recirculation of Recaptured Water Year*

2012 San Joaquin River Restoration Program Interim Flows was released for public comment on February 7, 2012 and a FONSI completed on April 3, 2012.

Meyers Farms Groundwater Banking Program The Meyers Family Farm Trust pursued development of the Meyers Farm Water Bank to store water in above-normal and wet years for later use during below-normal, dry, and critically-dry years. Under the banking program, CVP and non-CVP water to be banked flows from the Mendota Pool into five recharge ponds. Banked water is later extracted and pumped into Mendota Pool for exchange with Reclamation. The original project was analyzed in EA-05-09 *Meyers Farm Water Banking Project – Mendota, California* and a FONSI signed May 9, 2005. Two supplemental EAs and FONSIs for the project were prepared to increase the annual extraction rate and to add Banta-Carbona Irrigation District's non-CVP surface water to the banking program. In addition, Reclamation has recently received a request to increase the rate of extraction from Meyers Bank from 6,316 AFY to 10,526 AFY, to amend the cumulative total amount of CVP water banked from 35,000 AF to 60,000 AF at any given time, to increase the amount of Banta Carbona Irrigation District's non-CVP water conveyed in the DMC for banking from 5,000 AFY to 10,000 AFY, to approve the annual transfer of up to 10,000 AFY of Banta Carbona Irrigation District's CVP water in-lieu of their non-CVP water for banking at Meyers Bank, and to deliver banked water via exchange to other areas within the service area of San Luis Water District. Reclamation released a draft EA for public comment on July 2, 2012 for the proposed amendments. The public comment period closes July 31, 2012.

Tranquillity Irrigation District Transfer to San Luis Water District Under this project, Tranquillity Irrigation District could transfer up to 15,000 AF of its pumped groundwater to San Luis Water District via exchange with Reclamation at the Mendota Pool from March 1, 2011 through February 28, 2014 (Contract Years 2011 through 2013). Transfer in any single water year will not exceed 7,500 AF. The project was analyzed in EA-10-092 *Tranquillity Irrigation District/ San Luis Water District Groundwater Transfer/Exchange Program–2011 through 2013* and a FONSI completed on March 11, 2011.

Groundwater Pump-in Programs for San Luis Unit and Delta Division Contractors Under this project, participating CVP contractors within the Delta Division and San Luis Unit of the CVP could pump up to 50,000 AF total of groundwater into the DMC between March 1, 2012 through February 28, 2014 (Contract Years 2012 and 2013). The project was analyzed in EA-12-005 *Two-Year Exchange Agreements and/or Warren Act Contracts for Conveyance of Groundwater in the DMC – Contract Years 2012 through 2014 (March 1, 2012 – February 28, 2014)* and a FONSI was completed on May 8, 2012. The action was previously conducted between March 1, 2010 through February 28, 2012 (Contract Years 2010 and 2011) and analyzed in EA-09-169. It is likely that these actions will be requested in the future.

Byron-Bethany Irrigation District Long-term Exchange Agreement Reclamation has received a request from Byron-Bethany Irrigation District to enter into a 40-year contract for the introduction of up to 4,725 AFY of their non-CVP surface water in to the DMC for exchange with Reclamation. Reclamation is currently preparing an EA for the proposed project.

Additional Point of Delivery of Byron-Bethany Irrigations District's Non-Central Valley Project Water to Westlands Water District (supplementing EA-09-156) Under this project, Reclamation will deliver up to 5,000 AFY of Byron-Bethany Irrigation District's non-CVP water introduced into the DMC to Westlands Water District via the San Luis Canal through February 28, 2016 consistent with Byron-Bethany Irrigation District's existing Warren Act Contract. The additional point of delivery was analyzed in supplemental EA-12-052 and a FONSI was completed on June 15, 2012.

Reclamation's Proposed Action is the approval of additional points of delivery of up to 10,000 AFY of PID's non-CVP water to DPWD via the DMC. This is the same amount of water previously analyzed in EA-09-156; therefore, no additional non-CVP water will need to be introduced into the DMC for the Proposed Action. The Proposed Action will not cumulatively impact district or federal facilities or water rights as no additional diversions or changes to distribution facilities are needed to move this water. Water service actions, like those described above, do not result in increases or decreases of water diverted from rivers or reservoirs. Each water service transaction involving CVP and non-CVP water undergoes environmental review prior to approval. The Proposed Action and No Action alternative and other similar projects will not interfere with the projects listed above, nor will they hinder the normal operations of the CVP and Reclamation's obligation to deliver water to its contractors or to local fish and wildlife habitat. Neither alternative, when added to other water service actions, will result in cumulative effects to water resources beyond historical fluctuations and conditions.

The addition of up to 10,000 AF of PID's non-CVP water to DPWD's overall water supply will help increase water supply reliability in DPWD. Therefore, the Proposed Action will have cumulatively beneficial impacts to water resources within DPWD.

Existing conditions, such as loss of habitat due to urbanization and expanding agricultural lands that cumulatively impact listed species and their habitats, are expected to occur under either alternative. The additional point of diversion for the conveyance and storage of up to 10,000 AFY from PID to DPWD is not expected to contribute cumulatively to habitat loss as this water will be used consistent with current uses. Therefore, there will be no cumulative significant impacts to biological resources as a result of the Proposed Action.

The availability of additional supplemental water supply will have cumulatively beneficial impacts on socioeconomic resources with DPWD as this water will be used to help sustain existing crops and maintain farming within the district. As there will be no adverse impact to water resources within PID that will impact their ability to deliver water to their agricultural and urban uses, there will be no cumulative impacts to socioeconomic resources within PID.

Since there will be no direct or indirect impacts to land use, cultural resources, Indian Sacred Sites, Indian Trust Assets, air quality or global climate, as a result of the Proposed Action, there will be no cumulative impacts to these resources.

RECLAMATION

Managing Water in the West

Final Supplemental Environmental Assessment

Additional Point of Delivery for Patterson Irrigation District's Non-Central Valley Project Water to Del Puerto Water District

SEA-12-054

U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Region
South-Central California Area Office
Fresno, California

July 2012

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Table of Contents

List of Tables and Figures

Appendices

THIS PAGE LEFT INTENTIONALLY BLANK

Section 1 Introduction

1.1 Background

In March 2010, the Bureau of Reclamation (Reclamation) signed a Finding of No Significant Impact (FONSI) approving the execution of five-year Warren Act Contracts for Banta-Carbona Irrigation District, Byron Bethany Irrigation District, Patterson Irrigation District (PID), and West Stanislaus Irrigation District. The five-year Warren Act Contracts allowed for the conveyance and storage per contractor of up to 10,000 acre-feet per year (AFY) of non-Central Valley Project (non-CVP) surface water in the Delta-Mendota Canal (DMC) through February 28, 2016.

The environmental effects of the proposed five-year Warren Act Contracts was analyzed in the Environmental Assessment (EA)-09-156, *Five-year Warren Act Contracts for Banta-Carbona Irrigation District, Byron Bethany Irrigation District, Patterson Irrigation District, and West Stanislaus Irrigation District*. EA-09-156 analyzed direct, indirect, and cumulative impacts to the following resources: surface water resources, land use, air quality, biological resources, cultural resources, Indian Trust Assets, socioeconomic resources, environmental justice, and global climate change. No adverse impacts were expected to occur as a result of the issuance of the five-year contracts.

In June 2012, Reclamation received a request from PID to approve delivery of up to 10,000 AFY of their pre-1914 water rights water (non-CVP water), previously analyzed in EA-09-156, to Del Puerto Water District (DPWD) via the DMC. The additional points of delivery to DPWD are the only change proposed from what was analyzed in EA-09-156. Delivery of PID's non-CVP water to DPWD would continue through February 28, 2016, consistent with EA-09-156 and PID's current Warren Act Contract (Appendix A).

1.2 Purpose and Need

California has experienced a severe drought in recent years that has reduced water supplies to many CVP contractors. South-of Delta CVP water service contractors, including Cross Valley contractors, experienced reduced water supply allocations since 2007 due to hydrologic conditions and regulatory requirements. It is likely that South-of Delta CVP contractors will need to supplement supplies in the future to meet demands in many years because of dry years and overall CVP operational constraints. DPWD, as a South-of Delta CVP contractor, thus needs to identify additional supplies to avoid shortages for their customers.

The purpose of the Proposed Action is to provide up to 10,000 AFY of water to irrigable lands within DPWD consistent with the timeline analyzed in EA-09-156.

1.3 Reclamation's Legal and Statutory Authorities and Jurisdiction Relevant to the Proposed Federal Action

Several Federal laws, permits, licenses and policy requirements have directed, limited or guided the National Environmental Policy Act analysis and decision-making process of this EA and include the following as amended, updated, and/or superseded (all of which are incorporated by reference):

Warren Act

The Warren Act (Act as of February 21, 1911; CH. 141, [36 STAT.925]) authorizes Reclamation to enter into contracts to impound, store, and/or convey Non-project water when excess capacity is available in federal facilities.

Central Valley Project Improvement Act

Central Valley Project Improvement Act (CVPIA) of 1992, Title 34 of Public Law 102-575, Section 3408, Additional Authorities (c) authorizes the Secretary of the Interior to enter into contracts pursuant to Reclamation law and this title with any Federal agency, California water user or water agency, State agency, or private nonprofit organization for the exchange, impoundment, storage, carriage, and delivery of CVP and non-CVP water for domestic, municipal, industrial, fish and wildlife, and any other beneficial purpose, except that nothing in this subsection shall be deemed to supersede the provisions of section 103 of Public Law 99-546 (100 Stat. 3051).

Reclamation completed the Final Programmatic Environmental Impact Statement (EIS) for the CVPIA in October 1999 that analyzed alternatives and implementation of the CVPIA. The Record of Decision (ROD) was signed in January 9, 2001.

Water Quality Standards

Reclamation requires that the operation and maintenance of CVP facilities shall be performed in such a manner as is practical to maintain the quality of raw water at the highest level that is reasonably attainable. Water quality and monitoring requirements are established annually by Reclamation and are instituted to protect water quality in federal facilities by ensuring that imported non-CVP water does not impair existing uses or negatively impact existing water quality conditions. These standards are updated periodically. The water quality standards are the maximum concentration of certain contaminants that may occur in each source of non-CVP water. See Appendix A for water quality requirements for use of the DMC.

1.4 Scope

This supplemental EA has been prepared to analyze the impacts of adding additional points of delivery of up to 10,000 AFY of PID's non-CVP water to irrigable lands in DPWD via the DMC through February 28, 2016, consistent with PID's existing Warren Act Contract. As no other changes have been made to the Proposed Action analyzed in EA-09-156, this supplemental EA will focus on the impacts of the Proposed Action that were not previously analyzed. The Proposed Action area is shown in Figure 1-1. This EA has also been prepared to examine the possible effects of the No Action Alternative.

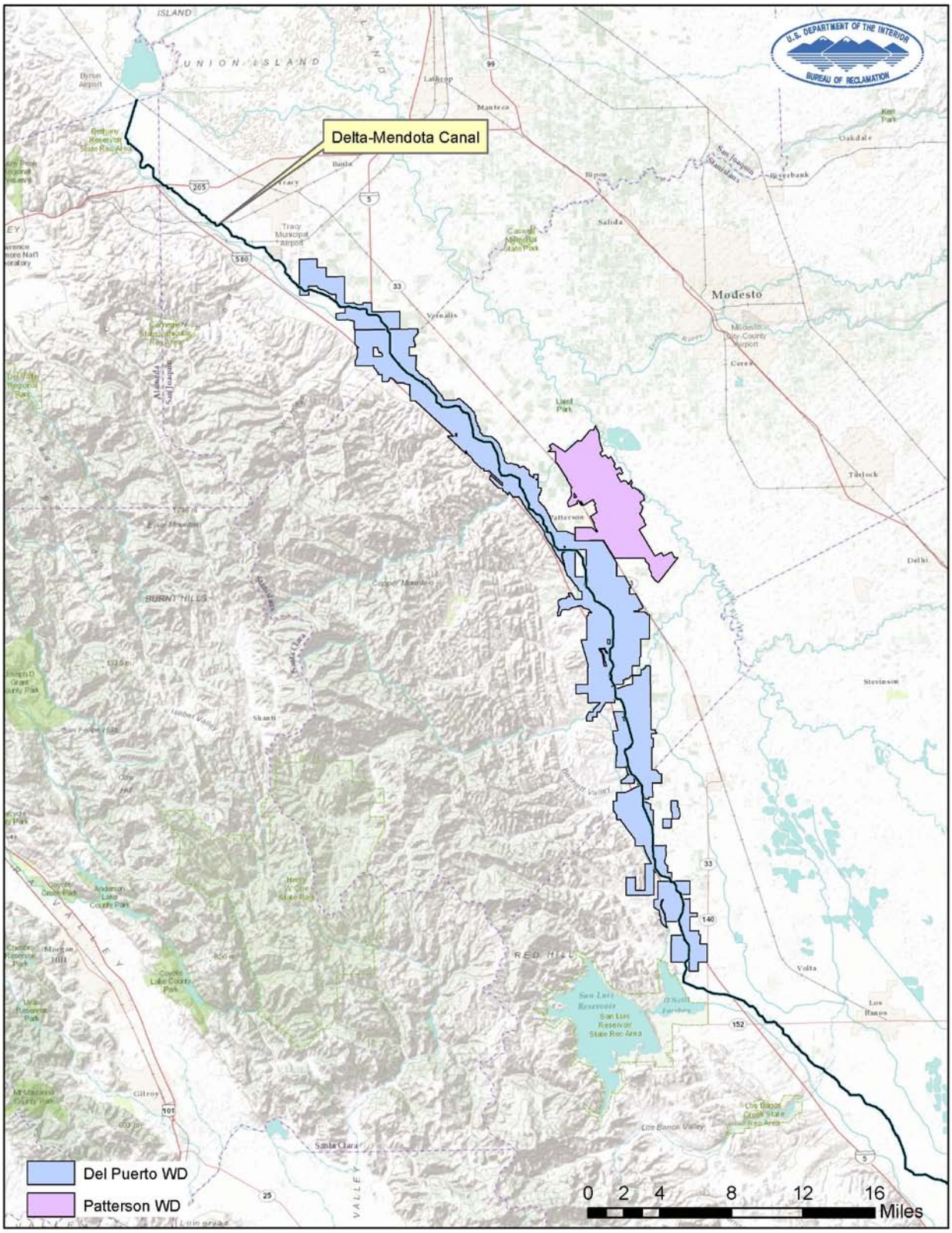

Figure 1-1 Proposed Action Area

THIS PAGE LEFT INTENTIONALLY BLANK

1.5 Resources Eliminated from Further Analysis

Reclamation analyzed the affected environment of the Proposed Action and No Action Alternative and has determined that there is no potential for direct, indirect, or cumulative effects to the following resources:

Land Use

There would be no impact to land use under the No Action alternative as conditions would remain the same as existing conditions. Under the Proposed Action, neither PID nor DPWD would change historic land and water management practices. PID's non-CVP water would move through existing facilities for delivery to lands within DPWD and would be used on existing crops. The water would not be used to place untilled or new lands into production, or to convert undeveloped land to other uses. Therefore, there would be no change to land use.

Cultural Resources

There would be no impacts to cultural resources under the No Action alternative as conditions would remain the same as existing conditions. There would be no impacts to cultural resources as a result of implementing the Proposed Action as the Proposed Action would facilitate the flow of water through existing facilities to existing users. No new construction or ground disturbing activities would occur as part of the Proposed Action. The pumping, conveyance, and storage of water would be confined to existing pumps and CVP facilities. Reclamation has determined that these activities have no potential to cause effects to historic properties pursuant to 36 CFR Part 800.3(a)(1).

Indian Sacred Sites

No impact to Indian sacred sites would occur under the No Action alternative as conditions would remain the same as existing conditions. Reclamation has determined that there would be no impacts to Indian sacred sites as a result of the Proposed Action since the Proposed Action would not limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites.

Indian Trust Assets

No impact to Indian Trust Assets would occur under the No Action alternative as conditions would remain the same as existing conditions. Reclamation has determined that the Proposed Action would not impact Indian Trust Assets as there are none in the Proposed Action area.

Environmental Justice

No impact to economically disadvantaged or minority populations would occur under the No Action alternative as conditions would remain the same as existing conditions. The Proposed Action would not cause dislocation, changes in employment, or increase flood, drought, or disease and would not disproportionately impact economically disadvantaged or minority populations.

Air Quality

There would be no impacts to air quality under the No Action alternative as conditions would remain the same as existing conditions. No construction or modification of facilities would be

needed under the Proposed Action to move PID's non-CVP water to DPWD through the DMC. Non-CVP and CVP water exchanged for PID's non-CVP water would be moved either via gravity or electric pumps which would not produce emissions that impact air quality. Therefore, a conformity analysis is not required under the Clean Air Act and there would be no impact to air quality as a result of the Proposed Action.

Global Climate

Neither the Proposed Action nor the No Action alternative would involve physical changes to the environment or construction activities and, therefore, would not impact global climate change. Global climate change is expected to have some effect on the snow pack of the Sierra Nevada and the runoff regime. Current data are not yet clear on the hydrologic changes and how they will affect the San Joaquin Valley. CVP water allocations are made dependent on hydrologic conditions and environmental requirements. Since Reclamation operations and allocations are flexible, any changes in hydrologic conditions due to global climate change would be addressed within Reclamation's operation flexibility and therefore surface water resource changes due to climate change would be the same with or without either alternative.

As there would be no impact to the resources listed above as a result of the Proposed Action or the No Action alternative, they will not be considered further.

1.6 Resources Requiring Further Analysis

This EA will analyze the affected environment of the Proposed Action and No Action Alternative in order to determine the potential direct, indirect, and cumulative effects to the following resources:

- Water Resources
- Biological Resources
- Socioeconomic Resources

Section 2 Alternatives Including the Proposed Action

This EA considers two possible actions: the No Action Alternative and the Proposed Action. The No Action Alternative reflects future conditions without the Proposed Action and serves as a basis of comparison for determining potential effects to the human environment.

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not approve additional points of delivery for PID's non-CVP water to DPWD. PID would continue to pump their non-CVP water into the DMC, dependent on available capacity, under their current Warren Act Contract which expires February 28, 2016. PID's non-CVP water would be conveyed and stored in San Luis Reservoir. Return of PID's non-CVP water to PID would continue to be done via exchange with Reclamation.

2.2 Proposed Action

Under the Proposed Action, Reclamation would approve additional points of delivery along the DMC for conveyance of up to 10,000 AFY of PID's non-CVP water to DPWD. Delivery of this water would continue through February 28, 2016, consistent with PID's existing Warren Act Contract. PID's non-CVP water would continue to be pumped into the DMC at milepost 42.53L. This water, less losses, would then be conveyed by way of the DMC and delivered to DPWD's turnouts. Any water not delivered to DPWD would be stored in San Luis Reservoir for later delivery via exchange with Reclamation to DPWD or PID.

