

RECLAMATION

Managing Water in the West

Draft Environmental Assessment

Tule River Water 5-Year Warren Act Agreement

EA-15-014



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

April 2015

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.

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Section 1 Introduction

1.1 Background

In recent years California has experienced droughts that have reduced water supplies to many water districts. As a result, Friant Division Central Valley Project (CVP) water service contractors received unprecedented 0 percent water supply allocations in 2014, and again in 2015. The zero allocations follow previous dry years in 2012 and 2013, in which Friant Division CVP contractors received 57 and 62 percent of their full Class 1 contract supply, respectively. The historically low allocations are due to a combination of hydrologic, environmental, and regulatory conditions.

In order to continue meeting their customers' needs, affected contractors are pursuing a range of additional water supplies, such as transfers, pumped groundwater and other surface water sources. In 2014, Terra Bella Irrigation District acquired 5,000 acre-feet (AF) of non-CVP Tule River water from Lower Tule River Irrigation District and Porterville Irrigation District. Under an agreement with the Bureau of Reclamation (Reclamation), this non-CVP water was conveyed in the Friant-Kern Canal, from milepost 97.36 to a turnout at milepost 103.64, where it was used for agricultural purposes. Reclamation evaluated the 2014 action under Environmental Assessment/Finding of No Significant Impact (EA/FONSI) 14-039 (Reclamation 2014).

Terra Bella Irrigation District has now proposed a five-year agreement for the same conveyance arrangement. The annual volumes would be the same, and the points of introduction and withdrawal would be the same. The location of the participating districts is shown in Figure 1-1.

1.2 Need for the Proposed Action

Terra Bella Irrigation District does not have adequate water supplies to meet the needs of their customers. The purpose of the Proposed Action is to provide a conveyance mechanism to deliver additional water supplies to support existing crops within the district.

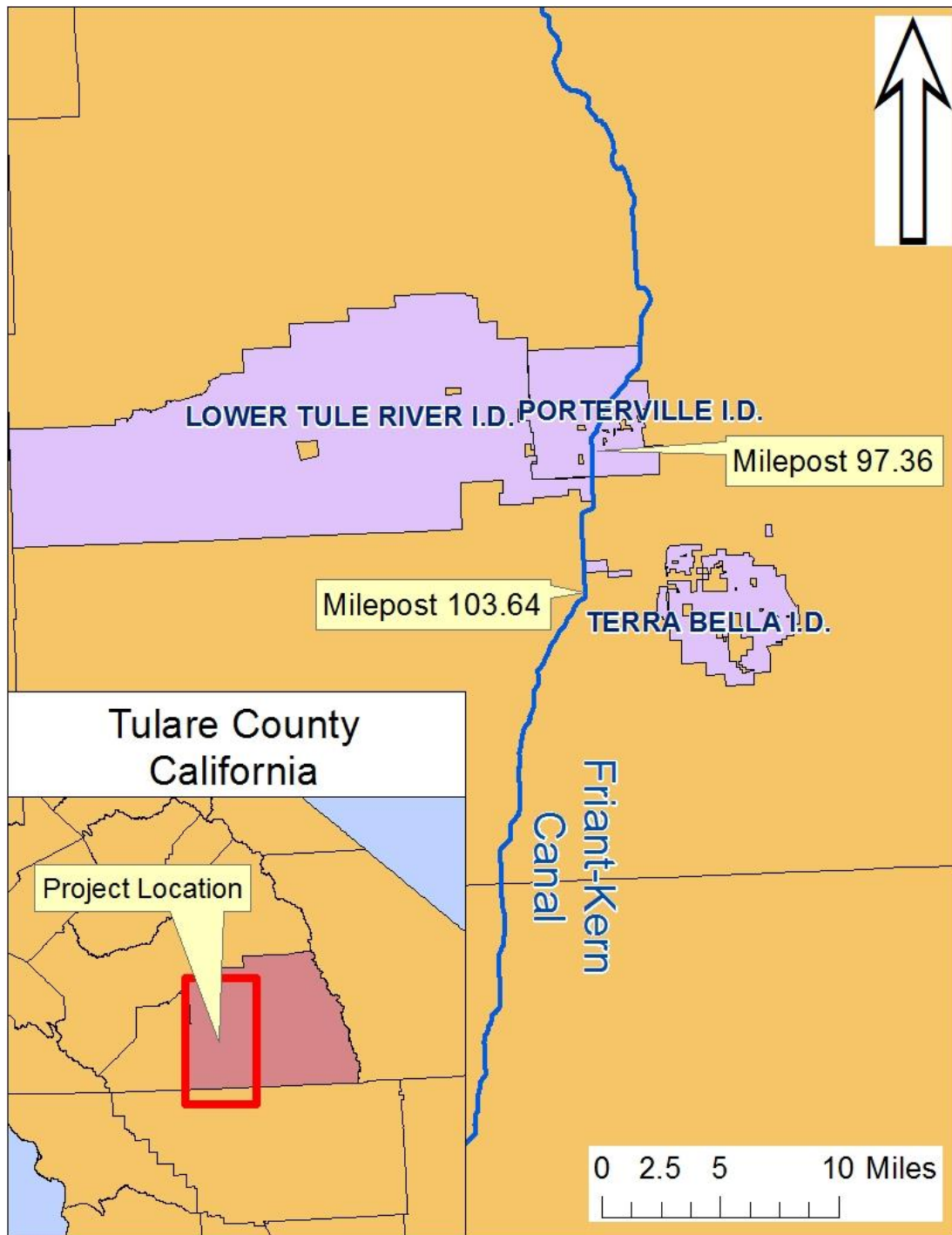


Figure 1-1 Project Location

Section 2 Alternatives Considered

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

If no action were taken, Terra Bella Irrigation District's non-CVP water would not be conveyed in the Friant-Kern Canal. The district would have to find an alternate water supply, or use another conveyance method to deliver this non-CVP water for use by their customers' on existing crops. If no other water supply or conveyance mechanism were found, fallowing of cropland would be necessary.

2.2 Proposed Action

Reclamation proposes to issue a Warren Act agreement to Terra Bella Irrigation District under Article 18 of its Repayment Contract. Under the proposed agreement, the district would introduce up to 5,000 AF per year of non-CVP Tule River water into the Friant-Kern Canal, for a period of five years. Water would be introduced into the Friant-Kern Canal from June to August of each year, subject to available capacity. Scheduling would be coordinated with Reclamation and the Friant Water Authority.

Under the Proposed Action, Tule River water would be released from storage in Success Reservoir into the Tule River channel, and diverted 5 miles downstream at the Poplar Ditch head gate in Porterville. The water would then be conveyed 5.5 miles in Poplar Ditch to the downstream side of the Friant-Kern Canal near Highway 190 (see Figure 2-1), where it would be contained and stored at a temporary pumping station installed by Terra Bella Irrigation District, until they are ready to pump the water for introduction into the Friant-Kern Canal. The temporary pumping station would be placed in the paved area between the ditch and Friant-Kern Canal at milepost 97.36 outside of Reclamation right-of-way. The pumping station would be installed each year, for use during the irrigation season, and then removed until it is needed the following year. No ground disturbance would be needed for the installation of the pumping station. Water pumped into the Friant-Kern Canal would flow to milepost 103.64, where Terra Bella Irrigation District would take it at their existing turnout.

