

RECLAMATION

Managing Water in the West

Environmental Assessment

Semitropic Water Storage District Pond-Poso Spreading and Recovery Facility

EA-09-134



U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Region
South Central California Area Office
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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, Abbreviations, and Definition of Terms

Aquifer	A body of rock or sediment that is porous and permeable to store, transmit, and yield groundwater to wells and springs
acre-feet	Volume of water necessary to cover one acre to a depth of one foot
APE	Area of Potential Effect
CAA	Clean Air Act
CDFG	California Department of Fish and Game
CDP	Census Designated Places
CFR	Code of Federal Regulations
cfs	cubic-feet per second

CH ₄	Methane
CNDDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CO	Carbon monoxide
CO ₂	Carbon dioxide
Conjunctive Use	Management of surface and groundwater in order to maximize the efficient use of the resource.
CVP	Central Valley Project
CWA	Clean Water Act
Delta	Sacramento and San Joaquin River Delta
DWR	Department of Water Resources
EA	Environmental Assessment
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
FWCA	Fish and Wildlife Coordination Act
FWS	U.S. Fish and Wildlife
g/hp-hr	grams per horsepower-hour
GHG	Green House Gases
Groundwater Bank	Semitropic Groundwater Banking and Exchange Program
Groundwater Overdraft	The reduction of groundwater storage that occurs when withdrawals from an aquifer exceed recharge.
Groundwater Basin	An alluvial aquifer with reasonably well-defined boundaries.
Groundwater Recharge	A structure that serves to conduct surface water into the Facility ground for the purpose of replenishing groundwater.
Groundwater Recharge	The natural or intentional infiltration of surface water into the zone of saturation.
Groundwater Sub-Basin	A subdivision of a groundwater basin
In-Lieu Recharge	Providing surface water to historic groundwater users, thereby leaving groundwater in storage for later use.
IRWMP	Integrated Regional Water Management Plan
ITA	Indian Trust Assets
Land Subsidence	The lowering of the natural land surface due to groundwater extraction.
LF	Linear feet
MBTA	Migratory Bird Treaty Act
MHI	Medium Household Income
NAAQS	National Ambient Air Quality Standards
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO _x	Nitrogen oxide
O&M	Operation and maintenance
PM	Particulate matter
PPSRF	Pond-Poso Spreading and Recovery Facility

PPSGPP	Pond-Poso Spreading Grounds Pumping Plant
RCP	reinforced concrete pipe
Recovery Act	American Recovery and Reinvestment Act of 2009
Region	Poso Creek IRWMP Region comprised of seven agricultural groups and one resource conservation group that formulated and adopted the IRWMP.
Reclamation	U.S. Bureau of Reclamation
ROG	reactive organic gas
San Joaquin River Settlement	A Settlement that was reached on NRDC et al. v. Kirk Rodgers et al. on September 13, 2006, and was approved by U.S. Eastern District Court of California on October 23, 2006. The Settlement includes a Restoration Goal and Water Management Goal.
Semitropic	Semitropic Water Storage District
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SWP	State Water Project
SWRU	Stored Water Recovery Unit
VFD	Variable Frequency Drive
VOC	Volatile Organic Compounds

Section 1 Purpose and Need for Action

1.1 Background

The American Recovery and Reinvestment Act of 2009 (Recovery Act) is a bill to create jobs, restore economic growth, and strengthen America's middle class through measures that modernize the nation's infrastructure, enhance America's energy independence, expand educational opportunities, preserve and improve affordable health care, provide tax relief, and protect those in greatest need, and for other purposes (United States Congress 2009). The Department of the Interior has been tasked with managing \$3 billion in investments as part of the Recovery Act in order to jumpstart the economy, create or save jobs, and address long-neglected challenges. Of the \$3 billion, \$1 billion will be invested in water infrastructure across the United States by Bureau of Reclamation (Reclamation). Out of this, \$260 million will go to projects in California that will expand water supplies, repair aging water infrastructure, and mitigate the effects of a devastating drought the state is currently experiencing. An additional \$135 million is available for grants for water reuse and recycling projects (U.S. Department of Interior 2009). Semitropic Water Storage District (Semitropic or District) applied for a Recovery Act-funded challenge grant in 2009 to assist with funding the construction of the Pond-Poso Spreading and Recovery Facility (PPSRF).

Semitropic is located in the southern end of California's San Joaquin Valley, in Kern County, approximately 20 miles northwest of Bakersfield. The District lies between Interstate-5 on the west, Highway 99 on the east, the City of Delano on the north and the City of Bakersfield on the south. The District comprises approximately 222,000 gross acres of which 130,100 are intensely farmed, highly productive agricultural land.

Prior to the formation of the District, irrigated agriculture relied completely on groundwater. As in other areas developed in reliance on groundwater, water levels declined as groundwater was pumped for beneficial use. To address the developing problem, Semitropic was formed to implement conjunctive use programs and facilities and, in particular, to import water to supplement the area's water needs. In 1973, Semitropic began importing surface water from the State Water Project (SWP) and conjunctively managing (planned use of groundwater in conjunction with surface water to optimize water resources) their water supply since the imported water supply is highly variable. Under their conjunctive use program, the underlying groundwater reservoir continued to meet demands for seasonal peaks and provide irrigation water in times of limited surface supplies. Some lands in the District received the imported water supply, while other lands remained solely dependent on pumped groundwater for irrigation.

In 1994, Semitropic began implementation of the Semitropic Groundwater Bank and entered into a Memorandum of Understanding with five other local districts to create the Semitropic Groundwater Bank. The Semitropic Groundwater Bank was created in response to several challenges including (1) groundwater overdraft, (2) rising energy costs, (3) rising water costs, (4) water shortages, and (5) poor agricultural economy. The objectives of the Semitropic Groundwater Bank are to (1) increase the water supply reliability of the area; (2) decrease the

cost of water for irrigation; and (3) correct overdraft in the groundwater basin. The banking program is a long-term water storage program designed to recharge the groundwater basin and reduce overdraft, increase operational reliability and flexibility, and optimize the distribution and use of available water resources between Semitropic and potential banking partners. Under the program, the banking partner(s) would deliver a portion of their unused SWP, Central Valley Project (CVP) or other surface water supplies to Semitropic during periods when such water is available. Under the program, the District takes delivery of (i.e., banks) “wet” period or year water, and in turn are able to turn off wells and temporarily improve groundwater levels. This “banked” groundwater is then used to supplement surface water deliveries during a “dry” period or year.

Since its inception, the Semitropic Groundwater Bank has provided long-term underground storage of water for use by the banking partners in times of need. The banking of water has been limited to “in-lieu” recharge wherein the District satisfies an irrigation demand with surplus water from its banking partners “in-lieu” of farmers pumping (leaving a like amount in groundwater storage). This method of banking has been limited to periods when the banking partners’ water supplies have not exceeded the ability to absorb the surface water by delivery to an irrigation demand. However, when surface water supplies exceed the ability to deliver and absorb the surface water with an irrigation demand, the District did not have direct recharge facilities available within the District to absorb the water supply. To add this capability, the District developed the PPSRF.

Semitropic has plans to increase the capacity of the Semitropic Groundwater Bank with construction of the Stored Water Recovery Unit (SWRU) which would increase storage by 650,000 acre-feet to a total maximum of 1.65 million acre-feet and increase recovery capacity by 200,000 acre-feet per year for a total pump back capacity of 290,000 acre-feet per year. This means that the Semitropic Groundwater Bank, including its entitlement exchange capability of up to 133,000 acre-feet per year, would be able to deliver up to 423,000 acre-feet per year of dry year yield to the California Aqueduct (Semitropic 2006b). Both the PPSRF and the planned SWRU are components of the Semitropic Groundwater Bank. However, the PPSRF has “independent utility” relative to the planned SWRU. More specifically, it can be operated as a fully functional recharge and recovery facility, independent of any of the existing or planned facilities.

More recently, to further their management objectives, Semitropic joined with five other neighboring water agencies to form the Poso Creek Regional Water Management Group and collectively prepared an Integrated Regional Water Management Plan (IRWMP), which was adopted by each of the five participating agencies in July 2007. The motivation for the IRWMP was a common groundwater basin and significantly reduced reliability of the principal sources of water supply available to the region from the Kern River, SWP, and CVP. The IRWMP identified and prioritized almost 30 projects which address water supply reliability for the region. The PPSRF was identified by the IRWMP as a project that can provide benefit towards meeting the region’s priorities of water supply reliability. Semitropic’s conjunctive-use facilities were noted by the Poso Creek Regional Water Management Group as a significant regional asset, inasmuch as there has been unused capacity in Semitropic’s spreading facilities and Semitropic

is favorably located with regard to recharge of the common groundwater basin. The IRWMP identified projects to maximize the utility of this asset, which included the Proposed Action.

The PPSRF was designed to enhance the operation of Semitropic's Groundwater Bank. The PPSRF is a recharge and extraction facility that once fully completed will add recharge capacity to convey up to 350 cubic feet per second (cfs) (equivalent to 700 acre-feet per day or 21,000 acre-feet per month during a wet period or opportunistic time to bank water supplies) and place up to 65,000 acre-feet of water into storage in any given wet year more efficiently (based on three months of use in a given "wet year"). The PPSRF would also provide for recovery of stored water. When the PPSRF is fully completed, it will provide for the recovery of about 66,000 acre-feet per year (based on 10 months of pumping and 10 percent downtime).

The PPSRF is located approximately four miles north and two miles west of the City of Wasco, California (Figure 1). In 2007, the District commenced construction of the easterly spreading grounds. The construction activities were limited to earthwork, including construction of diked spreading ponds, conveyance ditches, habitat benches, and well pads. Construction activities also included drilling seven production wells, five casing path wells and three shallow wells. The entire spreading grounds includes nine quarter sections of District-owned property, which is bisected by the District's Pond-Poso Canal. The easterly spreading grounds consists of five quarter sections (approximately 763 gross acres) that lie on the east side of the District's canal. The westerly spreading grounds consists of four quarter sections (approximately 640 gross acres) which lie on the west side of the District's canal. The Poso Creek Flood Channel lies immediately north of the PPSRF.

