RECLAMATION

Managing Water in the West

FINDING OF NO SIGNIFICANT IMPACT

5-Year Friant-Kern Canal Groundwater Pump-In Program

FONSI-15-046

U.S. Department of the Interior
Bureau of Reclamation

February 2016

Mission Statements

The mission of the Department of the Interior is to protect and manage the Nation's natural resources and cultural heritage; provide scientific and other information about those resources; and honor its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated 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.

BUREAU OF RECLAMATION
South-Central California Area Office, Fresno, California

FONSI-15-046

5-Year Friant-Kern Canal Groundwater Pump-In Program

Molly Burns — 2-25-2016

Prepared by: Molly Burns
Natural Resources Specialist — Date

2-25-2016

Concurred by: Jennifer L. Lewis
Wildlife Biologist — Date

Rain L. Emerson — 03/01/2016

Concurred by: Rain L. Emerson
Supervisory Natural Resources Specialist — Date

Michael P. Jackson — 3/4/2016

Approved by: Michael P. Jackson, P.E.
Area Manager — Date

Introduction

In accordance with section 102(2)(c) of the National Environmental Policy Act of 1969, as amended, the South-Central California Area Office of the Bureau of Reclamation (Reclamation), has determined that the introduction of non-Project groundwater into the Friant-Kern Canal (FKC) over a five-year period is not a major federal action that will significantly affect the quality of the human environment and an environmental impact statement is not required. This Finding of No Significant Impact (FONSI) is supported by Reclamation's Environmental Assessment (EA) 15-046, *5-Year Friant-Kern Canal Groundwater Pump-In Program*, and is hereby incorporated by reference.

Reclamation provided the public with an opportunity to comment on the Draft FONSI and Draft EA between January 27, 2016 and February 10, 2016. One letter was received on February 11, 2016 from Arvin-Edison Water Storage District. The comment letter and Reclamation's response to comments are included in Appendix C of EA-15-046.

Background

In 2014, due to ongoing drought conditions and reduced water supplies, Friant Division Central Valley Project (CVP) contractors requested approval from Reclamation to pump cumulatively up to 50,000 acre-feet (AF) of groundwater into the FKC over a two-year period (referred to as the FKC Groundwater Pump-in Program). Reclamation analyzed the two-year FKC Groundwater Pump-in Program in EA-14-011 (Reclamation 2014a). Based on specific environmental commitments required for the FKC Groundwater Pump-in Program, including water quality requirements, Reclamation determined that the cumulative introduction, storage, and conveyance of up to 50,000 AF per year of groundwater will not significantly affect the quality of the human environment and a FONSI was completed on May 2, 2014. Later, North-Kern Water Storage District (North-Kern), a non-CVP contractor located adjacent to the FKC in Kern County, requested approval from Reclamation to participate in the FKC Groundwater Pump-in Program. Reclamation analyzed the participation of North-Kern in the FKC Groundwater Pump-in Program in EA-14-051 and a FONSI was completed on October 15, 2014 (Reclamation 2014b). Both FONSI/EA-14-011 and FONSI/EA-14-051 (Reclamation 2014a and 2014b) are hereby incorporated by reference.

Due to ongoing dry conditions, certain Friant Division contractors and North-Kern have requested to continue participating in a FKC Groundwater Pump-in Program when the current program expires in February 2016.

Proposed Action

Reclamation proposes to enter into one-year Warren Act agreement(s) with the seven CVP contractors listed in Table 1 of EA-15-046. Additional one-year agreements may be entered into

over a 5-year period dependent on groundwater meeting water quality requirements. In addition, Reclamation proposes to enter into a 5-year Warren Act Contract with North-Kern for introduction of their groundwater into the FKC. The agreement(s) and Warren Act Contract will allow the districts to cumulatively introduce up to 50,000 AF per year of their non-CVP groundwater into the FKC as described in EA-15-046.

Environmental Commitments

The participating contractors shall implement the environmental protection measures listed in Table 2 of EA-15-046 to reduce environmental consequences associated with the Proposed Action. Environmental consequences for resource areas assume the measures specified will be fully implemented.

Findings

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

Resources Eliminated from Detailed Analysis

As described in Table 3 of EA-15-046, Reclamation analyzed the affected environment and determined that the Proposed Action does not have the potential to cause direct, indirect, or cumulative adverse effects to the following resources: air quality, cultural resources, environmental justice, global climate change, Indian Sacred Sites, Indian Trust Assets, land use, or socioeconomic resources.

Biological Resources

Under the Proposed Action, federally listed or proposed or candidate species and critical habitat will not be affected, nor will any migratory birds protected under the Migratory Bird Treaty Act. Many of the species and their critical habitat do not occur in the Proposed Action Area. The FKC is not used by any federally listed or proposed aquatic species. For those that do occur in the Proposed Action Area, the restriction to only allow ground disturbance within-already disturbed areas will reduce the chance of encountering a federally listed or proposed species, of affecting a primary constituent element of critical habitat, or of impacting a migratory bird. In order to avoid effects, prior to any ground disturbance, a preconstruction biological survey will be conducted and the results provided to Reclamation for review. If the results of the survey indicated that there will be no impact to protected biological resources, the work could then proceed. Otherwise, separate environmental analysis will be needed and the ground disturbance will not occur until the analysis and associated consultations, if applicable, were completed. With the above limitations and based upon the nature of this action, Reclamation has determined there will be *No Effect* to listed species or designated critical habitat under the Endangered Species Act (16 U.S.C. §1531 et. seq.) and *No Take* of birds protected under the Migratory Bird Treaty Act (16 U.S.C. 703 et. seq.). As such, no consultation with the U.S. Fish and Wildlife Service or National Marine Fisheries Service is necessary.

Water Resources

The Proposed Action will allow groundwater to be introduced and conveyed in the FKC when excess capacity is available. This will allow the water to be delivered to the participants' service

areas for existing agricultural use. There will be no modification of the FKC, and the capacity of the facility will remain the same.

Water from each well must meet water quality standards prior to approval for conveyance. If testing from any individual well indicates that its water does not meet Reclamation's then-current standards, it will not be allowed to discharge into the FKC until water quality concerns are addressed. This testing program adequately protected the quality of water in the canal during the previous pump-in program and is expected to for the Proposed Action. Although there was a spike in nitrates in November 2014 (see Figure 3 in EA-15-046), Reclamation was able to prevent the movement of impacted water from affecting other users' water supplies located downstream of the introduction points.

The total quantity of groundwater that will be pumped into the FKC under the Proposed Action by all participants will be limited to 50,000 AF per year over a five year period. The groundwater to be pumped under the Proposed Action will come from wells at varying depths, at a wide range of locations along the FKC. The wells involved during the previous pump-in program drew a total of 11,799 AF (see Table 5 in EA-15-046) over the two year period, which is minor in the context of local and regional supplies and if continued at this rate, will be well under the permitted 50,000 AF per year. However, cumulative regional groundwater overdraft is an ongoing concern. Supplies in the area are managed through conjunctive use, and aquifers are recharged with surface water in wet years to offset drawdown of groundwater supplies during dryer periods.