2.2.1 Environmental Commitments

The Proposed Action is subject to the following conditions:

- The water would only be used for beneficial purposes and in accordance with Federal Reclamation law and guidelines.
- The water would not be used to place untilled or new lands into production, or to convert undeveloped land to other uses.
- The Proposed Action would not affect CVP or State Water Project operations; all supplies would be previously scheduled for delivery points south-of-Delta, and do not require additional Delta exports.
- The movement of the water would not require the construction of any new water diversion or conveyance facilities.
- The Proposed Action must comply with water quality standards specified in Exhibit D of the Warren Act Contract (see Appendix A).

THIS PAGE LEFT INTENTIONALLY BLANK

Section 3 Affected Environment and Environmental Consequences

This section identifies the potentially affected environment and the environmental consequences involved with the Proposed Action and the No Action Alternative, in addition to environmental trends and conditions that currently exist.

The only difference between the Proposed Action analyzed in this Supplemental EA and the action analyzed in EA-09-156 is the delivery of PID's non-CVP water to DPWD via the DMC. Therefore, the affected environmental and environmental consequences section in this EA will focus on changes to the previous affected environment as a result of the Proposed Action and No Action alternative as well as areas that were not previously covered.

3.1 Water Resources

3.1.1 Affected Environment

South-of-Delta CVP Allocations

South-of-Delta CVP agricultural allocations averaged 62.5 percent from 2002 to 2011 and ranged from 10 percent to 100 percent during this period (Table 3-1). South-of-Delta CVP water supply allocations have been severely impacted over the last few years. Due to operational constraints and fluctuating hydrologic conditions, water allocations in the future are likely to be similar to those shown in Table 3-1.

Table 3-1 Average South-of-Delta Agricultural Allocation

Contract Year[1]	Agricultural Allocations (%)[2]
2011	80
2010	45
2009	10
2008	40
2007	50
2006	100
2005	85
2004	70
2003	75
2002	70
Average	**62.5**

[1]A Contract Year is from March 1 of a given year through February 28/29 of the following year.
[2]As percentage of Water Service Contract total

Del Puerto Water District

DPWD is a CVP contractor located in San Joaquin, Stanislaus, and Merced Counties with a CVP water service contract that provides up to 140,210 AFY (Contract No. 14-06-200-922). This contract water supply, which is delivered directly from the DMC, is the District's only source of water supply. Privately developed groundwater is available on a limited basis throughout the District, some of which is stored and/or conveyed under the terms of temporary Warren Act Contracts between the DPWD and Reclamation. Currently, the only CVP supply used for

municipal and industrial purposes is one or two acre-feet (AF) per month of landscape water supplied to a small piece of land recently converted to commercial use. All remaining CVP supplies are delivered for agriculture purposes. A summary of water supplies available to DPWD over the last five years is included in Table 3-2.

Table 3-2 Available Water Supplies in Del Puerto Water District

Water Year[1]	CVP Contract Allocation	Contract Quantity	DMC Pump-Ins (District WA Contract)	Other Annual Supplies[2]
2011-12	80%	112,168 AF	-	3,508 AF
2010-11	45%	63,095 AF	1,782 AF	5,135 AF
2009-10	10%	14,021 AF	2,384 AF	17,424 AF
2008-09	40%	56,084 AF	2,723 AF	26,738 AF
2007-08	50%	70,105 AF	2,157 AF	21,000 AF

[1]A Water Year is from March 1 of a given year through February 28/29 of the following year.
[2]CVP transfers

3.1.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not approve the additional point of delivery of up to 10,000 AF of PID's non-CVP water to DPWD via the DMC. PID's non-CVP water would continue to be pumped into the DMC for later return to PID's service area via exchange with Reclamation pursuant to the existing Warren Act Contract previously analyzed in EA-09-156. DPWD would continue to receive their existing CVP water supplies dependent upon hydrologic conditions and operational constraints as it has in the past. Any additional water supply needs within DPWD would need to be met from other sources, such as purchasing surface water supplies or from additional groundwater pumping.

Proposed Action

No additional diversions are being generated or needed for the delivery of PID's non-CVP water to DPWD via the DMC. No modifications of existing facilities are required for the movement of this water to DPWD. Therefore, there would be no impact to district or federal facilities or water rights as a result of the Proposed Action.

No activities such as dredging or filling of wetlands or surface waters would be required for implementation of the Proposed Action, therefore, permits obtained in compliance with the Clean Water Act are not required.

Executive Order 11988 requires Federal agencies to prepare floodplain assessments for actions located within or affecting flood plains, and similarly, Executive Order 11990 places similar requirements for actions in wetlands. The Proposed Action would not affect either concern as there are none within the action area.

Delivery of up to 10,000 AFY of PID's non-CVP water to DPWD would not impact PID's ability to service their customers as this water is only a portion of their existing pre-1914 water

rights entitlement and would not impact the availability or use of PID's other available water supplies. Therefore, there would be no adverse impacts to water supplies within PID.

The addition of up to 10,000 AF of PID's non-CVP water to DPWD's overall water supply would help increase water supply reliability in DPWD. Therefore, the Proposed Action would have beneficial impacts to water resources within DPWD.

Cumulative Impacts

Cumulative impacts result from incremental impacts of the Proposed Action or No Action alternative when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. To determine whether cumulatively significant impacts are anticipated from the Proposed Action or the No Action alternative, the incremental effect of both alternatives were examined together with impacts from past, present, and reasonably foreseeable future actions in the same geographic area.

As in the past, hydrological conditions and other factors are likely to result in fluctuating water supplies which drives requests for water service actions. Water districts aim to provide water to their customers based on available water supplies and timing, all while attempting to minimize costs. Farmers irrigate and grow crops based on these conditions and factors, and a myriad of water service actions are approved and executed each year to facilitate water needs. Each water service transaction involving Reclamation undergoes environmental review prior to approval.

Existing or foreseeable projects, in addition to the proposed delivery of PID's non-CVP water to DPWD, that could affect or could be affected by the Proposed Action or No Action alternative include the following:

Exchange Contractors 25-Year Water Transfer Program The San Joaquin River Exchange Contractors are currently transferring up to 130,000 AF of their substitute water to Reclamation under a 10-year (March 1, 2005, through February 28, 2014) water transfer program. Under the current program, the San Joaquin River Exchange Contractors develop sources of water to temporarily reduce the need for delivery of substitute water by Reclamation. The sources of water developed by the San Joaquin River Exchange Contractors include a maximum of 80,000 AF from conservation, tailwater recapture, and groundwater as well as a maximum of 50,000 AF from voluntary temporary land fallowing. For each AF of water developed by the San Joaquin River Exchange Contractors, an in-kind amount of water is considered acquired and left within the CVP for Reclamation to deliver to CVP contractors or wildlife areas. Reclamation and the San Joaquin River Exchange Contractors prepared an EIS/Environmental Impact Report (EIR) for the 10 year program and a ROD was completed March 23, 2005. As the program will expire soon, Reclamation and the San Joaquin River Exchange Contractors have proposed extending the program for another 25 years. A draft EIS/EIR was released for a 60 public review on May 4, 2012 (Reclamation 2012c).

San Joaquin River Restoration Program In 2006, the San Joaquin River Restoration Program (SJRRP) was established to implement the Stipulation of Settlement in *NRDC, et al. v. Kirk Rodgers et al.* The Settlement's two primary goals include: (1) restoration and maintenance of

fish populations in the San Joaquin River below Friant Dam to the confluence of the Merced River; and (2) management of water resources in order to reduce or avoid adverse water supply impacts to Friant Division long-term contractors. The SJRRP is a long-term effort to restore flows to the San Joaquin River from Friant Dam to the confluence of Merced River in order to meet the two goals established in the Settlement. In 2007, Reclamation released a notice of intent to prepare a programmatic EIS/EIR in the Federal Register. The draft programmatic EIS/EIR was released for a 60 public review on April 22, 2011 (Reclamation 2011a). A final programmatic EIS/EIR is pending.

As an initial action to guide implementation of the SJRRP, the Settlement requires that Reclamation modify releases from Friant Dam from October 1 to September 30 for a program of interim flows in order to collect pertinent scientific data and to implement a monitoring program. Environmental effects for the release of interim flows from Friant Dam down the San Joaquin River were addressed in a FONSI and EA/Initial Study entitled *Water Year 2010 Interim Flows Project* (Reclamation 2010). Supplemental EAs and FONSIs for continuation of interim flows were also completed for Water Years 2011 and 2012 (March 1, 2011 through February 28, 2013). Full restoration flows are scheduled to start no later than January 1, 2014.

In order to reduce or avoid adverse water supply impacts to all of the Friant Division long-term contractors that may result from the interim flows, Reclamation developed plans for recirculation, recapture, reuse, and exchange or transfer of interim flows. An EA that analyzed the impacts of recirculation of interim flows entitled *Recirculation of Recaptured Water Year 2012 San Joaquin River Restoration Program Interim Flows* was released for public comment on February 7, 2012 and a FONSI completed on April 3, 2012 (Reclamation 2012d).

Meyers Farms Groundwater Banking Program The Meyers Family Farm Trust pursued development of the Meyers Farm Water Bank to store water in above-normal and wet years for later use during below-normal, dry, and critically-dry years. Under the banking program, CVP and non-CVP water to be banked flows from the Mendota Pool into five recharge ponds. Banked water is later extracted and pumped into Mendota Pool for exchange with Reclamation. The original project was analyzed in EA-05-09 *Meyers Farm Water Banking Project – Mendota, California* and a FONSI signed May 9, 2005 (Reclamation 2005). Two supplemental EAs and FONSIs for the project were prepared to increase the annual extraction rate and to add Banta-Carbona Irrigation District's non-CVP surface water to the banking program. In addition, Reclamation has recently received a request to increase the rate of extraction from Meyers Bank from 6,316 AFY to 10,526 AFY, to amend the cumulative total amount of CVP water banked from 35,000 AF to 60,000 AF at any given time, to increase the amount of Banta Carbona Irrigation District's non-CVP water conveyed in the DMC for banking from 5,000 AFY to 10,000 AFY, to approve the annual transfer of up to 10,000 AFY of Banta Carbona Irrigation District's CVP water in-lieu of their non-CVP water for banking at Meyers Bank, and to deliver banked water via exchange to other areas within the service area of San Luis Water District. Reclamation released a draft EA for public comment on July 2, 2012 for the proposed amendments. The public comment period closes July 31, 2012.

Tranquillity Irrigation District Transfer to San Luis Water District Under this project, Tranquillity Irrigation District could transfer up to 15,000 AF of its pumped groundwater to San

Luis Water District via exchange with Reclamation at the Mendota Pool from March 1, 2011 through February 28, 2014 (Contract Years 2011 through 2013). Transfer in any single water year would not exceed 7,500 AF. The project was analyzed in EA-10-092 *Tranquillity Irrigation District/ San Luis Water District Groundwater Transfer/Exchange Program–2011 through 2013* and a FONSI completed on March 11, 2011 (Reclamation 2011b).

Groundwater Pump-in Programs for San Luis Unit and Delta Division Contractors Under this project, participating CVP contractors within the Delta Division and San Luis Unit of the CVP could pump up to 50,000 AF total of groundwater into the DMC between March 1, 2012 through February 28, 2014 (Contract Years 2012 and 2013). The project was analyzed in EA-12-005 *Two-Year Exchange Agreements and/or Warren Act Contracts for Conveyance of Groundwater in the DMC – Contract Years 2012 through 2014 (March 1, 2012 – February 28, 2014)* and a FONSI was completed on May 8, 2012 (Reclamation 2012e). The action was previously conducted between March 1, 2010 through February 28, 2012 (Contract Years 2010 and 2011) and analyzed in EA-09-169. It is likely that these actions would be requested in the future.

Byron-Bethany Irrigation District Long-term Exchange Agreement Reclamation has received a request from Byron-Bethany Irrigation District (BBID) to enter into a 40-year contract for the introduction of up to 4,725 AFY of their non-CVP surface water in to the DMC for exchange with Reclamation. Reclamation is currently preparing an EA for the proposed project.

Additional Point of Delivery of Byron-Bethany Irrigations District's Non-Central Valley Project Water to Westlands Water District (supplementing EA-09-156) Under this project, Reclamation would deliver up to 5,000 AFY of BBID's non-CVP water introduced into the DMC to Westlands Water District via the San Luis Canal through February 28, 2016 consistent with BBID's existing Warren Act Contract. The additional point of delivery was analyzed in supplemental EA-12-052 and a FONSI was completed on June 15, 2012.

Reclamation's Proposed Action is the approval of additional points of delivery of up to 10,000 AFY of PID's non-CVP water to DPWD via the DMC. This is the same amount of water previously analyzed in EA-09-156; therefore, no additional non-CVP water would need to be introduced into the DMC for the Proposed Action. The Proposed Action would not cumulatively impact district or federal facilities or water rights as no additional diversions or changes to distribution facilities are needed to move this water. Water service actions, like those described above, do not result in increases or decreases of water diverted from rivers or reservoirs. Each water service transaction involving CVP and non-CVP water undergoes environmental review prior to approval. The Proposed Action and No Action alternative and other similar projects would not interfere with the projects listed above, nor would they hinder the normal operations of the CVP and Reclamation's obligation to deliver water to its contractors or to local fish and wildlife habitat. Neither alternative, when added to other water service actions, would result in cumulative effects to water resources beyond historical fluctuations and conditions.

The addition of up to 10,000 AF of PID's non-CVP water to DPWD's overall water supply would help increase water supply reliability in DPWD. Therefore, the Proposed Action would have cumulatively beneficial impacts to water resources within DPWD.

3.2 Biological Resources

3.2.1 Affected Environment

Reclamation requested an official species list from the U.S. Fish and Wildlife Service on July 3, 2012 via the Sacramento Field Office's website: http://www.fws.gov/sacramento/ES_Species/Lists/es_species_lists-form.cfm (Document Number 120703093522). The list is for the following 7 ½ minute U.S. Geological Survey quadrangles, which overlapped DPWD: Howard Ranch, San Luis Dam, Crows Landing, Patterson, Orestimba Peak, Newman, Westley, Vernalis, Tracy, and Solyo (USFWS 2012). Reclamation further queried the California Natural Diversity Database for records of protected species within the project location (CNDDB 2012). The two lists, in addition to other information within Reclamation's files were combined to create the following list (Table 3-2)

Table 3-3 Federal Protected Species with Potential to be Present

Species	Status[1]	Occurrence Potential in DPWD Service Area [2]
Amphibians		
California red-legged frog *Rana aurora draytonii*	T, X	**Present.** Presumed extant in service area and habitat present. Critical habitat outside of DPWD service area. No construction of new facilities; no conversion of lands from existing uses.
California tiger salamander *Ambystoma californiense*	T	**Absent.** No individuals or habitat in area of impact.
Bird		
burrowing owl *Athene cunicularia*	MBTA	**Present.** Presumed extant in service area and habitat present. No construction of new facilities; no conversion of lands from existing uses.
Least Bell's vireo *Vireo bellii pusillus*	E	**Absent.** No individuals or habitat in area of effect.
Swainson's hawk *Buteo swainsoni*	MBTA	**Present.** Documented as extant in Project Area. No construction of new facilities; no conversion of lands from existing uses.
Fish		
Central Valley spring-run Chinook salmon *Oncorhynchus tshawytscha*	T NMFS	**Absent.** No natural waterways within the species' range would be affected by the proposed action.
Central Valley Steelhead *Oncorhynchus mykiss*	T NMFS	**Absent.** No natural waterways within the species' range would be affected by the proposed action.
Delta smelt *Hypomesus transpacificus*	T, X	**Absent.** No natural waterways within the species' range would be affected by the proposed action.
green sturgeon *Acipenser medirostris*	T NMFS	**Absent.** No natural waterways within the species' range would be affected by the proposed action.
winter-run Chinook salmon, Sacramento River *Oncorhynchus tshawytscha*	E NMFS	**Absent.** No natural waterways within the species' range would be affected by the proposed action.
Invertebrates		
Conservancy fairy shrimp *Branchinecta conservatio*	E	**Absent.** No individuals or vernal pools in area of impact.

Species	Status[1]	Occurrence Potential in DPWD Service Area [2]
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T	**Absent.** No individuals or elderberry shrubs in area of impact.
vernal pool fairy shrimp *Branchinecta lynchi*	T	**Absent.** No individuals or vernal pools in area of impact.
vernal pool tadpole shrimp *Lepidurus packardi*	E	**Absent.** No individuals or vernal pools in area of impact.
Mammals		
Fresno kangaroo rat *Dipodomys nitratoides exilis*	E, X	**Absent.** No individuals or habitat in area of effect. Critical habitat outside of DPWD service area.
riparian brush rabbit *Sylvilagus bachmani riparius*	E	**Absent.** No individuals or habitat in area of effect.
riparian (San Joaquin Valley) woodrat *Neotoma fuscipes riparia*	E	**Absent.** No individuals or habitat in area of effect.
San Joaquin kit fox *Vulpes mactotis mutica*	E	**Present.** CNDDB records indicate this species occurs in the Project Area. No construction of new facilities; no conversion of lands from existing uses.
Plant		
large-flowered fiddleneck *Amsinckia grandiflora*	E	**Absent.** No individuals or habitat in area of impact.
Reptiles		
Blunt-nosed leopard lizard *Gambelia sila*	E	**Absent.** No individuals or habitat in area of impact.
giant garter snake *Thamnophis gigas*	T	**Absent.** No individuals or habitat in area of impact.

Sources: U.S. Fish and Wildlife Service Sacramento Database 2012, CNDDB 2012
1 Status = Listing of Federally special status species, unless otherwise indicated
E: Listed as Endangered
MBTA: Birds protected under the Migratory Bird Treaty Act
NMFS: Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service.
T: Listed as Threatened
X: Critical Habitat designated for this species
2 Definition Of Occurrence Indicators
Present: Species reported in area and habitat present
Absent: Species not reported from service area and habitat requirements not met

3.2.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not approve the additional point of delivery of PID's non-CVP water to DPWD. PID's non-CVP water would continue to be pumped into the DMC for later return to PID's service area via exchange with Reclamation pursuant to the existing Warren Act Contract previously analyzed in EA-09-156. The previous action was found to have no effect on species protected under the Endangered Species Act or birds protected by the Migratory Bird Treaty Act.

Proposed Action

Affects are similar to the No Action Alternative. Most of the habitat types required by species protected under the ESA do not occur in the Proposed Action area. Any encountered biological resources are likely to be those associated with actively cultivated land. The Proposed Action would not involve the conversion of any land fallowed and untilled for three or more years as the non-CVP water would be used on existing agricultural lands. Such actions would require additional environmental review. Since no natural stream courses or additional surface water pumping would occur and there are capacity limitations and water quality restrictions in the DMC, there would be no effect to listed fish species. No critical habitat occurs within the area affected by the Proposed Action; therefore, no primary constituent elements of any critical habitat would be affected.

Based upon the short duration of the water availability, the requirement that no native lands be converted without consultation with U.S. Fish and Wildlife Service, and the stringent requirements for introduction of non-CVP water into federal facilities, any potential impacts to wildlife (whether federally listed or not) would be precluded. Reclamation has determined there would be no effect to listed species or birds protected by the Migratory Bird Treaty Act.