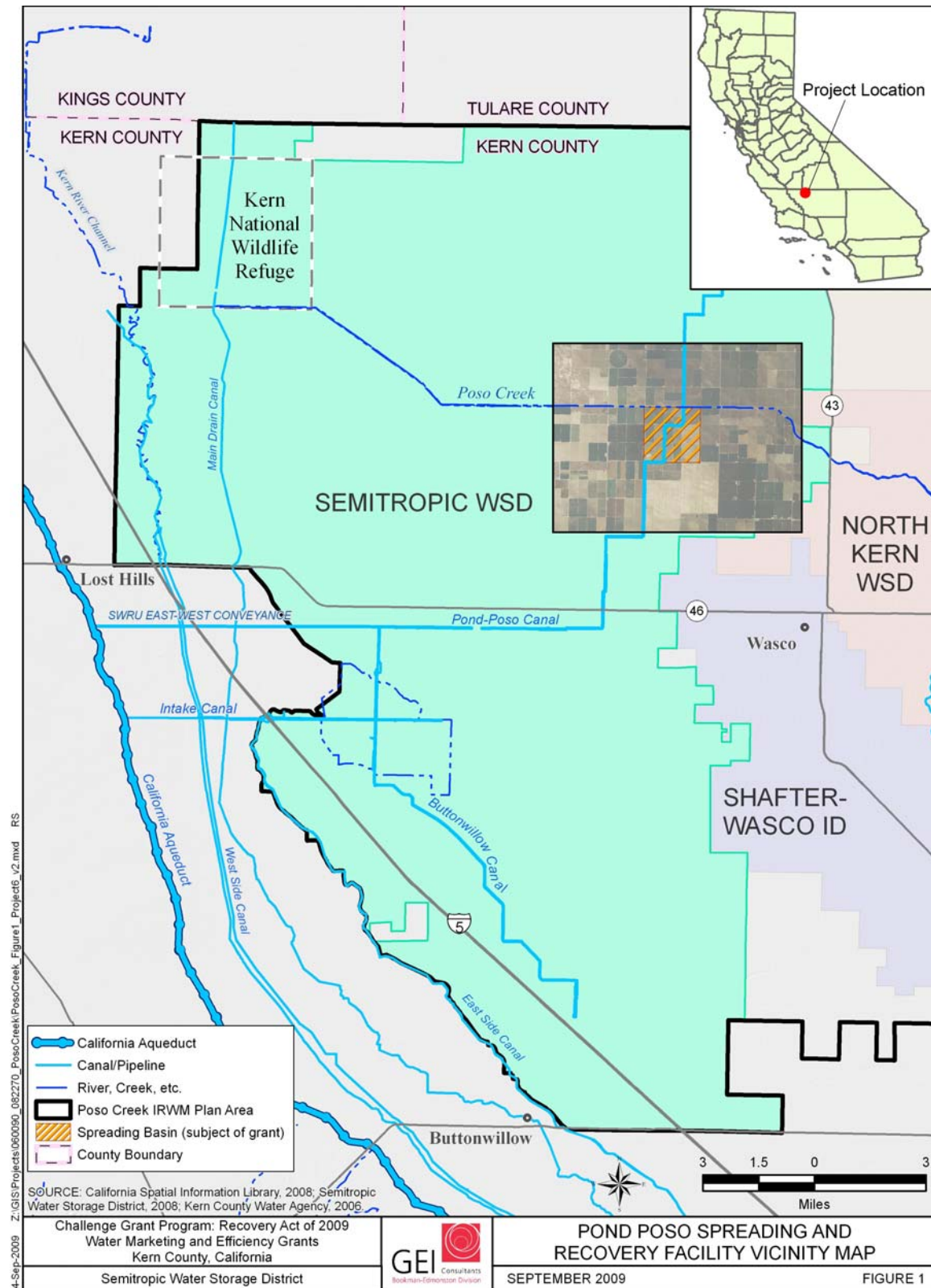


Figure 1 Location Map

1.2 Purpose and Need

The primary purpose of the Proposed Action is to improve the sustainability of the local water supplies and conjunctively manage the surface and groundwater resource for the benefit of the area. The need results from a number of actions which have served to reduce the historical reliability of water supplies available to the region.

Through the Proposed Action, Semitropic seeks to expand their ability to regulate water supplies in the banking facility. Currently, the District is able to replenish the groundwater basin by “in-lieu” recharge wherein the District delivers surface water supplies to meet an irrigation demand “in-lieu” of groundwater pumping. With the Proposed Action, the District would be able to continue to replenish the groundwater basin by spreading water for “direct” recharge when “indirect” “in-lieu” recharge is not possible.

1.3 Scope

This Environmental Assessment (EA) has been prepared to examine the potential for impacts on environmental resources as a result of the construction and operation of the facilities identified as the Proposed Action, as well as the No Action Alternate. The following environmental documents address the impacts of other actions that have been completed prior to this EA, and are hereby incorporated by reference:

- *Initial Study and Draft Negative Declaration for the Pond-Poso Spreading Grounds Unit of the Semitropic Groundwater Bank.* GEI Consultants, Inc., November 2006.
The Initial Study addressed the environmental aspects of the proposed Pond-Poso Spreading Grounds Unit of the Semitropic Groundwater Bank. These facilities would be constructed on 4 ¼ sections out of 15 sections evaluated by the Initial Study. Once constructed, the facilities would allow capture and spreading of surface water supplies when available. At the time of the Initial Study, the exact parcels within the 15 sections to be developed into spreading grounds were not certain. Therefore, the actual construction covers only a portion of the project location and is being constructed under phases.
- *Final Environmental Impact Report (EIR), Findings, and Mitigation Monitoring Plan for the Semitropic Groundwater Bank.* Bookman-Edmonston Engineering, July 1994.
Semitropic, acting on behalf of its Semitropic Improvement District, has developed the Semitropic Groundwater Bank to provide long-term underground storage of surplus water and to enhance groundwater levels. This Final EIR was for the initial Semitropic Groundwater Bank. The initial facilities were planned and evaluated in a report entitled “1992 Improvements Project”. This five-volume report is commonly referred to as the Project Report. The Project Report divided the project into three elements: Water Banking, Water Conservation, and Energy Development. The Semitropic Groundwater Bank was developed as a unit of the Water Banking Element. Since the initial EIR in 1994, a supplemental EIR was completed in 2000 and three addenda have been prepared and certified by the District in 2002, 2004, and 2005.

The construction of the easterly spreading grounds (including construction of diked spreading ponds, conveyance ditches, well pads and habitat benches) was completed in 2007. This work was completed prior to the application for the Recovery Act-funded challenge grant and is not part of the Proposed Action.

1.4 Potential Issues

- Water Resources
- Biological Resources
- Air Quality
- Cultural Resources
- Indian Trust Assets
- Land Use
- Socioeconomic Resources
- Environmental Justice
- Global Climate Change
- Cumulative Impacts

Section 2 Alternatives Including Proposed Action

This EA considers two alternatives: the Proposed Action and the No Action. The No Action Alternative reflects Semitropic's current banking operations and serves as a basis of comparison for determining potential effects to the environment that would result from implementation of the Proposed Action.

2.1 Proposed Action

Under the Proposed Action Alternative, Reclamation proposes to award a Recovery Act-funded grant to Semitropic to assist with funding the construction of the PPSRF, which would provide facilities for recharge and recovery of water. The Proposed Action would involve completing the construction work on the easterly spreading grounds to make them operational. The Proposed Action includes the physical structures that would make the previously shaped structures (2007) functional. The Proposed Action would be constructed starting in March 2010 and the work would be completed by September 2010.

Generally, the Proposed Action would include completion of a pumping plant immediately east of the Pond-Poso Canal (to lift water from the Pond-Poso Canal to the easterly spreading ponds); construction of pond structures including 34 interbasin structures and 20 pond overpours (to convey water to the lower elevation spreading ponds); construction of 3 emergency spillways located on the lowest tiers of the spreading ponds, adjacent to the Pond-Poso Canal (to overflow water into the canal in the event the inflow into the spreading ponds exceeds the spreading ponds capacity); construction of 4 County road siphon crossings (to convey water to the spreading ponds east of Scofield Road); completion of 7 production wells, 8 casing path wells and 5 shallow wells (to recover water that has been previously recharged); and construction of a collector system composed of pipelines as diagrammed in Figure 2 (to return pumped water to the Pond-Poso Canal).

Figure 2 is an aerial view of the completed earthwork for the easterly spreading grounds, with the locations of each project component that is part of the Proposed Action. All facilities would be constructed within the limits of the existing easterly spreading grounds.



Figure 2 Completed Earthwork for the Easterly Spreading Grounds

More particularly, construction activities would consist of the following:

Pumping Plant East of the Pond-Poso Canal (design capacity goal of 200 cfs)

Semitropic has completed a substantial amount of the work on the pumping plant including construction of a two-bay canal side, reinforced concrete sump structure, installation of the structural steel and miscellaneous metalwork, and installation of a vertical pump, motor and variable frequency drive (VFD) for one bay.

Remaining Work under the Proposed Action

- Installation of a vertical pump, motor, and VFD for the second bay.
- Installation of 75 linear feet (LF) of 48-inch steel manifold, including a 3-inch air and vacuum valve and 78 LF of 48-inch reinforced concrete pipe with a 48-inch flatback flap gate for each pump.
- Construction of a meter vault and installation of an acoustic meter to provide total and instantaneous flow readings.
- Excavation would involve about 1,960 cubic yards of material.

Equipment would consist of a crane, flatbed truck, excavator or trencher, compactor, concrete pump truck, front-end loader, rubber-tire loader or bulldozer.

An excavator would be used to dig the hole for the reinforced concrete meter vault which would then be compacted to the subgrade; rebar would be used to build the walls and invert of the meter vault. A trench would be dug for the 48-inch steel pump manifold and 48-inch reinforced concrete pipe. After pipe laying, the pipe zone would be backfilled with a front-end loader, trench backfill with a rubber-tired loader or bulldozer and final grading with a motor grader. A work area of 100 feet by 225 feet would be required for construction.