None of the wells are expected to individually pump enough water to create subsidence problems, but regional trends are towards gradually lowering ground surface levels as a result of subsidence. Since the Proposed Action is temporary and involves relatively small volumes of water drawn from many locations over a wide geographic area, it is not expected to result in subsidence beyond historical fluctuations. In addition, water users within Kern County are required to comply with applicable groundwater ordinances in order to limit impacts to local groundwater supplies. Tulare County has not elected to implement groundwater ordinances at this time.

Cumulative Impacts

Cumulative impacts result from incremental impacts of the Proposed Action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment.

Biological Resources

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

Water Resources

The FKC 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 impacts to water

supplies. Reclamation's water quality requirements have adequately protected the quality of water in the FKC from the cumulative effects of this and other water conveyance actions. Water quality requirements will continue to ensure that the proposed groundwater pump-in program will continue to have no cumulative effect.

Although capacity in the FKC is limited, Friant Water Authority and Reclamation actively operate the canal in order to balance competing demands. Non-Project water such as the groundwater which will be conveyed under the Proposed Action has a lower priority than Project water for conveyance in the FKC. Therefore, the Proposed Action will not cause conflicts or other cumulative impacts to FKC operations.

Groundwater overdraft is an ongoing challenge in the San Joaquin Valley. Pumping increases in dry years, and drops off in years when surface water supplies are plentiful. A variety of agencies throughout the region and state are working on balancing competing water needs in order to provide the greatest benefit possible with the limited resources available. The needs of the State will likely be met over time through a combination of demand management, increases in storage capacity and new supply development. Ground subsidence is related, and efforts to reduce subsidence will depend on success in meeting California's surface water needs while keeping groundwater pumping within a sustainable range.

RECLAMATION

Managing Water in the West

Final Environmental Assessment

5-Year Friant-Kern Canal Groundwater Pump-In Program

EA-15-046

U.S. Department of the Interior
Bureau of Reclamation

February 2016

Mission Statements

The mission of the Department of the Interior is to protect and manage the Nation's natural resources and cultural heritage; provide scientific and other information about those resources; and honor its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated 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.

Contents

Page

THIS PAGE LEFT INTENTIONALLY BLANK

Section 1 Introduction

The Bureau of Reclamation (Reclamation) provided the public with an opportunity to comment on the Draft Finding of No Significant Impact (FONSI) and Draft Environmental Assessment (EA) between January 27, 2016 and February 10, 2016. Reclamation received one comment letter from Arvin-Edison Water Storage District on February 11, 2016. The comment letter and Reclamation's response to comments can be found in Appendix C. Changes between this Final EA and the Draft EA, which are not minor editorial changes, are indicated by vertical lines in the left margin of this document.

1.1 Background

In 2014, due to ongoing drought conditions and reduced water supplies, Friant Division Central Valley Project (CVP) contractors requested approval from the Bureau of Reclamation (Reclamation) to pump cumulatively up to 50,000 acre-feet (AF) of groundwater into the Friant-Kern Canal (FKC) over a two-year period (referred to as the FKC Groundwater Pump-in Program). Reclamation analyzed the two-year FKC Groundwater Pump-in Program in Environmental Assessment (EA)-14-011 (Reclamation 2014a). Based on specific environmental commitments required for the FKC Groundwater Pump-in Program, including water quality requirements, Reclamation determined that the cumulative introduction, storage, and conveyance of up to 50,000 acre-feet (AF) per year of groundwater would not significantly affect the quality of the human environment and a Finding of No Significant Impact (FONSI) was completed on May 2, 2014. Later, North-Kern Water Storage District (North-Kern), a non-CVP contractor located adjacent to the FKC in Kern County, requested approval from Reclamation to participate in the FKC Groundwater Pump-in Program. Reclamation analyzed the participation of North-Kern in the FKC Groundwater Pump-in Program in EA-14-051 and a FONSI was completed on October 15, 2014 (Reclamation 2014b). Both FONSI/EA-14-011 and FONSI/EA-14-051 (Reclamation 2014a and 2014b) are hereby incorporated by reference.

Due to ongoing dry conditions certain Friant Division contractors and North-Kern have requested to continue participating in a FKC Groundwater Pump-in Program when the current program expires in February 2016.

1.2 Need for the Proposed Action

There is a need to supply additional water to areas where shortages are taking place within the Friant CVP Division service area. The purpose of Reclamation's action is to facilitate conveyance of supplemental water supplies to areas where it is needed to maintain crops