Cumulative Impacts

Existing conditions, such as loss of habitat due to urbanization and expanding agricultural lands that cumulatively impact listed species and their habitats, are expected to occur under either alternative. The additional point of diversion for the conveyance and storage of up to 10,000 AFY from PID to DPWD is not expected to contribute cumulatively to habitat loss as this water would be used consistent with current uses. Therefore, there would be no cumulative adverse impacts to biological resources as a result of the Proposed Action.

3.3 Socioeconomic Resources

3.3.1 Affected Environment

The agricultural industry significantly contributes to the overall economic stability of the San Joaquin Valley. DPWD's service area is predominately rural and agricultural. There are several communities and a few cities in the surrounding area that are homes for farm workers. In addition, there are small businesses that support agriculture such as feed and fertilizer sales, machinery sales and service, pesticide applicators, transport, packaging, marketing, etc.

3.3.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not approve the additional point of delivery of PID's non-CVP water to DPWD. PID's non-CVP water would continue to be pumped into the DMC for later return to PID's service area via exchange with Reclamation pursuant to the existing Warren Act Contract previously analyzed in EA-09-156. There would be no impact to socioeconomic resources in PID as there would be no change from existing conditions. DPWD would need to find other water sources to supplement its diminished CVP water supply. This could potentially impact socioeconomic resources within DPWD as purchasing additional water supplies and/or additional groundwater pumping could be costly and could impact farming within the district.

Proposed Action

The availability of this additional supplemental water supply would have beneficial impacts on socioeconomic resources with DPWD as this water would be used to help sustain existing crops and maintain farming within the district. As there would be no adverse impact to water resources within PID that would impact their ability to deliver water to their agricultural and urban uses, there would be no impacts to socioeconomic resources within PID.

Cumulative Impacts

There may be adverse cumulative impacts to socioeconomic resources under the No Action Alternative as DPWD may need to purchase more water supplies and/or increase groundwater pumping in order to meet irrigation demands.

The availability of additional supplemental water supply would have cumulatively beneficial impacts on socioeconomic resources with DPWD as this water would be used to help sustain existing crops and maintain farming within the district. As there would be no adverse impact to water resources within PID that would impact their ability to deliver water to their agricultural and urban uses, there would be no cumulative impacts to socioeconomic resources within PID.

THIS PAGE LEFT INTENTIONALLY BLANK

Section 4 Consultation and Coordination

4.1 Fish and Wildlife Coordination Act (16 U.S.C. § 661 et seq.)

The Fish and Wildlife Coordination Act requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The amendments enacted in 1946 require consultation with the Service and State fish and wildlife agencies "whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the United States, or by any public or private agency under Federal permit or license". Consultation is to be undertaken for the purpose of "preventing the loss of and damage to wildlife resources".

The Proposed Action does not involve any new impoundment or diversion of waters, channel deepening, or other control or modification of a stream or body of water as described in the statute, but the approval of additional points of delivery of introduced non-CVP surface water. In addition, no construction or modification of water conveyance facilities are required for movement of this water. Consequently, Reclamation has determined that the Fish and Wildlife Coordination Act does not apply.

4.2 Endangered Species Act (16 U.S.C. § 1531 et seq.)

Section 7 of the Endangered Species Act requires Federal agencies, in consultation with the Secretary of the Interior and/or Commerce, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species.

Based upon the short duration of the water availability, the requirement that no native lands be converted without consultation with U.S. Fish and Wildlife Service, and the stringent requirements for introductions of non-CVP water into federal facilities that would preclude any impacts to wildlife, whether federally listed or not, Reclamation has determined there would be no effect to listed species.

4.3 National Historic Preservation Act (16 U.S.C. § 470 et seq.)

The National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 et seq.), requires that Federal agencies give the Advisory Council on Historic Preservation an opportunity to comment on the effects of an undertaking on historic properties, properties that are eligible for inclusion in the National Register of Historic Places. The 36 CFR Part 800 regulations implement Section 106 of the National Historic Preservation Act.

Section 106 of the National Historic Preservation Act requires Federal agencies to consider the effects of Federal undertakings on historic properties, properties determined eligible for inclusion in the National Register of Historic Places. Compliance with Section 106 follows a series of steps that are designed to identify interested parties, determine the Area of Potential Effect, conduct cultural resource inventories, determine if historic properties are present within the Area of Potential Effect, and assess effects on any identified historic properties.

Reclamation has determined that the proposed undertaking of adding an additional point of delivery for PID's Non-CVP water to DPWD is the type of undertaking that has no potential to affect historic properties pursuant to 36 CFR Part 800.3(a)(1).

4.4 Migratory Bird Treaty Act (16 U.S.C. § 703 et seq.)

The Migratory Bird Treaty Act implements various treaties and conventions between the United States and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the Act provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to limitations in the Act, the Secretary of the Interior may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

The Proposed Action would not change the land use patterns of the cultivated or fallowed fields that do have some value to listed species or birds protected by the Migratory Bird Treaty Act; therefore, the Proposed Action would not affect birds protected by the Migratory Bird Treaty Act.

Section 5 List of Preparers and Reviewers

Rain Healer, M.S., Natural Resources Specialist, SCCAO
Jennifer Lewis, PhD., Wildlife Biologist, SCCAO
Bill Soule, Archaeologist, MP-153
Patricia Rivera, ITA, MP-400
Eileen Jones, Repayment Specialist, SCCAO – reviewer
Chuck Siek, Supervisory Natural Resources Specialist, SCCAO – reviewer
Randy English, Resources Management Division Chief, SCCAO – reviewer

Section 6 Acronyms and Abbreviations

AF	Acre-feet
AFY	Acre-feet per year
BBID	Byron-Bethany Irrigation District
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
DMC	DMC
DPWD	Del Puerto Water District
EA	Environmental Assessment
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
FONSI	Finding of No Significant Impact
Non-CVP	Non-Central Valley Project
Non-CVP water	PID's pre-1914 surface water
PID	Patterson Irrigation District
Reclamation	Bureau of Reclamation
SJRRP	San Joaquin River Restoration Program

Section 7 References

Bureau of Reclamation (Reclamation). 1963. Contract Between the United States and Westlands Water District for Providing Water Service. Contract No. 14-06-200-495A. Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 1999. CVP Water Supply Partial Contract Assignment from Mercy Springs Water District (Contract No. 14-06-200-3365A) to Pajaro Valley Water Management Area, Santa Clara Valley Water District, and WWD, Final Environmental Assessment and Final Finding of No Significant Impact. Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2002. Final Environmental Assessment and Finding of No Significant Impact (EA-00-84). Partial Assignment of CVP Water Supply Contract Assignment from Mercy Springs Water District (Contract No. 14-06-200-3365A) to Westlands Water District Distribution District #2. Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2004. Final Environmental Assessment and Finding of No Significant Impact (EA-03-116). Approval of CVP Water Supply Contract Assignment from Centinella Water District (Contract 7-07-20-W0055) to Westlands Water District. Mid-Pacific Region South Central California Area Office. Fresno, California

Bureau of Reclamation (Reclamation). 2005a. CVP Water Supply Contract Assignment from Widren Water District (Contract 04-06-200-8018) to Westlands Water District, Final Environmental Assessment and Initial Study. Mid-Pacific Region South Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2005b. Environmental Impact Statement (EIS-01-81) *Mendota Pool 10-Year Exchange Agreements*. South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2005c. Environmental Assessment (EA-05-09) *Farm Water Banking Project – Mendota, California*. South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2006. Final Environmental Assessment and Finding of No Significant Impact (EA-05-43). Broadview Water District Contract Assignment and Annexation to Westlands Water District. Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2009. Final Environmental Assessment/Initial Study. *San Joaquin River Restoration Project Water Year 2010 Interim Flows Project.* Mid-Pacific Region. Sacramento, California.

Bureau of Reclamation (Reclamation). 2010. *San Joaquin River Restoration Program Water Year 2010 Interim Flows Project Environmental Assessment/Initial Study.* Mid-Pacific Region. Sacramento, California. Website: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=3612.

Bureau of Reclamation (Reclamation). 2011a. *San Joaquin River Restoration Program: Program Draft Environmental Impact Statement/Environmental Impact Report*. Mid-Pacific Region. Sacramento, California. Website: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=2940.

Bureau of Reclamation (Reclamation). 2011b. Environmental Assesment (EA-10-092) *Tranquillity Irrigation District/San Luis Water District Groundwater Transfer/Exchange Program – 2011 through 2013*. South-Central California Area Office. Fresno, California. Website: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=7276.

Bureau of Reclamation (Reclamation). 2012a. San Luis Unit Project Website: http://www.usbr.gov/projects/Project.jsp?proj_Name=San+Luis+Unit+Project.

Bureau of Reclamation (Reclamation). 2012b. Final Environmental Assessment and Finding of No Significant Impact (EA-11-092). Oro Loma Water District Partial Assignment of 4,000 acre-feet of Central Valley Project Water to Westlands Water District. Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2012c. Draft Environmental Impact Statement/ Environmental Impact Report *Water Transfer Program for the San Joaquin River Exchange Contractors Water Authority, 2014-2038*. Mid-Pacific Region. Sacramento, California. Website: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=9086.

Bureau of Reclamation (Reclamation). 2012d. Draft Environmental Assessment *Recirculation of Recaptured Water Year 2012 San Joaquin River Restoration Program Interim Flows*. Mid-Pacific Region. Sacramento, California. Website: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=9063.

Bureau of Reclamation (Reclamation). 2012e. Environmental Assessment (EA-12-005) *Two-Year Exchange Agreements and/or Warren Act Contracts for Conveyance of Groundwater in the DMC – Contract Years 2012 through 2012 (March 1, 2012 – February 28, 2012)*. South-Central California Area Office. Fresno, California. Website: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=9223.

California Department of Fish and Game Natural Diversity Database (CNDDB). 2012. RareFind3 version 3.1.1 (data from May 2012). Accessed: July.

California Employment Development Department (EDD). 2012. Report 400c – Monthly labor force data for Counties, April 2012 preliminary. Website: http://www.calmis.ca.gov/file/lfmonth/countyur-400c.pdf. Accessed: June.

U.S. Census Bureau. 2012. County Quick Facts. Website: http://quickfacts.census.gov/qfd/states/06000.html. Accessed: June.

U.S. Fish and Wildlife Service (USFWS). 2012. Species List. Website: http://www.fws.gov/sacramento/ES_Species/Lists/es_species_lists-form.cfm (Document Number 120703093522). Accessed: July.

FINAL SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT (12-054)

ADDITIONAL POINT OF DELIVERY FOR BYRON BETHANY IRRIGATION DISTRICT'S NON-CENTRAL VALLEY PROJECT WATER TO WESTLANDS WATER DISTRICT

Appendix A
Patterson Irrigation District's Warren Act Contract

July 2012

Ag only - NO M&I

Temporary Warren Act Contract–Year 2010 - Year 2015
Irrigation and M&I
Contract No. 10-WC-20-4030

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
Delta Division, Central Valley Project, California
TEMPORARY CONTRACT BETWEEN THE UNITED STATES
AND
PATTERSON IRRIGATION DISTRICT
PROVIDING FOR MULTI-YEAR STORAGE AND
CONVEYANCE OF NON-PROJECT WATER
Table of Contents

Table of Contents - continued

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
Delta Division, Central Valley Project, California
TEMPORARY CONTRACT BETWEEN THE UNITED STATES
AND
PATTERSON IRRIGATION DISTRICT
PROVIDING FOR MULTI-YEAR STORAGE AND
CONVEYANCE OF NON-PROJECT WATER

THIS CONTRACT, executed this 3rd day of Dec, 2010, pursuant to the Act of June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, including the Act of February 21, 1911 (36 Stat. 925), and Section 305 of the Reclamation States Emergency Drought Relief Act of 1991, enacted March 5, 1992 (106 Stat. 59), all collectively hereinafter referred to as the Federal Reclamation laws, between the UNITED STATES OF AMERICA, hereinafter referred to as the United States, represented by the officer executing this Contract, hereinafter referred to as the Contracting Officer, and PATTERSON IRRIGATION DISTRICT, hereinafter referred to as the Contractor;

WITNESSETH, That:

EXPLANATORY RECITALS

[1st] WHEREAS, the United States has constructed and is operating the Central Valley Project, California, for diversion, Storage, carriage, distribution and beneficial use, for flood control, irrigation, municipal, domestic, industrial, fish and wildlife mitigation, protection and restoration, generation and distribution of electric energy, salinity control, navigation and other beneficial uses, of waters of the Sacramento River, the American River, the Trinity River, and the San Joaquin River and their tributaries; and

[2nd] WHEREAS, the Contractor asserts a right to a Non-Project Water supply for Irrigation and Municipal and Industrial (M&I) purposes through its interest in Patterson Irrigation District (PID) Pre-1914 San Joaquin River Water Rights Water at the Delta-Mendota Canal through PID licensed facilities at Milepost 42.53L and out of the DMC at Milepost 42.51L and between Mileposts 25.63R and 59.50R, and has requested the United States Store and Convey said Non-Project Water through Excess Capacity in the Delta-Mendota Canal and associated facilities' features of the Delta Division, including the San Luis Reservoir, Central Valley Project, California; and

[3rd] WHEREAS, the United States is willing to Convey said Non-Project Water to the Contractor through Excess Capacity in said Project Facilities in accordance with the terms and conditions hereinafter stated; and

NOW, THEREFORE, in consideration of the covenants herein contained, the parties agree as follows:

DEFINITIONS

1. When used herein unless otherwise distinctly expressed, or manifestly incompatible with the intent of the parties as expressed in this Contract, the term:

(a) "Calendar Year" shall mean the period January 1 through December 31, both dates inclusive;

(b) "Contracting Officer" shall mean the Secretary of the Interior's duly authorized representative acting pursuant to this Contract or applicable Reclamation law or regulation;

(c) "Contractor's Boundaries" shall mean the geographic area within which the Contractor is authorized to serve Non-Project Water as set forth on Exhibit A, which may be modified in accordance with Article 24, without amendment of this Contract;

(c.1) "Conveyance or Convey" shall mean the transportation of Non-Project Water in Project Facilities;

(d) "Eligible Lands" shall mean all lands to which Irrigation Water may be delivered in accordance with Section 204 of the RRA;

(e) "Excess Capacity" shall mean capacity in the Project Facilities in excess of that needed to meet the Project's authorized purposes, as determined solely by the Contracting Officer, which may be made available for Storage and Conveyance and delivery of Non-Project Water;

(f) "Full-Cost Lands" shall mean landholdings described in Sections 205(a)(3) and 202(3) of the RRA;

(g) "Incremental Fee" shall mean the fee, as set forth in Exhibit B, to be paid to the United States pursuant to the acreage limitation provisions of the Federal Reclamation laws for Non-Project Water Conveyed through Project Facilities that will be used to irrigate Ineligible Lands;

(h) "Ineligible Lands" shall mean all lands to which Irrigation Water may not be delivered in accordance with Section 204 of the RRA;

(i) "Irrigation Water" shall mean Non-Project Water that is used primarily in the commercial production of agricultural crops or livestock, including domestic use incidental thereto. Irrigation Water shall not include water used for purposes such as the watering of landscaping or pasture for animals (e.g., horses) which are kept for personal

enjoyment or water delivered to landholdings operated in units of less than 5 acres, unless the Contractor establishes to the satisfaction of the Contracting Officer that the use of water delivered to such landholding is a use described in this subdivision of this Article;

(j) "Municipal and Industrial Water" or "M&I Water" shall mean Non-Project Water that is made available for purposes other than the commercial production of agricultural crops or livestock, including domestic use incidental thereto. M&I Water shall include water for human use and purposes such as the watering of landscaping or pasture for animals (e.g. horses) which are kept for personal enjoyment or water delivered to landholdings operated in units of less than 5 acres;

(k) "Non-Project Water" shall mean water acquired by or available to the Contractor from the source(s) identified in Exhibit C that has not been appropriated by the United States;

(l) "Operating Non-Federal Entity" shall mean the non-federal entity that has the obligation pursuant to a separate agreement with the United States to operate and maintain all or a portion of the Project Facilities, and which may have funding obligations with respect thereto;

(m) "Project" shall mean the Central Valley Project, owned by the United States and managed by the Department of the Interior, Bureau of Reclamation;

(n) "Project Facilities" shall mean the Delta-Mendota Canal and associated facilities, constructed as features of the Delta Division, including the San Luis Reservoir, Central Valley Project, California;

(o) "Rates" shall mean the Annual amount to be paid to the United States by the Contractor, as set forth in Exhibit B, for the use of Excess Capacity in the Project

Facilities made available, for Storage and Conveyance, pursuant to this Contract, which recognizes a use-of-facilities charge;

(p) "RRA" shall mean the Reclamation Reform Act of October 12, 1982 (96 Stat. 1263), as amended;

(q) "Secretary" shall mean the Secretary of the Interior, a duly appointed successor, or an authorized representative acting pursuant to any authority of the Secretary and through any agency of the Department of the Interior;

(q.1) "Storage, Store, or Stored" shall mean the introduction and retention of Non-Project Water in Project Facilities for a period greater than 30 days;

(r) "Year, Annual, Annually, or Annum" shall mean the period from and including the effective date of this Contract, through the last day of the 12th consecutive month immediately following.

TERM OF CONTRACT

2. This Contract shall become effective on **September 1, 2010** and shall remain in effect through **August 31, 2015**; *Provided*, That upon written notice to the Contractor, this Contract may be terminated by the Contracting Officer at an earlier date if the Contracting Officer determines that the Contractor has not been complying with one or more terms or conditions of this Contract.

INTRODUCTION, STORAGE AND CONVEYANCE, AND DELIVERY OF NON-PROJECT WATER

3. (a) During the term of this Contract, the Contractor may introduce into Project Facilities within each Year, up to 10,000 acre-feet of Non-Project Water from the source(s) identified in Exhibit C in the Delta-Mendota Canal through Contractors' licensed facilities at Milepost 42.51L and at Delta-Mendota Canal Milepost(s) 42.53L, and between 25.63R and

in and/or Convey through Excess Capacity in the Project Facilities, the Non-Project Water for delivery to the Contractor from said point(s) of introduction in the Delta-Mendota Canal to said point(s) of delivery at DMC Milepost 42.51L, and between Mileposts 25.63R and 59.50R. The introduction of Non-Project Water into Project Facilities must be consistent with the authorized season of diversion, the maximum quantity and/or diversion rate of Non-Project Water, and the authorized purpose-of-use of Non-Project Water under the asserted water right(s) identified in Exhibit C.

(a.1) Introduction and delivery point(s) must be mutually agreed to in writing by the Contracting Officer and the Contractor, in accordance with an approved schedule submitted by the Contractor pursuant to subdivision (d) of this Article: *Provided*, That the Annual quantity of Non-Project Water to be Stored for and/or Conveyed to the Contractor in or through Project Facilities shall not exceed the quantity of Non-Project Water previously introduced into the Project Facilities by the Contractor, less **five** percent for losses.

