

# RECLAMATION

*Managing Water in the West*

**Draft Environmental Assessment**

## **Cawelo Water District and North Kern Water Storage District Calloway Canal Lining Project – Reaches C1, C2, and D**

**EA-15-01-MP**



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



**February 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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# List of Acronyms and Abbreviations

APE	Area of potential effect
CAA	Clean Air Act
CALFED	CALFED Bay-Delta Program
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CFR	Code of Federal regulations
CNDDDB	California Natural Diversity Data Base
CVP	Central Valley Project
CWD	Cawelo Water District
Delta	Sacramento-San Joaquin River Delta
DOI	Department of the Interior
EA	Environmental Assessment
FONSI	Finding of No Significant Impact
GHG	Greenhouse Gas
IS/ND	Initial Study/Negative Declaration
IRWM	Integrated Regional Waste Management
ITA	Indian Trust Assets
MBHCP	Metropolitan Bakersfield Habitat Conservation Plan
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NKWSD	North Kern Water Storage District
O & M	Operation and maintenance
PM <sub>10</sub>	Particulate matter less than 10 micrometers in diameter
PM <sub>2.5</sub>	Particulate matter less than 2.5 micrometers in diameter
Reclamation	U.S. Bureau of Reclamation
ROW	Right-of-way
SJVAB	San Joaquin Valley Air Board
SJVAPCD	San Joaquin Valley Air Pollution Control District
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SOIP	System Operations Improvement Project
SWP	State Water Project
TLHR	Tulare Lake Hydrologic Region
USFWS	U.S. Fish and Wildlife Service
USGS	U. S. Geological Survey

# Section 1 Introduction

## 1.1 Background

In conformance with the National Environmental Policy Act of 1969 (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1508), and Department of the Interior (DOI) Regulations (43 CFR Part 46), the Bureau of Reclamation (Reclamation) has prepared this Environmental Assessment (EA) to evaluate and disclose any potential environmental impacts associated with implementation of the Cawelo Water District (CWD)'s and North Kern Water Storage District (NKWSD)'s Calloway Canal Lining Project, Reach C1, C2, and D (Proposed Action) in Bakersfield, California. (See Figure 1). The Proposed Action would decrease seepage to a groundwater basin containing constituents of concern by lining 5,290 linear feet of the Calloway Canal with concrete. Reclamation proposes to provide DOI CALFED Bay-Delta Program grants to CWD for lining Reaches C1 and C2 and an Agriculture Water Conservation and Efficiency grant to NKWSD for lining Reach D. The Proposed Action would further the goals and objectives of the CALFED program as they apply to water supply reliability and water quality.

The Calloway Canal is a 30-mile long canal that is both lined and unlined. The first seven miles of canal were constructed between 1975 by O.P. Calloway and 1977 by the Kern County Land and Water Company, who subsequently expanded it to its current 30 mile length. Shortly after its creation, the CWD began cooperating with neighboring NKWSD in the use of conveyance facilities. In 2006, CWD and NKWSD formulated a plan to enhance the flexibility and efficiency of coordinated operations. The overall project, known as the Systems Operation Improvement Project (SOIP), consists of canal interties, pump stations, flow control structures, and canal lining. In conformance with the California Environmental Quality Act guidelines, NKWSD prepared and completed an Initial Study/Negative Declaration (IS/ND) for the SOIP, including plans to line the length of the Calloway Canal. (NKWSD 2006).

Previously, CWD, in partnership with NKWSD, applied for and was selected as a recipient of a CALFED Water Use Efficiency Grant to help fund lining 3,523 feet of the Calloway Canal (Reach A) between the Cross Valley Canal Intertie and Coffee Road, and a grant to help fund lining of 4,124 feet of the canal (Reach B). Reclamation prepared an EA and signed a Finding of No Significant Impact (FONSI) in April 2013 on the lining of Reach A of the canal (Reclamation 2013) and prepared an EA and signed a FONSI on the lining of Reach B in July 2014 (Reclamation 2014).