Construction of 34 Interbasin Structures and 20 Pond Overpours

The interbasin structures and pond overpours would be constructed in the locations shown in Figure 2. The topography of the area, where the spreading grounds were constructed, slopes gently from the southeast to the northwest. In this regard, the spreading grounds were designed to fill from the higher elevation end. Semitropic would have the flexibility to convey water to the lower elevation spreading ponds through the operation of the interbasin structures and pond overpours.

Overpours

- Construction of the overpours would require construction of weir structures ranging in length from 12 feet to 30 feet with a top walkway and vertical steel stop log posts for weir boards to control the flow of water, earthwork and concrete work.
- On either side of the spillway, 30-foot long driving ramps would be constructed.

Interbasin Structures

- Installation of approximately 74 LF of 18-inch polyvinyl chloride (PVC) pipe and an 18-inch butterfly valve to control the flow of water.
- Construction of two of the interbasin structures:

- Construction of a reinforced concrete inlet and outlet structure
- Installation of 42-inch reinforced concrete pipe (RCP) with a 42-inch slide gate for one of the interbasin structures
- The installation of a 24-inch RCP and 24-inch slide gate for the second interbasin structure
- Excavation would involve about 6,100 cubic yards of material.

The interbasin structures and pond overpours would require a working area of 150 feet by 200 feet for construction, with construction of two interbasin structures requiring a 150-foot by 300-foot working area. The construction process involves completing the earthwork with an excavator, compactor, and water truck. The concrete work would be accomplished with a concrete truck and hose. Installation of the pipe would require trenching with an excavator or trencher, delivery and unloading of pipe with a truck and crane, pipe laying with excavators or cranes, pipe zone backfill with a front-end loader, trench backfill with a rubber-tired loader or bulldozer and final grading with a motor grader.

Three Emergency Spillways

Three emergency spillways would be constructed to allow for the flexibility to overflow into the District's canal located at the lower elevations of the spreading grounds adjacent to the Pond-Poso Canal. The spillways would allow water to overflow into the District's canal when the inflow into the spreading ponds exceeds spreading pond capacity (See Figure 2 for general locations of the spillways). Construction consists of:

- Earth and concrete work.
- Installation of a 24-inch RCP with precast box and 24-inch slide gate.
- Excavation would involve about 3,810 cubic yards of material.

The emergency spillways would require a working area of 200 feet by 250 feet for construction. The construction process would include trenching with excavators or trenchers, delivery and unloading of pipe, pipe laying with excavators or cranes, pipe zone backfill with a front-end loader, trench backfill with a rubber-tired loader or bulldozer, and final grading with a motor grader.

Four County Road Siphon Crossings to Convey Water to the Spreading Ponds East of Scofield Road (see Figure 2 for location of siphon crossings)

- Earth and concrete work.
- Construction of the reinforced-concrete inlet and outlet structure of the siphon crossing
- Installation of approximately 435 LF of pipe per siphon crossing.
 - The most southerly siphon crossing would require the installation of 42-inch reinforced concrete pipe.
 - The three most northerly siphon crossings would require the installation of 18-inch PVC pipe.
- Installation of slide gates to control the flow of water.
- Siphon crossing would range from 70 to 100 feet for construction with a trench width approximately equal to the size of the pipe plus two feet. There would be about five feet

of earth cover over the top of the pipe. The construction would require a county permit to allow crossing the county easement for the road.

- Pipe trench excavation and backfill would involve approximately 10,000 cubic yards.

The road base would be demolished with a loader or excavator and hauled off with a truck. Pipe trench excavation would primarily rely on an excavator, while backfill operations would likely be conducted with a combination of an excavator and a loader. Pipe would be placed into the trench using a crane or trencher of suitable size. Excavated materials would be stored on site (parallel to the trench) until backfilled. Final grading would be accomplished with a motor grader and water truck. Placement of road base would be accomplished with a rolling compactor.

Completion of Seven Production Wells, Eight Casing Path Wells, and Five Shallow Wells

Wells would be piped to return pumped groundwater to the Pond-Poso Canal through the recovery pipeline and ditch collector system. The wells would recover water that has been previously recharged. The wells are located as shown in Figure 2.

- Each well would be equipped with a vertical pump and motor.
- A 10 to 12-inch pump discharge would be constructed, depending on the well site.
- Each pump discharge would have a sleeve-type coupling, check valve, and air vent and would be plumbed to discharge into the collector system for ultimate return to the Pond-Poso Canal.
- A flow meter would be installed on the pump discharge to provide total flow readings.
- A 50-foot by 50-foot area would be required for staging.
- Excavation would involve about 650 cubic yards of material.

Construction involves setting the pump column, tube, shaft, and pump using a pump rig. A boom truck would be required to set the motor. Concrete mix trucks would be required to deliver concrete for well and motor control center foundations. Trucks suitable to deliver all other materials including drill pipe, well casing, pump column, tube, and shaft, pump, motor, motor control center, discharge piping and appurtenances would also be required. All exposed metal surfaces would be painted.

Collector System

Construction of a collector system consists of a branching system of buried pipelines forming a grid as diagrammed in Figure 2. The system would collect the pumped groundwater and convey it into the Pond-Poso Canal.

- Installation of approximately 10,560 LF of 12-inch PVC pipe, 2,640 LF of 15-inch PVC pipe and 2,640 LF of 18-inch PVC pipe. The pipeline diameters depend on the number of wells to be served by a section of pipe, and would be backfilled an average of four feet over the pipe.
- The collector pipelines would require a working area width ranging from about 45 to 65 feet for construction, with a trench width approximately equal to the outside diameter of

the pipe plus two feet. The widths of the work areas and trenches vary with the size of the pipeline being constructed.

- Excavation and backfill would involve about 24,600 cubic yards of material.

The construction process involves clearing with a motor grader, trenching with either excavators or trenchers, delivery and unloading of pipe, pipe laying with excavators or cranes, pipe zone backfill with a front-end loader, trench backfill with a rubber-tired loader or bulldozer and final grading with a motor grader. Excess trench excavation materials would either be spread within the existing work area to allow for settlement or utilized to construct the adjacent access roadbeds.

The total of all excavation would be on the order of 47,120 cubic yards. Construction of these improvements would be all within the limits of Semitropic's property and acquisition of rights-of-way is not necessary.

Construction Dust Control

Water would be applied to the ground in unpaved roads and staging areas prior to beginning the following earthwork activities to limit fugitive dust emissions. Earthwork activities include land clearing, grubbing, excavation, land leveling, grading and demolition. To further minimize emissions resulting from construction of the Proposed Action, contractors would maintenance their vehicles regularly and power the vehicles down when they are not in use.

Groundwater Monitoring

As part of the original Semitropic Banking Program, a groundwater monitoring committee was established in 1994 to develop information so that any adverse impacts of the Groundwater Banking Program could be mitigated. The monitoring program is overseen by a committee made up of primarily representatives from surrounding water districts. The Kern County Water Agency and Department of Water Resources (DWR) participate in committee activities and water scheduling. Monitoring includes water level measurement in monitoring wells and groundwater quality (including salinity and nitrate) evaluations (Semitropic 1994). In general, the Semitropic Groundwater Bank operations do not allow for more water to be returned than has previously been banked. More specifically, the above-mentioned groundwater monitoring committee provides guidance on groundwater monitoring and subsidence that this facility would follow. In this regard, as the PPSRF is added to the Semitropic Groundwater Bank, it would follow the operation rules of the Semitropic Groundwater Bank EIR and the recommendation of the Groundwater Monitoring program.

Environmental Commitments

Semitropic would be required to have a qualified biologist conduct a survey for the San Joaquin kit fox between 14 and 30 days prior to any ground disturbing work. Copies of any survey reports must be submitted to Reclamation. Standard San Joaquin kit fox avoidance measures must be implemented during the proposed work. If any trees that are used by White-tailed Kites need to be removed as part of the proposed work, they cannot be removed during the breeding season.

2.2 No Action

Under the No Action Alternative, Reclamation would not provide federal funding to Semitropic under the Recovery Act for the construction of the easterly spreading grounds. Semitropic would construct their project without federal funding but construction would be delayed. Semitropic would continue to operate the Groundwater Bank as they have historically until such time the project is built. Banking operations would be limited to regulating available water supplies with in-lieu facilities, limiting Semitropic's ability to take advantage of water supplies to times when water can be absorbed by an irrigation demand until such time as facilities are built. Semitropic's project, without federal funding, would include supply facilities (canals, pipelines and pumps) to deliver water from Pond-Poso Canal, diked spreading grounds, supply pipelines and pumps, return structures (to Pond-Poso Canal), overflow structures (to Poso Creek), production wells and monitoring wells and a well collection system to return water to Pond-Poso Canal.

Section 3 Affected Environment & Environmental Consequences

3.1 Water Resources

3.1.1 Affected Environment

During the 1960's, Semitropic developed plans for main conveyance and distribution system facilities to extend from the California Aqueduct to farm delivery locations. Prior to these deliveries, the irrigated agriculture within Semitropic was totally dependent on pumping the underlying groundwater basin.

As mentioned previously, Semitropic created a water banking program. There are two methods available to return water to banking partners during extraction years. The first is through exchange of SWP allocated entitlement water. By entitlement exchange, Semitropic delivers pumped groundwater to landowners and, in exchange, makes SWP allocated entitlement water available for return to the Banking Partners. The second method of return occurs in particularly dry years when not enough SWP allocated entitlement is available to meet Semitropic's contractual commitment to return water to the Banking Partners. Under this method, Semitropic will extract previously "banked", stored groundwater and physically deliver it through pump-back facilities to the California Aqueduct.

Semitropic's original banking program has a capacity of 1,000,000 acre-feet. Total program annual withdrawal amount would be restricted by the size of the pump-back facility, simultaneous scheduled SWP deliveries to the Semitropic Groundwater Bank, and the proportion of the total program capacity that has been contracted to other banking partners. The annual withdrawal capacity includes up to 133,000 acre-feet of SWP water that could be exchanged with the California Aqueduct, and/or an annual additional 90,000 acre-feet per year of groundwater extraction to the California Aqueduct. Accordingly, the return capacity of the original program is a minimum of 90,000 acre-feet per year, and a maximum of 223,000 acre-feet per year (Semitropic 1997).

