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# APPROVAL OF ONE-YEAR TEMPORARY WARREN ACT CONTRACTS FOR THE CONVEYANCE OF NON-CVP WATER IN THE DELTA-MENDOTA CANAL

South-Central California Area Office

Date: February 27, 2009

To:

| | | | |
|---|---|---|---|
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Cost Authority Number: A10-0863-8943-332-65-0-0

From: Patti Clinton

Subject: Review and signing of FONSI

Please review the attached FONSI/EA and route it according to the order on the list. When your review is finished, please date and initial this routing document, and sign on the first page of the FONSI if your name is listed. However, if you have comments or questions please contact the Environmental Team or the proponent of the action. When everyone has signed the FONSI, please return it to Patti Clinton.

Thank you.

Ready for Central Files 2/27/09

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# UNITED STATES DEPARTMENT OF THE INTERIOR
# BUREAU OF RECLAMATION

## MID-PACIFIC REGION

## SOUTH-CENTRAL CALIFORNIA AREA OFFICE
## FRESNO, CALIFORNIA

### FINDING OF NO SIGNIFICANT IMPACT

### 2009 APPROVAL OF ONE-YEAR TEMPORARY WARREN ACT CONTRACTS FOR THE CONVEYANCE OF NON-CVP WATER IN THE DELTA-MENDOTA CANAL

**FONSI-08-98**

Recommended by: Laura Myers Date: 2/27/09

Laura Myers
Chief, Resource Management Division
South Central California Area Office

Approved by: Michael R. Jackson Date: 2/27/09

Michael Jackson
Areal Manager
South Central California Area Office

# FINDING OF NO SIGNIFICANT IMPACT
# 2008 APPROVAL OF ONE-YEAR TEPORARY WARREN ACT CONTRACTS FOR THE CONVEYANCE OF NON-CVP WATER IN THE DELTA-MENDOTA CANAL

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 U.S. Bureau of Reclamation (Reclamation), has determined that the approval of one-year Warren Act contracts is not a major federal action that would significantly affect the quality of the human environment and an environmental impact statement is not required. This Finding of No Significant Impact is supported by Reclamation's Draft Environmental Assessment (EA) Number EA-08-98, *Approval of One-year Temporary Warren Act Contracts for the Conveyance of Non-CVP Water in the Delta-Mendota Canal,* and is hereby incorporated by reference.

## BACKGROUND

Reclamation proposes to issue one-year temporary Warren Act Contracts to requesting Central Valley Project (CVP) contractors within the Delta Division and San Luis Unit for up to a combined total of 50,000 AF for the 2009 water year ending February 28, 2010 for the delivery of non-CVP water in the Delta-Mendota Canal (DMC). The source of non-CVP water to be delivered in the DMC would be from groundwater pumping by water districts within the Delta Division and San Luis Units.

Conveyance of non-CVP water under a Warren Act contract within Reclamation facilities would be subject to available capacity. The district will pump groundwater from wells close to the DMC directly into the DMC. The amount of water pumped into the DMC will be measured. The district will then take out a like amount from turnouts on the DMC to be conveyed through their distribution systems for agricultural use to water users within the district.

Additional sources of non-CVP water under Warren Act contracts are pre-1914 water from the following from Byron Bethany Irrigation District (up to 1,500 AF) and Banta Carbona Irrigation District (up to 5,000 AF). In addition, West Stanislaus Irrigation District (up to 5,000 AF) and Patterson Irrigation District (up to 5,000 AF) would convey water from the San Joaquin River.

Reclamation is expecting another dry year in 2009. Water district members of the San Luis & Delta-Mendota Water Authority (SLMDWA) will need additional water to supplement their CVP water supply. As a result of the expected dry year, the 2009 water allocation for agricultural South of Delta contractors is anticipated will likely be zero.

## FINDINGS

**Water Resources:** Each district requesting a Warren Act contract through this project will be required to submit a groundwater management plan. The total quantity of groundwater that can be pumped into the DMC under the Proposed Action is up to 50,000 acre-feet and that quantity will be divided among the San Luis Unit and Delta Division contractors. The amount of water pumped into the DMC will be credited to that district. Meaning, the quantity of groundwater pumped into the DMC will be delivered back into the district and used for irrigation purposes throughout the originating district. Though some of the water used for irrigation will be used up by evapotranspiration and evaporation, some will also seep back into the ground. The Proposed Action

is a way to get the groundwater into the district's distribution system for the benefit of all water users within the district's boundaries.

Every source of non-CVP water must be tested. Water quality and monitoring requirements are established by Reclamation to protect water quality in federal facilities by ensuring that non-CVP water does not impair existing uses or negatively impact existing water quality conditions. However, in times of emergency and extreme water supply shortage years, Reclamation has approved modified water quality standards to maximize the available supply of non-CVP water. The 2009 standards are listed below.

### 2009 Modified Water Quality Standards for Acceptance of Non-CVP Water in the Delta Mendota Canal

Water quality standard relaxation will be necessary to allow for more wells to be able to pump into the DMC.