2.2.1 Environmental Commitments

Terra Bella Irrigation District shall implement the following environmental protection measures to reduce environmental consequences associated with the Proposed Action (Table 2-1). Environmental consequences for resource areas

assume the measures specified would be fully implemented. Copies of all reports and monitoring shall be submitted to Reclamation.

Table 2-1 Environmental Protection Measures and Commitments

Resource	Protection Measure
Air Quality	All pumps to be used shall meet the applicable emission standards set by the San Joaquin Valley Air Pollution Control District.
Water Quality	Non-CVP water must meet water quality standards prior to approval for conveyance. If testing indicates that water does not meet then-current standards, it may not be introduced into the Friant-Kern Canal until water quality concerns are addressed.
Land Use/Biology	The non-CVP water involved in these actions must not be used to cultivate native or untilled land (fallow for three consecutive years or more).

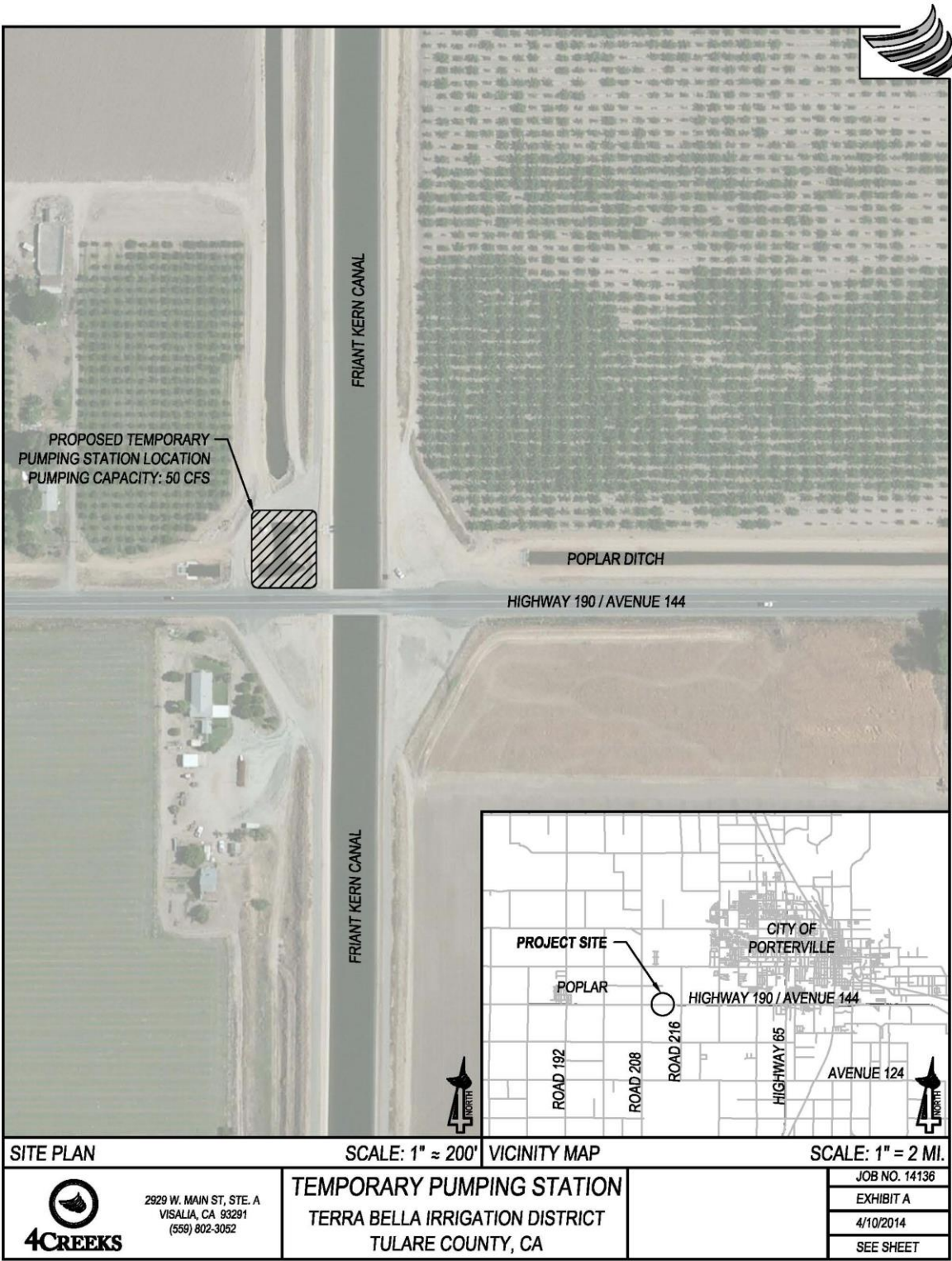


Figure 2-1 Proposed Temporary Pumping Station

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Section 3 Affected Environment and Environmental Consequences

This section analyzes 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 EA and the action analyzed in EA-14-029 is the term of the Warren Act agreement (from one year to five). Therefore, the affected environment and environmental consequences section in this EA will focus on those changes and will not repeat information included in EA-14-039 (Reclamation 2014) as it is incorporated by reference into this EA.

3.1 Resources Eliminated from Further Analysis

Reclamation analyzed the affected environment and determined that the Proposed Action did not have the potential to cause direct, indirect, or cumulative adverse effects to the resources listed in Table 3-1.

Table 3-1 Resources Eliminated from Further Analysis

Resource	Reason Eliminated
Land Use	Impacts would be identical to those evaluated under EA/FONSI-14-039. No further analysis is required.
Socioeconomic Resources	Impacts would be identical to those evaluated under EA/FONSI-14-039. No further analysis is required.
Environmental Justice	Impacts would be identical to those evaluated under EA/FONSI-14-039. No further analysis is required.
Cultural Resources	The Proposed Action would facilitate the flow of water through existing facilities to existing users. As no construction or modification of facilities would be needed in order to complete the Proposed Action, Reclamation has determined that these activities have no potential to cause effects to historic properties pursuant to 36 CFR Part 800.3(a)(1). See Appendix A for Reclamation's determination.
Indian Sacred Sites	The Proposed Action would not limit access to ceremonial use of Indian Sacred Sites on federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites. Therefore, there would be no impacts to Indian Sacred Sites as a result of the Proposed Action.
Indian Trust Assets	The Proposed Action would not impact Indian Trust Assets as there are none in the Proposed Action Area. See Appendix B for Reclamation's determination.
Air Quality	The San Joaquin Valley Air Pollution Control District requires pumps operated within the district to meet strict emission standards. With the requirement that equipment used for the Proposed Action must meet San Joaquin Valley Air Pollution Control District standards, impacts to air quality should be discountable.