With regards to historical surface water supply deliveries to the region, the Poso Creek IRWMP (2007) identified and evaluated the adverse impacts of recent regulatory and judicial actions which have or have the potential to adversely impact all three of the principal surface water sources for the region which includes Semitropic, SWP, CVP and Kern River. These actions include court-ordered reduced pumping south of the Sacramento-San Joaquin Delta; implementation of the San Joaquin River Settlement; Kern River water rights litigation; and the imposition (by USACE in 2006) of storage restrictions on Isabella Dam and Reservoir as a result of dam safety considerations. In particular, the IRWMP indicates that an average annual reduction on the order of 100,000 acre-feet in the surface water supplies brought into the region was likely going forward (relative to historical levels of supply), in the absence of any mitigating actions. This amounts to about 15 percent of the historical water supply to the region. With groundwater levels over the last 25 years being relatively stable, this anticipated shortfall can be expected to result in an increased reliance on pumped groundwater which would induce a long-term decline of groundwater levels.

In the area of the Proposed Action, most agricultural uses overlie a useable groundwater basin. To the extent that more water is regulated (conserved during “wet” years for use during “dry” years), more water is available to replenish the groundwater basin and the overall water balance is improved, which helps support groundwater levels for those uses relying on it in whole or in part.

The Tulare Lake Hydrologic Region comprises the drainage area of the San Joaquin Valley south of the San Joaquin River. The Tulare Lake Hydrologic Region is essentially a closed basin since surface water drains north into the San Joaquin River only in years of extreme rainfall. The San Joaquin Valley Groundwater Basin is the largest basin in the Tulare Lake Hydrologic Region. It is divided into six groundwater sub-basins: Kern County, Tulare Lake, Tule, Kaweah, Kings and Westside sub-basins (DWR 2005).

Semitropic resides within the Kern County groundwater sub-basin which includes the Kern River and the Poso Creek drainage areas, as well as the drainage areas of west-side streams in Kern County. The Kern County sub-basin has been identified by DWR as being critically overdrafted. By definition, “a basin is subject to critical conditions of overdraft when continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social, or economic impacts” (DWR 2003).

Extensive groundwater recharge programs, or water banks, exist in the south valley where water districts have recharged several million acre-feet of water for future use through water banking programs. For many years, irrigation districts throughout the region have managed the groundwater basin conjunctively to maximize water supply and maintain the groundwater system. These conjunctive use practices are designed to off-set the negative effects associated with groundwater overdraft. One such effect of groundwater overdraft is land subsidence which also results in a loss of aquifer storage space. Another effect of overdraft can be groundwater quality degradation. If groundwater overdraft in a basin produces a gradient that induces movement of water from adjacent areas which contain poor water quality water, degradation can occur in the basin. Many agencies have adopted groundwater replenishment programs and have taken advantage of water supplies available in “wet” periods or years, incidental deep percolation, and seepage from unlined canals, in an effort to prevent groundwater overdraft that could result in land subsidence and water quality degradation.

In regard to the concern of arsenic concentration in the water returned from the PPSRF, the Biennial Groundwater Monitoring Report for the Semitropic Water Storage District Water-Banking Project (2003-2004) contains a map of the arsenic concentrations in the groundwater. In the area of the Proposed Action, the arsenic concentrations are less than 10 parts per billion. Based on this data, groundwater that is pumped from the PPSRF is acceptable for agricultural use and is equal to or would improve the overall quality of water that is returned to the California Aqueduct via the Pond-Poso Canal.

3.1.2 Environmental Consequences

Proposed Action

The Proposed Action would help off-set the projected reductions in surface supplies delivered to the groundwater basin by increasing the flexibility and capacity for local regulation of available water supplies, which would help alleviate any conflict and competition over groundwater under

conditions of declining water levels. Water needs to be absorbed during “wet” periods and at times outside of the irrigation demand pattern in order to help off-set some of the declining groundwater levels. The Proposed Action would contribute to Semitropic conjunctively managing the surface and groundwater resources for the benefit of the region. The Proposed Action would improve Semitropic’s flexibility to absorb surface water available to the region, since surface water is becoming more difficult to deliver on a schedule that matches with the irrigation demand. The increased flexibility to absorb the available surface supplies translates to increased reliability and shallower groundwater levels, which benefits all users that rely in whole or in part on the common groundwater supply, i.e., both agricultural and urban users.

The Proposed Action would add direct recharge capacity to absorb water into storage in any given “wet” period or year and would help protect the local aquifer from overdraft. The increased ability to recharge available surface water supplies, primarily during “wet” years, would help to alleviate the projected long-term decline in groundwater levels.

The Proposed Action would also add flexibility in meeting water quality conditions for return of stored water to the California Aqueduct and could also have a slight positive impact on groundwater quality due to the groundwater pumping off-set in Semitropic. The banking of water in Semitropic combined with an anticipated minimum of 10 percent of water left in the District once water is returned to the banking partners would have a positive impact on the groundwater resources.

No Action

Under the No Action alternative, the project construction would be delayed until sufficient funding was available. There may be impacts to groundwater resources as compared to the baseline. The overdraft in the Tulare Lake Region could result in declining groundwater levels at approximately the current rate, as described in the section above. The projected long-term decline in groundwater levels would continue until such time as the project was constructed.

3.2 Biological Resources

3.2.1 Affected Environment

The biological resources found near the Proposed Action are similar to biological resources found in other agricultural areas of the San Joaquin Valley. From October 16-20, 2006, Semitropic retained a biologist to conduct a biological survey/study of the area of the Proposed Action as part of the Initial Study. The biological surveys covered Sections 2 through 11 and 14 through 17 in Township 26 South, Range 24 East. The biologist’s findings included that, with the exception of Poso Creek, the entire area where the Proposed Action is located was actively farmed and planted in cultivated agricultural crops. At the time the biological survey was conducted, five principal biotic habitats were present on site, including disked agricultural fields, field or row crops, orchards, vineyards and Poso Creek (see Appendix A for site photos). The species observed during the biological survey for the entire area described above, including the area of the Proposed Action, are listed in Table 2 of the biological survey, a copy of which can be found in Appendix B.

As stated in Appendix B (Biological Assessment of the Initial Study completed in 2006), “The initial development of proposed Pond-Poso spreading ground unit project shall impact approximately 1,360 acres of intensive cultivated agricultural cropland. No significant impacts to sensitive species are expected to result from impacts to the agricultural lands.”

Subsequent to the biological survey, in 2007, the District commenced construction of the easterly spreading grounds. In this regard, the land use of the area of the Proposed Action changed from agricultural use to spreading grounds, including dikes, ditches and ponds. The District also constructed “habitat benches” but they have not yet been planted with riparian plant species, most likely trees such as willows and/or cottonwoods.

Prior to the initiation of reconnaissance surveys, a survey of the California Department of Fish and Game (CDFG) Natural Diversity Data Base (CNDDDB) (CDFG 2006) and the California Native Plant Society (CNPS) online inventory of rare and endangered plants (CNPS 2006), was conducted for the Pond and Wasco NW U.S. Geological Survey (USGS) 7.5 minute quadrangles to obtain a list of the sensitive species within the area. Table 1 of the biological survey lists the special status species as reported on the Wasco NW and Pond USGS 7.5-minute quadrangles. The survey of the CNDDDB and CNPS listed seven sensitive animal species, five sensitive plant species and one sensitive habitat that occur within the Pond and Wasco NW USGS 7.5 minute quadrangles. Figure 4 of the 2006 biological survey illustrates the locations of these observations near the Proposed Action area. It is noted that none of the listed sensitive animal, plant and habitat species occur within the boundaries of the lands where the Proposed Action would be constructed.

More recently, the data base for special status species from the U.S. Fish and Wildlife (FWS) was accessed by logging onto the link http://www.fws.gov/sacramento/es/spp_lists/auto_list_form.cfm on September 4, 2009. The list in Table 1 was obtained for the Pond and Wasco NW USGS 7.5 minute quadrangles.

Table 1 Threatened and Endangered Species and Critical Habitat

Common Name	Scientific Name	Listing Status	Occurrence Potential in Action Area	Critical Habitat	Critical Habitat in Action Area
blunt-nosed leopard lizard	<i>Gambelia sila</i>	Endangered	None-area is too fragmented and disturbed, and very few burrows on-site	None	No
vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	Threatened	None-no vernal pools	Designated	No
valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	Threatened	None-no elderberry shrubs in or within 100 feet of footprint	Designated	No
delta smelt	<i>Hypomesus transpacificus</i>	Threatened	None-no effects in Sacramento-San Joaquin Delta	Designated	No
California red-legged frog	<i>Rana aurora draytonii</i>	Threatened	None-species doesn't occur	Designated, Proposed	No

Common Name	Scientific Name	Listing Status	Occurrence Potential in Action Area	Critical Habitat	Critical Habitat in Action Area
			on valley floor	increase	
giant garter snake	<i>Thamnophis gigas</i>	Threatened	None-species extirpated south of Burrel/Lanare	None	No
giant kangaroo rat	<i>Dipodomys ingens</i>	Endangered	None-area too fragmented and disturbed, and negative trapping results	None	No
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	Endangered	Very low; area is very disturbed, surrounded by agricultural, and very low prey base	None	No
Tipton kangaroo rat	<i>Dipodomys nitratooides nitratooides</i>	Endangered	None-negative trapping results	None	No

On November 3, 2009, in order to get a more up-to-date view of the baseline, a Reclamation wildlife biologist made a site visit to the site. The area now consists mainly of spreading basins and roads. Large portions of the area have been ripped, excavated, and bladed. Vegetation is not extensive and is mostly tumbleweed and in some places, low-stature non-native grasses. Since the time of the 2006 survey, the Proposed Action has changed to no longer include any work in Poso Creek or any removal of trees. No ground-nesting birds were seen.