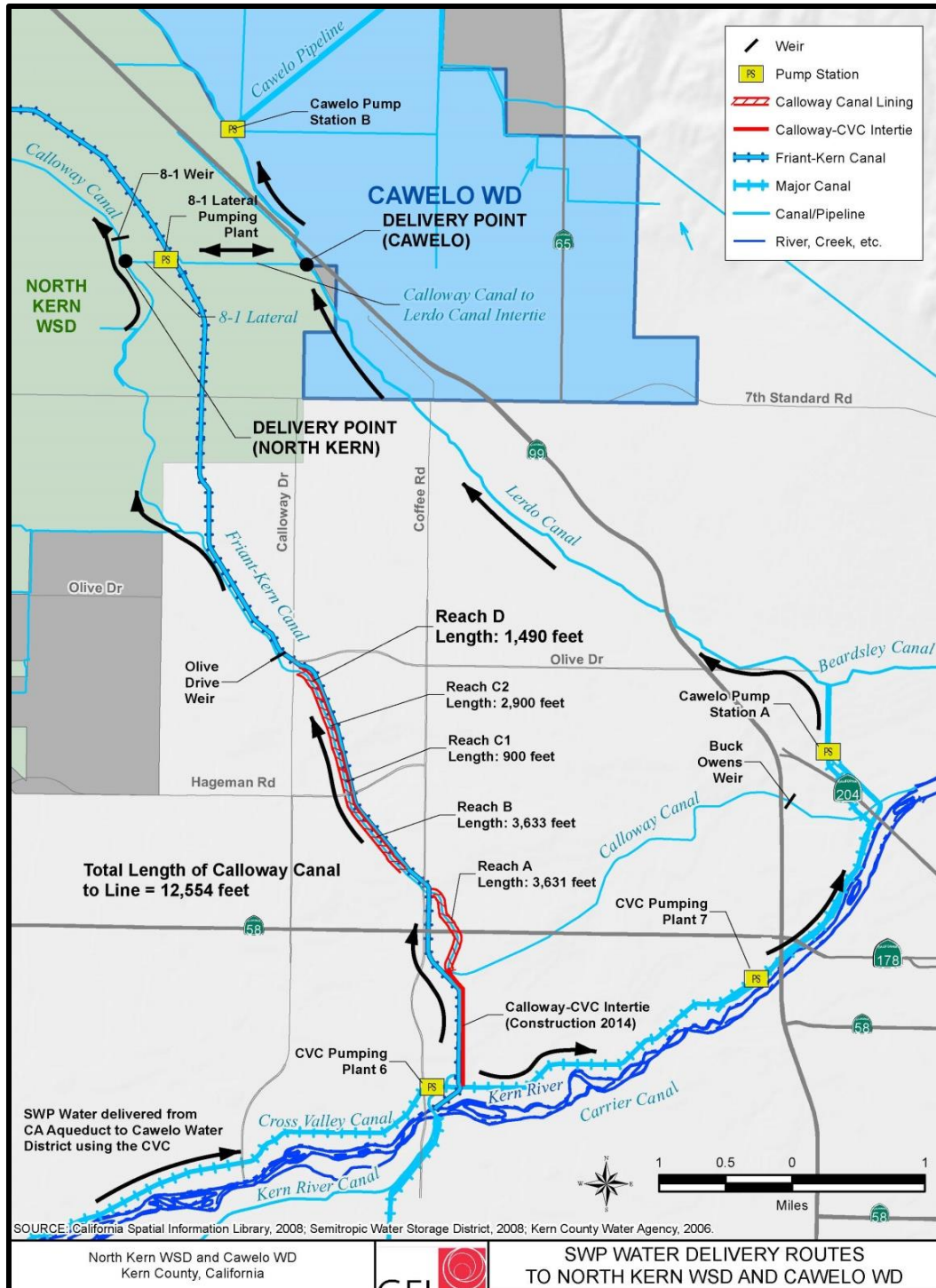


Figure 1. Vicinity of Cawelo Water District and North Kern Water Storage District Calloway Canal Lining Project – Reaches C1, C2, and D

This EA describes the existing environmental resources in the Proposed Action area, evaluates the effects of the No Action and Proposed Action alternatives on the resources, and proposes measures to avoid, minimize, or mitigate any adverse effects.

## **1.2 Need for the Proposal**

Currently, Reach C1, C2, and D lose approximately a total of 1,842 acre-feet per year or over 92,600 acre-feet over the life of the project through seepage to a groundwater basin in the Tulare Lake Hydrologic Region containing phenol, a constituent of concern (DWR 2009). Water is not recovered from the groundwater basin due to the cost of treatment to remove the contaminant. The implementation of the Proposed Action would increase operational efficiency in the CWD and decrease recharge to the underlying groundwater basin in an area that is undesirable for groundwater recharge.



## Section 2 Alternatives Including 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 that would result from implementation of the Proposed Action.

### 2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not award CALFED Water Use Efficiency Grants to the CWD and an Agricultural Water Conservation and Efficiency grant to the NKWSD that would partially fund the lining of Reaches C1, C2, and D of the Calloway Canal. The unlined canal reaches would continue to lose water to seepage.

### 2.2 Proposed Action Alternative

Under the Proposed Action Alternative, Reclamation would award CWD with a \$300,000 CALFED Water Use Efficiency Grant to assist in funding the lining of Reach C1 and a similar CALFED grant for \$1,000,000 to assist in funding of Reach C2. Reclamation would also award NKSWD with an Agricultural Water Conservation and Efficiency grant for \$609,500 to assist in funding the lining of Reach D.

The proposed project involves concrete lining of a total of 5,290 linear feet of the currently unlined Calloway Canal. Table 1 shows the various quantities and benefits for each reach. Details of the reach C1, C2 and D are shown in Figure 2.

Table 1. Proposed Project Data and Benefits

Reach	Canal Length to be Lined (Feet)	Seepage loss ( ac-ft/day-mile)	Water to be saved (ac-ft/year)	Water to be saved over 50-year lifetime of project	Proposed Bureau of Reclamation Grant	Water District Funding
Reach C1	900	11	315	15,750	\$300,000	\$436,093
Reach C2	2900	11	1017	50,850	\$1,000,000	\$1,006,179
Reach D	1490	11	520	26,000	\$609,500	\$609,500
<b>TOTAL</b>	<b>5290</b>	<b>11</b>	<b>1842</b>	<b>92,600</b>	<b>\$1,909,500</b>	<b>\$2,051,772</b>

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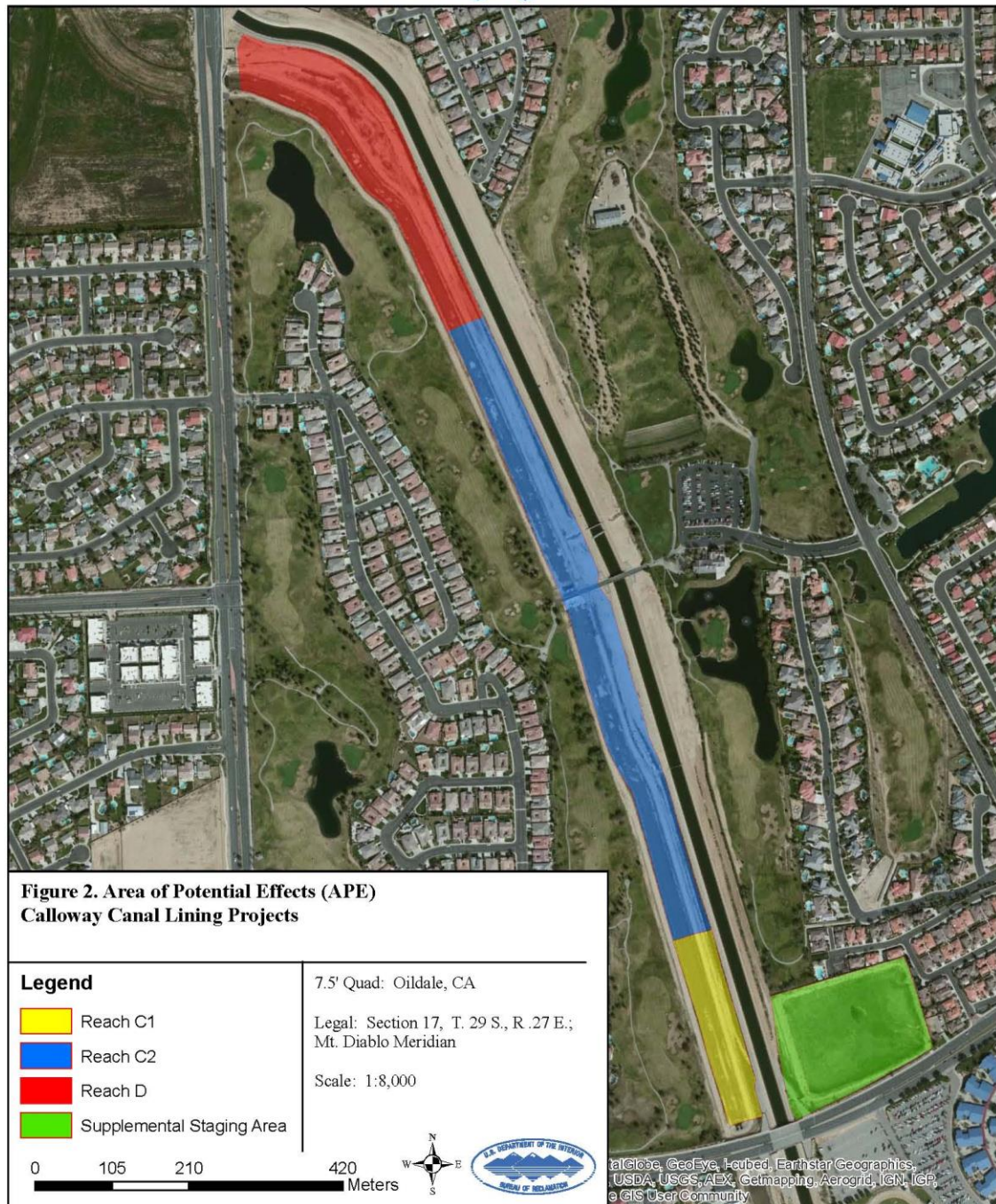