***Upper DMC Standards:***

| | |
|---|---|
| **Boron** | 2.0 mg/L |
| **EC** | 2,200 μmhos/cm |
| **Sulfate** | 400 mg/L |
| **Total Dissolved Solids (TDS)** | 1,500 mg/L |
| **Selenium** | 2.0 μg/L |

***Lower DMC Water Quality Standards:***

| | |
|---|---|
| **Selenium** | 2.0 μg/L |
| **TDS** | 1,500 mg/L |

The calculated degradation for TDS caused by the lower DMC wells shall not exceed 30 mg/L. The wells pumping into the lower DMC shall be shut off if the measured water quality at Check 20 on the DMC exceeds 450 mg/L TDS in a single day. The wells may resume pumping after the average water quality exceedance in the DMC no longer exists for three days.

Any well proposed to pump into the lower DMC must obtain a current water analysis. These tests will be conducted on a monthly basis for the duration of the pumping period.

***Other requirements for groundwater pumping:***

Wells in Management Areas 2 and 3 will be precluded from pumping into the DMC due to subsidence.

Water quality at Check 13 would be monitored weekly by Reclamation staff. If pumping increases TDS above 400 mg/L, pumps would be shut down.

The Proposed Action includes safeguards limiting the rate of water pumped, the installation of subsidence monitoring equipment and the payment of a subsidence mitigation fee to Central California Irrigation District (CCID) that will be attributable to actual canal repair costs.

The Proposed Action will allow efficient delivery of the districts' non-CVP water in a dry year when demand is high. No new facilities will be needed as a result of the Proposed Action. There

will be no construction or modification to the DMC. The capacity of the facility will remain the same. The Proposed Action will not interfere with the normal operations of local fish and wildlife habitat. Furthermore, the Proposed Action will not interfere in the quantity or timing of diversions. CVP operations and facilities will not vary considerably. Therefore, there will be no significant impacts to CVP facilities.

In addition, because the DMC and Mendota Pool are sources that the Exchange Contractors divert water from, they would be monitoring the water quality at Mendota Pool.

**Land Use:** Under the Proposed Action, participating districts will receive a small supplemental supply to their CVP water supply. Since water supply allocations will be reduced, districts must find supplemental supplies in order to meet demand. Groundwater pump-ins from the district will help alleviate some of the effects of water shortage, but most likely additional water supplies will still be needed. This water will only be used for agricultural purposes on existing crops. No new lands will be cultivated with this water. Therefore, there will be no changes to land use.

**Geology**: Estimates of groundwater recharge quantities in the project area indicate that the proposed groundwater pumping quantities should not contribute greatly to long term groundwater basin overdraft. At this point there is insufficient data to determine the impact of the Proposed Action on subsidence. In the context of all the likely groundwater pumping that is going on in 2009 (see Water Resources Section), the additional 50,000 AF that will be added due to this project is small and therefore any additional subsidence caused by the Proposed Action will be similarly small.

**Biological Resources**: Most of the habitat types required by species protected by the Endangered Species Act do not occur in the project area. The proposed action will not involve the conversion of any land fallowed and untilled for three or more years. The proposed action also will 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. Due to capacity limitations and water quality restrictions in the DMC, there will be no effects on listed fish species. No critical habitat occurs within the area affected by the Proposed Action and so none of the primary constituent elements of any critical habitat will be affected. Therefore, there will be no effects on threatened or endangered species or designated critical habitat.

**Cultural Resources**: The conveyance of non-CVP water will not harm any cultural resources as this is not the type of action that affects cultural resources.

**Indian Trust Assets**: There are no tribes possessing legal property interests held in trust by the United States in the water involved with this action, nor is there such a property interest in the lands designated to receive the water proposed in this action. This action will have no adverse effect on Indian Trust Assets.

**Socioeconomic Resources**: Under the Proposed Action, participating districts will receive a small supplemental supply to their CVP water supply. Since water supply allocations will be reduced, districts must find supplemental supplies in order to meet demand of agriculture production. Groundwater pump-ins from the district will help meet demand and help avoid reduction in agriculture production as a result of the anticipated dry year, but most likely additional water supplies will still be needed in order to alleviate all of the effects of the water shortage.

**Environmental Justice**: Implementing the Proposed Action will not cause any harm to minority or disadvantaged populations within the project area. A Warren Act contract will allow the water districts to use their non-CVP water for irrigation in their service area. The availability of this water will help maintain agricultural production and local employment since 2009 is expected to be a dry year.

**Cumulative Impacts**: Reclamation has made Warren Act contracts available in previous years whether it was a dry year or not. Most likely, this year more districts will be requesting Warren Act contracts since it is anticipated to be a dry year and groundwater is a potential supplement to the expected reduced CVP supply. This is a one-year action, and the cumulative amount the districts are limited to under this project is 50,000 AF. However, districts can request a Warren Act contract separate from the project for up to 10,000 AF of non-CVP water, but this action would be analyzed in a separate environmental document. Additionally, in accordance with the Warren Act contract, Reclamation will continue to make these contracts available to requesting districts in future years, given that each district meets present and future requirements for Warren Act contracts.

Agricultural run-off and groundwater pump-in could have cumulative water quality effects to the Mendota Pool; however, the intensive monitoring programs on-going at the Pool and the relatively small change in constituent concentration over time of the blended water, there would be no cumulative impact.

Although the project is likely to contribute to groundwater overdraft and subsidence in the region, the contribution is small compared to the likely groundwater pumping in 2009 and its ancillary subsidence.