During the November 3, 2009 site visit, an active kangaroo rat burrow system (three to four entrances) was spotted at the bottom of a basin (see attached report from Live Oak Associates). One of the entrances had a clear opening about 1½ to 2 inches in diameter, showing signs of ingress and egress, and fresh scat was found near the entrance. The Heermann's kangaroo rat (*D. heermanni*) is more common and less sensitive to habitat disturbance. However, the action area is within the range of the Federally endangered Tipton kangaroo rat (*D. nitratooides nitratooides*), and it was not possible to distinguish the burrow from that of the unlisted, sympatric Heermann's kangaroo rat. Live Oak Associates inspected the action area for kangaroo rat burrows and sign, and then conducted trapping according to the CDFG's protocol to verify the presence or absence of Tipton kangaroo (see Appendix B). One female Heermann's kangaroo rat was captured, but no Tipton kangaroo rats were caught.

Due to time limitations, the entire area was not inspected, but the Reclamation biologist toured the whole site via the farm roads and very few other burrow systems were seen. A burrow characteristic of either a pocket mouse or cricetid/murid mouse was seen, and one burrow system that appeared to belong to a California ground squirrel (*Spermophilus beecheyi*) was seen on the inner prism of the Pond-Poso Canal. The ground squirrel burrows did not show signs of use by a kit fox (such as prey remains), although the biologist conducting the site visit was not a qualified kit fox biologist. Nevertheless, occupancy of the area by the San Joaquin kit fox is not expected. Potential dens for the San Joaquin kit fox on the site consisted of the one group of ground squirrel burrows that the Reclamation biologist observed on November 3, 2009, the prey base is low, the site was formerly in active agricultural production and is surrounded by active

agricultural production for miles. Agricultural lands are generally not suitable for long-term occupation by kit foxes, although lands adjacent to natural habitats may be used for occasional foraging (Warrick et al. 2007).

The “habitat benches” would be planted with riparian plant species, which would be able to take hold once the basins are being flooded with water.

3.2.2 Environmental Consequences

Proposed Action

The Proposed Action would be consistent with the current operations of the District’s Groundwater banking operations. Since the Proposed Action would be constructed on once highly disturbed agricultural land where agricultural operations took place for many years, the project site provides limited opportunities for special status animal species and special status plant species to inhabit the property. Presently, as part of regular maintenance of the District’s converted land from agricultural use to spreading grounds on the east side of the Pond-Poso Canal, the District continues to disturb the area by such practices as disking, scraping, application of herbicides for weed control and other practices necessary to maintain the dikes, ditches and ponds of the spreading grounds.

Within the general vicinity of the Proposed Action, the survey of the CNDDDB and CNPS and the reconnaissance survey in October 2006, found sensitive animal, plant and habitat species, but none which occur within the boundaries of the disturbed land areas where the Proposed Action would be constructed. The survey work done in November 2009 also found no evidence of any special-status species.

The area is either outside the current range or clearly lacks required habitat elements for all but four species: the blunt-nosed leopard lizard, the Tipton kangaroo rat, the giant kangaroo rat, and the San Joaquin kit fox. The only kangaroo rat burrow system found lacked the precincts typical of the giant kangaroo rat, and trapping results verified that neither this species nor the Tipton kangaroo rat are present on-site. The blunt-nosed leopard lizard relies on burrows constructed by small mammals. There is a very limited abundance of small mammal burrows in the area, and because of the great disturbance of the site and the fact that it is surrounded by active agricultural fields, the blunt-nosed leopard is not expected to occur there. The San Joaquin kit fox is not expected to occur on-site, because of the fact that the area was recently cultivated, is surrounded by miles of active farm lands, potential dens with signs of kit fox use were not found, and the prey base is extremely low. The potential dens that were seen also would not be directly impacted by the Proposed Action. Nevertheless, a qualified kit fox biologist must perform a pre-activity survey of the entire action area and standard avoidance measures must be implemented. If the pre-activity survey detects a kit fox or any sign of a kit fox, the Proposed Action cannot proceed without further evaluation by Reclamation and consultation with the USFWS. No critical habitat has been designated in the action area, and therefore none would be affected. Accordingly, no adverse effect is expected on any special-status biological resources within the area to be constructed under this Proposed Action.

The “habitat benches” would provide potential habitat for migratory birds that utilize that habitat type. This would provide a benefit to these species.

There would be no adverse impacts from the Proposed Action.

No Action

Under the No Action Alternative, the project construction would be delayed until sufficient funding was available. However, regardless of when the site is constructed, there would be no adverse impacts to wildlife and special status species since no adverse impacts to sensitive species are expected to result from the conversion of these intensely cultivated cropland to spreading basins¹.

3.3 Air Quality

3.3.1 Affected Environment

The Proposed Action lies within the San Joaquin Valley Air Basin (SJVAB), the second largest air basin in California. 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 state and federal health-based air quality standards for Volatile Organic Compounds/reactive organic gas (VOC/ROG) and nitrogen oxide (NO_x) but does for particulate matter (PM)₁₀ and carbon monoxide (CO). In order to protect health, the San Joaquin Valley Air Pollution Control District (SJVAPCD) is required by federal law to adopt stringent control measures to reduce emissions.

Section 176 (C) of the Clean Air Act [CAA] (42 USC 7506 (C)) requires 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 Federal Clean Air Act (42 USC 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with SIP’s purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) 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 will, in fact, conform to the applicable SIP before the action is taken.

On November 30, 1993, the Environmental Protection Agency (EPA) promulgated final general conformity regulations at 40 Code of Federal Regulations (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

¹ This assumes that Semitropic would also implement a requirement for a kit fox pre-activity survey and avoidance measures.

by the Proposed Action equal or exceed certain de minimis amounts thus requiring the federal agency to make a determination of general conformity.

Table 2 presents the Federal de minimis thresholds covering the Proposed Action.

Table 2 San Joaquin Valley General Conformity de minimis Thresholds

Pollutant	Federal Status	de minimis (Tons/year)	de minimis (Pounds/day)
VOC/ROG (as an ozone precursor)	Nonattainment serious 8-hour ozone	50	274
NO _x (as an ozone precursor)	Nonattainment serious 8-hour ozone	50	274
PM ₁₀	Attainment	100	548
Carbon monoxide (CO)	Attainment Maintenance	100	548

Sources SJVAPCD 2009a; 40 CFR 93.153

In addition to Federal air quality regulations, the National Environmental Policy Act (NEPA) requires projects to additionally meet state and local standards. According to the Kern County California Environmental Quality Act Implementation Document (2004), Projects located in the SJVAPCD will be subject to the following significance thresholds (see below) specified for each air district, in addition to Federal standards. Projects that exceed the following thresholds shall be considered significant.

Table 3 SJVAPCD Local Significance Thresholds

Pollutant	Tons/year
VOC/ROG	10
NO _x	10
PM ₁₀	15

PM₁₀ - PM that is 10 microns in diameter or smaller.

The Kern County General Plan also implements several air quality standards, which include the following:

- *Kern County Rule 402: Fugitive Dust*
This rule prevents fugitive dust emissions from any construction activity so that the presence of such dust remains visible in the atmosphere beyond the property line of the emission source. Precautions should be taken to minimize fugitive dust emissions from the construction activity.
- *Kern County Rule 409: Combustion Contaminants*
This rule limits Carbon dioxide (CO₂) emissions from the burning of fuel.
- *Kern County Rule 407: Sulfur Content of Fuels/Sulfur Compounds*
This rule limits emissions of sulfur compounds from fuel combustion.

3.3.2 Environmental Consequences

Proposed Action

Under the Proposed Action, impacts to the air quality from the construction activities would be minimal because the majority of the large ground disturbing activities have already taken place.

In 2007, Semitropic completed construction of the majority of the earthwork for the easterly spreading grounds during construction of the diked spreading ponds, conveyance ditches, habitat benches, and well pads. Construction of the Proposed Action components, shown on Figure 2, would involve soil disturbing activities that would have a minimal affect on the air quality. The diesel fuel powered equipment required to construct the Proposed Action emit controlled construction contaminants listed in Tables 2 and 3. Table 4, below, presents the estimated emissions for the heavy equipment required to construct the Proposed Action based on estimated hours of use. Tons per year of contaminant production were calculated with the production rates shown in grams per horsepower-hour (g/hp-hr). The results of the air quality analysis indicates that VOC, CO, NO_x, and PM emissions fall below the de minimis thresholds presented in Table 2 and also below the local thresholds presented in Table 3.

There would be negligible emissions from operation of the Proposed Action after construction is complete. Electric pumps would be used to recover stored groundwater. These pumps would not emit pollutants at the pump; the source of the pollutants originates at the power plant. Power plants are permitted based on their maximum operating potential. The additional electricity would not result in the power plant exceeding operating capacity, and, thus, the applicable emissions permit. A majority of power is derived from fossil fuel combusted at power plants to generate electricity. CO₂ is the primary pollutant emitted as a result of the oxidation of the carbon in the fuel. NO_x and PM₁₀ are also emitted.

In summary, the construction and operation of the Proposed Action would not cause an adverse impact to air quality in the SJVAB or exceed applicable standards.

No Action

Under the No Action Alternative, effects would be similar to the Proposed Action but would occur later in time as construction would be delayed.

Table 4 Estimated Construction Emissions

Equipment	Hours HP		VOC		CO		NO _x		PM ₁₀		PM _{2.5}	
			(g/hp-hr)	(tons/yr)	(g/hp-hr)	(tons/yr)	(g/hp-hr)	(tons/yr)	(g/hp-hr)	(tons/yr)	(g/hp-hr)	(tons/yr)
637G Motor Scraper	1785	290	0.34	0.19	1.3	0.74	4.6	0.74	0.32	2.62	0.31	0.18
627G Scraper	1785	272	0.34	0.18	1.3	0.70	4.6	2.46	0.32	0.17	0.31	0.17
623B Cat 6K Water Pull	1190	200	0.440	0.12	2.070	0.54	5.490	1.44	0.410	0.11	0.400	0.10
Cat 563E Compactor	1040	130	0.370	0.06	1.480	0.22	4.900	0.73	34.000	5.07	0.330	0.05
Cat 4D Dozer	517	350	0.360	0.07	1.380	0.28	4.760	0.95	0.330	0.07	0.320	0.06
Drill Rig	176	250	0.600	0.03	2.290	0.11	7.150	0.35	0.500	0.02	0.490	0.02
Well Development Rig	80	250	0.600	0.01	2.290	0.05	7.150	0.16	0.500	0.01	0.490	0.01
Total (tons/yr)			0.66		2.64		6.83		8.07		0.60	

Equipment used and hours operated (estimate). Horsepower ratings for equipment provided by manufacturer specifications. Emission factors were generated from the NONROAD2005 model

Tons per year (tons/yr)

PM_{2.5} (Particulate matter less than 2.5 microns in diameter)

3.4 Cultural Resources

3.4.1 Affected Environment

Cultural resources is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. The National Historic Preservation Act (NHPA) of 1966 is the primary Federal legislation that outlines the Federal Government's responsibility to cultural resources. Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking on cultural resources listed on or eligible for inclusion in the National Register of Historic Places (National Register). Those resources that are on or eligible for inclusion in the National Register are referred to as historic properties.