Figure 2. Area of Potential Effects for Calloway Canal Lining for Reaches C1, C2, and D.

The Proposed Action would be implemented when the canal is not being utilized for surface water conveyance to the CWD and NKWSD, therefore canal dewatering measures would not be necessary. The proposed land disturbance activities would include trimming the sides and bottom of the Calloway Canal to the desired design depths prior to lining the canal. All associated construction activities would occur on existing facilities and previously disturbed right-of-way's (ROW) that are owned and operated by the NKWSD. The material that would be removed from the areas where the canal is too narrow and/or shallow would be utilized in the areas where the canal section is too wide and/or deep. Access to the project site would be obtained through the existing Calloway Canal Operations and Maintenance (O&M) roads. Additional fill material is not anticipated for the completion of the Proposed Action.

Construction activities would include the following:

- The existing canal would be trimmed to provide a canal prism with a 50-foot wide bottom width, 8.5-foot nominal depth and approximately 29-foot sides 3:1 side slopes.
- Trimming foundation work and the placement of backfill would be completed with an excavator, loader, and compaction equipment.
- Concrete lining work would be completed with a self-propelled lining machine. About 6,983 cubic yards of concrete would be used assuming a liner thickness of 4-inches.
- Construction would disturb about 7.04 acres within the canal.
- The Proposed Action would be implemented when the canal is not being utilized for surface water conveyance to the CWD and the NKWSD, therefore, canal dewatering measures would not be necessary.

Proposed construction activities are expected to start on about June 1, 2015 and be completed on about December 1, 2015.

### **2.2.1 Environmental Protection Measures**

CWD and NKWSD would implement the following environmental protection measures to reduce potential environmental consequences associated with the Proposed Action (Table 2). Environmental consequences for resource areas assume the measures specified would be fully implemented.

Table 2. Environmental Protection Measures	
Resource	Measure
Biological Resources	<p>CWD and NKWSD would follow Standardized Recommendations for Protection of the San Joaquin kit fox prior to and during ground disturbance (USFWS 2011). This includes conducting U.S. Fish and Wildlife Service (USFWS) approved pre-construction protocol level surveys for San Joaquin kit fox no fewer than 14 days and no more than 30 days prior to the onset of any ground-disturbing activity (USFWS 2011) as listed in Section 3.3.1 of this EA.</p> <p>CWD and NKWSD are participating in the Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) and will pay into the MBHCP and to use the related Incidental Take Permit to avoid any potential impacts to the San Joaquin kit fox.</p>
Biological Resources	<p>A protocol level pre-construction burrowing owl survey shall be conducted within 250 feet of areas subject to disturbance no fewer than 14 days and no more than 30 days prior to start of construction according to established guidelines (CDFG 2012). Appropriate avoidance, minimization, or protection measures shall be determined in consultation with the California Department of Fish and Wildlife in the event an active burrow or nest is located in an area subject to disturbance, or within the typical setback.</p>
Air Quality	<p>Implement control measures for construction emissions of particulate matter less than 10 microns in diameter (PM<sub>10</sub>) according to the San Joaquin Valley Air Pollution Control District's (SJVAPCD) Regulation VIII (SJVAPCD 2012b). One measure includes the use of water with all "land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities" for fugitive dust suppression.</p>

## **Section 3    Affected Environment & Environmental Consequences**

This section identifies the potentially affected environmental resources and the environmental consequences that could result from the Proposed Action and the No Action Alternatives.

### **3.1    Resources Not Analyzed in Detail**

Department of the Interior Regulations, Executive Orders, and Reclamation guidelines require a discussion of the following items when preparing environmental documentation:

#### **3.1.1    Cultural Resources**

Reclamation conducted historic property identification efforts and identified that the Calloway Canal was previously determined to be ineligible for inclusion in the National Register of Historic Places under consensus with the State Historic Preservation Officer (SHPO). With no historic properties within the area of potential effect, Reclamation determined that a finding of no historic properties affected, pursuant to 36 CFR §800.4(d)(1), was appropriate for this undertaking. (See Section 4.2 and Appendix A).

#### **3.1.2    Indian Trust Assets**

Indian Trust Assets (ITAs) are legal interests in assets that are held in trust by the United States for federally recognized Indian tribes or individuals. There are no Indian reservations, rancherias or allotments in the project area. The nearest ITA is a public domain allotment approximately 39 miles east of the project site. The Proposed Action does not have a potential to affect ITAs. (See Appendix B).

#### **3.1.3    Indian Sacred Sites**

Sacred sites are defined in Executive Order 13007 (May 24, 1996) as "any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site." The Proposed Action would not affect and/or prohibit access to and ceremonial use of Indian sacred sites.

#### **3.1.4    Environmental Justice**

Executive Order 12898 requires each Federal agency to identify and address disproportionately high and adverse human health or environmental effects, including social and economic effects of its program, policies, and activities on minority populations and low-income populations. Reclamation has not identified adverse human health or environmental effects on any population as a result of

implementing the Proposed Action. Therefore, implementing the Proposed Action would not have a significant or disproportionately negative impact on low-income or minority individuals within the Proposed Action area.

## **3.2 Water Resources**

### **3.2.1 Affected Environment**

#### ***Surface Water Resources***

A large portion of CWD's surface water supplies is SWP water, through a contract with Kern County Water Agency, with supplementary supplies from the Kern River, Poso Creek and recycled water. In order to meet CWD's average requirements of over 100,000 acre-feet, amounts in excess of available surface water supplies are met through groundwater sources. The Calloway Canal's nominal design is 1,000 cubic feet per second and may convey water up to nine months of the year.