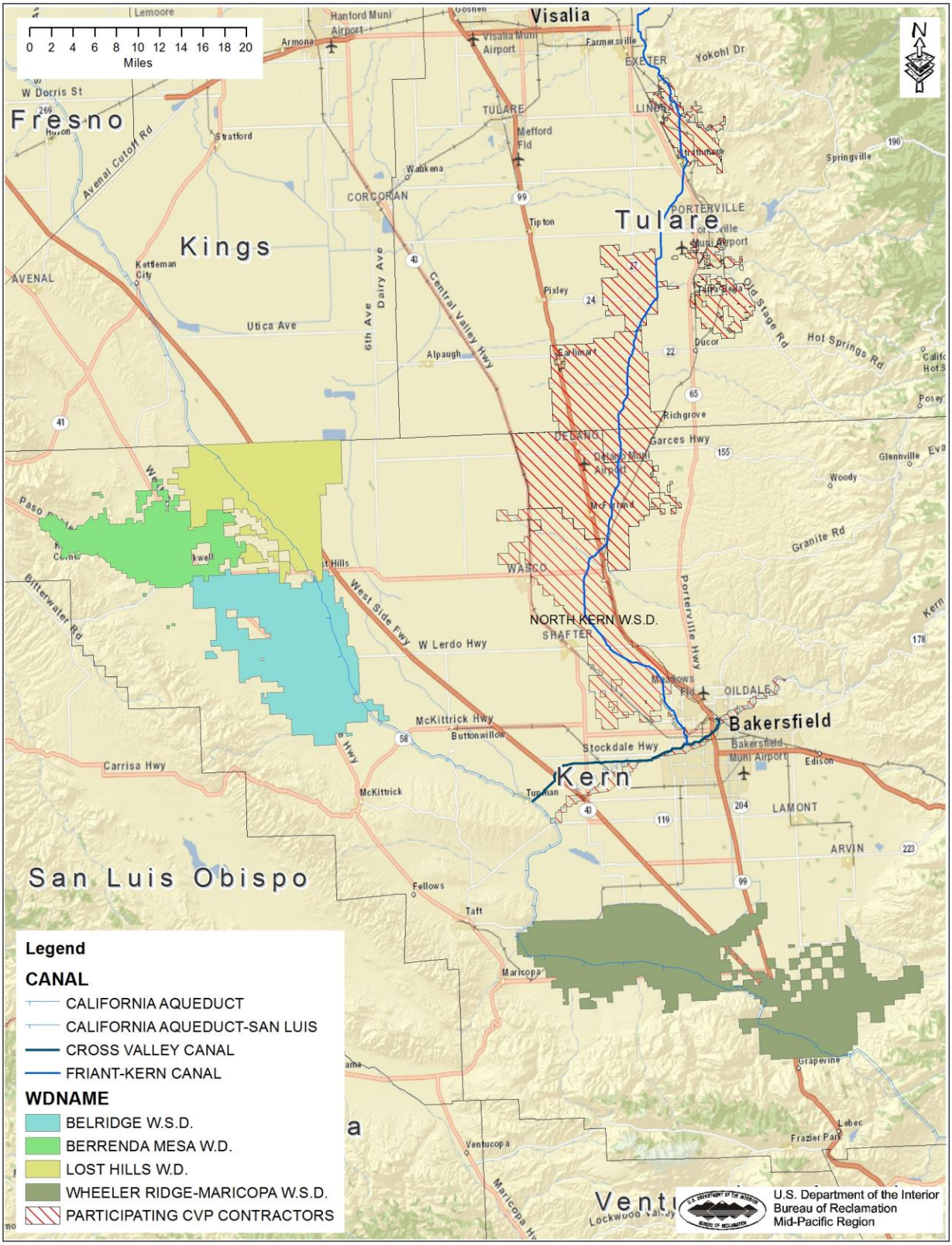


Figure 1 Proposed Action Area

Section 2 Alternatives Including the Proposed Action

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

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not permit the CVP contractors located within the Friant Division to introduce groundwater into the FKC. Affected growers would have to find alternative supplies of water, provide for alternative conveyance path(s), and/or temporarily take land out of production if water supplies continue to be insufficient to meet demands.

2.2 Proposed Action

Reclamation proposes to enter into one-year Warren Act agreement(s) with the seven CVP contractors listed in Table 1. Additional one-year agreements may be entered into over a 5-year period dependent on groundwater meeting water quality requirements. In addition, Reclamation proposes to enter into a 5-year Warren Act Contract with North-Kern for introduction of their groundwater into the FKC. The agreement(s) and Warren Act Contract would allow the districts to cumulatively introduce up to 50,000 AF per year of their non-Project groundwater into the FKC.

Table 1 CVP Contractors participating in agreements

Contractor	Years of Approval/Contract
Delano-Earlimart Irrigation District	1
Lindsay-Strathmore Irrigation District	1
North-Kern Water Storage District	5 (Contract)
Orange Cove Irrigation District	1
Saucelito Irrigation District	1
Southern San Joaquin Municipal Utility District	1
Tea Pot Dome Water District	1
Terra Bella Irrigation District	1

The source of the non-Project water would be groundwater pumped from privately owned wells within each district. The water would be introduced either directly or via the respective district's existing distribution systems. No ground disturbance or modification of facilities will be needed to complete the Proposed Action. Prior to introduction of groundwater, all wells would be tested

to demonstrate compliance with Reclamation's then-current water quality standards (see Appendix A for Reclamation's current water quality standards). The quantity of groundwater pumped into the FKC would be measured by flow-meters read and calibrated by Friant Water Authority field staff.

After introduction, the seven Friant CVP contractors would convey the water, less conveyance losses if applicable, through turnouts on the FKC for agricultural use. Exchanges would also be permitted in situations where a contractor's discharge point to the canal is downstream of the location where the water is needed.

North-Kern's non-Project water would be conveyed through the FKC to the Cross Valley Canal for delivery to the following westside Kern County water districts via the California Aqueduct as it was done previously (see Figure 1):

- Belridge Water Storage District (Belridge)
- Berrenda Mesa Water District (Berrenda Mesa)
- Lost Hills Water District (Lost Hills)
- Wheeler Ridge-Maricopa Water Storage District (Wheeler Ridge-Maricopa)

All delivery schedules for North-Kern's non-Project water would be coordinated with the Kern County Water Agency and the California Department of Water Resources (DWR) and approved by Reclamation prior to introduction into the FKC.

2.2.1 Environmental Commitments

The participating contractors shall implement the following environmental protection measures to reduce environmental consequences associated with the Proposed Action (Table 2). Environmental consequences for resource areas assume the measures specified would be fully implemented. Copies of all reports and monitoring data collected for the Proposed Action shall be submitted to Reclamation.

Table 2 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.
Groundwater	Districts in Kern County shall comply with applicable ordinances regarding transfer of pumped groundwater outside of the county and/or aquifer zone. Tulare County does not have such an ordinance.
Water Quality	Water from each well must meet water quality standards prior to approval for introduction. If testing from any individual well indicates that its water does not meet then-current standards, it would not be allowed to introduce groundwater into the FKC until water quality concerns are addressed.
Biological Resources	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).
Biological Resources	The Proposed Action shall 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.

Section 3 Affected Environment and Environmental Consequences

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

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.

Table 3 Resources Eliminated from Further Analysis

Resource	Reason Eliminated
Air Quality	The Proposed Action would not involve physical changes to the environment or construction activities that could impact air quality. Pumping would be required to introduce groundwater into the FKC under the Proposed Action, but power usage would be within the typical range for the facilities involved. In addition, any diesel pumps would be permitted by the San Joaquin Valley Air Pollution Control District in order to meet emission standards.
Cultural Resources	The Proposed Action would not involve physical changes to the environment or construction activities that could impact cultural resources. As the Proposed Action would facilitate the flow of water through existing facilities to existing users and no construction or modification of these 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 Code of Federal Regulations Part 800.3(a)(1). See Appendix B for Reclamation's determination.
Environmental Justice	The Proposed Action would not cause dislocation, changes in employment, or increase flood, drought, or disease nor would it disproportionately impact economically disadvantaged or minority populations.
Global Climate	The Proposed Action would not require additional electrical production beyond baseline conditions and would therefore not contribute to additional greenhouse gas emissions. As such, there would be no additional impacts to global climate change. Global climate change is expected to have some effect on the snow pack of the Sierra Nevada and the runoff regime. Current data are not yet clear on the hydrologic changes and how they will affect the San Joaquin Valley. CVP water allocations are made dependent on hydrologic conditions and environmental requirements. Since Reclamation operations and allocations are flexible, any changes in hydrologic conditions due to global climate change would be addressed within Reclamation's operation flexibility.
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.
Land Use	The introduced groundwater would be used for existing agricultural purposes within the Friant Division service area, Belridge, Berrenda Mesa, Lost Hills, and Wheeler Ridge-Maricopa, supporting current land uses. No conversion of undeveloped/native land would occur.
Socioeconomics	The Proposed Action would have beneficial impacts on socioeconomic resources for the water districts as the additional groundwater would be used to help sustain existing crops and maintain farming within the districts.

3.2 Biological Resources

3.2.1 Affected Environment

A species list for the Proposed Action Area was obtained from the U.S. Fish and Wildlife Service (Service 2016) for Kern and Tulare Counties. Reclamation used that list, information from the California Natural Diversity Database (CNDDB 2016), and other information in our files to compile the list in Table 4 below. There is no critical habitat in the Proposed Action Area.