The Section 106 process is outlined in the Federal regulations at 36 CFR Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking will have on historic properties. In summary, Reclamation must first determine if the Proposed Action is the type of action that has the potential to affect historic properties. If the Proposed Action is the type of action to affect historic properties, Reclamation must identify the area of potential effects (APE), determine if historic properties are present within that APE, determine the effect that the undertaking will have on historic properties, and consult with the State Historic Preservation Office (SHPO), to seek concurrence on Reclamation's findings. In addition, Reclamation is required through the Section 106 process to consult with Indian tribes concerning the identification of sites of religious or cultural significance, and consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

The San Joaquin Valley is rich in historical and pre-historic cultural resources. Cultural resources in this area would be generally prehistoric in nature and include remnants of native human populations that existed before European settlement. Prior to the 18th Century, many Native American tribes inhabited the Central Valley. It is possible that cultural resources lie undiscovered across the San Joaquin Valley. The lands affected by the Proposed Action consist of lands that have been historically farmed for many years. Any archaeological resources that may be present have likely been impacted by the agricultural practices. In 2007, five of the quarter-sections were converted from agricultural land to spreading grounds. Since the Proposed Action is to complete construction of the easterly spreading grounds, only a portion of the area of the five quarter-sections would have ground disturbing activities as identified in Figure 2.

Although the lands within the Proposed Action area have already been developed into spreading basins, a reconnaissance level cultural resource identification effort was completed by Catherine Pruett of Three Girls and a Shovel, LLC. This effort included a records search with the California Information Center at California State University, Bakersfield and a field inspection of the Proposed Action area to identify any remaining indications of archaeological resources. No cultural resources were identified within the Proposed Action area during the field identification efforts.

3.4.2 Environmental Consequences

Proposed Action

Under the Proposed Action there would be earth disturbing activities on a portion of the five quarter-sections already converted from agricultural to spreading grounds in order to make the easterly spreading ponds operational. The areas of ground disturbance (the construction footprint) of the Proposed Action components are shown in Figure 2. The operation of this facility would be consistent with the current operations of the District's groundwater banking operations. Since the area of the Proposed Action is located in lands that have historically been disturbed for many years by farming practices such as harvesting, tilling and irrigation, and recently converted to spreading grounds, any archaeological resources that may be present have likely already been impacted by these practices.

The reconnaissance level cultural resource identification effort conducted by Three Girls and a Shovel, LLC., was unable to identify cultural resources. During the identification process, both the Santa Rosa Rancheria and the Tule River Reservation were contacted and asked to assist in the identification of sites of religious and cultural significance and assist in the identification of any known cultural resources. No response was made to these inquiries. Reclamation entered into consultation with the SHPO on December 10, 2009 requesting concurrence on Reclamation's finding that no historic properties would be affected by the proposed undertaking. SHPO concurred in a letter dated December 22, 2009 (copy of consultation and concurrence letters can be found in Appendix C).

No Action

Under the No Action Alternative, Reclamation would not provide federal funds to Semitropic under the Recovery Act for the construction and operation of the easterly spreading grounds. Impacts to cultural resources would be similar to the Proposed Action but would occur later in time.

3.5 Indian Trust Assets

3.5.1 Affected Environment

Indian trust assets (ITA) are legal interests in assets that are held in trust by the United States Government for federally recognized Indian tribes or individual Indians. The trust relationship usually stems from a treaty, executive order, or act of Congress. The Secretary of the Interior is the trustee for the United States on behalf of federally recognized Indian tribes. "Assets" are anything owned that holds monetary value. "Legal interests" means there is a property interest for which there is a legal remedy, such as compensation or injunction, if there is improper interference. Assets can be real property, physical assets, or intangible property rights, such as a lease, or right to use something. ITA cannot be sold, leased, or otherwise alienated without United States' approval. ITA may include lands, minerals, and natural resources, as well as hunting, fishing, and water rights. Indian reservations, Rancherias, and public domain allotments are examples of lands that are often considered trust assets. In some cases, ITA may be located off trust land.

Reclamation shares the Indian trust responsibility with all other agencies of the Executive

Branch to protect and maintain ITA reserved by Indian tribes, or individual Indians by treaty, statute, or Executive Order.

The nearest ITA is Santa Rosa Rancheria, approximately 33 miles north northeast of the Proposed Action location.

3.5.2 Environmental Consequences

Proposed Action

Under the Proposed Action, there would be no effect on ITA, since there are no ITA within the vicinity of the Proposed Action.

No Action

As in the Proposed Action, there would be no impacts to ITA as there are none.

3.6 Land Use

3.6.1 Affected Environment

Kern County is the fourth most productive agricultural county in the nation. As a semiarid region, it must rely on adequate imported water supply for its farming. It is estimated that 75 percent of the water applied to local crops goes to satisfying actual crop requirements. Semitropic is situated within Kern County. Semitropic has been essentially fully developed to irrigated agriculture for many years, with about 130,100 acres irrigated of the approximately 222,500 acres in the District. The principal annual crops are cotton and alfalfa, while the principal permanent crops are grapes and almonds, with the latter accounting for an increase in land use. The crop pattern within the District has changed significantly over time from row crops to permanent plantings, primarily almonds, pistachios, grapes, and citrus. Table 3 lists the land uses for the district (Semitropic 2008).

The Proposed Action land is currently under Williamson Act contracts. The Williamson Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal because they are based on farming and open space uses as opposed to full market value (Department of Conservation 2009).

Table 5 Land Use

Land Use in Semitropic Water Storage District		
Crop	Acres	Percentage
Alfalfa	26,135	17.91%
Cotton	5,306	3.64%
Duck Pond	9,598	6.56%
Fruits	1,648	1.13%
Grain/pasture	23,285	15.96%
Grapes	4,800	3.29%
Nursery	125	0.09%
Nut crops	58,049	38.78%
Vegetables	4,850	3.32%
Waste and Miscellaneous Land	12,141	8.32%
Total Acres	151,855	100.00%
Undeveloped Native Vegetation	64,037	

Total District Acres	220,582
Irrigated Crop Acres are about 130,100 [Total Acres – Duck Pond, Waste, and Misc]	

3.6.2 Environmental Consequences

Proposed Action

As in the No Action Alternative, the land use would not change. The PPSRF would still be consistent with related open space use under the Williamson Act. Therefore, there would be no adverse impacts due to the Proposed Action.

No Action

Under the No Action Alternative, no changes to land use would occur because it was converted from agriculture land to spreading grounds in 2007 which is consistent with related open space use under the Williamson Act. Future construction would make the easterly spreading grounds operational.

3.7 Socioeconomic Resources

3.7.1 Affected Environment

According to the 2000 Census, Kern County's population was 800,458 (2008 estimate). The median income of households in Kern County was \$46,639 (2007 estimate). Approximately 18.1 percent of the population was below the poverty level [2007 estimate] (Census Bureau 2009). Between 2005 and 2025, Kern County's population is expected to double; grow by more than 160,000 new homes; and add 400,000 vehicles to its roadways (Kern Council of Governments 2009).

The largest population center in the southern San Joaquin Valley is the City of Bakersfield. Several smaller population centers in outlying areas support the two primary industries: agriculture and oil.

The cities of Delano, McFarland, Shafter, and Wasco, along with the unincorporated communities of Earlimart, Lost Hills, and Richgrove, are located in Kern County. Many farmer workers reside in these communities. Census 2000 population and median household income data for each of these communities have been compiled and are presented in the following tabulation (Note that both population and median household income [MHI] have been rounded to the nearest 100).

Table 6 Disadvantaged Communities

Cities and Census Designated Places (CDP)	Census Geography	Census 2000 Population ²	Census 2000 MHI ³	Percent of Census 2000 Statewide MHI
Delano	City	33,800 ⁴	28,100	59
Earlimart	CDP	6,600	21,300	45
Lost Hills	CDP	1,900	31,900	67
McFarland	City	9,600	24,800	52
Richgrove	CDP	2,700	22,900	48
Shafter	City	12,700	29,500	62

² Source: U.S. Census Bureau (<http://factfinder.census.gov>)

³ Source: U.S. Census Bureau (<http://factfinder.census.gov>)

⁴ Does not include institutionalized population.

Each of these communities is considered economically disadvantaged based on a comparison of the statewide MHI with household incomes within these urban areas. In particular, the MHI for each is less than 80 percent of the statewide MHI.

The population of Kern County supports a sizable agricultural industry. Kern County ranks among the leading five counties in the United States in the value of its agricultural products. The gross value of all agricultural products from Kern County in 2008 was over \$4 billion (Kern County Department of Agriculture/Measurement Standards 2009).

There are many small businesses that support agriculture in Kern County such as feed and fertilizer sales, machinery sales and service, pesticide applicators, transport, packaging, and marketing. Furthermore, the agricultural sector consists mostly of low paying and often seasonal employment.

3.7.2 Environmental Consequences

Proposed Action

Under the Proposed Action, the capacity for local regulation of available water supplies would be increased. Water would be captured during “wet” periods or years, which would help offset some of the reductions in reliability of surface water supplies. The Proposed Action would contribute to the sustainability of the underlying groundwater resource and the reliability of water supplies to the area. To the extent that the area would have a sustainable water supply, the portion of the overall economy that is reliant on agriculture would be positively impacted because farmers would continue to employ farm labor. Therefore, the Proposed Action would have no adverse impacts on the socioeconomic resources of the area.