While North Kern's principal source of surface water is the Kern River, the program for lining the Calloway Canal was developed collaboratively with neighboring CVP and SWP contractors since it enables exchanges of CVP and SWP water supplies. The Calloway Canal Lining was identified as part of the Poso Creek Integrated Regional Water Management (IRWM) Plan and the Water 2025 System Optimization Review for the Poso Creek IRWM Plan Area.

#### ***Groundwater Resources***

The underlying groundwater is part of the Kern County subbasin of the Tulare Lake Hydrologic Region (TLHR), one of seven subbasins designated by the California Department of Water Resources (DWR 2006). The region is essentially a closed basin, with principal drainages from the Kings, Kaweah, Tule, and Kern Rivers. These streams are the principal source of natural recharge to the underlying groundwater basin with applied irrigation also being a large contributor. Figure 3 shows that the underlying aquifer in the area of the Proposed Action is contaminated by phenol due to refinery operations. (Kern County Water Agency 1979). While this map was prepared in 1979, recent inquiry to the Regional Water Quality Control Board database indicates that several sites in this vicinity are still under active cleanup orders. CWD and NKWSD do not operate any groundwater recovery wells in the location of the Proposed Action although CWD and NKWSD have groundwater wells in other areas where there is no contamination.

### 3.2.2 Environmental Consequences

#### **No Action Alternative**

Under the No Action Alternative, the existing operations of both surface water and ground water would be utilized under their current conditions and seepage into the groundwater basin would continue.

#### **Proposed Action**

**Surface Water Resources** Through the Proposed Action, surface water would be conserved that would otherwise be recharged from the unlined canal; potentially about 1,842 acre-feet per year of surface supply would be conserved, based on historic use and use by new facilities under construction. (See Appendix C for how this was calculated). The conserved water would be delivered directly to the growers within CWD and NKWSD for crop irrigation or spread for groundwater recharge in an area where the groundwater is of usable quality. The conserved water would result in reduced dependence on Bay-Delta diversions during the typical nine month duration that the CWD and the NKWSD receives water. In addition to direct water savings the project would result in more beneficial use of surface water supplies, increased regional flexibility, increased operational efficiency, and associated water quality benefits.

**Groundwater Resources** Implementation of the Proposed Action would reduce groundwater recharge in the vicinity of the Calloway Canal Reaches C1, C2, and D area where there is phenol contamination. There are no plans to treat and use the contaminated water, so the Proposed Action would not affect the use of this groundwater.

Once the canal is lined, the surface supply would be delivered within the CWD and NKWSD irrigation districts, thus offsetting an equal amount of groundwater pumping in the groundwater basin in areas with groundwater of quality suitable for irrigation.

The irrigation demand would remain the same, with or without the Proposed Action. The total potential conserved water with the Proposed Action is 1,842 acre-feet per year. (Appendix C describes how this was calculated.) If the saved groundwater is not used for other demands, reducing groundwater pumping could allow groundwater levels to rise in areas of usable groundwater. This could reduce the pumping lift and thus reduce the cost of pumping.



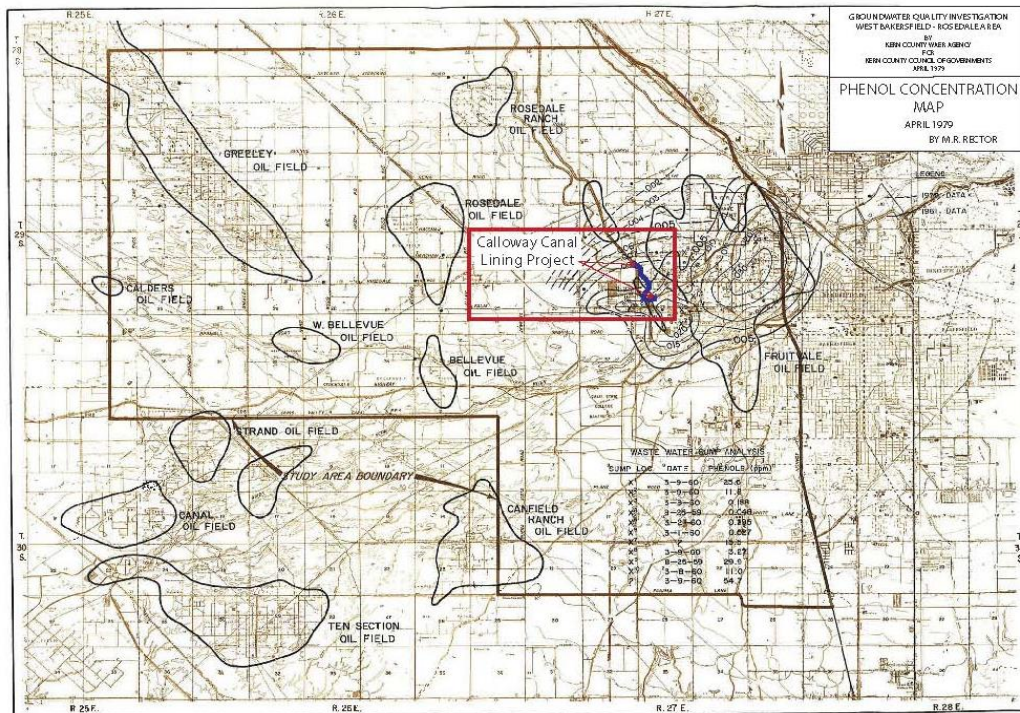


Figure 3. Phenol Concentrations in Groundwater Near Calloway Canal



## 3.3 Biological Resources

### 3.3.1 Affected Environment

The Proposed Action would occur within a maintained canal right-of-way (ROW) and surrounded entirely by fully developed urban areas (Figure 2). There is no natural habitat remaining on the canal ROW or the immediately adjoining areas due to operation and maintenance activities occurring throughout the year. There is no critical habitat in the affected area.

On November 4, 2014, Reclamation obtained a species list of federally listed, proposed and candidate species potentially occurring in the Oildale 7 ½ minute U.S. Geological Survey Quadrangle from the USFWS's website. Table 2 summarizes the species' status, determination of effects from the Proposed Action, and a summary of the rationale supporting the determination.

Based on the habitat requirements of the listed species that could potentially occur within the Proposed Action area, suitable habitat is absent for the Swainson's hawk, Southwestern willow flycatcher, vernal pool fairy shrimp, valley elderberry longhorn beetle, California red-legged frog, Bakersfield cactus, San Joaquin woolly-threads, blunt-nosed leopard lizard, giant garter snake, and delta smelt. Therefore, these species are not discussed in this section.