(a.2) The Annual loss percentage is applied to all Non-Project Water introduced into the Project Facilities during the then-current Year. The intent is that the loss percentage is applied only once to an identified quantity of Non-Project Water and that at no time shall the loss percentage be applied to the same block of Non-Project Water more than once.

(b) Exhibit C may be modified or replaced by mutual agreement of the Contractor and the Contracting Officer to reflect changes to the source(s) of Non-Project without amendment of this Contract: *Provided, however*, That no such modification or replacement shall be approved by the Contracting Officer absent all appropriate environmental documentation, including but not limited to documents prepared pursuant to the National Environmental Policy Act of 1969 (NEPA) and the Endangered Species Act of 1973 (ESA), as amended.

(c) All Non-Project Water Stored and/or Conveyed for and delivered to the Contractor pursuant to this Contract shall be used for **irrigation and M&I**.

(d) At the beginning of each Year and prior to the release of Non-Project Water from Project Facilities or introduction into Project Facilities, the Contractor shall submit appropriate schedule(s) to the Contracting Officer and the designated Operating Non-Federal Entity showing the estimated quantities of Non-Project Water to be released from or introduced into the Project Facilities, during the then-current Year, for all Non-Project Water subject to this Contract. Such schedule(s) shall include the estimated time(s) for Storing, Conveying, and/or delivering said Non-Project Water in or through Project Facilities for the then-current Year. The Non-Project Water that will be introduced, Stored, and/or Conveyed in and through Project Facilities is subject to the authorized season of diversion, the maximum quantity and/or diversion rate, and the authorized purpose-of-use as shown under the Contractors asserted water right(s) identified in Exhibit C.

(d.1) The Contractor is required to initially schedule, at the beginning of each Year, the Storage and Conveyance and delivery of the maximum quantity of Non-Project Water for which the Contractor desires Storage and Conveyance during the then-current Year or for the duration of this Contract when scheduling at the beginning of the final Year of this Contract. The initial schedule in any Year and any revision(s) thereof shall be in a form acceptable to the Contracting Officer and shall be submitted at such times and in such manner as determined by the Contracting Officer. The Contractor shall not introduce Non-Project Water into the Project Facilities unless and until the Annual schedule(s) and any revision(s) thereof have been approved, in writing, by the Contracting Officer.

(e) All Non-Project Water remaining in the Project Facilities at the end of a Year, shall incur Annually, the appropriate Rates, costs, and/or fees pursuant to Exhibit "B" of this Contract, which shall be updated Annually. All Non-Project Water either released from or Conveyed through Project Facilities upon the Contractor's request and is not accepted by the Contractor within 30 days after such release or Conveyance, shall be deemed to be unused water donated to the United States for Project purposes.

(e.1) All Non-Project Water remaining in Project Facilities at Contract termination, shall be deemed to be unused water donated to the United States for Project purposes unless, the Contractor has requested, in writing, a subsequent contract instrument at least 90 days prior to termination of this Contract.

(e.2) In the event that Federal share of San Luis Reservoir fills and capacity is no longer available for the Non-Project Water, the Non-Project Water currently in the Federal share of San Luis Reservoir shall be deemed to be the first water spilled: *Provided,* That the Contracting Officer will to the extent possible inform the Contractor by written notice, or otherwise, of any impending spill from the Federal share of San Luis Reservoir.

(f) Unless otherwise agreed to in writing by the Contracting Officer, the Non-Project Water shall be released from Storage, Conveyed, and delivered to the Contractor through existing Project Facilities.

(g) The introduction, Storage, Conveyance, release, and delivery of Non-Project Water pursuant to this Contract will not be supported with Project-use energy. If electrical power is required to pump the Non-Project Water into, through or from the Project Facilities, the Contractor shall be responsible for the acquisition and payment of all electrical power and associated transmission service charges.

(h) The Contractor shall have no rights to any benefits from increased power generation from Non-Project Water moving through Federally-owned electric power generators at Project Facilities or to any benefits that may result due to additional head at Project Power Facilities as a result of the Storage and Conveyance of Non-Project Water in the Project Facilities authorized pursuant to this Contract.

(i) The introduction of Non-Project Water into the Project Facilities by the Contractor shall be conditioned upon but not limited to: (i) compliance by the Contractor with the environmental measures described in the environmental documentation prepared in connection with the execution of this Contract; and (ii) with the terms of the applicable operations' procedures approved by the Contracting Officer.

MEASUREMENT OF NON-PROJECT WATER

4. (a) All Non-Project Water shall be measured and recorded at the point(s) of introduction and point(s) of delivery established pursuant to Article 3 herein with measurement devices acceptable to the Contracting Officer and the methods used to make such measurements shall be in accordance with sound engineering practices.

(b) Unless otherwise agreed to in writing by the Contracting Officer, the Contractor, at its own cost and expense, shall be responsible for providing, installing, operating, maintaining, repairing, and replacing all measurement devices required under this Contract in accordance with any right-of-use agreement(s) or other requisite authorization(s) issued by the United States. The Contractor shall be responsible for all costs associated with the issuance of such right-of-use agreement(s) and authorization(s).

(c) The Contractor shall maintain accurate records of the quantity of Non-Project Water, expressed in acre-feet, introduced into and delivered from Project Facilities at

said authorized point(s) of introduction and delivery and shall provide such records to the Contracting Officer and the Operating Non-Federal Entity at such times and in such manner as determined by the Contracting Officer.

(d) Upon the request of either party to this Contract, the Contracting Officer shall investigate, or cause to be investigated by the Operating Non-Federal Entity, the accuracy of all measurements of Non-Project Water required by this Contract. If the investigation discloses errors in the recorded measurements, such errors shall be promptly corrected. If the investigation discloses that measurement devices are defective or inoperative, the Contracting Officer shall take any necessary actions to ensure that the responsible party makes the appropriate adjustments, repairs, or replacements to the measurement devices. In the event the Contractor, as the responsible party, neglects or fails to make such adjustments, repairs, or replacements to the measurement devices within a reasonable time and to the reasonable satisfaction of the Contracting Officer, the Contracting Officer may cause such adjustments, repairs, or replacements to be made and the costs thereof shall be charged to the Contractor and the Contractor shall pay said charges to the United States immediately upon receipt of a detailed billing therefor. For any period of time during which accurate measurements of the Non-Project Water have not been made, the Contracting Officer shall consult with the Contractor and the Operating Non-Federal Entity prior to making a determination of the quantity of Non-Project Water delivered for that period of time and such determination by the Contracting Officer shall be final and binding on the Contractor.

OPERATION AND MAINTENANCE BY OPERATING NON-FEDERAL ENTITY

5. (a) The operation and maintenance of a portion of the Project Facilities to be used to Convey and deliver the Non-Project Water to the Contractor, and responsibility for

funding a portion of the costs of such operation and maintenance, have been transferred from the United States to the San Luis & Delta-Mendota Water Authority, the designated Operating Non-Federal Entity, pursuant to a separate agreement, identified as Contract No. 8-07-20-X0354, dated February 18, 2003 (Agreement), as amended. That separate Agreement shall not interfere with or affect the asserted rights or obligations of the Contractor or the United States hereunder.

(b) The Contractor shall pay directly to the San Luis & Delta-Mendota Water Authority, or to any successor approved by the Contracting Officer under the terms and conditions of the separate Agreement described in subdivision (a) of this Article, all Annual Rates, costs, fees, charges or assessments of any kind, including any assessment for reserve funds, that the San Luis & Delta-Mendota Water Authority or such successor determines, sets, or establishes for the operation and maintenance of that portion of the Project Facilities operated and maintained by the San Luis & Delta-Mendota Water Authority or such successor.

(c) For so long as the operation and maintenance of any portion of the Project Facilities used to Convey and deliver the Non-Project Water to the Contractor is performed by the San Luis & Delta-Mendota Water Authority, or any successor thereto, the Contracting Officer shall adjust those components of the Rates for the Non-Project Water Conveyed under this Contract by deleting the costs associated with the activity being performed by the San Luis & Delta-Mendota Water Authority or its successor.

(d) In the event the United States reassumes operation and maintenance of any portion of the Project Facilities from the Operating Non-Federal Entity, the Contracting Officer shall so notify the Contractor, in writing, and shall revise the Rates on Exhibit B to include those costs associated with the operation and maintenance activities reassumed by the United States. The Contractor shall, thereafter, in the absence of written notification from the Contracting

Officer to the contrary, pay the Rates, specified in the revised Exhibit B directly to the United States in compliance with Article 6 of this Contract.

ANNUAL PAYMENTS AND ADJUSTMENTS

6. (a) Upon execution of this Contract and for the duration of the term of this Contact, the Contractor shall have an executed letter of agreement with the Contracting Officer to among other things, allow for payment in advance of all costs to be incurred by Reclamation while administering this Contract.

(b) The Contractor shall submit an Annual schedule and revision(s) thereto as required pursuant to subdivision (d) of Article 3 herein. The Contractor shall make an advance payment to the United States 30 days prior to Storage and/or Conveyance of Non-Project Water which shall equal to the total amount payable pursuant to the applicable Rates, fees, and costs shown on Exhibit B (as updated Annually) for each acre-foot of Non-Project Water: (i) to be introduced into, Stored in, and/or Conveyed through the Project Facilities for the then-current Year; *Provided*, That where the Contractor's schedule provides for multiple introductions of Non-Project Water for Storage and Conveyance, advance payment may be made in increments corresponding to the amount of each scheduled introduction; and (ii) each acre-foot of Non-Project Water remaining in Storage from the previous Year. Non-Project Water shall not be introduced into, Stored in, and/or Conveyed through Project Facilities by the Contractor prior to such advance payment being received by the United States.

(c) In the event the Annual quantity of Non-Project Water delivered to the Contractor exceeds the quantity of Non-Project Water introduced previously pursuant to subdivision (a) of Article 3 herein, that additional amount of water shall be deemed Project water delivered to the Contractor, and an equivalent quantity of Project water shall be deducted from

the Contractor's Project water supply available thereafter under that certain "Long-Term Renewal Contract Between the United States and Patterson Irrigation District Providing for Project Water Service," designated Contract No. 14-06-200-3598A-LTR1, dated March 9, 2005 (Water Service Contract), and payment shall be made at the applicable rate identified on Exhibit **B** of the said Water Service Contract. The provisions of this subdivision are not exclusive and shall not bind the United States from exercising any other remedy, including the early termination of this Contract pursuant to Article 2 of this Contract.

(d) The amount of any overpayment by the Contractor determined by the Contracting Officer shall be applied first to any accrued indebtedness arising out of this Contract then due and owing to the United States by the Contractor. Any amount of such overpayment then remaining shall be refunded to the Contractor: *Provided, however*, That no refund shall be made by the United States to the Contractor for any quantity of Non-Project Water deemed to be unused water donated to the United States for Project purposes pursuant to subdivision (e) of Article 3 herein nor for the administrative charge required pursuant to subdivision (a) of this Article.

(e) All Annual payments made by the Contractor pursuant to subdivision (b) of this Article shall be covered into the Reclamation Fund pursuant to Section 3 of the Act of February 21, 1911 (36 Stat. 925).

(f) The Annual payment of the Rates set forth in this Article for the use of Excess Capacity is exclusive of O&M costs to be paid directly to the Operating Non-Federal Entity by the Contractor, and any additional charges that the Contractor may assess its water users. In accordance with the Act of February 21, 1911 (36 Stat. 925), the Contractor may not impose on its water users any charge for the use of Excess Capacity that exceeds the amount paid

to the United States and to the Operating Non-Federal Entity: *Provided*, That the Contractor may also charge its water users such additional amounts as are necessary to cover the Contractor's reasonable administrative costs in contracting with the United States for the use of Excess Capacity in the Project Facilities.

MEDIUM FOR TRANSMITTING PAYMENTS

7. (a) All payments from the Contractor to the United States under this Contract shall be by the medium requested by the United States on or before the date payment is due. The required method of payment may include checks, wire transfers, or other types of payment specified by the United States.

(b) Upon execution of the Contract, the Contractor shall furnish the Contracting Officer with the Contractor's taxpayer's identification number (TIN). The purpose for requiring the Contractor's TIN is for collecting and reporting any delinquent amounts arising out of the Contractor's relationship with the United States.

EXCESS CAPACITY

8. (a) The availability of Excess Capacity shall be determined solely by the Contracting Officer. Nothing contained in this Contract shall limit or preclude the United States from utilizing available capacity in the Project Facilities for the Storage and Conveyance of Project water pursuant to Federal law, Reclamation law or policy, and existing contract(s); or (2) for using Excess Capacity in the Project Facilities for the introduction, Storage, and Conveyance, and delivery of any other supplies of Non-Project Water.

(b) The Contracting Officer and the Operating Non-Federal Entity shall not be obligated to Convey Non-Project Water during periods of maintenance or for other operating requirements.

(c) If at any time during the Year, the Contracting Officer determines that there will not be Excess Capacity in the Project Facilities sufficient to allow the Non-Project Water to be introduced, Stored, Conveyed, or delivered in accordance with the approved

schedule submitted previously by the Contractor, the Contracting Officer shall so notify the Contractor in writing. Within 24 hours of said notice, the Contractor shall revise and resubmit its schedule accordingly.

(d) No provision of this Contract shall be construed in any way as a basis for the Contractor to establish a priority to or a permanent right to the use of Excess Capacity in the Project Facilities nor to set a precedent to obligate the United States to enter into contracts with any other entities or individuals for the Conveyance or Storage of Non-Project Water.

ACREAGE LIMITATION PROVISIONS

9. (a) The Non-Project Water Stored and/or Conveyed pursuant to this Contract cannot be furnished to irrigate more than 160 acres of Eligible Lands owned directly or indirectly by any one person unless that person has become subject to the discretionary provisions of the RRA. The Rates for furnishing Non-Project Water to irrigate such Eligible Lands are identified as Irrigation Cost of Service, RRA Full Cost 202(3), and RRA Full Cost 205(a)(3) on Exhibit B.

(b) The Non-Project Water Stored and/or Conveyed pursuant to this Contract can be furnished to Ineligible Lands only if the Contractor pays the Incremental Fee specified on Exhibit B.

RECEIPT AND DISTRIBUTION OF NON-PROJECT WATER--
SALE, TRANSFER, OR EXCHANGE OF NON-PROJECT WATER

10. (a) The parties hereto acknowledge that this Contract does not grant any permission or entitlement to the Contractor to extract and/or divert Non-Project Water from the source(s) described on Exhibit C or to change the nature or place of use of its asserted rights to said Non-Project Water in any way. It is the responsibility of the Contractor to comply with all applicable Federal, State, and local laws, including, but not limited to, State water law in relation to the Non-Project Water. It is expressly understood by the parties that the United States is only

providing Storage and Conveyance capacity for the Non-Project Water and does not claim any interest in the acquisition or use of the Non-Project Water beyond the terms specifically set forth in this Contract.

(b) The Contracting Officer makes no representations as to the accuracy of the description or of the validity of the Contractor's asserted rights to the Non-Project Water described in Exhibit C.

(c) No sale, transfer, or exchange of Non-Project Water Stored and/or Conveyed under this Contract may take place without the prior written approval of the Contracting Officer.

WATER CONSERVATION

11. (a) Prior to the delivery of water provided from or Conveyed through federally constructed or federally financed facilities pursuant to this Contract, the Contractor shall develop a water conservation plan, as required by subsection 210(b) of the Reclamation Reform Act of 1982 and 43 C.F.R. 427.1 (Water Conservation Rules and Regulations).

(b) The parties hereto acknowledge and agree that pursuant to the Water Service Contract, the Contractor has implemented an effective water conservation plan/program that has been approved by the Contracting Officer. Said water conservation plan/program shall be deemed to meet the requirements of subdivision (a) of this Article: *Provided*, That the Contractor, prior to execution of this Contract, documents to the satisfaction of the Contracting Officer that the quantity of Non-Project Water to be Stored and/or Conveyed pursuant to this Contract has been included into its approved water conservation plan/program and that all Non-Project Water shall be subject to the same water conservation requirements as the Project Water under the Water Service Contract.

UNITED STATES NOT LIABLE

12. (a) The United States, its officers, agents and employees, including the Operating Non-Federal Entity, shall not be responsible for the control, care, or distribution of the Non-Project Water before it is introduced into or after it is diverted from the Project Facilities. It is specifically understood by the parties hereto that the United States is only providing Storage and Conveyance capacity for the Non-Project Water and does not claim any interest in the acquisition or use of the Non-Project Water beyond the terms specifically set forth in this Contract.

(b) The Contractor shall indemnify and hold the United States, its officers, agents and employees, including the Operating Non-Federal Entity, harmless from legal liability for damages of any nature whatsoever arising out of any actions or omissions of the Contractor, its officers, agents and employees, resulting from the Contractor's performance of this Contract, including the manner or method in which the Non-Project Water identified on Exhibit C is introduced into and diverted from the Project Facilities. The Contractor further releases the United States, its officers, agents and employees, including the Operating Non-Federal Entity, from every claim for damage to persons or property, direct or indirect, resulting from the Contracting Officer's determination of the quantity of Excess Capacity available in the Project Facilities for Storage and Conveyance of the Contractor's Non-Project Water, the determination that the Non-Project Water introduced into or released from Project Facilities must be terminated, and the elimination from Exhibit C of any source(s) of Non-Project Water. Nothing contained in this Article shall be construed as an assumption of liability by the Contractor with respect to such matters.

OPINIONS AND DETERMINATIONS

13. (a) Where the terms of this Contract provide for actions to be based upon the opinion or determination of either party to this Contract, said terms shall not be construed as permitting such action to be predicated upon arbitrary, capricious, or unreasonable opinions or determinations. Both parties, notwithstanding any other provisions of this Contract, expressly reserve the right to seek relief from and appropriate adjustment for any such arbitrary, capricious, or unreasonable opinion or determination. Each opinion or determination by either party shall be provided in a timely manner. Nothing in subdivision (a) of this Article is intended to or shall affect or alter the standard of judicial review applicable under Federal law to any opinion or determination implementing a specific provision of Federal law embodied in statute or regulation.

(b) The Contracting Officer shall have the right to make determinations necessary to administer this Contract that are consistent with the provisions of this Contract, the laws of the United States and the State of California, and the rules and regulations promulgated by the Secretary. Such determinations shall be made in consultation with the Contractor to the extent reasonably practicable.

PROTECTION OF WATER AND AIR QUALITY

14. (a) Project Facilities used to make available and deliver Non-Project Water to the Contractor shall be operated and maintained in the most practical manner to maintain the quality of the Non-Project Water at the highest level possible as determined by the Contracting Officer: *Provided*, That the United States does not warrant the quality of the Non-Project Water delivered to the Contractor and is under no obligation to furnish or construct water treatment facilities to maintain or improve the quality of the Non-Project Water delivered to the Contractor.

(b) The Contractor shall comply with all applicable water and air pollution laws and regulations of the United States and the State of California; and shall obtain all required permits or licenses from the appropriate Federal, State, or local authorities necessary for the delivery of Non-Project Water by the Contractor; and shall be responsible for compliance with all Federal, State, and local water quality standards applicable to surface and subsurface drainage and/or discharges generated through the use of Project Facilities or Contractor facilities or Non-Project Water provided by the Contractor within the Contractor's Boundaries.