# RECLAMATION
*Managing Water in the West*

**Final Environmental Assessment**

# Approval of One-Year Temporary Warren Act Contracts for the Conveyance of Non-CVP Water in the Delta-Mendota Canal

**EA-08-98**

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

February 2009

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# List of Acronyms, Abbreviations, and Definition of Terms

| | |
|---|---|
| AF | acre-feet (the volume of water one foot deep and an acre in area) |
| AF/y | AF per year |
| APE | area of potential effects |
| bgs | below ground surface |
| BCID | Banta-Carbona Irrigation District |
| BBID | Byron Bethany Irrigation District |
| CDFG | California Department of Fish and Game |
| cfs | cubic feet per second |
| CVO | Central Valley Operations Office |
| CVP | Central Valley Project |
| CVPIA | Central Valley Project Improvement Act |
| districts | water service districts |
| DMC | Delta-Mendota Canal |
| DOI | Department of Interior |
| DPWD | Del Puerto Water District |
| DWR | California Department of Water Resources |
| EA | Environmental Assessment |
| ESA | Endangered Species Act |
| Exchange Contractors | San Joaquin River Exchange Contractors |
| FWCA | Fish & Wildlife Coordination Act |
| MBTA | Migratory Bird Treaty Act |
| M&I | municipal and industrial |
| mg/L | milligrams per liter |
| MSWD | Mercy Springs Water District |
| NHPA | National Historic Preservation Act |
| OLWD | Oro Loma Water District |
| Pacheco | Pacheco Water District |
| pCi/L | picocuries per liter |
| PID | Patterson Irrigation District |
| PWD | Panoche Water District |
| Reclamation | Bureau of Reclamation |
| Service | U.S. Fish and Wildlife Service |
| SJV | San Joaquin Valley |
| SJR | San Joaquin River |
| SLC | San Luis Canal |
| SLDMWA | San Luis & Delta-Mendota Water Authority |
| SLWD | San Luis Water District |
| SOD | south-of-Delta |
| SWP | California State Water Project |
| µg/L | micrograms per liter |
| µS/cm | microSiemens per centimeter |
| WWD | Westlands Water District |

# Section 1 Purpose and Need for Action

## 1.1 Background

The San Luis & Delta-Mendota Water Authority (SLDMWA), on behalf of its member agencies, has requested approval of one-year Warren Act contracts for Contract Water year 2009 (March 1, 2009 through February 28, 2010). Warren Act contracts allow for the storage and conveyance of non-Central Valley Project water in the Bureau of Reclamation (Reclamation) owned Central Valley Project (CVP) facilities for irrigation purposes when excess capacity exists in CVP facilities. Conveyance and storage of non-CVP water is limited to the availability of excess capacity in CVP facilities.

The Warren Act (Act as of February, 21, 1911, CH. 141, (36 STAT. 925)) authorizes Reclamation to negotiate agreements to store or convey non-CVP water when excess capacity is available in federal facilities. The action area of the Proposed Action consists of water districts in the Delta Division and San Luis Unit of the CVP in central California.

## 1.2 Purpose and Need

In 2009, and probably for several years to come, because of hydrologic conditions and/or regulatory constraints, the operation of the CVP by Reclamation will likely result in less water being made available to the south-of-delta (SOD) CVP water service contractors and State Water Project (SWP) contractors than is required to meet the demands of their customers. Both 2007 and 2008 were dry years. Reclamation is predicting 2009 to be another dry year, and it is anticipated that the water allocation to irrigation contractors will likely be zero. In addition, due to the delta smelt Biological Opinion issued on December 15, 2008 for the CVP, operation of the Federal Jones Pumping Plant will be limited and further reduce available CVP contract supplies. Pumping curtailments began in 2007 in response to Federal Judge Oliver Wanger's Delta Smelt Interim Remedy Order. Water district members of the SLDMWA will need additional water to supplement their 2009 CVP water supply during a dry year shortage.

## 1.3 Scope

This environmental assessment (EA) has been prepared to examine the impacts on environmental resources as a result of conveying non-CVP water in federal facilities.

The following districts are considered in the EA in the effects analysis and could potentially participate in this Proposed Action:

- Byron Bethany Irrigation District
- Banta-Carbona Irrigation District
- Del Puerto Water District
- Eagle Field Water District
- San Luis Water District
- Panoche Water District
- Pacheco Water District
- Oro Loma Water District

- Mercy Springs Water District
- Patterson Irrigation District
- West Stanislaus Irrigation District
- Westlands Water District

## 1.4 Potential Issues

Resources areas that will be analyzed in this EA include:

- Water Resources
- CVP Facilities
- Land Use
- Geology
- Biological Resources
- Environmental Justice

These resource areas have been considered but will not be included in the analysis for the reasons mentioned below:

- Cultural Resources
  - Comprehensive evaluation of cultural resources issues was eliminated from detailed environmental analysis as the Proposed Action would not be the kind of action that would impact cultural resources.
- Indian Trust Assets
  - Comprehensive evaluation of Indian Trust Assets (ITAs) was eliminated from detailed environmental analysis as there are none in the action area.