Resource	Reason Eliminated
Global Climate	The combined greenhouse gas emissions of all pumps that could be used under the Proposed Action are not anticipated to approach the 25,000 tons of carbon dioxide equivalent per year threshold of significance set by the Environmental Protection Agency. The pumps would also have to meet San Joaquin Valley Air Pollution Control District emission standards, which are set such that impacts from regulated emission sources would not cumulatively cause an adverse effect.

3.2 Water Resources

3.2.1 Affected Environment

See Reclamation EA-14-039 for a discussion of the affected environment for the Proposed Action (Reclamation 2014).

3.2.2 Environmental Consequences

No Action

If no action were taken, the non-CVP Tule River water would not be conveyed in the Friant-Kern Canal. Terra Bella Irrigation District would have to find an alternate water supply, or use another conveyance method to deliver this non-CVP water to their customers for use on existing crops.

Proposed Action

The Proposed Action would allow non-CVP water to be conveyed in the Friant-Kern Canal when excess capacity is available. This would allow the water to be delivered to Terra Bella Irrigation District's service area for agricultural use. There would be no modification of the Friant-Kern Canal, and the capacity of the facility would remain the same.

Introduction and conveyance of non-CVP water is dependent on available capacity and operational constraints; therefore, the Proposed Action would not interfere with the normal operations of federal facilities nor would it impede any CVP obligations to deliver water to other contractors or to local fish and wildlife habitat.

The total quantity of water conveyed in the Friant-Kern Canal under the Proposed Action would be limited to 5,000 AF per year, for five years. The water pumped into the Friant-Kern Canal would be delivered by way of the canal (less conveyance losses), and used for irrigation purposes on existing crops. Some of the irrigation water would be lost to evapotranspiration, and some would also percolate back into the aquifer.

Non-CVP water introduced into the Friant-Kern Canal must meet water quality standards prior to approval for conveyance (see Appendix C). If testing shows

that the water does not meet then-current standards, Terra Bella Irrigation District would not be allowed to discharge into the Friant-Kern Canal until water quality concerns are addressed. This testing program is anticipated to adequately protect the quality of water in the canal and limit degradation of other users' water supplies.

Cumulative Impacts

Reclamation has reviewed existing or foreseeable projects in the same geographic area that could affect or could be affected by the Proposed Action. Many water transfers, Warren Act agreements and other supply management actions have been executed or are in process. These drought relief projects are expected to have a cumulative beneficial effect on water supply during the ongoing drought.

As in the past, hydrological conditions and other factors are likely to result in fluctuating water supplies, which drive requests for water service actions. Water districts provide water to their customers based on available water supplies and timing, 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. It is likely that in future years, more districts will request exchanges, transfers, and Warren Act contracts (conveyance of non-CVP water in CVP facilities) due to hydrologic conditions. Each water service transaction involving Reclamation undergoes environmental review prior to approval.

The Friant-Kern Canal is used to convey water for a variety of users from a variety of sources. The quality of water being introduced is tested regularly in order to limit the potential for degradation of mixed water supplies. This testing program is anticipated to adequately protect the quality of water in the Friant-Kern Canal from the cumulative effects of this and other water conveyance actions.

Although capacity in the Friant-Kern Canal is limited, the Friant Water Authority and Reclamation actively operate the canal in order to balance competing demands. Non-CVP water, such as the water which would be conveyed under the Proposed Action, has a lower priority than CVP water for conveyance in the Friant-Kern Canal and is required to be coordinated with Reclamation and the Friant Water Authority prior to introduction. Therefore the Proposed Action would not cause conflicts or other cumulative impacts to Friant-Kern Canal operations.

3.3 Biological Resources

3.3.1 Affected Environment

See Reclamation EA-14-039 for a discussion of the affected environment for the Proposed Action (Reclamation 2014).

Reclamation requested an official species list from the U.S. Fish and Wildlife Service via the Sacramento Field Office's website, http://www.fws.gov/sacramento/ES_Species/Lists/es_species_lists-form.cfm, on March 23, 2015 (Appendix D). The list is for the following U.S. Geological Survey 7½-minute topographic quadrangles, which are overlapped by the Proposed Action Area: Fountain Springs, Ducor, Sausalito School, Success Dam, Woodville, and Porterville. Reclamation further queried the California Department of Fish and Wildlife California Natural Diversity Database for records of protected species within 10 miles of the construction area associated with the Proposed Action (CNDDDB 2015).

3.3.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not allow non-CVP water to be conveyed in the Friant-Kern Canal to Terra Bella Irrigation District. Terra Bella Irrigation District would need to find alternative supplies of water and/or temporarily take land out of production. If land was removed from production, there might be some fallowed fields that could temporarily be used by the San Joaquin kit fox. However, fields would likely be disked so often that denning would be unlikely to occur, and the value of the fallowed fields would remain low.

Proposed Action

Under the Proposed Action, federally listed, proposed or candidate species, and critical habitat protected under the Endangered Species Act (16 USC § 1531 et seq.) would not be affected. Migratory birds protected under the Migratory Bird Treaty Act (16 USC § 703-712) also would not be affected. Many of the species and their critical habitat do not occur in the Proposed Action Area because habitat types required by species protected by the Endangered Species Act do not occur in the Proposed Action Area. The Proposed Action would not involve the conversion of any native habitat or land fallowed and untilled for three or more years. There would be no change in land use patterns of cultivated or fallowed fields that do have some value to listed species or to birds protected under the Migratory Bird Treaty Act. Non-CVP water would not reach streams containing listed fish species; therefore, there would be no effects to fish. Based upon the reasons described above, Reclamation has determined there would be No Effect to listed species or designated critical habitat under the Endangered Species Act and No Take of birds protected by the Migratory Bird Treaty Act. As such, no consultation with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service is required.

Cumulative Impacts

As the Proposed Action would not result in any direct or indirect impacts to federally listed, proposed, or candidate species, or critical habitat, it would not contribute cumulatively to any impacts to these resources.

Section 4 Consultation and Coordination

4.1 Public Review Period

Reclamation intends to provide the public with an opportunity to comment on the Draft EA and FONSI during a 15 day public review period.

Section 5 Preparers and Reviewers

Ben Lawrence, Natural Resources Specialist, SCCAO-412

Jennifer L. Lewis, Wildlife Biologist, SCCAO-422

Scott Williams, Archaeologist, MP-153

Richard Stevenson, Indian Trust Assets, MP-400

Rain L. Emerson, Supervisory Natural Resources Specialist, SCCAO – reviewer

David E. Hyatt, Resources Management Division Chief, SCCAO – reviewer

Joy Kelley, Repayment Specialist, SCCAO – reviewer

Section 6 References

Bureau of Reclamation (Reclamation). 1999. Central Valley Project Improvement Act, Final Programmatic Environmental Impact Statement and Record of Decision. Mid-Pacific Region South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2014. Tule River Water Warren Act Agreement Environmental Assessment 14-039. August 2014.