(c) This Article shall not affect or alter any legal obligations of the Secretary to provide drainage or other discharge services.

(d) The Non-Project Water introduced into the Project Facilities shall be of such quality, as determined solely by the Contracting Officer, as to not significantly degrade the quality of the Project water. If it is determined by the Contracting Officer that the quality of the Non-Project Water from any source(s) identified in Exhibit C will significantly degrade the quality of Project water in or introduced into the Project Facilities, the Contractor shall, upon receipt of a written notice from the Contracting Officer, arrange for the immediate termination of the introduction of Non-Project Water from such sources(s) into the Project Facilities, and Exhibit C shall be modified to delete such sources(s) of Non-Project Water.

(e) Exhibit D identifies the minimum water quality standards for monitoring the quality of water in the Canal while the Contractor's Non-Project Water is Conveyed in the Project Facilities. Exhibit "D" also identifies the laboratories approved by the Contracting Officer that are to be used for conducting water quality analyses. The Contractor is responsible for the Annual sampling and analytical costs associated with evaluating quality of the Non-Project Water. Non-Project Water introduced into Project Facilities for purposes of water quality testing is considered Project water.

(f) At all times during the term of this Contract, the Contractor shall be in compliance with the requirements of the then-current Quality Assurance Project Plan (Plan) approved by the Contracting Officer to monitor Non-Project Water introduced into, Stored

and/or Conveyed through the Project Facilities. The Plan describes the sample collection procedures, water testing methods, and data review process, including quality control/quality assurance protocols, to verify analytical results.

(g) The Contracting Officer reserves the right to require additional analyses to ensure the Non-Project Water meets the Bureau of Reclamation's water quality acceptance criteria.

CHARGES FOR DELINQUENT PAYMENTS

15. (a) The Contractor shall be subject to interest, administrative, and penalty charges on delinquent payments. If a payment is not received by the due date, the Contractor shall pay an interest charge on the delinquent payment for each day the payment is delinquent beyond the due date. If a payment becomes 60 days delinquent, in addition to the interest charge, the Contractor shall pay an administrative charge to cover additional costs of billing and processing the delinquent payment. If a payment is delinquent 90 days or more, in addition to the interest and administrative charges, the Contractor shall pay a penalty charge for each day the payment is delinquent beyond the due date, based on the remaining balance of the payment due at the rate of 6 percent per year. The Contractor shall also pay any fees incurred for debt collection services associated with a delinquent payment.

(b) The interest charge rate shall be the greater of either the rate prescribed quarterly in the Federal Register by the Department of the Treasury for application to overdue payments or the interest rate of 0.5 percent per month. The interest charge rate will be determined as of the due date and remain fixed for the duration of the delinquent period.

(c) When a partial payment on a delinquent account is received, the amount received shall be applied first to the penalty charges, second to the administrative charges, third to the accrued interest, and finally to the overdue payment.

EQUAL EMPLOYMENT OPPORTUNITY

16. During the performance of this Contract, the Contractor agrees as follows:

(a) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, disability, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, disability, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this nondiscrimination clause.

(b) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, disability, or national origin.

(c) The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the Contracting Officer, advising the labor union or workers' representative of the Contractor's commitments under Section 202 of Executive Order 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) The Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(e) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the Contracting Agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(f) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this Contract or with any of such rules, regulations, or orders, this Contract may be canceled, terminated or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965 or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(g) The Contractor will include the provisions of paragraphs (a) through (g) in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions, including sanctions for noncompliance: *Provided, however,* That in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

CERTIFICATION OF NONSEGREGATED FACILITIES

17. The Contractor hereby certifies that it does not maintain or provide for its employees any segregated facilities at any of its establishments and that it does not permit its

employees to perform their services at any location under its control where segregated facilities are maintained. It certifies further that it will not maintain or provide for its employees any segregated facilities at any of its establishments and that it will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this certification is a violation of the Equal Employment Opportunity clause in this Contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, disability, or otherwise. The Contractor further agrees that (except where it has obtained identical certifications from proposed subcontractors for specific time periods) it will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding $10,000 which are not exempt from the provisions of the Equal Employment Opportunity clause; that it will retain such certifications in its files; and that it will forward the following notice to such proposed subcontractors (except where the proposed subcontractors have submitted identical certifications for specific time periods):

NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENT FOR CERTIFICATIONS OF NONSEGREGATED FACILITIES

A Certification of Non-segregated Facilities must be submitted prior to the award of a subcontract exceeding $10,000 which is not exempt from the provisions of the Equal Employment Opportunity clause. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually). Note: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

COMPLIANCE WITH CIVIL RIGHTS LAWS AND REGULATIONS

18. (a) The Contractor shall comply with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d), Section 504 of the Rehabilitation Act of 1973 (P.L. 93-112, as amended), the Age Discrimination Act of 1975 (42 U.S.C. 6101, *et seq.*), Title II of the Americans with Disabilities Act of 1990 if the entity is a State or local government entity [Title III if the entity is a non-government entity], and any other applicable civil rights laws, as well as with their respective implementing regulations and guidelines imposed by the U.S. Department of the Interior and/or Bureau of Reclamation.

(b) These statutes require that no person in the United States shall be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving financial assistance from the Bureau of Reclamation on the grounds of race, color, national origin, disability, or age. By executing this Contract, the Contractor agrees to immediately take any measures necessary to implement this obligation, including permitting officials of the United States to inspect premises, programs, and documents.

(c) The Contractor makes this agreement in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts, property discounts, or other Federal financial assistance extended after the date hereof to the Contractor by the Bureau of Reclamation, including installment payments after such date on account of arrangements for Federal financial assistance which were approved before such date. The Contractor recognizes and agrees that such Federal assistance will be extended in reliance on the representations and agreements made in this Article and that the United States reserves the right to seek judicial enforcement thereof.

(d) Complaints of discrimination against the Contractor shall be investigated by the Contracting Officer's Office of Civil Rights.

GENERAL OBLIGATION--BENEFITS CONDITIONED UPON PAYMENT

19. (a) The obligation of the Contractor to pay the United States as provided in this Contract is a general obligation of the Contractor notwithstanding the manner in which the obligation may be distributed among the Contractor's water users and notwithstanding the default of individual water users in their obligation to the Contractor.

(b) The payment of charges becoming due pursuant to this Contract is a condition precedent to receiving benefits under this Contract. The United States shall not make Non-Project Water available to the Contractor through Project Facilities during any period in which the Contractor is in arrears in the advance payment of Rates and charges due the United States. The Contractor shall not deliver Non-Project Water under the terms and conditions of this Contract for lands or parties that are in arrears in the advance payment of rates and charges as levied or established by the Contractor.

BOOKS, RECORDS, AND REPORTS

20. The Contractor shall establish and maintain accounts and other books and records pertaining to administration of the terms and conditions of this Contract, including the Contractor's financial transactions; water supply data; project land and rights-of-way use agreements; the water users' land-use (crop census), land-ownership, land-leasing, and water-use data; and other matters that the Contracting Officer may require. Reports shall be furnished to the Contracting Officer in such form and on such date or dates as the Contracting Officer may require. Subject to applicable Federal laws and regulations, each party to this Contract shall have the right during office hours to examine and make copies of the other party's books and records relating to matters covered by this Contract.

CONTINGENT UPON APPROPRIATION OR ALLOTMENT OF FUNDS

21. The expenditure or advance of any money or the performance of any obligation of the United States under this Contract shall be contingent upon appropriation or allotment of funds. Absence of appropriation or allotment of funds shall not relieve the Contractor from any

obligations under this Contract. No liability shall accrue to the United States in case funds are not appropriated or allotted.

ASSIGNMENT LIMITED--SUCCESSORS AND ASSIGNS OBLIGATED

22. The provisions of this Contract shall apply to and bind the successors and assigns of the parties hereto, but no assignment or transfer of this Contract or any right or interest therein by either party shall be valid until approved in writing by the other party.

OFFICIALS NOT TO BENEFIT

23. No Member of or Delegate to the Congress, Resident Commissioner, or official of the Contractor shall benefit from this Contract other than as a water user or landowner in the same manner as other water users or landowners.

CHANGES IN CONTRACTOR'S ORGANIZATION

24. While this Contract is in effect, no change may be made in the Contractor's organization, by inclusion or exclusion of lands or by any other changes which may affect the respective rights, obligations, privileges, and duties of either the United States or the Contractor under this Contract including, but not limited to, dissolution, consolidation, or merger, except upon the Contracting Officer's written consent.

NOTICES

25. Any notice, demand, or request authorized or required by this Contract shall be deemed to have been given, on behalf of the Contractor, when mailed, postage prepaid, or delivered to Bureau of Reclamation, Area Manager, South-Central California Area Office, 1243 N Street, Fresno, California 93721-1813, and on behalf of the United States, when mailed, postage prepaid, or delivered to Board of Directors of the Patterson Irrigation District, 948 Orange Avenue or P.O. Box 685, Patterson, California 95363. The designation of the addressee or the address may be changed by notice given in the same manner as provided in this Article for other notices.

INCORPORATION OF EXHIBITS

26. Exhibits A through D are attached hereto and incorporated herein by reference.

CONTRACT DRAFTING CONSIDERATIONS

27. The Articles or any portions thereof in this Contract that are double-spaced have been drafted, negotiated, and reviewed by the parties hereto, each of whom is sophisticated in the matters to which this Contract pertains, and no one party shall be considered to have drafted the stated Articles.

IN WITNESS WHEREOF, the parties hereto have executed this Contract as of the day and year first above written.

UNITED STATES OF AMERICA

By: _____
Area Manager
South-Central California Area Office
Mid-Pacific Region
Bureau of Reclamation

(SEAL)

PATTERSON IRRIGATION DISTRICT

By: _____
President of the Board of Directors

Attest:

By: _____
Secretary of the Board of Directors

THE PATTERSON IRRIGATION DISTRICT
RESOLUTION NO. 04-2010

RESOLUTION OF THE BOARD OF DIRECTORS OF THE PATTERSON IRRIGATION DISTRICT APPROVING CONTRACT AND LETTER OF AGREEMENT FOR CONVEYANCE OF NON-PROJECT WATER WITH THE UNITED STATES

WHEREAS, the State of California is currently experiencing unprecedented water management challenges during a series of dry years; and

WHEREAS, because of the drought conditions, many water districts in Northern California will not have sufficient water supplies for irrigation pursuant during the 2010 and future irrigation season; and

WHEREAS, PID has undertaken actions in recent years that have allowed it to conserve irrigation water and make water available for transfers; and

WHEREAS, PID wishes to assist other water agencies in Northern California with water supplies made available through conservation, and implement needed projects within the district with funds from water transfers; and

WHEREAS, in order to accomplish such transfers, PID will need transportation capacity available in the Delta Mendota Canal; and

WHEREAS, the United States has presented PID with a contract for execution; and

WHEREAS, the PID Board of Directors has reviewed the terms of the proposed contract; and

WHEREAS, PID has fully complied with the provisions of the California Environmental Quality Act and the United States has fully complied with the provisions of the National Environmental Policy Act; and

NOW, THEREFORE, based upon the evidence presented, the Board of Directors of the Patterson Irrigation District FINDS, DETERMINES, DECLARES AND RESOLVES each of the following:

1. The facts set forth in the recitals above and in the documents referenced therein are true and correct, and the Board of Directors so finds and determines:

2. The TEMPORARY CONTRACT BETWEEN THE UNITED STATES AND PATTERSON IRRIGATION DISTRICT PROVIDING FOR MULTI-YEAR STORAGE AND CONVEYANCE OF NON-PROJECT WATER (Contract No. 10-WC-20-4030) in

substantially the form presented to the Board and on file with the Secretary hereof is hereby approved.

3. The President and Secretary of the District are hereby authorized and directed to execute said contract in substantially the form presented to the Board, subject to such additions, deletions and revisions as the executing officers may approve prior to execution, said execution providing conclusive proof of such approval.

4. The District's General Manager is hereby authorized and directed to execute A Letter of Agreement with the United States Bureau of Reclamation for the Analysis, Preparation and Administration of Multi-Year Storage and/or Conveyance Contracts, which includes remittance of a deposit for said services.

5. The District's officers, staff and consultants are hereby authorized and directed to take all additional actions that they deem necessary or appropriate to carry out the intent of this Resolution and to ensure continued water service to the District and its water users.

PASSED AND ADOPTED at a special meeting of the Board of Directors of the Patterson Irrigation District held on October 20, 2010, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

PATTERSON IRRIGATION DISTRICT

By: _____
President

Attest: _____
Secretary

EXHIBIT A
CONTRACTOR'S BOUNDARY MAP

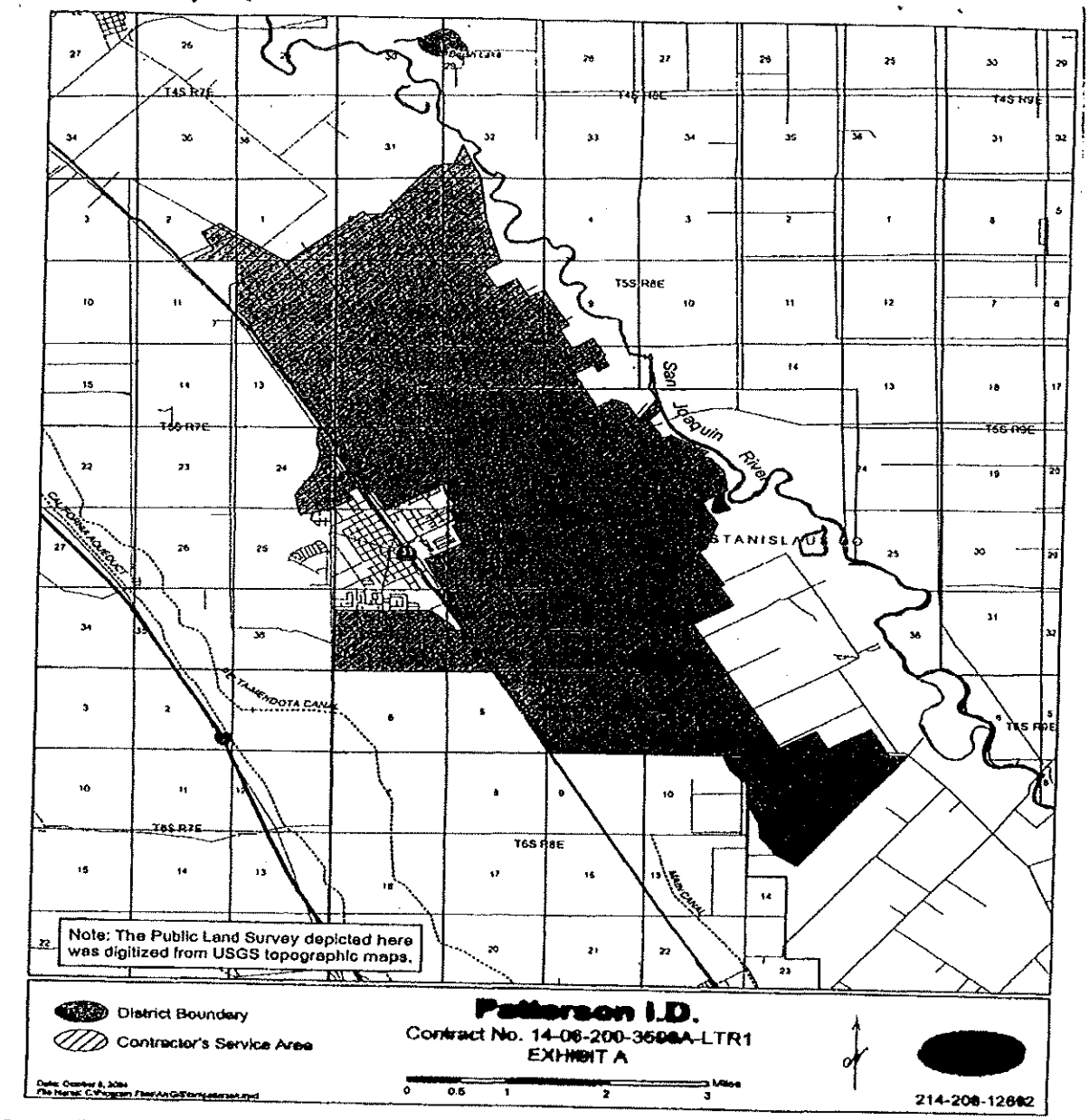

EXHIBIT B
PATTERSON IRRIGATION DISTRICT
YEAR 2010 ANNUAL STORAGE AND CONVEYANCE RATES
(Per Acre-Foot)

Cost Component		(1) Irrigation Cost of Service	(2) RRA Full Cost 202(3)	(3) RRA Full Cost 205(a)(3)	(4) Incremental Fee	(5) M&I Cost of Service
Water Marketing		$6.01	$6.01	$6.01	$6.01	$3.20
Conveyance						
O&M		*	*	*	*	*
Capital		$6.12	$12.91	$15.84	$15.84	$6.46
Storage						
O&M		$6.57	$6.57	$6.57	$ 6.57	$7.38
Capital		$6.06	$12.79	$15.69	$15.69	$3.31
Other Cost		$ 0.46	$0.97	$1.19	$1.19	$2.40
Total		$25.22	$39.25	$45.30	$45.30	$22.75

(1) The Irrigation Cost of Service Rate is applicable to Eligible Lands that are entitled to receive Irrigation Water at other than a Full-Cost Rate.

(2) The RRA Section 202(3) Full Cost Rate is applicable to a Qualified Recipient or to a Limited Recipient (as those terms are defined in Section 202 of the RRA) receiving Irrigation Water on or before October 1, 1981.

(3) The RRA Section 205(a)(3) Full Cost Rate is applicable to a Limited Recipient (as that term is defined in Section 202 of the RRA) that did not receive Irrigation Water on or before October 1, 1981, and those prior law landholders leasing land in excess of their entitlement.

(4) The Incremental Fee is applicable to Ineligible Lands pursuant to subdivision (b) of Article 9 of this Contract. (Incremental Fee requirements for Ineligible Lands are set forth in 43 CFR 426.15.)

(5) The M&I Cost of Service Rate is applicable to Non-Project Water delivered for municipal and industrial purposes. See definition of "Municipal and Industrial Water" in subdivision (j) of Article 1 of this Contract.

*Conveyance operation and maintenance costs were removed for ratesetting purposes and are billed directly by the Operating Non-Federal Entity.

NOTE: If the Non-Project Water is being Conveyed through the Contractor's 9(d) distribution system, a separate rate will be developed for that system.

Additional details of rate components are available on the Internet at
http://www.usbr.gov/mp/cvpwaterrates/ratebooks/index.html.

EXHIBIT C

SOURCE(S) OF CONTRACTOR'S NON-PROJECT WATER PATTERSON IRRIGATION DISTRICT

The source of the Contractor's Non-Project Water supply commonly known as "Pre-1914 Appropriative Right San Joaquin River Water" is described herein below:

Non-project pre-1914 appropriative right allows for both direct diversion and storage. Patterson Irrigation District's (PID) non-Project Water supplies are diverted from the San Joaquin River at River Mile 98.5. Water will be delivered through PID licensed facilities at Milepost 42.53L and out of the DMC at Milepost 42.51L and between Mileposts 25.63R and 59.50R.