## 1.5 Applicable Regulatory Requirements and Required Coordination

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:

- *Reclamation States Emergency Drought Relief Act* – Section 102 of the Reclamation States Emergency Drought Relief Act of 1991 provides for use of Federal facilities and contracts for temporary water supplies, storage and conveyance of non-CVP water inside and outside project service areas for municipal and industrial (M&I), fish and wildlife and agricultural uses.
- *Reclamation States Emergency Drought Relief Act* - Section 305 of 1991, enacted March 5, 1992 (106 Stat. 59), also authorizes Reclamation to utilize excess capacity to convey non-CVP water.
- *San Joaquin County Groundwater Export Ordinance Number 401.4* - San Joaquin County has adopted an ordinance, 401.4 Section 5-8100 of Title 5 of the Ordinance Code of San Joaquin County, which requires a permit to extract and export groundwater for use outside of the county. This ordinance is hereby incorporated by reference into the Proposed Action.

- Title XXXIV Central Valley Project Improvement Act (CVPIA), October 30, 1992, Section 3405 (a)
- 
- *Contracts for Additional Storage and Delivery of Water* – 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). The CVPIA is incorporated by reference.
- *Water Quality Standards* – Reclamation requires that the operation and maintenance of CVP facilities shall be performed in such 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 by Reclamation to protect water quality in the Delta Mendota Canal (DMC) 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 annual review for the approval of Warren Act Contracts would be subject to the then-existing water quality standards. The water quality standards are the maximum concentration of certain contaminants that may occur in each source of non-CVP water. Reclamation has established standards for non-CVP groundwater that may be pumped in the DMC above Check 13 (See Table 1-1), and in the DMC below Check 13 (See Table 1-2). Check 13, located near Santa Nella, California (the intake to the O'Neill Forebay), is the dividing line between the upper and lower DMC.
- Reclamation Reform Act, October 12, 1982
- Reclamation's Interim Guidelines for Implementation of Water Transfers under Title XXXIV of Public Law 102-575 (Water Transfer), February 25, 1993
- Reclamation and United States Fish and Wildlife Service (FWS) Regional, Final Administrative Proposal on Water Transfers, April 16, 1998
- Reclamation's Mid-Pacific Regional Director's Letter entitled "Delegation of Regional Functional Responsibilities to the CVP Area Offices – Water Transfers", March 17, 2008

## WATER QUALITY STANDARDS FOR ACCEPTANCE OF GROUNDWATER INTO THE DELTA-MENDOTA CANAL

### Headworks to Check 13 (O'Neill Forebay)

| Constituent | Units | Maximum Contaminant Level | Source |
|---|---|---|---|
| **Primary** | | | |
| Aluminum | mg/L | 1 | (1) |
| Antimony | mg/L | 0.006 | (1) |
| Arsenic | mg/L | 0.05 | (1) |
| Barium | mg/L | 1 | (1) |
| Beryllium | mg/L | 0.004 | (1) |
| Boron | mg/L | 0.7 | (16) |
| Cadmium | mg/L | 0.005 | (1) |
| Chromium (total) | mg/L | 0.05 | (1) |
| Lead | mg/L | 0.015 | (9) |
| Mercury (inorganic) | mg/L | 0.002 | (1) |
| Nickel | mg/L | 0.1 | (1) |
| Nitrates (as $NO_3$) | mg/L | 45 | (1) |
| Nitrate + Nitrite (sum as nitrogen) | mg/L | 10 | (1) |
| Nitrite (as nitrogen) | mg/L | 1 | (1) |
| Selenium | mg/L | 0.002 | (13) |
| Thallium | mg/L | 0.002 | (1) |
| **Secondary** | | | |
| Chloride | mg/L | 250 | (7) |
| Copper | mg/L | 1 | (10) |
| Iron | mg/L | 0.3 | (6) |
| Manganese | mg/L | 0.05 | (6) |
| Molybdenum | mg/L | 0.01 | (11) |
| Silver | mg/L | 0.1 | (6) |
| Sodium | mg/L | 69 | (15) |
| Specific Conductance | µS/cm | 2,200 | (7) |
| Sulfate | mg/L | 250 | (7) |
| TDS | mg/L | 1,500 | (7) |
| Zinc | mg/L | 5 | (6) |
| **Radioactivity** | | | |
| Gross Alpha | pCi/L | 15 | (3) |
| **Organic Chemicals** | | | |
| Atrazine | mg/L | 0.001 | (4) |
| Bentazon | mg/L | 0.018 | (4) |
| Carbofuran | mg/L | 0.018 | (4) |
| Chlordane | mg/L | 0.0001 | (4) |
| Chlorpyrifos | µg/L | 0.025 | (14) |
| 2, 4-D | mg/L | 0.07 | (4) |
| Diazinon | µg/L | 0.16 | (14) |
| Dibromochloropane (DBCP) | mg/L | 0.0002 | (4) |
| Endrin | mg/L | 0.002 | (4) |
| Ethylene Dibromide (EDB) | mg/L | 0.00005 | (4) |
| Glyphosate | mg/L | 0.7 | (4) |

## WATER QUALITY STANDARDS FOR ACCEPTANCE OF GROUNDWATER INTO THE DELTA-MENDOTA CANAL

### Headworks to Check 13 (O'Neill Forebay)

| Constituent | Units | Maximum Contaminant Level | Source |
|---|---|---|---|
| Heptachlor | mg/L | 0.00001 | (4) |
| Heptachlor Epoxide | mg/L | 0.00001 | (4) |
| Lindane | mg/L | 0.0002 | (4) |
| Methoxychlor | mg/L | 0.03 | (4) |
| Molinate | mg/L | 0.02 | (4) |
| 2, 4, 5-TP (Silvex) | mg/L | 0.05 | (4) |
| Simazine | mg/L | 0.004 | (4) |
| Thiobencarb | mg/L | 0.07 | (4) |
| Toxaphene | mg/L | 0.003 | (4) |