CNDDDB (California Natural Diversity Database). 2015. CNDDDB personal computer program updated March 2015. Sacramento, CA. Website: http://www.dfg.ca.gov/biogeodata/cnddb/rf_ftpinf.asp.

Appendix A

Reclamation's Cultural Resources Determination

CULTURAL RESOURCE COMPLIANCE
Mid-Pacific Region
Division of Environmental Affairs
Cultural Resources Branch

MP-153 Tracking Number: 15-SCAO-107

Project Name: 5-Year Warren Act Contract for Terra Bella Irrigation District

NEPA Contact: Ben Lawrence

NEPA Document: EA-15-014

MP 153 Cultural Resources Reviewer: Scott Williams



Date: March 26, 2015

The proposed undertaking by Reclamation is to issue a Warren Act agreement to Terra Bella Irrigation District under Article 18 of its Repayment Contract. This is the type of undertaking that does not have the potential to cause effects to historic properties, should such properties be present, pursuant to the NHPA Section 106 regulations codified at 36 CFR § 800.3(a)(1). Reclamation has no further obligations under NHPA Section 106, pursuant to 36 CFR § 800.3(a)(1).

Under the proposed agreement, the district would introduce up to 5,000 AF per year of non-CVP Tule River water into the Friant-Kern Canal, for a period of five years. The Tule River water would be released from storage in Success Reservoir into the Tule River channel, and diverted 5 miles downstream at the Poplar Ditch head gate in Porterville. The water would then be conveyed 5.5 miles in Poplar Ditch to the downstream side of the Friant-Kern Canal near Highway 190 (see Figure 2-1), where it would be contained and stored at a temporary pumping station installed by Terra Bella Irrigation District, until they are ready to pump the water for introduction into the Friant-Kern Canal. The temporary pumping station would be placed in the paved area between the ditch and Friant-Kern Canal at milepost 97.36 outside of Reclamation right-of-way. No ground disturbance would be needed for the installation of the temporary pumping facility. Water pumped into the Friant-Kern Canal would flow to milepost 103.64, where Terra Bella Irrigation District would take it at their existing turnout. No new construction or modification of existing facilities may occur in order to complete the Proposed Action.

After reviewing documentation provided within EA-15-014, Reclamation has concluded this action would not have significant impacts on properties listed, or eligible for listing, on the National Register of Historic Places.

This document is intended to convey the completion of the NHPA Section 106 process for this undertaking. Please retain a copy in the administrative record for this action. Should changes be made to this project, additional NHPA Section 106 review, possibly including consultation with the State Historic Preservation Officer, may be necessary. Thank you for providing the opportunity to comment.

Appendix B

Reclamation's Indian Trust Assets Determination



Lawrence, Benjamin <blawrence@usbr.gov>

Indian Trust Asset Determination Request, 5-Year Warren Act Contract for Terra Bella Irrigation District

Johnson, Charles <cjohnson@usbr.gov>
To: Benjamin Lawrence <blawrence@usbr.gov>
Cc: RICHARD STEVENSON <rstevenson@usbr.gov>

Wed, Apr 8, 2015 at 9:46 AM

Ben,

The closest ITA to the proposed Terra Bella Warren Act activities is the Tule River Indian reservation about 8 miles to the east of Terra Bella ID. (see attached image). Based on the nature of the planned work it does not appear to be in areas that will impact Indian hunting or fishing resources or water rights nor are they on actual Indian lands. It is reasonable to assume that the proposed action will not have any impacts on ITAs.

Chuck Johnson

Chuck Johnson, CPSS
Chief, Land Resources
Regional GIS Program Manager
Regional Realty Officer
Regional Soil Scientist
Regional Fire Management Officer
US Bureau of Reclamation voice 916-978-5266
2800 Cottage Way (MP-450) FAX 916-978-5290
Sacramento, CA 95825-1898 cjohnson@usbr.gov

"Non sibi sed aliis"

On Wed, Apr 8, 2015 at 8:30 AM, STEVENSON, RICHARD <rstevenson@usbr.gov> wrote:
Chuck,

Do you have a record of having done this one? I thought we were caught up.

----- Forwarded message -----
From: Lawrence, Benjamin <blawrence@usbr.gov>
[Quoted text hidden]



Appendix C

Reclamation's Water Quality Standards

RECLAMATION

Managing Water in the West

Policy for Accepting Non-Project Water into the Friant-Kern and Madera Canals Water Quality Monitoring Requirements



Friant-Kern Canal in Tulare County (Credit: Ted Holzem, Mintier & Associates)



U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region

March 7, 2008

United States Bureau of Reclamation
South-Central California Area Office
and
Friant Water Authority

Policy for Accepting Non-Project Water into the Friant-Kern and Madera Canals
Water Quality Monitoring Requirements

This Policy describes the approval process, implementation procedures, and responsibilities of a Contractor requesting permission from the U.S. Bureau of Reclamation (Reclamation) to introduce non-project water into the Friant-Kern and Madera Canals, features of the Friant Division of the Central Valley Project (CVP). The monitoring requirements contained herein are intended to ensure that water quality is protected and that domestic and agricultural water users are not adversely impacted by the introduction of non-project water. The discharge of non-project water shall not in any way limit the ability of either Reclamation or the Friant Water Authority (Authority) to operate and maintain the Canals for their intended purposes nor shall it adversely impact existing contracts or any other agreements. The discharge of non-project water into the Canals will be permissible only when there is excess capacity in the system as determined by the Authority and or Reclamation.

The Contractor shall be responsible for securing other requisite Federal, State or local permits.

Reclamation, in cooperation with the Authority, will consider all proposals to convey non-project water based upon this Policy's water quality criteria and implementation procedures established in this document. Table 1 provides a summary of the Policy's water quality monitoring requirements.

This policy is subject to review and modification by Reclamation and the Authority. Reclamation and the Authority reserve the right to change the water quality monitoring requirements for any non-project water to be conveyed in the Friant-Kern and Madera Canals.

A. Types of Non-Project Water

This policy recognizes three types of non-project water with distinct requirements for water quality monitoring.

1. "Type A" Non-Project Water

Water for which analytical testing demonstrates complete compliance with California drinking water standards (Title 22)¹, plus other constituents of concern recommended by the California Department of Health Services. Type A water must be tested every year for the full list of

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.

constituents listed in Table 2. No in-prism (within the Canal) monitoring is required to convey Type A water.

2. **“Type B” Non-Project Water**

Water that generally complies with Title 22, but may exceed the Maximum Contaminant Level (MCL) for certain inorganic constituents of concern to be determined by Reclamation and the Authority on a case-by-case basis. This water may be discharged into the Canal over short-intervals. Type B water shall be tested every year for the full list of constituents in Table 2, and more frequently for the identified constituents of concern. Flood Water and Ground Water are Type B non-project water.