Up to 10,000 acre-feet of Pre-1914 Water Rights Water (Non-Project Water)

EXHIBIT D

WATER QUALITY STANDARDS

RECLAMATION

Managing Water in the West

2010 Delta-Mendota Canal Pump-in Program Water Quality Monitoring Plan

U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region
South-Central California Area Office

Revised: 19 Feb 2010

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

List of Abbreviations and Acronyms

Authority	San Luis and Delta-Mendota Water Authority
ºC	degrees Celsius
DMC	Delta-Mendota Canal
DMC Headworks	DMC Milepost 2.5, Jones Pumping Plant
DMC Check 13	DMC Milepost 70, O'Neill Forebay
DMC Check 20	DMC Milepost 111, near Firebaugh
DMC Check 21	DMC Milepost 116, terminus at Mendota Pool
COC	chain of custody
CVP	Central Valley Project
DFG	California Department of Fish and Game
EC	electrical conductivity, µS/cm
Exchange Contractors	San Joaquin River Exchange Contractors Water Authority
ºF	degrees Fahrenheit
mg/L	milligrams per liter, equivalent to parts per million
QA	Quality Assurance
QC	Quality Control
QCO	Quality Control Officer
Reclamation	U.S. Department of the Interior, Bureau of Reclamation
Regional Board	California EPA, Central Valley Regional Water Quality Board
TDS	Total dissolved solids, mg/L
USGS	U.S. Geological Survey
µg/L	micrograms per liter, equivalent to parts per billion
µS/cm	microSiemens per cm, salinity in water

2010 Delta-Mendota Canal Pump-in Program Water Quality Monitoring Plan

Introduction

The overall supply of Central Valley Project (CVP) water has been reduced by drought and restrictions on pumping from the Sacramento-San Joaquin Delta. Under the Warren Act of 1911, Reclamation may execute temporary contracts to convey non-project water in the federal Delta-Mendota Canal (DMC) to farms to help sustain crops. Reclamation will also enter into exchange agreements in which groundwater pumped into the DMC will be exchanged with Reclamation for CVP water in San Luis Reservoir and delivered to from the San Luis Canal. In 2010, Reclamation will accept groundwater in the DMC subject to the monitoring and reporting requirements outlined in this document.

This document describes the plan for measuring the changes in the quality of water in the canal caused by the conveyance of groundwater during 2010, plus changes in groundwater elevation to estimate subsidence. Various agencies will use the data to determine the water quality conditions in the Delta-Mendota Canal, Mendota Pool, and wetlands water supply channels, and physical condition of local groundwater resources.

This document has been prepared by the U.S. Department of the Interior, Bureau of Reclamation (Reclamation), in cooperation with the San Luis & Delta-Mendota Water Authority (Authority), and the San Joaquin River Exchange Contractors Water Authority (Exchange Contractors), with assistance from staff of Banta Carbona Irrigation District, Del Puerto Water District, San Luis Water District, and Panoche Water District.
This monitoring plan will be conducted by staff of Reclamation, the Authority, and Water Districts and will complement independent monitoring by other Federal, State, and private agencies.

Several sampling techniques will be used to collect samples of water, including real-time, grab, and composite. The techniques used at each location are summarized in Section 3.

Continuous measurement of specific conductance (salinity) will be recorded at four stations in the canal using sondes connected to digital data loggers. The data will be averaged every 15 minutes, sent via satellite to the California Data Exchange Center where it will be posted in the Internet as preliminary data:

http://cdec.water.ca.gov/queryDaily.html

Central Valley Operations Office will post the daily average salinity measurements on its website:

http://www.usbr.gov/mp/cvo/wqrpt.html

The real-time data will be collected by Reclamation and used in a mass balance to calculate and predict water quality conditions. The calculated results will be reported to various agencies, and compared with independent field measurements collected by the Reclamation, the Exchange Contractors, US Geological Survey, and California EPA Central Valley Regional Water Quality Control Board (Regional Board).

Reclamation will operate autosamplers at four locations along the DMC and Mendota Pool that will collect daily composite samples for measurement of selenium and salinity.

Reclamation and the Regional Board will collect grab samples from various locations in the watershed to measure many other parameters.

Reclamation will use the data to assess changes in water quality and groundwater conditions caused by the 2010 DMC Pump-in Program, and will implement the terms and conditions of the 2010 Warren Act Contracts, exchange agreements, and the 15 January 2010 Letter from the Exchange Contractors to Reclamation (Appendix A).

Background

The Delta Division of the federal Central Valley Project (CVP) delivers water to almost a million acres of farmland in the San Joaquin Valley of California. The CVP is also the sole source of clean water for state and federal wildlife refuges and many private wetlands in Fresno, Merced, San Joaquin, and Stanislaus Counties.

The source of water for the Division is delta of the Sacramento and San Joaquin Rivers. This water is suitable in quality for irrigation and wetlands. The region is regularly affected by droughts that reduce the supply of water for the region. Environmental regulations also restrict the operation of the Jones Pumping Plant to divert water from the delta into the DMC. The salinity of water in the Delta is highly variable due to the influence of tides and outflow of river water.

The Delta-Mendota Canal (DMC) carries CVP water to farms, communities, and wetlands between Tracy and Mendota. The 116 mile canal is operated and maintained by the Authority under contract with Reclamation. Inflows of tailwater and subsurface water add contaminants to the DMC.

Under normal conditions, Reclamation delivers approximately 3 million acre-feet of water within the Authority's service area. Of this amount, 2.5 million acre-feet are delivered to agricultural lands, 150,000 to 200,000 acre-feet for municipal and industrial uses, and between 250,000 to 300,000 acre-feet are delivered to wildlife refuges for habitat enhancement and restoration.

The districts and refuges in the Delta Division use groundwater to supplement their contractual supply from the CVP. Three Delta Division districts also have riparian rights to water in the San Joaquin River. These other supplies of water are called "Non-Project Water" because they have not been appropriated by the United States for the purposes of the CVP.

The Warren Act of 1911([1]) authorizes Reclamation to execute temporary contracts to impound, store, and carry water in federal irrigation canals when excess capacity is available. Reclamation will also execute exchange agreements per CVPIA[2] in which Reclamation exchanges CVP water in San Luis Reservoir delivered to districts on the San Luis Canal for groundwater pumped into the DMC. Such contracts and exchange agreements will be negotiated by Reclamation with Delta Division water districts to allow the introduction of non-project water into the DMC to supplement the diminished supply of CVP water. This has helped farmers deliver enough water to irrigate and sustain valuable permanent crops like grapes, citrus, and deciduous fruit, and to sustain the local multi-billion dollar farming economy.

The quality of local groundwater is variable and must be measured to confirm that there will be no harm to downstream water users when the non-project water is pumped into the canal. Reclamation has developed a set of standards for the acceptance of non-project water in the Delta-Mendota Canal based on the requirements of downstream water users.

In 2010, environmental regulations and climate change have reduced the supply of surface water for the Central Valley Project. Water managers now must depend on groundwater to supplement surface water for irrigation. However, continuous pumping of groundwater can quickly reduce local aquifers and can cause irreversible damage to facilities through subsidence.

In 2010, Reclamation will require more detailed information about each source of groundwater and more monitoring of the aquifer to measure overdraft, prevent subsidence, and determine the feasibility of continuing this program in the future. Staff from the Authority and water districts will be required to take regular measurements of depth to groundwater, pump rates, and in-stream salinity measurements.

This Monitoring Plan will ensure that monitoring data will measure any changes in the quality of CVP water in the DMC and Mendota Pool.

Monitoring Mission and Goals

The mission of this monitoring program is to produce physical measurements that will determine the changes in the quality of the water in canal caused by the conveyance of groundwater during 2010. The data will be used to implement the terms of the 2010 Warren Act Contracts and exchange agreements, and to ensure that the quality of CVP water is commensurate with the needs and expectations of water users.

The monitoring program will also deal with changes to groundwater resources to identify and prevent long-term problems to local aquifers and facilities.

[1] Act of February 21, 1911, ch. 141, 36 Stat. 925

[2] Section 3405(a) of the Central Valley Project Improvement Act (CVPIA) (Title 34 of Public Law 102-575)

Program Goals

The general goals of monitoring are:

- Evaluate the quality of water in each well, and

- Confirm that the blend of CVP water and groundwater is suitable for domestic, agricultural, and wetlands uses.

- Provide reliable data for regulation of the 2010 DMC Pump-in Program to prevent contamination problems

- Provide measurements of groundwater dynamics (depth, recharge) to identify overdraft and subsidence

Study Area

The Study Area for this program encompasses the Delta-Mendota Canal from Tracy to Mendota, and the Mendota Pool. The canal is divided into two reaches in relation to the O'Neill Forebay and the connection to the State Water Project.

Water Quality Standards

Non-project water must meet the standards listed in Tables 6 and 7. The lists have been developed by Reclamation to measure constituents of concern that would affect downstream water users. In particular, the concentration of selenium in any pump-in water shall not exceed 2 ug/L, the limit for the Grasslands wetlands water supply channels specified in the 1998 Basin Plan.[3] The salinity of each source of pump-in water shall not exceed 1500 mg/L TDS.

Water Quality Monitoring Plan

In-stream Monitoring

The quality of water in the DMC will be measured at the locations listed in Tables 1, 2, and 3.

Reclamation will operate and maintain the real-time stations listed in Table 1. Based on available funding, Reclamation will continue to collect water samples at the sites listed in Table 2 under the DMC Water Quality Monitoring Program. Reclamation will be responsible for the costs of sampling and analysis of water sampled from the DMC.

Table 3 is a list of places along the canal near clusters of wells that could pump into the canal under this program. If the real-time monitoring is not sufficient to identify in-stream changes in quality caused by the addition of groundwater, Reclamation may require weekly measurements at the checks listed in table 3 to determine local effects

[3] California Regional Water Quality Control Board, Central Valley Region, Fourth Edition of the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins.

from groups of wells. For example, if the quantity of CVP water in the canal is limited, Reclamation will require detailed monitoring to identify the individual and cumulative changes in water quality caused by the addition of groundwater.

Table 1. Real-Time Monitoring Stations

Location	Operating Agency	Parameters	Frequency	Remarks
DMC Headworks	CVO	EC	Real-time	CDEC Site: DMC
DMC Milepost 70 (Check 13)	CVO	EC	Real-time	CDEC site : ONI
DMC Milepost 111.3 (Check 20)	CVO	EC	Real-time	CDEC site : DM2
DMC Milepost 116.5 (Check 21)	CVO	EC	Real-time	CDEC site : DM3

Key:
CDEC: California Data Exchange Center CVO: Central Valley Operations Office

Table 2. Water Quality Monitoring Stations

Location	Operating Agency	Parameters	Frequency	Remarks
DMC Milepost 3.46	Reclamation	EC, selenium	Daily composite	Autosampler
DMC Milepost 68 (McCabe Road)	Reclamation	Various	Monthly	Grab sample
DMC Milepost 70 (Check 13)	Reclamation	EC, selenium	Daily composite	Autosampler
DMC Milepost 97.7 (Russell Ave)	Reclamation	EC, selenium, boron, mercury	Monthly	Grab sample
DMC Milepost 110.1 (Washoe Ave)	Reclamation	EC, selenium, boron, mercury	Monthly	Grab sample
DMC Milepost 116.5 (Check 21)	Reclamation	EC, selenium	Daily composite	Autosampler
Mendota Pool (CCID Main Canal at Bass Ave)	Reclamation	EC, selenium	Daily composite	Autosampler

Key: Reclamation: MP-157 Environmental Monitoring Branch

Table 3. In-Stream Monitoring Stations (Optional)

Location	Responsible Agency	Parameters	Frequency	Remarks
DMC Milepost 16.2 (Check 2)	SLDMWA	EC	Weekly	Field measurement
DMC Milepost 20.6 (Check 3)	SLDMWA	EC	Weekly	Field measurement
DMC Milepost 34.4 (Check 6)	SLDMWA	EC	Weekly	Field measurement
DMC Milepost 38.7 (Check 7)	SLDMWA	EC	Weekly	Field measurement
DMC Milepost 48.6 (Check 9)	SLDMWA	EC	Weekly	Field measurement
DMC Milepost 64.0 (Check 12)	SLDMWA	EC	Weekly	Field measurement
DMC Milepost 85.1 (Check 16)	SLDMWA	EC	Weekly	Field measurement
DMC Milepost 100.9 (Telles Bridge)	SLDMWA	EC	Weekly	Field measurement

Key:
SLDMWA: San Luis and Delta-Mendota Water Authority

Wellhead Monitoring

Initial Analysis

All districts participating in the 2010 DMC Pump-in Program must provide the following information about each well to Reclamation prior to pumping groundwater into the DMC:

- the location of each well, pumping rate, and point of discharge in to the DMC;

- complete water quality analyses (Table 5 or 6)[4]

- the depth to groundwater in every well before pumping into the DMC commences.

The recommended summary forms for each well are included as Appendix 2.

Though most of the wells are privately owned, the Districts must provide access to each well for Reclamation and Authority staff.

All water samples must be sampled and preserved according to established protocols in correct containers. Analyses should be conducted by laboratories that have been approved by Reclamation, listed in Table 7. Each sample of well water must be sampled and analyzed at the expense of the well owner. Reclamation staff will review the analytical results and notify the District which wells may pump into the DMC in 2010.

[4] Note: Laboratory analyses of water in each well may be measured within three years

Compliance Monitoring

Daily Salinity

Mean daily salinity will be assessed with the sensors along the canal that report real-time data to CDEC, listed in Table 1. Such data will be downloaded by Reclamation and the Authority to monitor changes along the canal.

Weekly Monitoring

Reclamation may require weekly measurements of salinity along the DMC if the real-time sensors are not sufficient to identify changes. If necessary, Reclamation will direct the SLDMWA to measure the EC of water in the canal at the places listed in Table 3. These sites are located downstream from clusters of wells that could pump into the DMC. In addition, reclamation may also direct SLDMWA staff to measure the EC of the water in each active well

The weekly volume of groundwater pumped into the DMC from each well will be measured by the Authority and sent to Reclamation at the end of each week.

Selenium Monitoring

Reclamation will continue to measure selenium in the canal and Mendota Pool with autosamplers listed in Table 2. Reclamation may collect samples of water from various active wells; the cost of these tests will be borne by Reclamation. Based on available funds, Reclamation may also measure boron daily.

Depth to Groundwater

The Authority will continue to measure the depth to groundwater in each active well quarterly. Table 8 is a summary of measurements collected by the Authority between May 1995 and December 2009. The current depth to groundwater in each well will be compared to the depths listed in Table 8. If the current depth exceeds the maximum depth observed in table 8, then Reclamation direct the District to stop pumping from that well until the depth recovers to the median observed depth.

Data Compilation and Review

All compliance monitoring data collected by the Authority (i.e., flow, EC, and depth of groundwater from each active well, EC in the DMC) will be entered into worksheets and presented each week to Reclamation via e-mail. Reclamation will review the data to identify changes in the quality of water in the canal and in individual wells, and potential changes in the local aquifer that could lead to overdraft or subsidence.

Water Quality Monitoring Parameters and Data Management

The following sections describe the parameters for real-time and laboratory measurement of water quality, as well as methods for quality control, data management, and data reporting.

Real-Time Water Quality Monitoring Parameter

Reclamation and the Central Valley Operations Office have sensors along the DMC that measure salinity and temperature of water. These continuous measurements are posted on the Internet in real-time.

Salinity

Salinity is a measure of dissolved solids in water. It is the sum weight of many different elements within a given volume of water, reported in milligrams per liter (mg/L) or parts per million (ppm). Salinity is an ecological factor of considerable importance, influencing the types of organisms that live in a body of water. Also, salinity influences the kinds of plants and fish that will grow in a water body. Salinity can be estimated by measuring the electrical conductivity (EC) of the water.

Central Valley Operations Office (CVO) uses this conversion factor for estimating Total Dissolved Solids (TDS) from EC:

TDS (mg/L) = EC (µS/cm) * 0.618 + 16

Sampling For Laboratory Analyses of Water Quality

The following sections describe constituents for laboratory analyses of water quality, as well as methods for water quality sampling and chain of custody documentation.

Constituents

Table 5 and 6 are lists of constituents to be measured at in each well that will pump into the DMC during 2010. Parameters include selenium, mercury, boron, nutrients, and other compounds that cannot be measured with field sensors. Table 7 is a list of laboratories that have been approved by Reclamation.

Sampling methods

Grab samples will be collected in a bucket or bottle from the point of discharge into the canal. Samples of canal water should be collected mid-stream from a bridge or check structure. Grab samples should be poured directly into sample bottles appropriate to the analyses. This technique is for samples collected weekly or less frequently. Reclamation will specify the sample volume, type of bottle, need for preservative, and special handling requirements. Reclamation will train field staff on proper sample collection and handling.

Time composite samples will be collected by Reclamation using an autosampler. Daily composite samples will consist of up to eight subsamples taken per day and mixed into one sample. Weekly composite samples will consist of seven daily subsamples mixed into one sample.

Chain of Custody documentation

Chain of custody (COC) forms will be used to document sample collection, shipping, storage, preservation, and analysis. All individuals transferring and receiving samples will sign, date, and record the time on the COC that the samples are transferred.

Laboratory COC procedures are described in each laboratory's Quality Assurance Program Manual. Laboratories must receive the COC documentation submitted with each batch of samples and sign, date, and record the time the samples are transferred. Laboratories will also note any sample discrepancies (e.g., labeling, breakage). After generating the laboratory data report for the client, samples will be stored for a minimum of 30 days in a secured area prior to disposal.

Quality Control

Reclamation will assign staff to verify the accuracy of all measurements for this program.

Quality control (QC) is the overall system of technical activities that measure the attributes and performance of a process, item, or service against defined standards to verify that stated requirements are met.

Quality assurance (QA) is an integrated system of management activities involving, planning, implementation, documentation, assessment, reporting, and quality improvement to ensure that a process, item, or service is of the type and quality needed and expected by the customer.

QA objectives will be used to validate the data for this project. The data will be accepted, rejected, or qualified based on how sample results compare to established acceptance criteria.

The precision, accuracy, and contamination criteria will be used by the QCO to validate the data for this project. The criteria will be applied to the blind external duplicate/split, blank, reference, or spiked samples submitted with the production samples to the analytical laboratories by the participating agencies to provide an independent assessment of precision, accuracy, and contamination.

Laboratories analyze their own QC samples with the client’s samples. Laboratory QC samples, including laboratory fortified blanks, matrix spikes, duplicates, and method blanks, assess precision, accuracy, and contamination. Laboratory QC criteria are stated in the analytical methods or determined by each laboratory. Since internal control ranges are often updated in laboratories based on instrumentation, personnel, or other influences, it is the responsibility of the QCO to verify that these limits are well documented and appropriately updated during system audits. The preferred method of reporting the QC results is for the laboratory to provide a QC summary report with acceptance criteria for each QC parameter of interest.