Sources:
Title 22. The Domestic Water Quality and Monitoring Regulations specified by the State of Cali
(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 V
the Sacramento River and San Joaquin River Basins. Table III-2A
(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 Organizati
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 09/28/2008 SCC-107

**Table 1-1 Water Quality Standards above Check 13**

## WATER QUALITY STANDARDS FOR ACCEPTANCE OF GROUNDWATER INTO THE DELTA-MENDOTA CANAL

### Check 13 (O'Neill Forebay) To Check 21 (Mendota Pool)

| Constituent | Units | Maximum Contaminant Level | Source |
|---|---|---|---|
| Boron | µg/L | 700 | (3) |
| Chromium, total | µg/L | 50 | (1) |
| Mercury | µg/L | 2 | (1) |
| Molybdenum | µg/L | 10 | (3) |
| Nickel | µg/L | 100 | (1) |
| Nitrates | µg/L | 45 | (1) |
| Selenium | µg/L | 2 | (2) |
| Specific Conductance | µS/cm | 1,230 | (4) |
| Total Dissolved Solids | mg/L | 800 | (4) |
| Chlorpyrifos | µg/L | 0.025 | (2) |
| Diazinon | µg/L | 0.16 | (2) |

(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

(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 Ilr-1144, Article 9. Quality of Substitute Water.