Type B water may not be pumped into the Friant-Kern Canal within a half-mile upstream of a delivery point to a CVP Municipal and Industrial contractor. At this time, there are no M & I Contractors served from the Madera Canal.

The introduction of Type B water into the Friant-Kern and Madera Canals will require regular in-prism monitoring to confirm that the CVP water delivered to downstream customers is suitable in quality for their needs. The location, frequency, and parameters of in-prism monitoring will be determined by Reclamation and the Authority on a case-by-case basis.

3. **“Type C” Non-Project Water**

Type C Water is non-project water that originates in the same source as CVP water but that has not been appropriated by the United States. For example, non-project water from a tributary within the upper San Joaquin River watershed, such as the Soquel Diversion from Willow Creek above Bass Lake, is Type C water. Another example is State Water Project water pumped from the California Aqueduct and Cross Valley Canal into the lower Friant-Kern Canal. No water quality analyses are required to convey Type C water through the Friant-Kern or Madera Canals because it is physically the same as Project water.

B. Authorization

The Warren Act (Act of February 21, 1911, ch. 141, 36 Stat. 925), as supplemented by Section 305 of Public Law 102-250, authorizes Reclamation to contract for the carriage and storage of non-project water when excess capacity is available in Federal water facilities. The terms of this Policy are also based on the requirements of the Clean Water Act (33 U.S.C. 1251 et seq.), the Endangered Species Act of 1973 (P.L. 93-205), the National Environmental Policy Act of 1969 (NEPA, 42 U.S.C. 4321 et seq.), the Reclamation Act of 1902 (June 17, 1902 as amended), and the Safe Drinking Water Act of 1974 (P.L. 93-523, amended 1986) and Title XXIV of the Reclamation Projects Authorization and Adjustments Act of 1992 (P.L. 102-575, 106 Stat 4600).

C. General Requirements for Discharge of Non-Project Water

1. Contract Requirements

A Contractor wishing to discharge non-project water into the Friant-Kern or Madera Canals must first execute a contract with Reclamation. The contract may be negotiated with Reclamation's South Central California Area Office (SCCAO) in Fresno.

2. Facility Licensing

Each non-project water discharge facility must be licensed by Reclamation and the Authority. The license for erection and maintenance of structures may be negotiated with the SCCAO.

3. Prohibition When the Canal is Empty

Non-project shall not be conveyed in the Friant-Kern or Madera Canals during periods when the canal is de-watered for maintenance.

D. Non-Project Discharge, Water Quality, and Monitoring Program Requirements

1. General Discharge Approval Requirements

Each source of non-project water must be correctly sampled, completely analyzed, and be approved by Reclamation prior to introduction into the Friant-Kern or Madera Canals. The Contractor shall pay the cost of collection and analyses of the non-project water required under this policy².

2. Water Quality Sampling and Analyses

Each source of Type A and B non-project water must be tested every year for the complete list of constituents of concern and bacterial organisms listed in Table 2. The analytical laboratory must be approved by Reclamation (Table 3).

3. Water Quality Reporting Requirements

Water quality analytical results must be reported to the Contracting Officer for review.

4. Type B Water Quality Monitoring

Reclamation will provide a Quality Assurance Project Plan (QAPP) that will describe the protocols and methods for sampling and analysis of Type B non-project water.

2. Reclamation will pay for the collection and analyses of quarterly baseline samples collected at Friant Dam and Lake Woolomes.

The program may include sampling of canal water upstream and downstream of the Contractor's discharge point into the Friant-Kern or Madera Canal. The location of samples, and the duration and frequency of sampling, and the list of constituents to be analyzed, may be changed upon review of measured trends in concentration of those constituents of concern.

E. Control of Water Quality in the Friant Division

The quality of CVP water will be considered impaired if the conveyance of the Contractor's non-project water is causing the quality of CVP water to exceed a maximum contaminant level specified in Title 22 (Table 2).

Reclamation, in consultation with the Authority, will direct the Contractor to stop the discharge of non-project water from this source into the Friant-Kern or Madera Canal.

F. Baseline Water Quality Analysis

Every four months, Reclamation will collect samples of water from the Friant-Kern Canal near Friant Dam and near Lake Woolomes. These samples will be analyzed for Title 22 and many other constituents. The purpose of these samples is to identify the baseline quality of water in the canal. No direct analysis within the Madera Canal will be conducted at this time.

The cost of this analysis will be borne by Reclamation under the CVP Baseline water quality monitoring program.

G. Water Quality Data Review and Management

All water quality data must be sent to Reclamation for review, verification, and approval. All water quality data will be entered into a database to be maintained by Reclamation. All field notes and laboratory water quality analytical reports will be kept by the Authority. All water quality data will be available upon request to the Contractor and other interested parties.

Definitions

CVP or Project water

Water that has been appropriated by the United States for the Friant Division of the CVP. The source of Project water in the Friant Division is the San Joaquin River watershed.

Non-project water

Water that has not been appropriated by the United States for the Friant Division of the CVP. This includes groundwater, and surface water from other streams and rivers that cross the Friant-Kern and Madera Canals, such as Wutchumna Ditch.

Maximum Contaminant Level

Usually reported in milligrams per liter (parts per million) or micrograms per liter (parts per billion).

Non-project discharge system

The pipe and pumps from which non-project water enters the Friant Division.

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.

Type A water

This is non-project water that meets California drinking water standards. This water must be tested every year for the full list of Title 22 constituents. No in-stream monitoring is required to convey Type A water in the Friant Division.

Type B water

This is non-project water that has constituents that may exceed the California drinking water standards. This water must be tested every year for the full list of Title 22 constituents, plus annually for constituents of concern. Field monitoring is required of each source and of water upstream and downstream of the discharge point.

Type C water

This is non-project water from the same watershed as Project water that has not been appropriated by the United States for the Central Valley Project. Water from Soquel Creek diversion or the State Water Project are Type C water. No water quality analyses are required to convey this water in the Friant-Kern Canal.

Table 1. Water Quality Monitoring Requirements in the Friant Division
Table 2. Title 22 California Drinking Water Standards
Table 3. List of Labs Approved by Reclamation

Table 1. Water Quality Monitoring Requirements - Friant Division, Central Valley Project

Type of Water		Location	How often will a sample be collected?	What will be measured in the water?	Who will collect samples?
Project Water	Friant		January, April, June, October	Title 22 and bacterial constituents (1) (2)	Reclamation, MP-157
	Lake Woolomes		January, April, June, October	Title 22 and bacterial constituents (1) (2)	Reclamation, MP-157
Type A Non-Project Water			Every year	Title 22 and bacterial constituents (1) (2)	Contractor
Type B Non-Project Water			Every year	Title 22 and bacterial constituents (1) (2)	Contractor
			Every month (5)	Constituents of concern (5)	Contractor
			Every week (5)	EC, turbidity, etc.(3) (5)	Friant Water Authority
Type C Non-Project Water			None required		
Project water	Upstream of each Type B discharge (4)		Every week (5)	EC, turbidity, etc.(3) (5)	Friant Water Authority
	Downstream of each Type B discharge (4)		Every week (5)	EC, turbidity, etc.(3) (5)	Friant Water Authority

Notes:

(1) California Department of Health Services, California Code of Regulations, Title 22, Division 4, Chapter 15, Domestic Water Quality and Monitoring,

http://www.dhs.ca.gov/ps/ddwem/publications/Regulations/regulations_index.htm.