Table 4 Special-status species considered within or near the Proposed Action Area

Species	Status[a]	Effects[b]	Occurrence in the Study Area
AMPHIBIANS			
California Red-legged Frog (*Rana draytonii*)	T, X	NE	Presumed extirpated from the Proposed Action Area (USFWS 2002), and no ground disturbance (without a survey verifying that no impact would occur) or land conversion as a result of the Proposed Action.
California Tiger Salamander (*Ambystoma californiense*)	T, X	NE	Known from along the FKC, but no ground disturbance (without a survey verifying that no impact would occur) or land conversion as a result of the Proposed Action.
Mountain Yellow-legged Frog (*Rana muscosa*)	E, PX	NE	Does not occur in Proposed Action Area.
Sierra Nevada Yellow-legged Frog (*Rana sierra*)	E, PX	NE	Does not occur in Proposed Action Area.
Yosemite Toad (*Anaxyrus canorus*)	T, PX	NE	Does not occur in Proposed Action Area.
BIRDS			
California Condor (*Gymnogyps californianus*)	E, X	NE	No ground disturbance (without a survey verifying that no impact would occur) or land conversion as a result of the Proposed Action.
Coastal California Gnatcatcher (*Polioptila californica californica*)	T, X	NE	Does not occur in Proposed Action Area and coastal scrub habitat absent.
Least Bell's Vireo (*Vireo bellii pusillus*)	E, X	NE	Could fly over the Proposed Action Area during migration, but habitat is lacking.
Southwestern Willow Flycatcher (*Empidonax traillii extimus*)	E, X	NE	Could fly over the Proposed Action Area during migration, but habitat is lacking.
Western Snowy Plover (*Charadrius alexandrines nivosus*)	T, X	NE	No ground disturbance (without a survey verifying that no impact would occur) or land conversion as a result of the Proposed Action.
Yellow-billed Cuckoo (*Coccyzus americanus*)	T, PX	NE	Could fly over the Proposed Action Area during migration; no ground disturbance (without a survey verifying that no impact would occur) or land conversion as a result of the Proposed Action.
CRUSTACEANS			
Conservancy Fairy Shrimp (*Branchinecta conservatio*)	E, X	NE	Not documented in the Proposed Action Area, and no ground disturbance (without a survey verifying that no impact would occur) or land conversion as a result of the Proposed Action.
Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)	T, X	NE	Known from along the FKC, but no ground disturbance (without a survey verifying that no impact would occur) or land conversion as a result of the Proposed Action.
Vernal Pool Tadpole Shrimp (*Lepidurus packardi*)	E, X	NE	Not documented in the Proposed Action Area, and no ground disturbance (without a survey verifying that no impact would occur) or land conversion as a result of the Proposed Action.
FISH			

Species	Status[a]	Effects[b]	Occurrence in the Study Area
Delta smelt (*Hypomesus transpacificus*)	T, X	NE	No waterways within the species' range would be affected by the proposed project.
Little Kern Golden Trout (*Oncorhynchus aguabonita whitei*)	T, X	NE	Does not occur in Proposed Action Area.
Mohave Tui Chub (*Gila bicolor* ssp. *mohavensis*)	E	NE	Does not occur in Proposed Action Area.
Owens Pupfish (*Cyprinodon radiosus*)	E	NE	Does not occur in Proposed Action Area.
Owens Tui Chub (*Gila bicolor* ssp. *Snyderi*)	E, X	NE	Does not occur in Proposed Action Area.
INSECTS			
Kern Primrose Sphinx Moth (*Euproserpinus euterpe*)	T	NE	Does not occur in Proposed Action Area.
MAMMALS			
Buena Vista Lake Ornate Shrew (*Sorex ornatus relictus*)	E, X	NE	No ground disturbance (without a survey verifying that no impact would occur) or land conversion as a result of the Proposed Action.
Fisher (*Martes pennant*)	PT	NE	Does not occur in Proposed Action Area.
Fresno Kangaroo Rat (*Dipodomys nitratoides exilis*)	E, X	NE	Does not occur in Proposed Action Area.
Giant Kangaroo Rat (*Dipodomys ingens*)	E	NE	Irrigated agriculture does not provide suitable habitat for this species. No change in land use as a result of the Proposed Action.
San Joaquin Kit Fox (*Vulpes macrotis mutica*)	E	NE	There are multiple CNDDB-recorded occurrences of San Joaquin kit fox in and near the action area. No ground disturbance (without a survey verifying that no impact would occur) or land conversion as a result of the Proposed Action.
Sierra Nevada Bighorn Sheep (*Ovis canadensis sierra*)	E, X	NE	Does not occur in Proposed Action Area.
Tipton Kangaroo Rat (*Dipodomys nitratoides nitratoides*)	E	NE	No ground disturbance (without a survey verifying that no impact would occur) or land conversion as a result of the Proposed Action.
PLANTS			
Bakersfield Cactus (*Opuntia treleasei*)	E	NE	No ground disturbance (without a survey verifying that no impact would occur) or land conversion as a result of the Proposed Action.
California Jewelflower (*Caulanthus californicus*)	E	NE	Not documented in the Proposed Action Area, and no ground disturbance (without a survey verifying that no impact would occur) or land conversion as a result of the Proposed Action.
Greene's Tuctoria (*Tuctoria greenei*)	E, X	NE	Does not occur in Proposed Action Area.
Hoover's Spurge (*Chamaesyce hooveri*)	T, X	NE	Does not occur in Proposed Action Area.
Keck's Checker-mallow (*Sidalcea keckii*)	E, X	NE	Does not occur in Proposed Action Area.
Kern Mallow (*Eremalche kernensis*)	E	NE	Not documented in the Proposed Action Area, and no ground disturbance (without a survey verifying that no impact would occur) or land conversion as a result of the Proposed Action.
San Fernando Valley Spineflower (*Chorizanthe parryi* var. *Fernandina*)	C	NE	Does not occur in Proposed Action Area.

Species	Status[a]	Effects[b]	Occurrence in the Study Area
San Joaquin Adobe Sunburst (*Pseudobahia peirsonii*)	T	NE	No ground disturbance (without a survey verifying that no impact would occur) or land conversion as a result of the Proposed Action.
San Joaquin Orcutt Grass (*Orcuttia inaequalis*)	T, X	NE	Not documented in the Proposed Action Area, and no ground disturbance (without a survey verifying that no impact would occur) or land conversion as a result of the Proposed Action.
San Joaquin Wooly-threads (*Monolopia* [=*Lembertia*] *congdonii*)	E	NE	No ground disturbance (without a survey verifying that no impact would occur) or land conversion as a result of the Proposed Action.
San Mateo Thornmint (*Acanthomintha obovata* ssp. *Duttonii*)	E	NE	Does not occur in Proposed Action Area.
Springville Clarkia (*Clarkia springvillensis*)	T	NE	Does not occur in Proposed Action Area.
REPTILES			
Blunt-nosed Leopard Lizard (*Gambelia silus*)	E	NE	No ground disturbance (without a survey verifying that no impact would occur) or land conversion as a result of the Proposed Action.
Desert Tortoise (*Gopherus agassizii*)	T, X	NE	Does not occur in Proposed Action Area.
Giant garter snake (*Thamnophis gigas*)	T	NE	No ground disturbance (without a survey verifying that no impact would occur) or land conversion as a result of the Proposed Action.