revised 09/28/2008 SCC-107

**Table 1-2 Water Quality Standards below Check 13**

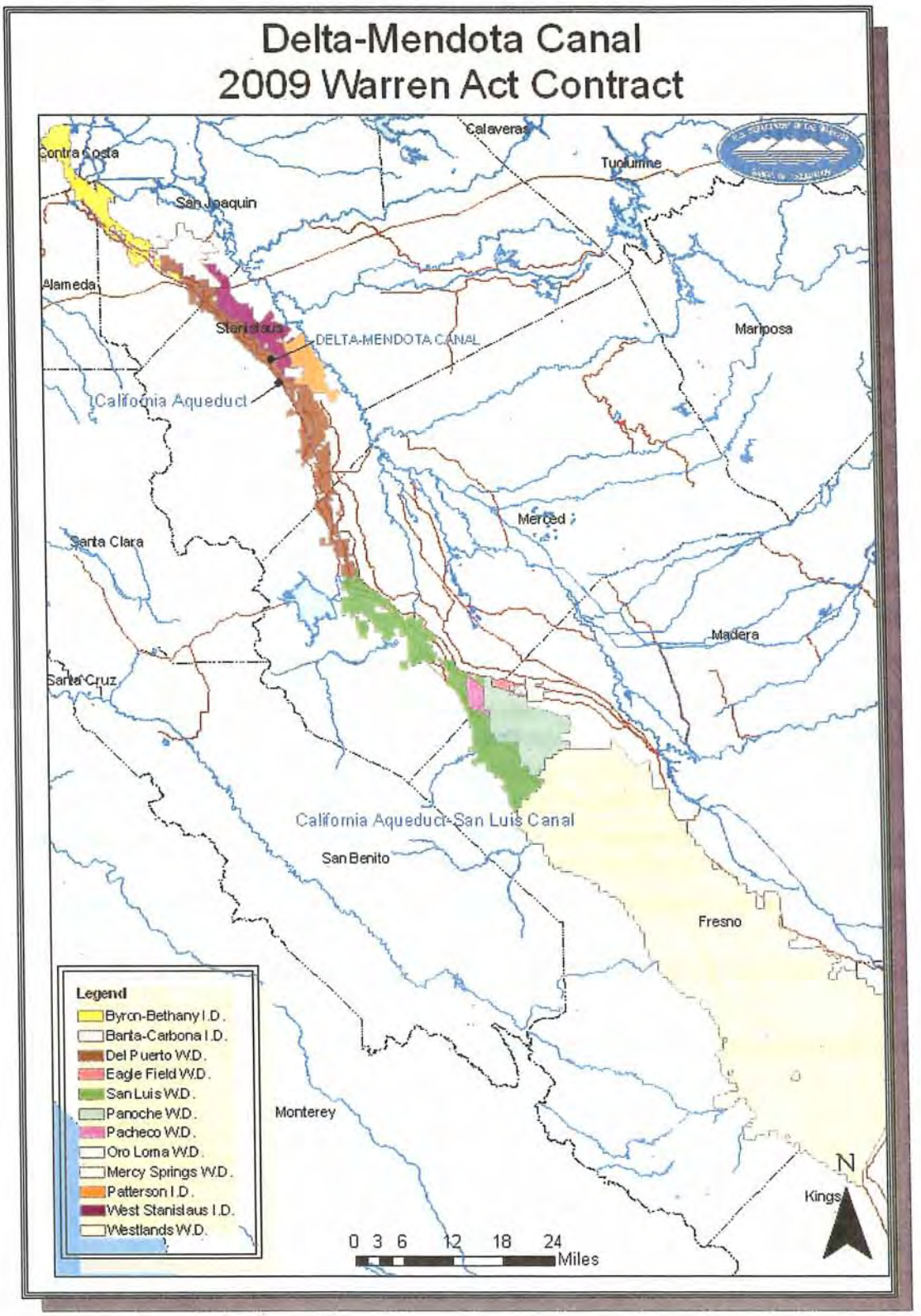


**Figure 1-1 Map Showing Potential Districts that could Participate**

# Section 2 Alternatives Including Proposed Action

## 2.1 No Action

The No Action Alternative consists of not approving Warren Act contracts in 2009 and not allowing non-CVP water to be conveyed and stored in CVP facilities. SOD water districts would receive CVP water supply in accordance with the terms and conditions of the applicable districts' CVP water service contracts. The districts would need to construct facilities to deliver the non-project water Under the No Action Alternative, estimating 2.5 AF/acre necessary to grow a crop, and 50,000 AF of water unavailable to supplement an already critically low water supply situation, an estimated total of 20,000 acres of additional land would be fallowed.

## 2.2 Proposed Action

Reclamation proposes to issue one-year temporary Warren Act contracts in 2009 to requesting CVP contractors within the Delta Division and San Luis Unit (limited to those listed below) for a combined total of up to 50,000 AF for the 2009 contract year ending February 28, 2010 for the delivery of non-CVP water in the DMC. Conveyance of non-CVP water under a Warren Act contract would be subject to available capacity.

The following is a list of the Delta Division water districts who could potentially participate in this Proposed Action:

- Banta-Carbona Irrigation District
- Byron Bethany Irrigation District
- Del Puerto Water District
- Eagle Field Water District
- Oro Loma Water District
- Mercy Springs Water District
- West Stanislaus Irrigation District
- Patterson Irrigation District

The following are the San Luis Unit water districts who could potentially participate in this Proposed Action:

- Pacheco Water District
- Panoche Water District
- San Luis Water District
- Westlands Water District

### General Requirements

The non-CVP water would be:

1. Delivered through the DMC to water districts in the Delta Division or

2. Exchanged with CVP water and delivered through the SLC to the San Luis Unit Contractors or
3. Stored in San Luis Reservoir for later delivery to the Delta Division or San Luis Unit contractors or
4. A combination of two and three above.

The non-CVP water would only be used for irrigation purposes on established lands. There would be no new construction or excavation occurring as part of the Proposed Action. No native or untilled land (fallow for 3 years or more) may be cultivated with CVP water involved with these actions.

### Source of Water Under Warren Act - Non-CVP Groundwater

One source of non-CVP water would be groundwater pumped from wells directly into the DMC. The wells are owned by local farmers, but would be operated by district staff. The Districts would pump groundwater from wells close to the DMC directly into the DMC. The amount of well water pumped into the DMC would be measured by SLDMWA field staff. Participating districts intend to pump up to 10,000 AF of groundwater into the DMC. Although more than five Warren Act contracts may be executed, conveyed amounts would not exceed a total combined amount of up to 50,000 AF. The districts would then take out a like amount from turnouts on the DMC to be conveyed through their distribution systems for agricultural use to water users within the district.

Three districts (San Luis, Pacheco, and Panoche Water Districts) are connected to both the DMC and SLC. Under the proposed contracts, groundwater could be pumped into the DMC which would be credited to each district and delivered from the DMC to satisfy other DMC demands and, in exchange, CVP water would be delivered to each district through the San Luis Canal.

No groundwater would be pumped directly into the SLC under the Proposed Action.

Each district would be required to confirm that the proposed pumping of groundwater would be compatible with local groundwater management plans.

**2009 Modified Water Quality Standards for Acceptance of Groundwater into the Delta Mendota Canal** Every source of non-CVP water must be tested and must meet water quality standards. Water quality and monitoring requirements are established by Reclamation to protect water quality in federal facilities by ensuring that non-CVP water does not impair existing uses or negatively impact existing water quality conditions. However, in times of emergency and extreme water supply shortage years, Reclamation has approved modified water quality standards to maximize the available supply of non-CVP water. The 2009 standards are listed below.

Water quality standard relaxation would be necessary to allow for more wells to be able to pump into the DMC.

***Upper DMC Standards:***

| | |
|---|---|
| **Boron** | 2.0 mg/L |
| **EC** | 2,200 μmhos/cm |
| **Sulfate** | 400 mg/L |
| **Total Dissolved Solids (TDS)** | 1,500 mg/L |
| **Selenium** | 2.0 μg/L |

***Lower DMC Water Quality Standards:***

| | |
|---|---|
| **Selenium** | 2.0 μg/L |
| **TDS** | 1,500 mg/L |

The calculated degradation for TDS caused by the lower DMC wells shall not exceed 30 mg/L. The wells pumping into the lower DMC shall be shut off if the measured water quality at Check 20 on the DMC exceeds 450 mg/L TDS in a single day. The wells may resume pumping after the average water quality exceedance in the DMC no longer exists for three days.

Any well proposed to pump into the lower DMC must obtain a current water analysis prior to pumping. These tests would be continued to be conducted on a monthly basis for the duration of the pumping period.