No Action Alternative

Under the No Action Alternative, Semitropic would rely on existing facilities for the operations of their groundwater bank. The District would not have the increased capability to regulate their water supplies making the water supply less reliable. If the construction is delayed, then the cost of pumping groundwater would go up as the distance the water in the ground needs to be pumped or lifted increases. A less reliable and more expensive water supply would impact the farming economy in Kern County by farmer’s idling more crops and reducing farm labor. Accordingly, the No Action Alternative may negatively impact socioeconomic resources of the area temporarily.

3.8 Environmental Justice

3.8.1 Affected Environment

As mandated by Executive Order 12898, published February 11, 1994, entitled, “Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations”, this EA addresses potential environmental justice concerns. The population of some small

⁵ Does not include institutionalized population.

communities typically increases during late summer harvest. The market for seasonal workers on local farms draws thousands of migrant workers, commonly of Hispanic origin from Mexico and Central America. Table 6 characterizes the community by county (Census Bureau 2009).

Table 7 Community Characteristics by County

General Characteristics	Kern County		California	
	Number	%	Number	%
White	683,591	85.4	28,155,606	76.6
Black or African American	51,229	6.4	2,462,697	6.7
American Indian/Alaskan Native	14,408	1.8	441,080	1.2
Asian	32,018	4.0	4,594,583	12.5
Native Hawaiian/Pacific Islander	1,601	0.2	147,027	0.4
Hispanic/Latino (of any race)	377,016	47.1	13,452,940	36.6
Two or more races	16,810	2.1	955,673	2.6
Average household size	3.03		2.87	
Median household income	\$46,639		\$59,928	
Individuals below poverty level	144,883	18.1		12.4

3.8.2 Environmental Consequences

Proposed Action

The Proposed Action would enhance the operation of the District's groundwater bank to better manage available water supplies. Semitropic would have more flexibility to capture water during "wet" periods or years, which would help offset some of the restrictions in availability of surface water supplies, thus contributing to the sustainability of the underlying groundwater resource. In this regard, the agricultural industry would be positively impacted because it would maintain and generate demand for farm labor, a source of employment for many minority and disadvantaged populations. By continuing to provide employment at historic levels, the Proposed Action would have no adverse impact on minority or disadvantaged populations.

No Action Alternative

Under the No Action Alternative, Semitropic would rely on existing facilities for the operations of their groundwater bank. The District would not have the increased capability to regulate their water supplies making the water supply less reliable. If the construction is delayed, then the cost of pumping groundwater would go up as the distance the water in the ground needs to be pumped or lifted increases. A less reliable and more expensive water supply would impact the farming economy in Kern County by farmer's idling more crops and reducing farm labor. Accordingly, the No Action Alternative may negatively impact these populations in the area temporarily.

3.8 Global Climate Change

3.8.1 Affected Environment

Climate change refers to significant change in measures of climate (e.g., temperature, precipitation, or wind) lasting for decades or longer. Many environmental changes can contribute to climate change (changes in sun's intensity, changes in ocean circulation, deforestation, urbanization, burning fossil fuels, etc.) (EPA 2008a).

Gases that trap heat in the atmosphere are often called greenhouse gases (GHG). Some GHG such as CO₂ occur naturally and are emitted to the atmosphere through natural processes and human activities. Other GHG (e.g., fluorinated gases) are created and emitted solely through human activities. The principal GHG that enter the atmosphere because of human activities are: CO₂, methane (CH₄), NO_x, and fluorinated gasses (EPA 2008a).

During the past century humans have substantially added to the amount of GHG in the atmosphere by burning fossil fuels such as coal, natural gas, oil and gasoline to power our cars, factories, utilities and appliances. The added gases, primarily CO₂ and CH₄, are enhancing the natural greenhouse effect, and likely contributing to an increase in global average temperature and related climate changes. There are uncertainties associated with the science of climate change (EPA 2008b).

More than 20 million Californians rely on the SWP and CVP. Increases in air temperature may lead to changes in precipitation patterns, runoff timing and volume, sea level rise, and changes in the amount of irrigation water needed due to modified evapotranspiration rates. These changes may lead to impacts to California's water resources and project operations.

While there is general consensus in their trend, the magnitudes and onset-timing of impacts are uncertain and are scenario-dependent (Anderson et al. 2008a).

3.8.2 Environmental Consequences

Proposed Action

The impact that GHG emissions have on global climate change is not dependent on whether they were generated by stationary, mobile, or area sources, or whether they were generated in one region or another (County of Placer 2009). As in the No Action Alternative, the Proposed Action would be expected to result in a slight temporary net increase in GHG emissions associated with short term construction activities. Operation would also result in a slight net increase of GHG emissions associated with the slightly increased need for maintenance activities.

While any increase in GHG emissions would add to the global inventory of gases that would contribute to global climate change, the Proposed Action would result in only very slight increases in GHG emissions from temporary or existing sources. Therefore, there would be no adverse impacts to global climate change.

No Action Alternative

Under the No Action Alternative, Reclamation would not provide federal funds to Semitropic under the Recovery Act for the construction and operation of the easterly spreading grounds. Construction would be delayed and Semitropic would continue to operate the groundwater bank as they have historically with in-lieu banking facilities. Effects of Semitropic's project would be similar to the Proposed Action but at a later date.

3.8 Cumulative Impacts

Cumulative impacts result from incremental impacts of a 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.

To determine whether cumulatively significant impacts are anticipated from the Proposed Action, the incremental effect of the Proposed Action was examined together with impacts from past, present, and reasonably foreseeable future actions in the same geographic area.

Construction and operation of the PPSRF would not contribute to cumulative changes or impacts to water resources, biological resources, air quality, cultural resources, ITA, land use, socioeconomic resources, environmental justice or global climate change. Therefore, there would be no cumulative impacts as a result of the Proposed Action.

Section 4 Consultation and Coordination

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

4.1 Fish and Wildlife Coordination Act (16 USC § 661 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The amendments enacted in 1946 require consultation with the FWS and State fish and wildlife agencies where the “waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted or otherwise controlled or modified” by any agency under a Federal permit or license. Consultation is to be undertaken for the purpose of “preventing the loss of and damage to wildlife resources.” The Proposed Action would not involve federal water development projects. Therefore the FWCA would not apply. The Proposed Action consists of adding a direct recharge and recovery facility to the existing Semitropic Groundwater Bank to allow flexibility in the timing of delivery, absorption, and return of diverted water. The Proposed Action would not impound, divert, control or modify a body of water other than water delivered by the Pond Poso Canal. The water that would be delivered to and recovered from the PPSRF has already been diverted from its sources and into the Pond-Poso Canal.

4.2 Endangered Species Act (16 USC § 1531 et seq.)

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

No Federally listed or proposed species or critical habitat occur in the area that would be affected by the Proposed Action. A kit fox pre-activity survey and avoidance measures must be implemented. Reclamation has determined that the Proposed Action would not affect any Federally-proposed or listed species or any proposed or designated critical habitat. No consultation is required with the National Marine Fisheries Service, and if the kit fox pre-activity survey verifies that no kit fox has occupied the area since the previous surveys, no consultation is required with the FWS.

4.3 National Historic Preservation Act (16 USC § 470 et seq.)

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

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

Reclamation entered into consultation with the SHPO on December 10, 2009 requesting concurrence on Reclamation's finding that no historic properties would be affected by the proposed undertaking. SHPO concurred in a letter dated December 22, 2009 (copy of consultation and concurrence letters can be found in Appendix B).

4.4 Indian Trust Assets

ITA are legal interests in property held in trust by the United States for federally-recognized Indian tribes or individual Indians. An Indian trust has three components: (1) the trustee, (2) the beneficiary, and (3) the trust asset. ITA can include land, minerals, federally-reserved hunting and fishing rights, federally-reserved water rights, and instream flows associated with trust land. Beneficiaries of the Indian trust relationship are federally-recognized Indian tribes with trust land; the United States is the trustee. By definition, ITA cannot be sold, leased, or otherwise encumbered without approval of the United States. The characterization and application of the United States trust relationship have been defined by case law that interprets Congressional acts, executive orders, and historic treaty provisions.

The Proposed Action does not affect any ITA as there are none in the area.

4.5 Migratory Bird Treaty Act (16 USC § 703 et seq.)

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

The Proposed Action would have no adverse effect on birds protected by the MBTA. There might be a slight benefit to birds from the habitat banks. The Proposed Action would be implemented in compliance with the MBTA.

4.6 Executive Order 11988 – Floodplain Management and Executive Order 11990 – Protection of Wetlands

Executive Order 11988 requires Federal agencies to prepare floodplain assessments for actions located within or affecting flood plains, and similarly, Executive Order 11990 places similar requirements for actions in wetlands. The Proposed Action would not affect either concern.

4.7 Clean Water Act (16 USC § 703 et seq.)

Section 401

Section 401 of the Clean Water Act [CWA] (33 USC § 1311) prohibits the discharge of any pollutants into navigable waters, except as allowed by permit issued under sections 401 and 404 of the CWA (33 USC § 1342 and 1344). If new structures (e.g., treatment plants) are proposed, that would discharge effluent into navigable waters, relevant permits under the CWA would be required for the project applicant(s). Section 401 requires any applicant for an individual United States Army Corps of Engineers dredge and fill discharge permit to first obtain certification from the state that the activity associated with dredging or filling will comply with applicable state effluent and water quality standards. This certification must be approved or waived prior to the issuance of a permit for dredging and filling.

Section 404

Section 404 of the CWA authorizes the United States Army Corps of Engineers to issue permits to regulate the discharge of “dredged or fill materials into waters of the United States” (33 USC § 1344).

The Proposed Action does not involve discharge into waters of the United States or wetlands; hence, no permit would be required.

4.8 Clean Air Act (42 USC § 7506 (C))

Section 176 of the CAA requires that any entity of the Federal government that engages in, supports, or in any way provided financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable 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 NAAQS 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 will, in fact conform to the applicable SIP before the action is taken.