#### ***Western Burrowing Owl***

Although not listed under the federal Endangered Species Act, the burrowing owl is protected by the Migratory Bird Treaty Act (MBTA). This small ground-dwelling owl is a year-long resident that exhibits high site fidelity. They live in ground squirrel and other mammal burrows that it appropriates and enlarges for its own purposes (CDFG 2012). Burrowing owls are typically found in short-grass grasslands, open scrub habitats, and a variety of open, human-altered environments, such as the edges of canals or roadways, ditches, and drains along agricultural fields. These owls are active day and night and are opportunistic feeders. Their diet includes insects, amphibians, reptiles, small mammals, and grass material.

Burrowing owls have shown significant declines throughout California in recent years principally due to the conversion of grassland and pasturelands to agricultural and urban uses, and to poisoning programs to control California ground squirrels. Other hazards common to agricultural areas in the state that could impact burrowing owls include automobiles, barbed-wire fences, and electric fences (Gervais et al. 2008).

A field inspection of the right-of-way of Reaches C1, C2, and D in 2014 did not find any burrowing owls, burrowing owl tracks, whitewash, or pellets outside potential dens and burrows (Vanherweg 2014).

### ***Tipton Kangaroo Rat***

Tipton kangaroo rat burrow systems are usually in open areas but may occur in areas of thick scrub. They are commonly in slightly elevated mounds, the berms of roads, canal embankments, railroad beds, and bases of shrubs and fences where windblown soils accumulate above the level of surrounding terrain. They eat mostly seeds with small amounts of green, herbaceous vegetation and insects supplementing their diet when available. A field inspection of the right-of-way of Reaches C1, C2, and D in 2014 did not find any potential Tipton kangaroo rat burrows or sign in the corridor.

### ***San Joaquin Kit Fox***

San Joaquin kit fox diet varies based on prey availability, and includes small to mid-sized mammals, ground-nesting birds, and insects. Kit foxes excavate their own dens, or may use other animals', and human-made structures (culverts, abandoned pipelines, and banks in sumps or roadbeds).

Kit fox currently inhabit the western and southern San Joaquin Valley in grassland and scrubland communities. Primary reasons for the species' decline include loss and degradation of habitat (USFWS 1998), in addition to vehicular traffic.

Surveys conducted between 1998 and 2004 to support a report prepared for the California Department of Transportation (Caltrans), indicates that there is known San Joaquin kit fox activity in the immediate vicinity of Calloway Canal (Bjurlin, Cypher, Wingert, & Job, 2005). Kit fox were observed during daytime and nighttime during this study.

A biologist conducted a daytime ground survey for San Joaquin kit foxes, their dens, and signs of presence at the proposed project corridor in November 2014. (Vanherweg 2014). The ground surveys were completed by walking transects 50 feet wide. The ground survey followed CDFW Approved Survey Methodologies for Sensitive Species (CDFW 1990).

The survey found 10 known dens and 8 potential kit fox dens along the proposed project corridor. Kit fox and red fox scat was found at all the known dens. An adult red fox was observed at two locations within the proposed project corridor.

Table 3. Special Status Species That May Occur in the Area of Calloway Canal Reaches C1, C2 and D

Common Name	Scientific Name	Status <sup>1</sup>	Effect <sup>2</sup>	Summary of Effects Determination <sup>3</sup>
<b>Birds</b>				
Swainson's hawk	<i>Buteo swainsoni</i>	MBTA	NE	CNDDB <sup>4</sup> records indicate this species occurs within a 10-mile radius of the Proposed Action area. No suitable habitat present.
Southwestern willow flycatcher	<i>Empidonax traillii eximius</i>	E, MBTA	NE	No suitable habitat in the Proposed Action area.
Western burrowing owl	<i>Athene cunicularia</i>	MBTA	NLAA	Surveys did not find indication of owls along canal although CNDDB <sup>4</sup> records indicate this species occurs within a 1-mile radius of the Proposed Action area. Environmental Protection Measures would be implemented to avoid potential effects.
<b>Invertebrates</b>				
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	T	NE	No suitable habitat in the Proposed Action area. No elderberry shrubs would be disturbed.
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	T	NE	No suitable habitat in the Proposed Action area..
<b>Mammals</b>				
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	E	NLAA	Potential kit fox dens within canal right-of-way for Reach B. Known kit fox dens greater than 200 feet north of Reach B. CWD is paying into the Metropolitan Bakersfield Habitat Conservation Plan and would implement the USFWS's <i>Standardized Recommendations for Protection of the San Joaquin Kit Fox</i>
Tipton kangaroo rat	<i>Dipodomys nitratoides nitratoides</i>	E	NE	Previously recorded CNDDB <sup>4</sup> sites within a 5-mile radius of the Proposed Action area have been developed for housing. Survey did not find any potential Tipton kangaroo rat burrows or sign in the corridor.
<b>Plants</b>				
Bakersfield cactus	<i>Opuntia treleasei</i>	E	NE	CNDDB <sup>4</sup> records indicate isolated clumps in Kern County, about 5 miles northeast of project area. Believed to be extirpated from Bakersfield due to development. No suitable habitat in project area.

San Joaquin woolly-threads	<i>Monolopia congdonii</i>	E	NE	Native vegetation and habitat has been eliminated at previously recorded CNDDB <sup>4</sup> sites. Believed to be extirpated from Bakersfield due to development. No suitable habitat in project area.
<b>Reptiles</b>				
Blunt-nosed leopard lizard	<i>Gambelia sila</i>	E	NE	CNDDB <sup>4</sup> records indicate this species occurs within the Oildale Quad and a 5-mile radius of the project area. No suitable habitat present.
Giant garter snake	<i>Thamnophis gigas</i>	T	NE	No suitable habitat present.
<b>Amphibians</b>				
California red-legged frog	<i>Rana draytonii</i>	T	NE	No suitable habitat present.
<b>Fish</b>				
Delta smelt	<i>Hyponesus transpacificus</i>	T	NE	No suitable habitat present.

<sup>1</sup> Status= Listing of Federally special status species, unless otherwise indicated

E: Listed as Endangered

MBTA: Birds protected by the Migratory Bird Treaty Act

T: Listed as Threatened

X: Critical Habitat designated for this species

<sup>2</sup> Effects = Effect determination

NE: No Effect to federally listed species anticipated from the Proposed Action.

NLAA: Not Likely to Adversely Affect with Environmental Protection Measures

MA: May Affect federally listed species

<sup>3</sup> Summary of rationale supporting determination

<sup>4</sup> CNDDB = California Natural Diversity Database 2013

### 3.3.2 Environmental Consequences

#### **No Action Alternative**

Under the No Action Alternative, Reclamation would not provide grant funds for the lining of the Calloway Canal and conditions would remain the same as described above. There would be no impacts to wildlife and special-status species as no new construction would occur and historical operation and maintenance practices would continue.