(2) Cryptosporidium, Giardia, total coliform bacteria

(3) Field measurements.

(4) Location to be determined by the Contracting Officer

(5) To be determined by the Contracting Officer, if necessary.

This water quality monitoring program is subject to change at any time by the Contracting Officer.

Revised: 08/16/2007 SCC-107

U.S. Bureau of Reclamation
 Friant Water Authority
 Friant Division, California
 Water Quality Monitoring Requirements

Table 2a. Water Quality Constituents

CONSTITUENT OR PARAMETER	Units	Recommended Method	California DHS Maximum Contaminant Level		CAS Registry Number
Primary Constituents (CCR § 64431)					
Aluminum	µg/L	EPA 200.7	1,000	1	7429-90-5
Antimony	µg/L	EPA 200.8	6	1	7440-36-0
Arsenic	µg/L	EPA 200.8	10	16	7440-38-2
Asbestos	MFL > 10µm	EPA 100.2	7	1	1332-21-4
Barium	µg/L	EPA 200.7	1,000	1	7440-39-3
Beryllium	µg/L	EPA 200.7	4	1	7440-41-7
Cadmium	µg/L	EPA 200.7	5	1	7440-43-9
Chromium	µg/L	EPA 200.7	50	1	7440-47-3
Cyanide	µg/L	EPA 335.4	150	1	57-12-5
Fluoride	mg/L	EPA 300.1	2	1	16984-48-8
Mercury (inorganic)	µg/L	EPA 245.1	2	1	7439-97-6
Nickel	µg/L	EPA 200.7	100	1	7440-02-0
Nitrate (as NO ₃)	mg/L	EPA 300.1	45	1	7727-37-9
Total Nitrate + Nitrite (as Nitrogen)	mg/L	EPA 353.2	10	1	
Nitrite (as Nitrogen)	mg/L	EPA 300.1	1	1	14797-65-0
Selenium	µg/L	EPA 200.8	50	1	7782-49-2
Thallium	µg/L	EPA 200.8	2	1	7440-28-0
Secondary Constituents (CCR § 64449)					
Aluminum	µg/L	EPA 200.7	200	6	7429-90-5
Chloride	mg/L	EPA 300.1	250/500/600	7	16887-00-6
Color	units	SM 2120 B	15	6	
Copper	µg/L	EPA 200.7	1,000	6	7440-50-8
Foaming agents (MBAS)	mg/L	SM 5540 C	0.5	6	
Iron	µg/L	EPA 200.7	300	6	7439-89-6
Manganese	µg/L	EPA 200.7	50	6	7439-96-5
Methyl-tert-butyl ether (MtBE)	µg/L	EPA 524.2	5	6	1634-04-4
Odor - Threshold	threshold units	SM 2150 B	3	6	
Silver	µg/L	EPA 200.7	100	6	7440-22-4
Specific conductance (EC)	µS/cm	SM 2510 B	900/1600/2200	7	
Sulfate	mg/L	EPA 300.1	250/500/600	7	14808-79-8
Thiobencarb	µg/L	EPA 525.2	1	6	28249-77-6
Total dissolved solids (TDS)	mg/L	SM 2540 C	500/1000/1500	7	
Turbidity	NTU	EPA 180.1	5	6	
Zinc	mg/L	EPA 200.7	5	6	7440-66-6

Table 2a. Water Quality Constituents

CONSTITUENT OR PARAMETER		Units	Recommended Method	California DHS Maximum Contaminant Level	CAS Registry Number
Other required analyses (CCR § 64449 (b)(2); CCR § 64670)					
Bicarbonate	mg/L	SM 2320B		8	
Calcium	mg/L	SM3111B		8,12	7440-70-2
Carbonate	mg/L	SM 2320B		8	
Copper	mg/L	EPA 200.7	1.3	14	7440-50-8
Hardness	mg/L	SM 2340 B		8	
Hydroxide alkalinity	mg/L	SM 2320B		8,12	
Lead	mg/L	EPA 200.8	0.015	14	7439-92-1
Magnesium	mg/L	EPA 200.7		8	7439-95-4
Orthophosphate	mg/L	EPA 365.1		12	
pH	units	EPA 150.1		8,12	
Silica	mg/L	EPA 200.7		12	
Sodium	mg/L	EPA 200.7		8	7440-23-5
Temperature	degrees C	SM 2550		12	
Radiochemistry (CCR § 64442)					
Radioactivity, Gross Alpha	pCi/L	SM 7110C		15 3	
Microbiology					
Cryptosporidium	org/liter		No MCL, measure for presence (surface water only)		
Fecal Coliform	MPN/100ml		No MCL, measure for presence (surface water only)		
Giardia	org/liter		No MCL, measure for presence (surface water only)		
Total Coliform bacteria	MPN/100ml		No MCL, measure for presence (surface water only)		
Organic Constituents (CCR § 64444)					
EPA 504.1 method					
Dibromochloropropane (DBCP)	µg/L	EPA 504.1		0.2 4	96-12-8
Ethylene dibromide (EDB)	µg/L	EPA 504.1		0.05 4	206-93-4
EPA 505					
Chlordane	µg/L	EPA 505		0.1 4	57-74-9
Endrin	µg/L	EPA 505		2 4	72-20-8
Heptachlor	µg/L	EPA 505		0.01 4	76-44-8
Heptachlor epoxide	µg/L	EPA 505		0.01 4	1024-57-3
Hexachlorobenzene	µg/L	EPA 505		1 4	118-74-1
Hexachlorocyclopentadiene	µg/L	EPA 505		50 4	77-47-4
Lindane (gamma-BHC)	µg/L	EPA 505		0.2 4	58-89-9
Methoxychlor	µg/L	EPA 505		30 4	72-43-5
Polychlorinated biphenyls	µg/L	EPA 505		0.5 4	1336-36-3
Toxaphene	µg/L	EPA 505		3 4	8001-35-2
EPA 508 Method					
Alachlor	µg/L	EPA 508.1		2 4	15972-60-8
Atrazine	µg/L	EPA 508.1		1 4	1912-24-9
Simazine	µg/L	EPA 508.1		4 4	122-34-9