[a] Status= Listing of Federally special status species
C: Candidate for federal listing
E: Listed as Endangered
PT: Proposed Threatened
PX: Proposed critical habitat designated for this species.
T: Listed as Threatened
X: Critical habitat designated for this species
NMFS: species under the jurisdiction of the National Marine Fisheries Service

[b] Effects = Effect determination
NE: No Effect from the Proposed action to federally listed species

3.2.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not permit the introduction of the pumped groundwater into federal facilities. The contractors would need to find alternative supplies of water, provide for alternative conveyance path(s), and/or temporarily take land out of production. If this were to occur, there might be some fallowed fields that could temporarily be used by the San Joaquin kit fox and the Tipton kangaroo rat. However, the fields would likely be disced frequent enough that denning and burrowing would be unlikely to occur, and the value of the fallowed fields to those species would be low.

Proposed Action

Under the Proposed Action, federally listed or proposed or candidate species and critical habitat would not be affected, nor would any migratory birds protected under the Migratory Bird Treaty Act. Many of the species and their critical habitat do not occur in the Proposed Action Area. The FKC is not used by any federally listed or proposed aquatic species. For those that do occur in the Proposed Action Area, the restriction to only allow ground disturbance within-already disturbed areas would reduce the chance of encountering a federally listed or proposed species,

of affecting a primary constituent element of critical habitat, or of impacting a migratory bird. In order to avoid effects, prior to any ground disturbance, a preconstruction biological survey will be conducted and the results provided to Reclamation for review. If the results of the survey indicated that there would be no impact to protected biological resources, the work could then proceed. Otherwise, separate environmental analysis would be needed and the ground disturbance would not occur until the analysis and associated consultations, if applicable, were completed. With the above limitations and based upon the nature of this action, Reclamation has determined there would be *No Effect* to listed species or designated critical habitat under the Endangered Species Act (16 U.S.C. §1531 et. seq.) and *No Take* of birds protected under the Migratory Bird Treaty Act (16 U.S.C. 703 et. seq.). As such, no consultation with the U.S Fish and Wildlife Service or National Marine Fisheries Service is necessary.

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.

3.3 Water Resources

3.3.1 Affected Environment

EA-14-011 and EA-14-051 included information and analyses of the water resources within the Friant Division and North-Kern that could be affected by the Proposed Action, including groundwater resources and subsidence trends within the Friant Division service area. As this would be the same for the Proposed Action covered in this EA, it is not repeated here.

Water Quality Results for the 2014 FKC Groundwater Pump-in Program

As described in Section 1.1, Reclamation previously approved a two-year groundwater pump-in program for Friant Division contractors and North-Kern. All wells that participated were tested prior to introduction and met Reclamation's water quality criteria except some Friant Division CVP contractor wells exceeded the standards for electrical conductivity (EC) and nitrates. North-Kern wells met all of Reclamation's water quality criteria. Reclamation and the Friant Water Authority continuously monitored for EC and nitrates during the two-year pump-in program. A summary of water quality test results for EC and nitrates for the 2014 FKC Groundwater Pump-in Program is included in Figures 2 and 3, respectively. The only exceedance of Reclamation's water quality criteria occurred for nitrates as NO_3 in November of 2014 at milepost 89.35. These exceedances were not recorded downstream as water was being held by a check structure. Upon notification, the Friant Water Authority shut off wells per Reclamation's water quality requirements. Nitrate as NO_3 levels never exceeded California drinking water standards (45 mg/L) as shown in Figure 3. Nitrate exceedance was likely caused by lack of fresh water moving through the system from Millerton Lake and the Wutchumna ditch diversion. Although an exceedance did occur, municipal and industrial users along the FKC were not impacted by the addition of non-Project water.

Figure 2 Summary of Electrical Conductivity in FKC during 2014 Pump-in Events

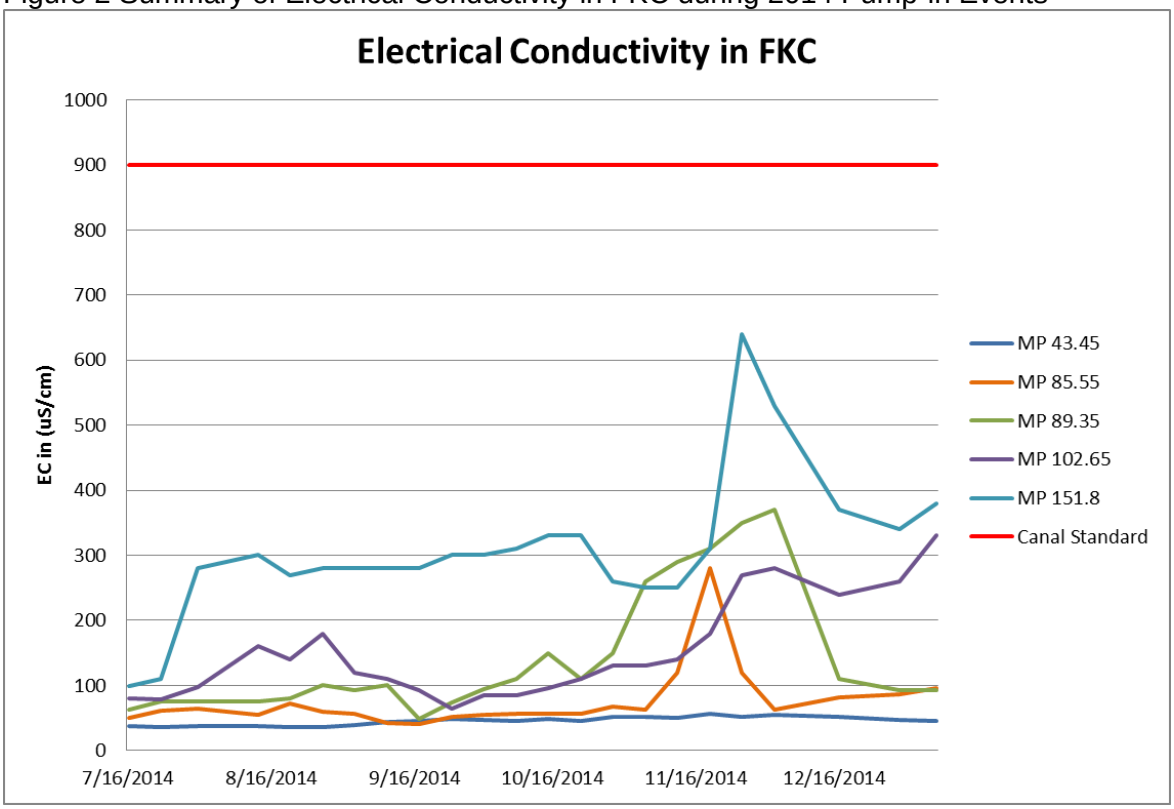
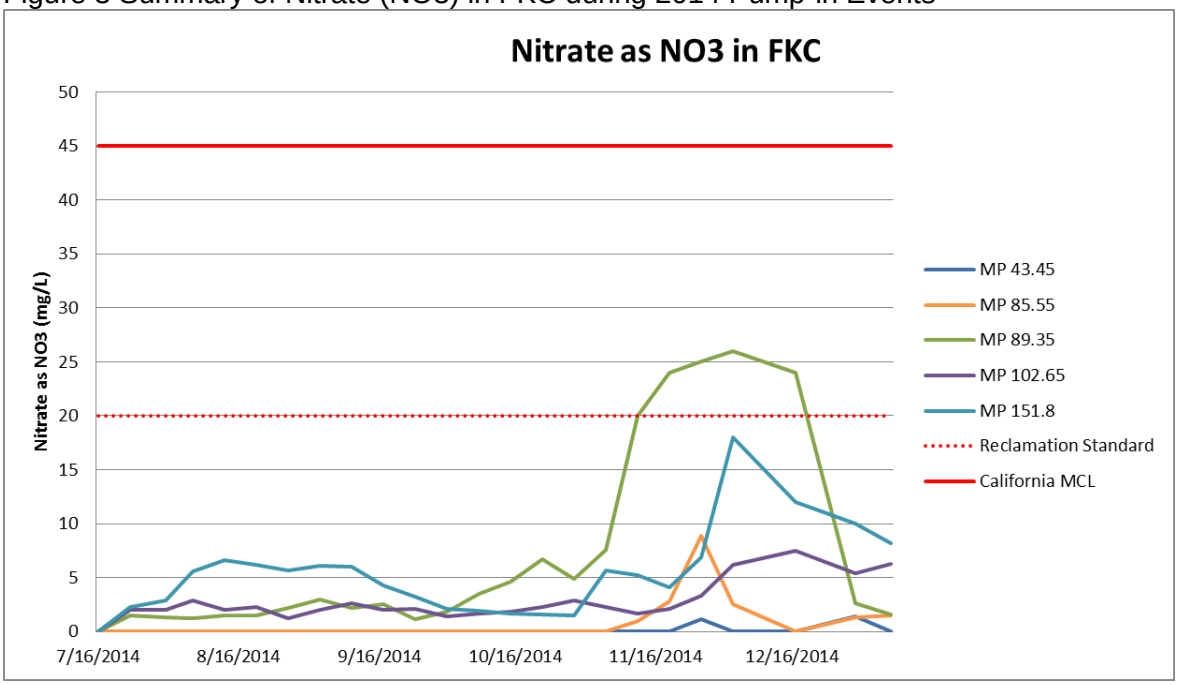