#### **Proposed Action**

**Western Burrowing Owl** The Proposed Action is not likely to adversely affect the Western burrowing owl since they were not found along the canal. Since they have been found within a mile of the canal and appropriate burrows are present

along the canal, one or more pair could potentially occupy a burrow prior to construction. Construction could affect the owl's survivorship or disturb their foraging habitat if the owls are within or along the edge of the canal (Gervais et al. 2008). Owls could also become disturbed from factors such as noise and vibration due to heavy equipment which could cause the owls to flee and result in nest failure as well as vehicular strikes. During construction, there is the potential that if owls are present along or near the canal, they could become buried inside burrows.

*Environmental Protection Measures* A survey for burrowing owls would be conducted by a qualified biologist within 250 feet of the project area no fewer than 14 days and no more than 30 days prior to construction activities (CDFG 2012). (CDFG is now the California Department of Fish and Wildlife (CDFW)). If the survey indicates the presence of burrowing owls, then the mitigation measures to minimize impacts to burrowing owls, their burrows and foraging habitat according to established guidelines would be followed. CDFW would be consulted in the event occupied burrows or nests within 150 feet of an area subject to disturbance during the non-breeding season (September 1 through January 31), or within 250 feet of an area subject to disturbance during the breeding season (February 1 through August 31) are discovered within the Proposed Project area (CDFG 2012).

**Tipton Kangaroo Rat** The Proposed Action would not affect the Tipton kangaroo rat because appropriate habitat is not present.

**San Joaquin Kit Fox** The Proposed Action could cause negative impacts to prey abundance or reduce the number of potential den sites through habitat modification during construction (USFWS 1998). Impacts to kit foxes may also result if an individual uses the canal as a migratory corridor during construction. The Proposed Action may adversely affect the kit fox due to presence of known and potential dens.

On May 22, 2014, CWD and NKWSD requested to participate in the Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) and to use the related Incidental Take Permits to avoid any potential impacts from the Proposed Action to the San Joaquin kit fox. CWD and NKWSD were accepted to participate in the MBHCP. They will pay into the MBHCP for the acquisition or enhancement of habitat for kit fox.

*Procedures to Obtain Compliance with the MBHCP* CWD and NKWSD would submit a map illustrating the location of the project to the MBHCP staff. MBHCP staff would then review the map. Following this review, MBHCP staff will determine the need for a Biological Clearance Survey. The survey would be performed by a qualified biologist and delivered to the U.S. Fish and Wildlife Service, the California Department of Fish and Wildlife, and City of Bakersfield

Planning Division prior to approval of grading plans. The Clearance Survey would determine if there are any kit fox dens on site.

CWD and NKWSD would follow the *U.S. Fish And Wildlife Service Standardized Recommendations For Protection Of The Endangered San Joaquin Kit Fox Prior To Or During Ground Disturbance* as follows:

1. Prior to the onset of ground-disturbing project activities, project personnel shall be briefed on the occurrence and distribution of listed species in the project area, measures being implemented to protect these species during project actions, and reporting requirements should incidental take occur.
2. Within 30 days prior to commencement of construction activities, a qualified biologist(s) shall conduct preactivity surveys of proposed work zones. During pre-activity surveys, the status of previous surveys shall be reviewed; San Joaquin kit fox dens shall be identified and flagged as necessary.
3. Pets shall not be permitted on the project site during construction activities.
4. All food-related trash such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers only and regularly removed from the project site.
5. All spills of hazardous materials within endangered species habitats shall be cleaned up immediately.
6. No firearms will be allowed in the project area.
7. All construction activities conducted during the project shall be confined to daylight hours unless circumstances warrant night work and approval is obtained from the CDFW and USFWS.
8. All project-related vehicles shall observe a speed limit of 20 miles per hour (mph) or less on all routes that traverse endangered species habitat, except on state and county highways and road.
9. Project-related vehicles shall be confined to existing primary or secondary roads or to specifically delineated project areas (i.e., areas that have been surveyed and described in existing documentation). Otherwise, no off-road vehicle travel shall be permitted.
10. All open trenches and footing holes shall be covered each night or ramped in such a way as to allow wildlife that may enter to escape unharmed. Ramps will be no more than 1,000 feet apart and no more than 45 degrees.
11. All known and potential San Joaquin kit foxes dens avoidance criteria:

- 100 feet from known San Joaquin kit fox dens;
- 50 feet from potential San Joaquin kit fox dens;

If damage or destruction to a known or potential San Joaquin kit fox den cannot be avoided during project activities the den shall be monitored for three consecutive days and excavated according to agency approved guidelines. All den excavations shall be performed or supervised by a qualified biologist.

Upon completion of the Biological Clearance Survey, MBHCP would specify the appropriate fees to be paid for the project prior to start of construction. Once the fees are paid, MBHCP would provide the MBHCP Compliance Acknowledgement Form for the Proposed Action.

### **3.4 Air Quality**

Section 176 (c) of the Clean Air Act (CAA) (42 USC 7506 (c)) requires that any entity of the Federal government that engages in, supports, or in any way provides financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan (SIP) required under Section 110 (a) of the CAA (42 USC 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with a SIP's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements would, in fact conform to the applicable SIP before the action is taken.

#### **3.4.1 Affected Environment**

The Proposed Action lies within the San Joaquin Valley Air Basin (SJVAB), the second largest air basin in the State. Air basins share a common "air shed", the boundaries of which are defined by surrounding topography. Although mixing between adjacent air basins inevitably occurs, air quality conditions are relatively uniform within a given air basin. The San Joaquin Valley experiences episodes of poor atmospheric mixing caused by inversion layers formed when temperature increases with elevation above ground, or when a mass of warm, dry air settles over a mass of cooler air near the ground.

Despite years of improvements, the SJVAB does not meet all State and Federal health-based air quality standards. To protect health, the SJVAPCD is required by Federal law to adopt stringent control measures to reduce emissions. On November 30, 1993, the Environmental Protection Agency promulgated final general conformity regulations at 40 CFR 93 Subpart B for all federal activities except those covered under transportation conformity. The general conformity

regulations apply to a proposed Federal action in a non-attainment or maintenance area if the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutant caused by a proposed action equal or exceed certain emissions thresholds, thus requiring the Federal agency to make a conformity determination.

### **3.4.2 Environmental Consequences**

#### ***No Action Alternative***

Under the No Action Alternative, there would be no impacts to air quality since no construction would take place.

#### ***Proposed Action***

Construction emissions would vary from day to day and by activity, timing and intensity, and wind speed and direction. Generally, air quality impacts from the Proposed Action would be localized in nature.