**Water Quality Monitoring** Reclamation, SLDMWA, and the SOD water districts would monitor the quality of water in the DMC to confirm that the blended water is suitable for downstream users. Independent data from several agencies would be compiled. Real-time salinity measurements are conducted by Central Valley Operations Office (CVO) and the DWR. Reclamation would measure selenium, boron, and salinity. The San Joaquin River Exchange Contractors (Exchange Contractors) have salinity sensors in the Mendota Pool. The U.S. Geological Survey measures salinity in the lower SJR and Grasslands tributaries.

Reclamation staff would monitor the salinity of water in the DMC using sensors operated by CVO. These real-time data are posted online by the California Data Exchange Center. Staff from Reclamation, CVO, and SLDMWA would monitor salinity in the canal daily to detect any adverse changes in water quality caused by the addition of the non-CVP water. The Warren Act contract provides for additional analyses of each well as needed, and allows the Contracting Officer to shut down wells that cause water quality problems.

A water balance model would be used to predict water quality changes with the addition of each source of non-CVP water. The model would be run by Reclamation frequently and would be confirmed with real-time salinity measurements.

If the water balance model or actual measurements show that the blended water in the canal has been degraded, Reclamation would work with the SLDMWA and each District to modify or restrict the operation of wells to improve water quality.

Staff with Reclamation, SLDMWA, and the Exchange Contractors would monitor water quality in the canal and Mendota Pool using in-situ sensors that provide "real-time" measurements of salinity. Frequent monitoring would occur if the salinity approaches the threshold of 625 μS/cm

electrical conductivity, equivalent to 400 mg/L TDS. Reclamation would develop a protocol for shutting off non-CVP wells to reduce salinity in the canal and Mendota Pool.

Water quality at Check 13 would be monitored weekly by Reclamation staff. Staff with Reclamation, SLDMWA, and the Exchange Contractors would monitor water quality in the canal and Mendota Pool using in-situ sensors that provide "real-time" measurements of salinity. Reclamation has sensors in place that provide continuous measurements of salinity via the Internet. Reclamation has established salinity standards for the canal and Mendota pool. Reclamation would use a computer model to predict contaminant loading and concentrations in the canal and Mendota Pool. Frequent monitoring would occur if the salinity approaches the threshold of 625 μS/cm electrical conductivity, equivalent to 400 mg/L TDS. If the blend approaches the standard, Reclamation would contact the district to shut down the wells until the salinity is reduced. Reclamation staff would specify which wells must be shut off, the district staff would deal directly with the well-operator to accomplish this. Reclamation would continue to collect daily composite samples of water from the canal and Mendota pool. These would be collected weekly and sent to the lab for selenium measurements. The preliminary results should be available up to 10 days after each week.

A brief "lag time" between detection of the exceedance and the resultant shutting down of non-CVP wells would be less than a day. The subsequent reduction in contamination would be no more than a day or two and would not cause any effect over the extremely short duration before the water quality standards would return to target levels.

Pumping may resume when the assimilative capacity of the canal and Mendota Pool is sufficient to dilute the non-CVP well water and meet water quality objectives. Reclamation would specify which wells may resume pumping in cooperation with the staff of each district and SLDMWA.

**Other requirements for groundwater pumping** Wells in Management Areas 2 and 3 (Figure 2-1) would be precluded from pumping into the DMC due to subsidence.

The Proposed Action includes safeguards limiting the rate of water pumped, the installation of subsidence monitoring equipment and the payment of a subsidence mitigation fee to Central California Irrigation District (CCID) that would be attributable to actual canal repair costs for canals in their distribution system.