Figure 3 Summary of Nitrate (NO3) in FKC during 2014 Pump-in Events



3.3.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not approve the introduction of pumped groundwater into federal facilities. The contractors would need to find alternative supplies of water, provide for alternative conveyance path(s), and/or temporarily take land out of production if existing water supplies are insufficient to meet demands.

Proposed Action

The Proposed Action would allow groundwater to be introduced and conveyed in the FKC when excess capacity is available. This would allow the water to be delivered to the participants' service areas for existing agricultural use. There would be no modification of the FKC, and the capacity of the facility would remain the same.

Water from each well must meet water quality standards prior to approval for conveyance. If testing from any individual well indicates that its water does not meet Reclamation's then-current standards, it would not be allowed to discharge into the FKC until water quality concerns are addressed. This testing program adequately protected the quality of water in the canal during the previous pump-in program and is expected to for the Proposed Action. Although there was a spike in nitrates in November 2014 (Figure 3), Reclamation was able to prevent the movement of impacted water from affecting other users' water supplies located downstream of the introduction points.

The total quantity of groundwater that would be pumped into the FKC under the Proposed Action by all participants would be limited to 50,000 AF per year over a five year period. The groundwater to be pumped under the Proposed Action would come from wells at varying depths, at a wide range of locations along the FKC. The wells involved during the previous pump-in program drew a total of 11,799 AF (Table 5) over the two year period, which is minor in the context of local and regional supplies and if continued at this rate, would be well under the permitted 50,000 AF per year. However, cumulative regional groundwater overdraft is an ongoing concern. Supplies in the area are managed through conjunctive use, and aquifers are recharged with surface water in wet years to offset drawdown of groundwater supplies during dryer periods.

Table 5 Groundwater Pumped by District during 2014 and 2015

Contractor	2014 (acre-feet)	2015 (acre-feet)	Total (acre-feet)
Delano-Earlimart ID	2,059	2,588	**4,647**
Lindsay-Strathmore ID	1,078	1,317	**2,395**
North-Kern WSD	0	0	**0**
Orange Cove ID	308	576	**884**
Saucelito ID	675	850	**1,525**
So. San Joaquin MUD	0	1,315	**1,315**
Tea Pot Dome WD	0	0	**0**
Terra Bella ID	409	624	**1,033**
Total	**4,529**	**7,270**	**11,799**

None of the wells are expected to individually pump enough water to create subsidence problems, but regional trends are towards gradually lowering ground surface levels as a result of subsidence. Since the Proposed Action is temporary and involves relatively small volumes of water drawn from many locations over a wide geographic area, it is not expected to result in subsidence beyond historical fluctuations. In addition, water users within Kern County are required to comply with applicable groundwater ordinances in order to limit impacts to local groundwater supplies. Tulare County has not elected to implement groundwater ordinances at this time.

Cumulative Impacts

The FKC 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 impacts to water supplies. Reclamation's water quality requirements have adequately protected the quality of water in the FKC from the cumulative effects of this and other water conveyance actions. Water quality requirements would continue to ensure that the proposed groundwater pump-in program would continue to have no cumulative effect.

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

Groundwater overdraft is an ongoing challenge in the San Joaquin Valley. Pumping increases in dry years, and drops off in years when surface water supplies are plentiful. A variety of agencies throughout the region and state are working on balancing competing water needs in order to provide the greatest benefit possible with the limited resources available. The needs of the State will likely be met over time through a combination of demand management, increases in storage capacity and new supply development. Ground subsidence is related, and efforts to reduce subsidence will depend on success in meeting California's surface water needs while keeping groundwater pumping within a sustainable range.

Section 4 Consultation and Coordination

4.1 Public Review Period

Reclamation provided the public with an opportunity to comment on the Draft FONSI and Draft EA during a 15-day public review period. Reclamation received one comment letter, which is included in Appendix C along with Reclamation's responses.

THIS PAGE LEFT INTENTIONALLY BLANK

Section 5 Preparers and Reviewers

Molly Burns, Natural Resources Specialist, SCCAO
Jennifer L. Lewis, Wildlife Biologist, SCCAO
John Fogerty, Archaeologist, MP-153
George Bushard, Project Manager, SCCAO – reviewer
Rain L. Emerson, M.S., Supervisory Natural Res. Specialist, SCCAO – reviewer
David E. Hyatt, Resources Management Division Chief, SCCAO – reviewer

THIS PAGE LEFT INTENTIONALLY BLANK

Section 6 References

Bureau of Reclamation (Reclamation). 2014a. *Friant-Kern Canal Groundwater Pump-in Program Warren Act Agreements* (Final FONSI/EA-14-011). South-Central California Area Office. Fresno, CA. Website: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=17022.

Bureau of Reclamation (Reclamation). 2014b. *Addition of North-Kern Water Storage District to the Friant-Kern Canal Groundwater Pump-in Program* (Final FONSI/EA-14-051). South-Central California Area Office. Fresno, CA. Website: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=19441.

California Natural Diversity Database (CNDDB). 2016. California Department of Fish and Wildlife. Biogeographic Data Branch, Monthly CNDDB Data Download. Sacramento, California. Retrieved from http://www.dfg.ca.gov/biogeodata/cnddb/rf_ftpinfo.asp. update. Last updated December 2015.