Table 2a. Water Quality Constituents

CONSTITUENT OR PARAMETER	Units	Recommended Method	California DHS Maximum Contaminant Level		CAS Registry Number
EPA 515.3 Method					
Bentazon	µg/L	EPA 515	18	4	25057-89-0
2,4-D	µg/L	EPA 515.1-4	70	4	94-75-7
Dalapon	µg/L	EPA 515.1-4	200	4	75-99-0
Dinoseb	µg/L	EPA 515.1-4	7	4	88-85-7
Pentachlorophenol	µg/L	EPA 515.1-4	1	4	87-86-5
Picloram	µg/L	EPA 515.1-4	500	4	1918-02-1
2,4,5-TP (Silvex)	µg/L	EPA 515.1-4	50	4	93-72-1
EPA 524.2 Method (Volatile Organic Chemicals)					
Benzene	µg/L	EPA 524.2	1	4	71-43-2
Carbon tetrachloride	µg/L	EPA 524.2	0.5	4	56-23-5
1,2-Dibromomethane	µg/L	EPA 524.2	0.05		106-93-4
1,2-Dichlorobenzene	µg/L	EPA 524.2	600	4	95-50-1
1,4-Dichlorobenzene	µg/L	EPA 524.2	5	4	106-46-7
1,1-Dichloroethane	µg/L	EPA 524.2	5	4	75-34-3
1,2-Dichloroethane	µg/L	EPA 524.2	0.5	4	107-06-2
1,1-Dichloroethylene	µg/L	EPA 524.2	6	4	75-35-4
cis-1,2-Dichloroethylene	µg/L	EPA 524.2	6	4	156-59-2
trans-1,2-Dichloroethylene	µg/L	EPA 524.2	10	4	156-60-5
Dichloromethane	µg/L	EPA 524.2	5	4	75-09-2
1,2-Dichloropropane	µg/L	EPA 524.2	5	4	78-87-5
1,3-Dichloropropene	µg/L	EPA 524.2	0.5	4	542-75-6
Ethylbenzene	µg/L	EPA 524.2	300	4	100-41-4
Methyl-tert-butyl ether (MtBE)	µg/L	EPA 524.2	13	4	1634-04-4
Monochlorobenzene	µg/L	EPA 524.2	70	4	108-90-7
Styrene	µg/L	EPA 524.2	100	4	100-42-5
1,1,2,2-Tetrachloroethane	µg/L	EPA 524.2	1	4	79-34-5
Tetrachloroethylene (PCE)	µg/L	EPA 524.2	5	4	127-18-4
Toluene	µg/L	EPA 524.2	150	4	108-88-3
1,2,4-Trichlorobenzene	µg/L	EPA 524.2	5	4	120-82-1
1,1,1-Trichloroethane	µg/L	EPA 524.2	200	4	71-55-6
1,1,2-Trichloroethane	µg/L	EPA 524.2	5	4	79-00-5
Trichloroethylene (TCE)	µg/L	EPA 524.2	5	4	79-01-6
Trichlorofluoromethane	µg/L	EPA 524.2	150	4	75-69-4
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	EPA 524.2	1,200	4	76-13-1
Total Trihalomethanes	ug/L	EPA 524.2	80	10	
Vinyl chloride	µg/L	EPA 524.2	0.5	4	75-01-4
Xylene(s)	µg/L	EPA 524.2	1,750	4	1330-20-7
EPA 525.2 Method					
Benzo(a)pyrene	µg/L	EPA 525.2	0.2	4	50-32-8
Di(2-ethylhexyl)adipate	µg/L	EPA 525.2	400	4	103-23-1
Di(2-ethylhexyl)phthalate	µg/L	EPA 525.2	4	4	117-81-7
Molinate	µg/L	EPA 525.2	20	4	2212-67-1
Thiobencarb	µg/L	EPA 525.2	70	4	28249-77-6
EPA 531.1 Method					
Carbofuran	µg/L	EPA 531.1-2	18	4	1563-66-2
Oxamyl	µg/L	EPA 531.1-2	50	4	23135-22-0

Table 2a. Water Quality Constituents

CONSTITUENT OR PARAMETER	Units	Recommended Method	California DHS Maximum Contaminant Level		CAS Registry Number
EPA 547 Method					
Glyphosate	µg/L	EPA 547	700	4	1071-83-6
EPA 548.1 Method					
Endothal	µg/L	EPA 548.1	100	4	145-73-3
EPA 549.2 Method					
Diquat	µg/L	EPA 549.2	20	4	85-00-7
EPA 613 Method					
2,3,7,8-TCDD (Dioxin)	µg/L	EPA 1613	0.00003	4	1746-01-6

Source Data:

Adapted from Marshack, Jon B. August 2003. A Compilation of Water Quality Goals. Prepared for the California Environmental Protection Agency, Regional Water Quality Control Board.

U.S. Bureau of Reclamation
Friant Water Authority
Friant Division, California
Water Quality Monitoring Requirements

Table 2b. Unregulated Chemicals (CCR § 64450)

			California Department of Health Services				CAS
CONSTITUENT OR PARAMETER	Units	Recommended Method	Notification Level		Response Level	Registry Number	
Boron	mg/L	EPA 200.7	1	9, 17	10	7440-42-8	
n-Butylbenzene	µg/L	EPA 524.2	260	17	2,600	104-51-8	
sec-Butylbenzene	µg/L	EPA 524.2	260	17	2,600	135-98-8	
tert-Butylbenzene	µg/L	EPA 524.2	260	17	2,600	98-06-6	
Carbon disulfide	µg/L		160	17	1,600		
Chlorate	µg/L	EPA 300.1	0.8	17	8		
2-Chlorotoluene	µg/L	EPA 524.2	140	17	1,400	95-49-8	
4-Chlorotoluene	µg/L	EPA 524.2	140	17	1,400	106-43-4	
Dichlorofluoromethane (Freon 12)	µg/L	EPA 524.2	1,000	9,17	10,000	75-43-4	
1,4-Dioxane	µg/L	SM 8270	3	17	300	123-91-1	
Ethylene glycol	µg/L	SM 8015	1,400	17	14,000	107-21-1	
Formaldehyde	µg/L	SM 6252	100	17	1,000	50-00-0	
n-Propylbenzene	µg/L		260	17	2,600		
HMX	µg/L	SM 8330	350	17	3,500	2691-41-0	
Isopropylbenzene	µg/L		770	17	7,700		
Manganese	mg/L		1	17	5		
Methyl isobutyl ketone	µg/L		120	17	1,200		
Napthalene	µg/L	EPA 524.2	17	17	170	91-20-3	
n-nitrosodiethylamine (NDEA)	µg/L	1625	0.01	17	0.1		
n-nitrosodimethylamine (NDMA)	µg/L	1625	0.01	17	0.2		
n-nitroso-n-propylamine (NDPA)	µg/L	1625	0.01	17	0.5		
Perchlorate	µg/L	EPA 314	6	9, 17	60	13477-36-6	
Propachlor	µg/L	EPA 507 or 525	90	17	900	1918-16-7	
p-Isopropyltoluene	µg/L	EPA 524.2	770	17	7,700	99-87-6	
RDX	µg/L	SM 8330	0.30	17	30	121-82-4	
tert-Butyl alcohol (ethanol)	µg/L	EPA 524.2	12	9,17	1,200	75-65-0	
1,2,3-Trichloropropane (TCP)	ug/L	EPA 524.2	0.005	9,17	0.5	96-18-4	
1,2,4-Trimethylbenzene	µg/L	EPA 524.2	330	17	3,300	95-63-6	
1,3,5-Trimethylbenzene	µg/L	EPA 524.2	330	17	3,300	95-63-6	
2,4,6-Trinitrotoluene (TNT)	µg/L	SM 8330	1	17	100		
Vanadium	mg/L	EPA 286.1	0.05	9,17	0.5	7440-62-2	