Short-term air quality impacts would be associated with construction, and would generally arise from dust generation (fugitive dust) and operation of construction equipment. Fugitive dust results from land clearing, grading, excavation, concrete work, and vehicle traffic on paved and unpaved roads. Fugitive dust is a source of airborne particulates, including PM<sub>10</sub> and PM<sub>2.5</sub>.

Earth-moving equipment, trucks, and other mobile sources powered by diesel or gasoline are also sources of combustion emissions, including nitrogen dioxide, carbon monoxide, volatile organic compounds, sulfur dioxide, and small amounts of air toxics. Table 3 below shows the type of equipment and duration of operation estimated for the Proposed Action. Table 4 below provides a summary of the estimated emissions (with mitigation) during construction and a comparison to federal and local emission thresholds in tons per year. Calculated emissions from the Proposed Action were estimated using the 2013 California Emissions Estimator Model (CalEEMOD ) software (version 2013.2.2), which incorporates emission factors for reactive organic gases (ROG), NO<sub>x</sub>, CO, SO<sub>2</sub>, and both fugitive and exhaust PM<sub>10</sub>, and PM<sub>2.5</sub>.

Comparison of the estimated Proposed Action emissions (with control measures) and the thresholds for Federal and local conformity determinations (Table 4) indicates that project emissions are estimated to be below these thresholds. Therefore, a Federal general conformity analysis report is not required. The Proposed Action would implement the SJVAPCD's Regulation VIII (SJVAPCD 2012c) control measures for construction emissions of PM<sub>10</sub>. One of these control measures includes the use of water with all "land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities" for fugitive dust suppression.



Table 4 - Type of Equipment and Duration of Operation for Reach C1, C2 and D Lining

Type of Equipment	Proposed Use	Number of Equipment	Duration of Operation <sup>1</sup>
Skip Loader	Loading of excess materials, moving material, cleanup	1	1.5-2 months
Compactor	Scarify and re-compact material	1	1.5-2 months
Excavator	Digging and material handling	1	1.5-2 months
Power-Operated Vibratory Screed	Leveling out/vibrating concrete mixture	1	1.5-2 months
Concrete Trucks	Transportation of concrete mix	1	1.5-2 months
Motor Grader	Final grading of canal embankments and clean up	1	1.5-2 months
Water Truck	Dust abatement and moisture conditioning of soil	2	1.5-2 months
Pick-up Trucks	Service of equipment	2	3 months

<sup>1</sup>Equipment operated 8 hours/day for 5 days/week

Table 5 - Estimated Calloway Canal Reaches C1, C2 and D Lining Emissions with Control Measures During Construction and Federal and Local Emissions Thresholds in tons per year

Pollutant	Federal Attainment Status <sup>a</sup>	Thresholds for Federal Conformity Determinations <sup>b</sup>	Local Significance Thresholds <sup>c</sup>	Estimated Project Emissions <sup>d</sup>
VOC <sup>1</sup> (as an ozone precursor)	Nonattainment/Extreme (8-hour ozone)	10	10	0.13
NO <sub>x</sub> <sup>2</sup> (as an ozone precursor)	Nonattainment/Extreme (8-hour ozone)	10	10	1.35
PM <sub>10</sub> <sup>3</sup>	Attainment <sup>e</sup>	100	15	0.98
PM <sub>2.5</sub> <sup>4</sup>	Nonattainment	100	15	0.20
CO <sub>2</sub>	-	-	---	101.09

1 = volatile organic compounds

2 = nitrogen oxides

3 = particulate matter less than 10 micrometers in diameter

4 = particulate matter less than 2.5 micrometers in diameter

<sup>a</sup>SJVAPCD (2012a)

<sup>b</sup>40 CFR 93.153

<sup>c</sup>SJVAPCD (2012 b)

<sup>d</sup>Construction emissions estimated with CalEEMOD Windows Version 2013.2.2

<sup>e</sup>PM<sub>10</sub><sup>3</sup> has nonattainment status under the California Ambient Air Quality Standards

### **3.5 Cumulative Effects**

According to CEQ regulations for implementing the procedural provisions of NEPA, a cumulative impact is defined as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

Greenhouse gas (GHG) impacts are considered to be cumulative impacts since any increase in GHG emissions would add to the existing inventory of gases that could contribute to climate change. The estimated GHG emission due to temporary Proposed Action construction activities is 101.09 metric tons of carbon dioxide equivalents, using CalEEMOD. There are no on-going operational emissions from the Project.

There are no other known past, present, and reasonably foreseeable future actions that would cumulatively result in significant impacts to the human environment when taking into consideration the actions analyzed within this EA

## **Section 4 Consultation & Coordination**

Several Federal laws, permits, licenses and policy requirements have directed or guided the NEPA analysis and decision making process of this EA.

### **4.1 Public Review Period**

Reclamation will make the EA available for a 15 day period. Additional analysis will be prepared if substantive comments identify impacts that were not previously analyzed or considered.

### **4.2 State Historic Preservation Officer**

Reclamation initiated consultation with the SHPO on October 20, 2014 via a mailed consultation package for this undertaking. Since the package was submitted, no correspondence has been received from SHPO. Pursuant to 36 CFR §800.5(c), the SHPO has 30 days from receipt to review an agency finding. As SHPO did not respond within 30 days, Reclamation is concluding the Section 106 process. Should SHPO respond at later date with concerns, Reclamation may address them, as appropriate. (See Appendix C).

### **4.3 Endangered Species Act (16 USC § 1531 et seq.)**

Section 7 of the Endangered Species Act requires Federal agencies to ensure that discretionary federal actions do not jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of the critical habitat of these species.

The Proposed Action may adversely affect the San Joaquin kit fox. However, CWD and NKWSD are participating in the Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) instead of formal consultation under Section 7 with the Fish and Wildlife Service. The purpose of the MBHCP is to acquire, preserve and enhance native habitats which support endangered and threatened species while allowing urban development to proceed within the Bakersfield and Kern County areas. The MBHCP has an Incidental Take Permit under Section 10(a) of the Endangered Species Act. The MBHCP describes a method of collecting funds for the acquisition and/or enhancement of natural lands for purposes of creating preserves, and also provides a reduction of take of endangered species within the developed areas.

## Section 5 References

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## **Appendix A**

# **Cultural Resources Compliance Memo**

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

**MP-153 Tracking Number:** 14-MPRO-215, 14-MPRO-229, 14-MPRO-233

**Project Name:** National Historic Preservation Act Compliance for Calloway Canal Lining Projects for Cawelo Water District (CWD) and North Kern Water Storage District (NKWSD), Kern County, California.