For water samples, the QCO will use a statistical program to determine if current concentrations for parameters at given sites are consistent with the historical data at these

sites. A result is determined to be a historical outlier if it is greater than 3 standard deviations from the average value for the site. The presence of an outlier could indicate an error in the analytical process or a significant change in the environment.

Samples must be prepared, extracted, and analyzed within the recommended holding time for the parameter. Data may be qualified if the sample was analyzed after the holding time expires.

Completeness refers to the percentage of project data that must be successfully collected, validated, and reported to proceed with its intended use in making decisions.

Constraints with regard to time, money, safety, and personnel were some of the factors in choosing the most representative sites for this project. Monitoring sites have been selected by considering the physical, chemical, and biological boundaries that define the system under study.

Sites also were selected to be as representative of the system as possible. However, Reclamation will continue to evaluate the choice of the sites with respect to their representativeness and will make appropriate recommendations to the Contracting Officer given a belief or finding of inadequacy.

Comparability between each agency's data is enhanced through the use of Standard Operating Procedures that detail methods of collection and analysis. Each agency has chosen the best available protocol for the sampling and analyses for which it is responsible based on the agency's own expertise. Audits performed by the QCO will reinforce the methods and practices currently in place and serve to standardize techniques used by the agencies.

Data Management

This program will use data from several independent sources. Each collecting agency will be responsible for its data reduction (analysis), internal data quality control, data storage, and data retrieval.

Real-Time Data – Raw data from field sensors, must be identified as preliminary, subject to change

Provisional Data - Data that have been reviewed by the collecting agency but may be changed pending re-analyses or statistical review

Laboratory Data – Data produced by the laboratory following laboratory QA/QC protocols

Data Reporting

Preliminary data for each well must be compiled by each district and reported to Reclamation for review and approval. The list of approved wells will be included in the District's 2010 Warren Act contract.

In-stream data will be collected by Reclamation. Routine measurements of flow, EC, and depth of groundwater in each well will be collected by the Authority and sent to Reclamation each week.

Reclamation will compile these data in a water balance model developed by Reclamation, the Authority, and Exchange Contractors to predict the change in salinity in the canal with the addition of groundwater.

Real-time data will be used to monitor day-to-day patterns and assess actual conditions. The real-time data will be posted in regular e-mail messages to the districts and Authority. Reclamation will compile all flow, water quality, and groundwater data into a final report for future reference.

Data Interpretation

Reclamation staff will review all data for the canal and all wells pumping into the canal.

In accordance with the Exchange Contractor's letter of 15 January 2010, the addition of groundwater cannot cause an increase in salinity of more than 30 mg/L in the lower DMC, nor cause the in-stream salinity to exceed 450 mg/L.

Each week, Reclamation staff will use the real-time salinity measurements (Table 1) and optional weekly in-stream measurements (Table 3) to monitor and determine the changes in water quality caused by the conveyance of groundwater in the DMC.

Reclamation will direct the Authority and the Districts to stop pumping groundwater into the upper DMC if the concentration of these constituents in the canal exceed the maximum allowable concentrations listed in Table 4.

Table 4. Maximum Allowable Concentration of Seven Constituents in the Upper DMC

Constituent	Monitoring Location	Maximum concentration in the DMC
Arsenic	McCabe Road	10 µg/L
Boron	McCabe Road	0.7 mg/L
Nitrates as N	McCabe Road	45 mg/L
Selenium	Check 13	2 µg/L
Specific conductance (EC)	Check 13	1,200 µS/cm
Sulfates	McCabe Road	250 mg/L
Total Dissolved Solids*	Check 13	800 mg/L

*Calculation: TDS (mg/L) = EC (µS/cm) x 0.618 + 16

Reclamation will direct the Authority and the Districts to stop pumping groundwater into the lower DMC if:

- the additional groundwater is causing an increase of 30 mg/L in TDS between Check 13 and 20, or

- the TDS of water in the canal exceeds 450 mg/L, measured at Check 20[5].

Reclamation reserves the right to modify this monitoring program at any time to change.

Revised: 19 Feb 2010

[5] Note: Reclamation will continue to monitor the effects of the six sumps near Firebaugh that pump subsurface groundwater into the canal.

Table 5. Water Quality Standards for Acceptance of Groundwater into the Upper Delta-Mendota Canal Headworks to Check 13 (O'Neill Forebay)

Constituent	Units	Maximum Contaminant Level		Detection Limit for Reporting		CAS Registry Number	Recommended Analytical Method
Primary							
Aluminum	mg/L	1	(1)	0.05	(2)	7429-90-5	EPA 200.7
Antimony	mg/L	0.006	(1)	0.006	(2)	7440-36-0	EPA 200.8
Arsenic	mg/L	0.05	(1)	0.002	(2)	7440-38-2	EPA 200.8
Barium	mg/L	1	(1)	0.1	(2)	7440-39-3	EPA 200.7
Beryllium	mg/L	0.004	(1)	0.001	(2)	7440-41-7	EPA 200.7
Boron	mg/L	0.7	(16)			7440-42-8	EPA 200.7
Cadmium	mg/L	0.005	(1)	0.001	(2)	7440-43-9	EPA 200.7
Chromium (total)	mg/L	0.05	(1)	0.01	(2)	7440-47-3	EPA 200.7
Lead	mg/L	0.015	(9)	0.005	(8)	7439-92-1	EPA 200.8
Mercury (inorganic)	mg/L	0.002	(1)	0.001	(2)	7439-97-6	EPA 245.1
Nickel	mg/L	0.1	(1)	0.01	(2)	7440-02-0	EPA 200.7
Nitrates (as NO3)	mg/L	45	(1)	2	(2)	7727-37-9	EPA 300.1
Nitrate + Nitrite (sum as nitrogen)	mg/L	10	(1)				EPA 353.2
Nitrite (as nitrogen)	mg/L	1	(1)	0.4	(2)	14797-65-0	EPA 300.1
Selenium	mg/L	0.002	(13)			7782-49-2	EPA 200.8
Thallium	mg/L	0.002	(1)	0.001	(2)	7440-28-0	EPA 200.8
Secondary							
Chloride	mg/L	250	(7)			16887-00-6	EPA 300.1
Copper	mg/L	1	(10)	0.05	(8)	7440-50-8	EPA 200.7
Iron	mg/L	0.3	(6)			7439-89-6	EPA 200.7
Manganese	mg/L	0.05	(6)			7439-96-5	EPA 200.7
Molybdenum	mg/L	0.01	(11)			7439-98-7	EPA 200.7
Silver	mg/L	0.1	(6)			7440-22-4	EPA 200.7
Sodium	mg/L	69	(15)			7440-23-5	EPA 200.7
Specific Conductance	µS/cm	2,200	(7)				SM 2510 B
Sulfate	mg/L	250	(7)			14808-79-8	EPA 300.1
TDS	mg/L	1,500	(7)				SM 2540 C
Zinc	mg/L	5	(6)			7440-66-6	EPA 200.7
Radioactivity							
Gross Alpha	pCi/L	15	(3)	3	(3)		SM 7110C
Organic Chemicals							
Atrazine	mg/L	0.001	(4)	0.0005	(5)	1912-24-9	EPA 508.1
Bentazon	mg/L	0.018	(4)	0.002	(5)	25057-89-0	EPA 515
Carbofuran	mg/L	0.018	(4)	0.005	(5)	1563-66-2	EPA 531.1-2
Chlordane	mg/L	0.0001	(4)	0.0001	(5)	57-74-9	EPA 505
Chlorpyrifos	µg/L	0.025	(14)			2921-88-2	EPA 8141
2, 4-D	mg/L	0.07	(4)	0.01	(5)	94-75-7	EPA 515.1-4
Diazinon	µg/L	0.16	(14)			333-41-5	EPA 507
Dibromochloropane (DBCP)	mg/L	0.0002	(4)	0.00001	(5)	96-12-8	EPA 504.1
Endrin	mg/L	0.002	(4)	0.0001	(5)	72-20-8	EPA 505
Ethylene Dibromide (EDB)	mg/L	0.00005	(4)	0.00002	(5)	206-93-4	EPA 504.1
Glyphosate	mg/L	0.7	(4)	0.025	(5)	1071-83-6	EPA 547
Heptachlor	mg/L	0.00001	(4)	0.00001	(5)	76-44-8	EPA 505
Heptachlor Epoxide	mg/L	0.00001	(4)	0.00001	(5)	1024-57-3	EPA 505
Lindane	mg/L	0.0002	(4)	0.0002	(5)	58-89-9	EPA 505
Methoxychlor	mg/L	0.03	(4)	0.01	(5)	72-43-5	EPA 505
Molinate	mg/L	0.02	(4)	0.002	(5)	2212-67-1	EPA 525.2
2, 4, 5-TP (Silvex)	mg/L	0.05	(4)	0.001	(5)	93-72-1	EPA 515.1-4
Simazine	mg/L	0.004	(4)	0.001	(5)	122-34-9	EPA 508.1
Thiobencarb	mg/L	0.07	(4)	0.001	(5)	28249-77-6	EPA 525.2
Toxaphene	mg/L	0.003	(4)	0.001	(5)	8001-35-2	EPA 505

Table 5. Water Quality Standards for Acceptance of Groundwater into the Upper Delta-Mendota Canal Headworks to Check 13 (O'Neill Forebay)

Sources:

Title 22. The Domestic Water Quality and Monitoring Regulations specified by the State of California Health and Safety Code (Sections 4010-4037), and Administrative Code (Sections 64401 et seq.), as amended.

(1) Title 22. Table 64431-A (mg/L)
(2) Title 22. Table 64432-A (mg/L)
(3) Title 22. Table 64442 (pCi/L)
(4) Title 22. Table 64444-A (mg/L)
(5) Title 22. Table 64445.1-A (mg/L)
(6) Title 22. Table 64449-A (mg/L)
(7) Title 22. Table 64449-B (mg/L)
(8) Title 22. Table 64678-A (mg/L)
(9) Title 22. Section 64678 (d)
(10) Title 22. Section 64678 (e)

California Regional Water Quality Control Board, Central Valley Region, Fourth Edition of the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins.

(13) Basin Plan, Table III-1 (ug/L) (selenium in Grasslands water supply channels)

(14) Basin Plan, Table III-2A (ug/L) (chlorpyrifos & diazinon in San Joaquin River from Mendota to Vernalis)

Ayers, R. S. and D. W. Westcot, *Water Quality for Agriculture* , Food and Agriculture Organization of the United Nations - Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985).

(15) Ayers, Table 1 (mg/L) (sodium)

(16) Ayers, Table 21 (mg/L) (boron)

revised: 05 Feb 2010 SCC-107

Table 6. Water Quality Standards for Acceptance of Groundwater into the lower Delta-Mendota Canal Check 13 (O'Neill Forebay) To Check 21 (Mendota Pool)

Constituent	Units	Maximum Contaminant Level		CAS Registry Number	Recommended Analytical Method
Bicarbonate	mg/L	61	(5)	71-52-3	SM 2320 A
Boron	mg/L	0.7	(3)	7440-42-8	EPA 200.7
Calcium	mg/L	80	(5)	7440-70-2	EPA 200.5
Chloride	mg/L	40	(5)	189689-94-9	EPA 300.1
Chlorpyrifos	µg/L	0.025	(2)	2921-88-2	EPA 8141
Chromium, total	µg/L	50	(1)	7440-47-3	EPA 200.7
Diazinon	µg/L	0.16	(2)	333-41-5	EPA 507
Hardness	mg/L				calculated
Magnesium	mg/L	16	(5)	7439-95-4	EPA 200.5
Mercury	µg/L	2	(1)	7439-97-6	EPA 245.1
Molybdenum	µg/L	10	(3)	7439-98-7	EPA 200.7
Nickel	µg/L	100	(1)	7440-02-0	EPA 200.7
Nitrates (as NO3)	mg/L	45	(1)	7727-37-9	EPA 300.1
Nitrite (as nitrogen)	mg/L	1	(1)	14797-65-0	EPA 300.1
pH	units	5.0 - 7.0	(5)		EPA 150.1
Potassium	mg/L	4.5	(5)	7440-09-7	EPA 200.5
SAR		<2	(5)		calculated
Selenium	µg/L	2	(2)	7782-49-2	EPA 200.8
Sodium	mg/L	69	(3)	7440-23-5	EPA 200.7
Specific Conductance	µS/cm	1,230	(4)		SM 2510 B
Sulfate	mg/L	50	(5)	14808-79-8	EPA 300.1
Total Dissolved Solids	mg/L	800	(4)		SM 2540 C

(1) Title 22. The Domestic Water Quality and Monitoring Regulations specified by the State of California Health and Safety Code (Sections 4010-4037), and Administrative Code (Sections 64401 et seq.), as amended.

(2) California Regional Water Quality Control Board, Central Valley Region, Fourth Edition of the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins. Table III-2A

(3) Ayers, R. S. and D. W. Westcot, *Water Quality for Agriculture* , Food and Agriculture Organization of the United Nations - Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985).

(4) Second Amended Contract for Exchange of Waters, No I1r-1144, Article 9. Quality of Substitute Water.

(5) Spectrum Analytic, Inc. Guide to Interpreting Irrigation Water Analysis. Washington C.H., Ohio
http://www.spectrumanalytic.com/support/library/rf/A_Guide_to_Interpreting_Irrigation_Water_Analysis.htm

revised 11/23/2009 SCC-107

RECLAMATION
Managing Water in the West

Table 7. Approved Laboratory List for the Mid-Pacific Region Environmental Monitoring Branch (MP-157)

Basic Laboratory	**Address**	2218 Railroad Avenue Redding, CA 96001 USA
	Contact	Nathan Hawley, Melissa Hawley, Ricky Jensen
	P/F	(530) 243-7234 / (530) 243-7494
	Email	nhawley@basiclab.com (QAO), mhawley@basiclab.com (PM), jcady@basiclab.com (quotes), poilar@basiclab.com (sample custody), khawley@basiclab.com (sample custody)
	CC Info	nhawley@basiclab.com, jcady@basiclab.com (sample custody)
	Methods	*Approved only for inorganic parameters (metals, general chemistry)*
BioVir Analytical Laboratories	**Address**	685 Stone Road Unit 6 Benicia, CA 94510 USA
	Contact	Rick Danielson, Lab Director
	P/F	(707) 747-5906 / (707) 747-1751
	Email	red@biovir.com, csj@biovir.com, lb@biovir.com, QAO Jim Truscott jrt@biovir.com
	Methods	*Approved for all biological and pathogenic parameters*
Block Environmental Services	**Address**	2451 Estand Way Pleasant Hill, CA 94523 USA
	Contact	David Block
	P/F	(925) 682-7200 / (925) 686-0399
	Email	dblock@blockenviron.com
	Methods	*Approved for Toxicity Testing.*
California Laboratory Services	**Address**	3249 Fitzgerald Road Rancho Cordova, CA 95742
	Contact	Raymond Oslowski
	P/F	(916) 638-7301 / (916) 638-4510
	Email	rayo@californialab.com
	Methods	*Approved for Chromium VI*
Caltest Analytical Laboratory	**Address**	1885 North Kelly Road Napa, CA 94558
	Contact	Bill Svoboda, Project Manager x29
	P/F	(707) 258-4000 / (707) 226-1001
	Email	bsvoboda@caltestlab.com
	Methods	*Approved for all inorganic parameters and bioligical parameters*
Columbia Environmental Resource Center	**Address**	4200 New Haven Road Columbia, MO 65201 USA
	Contact	Tom May, Research Chemist
	P/F	(573) 876-1858 / (573) 876-1896
	Email	tmay@usgs.gov
	Methods	*Approved for mercury in biological tissue*
Data Chem Laboratories	**Address**	960 West LeVoy Drive Salt Lake City, UT 84123-2547 USA
	Contact	Bob DiRienzo, Kevin Griffiths-Project Manager, Rand Potter - Project Manager, asbestos
	P/F	(801) 266-7700 / (801) 268-9992
	Email	griffiths@datachem.com, Potter@datachem.com Invoicing: (Justin) pate@datachem.com
	Methods	*Approved for asbestos, metals, organochlorine pesticides and PCBs in solids*
Dept. of Fish & Game - WPCL	**Address**	2005 Nimbus Road Rancho Cordova, CA 95670 USA
	Contact	David B. Crane
	P/F	(916) 358-2858 / (916) 985-4301
	Email	dcrane@ospr.dfg.ca.gov
	Methods	*Approved only for metals analysis in tissue.*
Frontier Geosciences	**Address**	414 Pontius North Seattle, WA 98109 USA
	Contact	Shelly Fank - QA Officer, Matt Gomes-Project Manager
	P/F	(206) 622-6960 / (206) 622-6870
	Email	shellyf@frontiergeosciences.com, mattg@frontiergeosciences.com
	Methods	*in low level metals analysis.*

Fruit Growers Laboratory	**Address**	853 Corporation Street Santa Paula, CA 93060 USA
	Contact	David Terz, QA Director
	P/F	(805) 392-2024 / (805) 525-4172
	Email	davidt@fglinc.com
	Methods	*Approved for all inorganic and organic parameters in drinking water.*
Montgomery Watson/Harza Laboratories	**Address**	750 Royal Oaks Drive Ste. 100 Monrovia, CA 91016 USA
	Contact	Allen Glover (project manager), Bradley Cahoon (quotes)
	P/F	(916) 374-8030, 916-996-5929 (AG-cell) / (916) 374-8061
	Email	Allen.Glover@us.mwhglobal.com, Bradley.Cahoon@us.mwhglobal.com
	CC Info	cc. Sam on all communications to Allen. Samer.Momani@us.mwhglobal.com
	Methods	*Approved for all inorganic and organic parameters in drinking water*
Olson Biochemistry Laboratories	**Address**	SDSU: Box 2170, ACS Rm. 133 Brookings, SD 57007 USA
	Contact	Nancy Thiex, Laboratory Director
	P/F	(605) 688-5466 / (605) 688-6295
	Email	Nancy.Thiex@sdstate.edu
	CC Info	For re-analysis: contact Zelda McGinnis-Schlobohm and Nancy Anderson
		Zelda.Schobohm@SDSTATE.EDU, Nancy.Anderson@SDSTATE.EDU
		For analysis questions only: just CC. Nancy Anderson
	Methods	*Approved only for low level selenium analysis.*
Severn Trent Laboratories	**Address**	880 Riverside Parkway West Sacramento, CA 95605 USA
	Contact	Jeremy Sadler
	P/F	(916) 374-4381 / (916) 372-1059
	Email	jsadler@stl-inc.com
	Methods	*Approved for all inorganic parameters and hazardous waste organics* ***except for Ammonia as Nitrogen*** *.* *Ag analysis in sediment, when known quantity is present, request 6010B*
Sierra Foothill Laboratory, Inc.	**Address**	255 Scottsville Blvd, Jackson, CA 95642
	Contact	Sandy Nurse (Owner) or Dale Gimble (QA Officer)
	P/F	(209) 223-2800 / (209) 223-2747
	Email	sandy@sierralab.com, CC: dale@sierralab.com
	Methods	*Approved for all inorganic parameters, microbiological parameters, acute and chronic toxicity.*
Twining Laboratories, Inc.	**Address**	2527 Fresno Street Fresno, CA 93721 USA
	Contact	Jim Brownfield (QA Officer), Sample Control (for Bottle Orders)
	P/F	(559) 268-7021 / (559) 268-0740
	Email	JimB@twining.com cc. to JosephU@twining.com
	Methods	*Approved only for general chemistry and boron analysis.*
U.S. Geological Survey - Denver	**Address**	Denver Federal Center Building 20, MS 973 Denver, CO 80225 USA
	Contact	Stephen A. Wilson
	P/F	(303) 236-2454 / (303) 236-3200
	Email	swilson@usgs.gov
	Methods	*Approved only for inorganic parameters in soil .*
USBR Technical Service Center Denver Soils	**Address**	Denver Federal Center Building 67, D-8750 Denver, CO 80225-0007 USA
	Contact	Juli Fahy or Stan Conway
	P/F	(303) 445-2188 / (303) 445-6351
	Email	jfahy@do.usbr.gov
	Methods	*Approved only for general physical analysis in soils.*
Western Environmental Testing Laboratories	**Address**	475 East Greg Street # 119 Sparks, NV 89431 USA
	Contact	Ginger Peppard (Customer Service Manager), Andy Smith (Lab Director), Michelle Kramer
	P/F	(775) 355-0202 / (775) 355-0817
	Email	ginger@WETLaboratory.com, andy@WETLaboratory.com, michelle@WETLaboratory.com
	Methods	*Approved only for inorganic parameters (metals, general chemistry).*