U.S. Fish and Wildlife Service (USFWS). 2002. Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*). U.S. Fish and Wildlife Service, Portland, Oregon.

U.S. Fish and Wildlife Service (Service). 2016. Federal Species List (document No. 140718020935). IPaC - Information for Planning and Conservation Website: http://ecos.fws.gov/ipac/. Generated January 11, 2016 01:32 PM MST, IPaC v2.3.2.

Appendix A

Reclamation's Water Quality Criteria

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 policy[2].

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 theses 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 - 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 NO3)	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)

CONSTITUENT OR PARAMETER	Units	Recommended Method	California Department of Health Services Notification Level		Response Level	CAS 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 644442. 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	**Address**	2218 Railroad Avenue Redding, CA 96001 USA
	Contact	Nathan Hawley, Melissa Hawley, Ricky Jensen
	P/F	(530) 243-7234 / (530) 243-7494
	Email	nhawley@basiclab.com (QAO), mhawley@basiclab.com (PM), jcady@basiclab.com (quotes),
		poilar@basiclab.com (sample custody), khawley@basiclab.com (sample custody)
	CC Info	nhawley@basiclab.com, jcady@basiclab.com (sample custody)
	Methods	*Approved only for inorganic parameters (metals, general chemistry)*
BioVir Analytical Laboratories	**Address**	685 Stone Road Unit 6 Benicia, CA 94510 USA
	Contact	Rick Danielson, Lab Director
	P/F	(707) 747-5906 / (707) 747-1751
	Email	red@biovir.com, csj@biovir.com, lb@biovir.com, QAO Jim Truscott jrt@biovir.com
	Methods	*Approved for all biological and pathogenic parameters*
Block Environmental Services	**Address**	2451 Estand Way Pleasant Hill, CA 94523 USA
	Contact	David Block
	P/F	(925) 682-7200 / (925) 686-0399
	Email	dblock@blockenviron.com
	Methods	*Approved for Toxicity Testing.*
California Laboratory Services	**Address**	3249 Fitzgerald Road Rancho Cordova, CA 95742
	Contact	Raymond Oslowski
	P/F	(916) 638-7301 / (916) 638-4510
	Email	rayo@californialab.com
	Methods	*Approved for Chromium VI*
Caltest Analytical Laboratory	**Address**	1885 North Kelly Road Napa, CA 94558
	Contact	Bill Svoboda, Project Manager x29
	P/F	(707) 258-4000 / (707) 226-1001
	Email	bsvoboda@caltestlab.com
	Methods	*Approved for all inorganic parameters and bioligical parameters*
Columbia Environmental Resource Center	**Address**	4200 New Haven Road Columbia, MO 65201 USA
	Contact	Tom May, Research Chemist
	P/F	(573) 876-1858 / (573) 876-1896
	Email	tmay@usgs.gov
	Methods	*Approved for mercury in biological tissue*
Data Chem Laboratories	**Address**	960 West LeVoy Drive Salt Lake City, UT 84123-2547 USA
	Contact	Bob DiRienzo, Kevin Griffiths-Project Manager, Rand Potter - Project Manager, asbestos
	P/F	(801) 266-7700 / (801) 268-9992
	Email	griffiths@datachem.com, Potter@datachem.com Invoicing: (Justin) pate@datachem.com
	Methods	*Approved for asbestos, metals, organochlorine pesticides and PCBs in solids*
Dept. of Fish & Game - WPCL	**Address**	2005 Nimbus Road Rancho Cordova, CA 95670 USA
	Contact	David B. Crane
	P/F	(916) 358-2858 / (916) 985-4301
	Email	dcrane@ospr.dfg.ca.gov
	Methods	*Approved only for metals analysis in tissue.*
Frontier Geosciences	**Address**	414 Pontius North Seattle, WA 98109 USA
	Contact	Shelly Fank - QA Officer, Matt Gomes-Project Manager
	P/F	(206) 622-6960 / (206) 622-6870
	Email	shellyf@frontiergeosciences.com, mattg@frontiergeosciences.com
	Methods	*in low level metals analysis.*

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

Revised: 04/16/2007 MP-157

Appendix B

Cultural Resources Determination

CULTURAL RESOURCES COMPLIANCE
Division of Environmental Affairs
Cultural Resources Branch (MP-153)

MP-153 Tracking Number: 16-SCAO-041

Project Name: 2016 Friant Kern Canal Groundwater Pump-in Environmental Assessment

NEPA Document: EA-15-046

NEPA Contact: Molly Burns, Natural Resource Specialist

MP 153 Cultural Resources Reviewer: John Fogerty, Archaeologist

Date: January 6, 2016

Reclamation proposes to enter into Warren Act agreement(s) with the Delano-Earlimart Irrigation District (ID), the Lindsay-Strathmore ID, the Orange Cove ID, the Saucelito ID, the Terra Bella ID, the Southern San Joaquin Municipal Utility District, and the Tea Pot Dome Water District for the duration of one year (with additional one-year agreements possible over a 5-year period, dependent on groundwater meeting water quality requirements). In addition, Reclamation proposes to enter into a 5-year Warren Act Contract with North-Kern Water Storage District for introduction of their groundwater into the FKC. Cumulatively, the agreement(s) and Warren Act Contract would permit the districts to introduce up to 50,000 acre-feet (AF) of their non-Central Valley Project (CVP) groundwater into the Friant Kern Canal. 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).

Non-CVP groundwater will be pumped from privately owned wells within each relevant district, and introduced either directly or via the respective district's existing distribution systems for conveyance via extant turnouts on the FKC for agricultural use. Exchanges would also be permitted in situations where a contractor's discharge point to the canal is downstream of the location where the water is needed. All delivery schedules for North-Kern's non-CVP water would be coordinated with the Kern County Water Agency and the California Department of Water Resources (DWR) and approved by Reclamation prior to introduction into the FKC. As an administrative action, no ground disturbance or modification of facilities are necessary to complete the proposed action.

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 C

Comments and Responses to Comments

ARVIN-EDISON WATER STORAGE DISTRICT

February 10, 2016
Via Electronic Mail (mburns@usbr.gov) & Fax (559) 487-5397

Molly Burns
United States Department of the Interior
BUREAU OF RECLAMATION
1243 N. Street
Fresno CA, 93721

Re: ***5-Year Friant-Kern Canal Groundwater Pump-In Program Draft FONSI and EA Comments*** **(15-046)**

Dear Ms. Burns:

Following are Arvin-Edison Water Storage District's (AEWSD) comments on the subject EA/FONSI-15-046.

AEWSD's comments fall into the following four categories and are focused on the proposed changes to water quality requirements involving the introduction of groundwater/Non-Project water supplies (Project) into the Friant-Kern Canal (FKC).

Water Quality Guidelines

AEWSD has extensively commented on the Water Quality (WQ) Guidelines in the past, and which comments are hereby incorporated. As you are aware, the Bureau of Reclamation (Reclamation) has stated in previous responses to AEWSD that the WQ Guidelines will be "…updated…along a separate track." AEWSD looks forward to working with Reclamation on revisions to the archaic and deficient Water Quality.