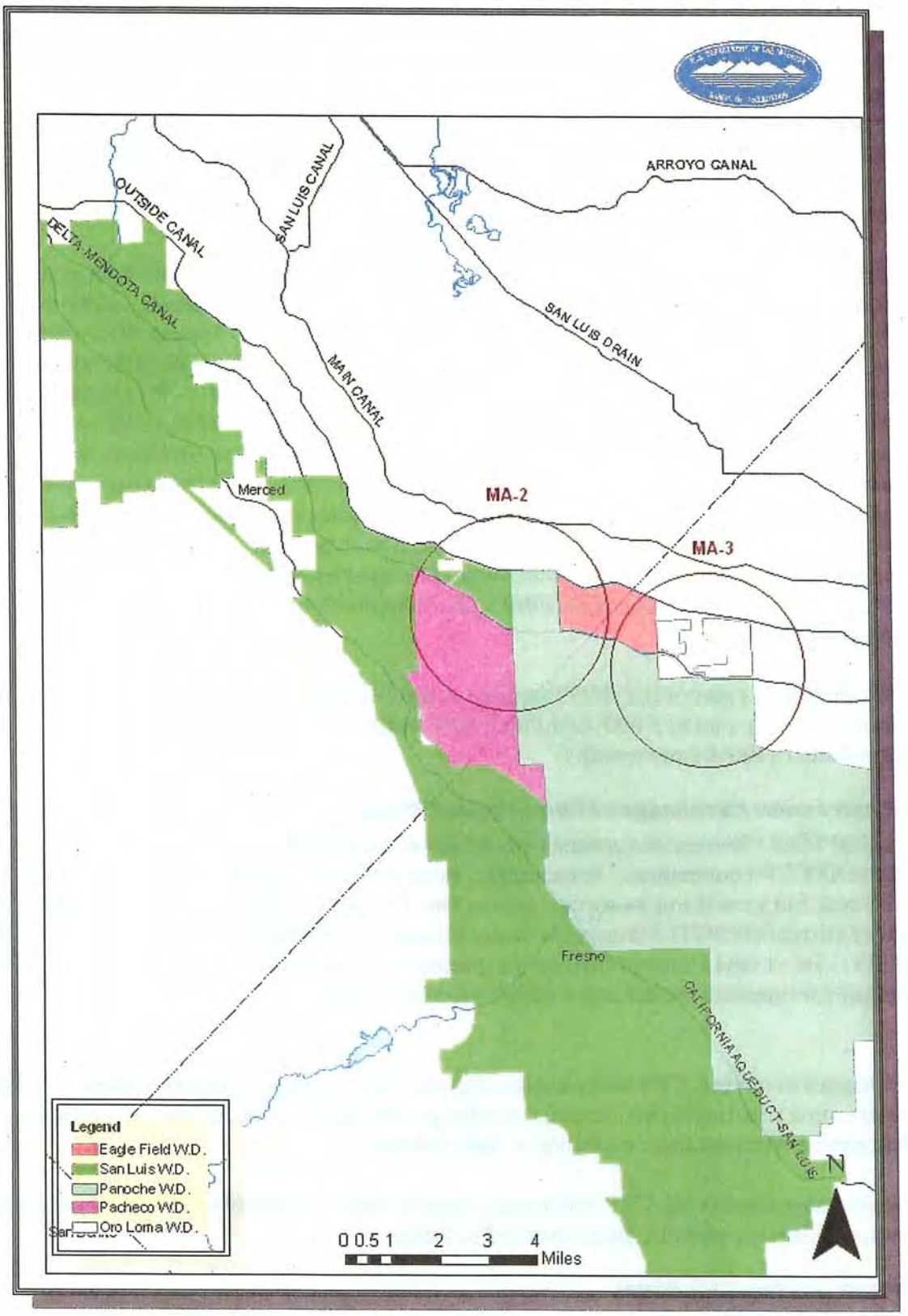


**Figure 2-1 Management Areas Precluded from Pumping**

### *Source of Water Under Warren Act – Pre-1914 and other Non-Project Surface Water*

**BBID** Additionally, Byron Bethany Irrigation District (BBID), previously known as Plainview Water District, has up to 1,500 AF of pre-1914 water rights that is pumped by the California Department of Water Resources (DWR) via the Clifton Forebay and delivered to BBID. This water would be an additional source of non-CVP water that would conveyed under this Warren Act contract. Since it is pumped from the delta, is the same quality as CVP water and does not need water quality analyses.

**BCID and PID** An additional source of surface water would be to allow Banta Carbona Irrigation District (BCID) and Patterson Irrigation District (PID) to convey under their Warren Act contracts up to 5,000 AF of their water supplies from the San Joaquin River (SJR) diverted based on pre-1914 water rights. BCID supplies can be diverted from the SJR through a screened diversion at river mile 63.5 located about five miles north of Vernalis. PID holds pre-1914 rights to water on the SJR. PID asserted that construction and operation of the CVP interfered with its prior right to the use of the water from the SJR. As a result, PID entered into a water supply contract with the United States that included not only a CVP supply, but also a 6,000 SF annual supply of replacement, or settlement, water. PID supplies can be diverted from the SJR at river mile 98.5. The water would be conveyed through each respective district's distribution system and pumped into the DMC. This water would be used by each district or transferred to other CVP contractors via the use of the DMC, the Mendota Pool or exchanged with CVP water for delivery in the SLC.

Also included as part of the 2009 Proposed Action would be to allow West Stanislaus Irrigation District to convey up to 5,000 AF of their SJR water, including conveyance of up to 5,000 AF of groundwater (420 AF per month).

### *Transfer and/or Exchanges of Non-Project Water*

The 2009 SOD Warren Act contract would allow the transfer of some of the non-CVP water to other SOD CVP contractors. For example, Panoche Water District (PWD) would transfer non-CVP water from wells in its service area to Oro Loma Water District (OLWD), Mercy Springs Water District (MSWD), Westlands Water Districts (WWD), Widren Water District, BCID, and SLWD. Due to the County of Madera's groundwater management plan no groundwater pumping for transfer would occur within Madera County.

Exchanges involving CVP water cannot alter the flow regime of natural waterway or natural water courses such as rivers, streams, creeks, ponds, pools, wetlands, etc., so as to have a detrimental effect on fish or wildlife or their habitats.

All exchanges involving CVP water must comply with all applicable Federal, State, and local laws, regulations, permits, guidelines and policies.

### *Storage of Non-CVP Water*

Under the 2009 Warren Act contracts, the districts would have the ability to store pumped water in San Luis Reservoir. Water is stored in San Luis Reservoir by exchanging the water pumped into the DMC, (over the amount diverted by the pumping district) for water still in storage in San Luis Reservoir. Water pumped into the DMC is to meet existing DMC demand leaving water

that otherwise would have been conveyed through the DMC in the reservoir. SLDMWA would account for the pumped-in water, water delivered and water stored.

The schedule for pumping would be the maximum rate allowable by Reclamation in the spring which will allow the maximum amount of water to be in storage for use in the summer months.