Revised: 05/17/2007

**U.S. Bureau of Reclamation
Friant Water Authority
Friant Division, California
Water Quality Monitoring Requirements**

Notes for Tables 2a and 2b

Title 22. California Code of Regulations, California Safe Drinking Water Act and Related Laws and Regulations. February 2007.
<http://www.dhs.ca.gov/ps/ddwem/publications/lawbook/PDFs/dwregulations-02-06-07.pdf>

- [1] Table 64431-A. Maximum Contaminant Levels, Inorganic Chemicals
- [2] Table 64432-A. Detection Limits for Purpose of Reporting (DLRs) for Regulated Inorganic Chemicals
- [3] Table 64442. Radionuclide Maximum contaminant Levels (MCLs) and Detection Levels for Reporting (DLRs)
- [4] Table 64444-A. Maximum Contaminant Levels Organic Chemicals
- [5] Table 64445.1-A. Detection Limits for Reporting (DLRs) for Regulated Organic Chemicals
- [6] Table 64449-A. Secondary Maximum Contaminant Levels "Consumer Acceptance Levels"
- [7] Table 64449-B. Secondary Maximum Contaminant Levels "Consumer Acceptance Levels"
- [8] § 64449(b)(2)
- [9] Table 64450. Unregulated Chemicals
- [10] Appendix 64481-A. Typical Origins of Contaminants with Primary MCLs
- [11] Table 64533-A. Maximum Contaminant Levels and Detection Limits for Reporting Disinfection Byproducts
- [12] § 64670.(c)
- [13] Table 64678-A. DLRs for Lead and Copper
- [14] § 64678 (d)
- [15] § 64678 (e)
- [16] New Federal standard as of 1/23/2006
- [17] Dept Health Services Drinkig Water Notification Levels (June 2006)

RECLAMATION

Managing Water in the West

Table 3. Approved Laboratory List for the Mid-Pacific Region Environmental Monitoring Branch (MP-157)

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

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

Revised: 04/16/2007 MP-157

Appendix D

Species List

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

**Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the Counties and/or
U.S.G.S. 7 1/2 Minute Quads you requested**

Document Number: 150323123011

Current as of: March 23, 2015

Quad Lists

Listed Species

Invertebrates

- Branchinecta lynchi*
vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus*
valley elderberry longhorn beetle (T)

Fish

- Hypomesus transpacificus*
delta smelt (T)

Amphibians

- Rana draytonii*
California red-legged frog (T)

Reptiles

- Gambelia (=Crotaphytus) sila*
blunt-nosed leopard lizard (E)
- Thamnophis gigas*
giant garter snake (T)

Birds

- Empidonax traillii extimus*
southwestern willow flycatcher (E)
- Gymnogyps californianus*
California condor (E)

Mammals

- Dipodomys nitratooides nitratooides*
Tipton kangaroo rat (E)
- Vulpes macrotis mutica*
San Joaquin kit fox (E)

Plants

- Caulanthus californicus*
California jewelflower (E)
- Clarkia springvillensis*
Springville clarkia (T)
- Pseudobahia peirsonii*
San Joaquin adobe sunburst (T)
- Sidalcea keckii*
Critical habitat, Keck's checker-mallow (X)
Keck's checker-mallow (=checkerbloom) (E)

Quads Containing Listed, Proposed or Candidate Species:

FOUNTAIN SPRINGS (286B)
DUCOR (287A)
SAUSALITO SCHOOL (287B)
SUCCESS DAM (309C)
WOODVILLE (310C)
PORTERVILLE (310D)

County Lists

Tulare County

Listed Species

Invertebrates

- Branchinecta conservatio*
Conservancy fairy shrimp (E)

Branchinecta lynchi

Critical habitat, vernal pool fairy shrimp (X)
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus

valley elderberry longhorn beetle (T)

Lepidurus packardii

Critical habitat, vernal pool tadpole shrimp (X)
vernal pool tadpole shrimp (E)

Fish

Gila bicolor snyderi

Owens tui chub (E)

Hypomesus transpacificus

delta smelt (T)

Oncorhynchus (=Salmo) aquabonita whitei

Critical habitat, little Kern golden trout (X)
Little Kern golden trout (T)

Amphibians

Ambystoma californiense

California tiger salamander, central population (T)
Critical habitat, CA tiger salamander, central population (X)

Rana draytonii

California red-legged frog (T)

Rana muscosa

Mountain yellow legged frog (PX)

Rana sierrae

Mountain yellow legged frog (PX)

Reptiles

Gambelia (=Crotaphytus) sila

blunt-nosed leopard lizard (E)

Thamnophis gigas

giant garter snake (T)

Birds

Charadrius alexandrinus nivosus

western snowy plover (T)

Coccyzus americanus occidentalis

Western yellow-billed cuckoo (T)

Empidonax traillii extimus

southwestern willow flycatcher (E)

Gymnogyps californianus

California condor (E)
Critical habitat, California condor (X)

Vireo bellii pusillus

Least Bell's vireo (E)

Mammals

Dipodomys ingens

giant kangaroo rat (E)

Dipodomys nitratooides exilis
Fresno kangaroo rat (E)

Dipodomys nitratooides nitratooides
Tipton kangaroo rat (E)

Ovis canadensis californiana
Sierra Nevada (=California) bighorn sheep (E)

Vulpes macrotis mutica
San Joaquin kit fox (E)

Plants

Caulanthus californicus
California jewelflower (E)

Chamaesyce hooveri
Critical habitat, Hoover's spurge (X)
Hoover's spurge (T)

Clarkia springvillensis
Springville clarkia (T)

Eremalche kernensis
Kern mallow (E)

Orcuttia inaequalis
Critical habitat, San Joaquin Valley Orcutt grass (X)
San Joaquin Valley Orcutt grass (T)

Pseudobahia peirsonii
San Joaquin adobe sunburst (T)

Sidalcea keckii
Critical habitat, Keck's checker-mallow (X)
Keck's checker-mallow (=checkerbloom) (E)

Tuctoria greenel
Greene's tuctoria (=Orcutt grass) (E)

Candidate Species

Amphibians

Bufo canorus
Yosemite toad (C)

Rana muscosa
mountain yellow-legged frog (C)

Mammals

Martes pennanti
fisher (C)

Plants

Abronia alpina
Ramshaw sand-verbena (C)

Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](#). Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our [Protocol](#) and [Recovery Permits](#) pages.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal [consultation](#) with the Service.

During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special

management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our [Map Room](#) page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. [More info](#)

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be June 21, 2015.