AEWSD-1

AEWSD's primary concerns with the March 2008 WQ Guidelines remain as follows:

- Guidelines address only "non-project water" but should include all sources of introduced water supplies that are NOT chemically the same as project water; and
- Title 22 standards generally are not protective of the water quality for irrigation uses; and
- Guidelines do not adequately protect downstream users from significant water quality impacts as there are no in-canal standards for turbidity and salinity; and
- Type B water has to "generally" comply with Title 22, but may exceed Title 22 for certain constituents of concern as determined by Reclamation and Friant Water Authority on a case-by-case basis; and
- Type C water is not required to meet any water quality requirements as it is erroneously stated to be "physically the same as Project water." However, this is a misstatement because State Water Project water does not originate from Millerton Lake and is not chemically the same as FKC water.

Limits of Degradation by Nitrates and Salinity

AEWSD-2

AEWSD understands the proposed action is to increase the allowable level of degradation of both nitrates and salinity. The table below illustrates the various constituents of interest to AEWSD.

20401 Bear Mountain Boulevard · P.O. Box 175 · Arvin, CA 93203
Telephone (661) 854-5573 · Fax (661) 854-5213 · E-mail: arvined@aewsd.org

AEWSD-2

	Well Discharge Nitrate (mg/L)	Well Discharge Salinity (uS/cm)
Background	0.3	67
Irrigation Standard	22	700
2016 Pump-in proposed	45	900

It is noted the background and historical FKC water quality levels for nitrate is 0.3 mg/L and salinity is 67 uS/cm. The proposed levels represent a 14,900% increase in nitrate and a 1,250% increase in salinity.

Therefore this proposed action represents significant degradation.

By allowing the degradation by nitrates and salinity, Reclamation is purposely allowing a few districts to benefit by the high quality of their FKC supply, while denying the same benefit to AEWSD.

Irrigated Lands Regulatory Program and CVSALTS Program

AEWSD-3

In addition to the water quality provisions in AEWSD's water contract, water quality regulations currently being pursued by the Central Valley Regional Water Quality Control Board (CVRWQCB) include an Irrigated Lands Regulatory Program (ILRP) and a CVSALTS Program. Under the ILRP regulations, much of AEWSD has preliminarily been classified as a "high vulnerability" area by the CVRWQCB with regards to high nitrate levels in groundwater. In addition, the CVSALTS Program is envisioned to limit the salt (TDS and/or EC) loading on agricultural irrigated land.

The Project, as proposed by the United States, will severely degrade both the nitrate and salt levels that these two CVRWQCB programs will regulate. It is unconscionable that the United States be given free reign to introduce high concentration of nitrates and salt into a pristine water supply and then have the CVRWCQB enforce regulations on AEWSD to control and reduce said constituents. In that regard, please note that the CVRWCQB has been copied and AEWSD will be investigating remedies in that forum.

Reference to AEWSD's Contract

While the United States does not warrant the quality of water delivered to a contractor, the United States is obligated to operate and maintain project facilities in the most practical manner to maintain the quality of the water at the highest level possible.

AEWSD-4

Furthermore, the water supplied to AEWSD pursuant to its repayment contract is Central Valley Project Water stored or flowing through Millerton Lake. Indeed, the definition of Class 1 water is defined as *"that supply of water stored in or flowing through Millerton Lake…"*

Water that is stored in or flowing through Millerton Lake is pristine Sierra Nevada snowmelt and, as such, relied upon by AEWSD to maintain its water quality. The Project as proposed will displace and degrade AEWSD's contractual supply. AEWSD wishes to use the pristine FKC to dilute its internal groundwater supplies, however, this Reclamation approved program (along with other similar programs) force AEWSD to start with much higher salts and nitrates and therefore AEWSD is negatively impacted accordingly.

Thank you, and again we appreciate the opportunity to provide input into your Project. If you have questions or comments, please don't hesitate to call or email.

Sincerely,

David A. Nixon
Deputy General Manager

cc: Board of Directors
Steve Collup, Engineer-Manager
Jeevan Muhar, Staff Engineer
Michael Jackson, Chris Eacock and Scott Taylor, USBR
Pamela Creedon and Clay Rodgers, CVRWQCB

DAN:JSM:sj\AEWSD\USBR\Enviro.Docs\5yr.FKC.Pump-in FONSI.15-046.docx

Response to Arvin-Edison Water Storage District (AEWSD) Comment Letter, dated February 10, 2016 and submitted to Reclamation on February 11, 2016

AEWSD-1 AEWSD's concern regarding quality of the water being introduced in the FKC is noted. Reclamation will continue to work with the Friant Water Authority, Friant Division Contractors, including AEWSD, to refine water quality monitoring standards and requirements to protect irrigation suitability and minimize potential degradation.

AEWSD-2 Comment noted. For 2016, in addition to the requirements included in the 2008 water quality program, Reclamation will add in-stream limits for Nitrate (as NO_3) not to exceed 20 mg/L, and Electrical Conductivity (EC) not to exceed 700 µS/cm, measured at the terminus of the Friant-Kern Canal. An instream monitoring program will be enforced during pump-in events.

Although Reclamation does not have any equipment available to regularly measure nitrates and salinity in the canal, it will pursue installing a continuous salinity meter in the Friant-Kern Canal; similar units are operated in the Delta-Mendota Canal. Currently, Reclamation has provided the Friant Authority with a handheld nitrate meter that will be used during pump-in events.

Based on available funding, Reclamation proposes to collect more frequent samples at the terminus of the canal to measure the concentrations of a short list of important constituents, including nitrates and agricultural chemicals.

AEWSD-3 Reclamation is a member of the CV-SALTS Executive Committee and executed the 2008 Management Agency Agreement to mitigate and manage adverse impacts of salt and boron imported into the San Joaquin Basin via the Delta Mendota Canal to help achieve compliance with the objectives contained in the Water Quality Control Plan for the Sacramento River and the San Joaquin River Basins. The proposed instream monitoring program and limits described above should prevent problems for the District.

AEWSD-4 As described above, Reclamation will monitor the quality of water the District receives from the Friant-Kern Canal and will actively assess the cumulative effects of the pump-in program on water delivered to AEWSD. We will continue to work with the Friant Water Authority and the Warren Act contractors to maintain water quality in the canal. Specifically, the proposed 2016 Friant-Kern Canal Water Quality Monitoring Program will now include implementation of the 2008 standards (e.g., Title 22 analysis of every source of Type A and Type B non-Project water), as well as the following monitoring programs and measures:

1. CVP Baseline Monitoring Program. This is an ongoing program conducted by Reclamation to measure Title 22 constituents at Friant Dam and near the Friant-Kern Canal terminus.

2. Weekly measurements of nitrates at the terminus of the Friant-Kern Canal during pump-ins events.
3. Based on available funding, monthly sampling and analysis of water at the terminus of the canal for a short list of constituents of concern, including nitrates and agricultural chemicals.
4. Installation and operation of a meter at the terminus of the Friant-Kern Canal to provide real-time measurements of salinity.
5. Establish in-stream standards at the Friant-Kern Canal terminus, such as 20 mg/L maximum allowable Nitrates (as NO_3) and 700 µS/cm EC.

This program will be implemented by Reclamation's South-Central California Area Office staff with assistance from the Friant Water Authority and Friant Dam staff. The proposed program should not interfere with canal operations.