**NEPA Contact:** Doug Kleinsmith, Natural Resource Specialist

**MP 153 Cultural Resources Reviewer:** BranDee Bruce, Architectural Historian

**Date:** November 26, 2014

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Reclamation proposes to issue three grants to CWD and NKWSD to line Reaches C1, C2, and D of the Calloway Canal, in Kern County, California. This lining activity will result in 5,290 linear feet of new lining on the Calloway Canal. CWD is requesting the grants for Reach C1 and Reach C2, while NKWSD is requesting grant monies for Reach D. However, both water districts will be working in partnership to complete the canal lining therefore, consultation was completed on all three grants at the same time. This action constitutes an undertaking with the potential to cause effects to historic properties, assuming such properties are present, requiring compliance with Section 106 of the National Historic Preservation Act (NHPA) as amended.

Based on historic properties identification efforts conducted by Reclamation, no historic properties within the area of potential effects were identified, as the Calloway Canal has been determined ineligible for listing on the National Register of Historic Places (National Register) under consensus with the State Historic Preservation Officer (SHPO). For this current undertaking, a finding of no historic properties affected pursuant to 36 CFR §800.4(d)(1) was determined.

Reclamation submitted the consultation package to SHPO on October 20, 2014. Since the package was submitted, no correspondence has been received from SHPO. Pursuant to 36 CFR §800.5(c), the SHPO has 30 days from receipt to review an agency finding. If after 30 days the SHPO has not responded, §800.5(c)(1) states that "...the agency official may proceed after close of the 30 day review period if the SHPO/THPO has agreed with the finding or has not provided a response...and the agency official shall then carry out the undertaking in accordance with paragraph (d)(1) of this section." As SHPO has failed to respond within 30 days, Reclamation is concluding the Section 106 process. Should SHPO respond at later date with concerns, Reclamation may address them, as appropriate. If a concurrence letter for this undertaking is received, it will be forwarded for your records.

Consultation correspondence between Reclamation and the SHPO has been provided with this cultural resources compliance document for inclusion in the administrative record for this action. This document serves as notification that Section 106 compliance has been completed for this undertaking. Please note that if project activities subsequently change, additional NHPA Section 106 review, including further consultation with the SHPO, may be required.

**Attachments:**

Letter: Reclamation to SHPO dated October 20, 2014

# **Appendix B**

## **Indian Trust Assets Compliance**

### **Memo**



11/5/2014

DEPARTMENT OF THE INTERIOR Mail - Re: ITA request for Calloway Canal lining Reaches C1, C2, and D



Kleinsmith, Douglas <dkleinsmith@usbr.gov>

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**Re: ITA request for Calloway Canal lining Reaches C1, C2, and D**

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**RIVERA, PATRICIA** <privera@usbr.gov>  
To: "Kleinsmith, Douglas" <dkleinsmith@usbr.gov>

Wed, Nov 5, 2014 at 11:32 AM

Doug,

I reviewed the proposed action to approve Cawelo Water District and North Kern Water Storage District's proposal to line Calloway Canal at Reaches C1, C2, and D (Proposed Action) in Bakersfield, California. The Proposed Action would decrease seepage to a groundwater basin containing constituents of concern by lining 5,290 linear feet of the Calloway Canal with concrete. Reclamation proposes to provide Department of the Interior (DOI) CALFED Bay-Delta Program grants to CWD for lining Reaches C1 and C2 and to NKWSD for lining Reach D.

The proposed action does not have a potential to impact Indian Trust Assets. The nearest ITA is a Public Domain Allotment approximately 39 miles East of the project location.

Patricia Rivera  
Native American Affairs Program Manager  
US Bureau of Reclamation  
Mid-Pacific Region  
2800 Sacramento, California 95825  
(916) 978-5194

<https://mail.google.com/mail/u/0/?ui=2&ik=28715b7a4b&view=pt&search=inbox&msg=1498171c4cf55b973&siml=1498171c4cf55b97>

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## Appendix C

# Calculations for Amount of Water Conserved by Lining

The groundwater basin in Kern County is estimated to be about 40,000,000 acre-feet in volume. Implementation of the Proposed Action would reduce groundwater recharge to an area where recovery of the groundwater would be problematic due to constituents of concern; if groundwater is recovered in the unlined canal area, an added cost to treat would be necessary prior to beneficial use of the groundwater supply. Once the canal is lined, the surface supply will be delivered within the irrigation district, thus offsetting an equal amount of groundwater pumping in the groundwater basin in an area with groundwater of quality suitable for irrigation, since the irrigation demand remains the same, with or without the Proposed Action.

Historical data is collected at various locations along the Calloway Canal and reported in the North Kern Water Storage District Calloway Canal Diversion Summary available from the annual Kern River Report prepared by the City of Bakersfield. (City of Bakersfield 1990-2010). The reports used in this analysis are from 1990 to 2010. The Calloway Canal is used by NKWSD mainly in “wet” years and therefore the flow in the canal is highly variable with the canal being unused during dry periods.

To determine the average annual seepage losses, two different flow measurement locations along the canal were compared, specifically the Buck Owens Weir and the Olive Drive Weir, which includes all Reaches to be lined C1, C2, and D. Taking into account all deliveries and inflows, the difference between the two points is the amount of water lost due to seepage. The seepage loss at Buck Owens Weir for the approximate six mile reach of canal lost on average 6,975 acre-feet per year. Therefore the amount of water lost per year in reaches of the Calloway Canal, which includes reaches C1, C2, and D, is 1,125 acre-feet per mile. However, during some of the months, the canal was only operated for part of the month; therefore, averages are not truly reflective of daily losses. When the canal was typically operated for the entire month, the average loss was 1,994 acre-feet per month or 322 acre-feet per month per mile. The implied average loss is 11 acre-feet per day per mile and the operations averaged 3.14 months per year (96 days per year). The length of the reach proposed to be lined under the Proposed Action is roughly 5,290 feet (Approximately 1 mile). Therefore, the amount water saved would be about 1,056 acre-feet of water conserved per year (11 acre-feet per day/mile x 1 mile x 96 days per year) based on historical use of the NKWSD facilities.

A new canal linking the Cross Valley Canal (which delivers SWP water to CWD) and the Calloway Canal has been completed. With the new canal connection and associated operation scheme, the Calloway Canal could see an increased operation of 2.4 months per year (72 days). This would allow the Proposed Action to save an additional 792 acre-feet per year (11 acre-feet per day/mile x 1 mile x 72 days.) The total potential conserved water with the Proposed Action is 1,848 acre-feet per year, based on the historic use plus use associated with the new canal connection.