The Proposed Action would involve construction or land disturbing activities that could lead to construction emissions and fugitive dust emissions; however, the results of the air quality analysis indicates that emissions would fall below the de minimis thresholds and also below the local thresholds, and a conformity analysis is not required.

Section 5 Public Review Period

Reclamation posted the draft EA/FONSI on Reclamation's website. The public review period began January 21, 2010 and ended February 19, 2010. Reclamation did not receive any comments during the review period.

Section 6 List of Preparers and Reviewers

Reclamation

Patti Clinton, Natural Resources Specialist, SCCAO
Laura Myers, Chief, Resources Management Division, SCCAO
Mike Kinsey, Supervisory Wildlife Biologist, SCCAO
Shauna McDonald, Wildlife Biologist, SCCAO
Rain Healer, Natural Resources Specialist, SCCAO
Adam Nickels, Archaeologist, MP
Patricia Rivera, ITA, MP

GEI Consultants, Inc., Bookman-Edmonston Division

Isela Medina, PE
Samuel Schaefer, PE

Section 7 References

- Anderson, J, F Chung, M Anderson, L Brekke, D Easton, M Ejetal, R Peterson, and R Snyder. 2008. *Progress on Incorporating Climate Change into Management of California's Water Resources*. Climatic Change (2008) 87 (Suppl 1):S91–S108 DOI 10.1007/s10584-007-9353-1
- Placer County. 2009. Environmental Impact Report, County of Placer, *American Vineyard Village*.
[http://www.placer.ca.gov/Departments/CommunityDevelopment/EnvCoordSvcs/EIR/~media/cdr/ECS/EIR/AmericanVineyardVillage/3%2013%20%20CLIMATE%20CHANG E.ashx](http://www.placer.ca.gov/Departments/CommunityDevelopment/EnvCoordSvcs/EIR/~/media/cdr/ECS/EIR/AmericanVineyardVillage/3%2013%20%20CLIMATE%20CHANG E.ashx)
- Department of Conservation. 2009. Website – Williams Act Program.
<http://www.conservation.ca.gov/dlrp/lca/Pages/Index.aspx>
- DWR. 2003. California Department of Water Resources. *California Groundwater: Bulletin 118 Update 2003*; October 2003.
- DWR. 2005. California Department of Water resources. *California water Plan Update 2005*; Volume 3 – regional Reports; Chapter 8: Tule Lake Hydrologic Region; September 2005
- EPA. 2008a: Website – Climate Change, Basic Information.
<http://www.epa.gov/climatechange/basicinfo.html>
- EPA. 2008b: Website – Climate Change, Science.
<http://www.epa.gov/climatechange/science/index.html>
- Kern Council of Governments. 2009. *2002-2003 Annual Report*. Website:
<http://www.kerncog.org/newsletters/KCOGAnnual.pdf>
- Kern County Department of Agriculture/Measurement Standards. 2009. Website:
http://www.co.kern.ca.us/kernag/caap/croprpts/crop00_09/Crop2008.pdf
- Placer County. 2007. *American Vineyard Village Draft Environmental Impact Report*. December 2007.

- Semitropic, 1994. Semitropic Water Storage District and Metropolitan Water District of Southern California. *Semitropic Groundwater Banking Project, Final Environmental Impact report, Findings and Mitigation Monitoring Plan*; July 1994.
- Semitropic, 1997. Semitropic Water Storage District. *Semitropic Water Banking and Exchange Program (Semitropic Groundwater Banking Program), Initial Study*; April 1997.
- Semitropic, 2006. Semitropic Water Storage District. *Initial Study and Draft Negative Declaration for the Pond Poso Spreading Grounds Units of the Semitropic Groundwater Bank*; November 2006.
- Semitropic water Storage District Website: <http://www.Semitropic.com/AboutUs.htm>
- Semitropic water Storage District Website: <http://www.Semitropic.com/FuturePlans.htm>
- United States Census Bureau State and County Quick Facts. 2009. Website: <http://factfinder.census.gov>. Accessed: September 14, 2009.
- United States Congress. 2009. Website: <http://www.opencongress.org/bill/111-s1/text>
- United States Department of Interior. 2009. News Release: *Secretary Salazar Announces \$260 Million in Economic Recovery Investments to Help California Address Long-Term Water Supply Challenges and Devastating Drought Conditions. Water-Related Economic Investments Total \$1 Billion in the West*. Website: http://www.doi.gov/news/09_News_Releases/041509.html
- United States Fish and Wildlife Service. 2009. Website: http://www.fws.gov/sacramento/es/spp_lists/auto_list_form.cfm.
- Warrick, G. D., H. O. Clark, Jr., P. A. Kelly, D. F. Williams, and B. L. Cypher. 2007. Use of agricultural lands by San Joaquin kit foxes. *Western North American Naturalist* 67:270-277.

Appendix A – Site Photos



Spreading Basin



Spreading Basin



Basin Pump



Pond Structure



Pond Structure



Well Structure

Appendix B – Biological Surveys

Appendix C – State Historic Preservation Office Correspondence



United States Department of the Interior

BUREAU OF RECLAMATION
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, California 95825-1898



MPR53 REFER TO:
ENV-3.00

CERTIFIED – RETURN RECEIPT REQUESTED

DEC 10 2009

Mr. Milford Wayne Donaldson
State Historic Preservation Officer
Office of Historic Preservation
1416 9th Street, Room 1442-7
Sacramento, California 95814

Subject: National Historic Preservation Act, Section 106 Consultation for Improvements to the
Pond Poso Spreading and Recovery Facility of the Semitropic Water Storage District,
Kern County, California (Project No. 09-SCAO-338) – American Recovery and
Reinvestment Act Project

Dear Mr. Donaldson:

The Bureau of Reclamation is initiating the National Historic Preservation Act (NHPA) Section 106 process and is seeking your concurrence with a finding of no historic properties affected for a proposed enhancement of an existing spreading and recovery facility managed by the Semitropic Water Storage District of Kern County, California. This project is being funded through the American Recovery and Reinvestment Act (ARRA). The use of Federal appropriations constitutes an undertaking pursuant to Section 301(7) of the NHPA (16 U.S.C. 470), as amended. Reclamation is consulting with you in accordance with the regulations at 36 CFR Part 800 implementing Section 106 of the NHPA.

The proposed improvements will take place in an existing spreading basin that encompasses five quarter sections approximately 763 acres in size. The project entails the construction of inter-basin structures, 20 pond over-pours, three emergency spillways, four county road siphon crossings, completion of seven production wells, eight casing path wells and five shallow wells, and construction of a collector system. Heavy equipment such as excavators will be used to install and construct the necessary enhancements. Excavated soils will either be disposed of commercially or by spreading them over the existing spreading basin. The proposed improvements are being constructed in an existing spreading basin that was originally constructed in 2006 as a private endeavor by the Semitropic Water Storage District. The purpose of the spreading basin was to provide groundwater recharge that could be extracted in dry years or supplement reduced deliveries during irrigation seasons.

The current spreading basin, although it has not been excavated and levees have been constructed, is not a working facility. Appropriations under the ARRA program will allow the Semitropic irrigation district to complete the final components of the spreading basin project. Once the final components have been implemented, the existing spreading basin will be functional and provide for a more reliable irrigation water supply.

Reclamation has determined that the area of potential effects (APE) constitutes the five quarter sections where the project action will take place (Figure 1 of Pruett [2009:2]). A detailed description of the APE is included in the enclosed cultural resource inventory report by Pruett (2009:1). The APE lies within agricultural lands northwest of the City of Wasco in Kern County, California. The five quarter sections were developed into spreading ponds and levees in 2006. The APE is a highly modified environment. In 2006 much of the APE was excavated to depths of approximately 30 feet during the construction of the spreading basin area. The legal description for the APE is E ½, sec. 17; W ½, sec. 16; and the SW ¼, sec 9, T. 26 S., R. 24 E., Mount Diablo Meridian, as depicted on the Wasco 7.5-minute USGS topographic quadrangle.

In an effort to identify historic properties, Semitropic Water Storage District's engineering consultant, GEI Consultant, subcontracted with Three Girls and a Shovel, LLC, to conduct a cultural resource inventory of the APE. The results of this inventory are detailed in the enclosed cultural resource inventory report by Pruett (2009). In summary of Pruett (2009), a records search did not reveal any previously recorded cultural resources nor any previous cultural resource identification efforts within or immediately adjacent the APE. Because the area has been significantly modified during construction of the spreading basin in 2006 without any previous cultural resource considerations, Pruett conducted a pedestrian inspection of the APE. No cultural resources were identified during the survey. Pruett's effort to consult with Indian Tribes and Native American organizations and individuals also failed to identify any known cultural resources. Pruett (2009) concludes that any cultural resources that may have been present prior to the construction of the spreading basin in 2006 are now removed.

Based on the above information and enclosed report by Pruett (2009), Reclamation concludes that the proposed undertaking will have no effect on historic properties pursuant to the regulations at 36 CFR Part 800.4(d)(1). In an effort to identify sites of religious and cultural significance, Reclamation is consulting with the Tule River Tribe and the Santa Rosa Rancheria pursuant to 36 CFR Part 800.4(a)(4). If Reclamation is made aware of any resources, we will contact your office immediately.

Reclamation invites your comments on our delineation of the APE and the appropriateness of our identification efforts. We also request your concurrence on our finding that the proposed undertaking will result in no effect to historic properties. If you have any questions, comments, or concerns, please contact Mr. Adam Nickels at 916-978-5053 or anickels@usbr.gov. We look forward to your response.

Sincerely,

MICHAEL A. CHOTKOWSKI

Michael A. Chotkowski
Regional Environmental Officer

Enclosure

Reference:

Pruett, C.L.

2009 *A Cultural Resources Assessment for the Semitropic Water Storage District, Northwest of Wasco, Kern County California*. Unpublished report prepared for Semitropic Water Storage District, on Behalf of the Bureau of Reclamation. On file with the Bureau of Reclamation, Sacramento California, Project No. 09-SCAO-338

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