San Luis & Delta-Mendota Water Authority
Delta-Mendota Canal

Table 8. Summary of Depth to Groundwater in Adjacent Wells (feet)
May 1995 - Dec 2009

Milepost	Max	Min	Average	Median	Count
12.37L	327.8	164.2	230.7	226.0	45
12.69L	244.8	207.5	226.1	225.0	45
12.75R	295.0	212.0	249.4	253.2	44
13.31L	275.8	210.0	229.9	226.2	44
14.26R	268.5	227.5	240.6	241.0	44
15.11R	264.0	200.0	238.4	238.8	45
21.25L	156.0	106.0	119.4	114.8	43
21.86L	130.0	89.6	107.6	107.9	45
22.77R	170.0	39.2	134.5	135.0	45
23.41L	254.0	141.0	190.7	188.0	45
30.43R	169.8	121.8	144.3	143.2	45
30.43L	155.0	102.0	124.5	124.1	45
31.60L	277.0	110.1	215.9	232.0	45
33.71L	198.6	130.9	166.8	168.0	45
35.73R	179.0	146.8	159.1	159.0	45
36.01L	290.0	137.2	201.3	174.0	43
36.80L	204.0	111.0	152.2	146.0	44
37.10L	277.0	158.0	193.3	189.9	44
37.32L	200.0	150.8	165.4	161.4	44
37.58L	170.0	127.8	146.2	141.2	44
45.78R	121.0	83.0	98.0	95.3	44
48.97L	130.0	80.8	97.3	95.0	44
51.66L	141.2	86.4	108.5	106.0	44
58.28L	63.0	27.0	41.5	39.8	43
60.06R	95.0	37.6	64.2	60.2	43
66.71L	49.8	19.8	34.6	33.0	43
78.31L	49.3	21.9	28.5	27.0	52
79.13R	111.8	59.4	84.5	88.2	52
79.60L	83.2	54.5	65.0	62.3	52
80.03L	80.0	16.0	34.5	34.0	52
80.03R	143.5	143.5	143.5	143.5	1
80.62R	100.2	47.8	60.6	58.5	52
80.62L	69.0	19.4	43.1	43.0	52
83.08-R	64.9	37.6	44.9	42.7	27
83.67-L	71.6	12.0	24.2	21.9	27
90.18R	201.3	103.9	136.8	130.0	52
90.19L1	218.5	98.9	141.8	133.2	52
90.19L2	190.0	72.0	131.6	123.4	52

San Luis & Delta-Mendota Water Authority
Delta-Mendota Canal

Table 8. Summary of Depth to Groundwater in Adjacent Wells (feet)
May 1995 - Dec 2009

Milepost	Max	Min	Average	Median	Count
90.39R	212.0	105.0	136.0	129.2	52
90.60L	187.8	28.7	133.0	129.2	52
90.61R	198.0	104.0	135.0	127.9	52
90.91L	285.9	93.2	141.7	134.6	52
91.15L	287.7	97.4	134.8	128.0	52
91.36L	217.0	16.8	116.6	121.1	52
91.57R	222.2	91.8	132.0	126.5	52
91.68R	219.6	99.2	136.8	136.1	52
91.77R	172.2	96.0	127.1	124.2	52
91.80L	195.2	93.1	130.1	124.3	52
92.00R	172.6	109.0	137.7	131.2	52
92.14L	215.1	98.8	140.2	134.7	52
92.20R	220.0	95.8	137.3	135.3	52
92.72L	218.3	100.2	140.2	131.9	52
93.20L	296.1	102.2	135.3	129.9	52
93.27R	228.4	115.0	152.7	148.0	51
93.27L	208.5	100.8	140.1	133.5	52
94.26L	228.1	99.7	135.9	131.5	52
95.62L	213.4	99.6	138.9	127.4	52
97.28L	131.5	34.0	60.6	50.0	52
98.74L	114.2	39.2	53.8	45.6	52
99.24L	96.0	31.5	56.1	51.2	52
99.82L	181.8	19.5	57.0	50.6	52
100.24L	136.6	28.1	52.6	45.6	52
100.65L	131.2	36.5	62.2	55.2	52
100.85L	98.3	39.0	56.2	49.6	51
101.27L	120.5	37.4	58.4	49.0	51
102.04R	130.0	38.0	60.2	50.9	51
106.20R	134.5	60.7	84.8	81.9	51
113.72L	29.2	13.2	21.6	21.6	51
115.32R	82.9	18.5	31.0	31.6	51
115.62L	42.0	12.2	25.5	24.4	50
115.84R	39.2	14.9	25.1	23.6	51
116.40L1	77.0	14.2	30.4	28.0	51
116.40L2	74.0	11.3	29.8	23.7	51

Appendix 1. 2010 Letter from Exchange Contractors

SAN JOAQUIN RIVER EXCHANGE CONTRACTORS WATER AUTHORITY
CCID • CCC
FCWD • SLCC

Consisting of 240,000 acres on the Westside of the San Joaquin Valley

JAMES E. O'BANION
Chairman

ROY CATANIA
Vice Chairman

STEVE CHEDESTER
Executive Director

LARRY FREEMAN
Water Resources Specialist

JOANN TOSCANO
Administrative Assistant

MINASIAN, SPRUANCE, MEITH, SOARES & SEXTON LLP
Legal Counsel

CENTRAL CALIFORNIA IRRIGATION DISTRICT

James E. O'Banion
President

Christopher White
General Manager

SAN LUIS CANAL COMPANY

James L. Nickel
President

Chase Hurley
General Manager

FIREBAUGH CANAL WATER DISTRICT

Mike Stearns
President

Jeff Bryant
General Manager

COLUMBIA CANAL COMPANY

Roy Catania
President

Randy Houk
General Manager

P.O. Box 2115
541 H Street
Los Banos, CA 93635
(209) 827-8616
Fax (209) 827-9703
e-mail: jtoscano@sjrecwa.net
Website: www.sjrecwa.net

January 15, 2010

VIA EMAIL & U.S. MAIL

Mr. Michael Jackson
U.S. Bureau of Reclamation
1243 N Street
Fresno, CA 93721-1813

Ms. Frances Mizuno
San Luis & Delta-Mendota Water Authority
Post Office Box 2157
Los Banos, CA 93635

RE: ***2010 DMC Pumping***

Dear Michael and Frances:

This letter is to confirm the San Joaquin River Exchange Contractors Water Authority's (Exchange Contractors) approval of your request to continue the DMC pumping program in 2010. As a result of subsidence effects being determined in 2008, this year's program must continue to include that no pumping will be allowed in Management Areas 2 and 3.

As you know, a joint groundwater study between the Central California Irrigation District, the City of Los Banos and the United States Bureau of Reclamation is currently being conducted in the Los Banos aquifer subarea due to significant groundwater concerns. The study and its recommendations are anticipated to be completed in March 2010. Due to the regulatory pumping restrictions that are being implemented on the Jones Pumping Plant, we can appreciate the SLDMWA's need to begin the environmental review process for the 2010 DMC Pumping Program; however, we must reserve the right to amend this approval letter pending the outcome of the joint groundwater study.

The Exchange Contractors' Board approval for this pumping program is based upon the conditions set forth below:

1. Any well that is proposed to pump into the lower DMC must obtain a current water quality analysis. The analysis shall consist of Ag Suitability and selenium, plus any other constituents the U.S. Bureau of Reclamation (USBR) may require. (Wells may be pumped for 24

hours in order to get the initial sample for water quality testing.) These tests will be conducted on a monthly basis for the duration of the pumping period. From our perspective, pumping may begin once we have received copies of current lab test results for salinity and selenium, recognizing the other constituents may take longer to obtain the lab results.

2. Only wells that test at 1,500 ppm TDS or less at the well head will be allowed.

3. Only wells that test at 2 ppb selenium or less at the well head will be allowed.

4. The calculated degradation caused by the lower DMC wells shall not exceed 30 ppm. (The model developed by USBR during the 2008 and 2009 pumping program shall be used and USBR shall provide at least weekly updates of the reports to the Exchange Contractors.)

5. At any time, the wells in the lower DMC will be shut off if the measured water quality at Check 20 on the DMC exceeds 450 ppm TDS in a single day. The wells may resume pumping after the average water exceedence no longer exists for 3 days. Wells with water quality at the well head of 450 TDS or less would be allowed to continue to pump and would not be subject to this restriction.

6. The water would be credited to the receiving district as a whole, not for specific growers.

7. The wells will only run through February 28, 2011.

If you agree with the program as outlined, and before any additional lower DMC pumping commences, we request that each of your agencies confirm in writing to the program described above. Please contact us if you have any questions regarding this matter.

Sincerely,

Steve Chedester

cc: San Joaquin River Exchange Contractors Members
Paul Minasian, Esq.

Appendix 2. Recommended Well Summary Form

2010 DMC Pump-in Program
Summary Sheet

District:	
Well Operator:	
Well ID	

Groundwater elevation

Depth to groundwater	
Date of measurement	

DMC Milepost	

Water Quality Analysis

Date of sample	
Lab	
Sample ID:	

Table A. Water Quality Standards for Acceptance of Groundwater into the Delta-Mendota Canal Headworks to Check 13 (O'Neill Forebay)

District	
Well ID	
DMC Milepost	

Constituent	Units	Maximum Contaminant Level		Detection Limit for Reporting		CAS Registry Number	Recommended Analytical Method	Analytical Results	Units
Primary									
Aluminum	mg/L	1	(1)	0.05	(2)	7429-90-5	EPA 200.7		
Antimony	mg/L	0.006	(1)	0.006	(2)	7440-36-0	EPA 200.8		
Arsenic	mg/L	0.05	(1)	0.002	(2)	7440-38-2	EPA 200.8		
Barium	mg/L	1	(1)	0.1	(2)	7440-39-3	EPA 200.7		
Beryllium	mg/L	0.004	(1)	0.001	(2)	7440-41-7	EPA 200.7		
Boron	mg/L	0.7	(16)			7440-42-8	EPA 200.7		
Cadmium	mg/L	0.005	(1)	0.001	(2)	7440-43-9	EPA 200.7		
Chromium (total)	mg/L	0.05	(1)	0.01	(2)	7440-47-3	EPA 200.7		
Lead	mg/L	0.015	(9)	0.005	(8)	7439-92-1	EPA 200.8		
Mercury (inorganic)	mg/L	0.002	(1)	0.001	(2)	7439-97-6	EPA 245.1		
Nickel	mg/L	0.1	(1)	0.01	(2)	7440-02-0	EPA 200.7		
Nitrates (as NO3)	mg/L	45	(1)	2	(2)	7727-37-9	EPA 300.1		
Nitrate + Nitrite (sum as nitrogen)	mg/L	10	(1)				EPA 353.2		
Nitrite (as nitrogen)	mg/L	1	(1)	0.4	(2)	14797-65-0	EPA 300.1		
Selenium	mg/L	0.002	(13)			7782-49-2	EPA 200.8		
Thallium	mg/L	0.002	(1)	0.001	(2)	7440-28-0	EPA 200.8		
Secondary									
Chloride	mg/L	250	(7)			16887-00-6	EPA 300.1		
Copper	mg/L	1	(10)	0.05	(8)	7440-50-8	EPA 200.7		
Iron	mg/L	0.3	(6)			7439-89-6	EPA 200.7		
Manganese	mg/L	0.05	(6)			7439-96-5	EPA 200.7		
Molybdenum	mg/L	0.01	(11)			7439-98-7	EPA 200.7		
Silver	mg/L	0.1	(6)			7440-22-4	EPA 200.7		
Sodium	mg/L	69	(15)			7440-23-5	EPA 200.7		
Specific Conductance	µS/cm	2,200	(7)				SM 2510 B		
Sulfate	mg/L	250	(7)			14808-79-8	EPA 300.1		
TDS	mg/L	1,500	(7)				SM 2540 C		
Zinc	mg/L	5	(6)			7440-66-6	EPA 200.7		
Radioactivity									
Gross Alpha	pCi/L	15	(3)	3	(3)		SM 7110C		
Organic Chemicals									
Atrazine	mg/L	0.001	(4)	0.0005	(5)	1912-24-9	EPA 508.1		
Bentazon	mg/L	0.018	(4)	0.002	(5)	25057-89-0	EPA 515		
Carbofuran	mg/L	0.018	(4)	0.005	(5)	1563-66-2	EPA 531.1-2		
Chlordane	mg/L	0.0001	(4)	0.0001	(5)	57-74-9	EPA 505		
Chlorpyrifos	µg/L	0.025	(14)			2921-88-2	EPA 8141		

Table A. Water Quality Standards for Acceptance of Groundwater into the Delta-Mendota Canal Headworks to Check 13 (O'Neill Forebay)

District	
Well ID	
DMC Milepost	

Constituent	Units	Maximum Contaminant Level		Detection Limit for Reporting		CAS Registry Number	Recommended Analytical Method	Analytical Results	Units
2, 4-D	mg/L	0.07	(4)	0.01	(5)	94-75-7	EPA 515.1-4		
Diazinon	µg/L	0.16	(14)			333-41-5	EPA 507		
Dibromochloropane (DBCP)	mg/L	0.0002	(4)	0.00001	(5)	96-12-8	EPA 504.1		
Endrin	mg/L	0.002	(4)	0.0001	(5)	72-20-8	EPA 505		
Ethylene Dibromide (EDB)	mg/L	0.00005	(4)	0.00002	(5)	206-93-4	EPA 504.1		
Glyphosate	mg/L	0.7	(4)	0.025	(5)	1071-83-6	EPA 547		
Heptachlor	mg/L	0.00001	(4)	0.00001	(5)	76-44-8	EPA 505		
Heptachlor Epoxide	mg/L	0.00001	(4)	0.00001	(5)	1024-57-3	EPA 505		
Lindane	mg/L	0.0002	(4)	0.0002	(5)	58-89-9	EPA 505		
Methoxychlor	mg/L	0.03	(4)	0.01	(5)	72-43-5	EPA 505		
Molinate	mg/L	0.02	(4)	0.002	(5)	2212-67-1	EPA 525.2		
2, 4, 5-TP (Silvex)	mg/L	0.05	(4)	0.001	(5)	93-72-1	EPA 515.1-4		
Simazine	mg/L	0.004	(4)	0.001	(5)	122-34-9	EPA 508.1		
Thiobencarb	mg/L	0.07	(4)	0.001	(5)	28249-77-6	EPA 525.2		
Toxaphene	mg/L	0.003	(4)	0.001	(5)	8001-35-2	EPA 505		

Sources:

Title 22. The Domestic Water Quality and Monitoring Regulations specified by the State of California Health and Safety Code

(1) Title 22. Table 64431-A (mg/L)
(2) Title 22. Table 64432-A (mg/L)
(3) Title 22. Table 64442 (pCi/L)
(4) Title 22. Table 64444-A (mg/L)
(5) Title 22. Table 64445.1-A (mg/L)
(6) Title 22. Table 64449-A (mg/L)
(7) Title 22. Table 64449-B (mg/L)
(8) Title 22. Table 64678-A (mg/L)
(9) Title 22. Section 64678 (d)
(10) Title 22. Section 64678 (e)

Lab:	
Lab ID:	
Sample Date:	

California Regional Water Quality Control Board, Central Valley Region, Fourth Edition of the Water Quality Control Plan for
(13) Basin Plan, Table III-1 (ug/L) (selenium in Grasslands water supply channels)
(14) Basin Plan, Table III-2A (ug/L) (chlorpyrifos & diazinon in San Joaquin River from Mendota to Vernalis)

Ayers, R. S. and D. W. Westcot, *Water Quality for Agriculture* , Food and Agriculture Organization of the United Nations - Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985).
(15) Ayers, Table 1 (mg/L) (sodium)
(16) Ayers, Table 21 (mg/L) (boron)

revised 03/03/2009 SCC-107

Table B. Water Quality Standards for Acceptance of Groundwater into the Delta-Mendota Canal
Check 13 (O'Neill Forebay) To Check 21 (Mendota Pool)

District	
Well ID	
DMC Milepost	

Constituent	Units	Maximum Contaminant Level		CAS Registry Number	Recommended Analytical Method	Analytical Results	Units
Boron	µg/L	700	(3)	7440-42-8	EPA 200.7		
Chromium, total	µg/L	50	(1)	7440-47-3	EPA 200.7		
Mercury	µg/L	2	(1)	7439-97-6	EPA 245.1		
Molybdenum	µg/L	10	(3)	7439-98-7	EPA 200.7		
Nickel	µg/L	100	(1)	7440-02-0	EPA 200.7		
Nitrates	µg/L	45	(1)	7727-37-9	EPA 300.1		
Selenium	µg/L	2	(2)	7782-49-2	EPA 200.8		
Specific Conductance	µS/cm	1,230	(4)		SM 2510 B		
Total Dissolved Solids	mg/L	800	(4)		SM 2540 C		
Chlorpyrifos	µg/L	0.025	(2)	2921-88-2	EPA 8141		
Diazinon	µg/L	0.16	(2)	333-41-5	EPA 507		

(1) Title 22. The Domestic Water Quality and Monitoring Regulations specified by the State of California
(2) California Regional Water Quality Control Board, Central Valley Region, Fourth Edition of the Water
(3) Ayers, R. S. and D. W. Westcot, *Water Quality for Agriculture* , Food and Agriculture Organization of the
(4) Second Amended Contract for Exchange of Waters, No I1r-1144, Article 9. Quality of Substitute Water.
revised 03/03/2009 SCC-107

Lab:	
Lab ID:	
Sample Date:	